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.

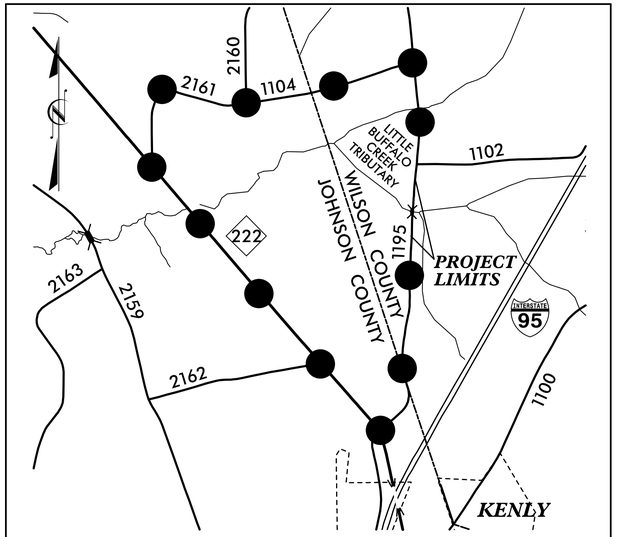
DocuSign Envelope ID: 97015C1A-5D60-47E8-BAC6-1A9E19D54636

09/08/99

TIP PROJECT: B–5999

CONTRACT: DD00278

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



VICINITY MAP — *OFFSITE DETOUR*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WILSON COUNTY

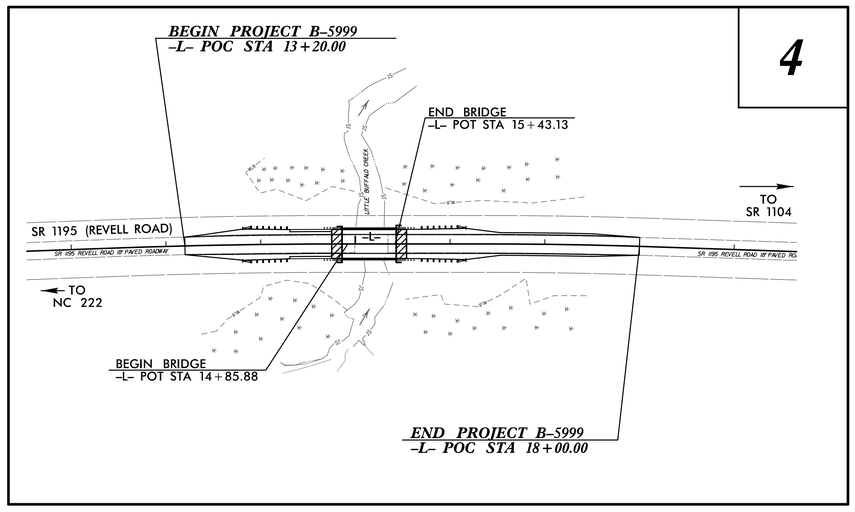
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B–5999	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.4.R.88		PE
17BP.4.R.88		RW/UTIL
48194.3.1	BRZ–1195(002)	CONST.

LOCATION: REPLACE BRIDGE NO. 37 OVER LITTLE BUFFALO CREEK TRIBUTARY ON SR 1195 (REVELL ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NAD 83/
NA 2011



NOTES:

1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
2. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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 2016 = 590
ADT 2036 = 1180
K = 10 %
D = 60 %
T = 4 % *
V = 60 MPH
* TTST = 1% DUAL 3%
FUNC CLASS = LOCAL
SUB–REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT B–5999 = 0.082 MILES
LENGTH OF STRUCTURE PROJECT B–5999 = 0.009 MILES
TOTAL LENGTH OF PROJECT B–5999 = 0.091 MILES

Prepared In the Office of:
HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 17, 2018

LETTING DATE:
NOVEMBER 20, 2018

DOUGLAS M. WHEATLEY, PE
PROJECT ENGINEER

ROY H. TELLIER, PE
PROJECT DESIGN ENGINEER

MATT CLARKE, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

DocuSigned by: James A. Byrd 23592959E54F47C...
8/31/2018
SIGNATURE:

NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A BYRD P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by: Roy Tellier BF7D8DB0AE8C430...
8/30/2018
SIGNATURE:

NORTH CAROLINA PROFESSIONAL SEAL 044575 ENGINEER ROY H. TELLIER P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

30-AUG-2018 17:36
\Roadway\Proj\17BP.4.R.88_rdy_tsh.dgn
HNTB

DocuSign Envelope ID: 7E62CF92-938C-47AC-803E-0D47D6C32D5A

PROJECT REFERENCE NO.	SHEET NO.
B–5999	1A

ROADWAY DESIGN
ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044575 ENGINEER ROY TELLIER, II

DocuSigned by: Roy Tellier
BF7D8DB0AE8C430...
8/29/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

8/17/99

INDEX OF SHEETS

GENERAL NOTES: 2018 SPECIFICATIONS

EFFECTIVE: 01–16–2018
REVISED:

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. 560.02

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 OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

TELECOMMUNICATIONS – SPECTRUM, CENTURYLINK
WATER/SEWER – TOWN OF KENLY

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.

EFF. 01–16–2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N. C. Department of Transportation – Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.02	Method of Clearing – Method II
225.04	Method of Obtaining Superelevation – Two Lane Pavement
DIVISION 4 – MAJOR STRUCTURES	
422.02	Bridge Approach Fills – Type II Modified Approach Fill
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.02	Method of Shoulder Construction – High Side of Superelevated Curve – Method II
DIVISION 8 – INCIDENTALS	
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation (Special Detail for Sheet 6 of 8)
862.03	Structure Anchor Units (Special Detail for Type III Anchor Units Sheets 1 of 7 and 2 of 7)

29-AUG-2018 15:48
R:\Roadway\Proj\17BP.4.R.88_rdy_gen.dgn
HN18

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
B-5999	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
- Computed 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 — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- 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 & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easement Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

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. — UST
- 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-5999	1C-1

Location and Surveys

PROJECT SURVEYOR

SURVEY CONTROL SHEET 97–0037

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION
101	BL-101	681037.5817	2259137.4705	183.10
102	BL-102	681604.6480	2259131.3133	176.63
1	970037-1	682235.7020	2259184.8910	182.76

BENCHMARK DATA

BM1 ELEVATION = 178.12
N 681943 E 2259122
BENCHTIE SET IN 24" MAPLE

BM2 ELEVATION = 177.22
N 681456 E 2259159
BENCHTIE SET IN 18" OAK

ALIGNMENT DATA

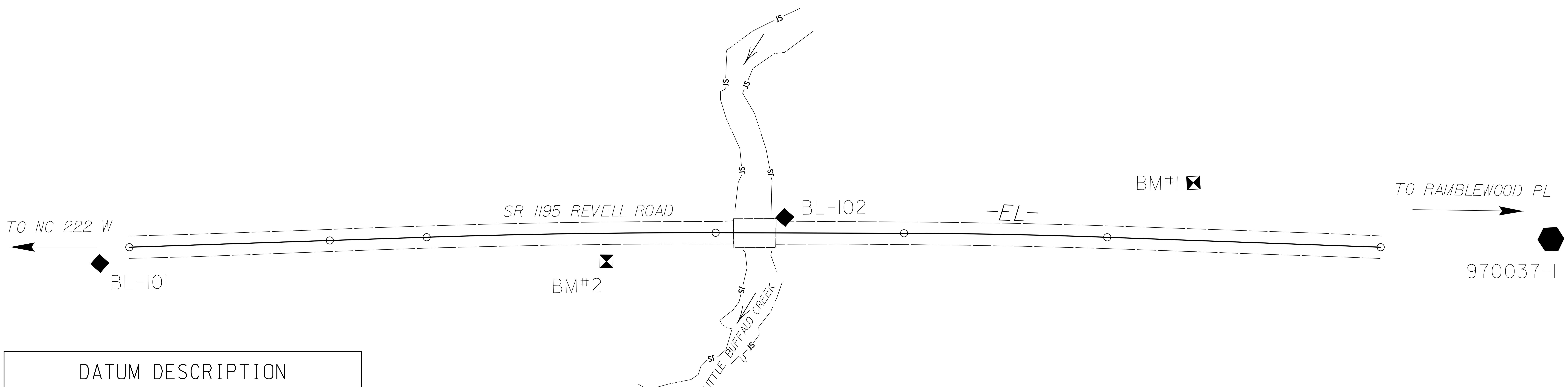
EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	681062.723	2259125.503							
LINE			N 01°17'50.2" E	245.78					
PC	681308.439	2259131.067							
CURVE			N 02°20'25.2" E	238.78	02°05'10.2"(RT)	00°52'25.1"	238.79	119.41	6558.39
PT	681547.019	2259140.818							
LINE			N 03°23'00.3" E	155.62					
PC	681702.366	2259150.002							
CURVE			N 04°20'43.8" E	167.91	01°55'27.0"(RT)	01°08'45.3"	167.92	83.97	5000.00
PT	681869.792	2259162.724							
LINE			N 05°18'27.4" E	226.05					
POT	682094.874	2259183.635							

NC GRID
NAD 83 NA 2011

PRIMARY GPS CONTROL
(OUT OF PROJ LIMITS):

970037-2
N:682802.451
E:2259236.142
ELEV.=188.817'



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "970037-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 682235.702(ft) EASTING: 2259184.891(ft)
ELEVATION: 182.762(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988997
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "970037-1" TO -L- STATION IS

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS

6/2/99

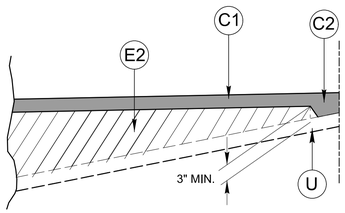
29-AUG-2018 15:48
\17.BP.4.R.88 Wilson BR037\Final Survey\970037_ls_1c1.dgn
HNTB

DocuSign Envelope ID: 7E62CF92-938C-47AC-803E-0D47D6C32D5A

6/2/99

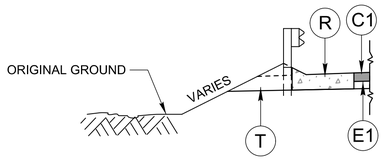
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



DETAIL SHOWING METHOD OF WEDGING

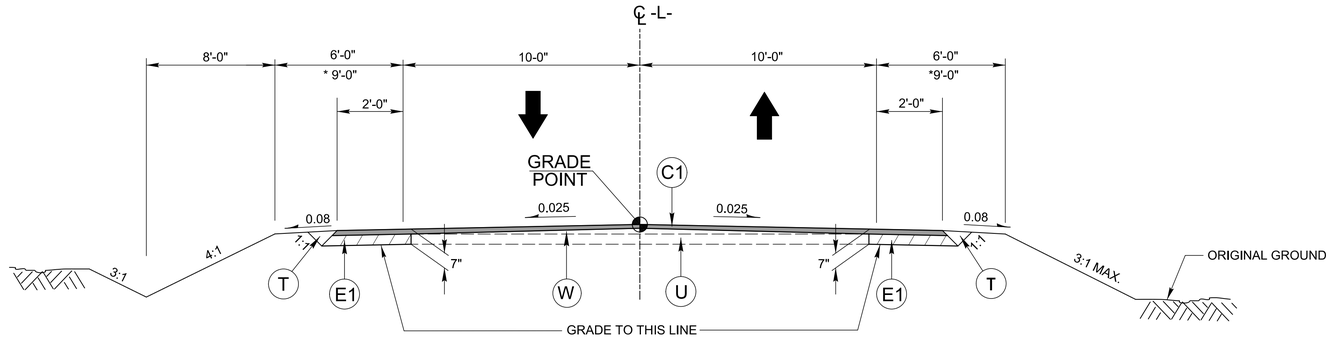
USE WITH TYPICAL SECTION 1



DETAIL A

SHOULDER BERM GUTTER LOCATIONS

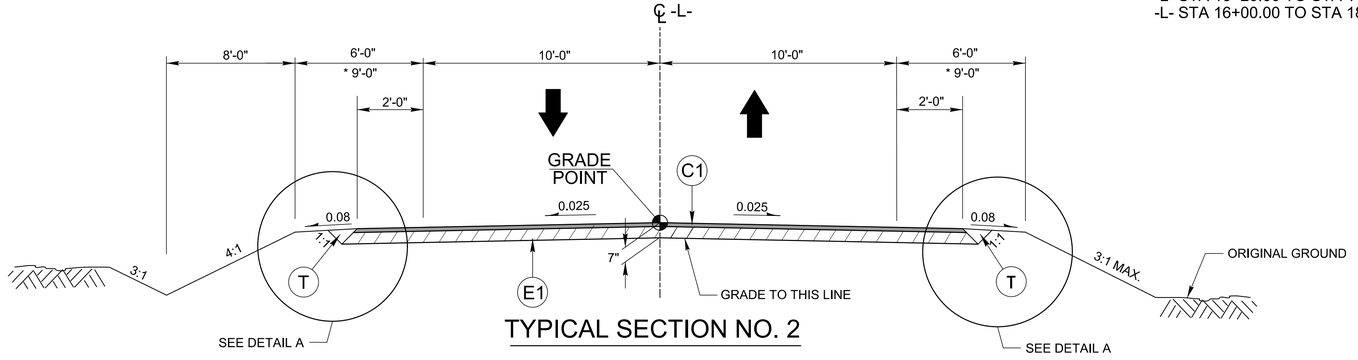
-L- STA 14+30.62 to STA 14+80.00 RT
-L- STA 14+30.88 to STA 14+80.00 LT



