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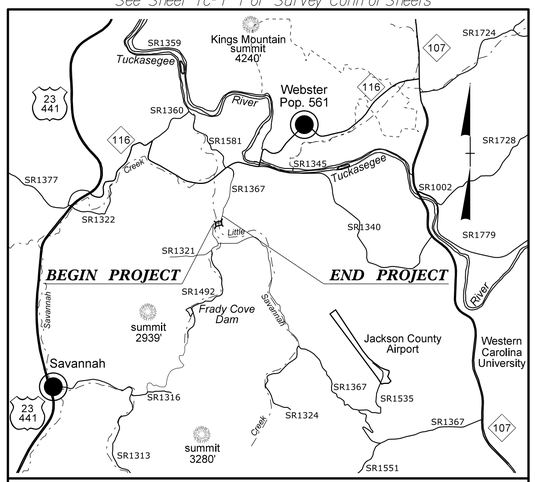
09/08/99

TIP PROJECT: B–5410

CONTRACT: C203769

See Sheet 1a For Index of Sheets
See Sheet 1b For Index of Sheets
See Sheet 1c-1 For Survey Control Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

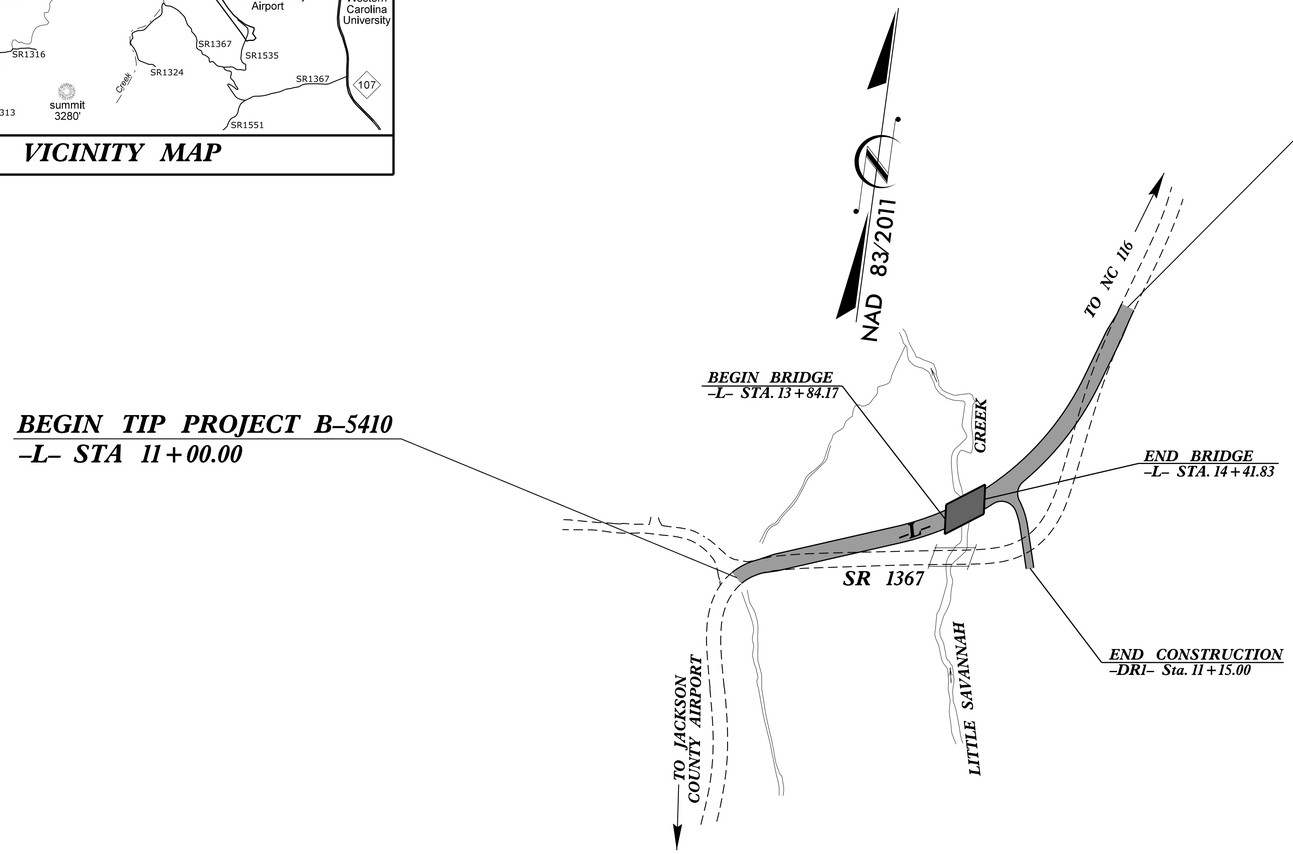
JACKSON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B–5410	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46125.1.1	BRZ–1367(3)	PE
46125.2.1	BRZ–1367(3)	R/W, UTIL
46125.3.1	BRZ–1367(3)	CONST

LOCATION: BRIDGE 221 OVER LITTLE SAVANNAH CREEK ON SR 1367

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE



***** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL STOPPING SIGHT DISTANCE***

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 2016 = 1,168
ADT 2036 = 1,645
K = 10 %
D = 65 %
T = 11 % *
V = 35 MPH **
* TTST =1 DUAL 10
FUNC CLASS = LOCAL
SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B–5410 = 0.114 Miles
LENGTH STRUCTURE TIP PROJECT B–5410 = 0.011 Miles
TOTAL LENGTH TIP PROJECT B–5410 = 0.125 Miles.

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 23, 2015

LETTING DATE: JUNE 21, 2016

KEVIN E. MOORE, PE
PROJECT ENGINEER

STEVEN D. KENDALL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039249 ENGINEER BRIAN M. RADAKOVIC

DocuSigned by: Brian M. Radakovic
SIGNATURE: P.E. 3/24/2016

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 033296 ENGINEER Steven D. Kendall

DocuSigned by: Steven D. Kendall
SIGNATURE: P.E. 3/24/2016

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

21-MAR-2016 08:23
R:\Roadway_Proj\B5410_Rdy_tsh.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-5410	1A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 033296 ENGINEER Steven D. Kendall

DocuSigned by: Steven D. Kendall
C919CB49D9EE4A2... 4/27/2016

INDEX OF SHEETS

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.

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.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS 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.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, FRONTIER COMMUNICATIONS, BALSAM WEST FIBERNET LLC
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 OTHERS.

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 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.57	Reinforced Brick Endwall - for Single 60" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Beg. March 2013 Letting use detail in lieu of Standard)
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
B-5410	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc.
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
B-5410	1C-1
Location and Surveys	

SURVEY CONTROL SHEET B-5410
-FINAL-

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	602668.5290	737669.7800	2051.92	10+04.76	12.74 RT
2	BL-2	602805.8610	737778.4170	2050.35	12+13.90	2.95 LT
3	BL-3	602847.5740	738065.0250	2053.57	14+65.04	93.57 RT
4	BL-4	603115.5940	738102.5400	2059.34	16+94.01	13.07 LT
5	BL-5	603497.4880	738209.5720	2076.89	OUTSIDE PROJECT LIMITS	

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+50.00	-29.46	602808.3704	737709.2823
L	12+00.00	-45.00	602840.4045	737750.6970
L	13+18.31	-45.00	602881.7617	737861.5430
L	16+53.14	-45.00	603086.8802	738059.3542
L	17+46.14	-29.89	603170.3679	738103.0131