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FROM:

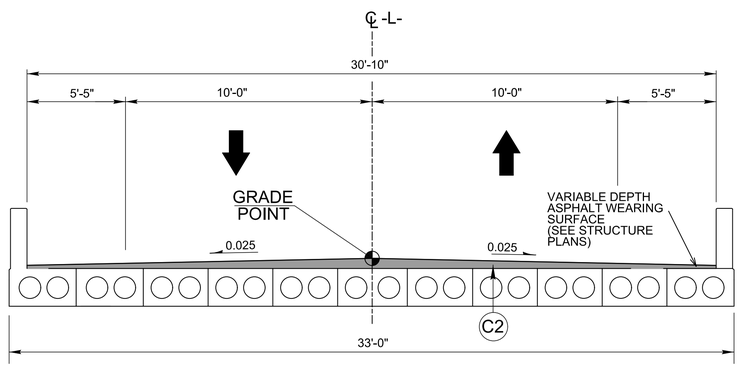
-L- STA 13+20.00 TO STA 14+50.00
-L- STA 16+00.00 TO STA 18+00.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 FROM:

-L- STA 14+50.00 TO STA 14+85.88 (BRIDGE)
-L- STA 15+43.13 (BRIDGE) TO STA 16+00.00



TYPICAL SECTION NO. 3

CORED SLAB BRIDGE OVERLAY

USE TYPICAL SECTION NO. 3 FROM:

-L- STA 14+85.88 TO STA 15+43.13

NOTES: * SHOULDER WIDTH INCREASED 3' WITH THE USE OF GUARDRAIL

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
B–5999	2A–1

ROADWAY DESIGN ENGINEER

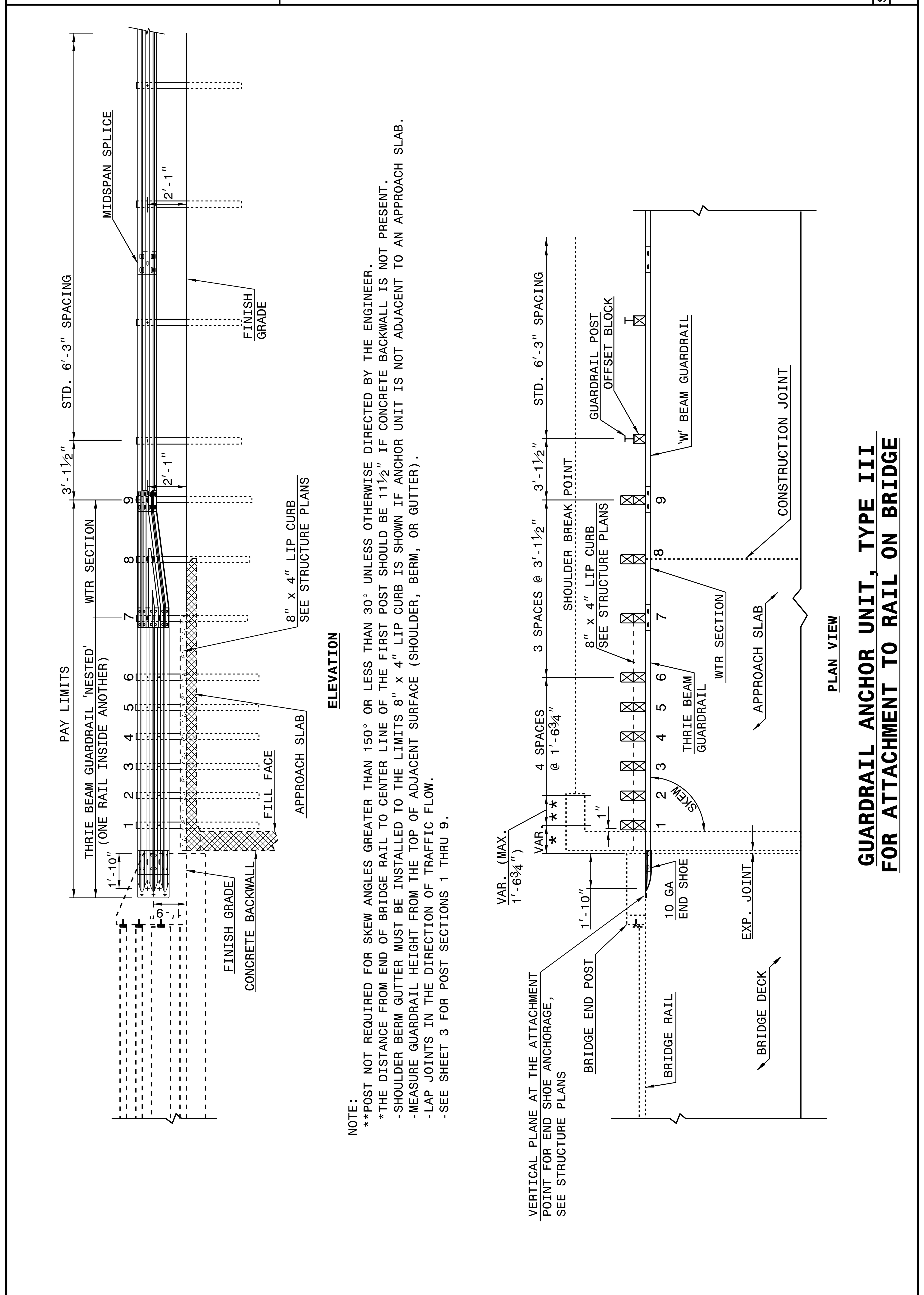
NORTH CAROLINA PROFESSIONAL SEAL 044575 ENGINEER KIMBERLY D. TELLER II
8/29/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

28-AUG-2018 16:48
HNTB
R:\Drawing Proj\178P.4.R.88_rdy_typ.dgn

DocuSign Envelope ID: 4EDF310D-0FD8-4551-A8B3-AF857F7F3A29

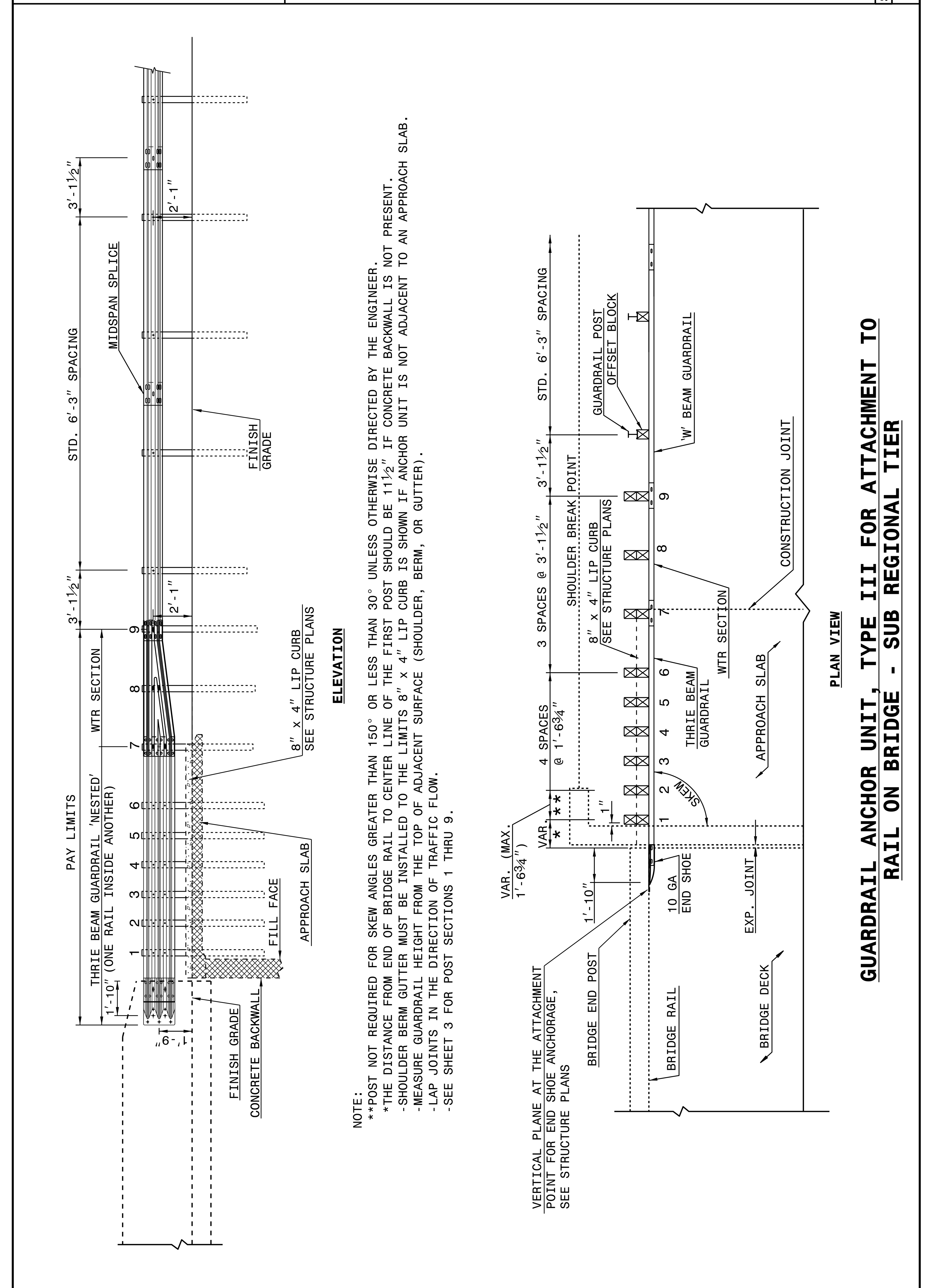
PROJECT REFERENCE NO.	SHEET NO.
B-5999	2C-1


GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE
ELEVATION
PLAN VIEW
STD. 6'-3" SPACING
MIDSPAN SPLICE
FINISH GRADE
PAY LIMITS
THRIE BEAM GUARDRAIL 'NESTED' (ONE RAIL INSIDE ANOTHER)
WTR SECTION
8" x 4" LIP CURB SEE STRUCTURE PLANS
FILL FACE
APPROACH SLAB
FINISH GRADE
CONCRETE BACKWALL
GUARDRAIL POST OFFSET BLOCK
'W' BEAM GUARDRAIL
SHOULDER BREAK POINT
CONSTRUCTION JOINT
THRIE BEAM GUARDRAIL
10 GA END SHOE
EXP. JOINT
BRIDGE DECK
BRIDGE RAIL
BRIDGE END POST
VERTICAL PLANE AT THE ATTACHMENT POINT FOR END SHOE ANCHORAGE, SEE STRUCTURE PLANS
NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

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

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

SHEET 1 OF 7
862D03


GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER
ELEVATION
PLAN VIEW
STD. 6'-3" SPACING
MIDSPAN SPLICE
FINISH GRADE
PAY LIMITS
THRIE BEAM GUARDRAIL 'NESTED' (ONE RAIL INSIDE ANOTHER)
WTR SECTION
8" x 4" LIP CURB SEE STRUCTURE PLANS
FILL FACE
APPROACH SLAB
FINISH GRADE
CONCRETE BACKWALL
GUARDRAIL POST OFFSET BLOCK
'W' BEAM GUARDRAIL
SHOULDER BREAK POINT
CONSTRUCTION JOINT
THRIE BEAM GUARDRAIL
10 GA END SHOE
EXP. JOINT
BRIDGE DECK
BRIDGE RAIL
BRIDGE END POST
VERTICAL PLANE AT THE ATTACHMENT POINT FOR END SHOE ANCHORAGE, SEE STRUCTURE PLANS
NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

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

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

SHEET 2 OF 7
862D03

SEAL 022966
8/30/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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.:

14-DEC-2017 10:36
S:\Contracts\Contracts\Special Details\jhowerton\Standard Drawings\2018 Standard Drawings\Details in Lieu of Standards\Division 8\0862d03l.dgn
jhowerton AT CSD-242595

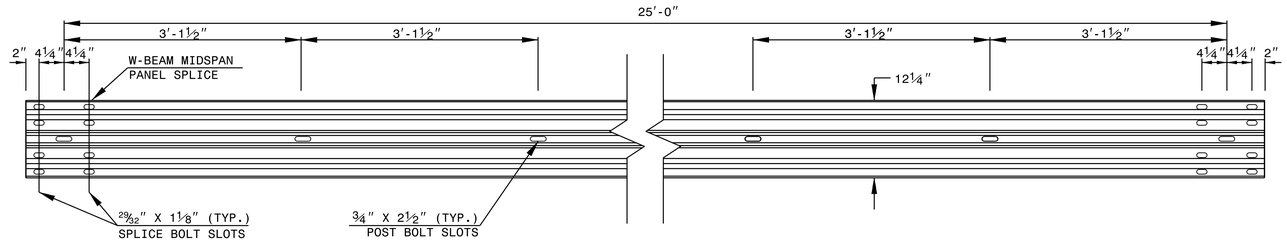
DocuSign Envelope ID: 4EDF310D-0FD8-4551-A8B3-AF857F7F3A29

PROJECT REFERENCE NO.	SHEET NO.
B-5999	2C-2
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

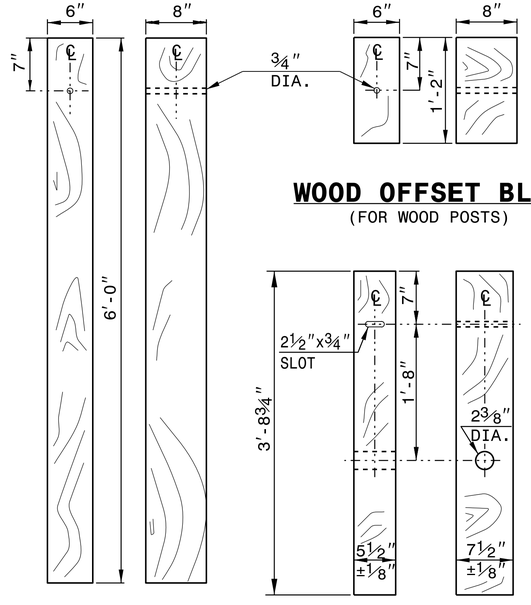
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



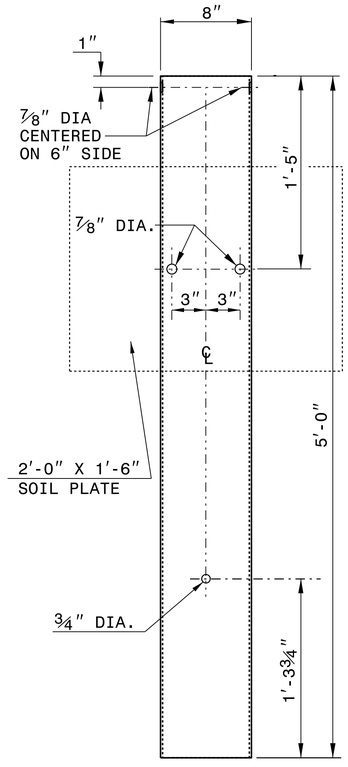
STANDARD W-BEAM GUARDRAIL



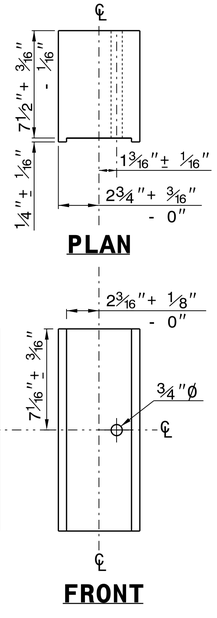
WOOD OFFSET BLOCK
(FOR WOOD POSTS)

STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



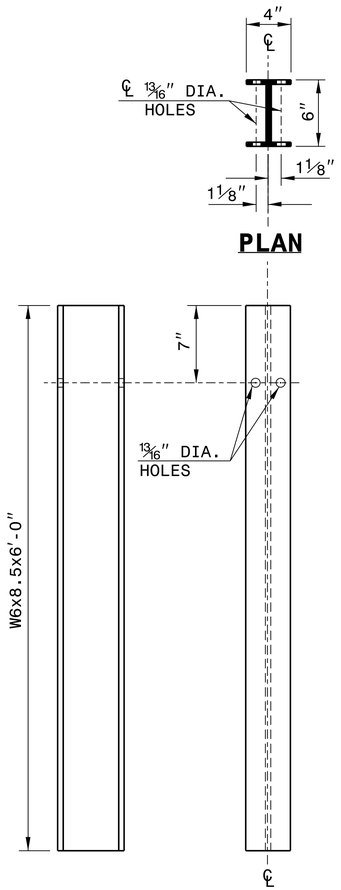
STEEL TUBE
TS 6"x8"x0.1875"



PLAN

SIDE **FRONT**

ROUTED OFFSET BLOCK



PLAN

SIDE **FRONT**

"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOSHUA HOWERTON
DocuSigned by: 873F3D17DCDC45F...
8/30/2018

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

SEE TITLE BLOCK

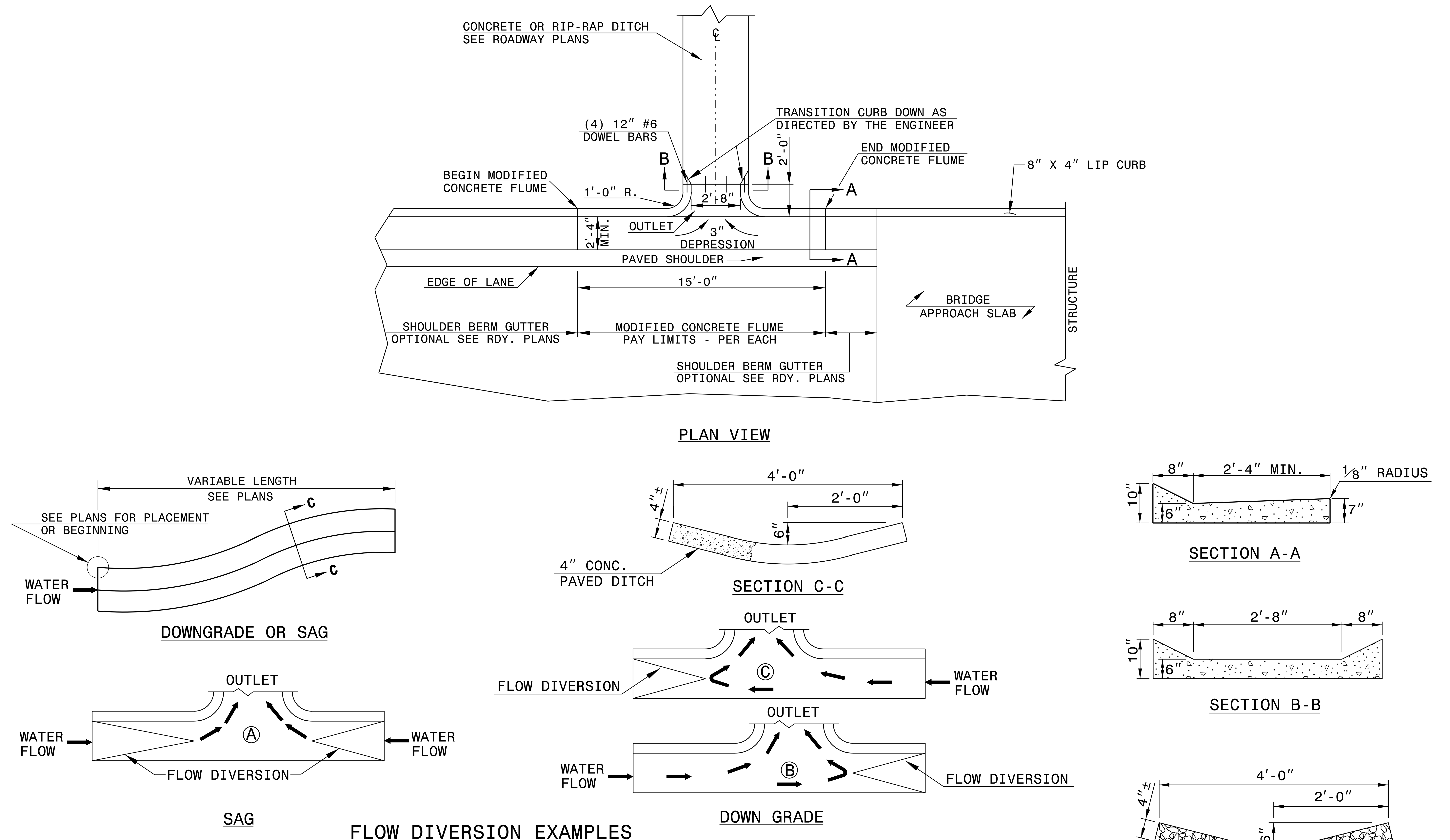
ORIGINAL BY: J.HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

DocuSign Envelope ID: 4EDF310D-0FD8-4551-A8B3-AF857F7F3A29

PROJECT REFERENCE NO.	SHEET NO.
B-5999	2C-3

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

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



NOTES:

- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18" PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

SHEET 1 OF 1
MODFLMDTCH

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

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

SHEET 1 OF 1
MODFLMDTCH

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 Joel S. Howerton
8/30/2018

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. Ward DATE: Apr. 2002
MODIFIED BY: J.S. Howerton DATE: October 2017
CHECKED BY: DATE:
FILE SPEC.: w:details\stand\modifiedflume.dgn

18-OCT-2017 14:17
S:\Contracts\Contracts\Special Details\ericward\usr\details\stand\modifiedflume.dgn
jhowerton AT CSD-292595

12/06/07

COMPUTED BY:	ROY H. TELLIER, PE	DATE:	4/23/18
CHECKED BY:	DOUGLAS M. WHEATLEY, PE	DATE:	4/23/18

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-5999	3B-1

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +25%	BORROW	WASTE
13+20.00	14+85.88 (BRIDGE)	18	38	20	
15+43.13 (BRIDGE)	16+00.00	46	81	35	
TOTALS:		64	118	54	
PROJECT TOTALS:		64	118	54	
5% TO REPLACE TOP SOIL ON BORROW PIT				3	
GRAND TOTALS:		64		57	
SAY:		70		60	

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

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.

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	14+50.00	14+87 +/-	CL	102.03
	15+42 +/-	16+00.00	CL	137.10
			TOTAL:	314.37
			SAY:	320

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH (FT)
-L-, RT	14+30.88	14+75.00	44.12
-L-, LT	14+30.88	14+75.00	44.12
		TOTAL:	88.24
		SAY:	90

ROW AREA DATA SUMMARY

PARCEL NO.	PROPERTY OWNERS NAMES	PROP. R/W	PERM. UTILTIY EASE.	PERM. DRAIN. EASE.	PERM. DRAINAGE UTILITY EASE.	CONST. EASE.
1	HIGHWAY 39 LIMITED PARTNERSHIP					
2	GERALD STARLING			199.03 SF		

"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			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TYPE III	GREU TL-3								EA	G	NG				
-L-	13+81	14+85.88 (BRIDGE)	RT	106'			14+85.88 (BRIDGE)		5.42'	8.42'	50'		1'		1	1														
	13+81	14+85.88 (BRIDGE)	LT	106'			14+85.88 (BRIDGE)		5.42'	8.42'	50'		1'		1	1														
	15+43.13 (BRIDGE)	16+17	LT	75'			15+43.13 (BRIDGE)		5.42'	8.42'	50'		1'		1	1														
	15+43.13 (BRIDGE)	16+17	RT	75'			15+43.13 (BRIDGE)		5.42'	8.42'	50'		1'		1	1														
			SUBTOTAL:	372'																										
			ANCHOR DEDUCTIONS:																											
			GREU, TL-3: 4@50'	-200.00'																										
			TYPE III: 4@18.75'	-75.00																										
			TOTAL:	97'																										
			SAY:	100'																										
			ADDITIONAL POST	5																										

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CAAP 12"	CAAP 15"	CAAP 18"	CAAP 24"	CAAP 30"	CAAP 36"	CAAP 42"	CAAP 48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"		30"		36"		42"		48"	
THICKNESS OR GAUGE											.064	.079		.109		.064	.064	.064	.064		.079		.079		.109		.109	
-L- 14+39.00	LT																											
-L- 14+39.00	RT																											
TOTAL																												

STATION	CLASS III R.C. PIPE OR C.S. PIPE, TYPE IR OR HDPE PIPE, TYPE S OR D 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 * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G			D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	TB GRATED D.I., TYPE 'B' STD. 840.35	T.B.D.I. (N.S.) FRAME AND TWO GRATES STD. 840.29	MODIFIED CONCRETE FLUME (SHEET 2C-3)				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+39.00																																				1								
-L- 14+39.00																																				1								
TOTAL																																				2								