PUE
-FINAL- ROW MARKER PERMANENT EASEMENT-E

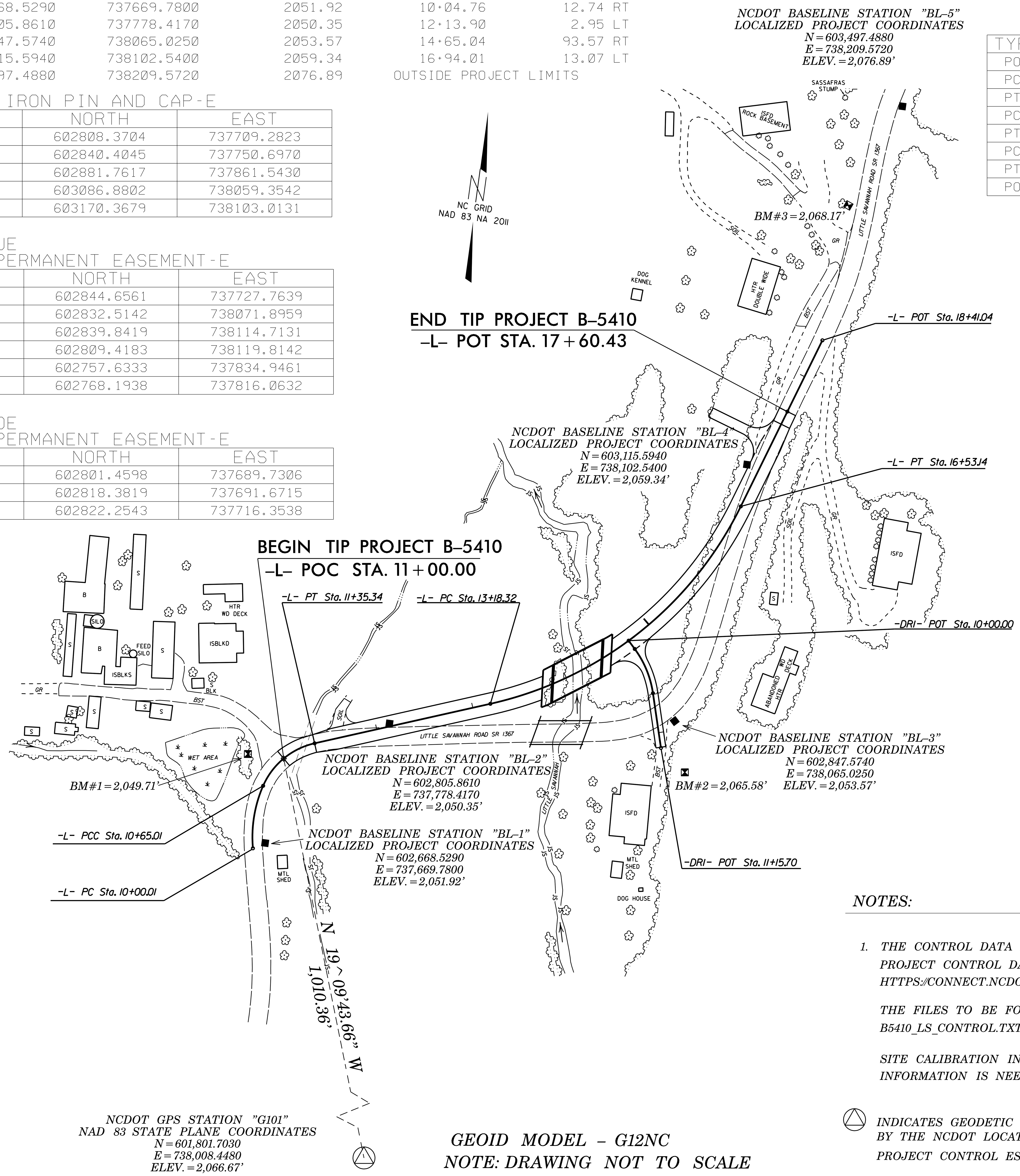
ALIGN	STATION	OFFSET	NORTH	EAST
L	11+80.00	-57.00	602844.6561	737727.7639
L	14+61.00	109.31	602832.5142	738071.8959
L	14+88.00	134.00	602839.8419	738114.7131
L	14+75.00	159.00	602809.4183	738119.8142
L	12+50.00	62.00	602757.6333	737834.9461
L	12+36.00	45.50	602768.1938	737816.0632

PDE
-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+31.00	-30.00	602801.4598	737689.7306
L	11+37.00	-45.00	602818.3819	737691.6715
L	11+61.48	-40.00	602822.2543	737716.3538

-L- FINAL

TYPE	STATION	NORTH	EAST
POT	10+00.00	602661.5045	737658.2364
PC	10+00.01	602661.4983	737658.2378
PT	10+65.01	602725.8043	737659.9036
PC	10+65.01	602725.8043	737659.9036
PT	11+35.34	602775.6417	737705.8497
PC	13+18.32	602839.6028	737877.2793
PT	16+53.14	603072.6896	738102.0582
POT	18+41.04	603250.9997	738161.3110



BM1 ELEVATION = 2049.71
N 602756 E 737640
L STATION 10+82.00 30 LEFT
8 INCH SPIKE SET IN BASE OF 24 INCH
PINETREE

BM2 ELEVATION = 2065.58
N 602797 E 738082
L STATION 14+49.00 143 RIGHT
8 INCH SPIKE SET IN BASE OF 24 INCH
POPLAR TREE

BM3 ELEVATION = 2068.17
N 603390 E 738169
L STATION 18+41.00
N 03°04'13.24" E DIST 139.54
8 INCH SPIKE SET IN BASE OF 24 INCH
PINETREE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "G101"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 601801.703(ft) EASTING: 738008.448(ft)
ELEVATION: 2066.674(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9997793433
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "G101" TO -L- STATION 11+35.33 IS
N 19°09'43.66" W 1,010.36'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOID MODEL - G12NC
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:
B5410_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.

6/2/99
29-MAR-2016 12:06

PROJ. REFERENCE NO.	SHEET NO.
B-5410	1C-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CENTERLINE COORDINATE LIST

Point #	Chain	Station	Northing (Y)	Easting (X)
1	L	10+00.00	602661.5045	737658.2364
2	L	11+00.00	602756.0802	737676.8059
3	L	12+00.00	602798.2435	737766.4275
4	L	13+00.00	602833.2001	737860.1186
5	L	14+00.00	602876.2336	737950.1085
6	L	15+00.00	602941.0927	738025.8328
7	L	16+00.00	603023.6141	738081.7891
8	L	17+00.00	603117.1577	738116.8350
9	L	18+00.00	603212.0554	738148.3697
10	L	18+41.04	603250.9997	738161.3110

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-5410	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 033296 ENGINEER Steven D. Kendall

DocuSigned by: Steven D. Kendall C919CB49D9EE442... 3/23/2016

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DocuSigned by: Clark S. Morrison B0A110DD1E004C4... 3/23/2016

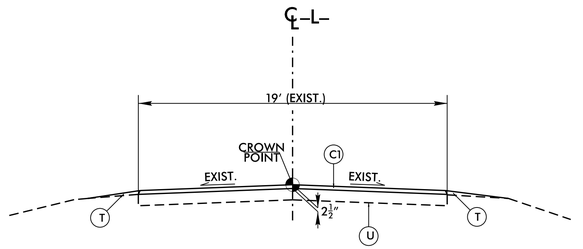
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

FINAL PAVEMENT DESIGN

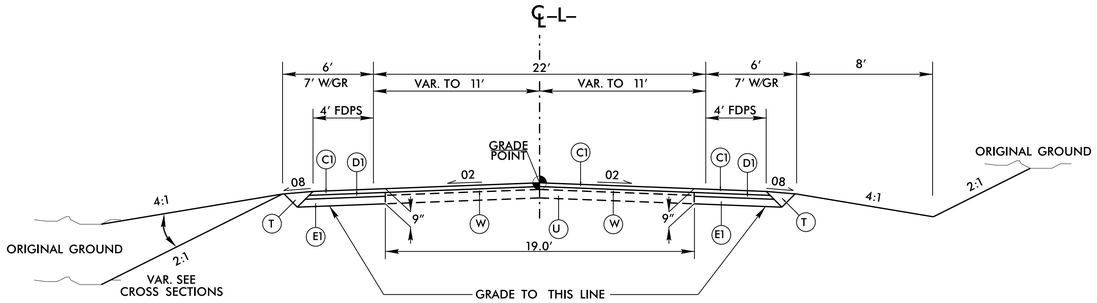
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J	PROP. 6" AGGREGATE BASE COURSE.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING (SEE DETAIL)