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

31-AUG-2018 09:16
\Roadway\Proj\17BP.4.R.88_rdy_sum.dgn
HNTB

DocuSign Envelope ID: 7E62CF92-938C-47AC-803E-0D47D6C32D5A

HNTB

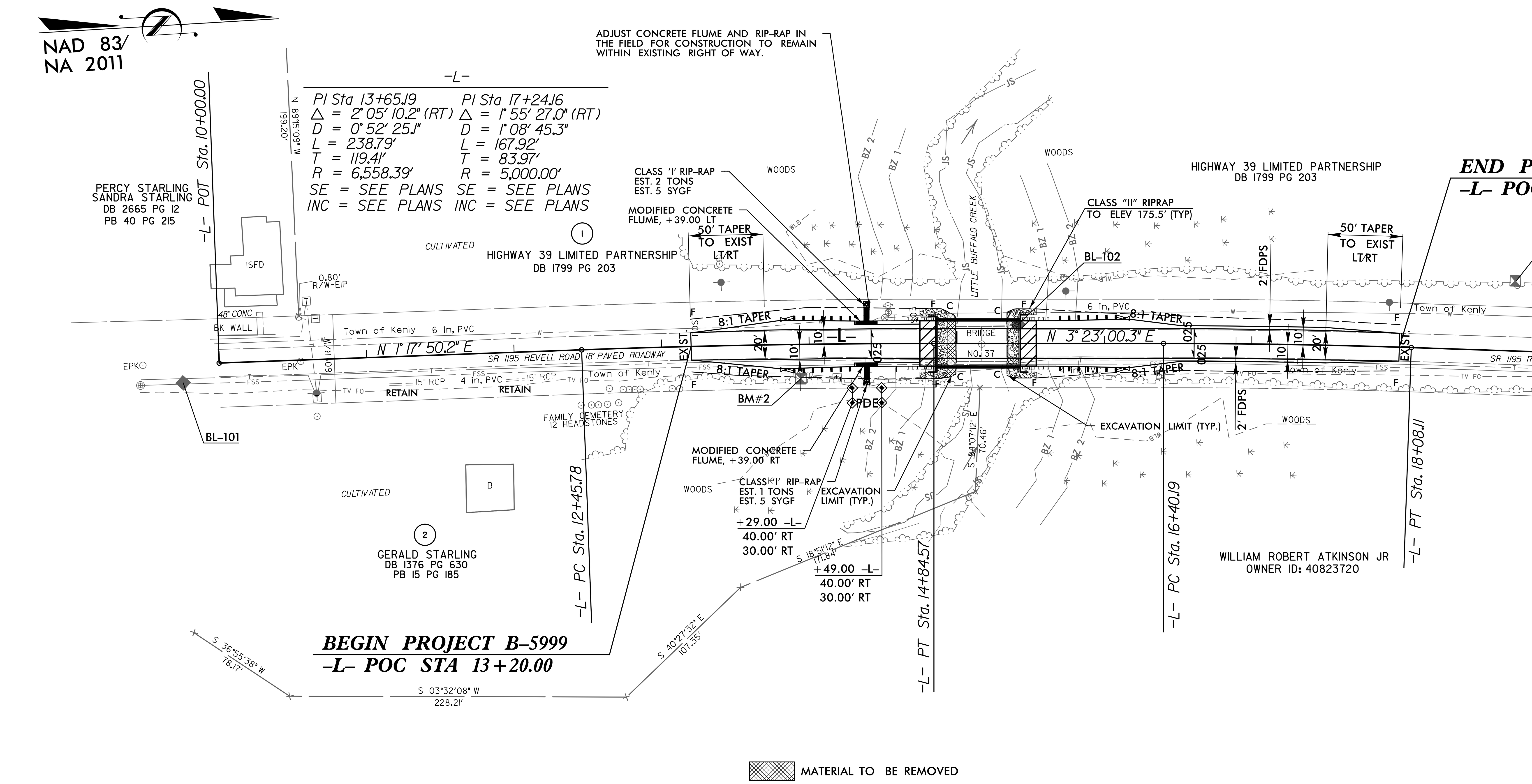
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
B-5999	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 044575 — 8/29/2018	SEAL 15764 — 8/30/2018

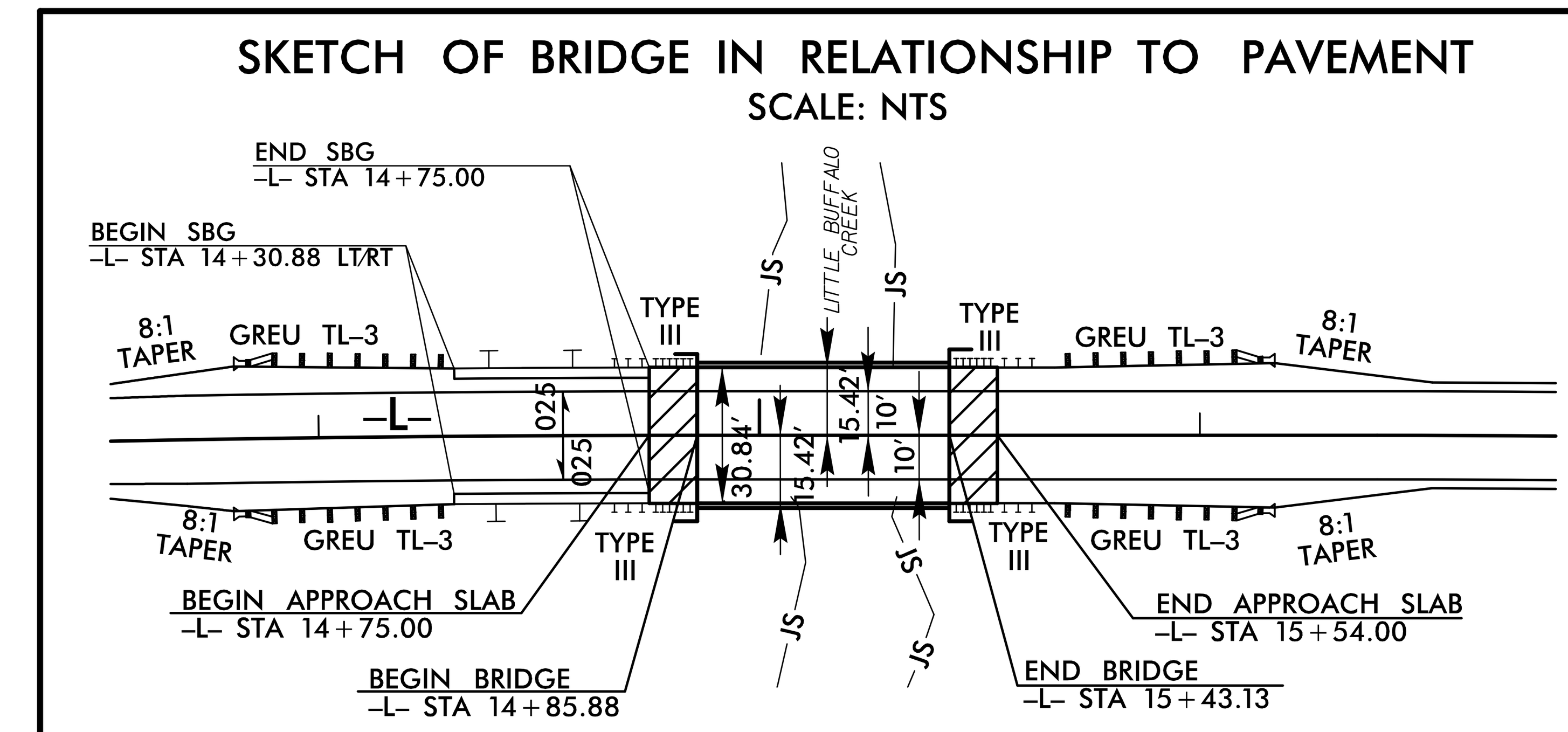
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

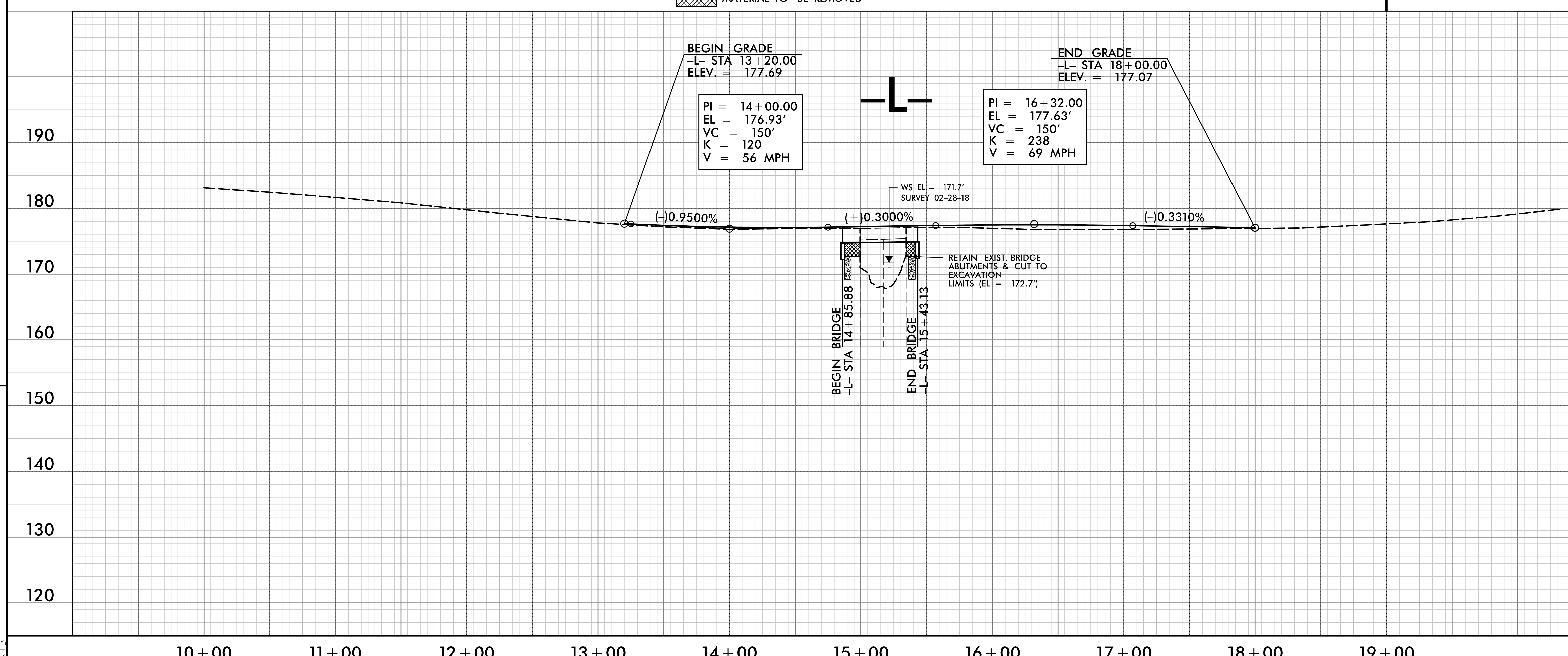
REVISIONS

RW REVISION 2018-07-24: REMOVED PDE AND ADDED NOTE ON PARCEL 1. EWA



NAD 83/ NA 2011
-L-
PI Sta 13+65.19 △ = 2° 05′ 10.2″ (RT) D = 0° 52′ 25.1″ L = 238.79′ T = 119.41′ R = 6,558.39′ SE = SEE PLANS INC = SEE PLANS
PI Sta 17+24.16 △ = 1° 55′ 27.0″ (RT) D = 1° 08′ 45.3″ L = 167.92′ T = 83.97′ R = 5,000.00′ SE = SEE PLANS INC = SEE PLANS
ADJUST CONCRETE FLUME AND RIP-RAP IN THE FIELD FOR CONSTRUCTION TO REMAIN WITHIN EXISTING RIGHT OF WAY.
PERCY STARLING SANDRA STARLING DB 2665 PG 12 PB 40 PG 215
HIGHWAY 39 LIMITED PARTNERSHIP DB 1799 PG 203
GERALD STARLING DB 1376 PG 630 PB 15 PG 185
WILLIAM ROBERT ATKINSON JR OWNER ID: 40823720
END PROJECT B-5999 -L- POC STA 18+00.00
BEGIN PROJECT B-5999 -L- POC STA 13+20.00
-L- POT Sta. 10+00.00
-L- POT Sta. 20+34.16
-L- PC Sta. 12+45.78
-L- PT Sta. 14+84.57
-L- PC Sta. 16+40.19
-L- PT Sta. 18+08.11
N 1° 17′ 50.2″ E
N 3° 23′ 00.3″ E
N 5° 18′ 27.4″ E
SR 1195 REVELL ROAD 18′ PAVED ROADWAY
CLASS 'I' RIP-RAP EST. 2 TONS EST. 5 SYGF
MODIFIED CONCRETE FLUME, +39.00 LT
CLASS "II" RIPRAP TO ELEV 175.5′ (TYP)
50′ TAPER TO EXIST LT/RT
8:1 TAPER
BM#1
BM#2
BL-101
BL-102
EXCAVATION LIMIT (TYP.)
MODIFIED CONCRETE FLUME, +39.00 RT
CLASS 'I' RIP-RAP EST. 1 TONS EST. 5 SYGF
+29.00 -L- 40.00′ RT 30.00′ RT
+49.00 -L- 40.00′ RT 30.00′ RT
FAMILY CEMETERY 12 HEADSTONES
LITTLE BUFFALO CREEK
WOODS
CULTIVATED
MATERIAL TO BE REMOVED