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



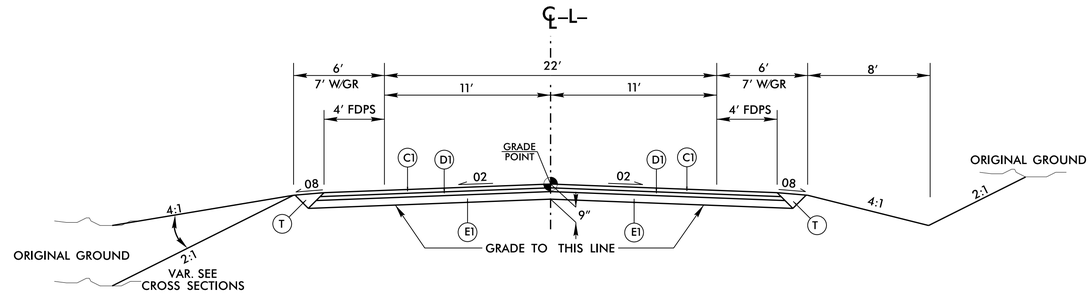
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:
–L– STA. 11+00.00 TO STA. 11+35.34
–L– STA. 17+46.14 TO STA. 17+60.43



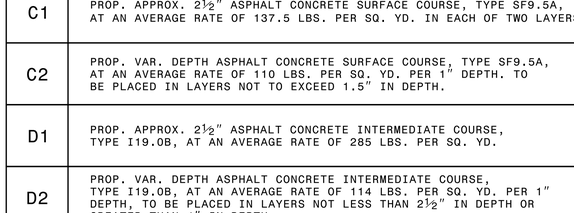
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:
–L– STA. 11+35.34 TO STA. 13+00.00
–L– STA. 16+00.00 TO STA. 17+46.14

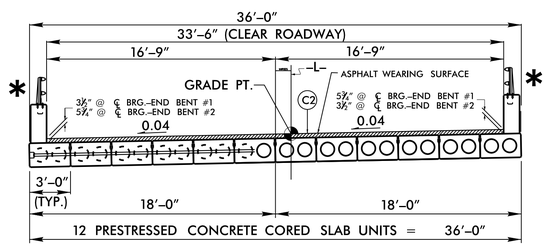


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:
–L– STA. 13+00.00 TO STA. 13+84.17 (BEGIN BRIDGE)
–L– STA. 14+41.83 (END BRIDGE) TO STA. 16+00.00



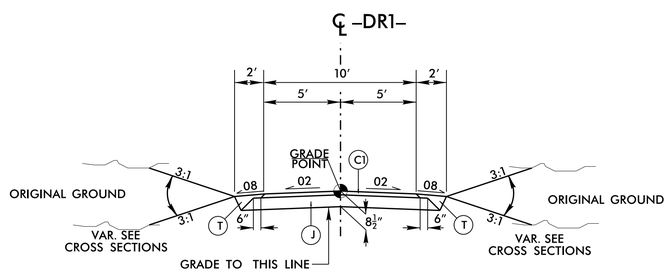
Wedging Detail



TYPICAL SECTION ON STRUCTURE

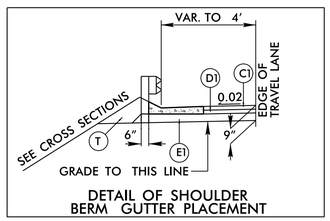
–L– STA. 13+84.17 (BEGIN BRIDGE) TO STA. 14+41.83 (END BRIDGE)

✱ BICYCLE SAFE RAILS REQUIRED



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AS FOLLOWS:
–DR1– STA. 10+15.00 TO STA. 11+15.70



DETAIL OF SHOULDER BERM GUTTER PLACEMENT

USE IN CONJUNCTION WITH TYPICAL SECTIONS 2 AND 3
–L– LT STA. 13+35.48 TO 13+81.60
–L– LT STA. 14+63.87 TO 16+98.00

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5410	2B-1
R/W SHEET NO.	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 033296 ENGINEER Steven D Kendall

DocuSigned by: Steven D. Kendall
C919CB480B0EE4A2...
3/21/2016

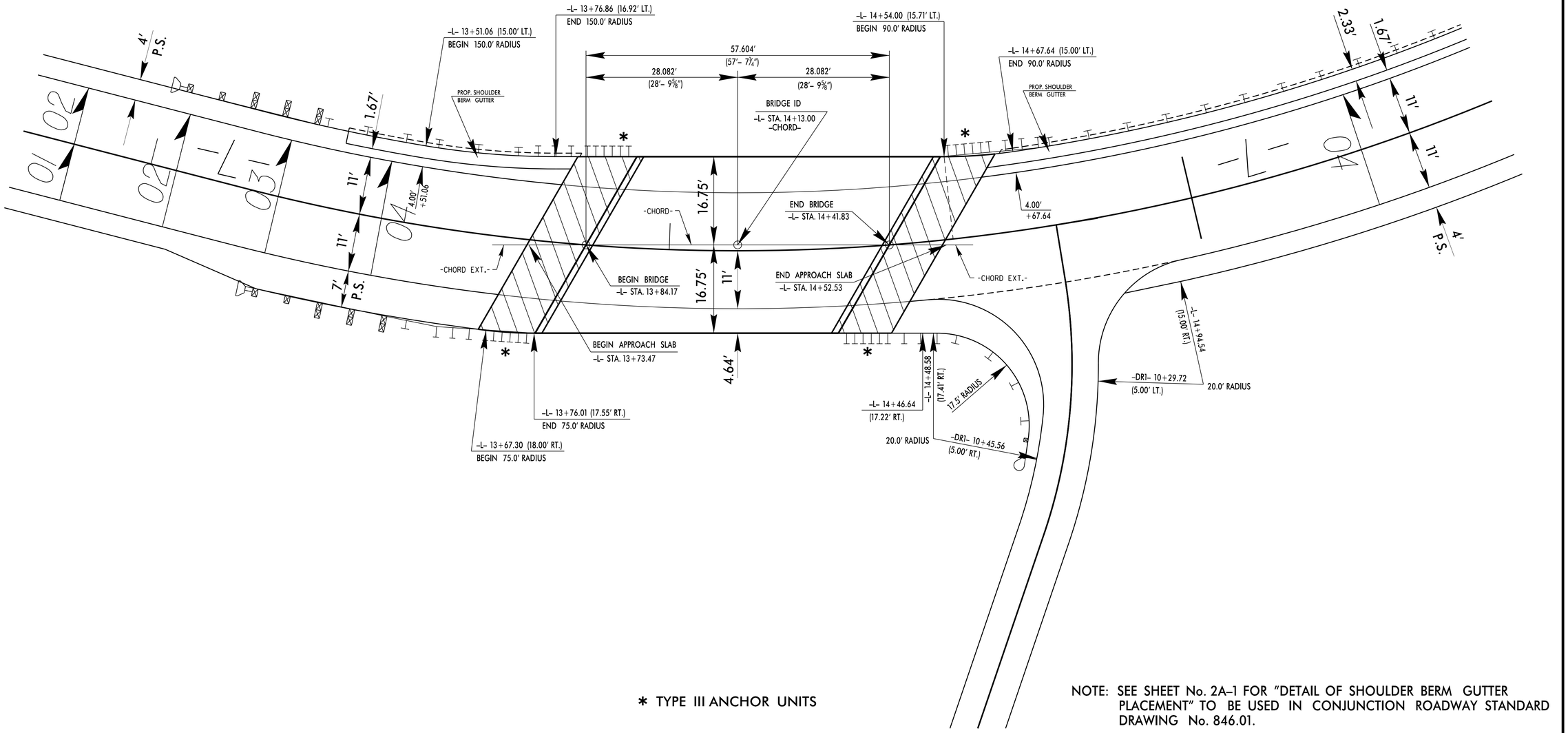
BRIDGE /ROADWAY INTERSECTION DETAIL

NAD 83/2011

15+00

10′ 0′ 10′ 20′
5′

(ENGLISH)