-L-
BEGIN GRADE -L- STA 13+20.00 ELEV. = 177.69
END GRADE -L- STA 18+00.00 ELEV. = 177.07
PI = 14+00.00 EL = 176.93′ VC = 150′ K = 120 V = 56 MPH
PI = 16+32.00 EL = 177.63′ VC = 150′ K = 238 V = 69 MPH
(-)0.9500%
(+)0.3000%
(-)0.3310%
WS EL = 171.7′ SURVEY 02-28-18
RETAIN EXIST. BRIDGE ABUTMENTS & CUT TO EXCAVATION LIMITS (EL = 172.7′)
BEGIN BRIDGE -L- STA 14+85.88
END BRIDGE -L- STA 15+43.13
190
180
170
160
150
140
130
120
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00

BM#1
-L- STA 18+77.63, 47.55′ LEFT
BENCHTIE SET IN 24″ MAPLE
ELEVATION = 178.12′

BM#2
-L- STA 13+94.44, 22.92′ RIGT
BENCHTIE SET IN 18″ OAK
ELEVATION = 177.22′

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 700	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 174.5	FT
BASE DISCHARGE	= 1100	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 175.3	FT
OVERTOPPING DISCHARGE	= >1500 (+)	CFS
OVERTOPPING FREQUENCY	= >500 (+)	YRS
OVERTOPPING ELEVATION	= 177.1	FT
DATE OF SURVEY	= 02-28-18	
W.S.ELEVATION AT DATE OF SURVEY	= 171.7	FT

8/17/99

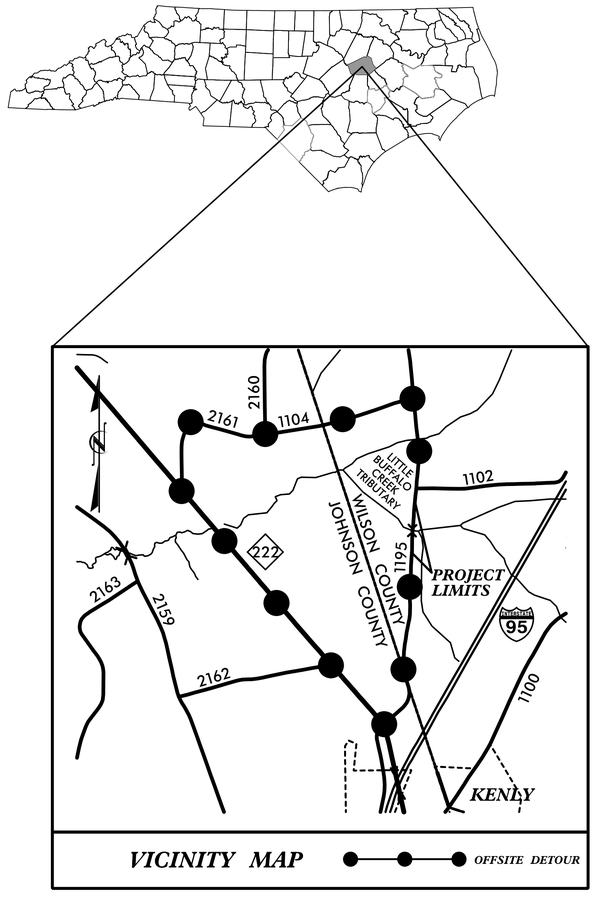
29-AUG-2018 15:48
R:\Roadway\Proj\17BP.4.R.88_rdy_psh4.dgn
HNTB

DocuSign Envelope ID: 7FF0CC57-E1BE-4406-8E34-83C975CE0813

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

WILSON COUNTY



LOCATION: REPLACE BRIDGE NO. 37 OVER LITTLE BUFFALO CREEK TRIBUTARY ON SR 1195 (REVELL ROAD)

PLANS PREPARED BY: HNTB	*NCDOT CONTACTS:*	
R.B. EARLY, P.E. *PROJECT ENGINEER*	ANDY BROWN, PE *DIVISION TRAFFIC ENGINEER*	
J. A. PHILLIPS *PROJECT DESIGN TECHNICIAN*		

INDEX OF SHEETS

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 JAN 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Ste 200
Raleigh, North Carolina 27609
NC License No: C-1554

APPROVED: Rhonda B. Early
DATE: 8/30/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

SHEET NO.
TMP-1

B-5999

TIP PROJECT:

8/30/2018
...\TBP.4.R.88_tc_TCP_01_title.dgn
HNTB

DocuSign Envelope ID: 32FBAC4F-0CFE-4101-BF65-35DA4D081799

PROJ. REFERENCE NO.	SHEET NO.
B-5999	TMP-2

LEGEND

GENERAL

DIRECTION OF TRAFFIC FLOW

DIRECTION OF PEDESTRIAN TRAFFIC FLOW

EXIST. PVMT.

NORTH ARROW

PROPOSED PVMT.

WORK AREA (AWAY FROM TRAFFIC)

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

CONE

DRUM SKINNY DRUM

FLASHING ARROW BOARD

FLAGGER

TEMPORARY SIGNING

PORTABLE SIGN

STATIONARY SIGN

PAVEMENT MARKERS

CRYSTAL/CRYSTAL

CRYSTAL/RED

YELLOW/YELLOW

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 THE DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATIONS MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) 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.

TRAFFIC PATTERN ALTERATIONS

B) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

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 ON SHEET TMP-3.

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.

PAVEMENT MARKING AND MARKERS

G) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE IN EXISTING LOCATION AS FOLLOWS:

ROAD NAME	MARKING	MARKERS
(SR 1195) REVELL ROAD	THERMOPLASTIC	RAISED

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

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

J) PASSING ZONE WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

PHASING

PHASE I

STEP 1

PRIOR TO ANY CONSTRUCTION OPERATIONS, PLACE AND COVER OFF-SITE DETOUR SIGNS AS SHOWN ON TMP-3 AND IN ACCORDANCE WITH RSD 1101.03 (SHEETS 1 AND 2 OF 9).

STEP 2

USING OFF-SITE DETOUR, UNCOVER DETOUR SIGNS, CLOSE -L- (SR 1195 / REVELL ROAD) TO TRAFFIC AND CONSTRUCT PROPOSED BRIDGE AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE.

STEP 3

UPON COMPLETION OF BRIDGE AND ROADWAY, PLACE FINAL PAVEMENT MARKINGS AND MARKERS IN ACCORDANCE WITH RSD 1205.01, 1205.02, 1205.12, 1250.01 AND 1251.01. REMOVE BARRICADES AND DETOUR SIGNS AND OPEN -L- (SR 1195 / REVELL ROAD) TO TRAFFIC.

9/13/2018
...\TBP\4.R.88_tc_TCP_02_notes.dgn
HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED Digitally signed by: Rhonda B. Early F34CAF5AC6BF48A...

DATE: 9/13/2018

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY SEAL

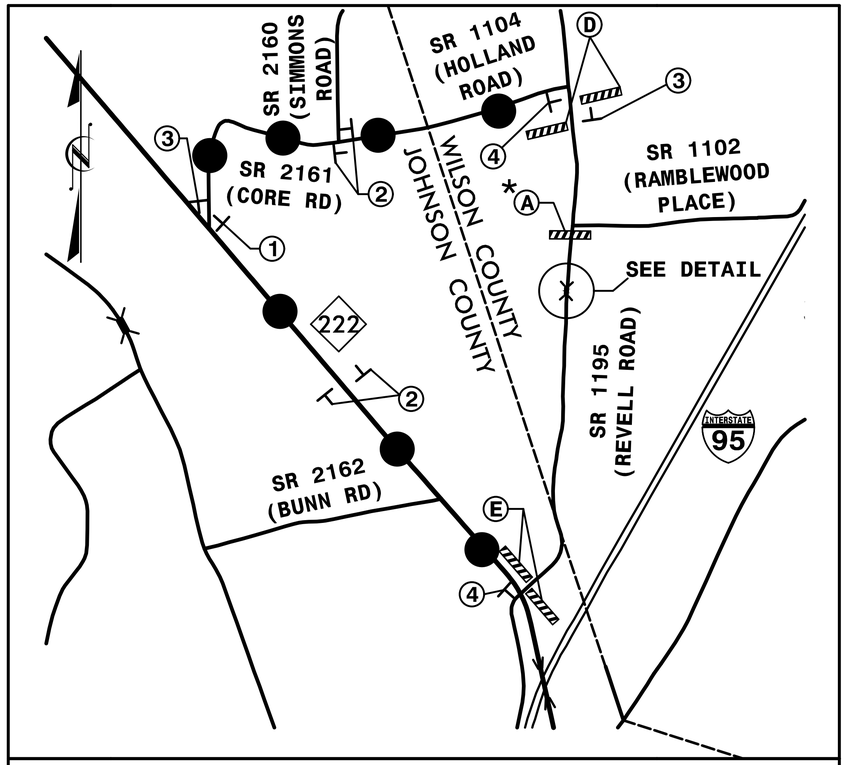
STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

TRANSPORTATION MANAGEMENT PLAN

LEGEND, GENERAL NOTES AND PHASING

DocuSign Envelope ID: 7FF0CC57-E1BE-4406-8E34-83C975CE0813

PROJ. REFERENCE NO.	SHEET NO.
B-5999	TMP-3



DETOUR ROUTE

Ⓐ R11-2 48″ x 30″ — ROAD CLOSED
TYPE III BARRICADE
* STAGGER FOR LOCAL ACCESS

Ⓔ R11-4 60″ x 30″ — ROAD CLOSED TO THRU TRAFFIC / DETOUR
M4-10L 48″ x 18″
TYPE III BARRICADE

Ⓓ R11-4 60″ x 30″ — ROAD CLOSED TO THRU TRAFFIC / DETOUR
M4-10R 48″ x 18″
TYPE III BARRICADE

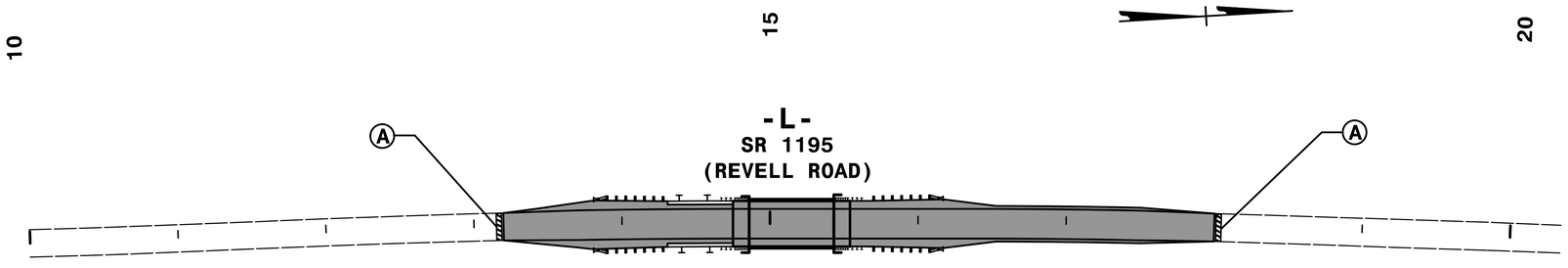
① DETOUR M4-8 24″ X 12″ — M6-1 21″ X 15″

② DETOUR M4-8 24″ X 12″ — M6-3 21″ X 15″

③ DETOUR M4-8 24″ X 12″ — M6-1 L 21″ X 15″

④ END DETOUR M4-8 A 24″ X 18″

REFER TO RSD 1101.03
(SHEETS 1 & 2 OF 9) FOR
ADDITIONAL SIGN REQUIREMENTS
INCLUDING
-W20-3 (20 EA)
-W20-2 (4 EA)
-SP-4 (4 EA)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED Signed by: Rhonda B. Early F34CAF5AC6BF48A...
DATE: 8/30/2018

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY
SEAL

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

TRANSPORTATION MANAGEMENT PLAN

DETOUR AND DETAIL

8/30/2018
...\TBF_4.R.88_tc_TCP_detour.dgn
HNTB

TIP PROJECT: B-5999

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5999	EC-1	

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

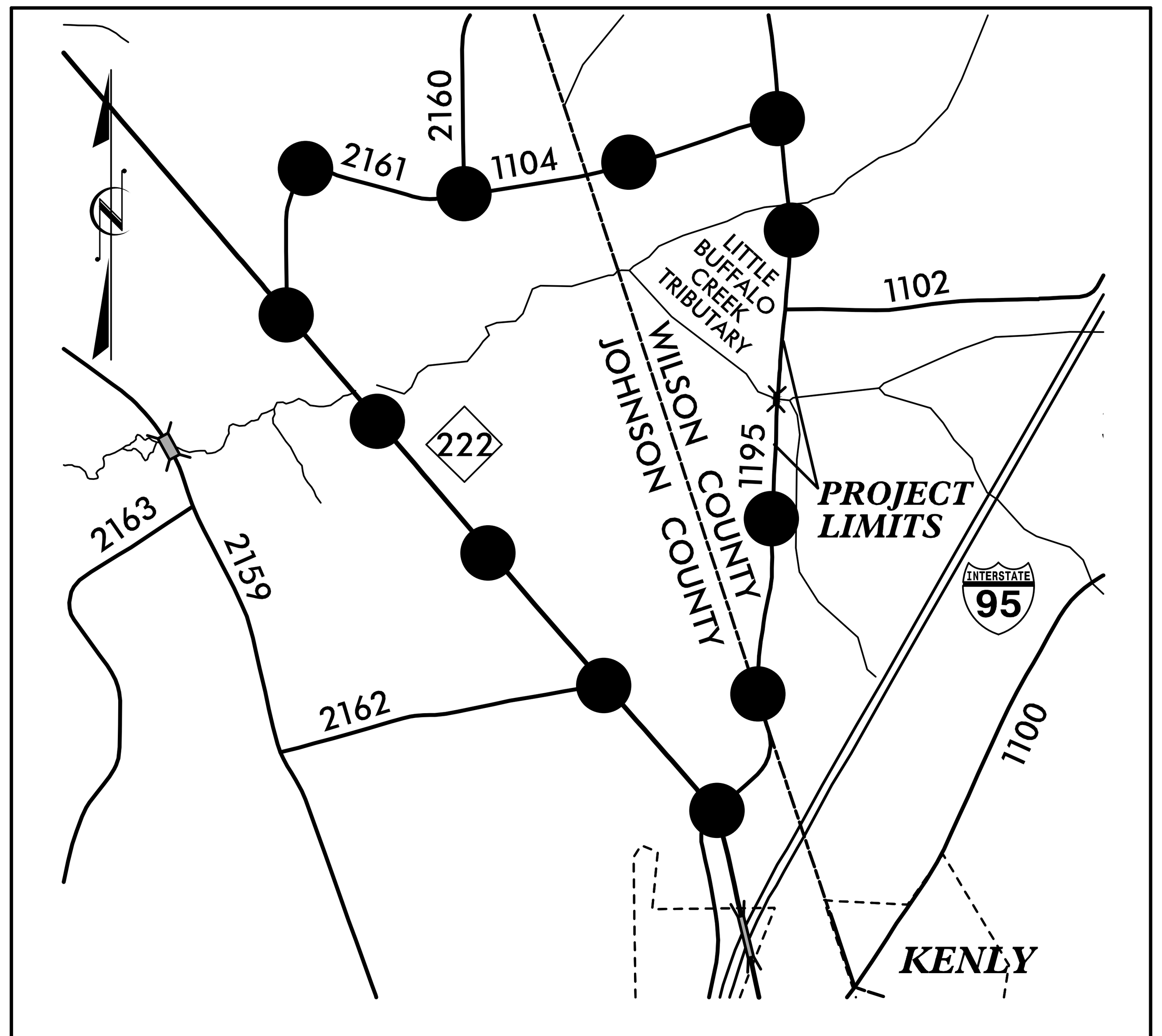
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

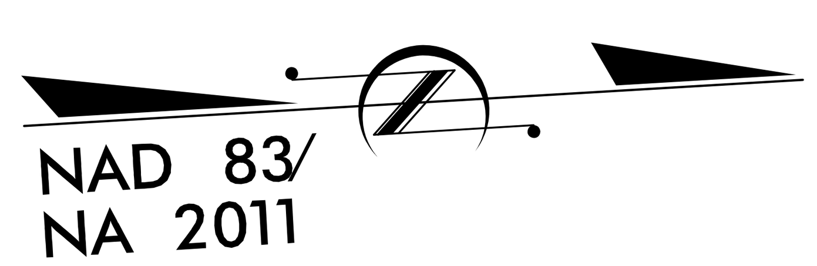
WILSON COUNTY

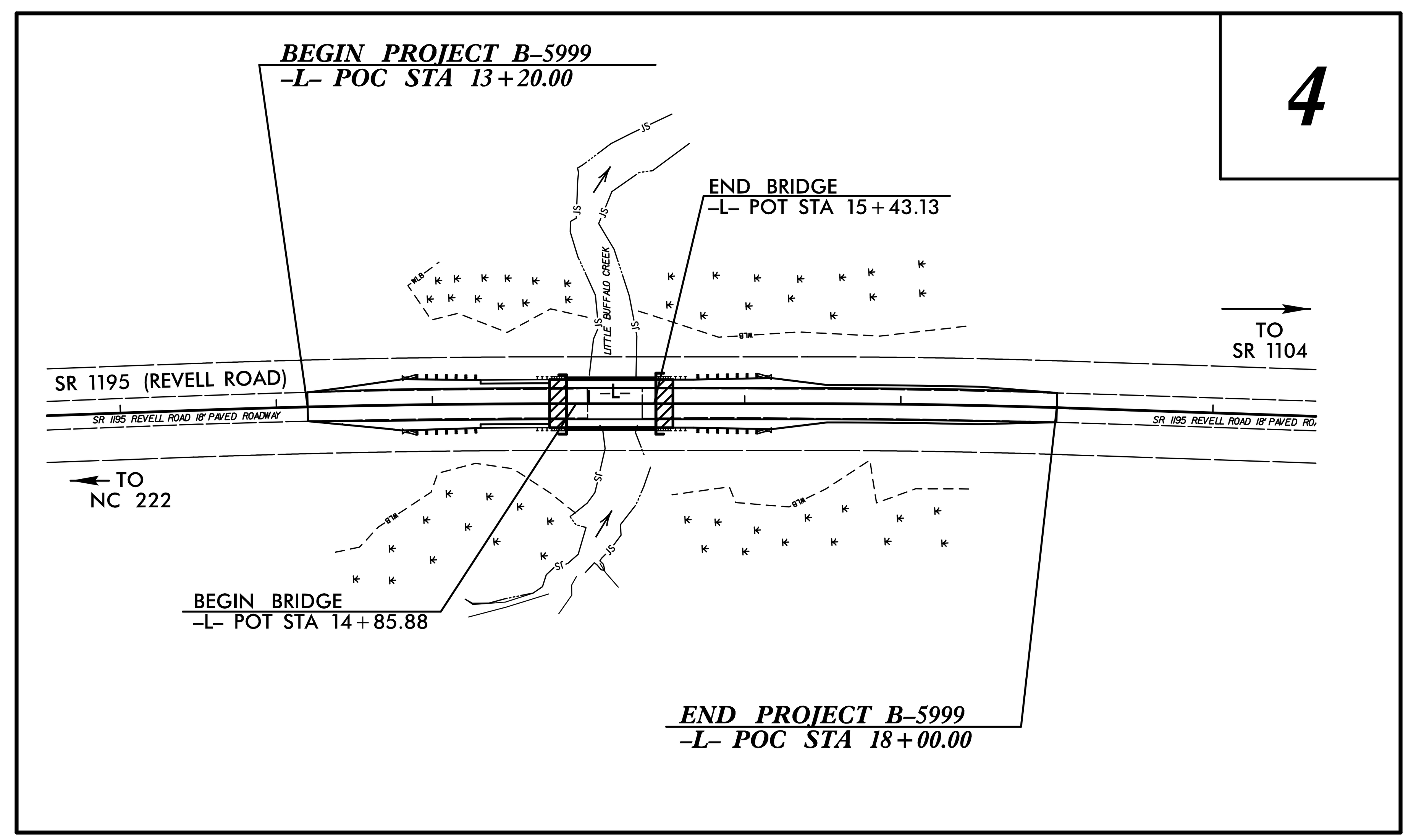
LOCATION: REPLACE BRIDGE NO. 37 OVER LITTLE BUFFALO CREEK TRIBUTARY ON SR 1195 (REVELL ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



VICINITY MAP — OFFSITE DETOUR





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	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
	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	

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 SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

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

Prepared In the Office of:

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2018 STANDARD SPECIFICATIONS

NATALIE CHAN, P.E.
EROSION CONTROL
LEVEL III
CERTIFICATION #3444

Roadway Standard Drawings

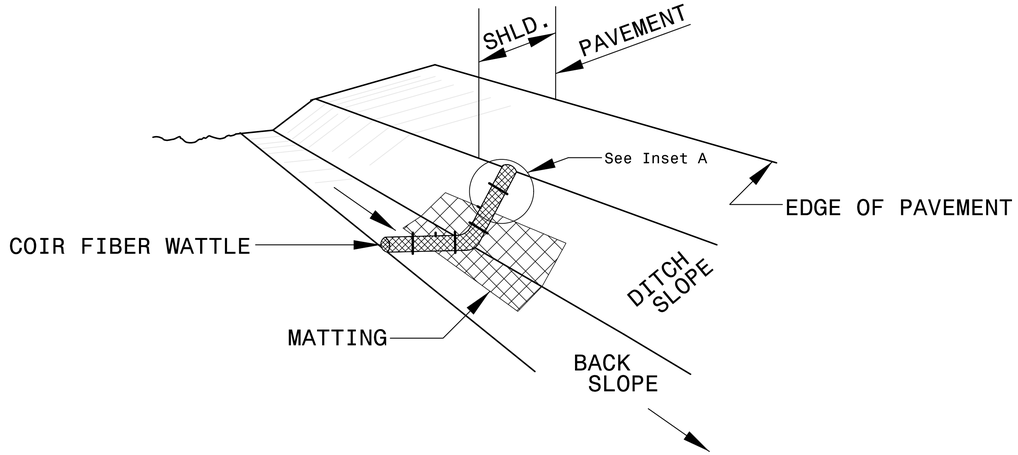
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 *Railroad Erosion Control Detail*
1605.01 *Temporary Silt Fence*
1606.01 *Special Sediment Control Fence*
1607.01 *Gravel Construction Entrance*
1622.01 *Temporary Berms and Slope Drains*
1630.01 *Riser Basin*
1630.02 *Silt Basin Type B*
1630.03 *Temporary Silt Ditch*
1630.04 *Stilling Basin*
1630.05 *Temporary Diversion*
1630.06 *Special Stilling Basin*
1631.01 *Matting Installation*
1632.01 *Rock Inlet Sediment Trap Type A*
1632.02 *Rock Inlet Sediment Trap Type B*
1632.03 *Rock Inlet Sediment Trap Type C*
1633.01 *Temporary Rock Silt Check Type A*
1633.02 *Temporary Rock Silt Check Type B*
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*
1640.01 *Coir Fiber Baffle*
1645.01 *Temporary Stream Crossing*