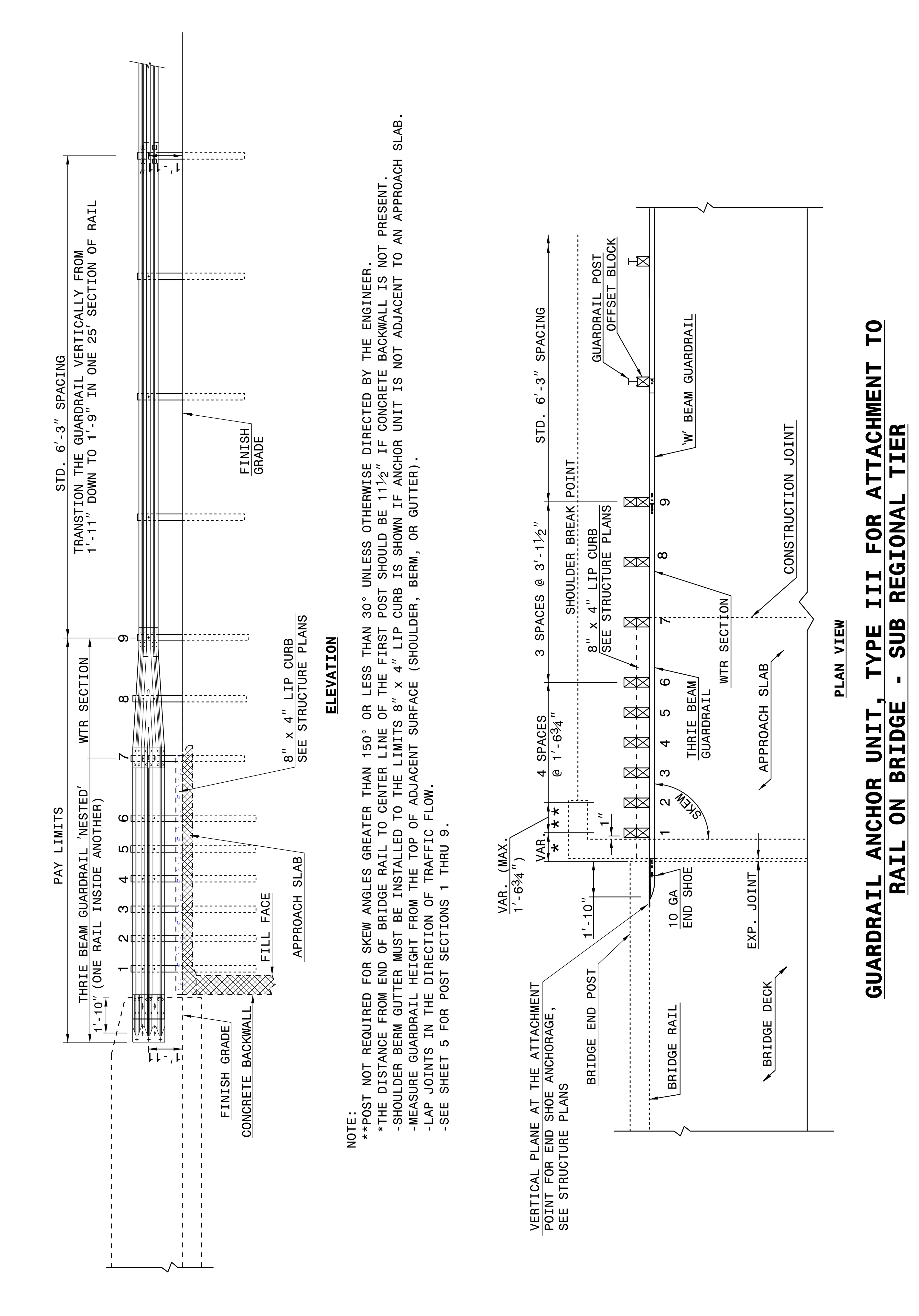


* TYPE III ANCHOR UNITS

NOTE: SEE SHEET No. 2A–1 FOR "DETAIL OF SHOULDER BERM GUTTER PLACEMENT" TO BE USED IN CONJUNCTION ROADWAY STANDARD DRAWING No. 846.01.

10-MAR-2016 09:06
R:\Roadway\Projects\B-5410_RDY_psh_det2b.dgn
$$USER_NAME$$

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER
SHEET 2 OF 7 862d03

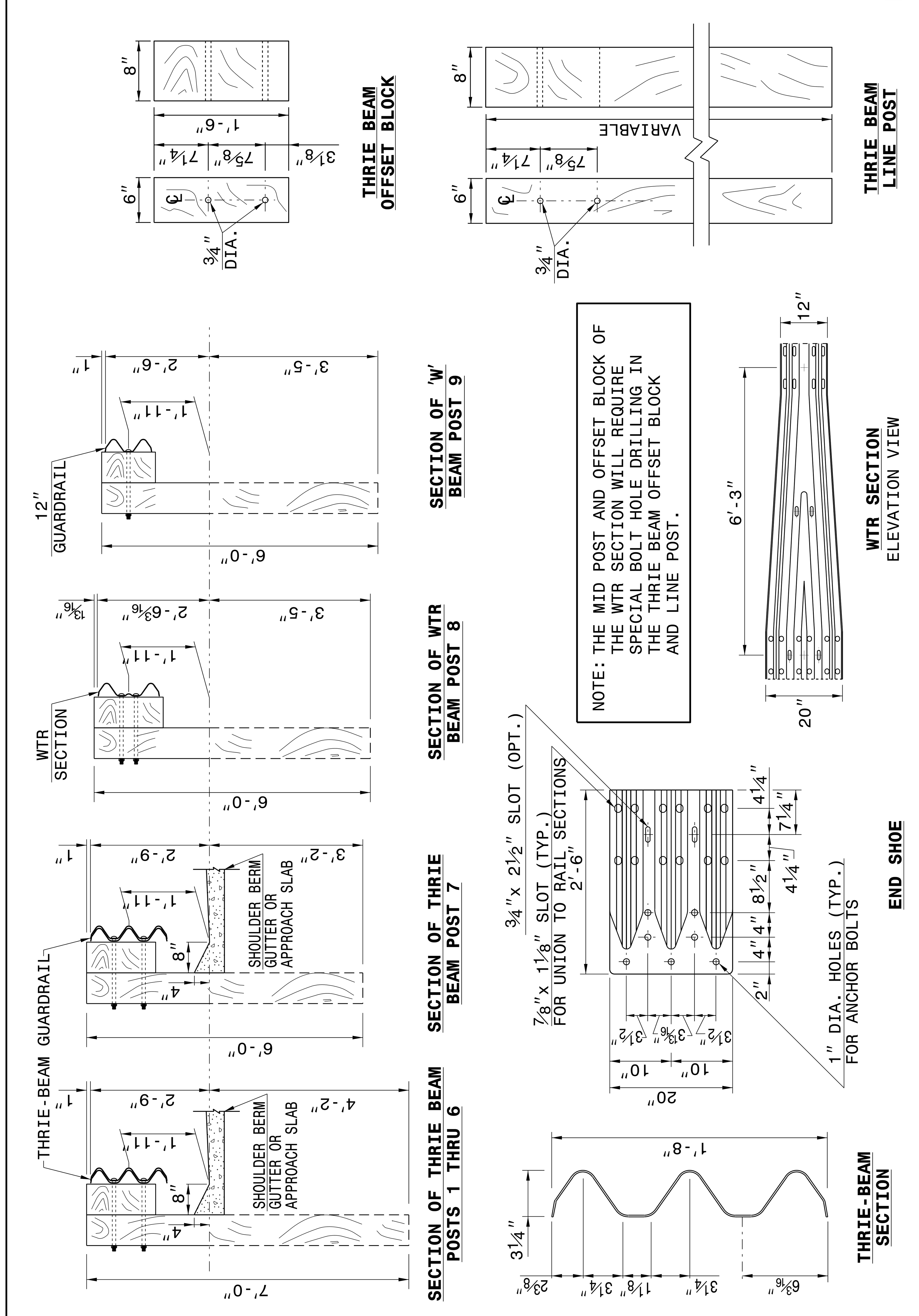


STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

SHEET 2 OF 7
862d03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III
SHEET 3 OF 7 862d03