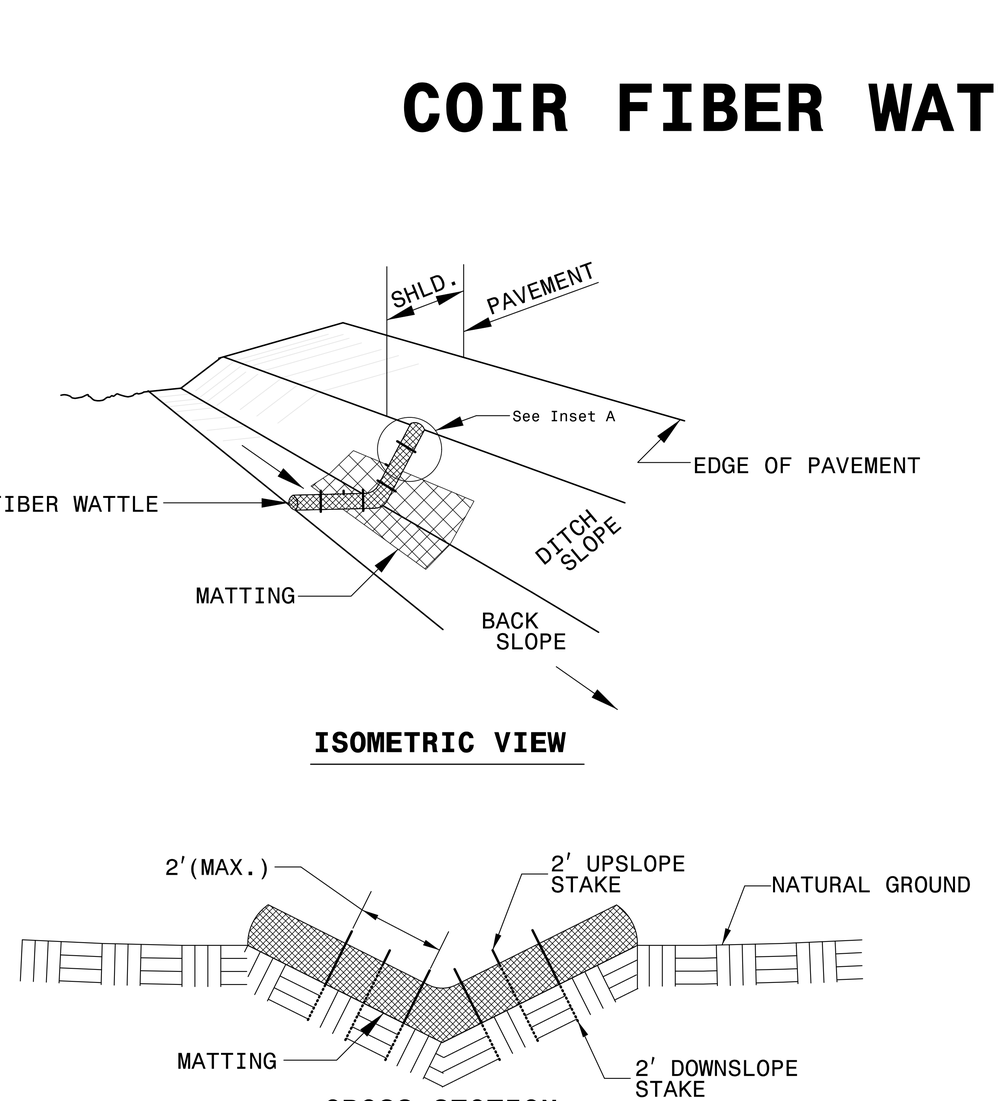
8/29/2018
...\Design\17BP.4.R.88_EC_tsh.dgn
HNTB

PROJECT REFERENCE NO.	SHEET NO.
B-5999	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

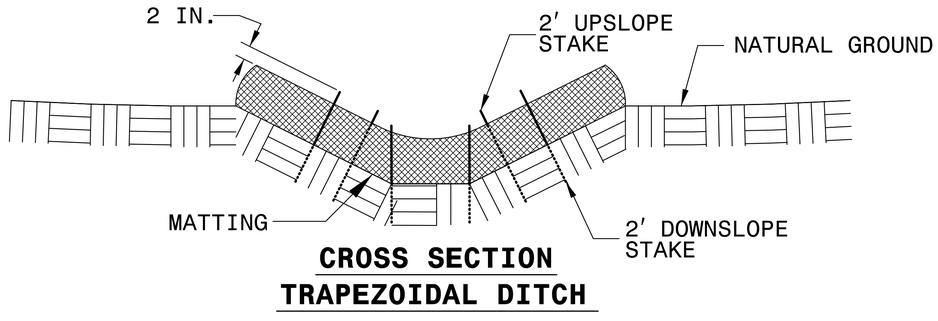
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

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

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

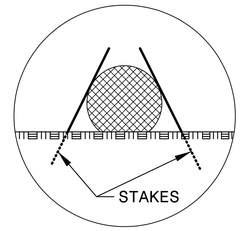
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

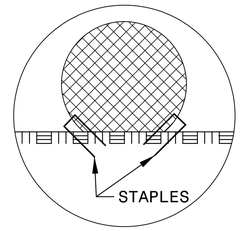
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

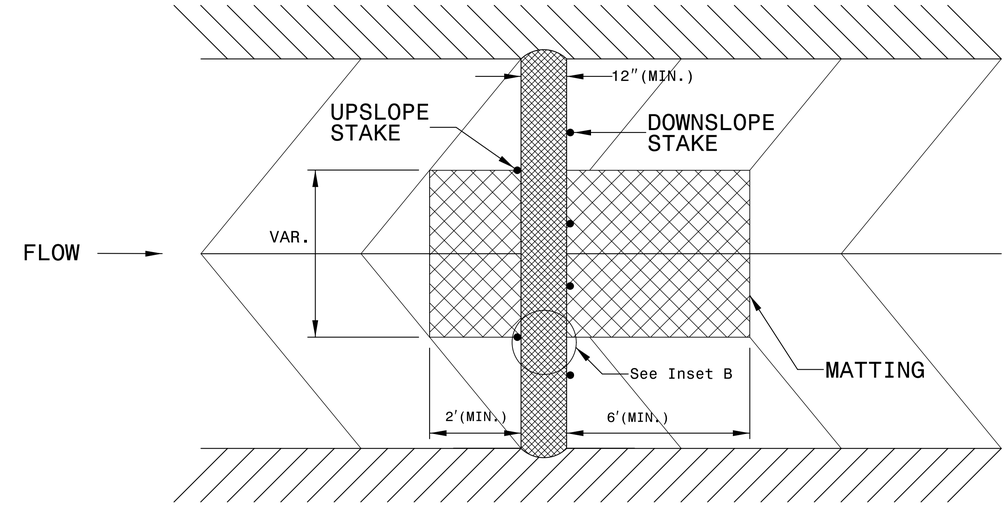
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



INSET B



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-5999	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

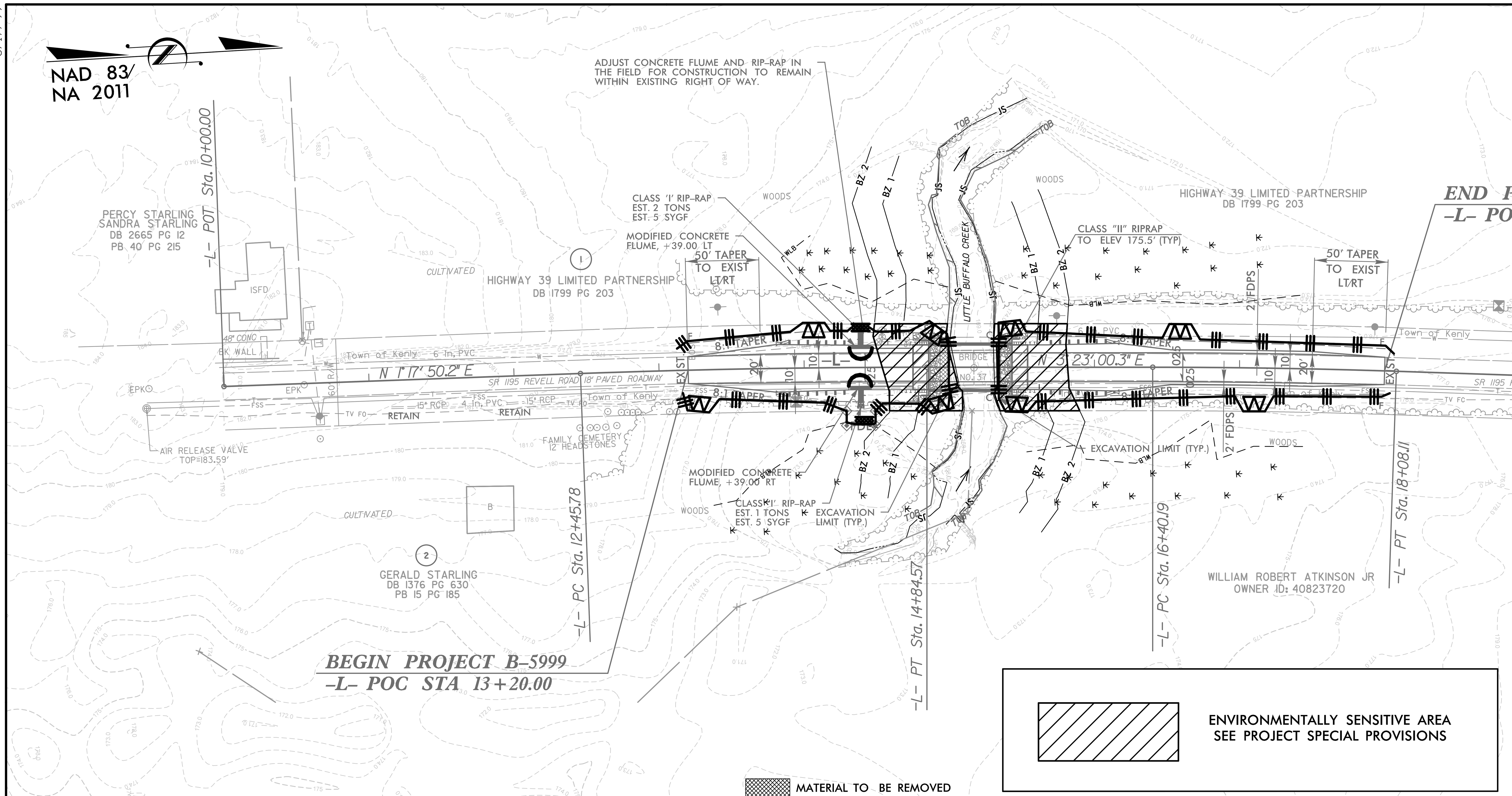
SOIL STABILIZATION TIMEFRAMES

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

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
B-5999	EC-4
RW SHEET NO.	

NATALIE CHAN, P.E.
EROSION CONTROL
LEVEL III
CERTIFICATION #3444



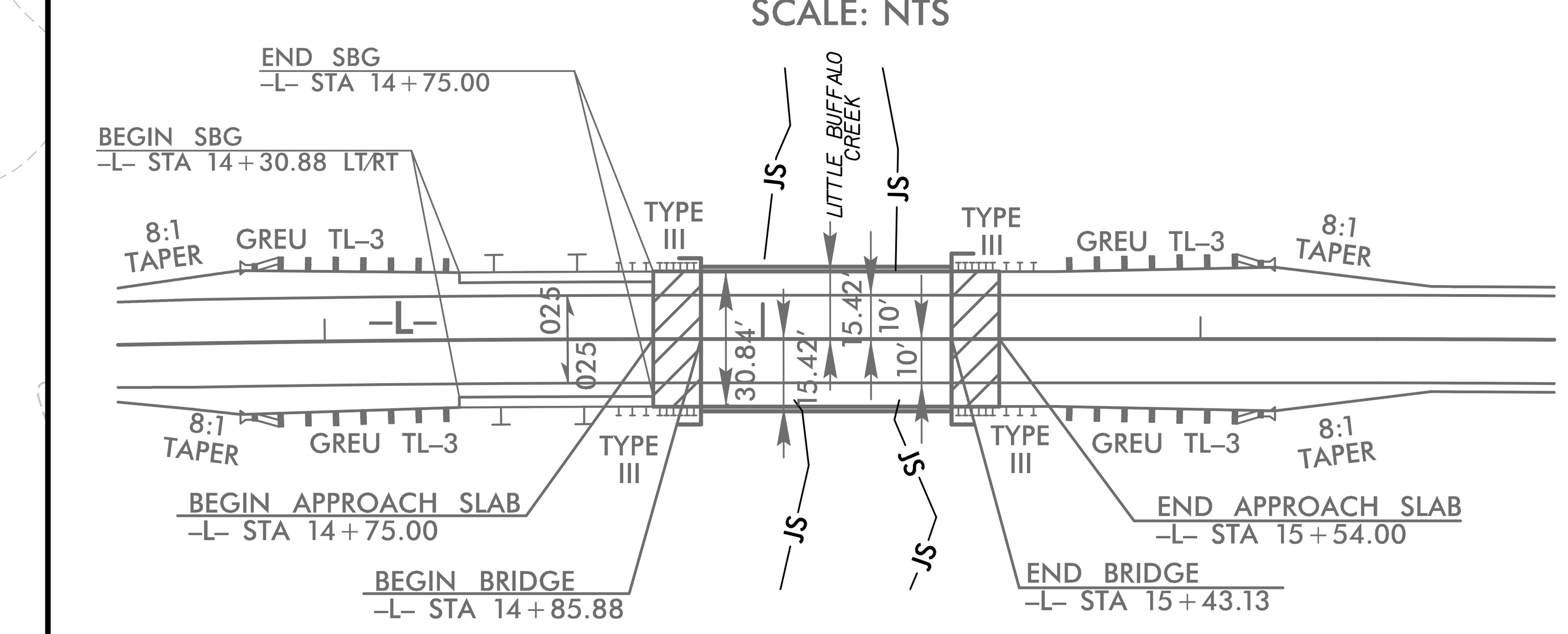
NAD 83/
NA 2011
ADJUST CONCRETE FLUME AND RIP-RAP IN THE FIELD FOR CONSTRUCTION TO REMAIN WITHIN EXISTING RIGHT OF WAY.
-L- POT Sta. 10+00.00
PERCY STARLING
SANDRA STARLING
DB 2665 PG 12
PB 40 PG 215
CLASS 'I' RIP-RAP
EST. 2 TONS
EST. 5 SYGF
MODIFIED CONCRETE
FLUME, +39.00 LT
50' TAPER
TO EXIST
LT/RT
HIGHWAY 39 LIMITED PARTNERSHIP
DB 1799 PG 203
CLASS "II" RIPRAP
TO ELEV 175.5' (TYP)
END PROJECT B-5999
-L- POC STA 18+00.00
-L- POT Sta. 20+34.16
N 1°17' 50.2" E
N 23°00.3" E
N 5°18' 27.4" E
SR 1195 REVELL ROAD 18' PAVED ROADWAY
LITTLE BUFFALO CREEK
AIR RELEASE VALVE
TOP=183.59'
FAMILY CEMETERY
12 HEADSTONES
MODIFIED CONCRETE
FLUME, +39.00 RT
CLASS 'I' RIP-RAP
EST. 1 TONS
EST. 5 SYGF
EXCAVATION
LIMIT (TYP.)
EXCAVATION LIMIT (TYP.)
-L- PC Sta. 12+45.78
GERALD STARLING
DB 1376 PG 630
PB 15 PG 185
-L- PT Sta. 14+84.57
-L- PC Sta. 16+40.19
-L- PT Sta. 18+08.11
WILLIAM ROBERT ATKINSON JR
OWNER ID: 40823720
BEGIN PROJECT B-5999
-L- POC STA 13+20.00