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

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

SHEET 3 OF 7
862d03

SEAL 022966 NORTH CAROLINA PROFESSIONAL ENGINEER Joel S. Howerton
DocuSigned by: Joel S. Howerton 873F3D17DCDC45F... 3/21/2016

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

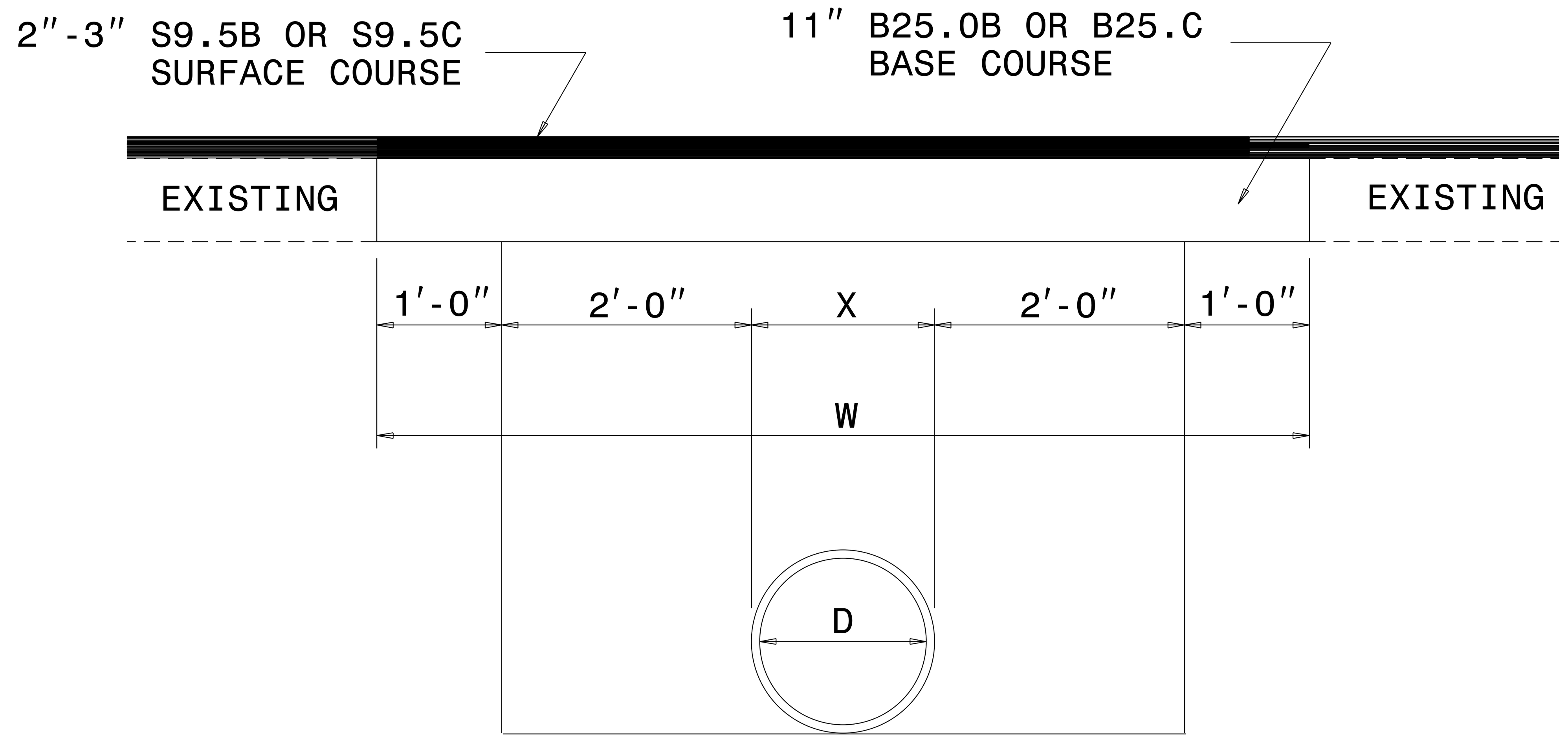
SEE TITLE BLOCK

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

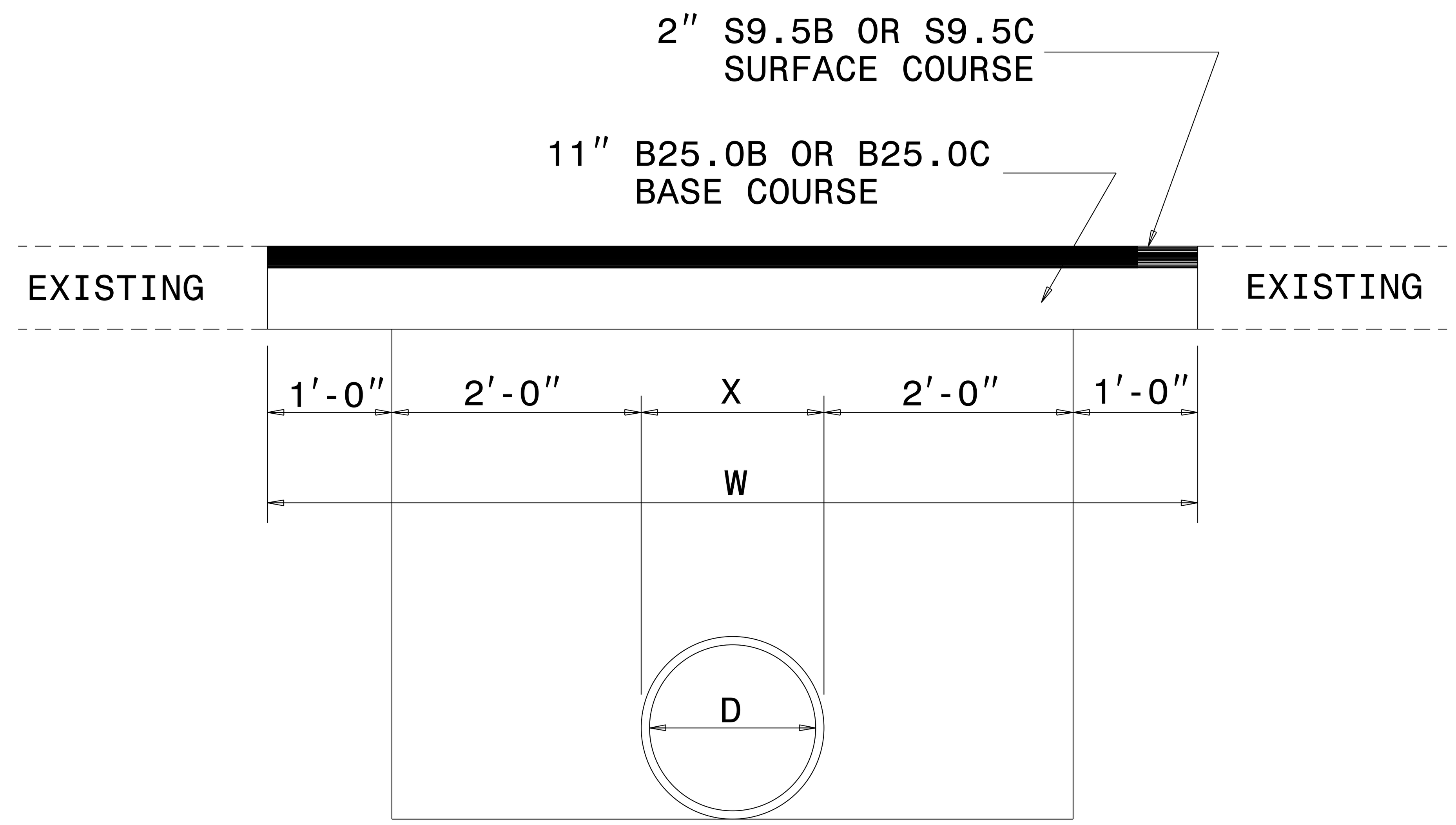
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
PAVEMENT REPAIRS
FOR SUPERPAVE MIX TYPES

D	X	W
12″	1′-4″	7′-4″
15″	1′-7″	7′-7″
18″	1′-10″	7′-10″
24″	2′-6″	8′-6″
30″	3′-1″	9′-1″
36″	3′-8″	9′-8″
42″	4′-5″	10′-5″
48″	5′-0″	11′-0″
54″	5′-8″	11′-8″
60″	6′-2″	12′-2″



PAVEMENT REPAIRS ON ROADS TO BE RESURFACED
(PIPE IS PLACED UNDER EXISTING PAVEMENT)



PAVEMENT REPAIRS ON ROADS NOT TO BE RESURFACED
(PIPE IS TO BE PLACED UNDER EXISTING PAVEMENT)

SHEET 1 OF 1
654D01

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

ENGLISH DETAIL DRAWING FOR
PAVEMENT REPAIRS
FOR SUPERPAVE MIX TYPES

SHEET 1 OF 1
654D01

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton
DocuSigned by: Joel S. Howerton 3/21/2016

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

SEE TITLE BLOCK

ORIGINAL BY: J.S. HOWERTON DATE: 5/6/15
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: jhowerton\654D01.dgn

PROJECT REFERENCE NO.	SHEET NO.
46125.1.1(B-5410)	2G-1

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 028893 ENGINEER MICHAEL H STEPHENS

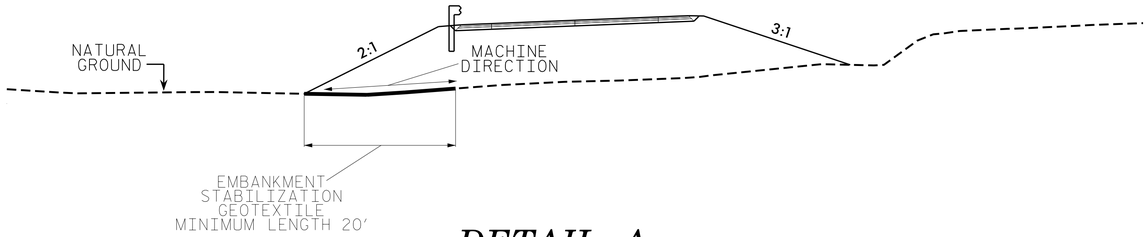
DocuSigned by: Michael H. Stephens C44768209231 4CC...

3/14/2016

SIGNATURE DATE

ENGINEER

SIGNATURE DATE



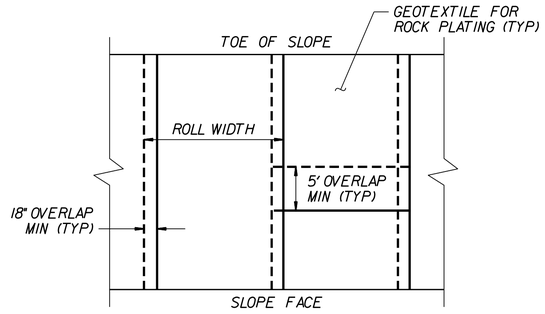
DETAIL A

14+50 TO 16+25 -L-

NOTES

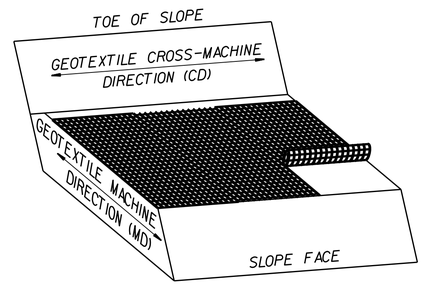
1. FOR ROADWAY EMBANKMENTS WITH LESS THAN A 2.5:1 SLOPE.
2. PLACE ALL GEOTEXTILE WITH THE MACHINE DIRECTION PERPENDICULAR TO THE SLOPE FACE.
3. GEOTEXTILE FOR EMBANKMENT STABILIZATION SHALL BE PLACED FROM TOE OF PROPOSED SLOPE EXTENDING A MINIMUM OF 20 FT ALONG THE TRANSITION FORM EXISTING GROUND AND NEW EMBANKMENT FILL

GEOTEXTILE FOR EMBANKMENT STABILIZATION (SQUARE YARDS)	
GEOTEXTILE	1,100 SYDS



GEOTEXTILE OVERLAP DETAIL

(PLAN VIEW)



GEOTEXTILE PLACEMENT DETAIL

(PLAN VIEW)

PREPARED BY: MHS	DATE: 12/17/14
REVIEWED BY: SCC	DATE: 12/17/14

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

EMBANKMENT STABILIZATION DETAIL

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

12/06/07

COMPUTED BY: H. L. EDWARDS DATE: 12/10/2015
CHECKED BY: T. R. MEADOWS DATE: 2/416

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-5410	3B-1

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–L–	11+59.80	13+57.54	RT	309.92
–L–	13+89.32	17+04.02	RT	606.24
			TOTAL:	916.17
			SAY:	920.0

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
–L–	13+35.48	13+81.60	LT	44.3
–L–	14+63.87	16+98.00	LT	223.0
			TOTAL:	267.3
			SAY:	270.0

SUMMARY OF EARTHWORK

(IN CUBIC YARDS)

SURVEY LINE	LOCATION	STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
–L–	LT	10+75.00	12+75.00	6	392	386	
–L–	CL	12+75.00	14+00.00		903	903	
–L–	RT	10+75.00	13+75.00	380	21		359
			SUBTOTALS NO. 1:	386	1,316	1,289	359
–L–	CL	14+00.00	15+75.00		1,964	1,964	
–L–	LT	15+75.00	17+75.00	67	591	524	
–L–	RT	14+00.00	17+75.00	131	79		52
–DR1–	CL	10+20.00	11+15.70	15	347	332	
			SUBTOTALS NO. 2:	213	2,981	2,820	52
			PROJECT SUBTOTALS:	599	4,297	4,109	411
			SELECT GRANULAR MATERIAL IN LIEU OF BORROW:		–371	–371	
			PROJECT TOTALS:	599	3,926	3,738	407
			REPLACE TOP SOIL ON BORROW PITS:			187	
			GRAND TOTALS:	599		3,925	
			SAY:	600		4,000	

NOTE:
Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Removal of Existing Pavement wil be paid for at the Lump Sum Price "GRADING"

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

"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: TYPE III	ANCHORS: AT–1	ANCHORS: GRAU 350 TL–2	ANCHORS: M–350	ANCHORS: XIII	ANCHORS: CAT–1	ANCHORS: VI MOD	ANCHORS: BIC	IMPACT ATTENUATOR TYPE 350: EA	IMPACT ATTENUATOR TYPE 350: G	IMPACT ATTENUATOR TYPE 350: NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–L–	13+01.69	13+92.93	LT	86.27					4	7					1		1												
–L–	13+22.96	13+76.19	RT	53.36			13+76.19		4	7					1		1												
–L–	14+53.24	17+16.50	LT	239.06	27.59		14+53.24		4	7					1	1													
–L–/–DR1–	14+31.35	10+47.60	RT	18.75	33.55				4	7					1	1													
			SUB–TOTALS	397.43	61.14										4	2	2												
			DEDUCTION FOR ANCHORS	–125.00																									
			DEDUCTION FOR SHOP CURVE ANCHORS		–12.50								GRAU 350 TL–2: 2 EACH @	25.00′ =		50.00′														
													TYPE III: 4 EACH @	18.75′ =		75.00′														
			TOTAL	272.43	48.64								AT–1: 2 EACH @	6.25′ =			12.50′													
			SAY	275.00	50.00																									
													DEDUCTION FOR ANCHORS =			125.00′														
			ADDITIONAL GUARDRAIL POSTS = 5										DEDUCTION FOR SHOP CURVE ANCHORS =				12.50′													

22-MAR-2016 08:22
R:\Roadway Proj\B5410_Rdy_sum.dgn

COMPUTED BY: H. L EDWARDS DATE: 12/10/2015
CHECKED BY: T. R. MEADOWS DATE: 2/4/16

PROJECT REFERENCE NO.	SHEET NO.
B-5410	3D-1

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUB–REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L- 14+73.00	LT	401		2053.60															
		401	402		2049.60	2046.20													
-L- 13+42.00	LT	403		2051.20															
		403	404		2047.20	2045.90													
-L- 12+17.12	LT	405			2046.12	2051.20													
-DR1- 10+38.00	CL	406			2049.18	2047.75				60									
TOTAL										60									
SAY																			

STATION	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
-L- 14+73.00	401																							
	401	402		20																				
-L- 13+42.00	403																							
	403	404		24																				
-L- 12+17.12	405					24																		
-DR1- 10+38.00	406																							
TOTAL				44		24																		
SAY																								

STATION	FROM	TO	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.35	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- 14+73.00	401									1									1	1					
	401	402																							
-L- 13+42.00	403									1									1	1					
	403	404																							
-L- 12+17.12	405																					0.5526			Collar & extend existing 24" CMp
-DR1- 10+38.00	406																								
TOTAL										2									2	2		0.5526			
SAY																						1.0			

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"	84"	BITUMINOUS COATED C.S. PIPE TYPE B 54" .109	54" .138	54" .168	54" SHOP ELON-GATED .138	54" SHOP ELON-GATED .168	60" .138	60" .168	66" .138	66" .168	72" .138	72" .168	STRUCTURAL PLATE PIPE 60" 12	60" 10	66" 12	66" 10	72" 12	72" 10	REINFORCED ENDWALLS WITH R.C. – C.Y.	WITH C.S. – C.Y.	MASONARY DRAINAGE STRUCTURES CUBIC YARDS	REINF. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	REINF. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS
-L- 10+96.63	RT					2044.6																									5.9									Head Endwall (See Std.'s 838.27 & 838.57)
-L- 11+00.00	CL	403			2044.6	2044.2			60																															Remove existing 60" CMP (61.1')
TOTAL									60																						5.9									
SAY																															6.0									

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

COMPUTED BY: PQL DATE: 1/15/15
CHECKED BY: SCC DATE: 4/11/16

PROJECT NO.	SHEET NO.
B-5410	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location	Drain Type*	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

***UD = Underdrain**
***BD = Blind Drain**
***SD = Subsurface Drain**

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Brdige No. 221 on SR 1367 over Little Savannah Ck	EB1/EB2	1

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU		100	200	100		
				TOTAL CY/TONS/SY:	100	200	100*	0	0

ASU = Aggregate Subgrade, AST = Aggregate Stabilization

***Total square yards of Geotextile for Soil Stabilization is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.**

PROJECT REFERENCE NO.	SHEET NO.
B-5410	4
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 033296 ENGINEER Steven D. Kendall — Steven D. Kendall 4/28/2016

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 039249 ENGINEER BRIAN M. RADAKOVIC — Brian M. Radakovic 4/28/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT REMOVAL

SEE SHEET S-1 TO S-16 FOR STRUCTURE PLANS

-L-

PI Sta 10+33.20	PI Sta 11+03.00	PI Sta 14+97.81
Δ = 28° 38′ 56.6″ (RT)	Δ = 53° 43′ 50.9″ (RT)	Δ = 51° 09′ 26.9″ (LT)
D = 44° 04′ 25.2″	D = 76° 23′ 39.7″	D = 15° 16′ 43.9″
L = 65.00′	L = 70.33′	L = 334.82′
T = 33.19′	T = 37.99′	T = 179.50′
R = 130.00′	R = 75.00′	**R = 375.00′
		SE-See Plans

**DESIGN EXCEPTION FOR STOPPING SIGHT DISTANCE

-DR1-

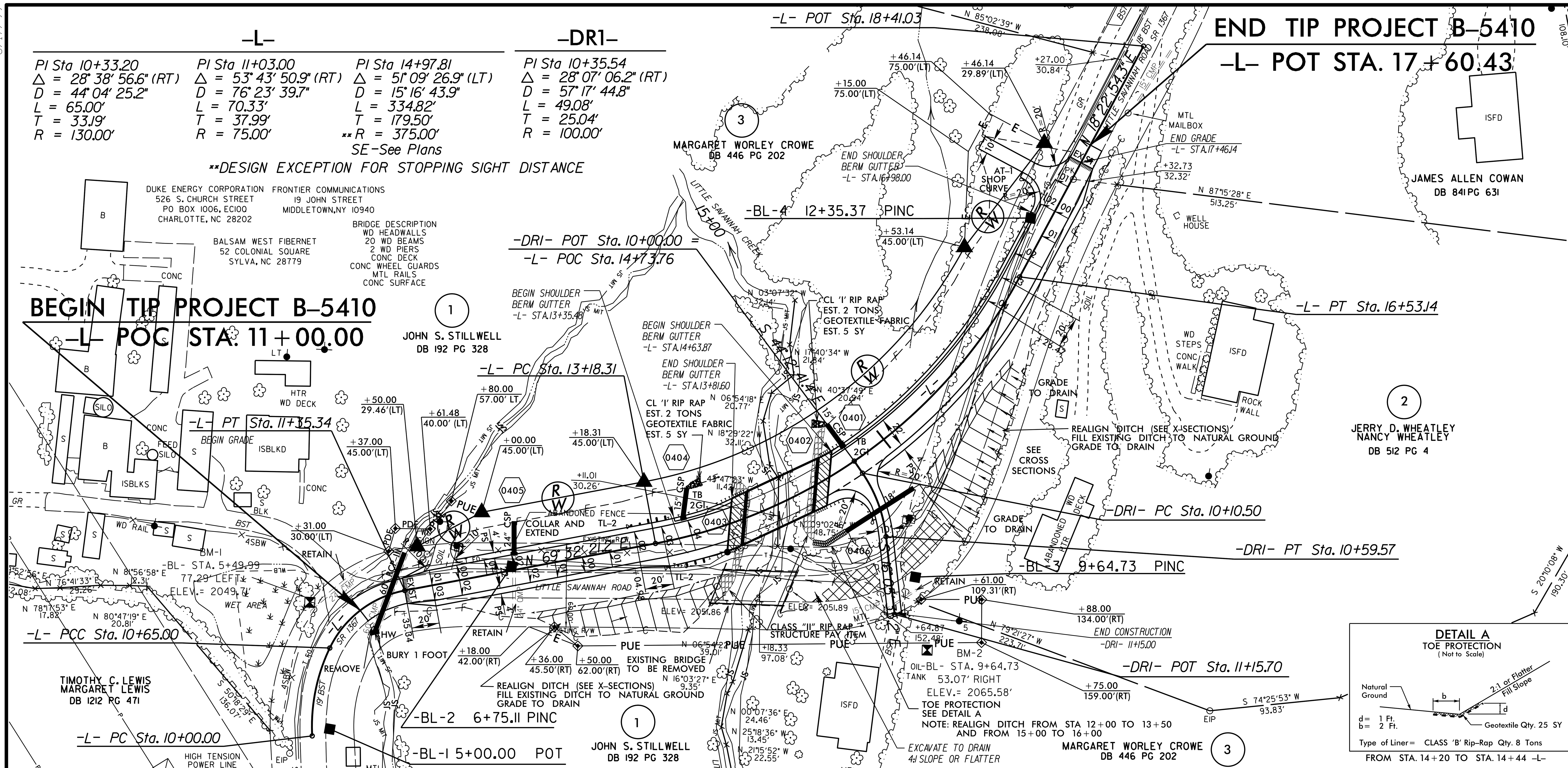
PI Sta 10+35.54
Δ = 28° 07′ 06.2″ (RT)
D = 57° 17′ 44.8″
L = 49.08′
T = 25.04′
R = 100.00′

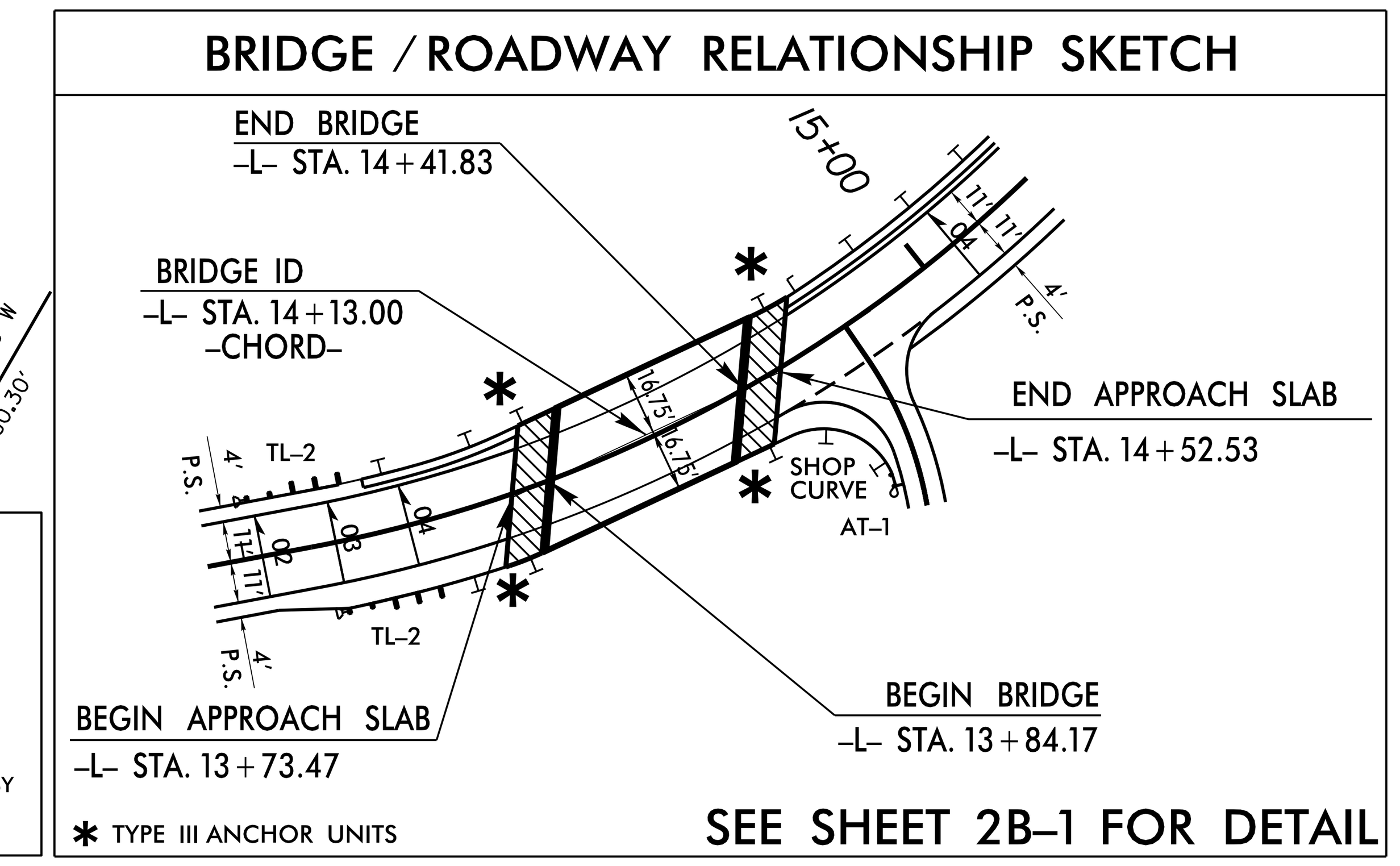
DUKE ENERGY CORPORATION
526 S. CHURCH STREET
PO BOX 1006, EC10O
CHARLOTTE, NC 28202

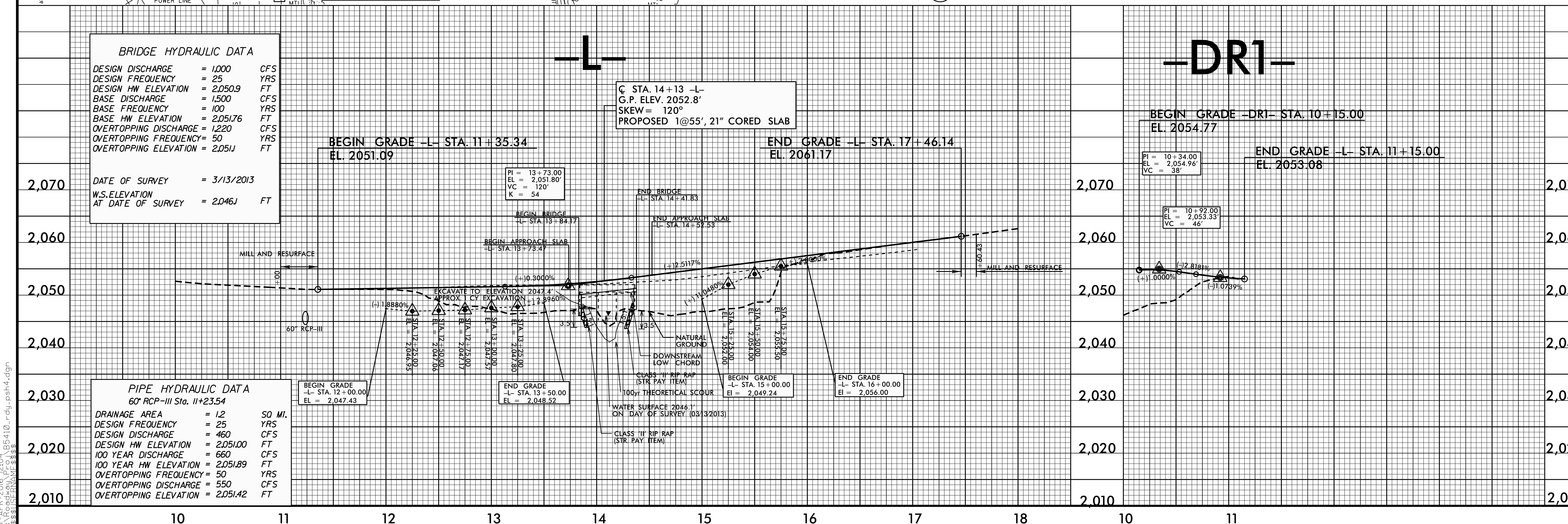
FRONTIER COMMUNICATIONS
19 JOHN STREET
MIDDLETOWN, NY 10940

BALSAM WEST FIBERNET
52 COLONIAL SQUARE
SYLVA, NC 28779

BRIDGE DESCRIPTION
WD HEADWALLS
20 WD BEAMS
2 WD PIERS
CONC DECK
CONC WHEEL GUARDS
MTL RAILS
CONC SURFACE







BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1,000	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2,050.9	FT
BASE DISCHARGE	= 1,500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2,051.76	FT
OVERTOPPING DISCHARGE	= 1,220	CFS
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING ELEVATION	= 2,051.1	FT
DATE OF SURVEY	= 3/13/2013	
W.S. ELEVATION AT DATE OF SURVEY	= 2,046.1	FT

PIPE HYDRAULIC DATA

60″ RCP-III Sta. 11+23.54

DRAINAGE AREA	= 1.2	SQ MI.
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 460	CFS
DESIGN HW ELEVATION	= 2,051.00	FT
100 YEAR DISCHARGE	= 660	CFS
100 YEAR HW ELEVATION	= 2,051.89	FT
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING DISCHARGE	= 550	CFS
OVERTOPPING ELEVATION	= 2,051.42	FT

8/17/99

27-APR-2016 12:04
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$$$$USERNAME$$$$