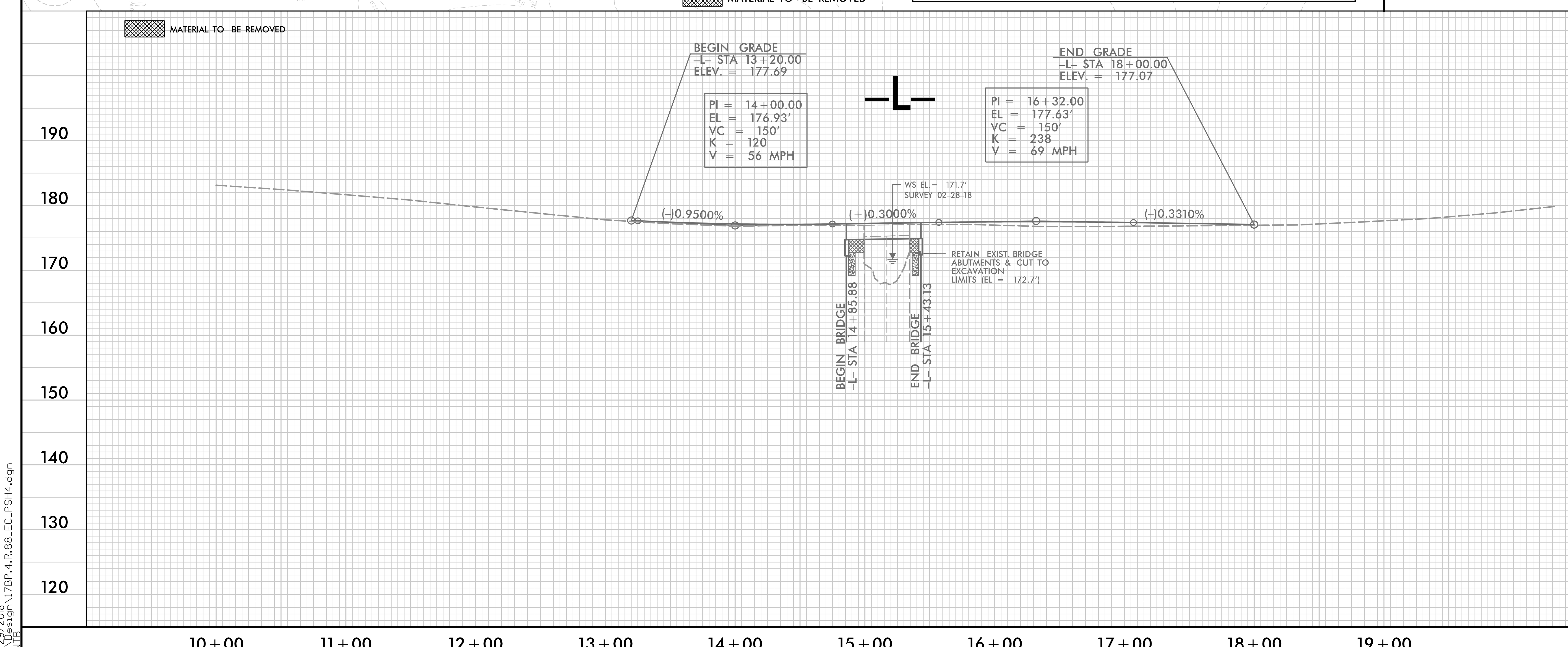
ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

MATERIAL TO BE REMOVED

SKETCH OF BRIDGE IN RELATIONSHIP TO PAVEMENT

SCALE: NTS





MATERIAL TO BE REMOVED
BEGIN GRADE
-L- STA 13+20.00
ELEV. = 177.69
-L-
PI = 14+00.00
EL = 176.93'
VC = 150'
K = 120
V = 56 MPH
END GRADE
-L- STA 18+00.00
ELEV. = 177.07
PI = 16+32.00
EL = 177.63'
VC = 150'
K = 238
V = 69 MPH
WS EL = 171.7'
SURVEY 02-28-18
(-)0.9500%
(+)0.3000%
(-)0.3310%
RETAIN EXIST. BRIDGE ABUTMENTS & CUT TO EXCAVATION LIMITS (EL = 172.7')
BEGIN BRIDGE
-L- STA 14+85.88
END BRIDGE
-L- STA 15+43.13
190
180
170
160
150
140
130
120
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00

BM#1
-L- STA 18+77.63, 47.55' LEFT
BENCHTIE SET IN 24" MAPLE
ELEVATION = 178.12'

BM#2
-L- STA 13+94.44, 22.92' RIGT
BENCHTIE SET IN 18" OAK
ELEVATION = 177.22'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 700	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 174.5	FT
BASE DISCHARGE	= 1100	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 175.3	FT
OVERTOPPING DISCHARGE	= >1500 (+)	CFS
OVERTOPPING FREQUENCY	= >500 (+)	YRS
OVERTOPPING ELEVATION	= 177.1	FT
DATE OF SURVEY	= 02-28-18	
W.S.ELEVATION AT DATE OF SURVEY	= 171.7	FT

RW REVISION 2018-07-24: REMOVED PDE AND ADDED NOTE ON PARCEL 1. EWA

8/17/99

8/29/2018
...\Design\17BP.4.R.88_EC_PSH4.dgn

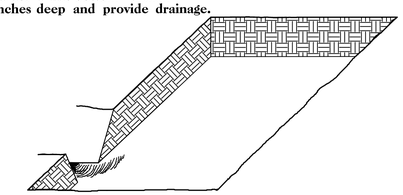
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B–5999	RF–1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

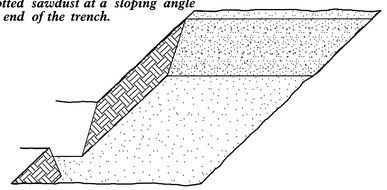
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

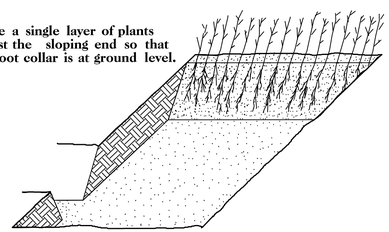
1. Locate a healing–in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



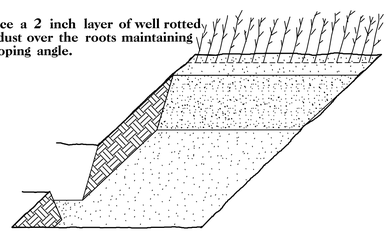
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

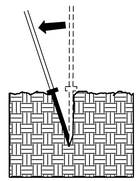


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

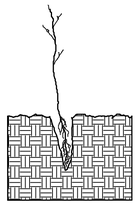


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

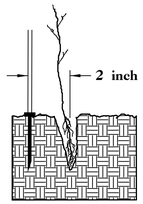
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



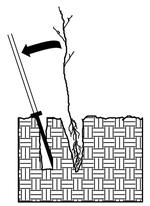
1. Insert planting bar as shown and pull handle toward planter.



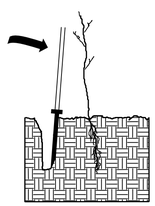
2. Remove planting bar and place seedling at correct depth.



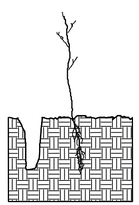
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ *TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.*

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

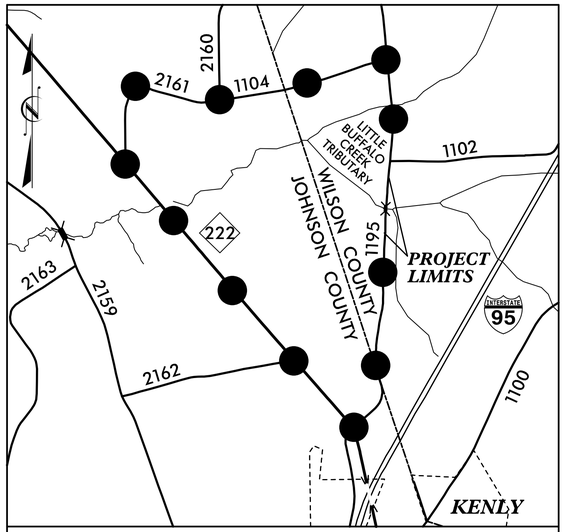
25%	***LIRIODENDRON TULIPIFERA***	***TULIP POPLAR***	**12 in – 18 in 3R**
25%	***PLATANUS OCCIDENTALIS***	***AMERICAN SYCAMORE***	**12 in – 18 in 3R**
25%	***FRAXINUS PENNSYLVANICA***	***GREEN ASH***	**12 in – 18 in 3R**
25%	***BETULA NIGRA***	***RIVER BIRCH***	**12 in – 18 in 3R**

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

09/08/99

TIP PROJECT: B–5999



VICINITY MAP — OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
WILSON COUNTY

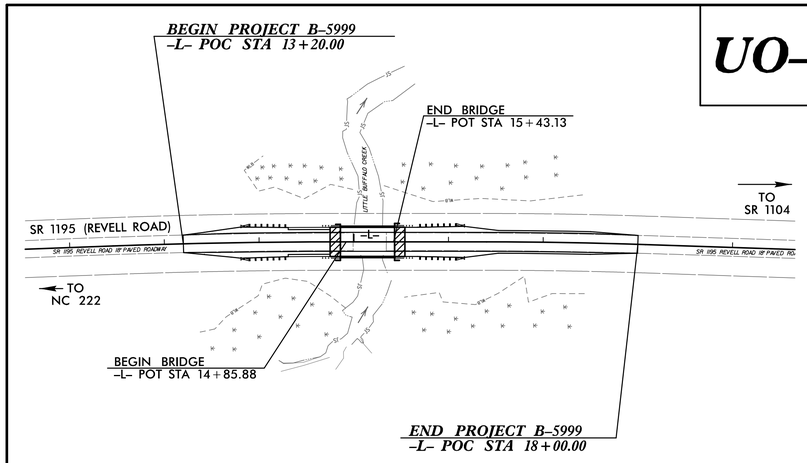
T.I.P. NO.	SHEET NO.
B–5999	UO–1

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

LOCATION: ***BRIDGE NO. 37 OVER LITTLE BUFFALO CREEK TRIBUTARY ON SR 1195 (REVELL ROAD)***

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

UO–4



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

UTILITY OWNERS WITH CONFLICTS

(A) TELEPHONE – CENTURYLINK
(B) TELEPHONE – SPECTRUM
(C) WATER/SEWER – TOWN OF KENLY

DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

DAVID BEAMAN	*DIVISION CONTACT #1*
KIM MOORE	*DIVISION CONTACT #2*
MATT CLARKE	*DIVISION CONTACT #3*
RANDY DAVIS	*DIVISION CONTACT #4*

31-AUG-2018 09:13
\\7BP.4.R.88 Wilson BR037\Utilities\7BP.4.R.88_ut_tsh_uo01_psh.dgn
HNTB

PROJECT REFERENCE NO.	SHEET NO.
B-5999	U0-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — RFH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PRPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 12" SS
- Force Main Sewer Line (Sized as Shown) — 12" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP O/H POW LINES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 24" ENCAS BY OC
- Encasement — 24" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole
- Power Manhole
- Telephone Manhole
- Sanitary Sewer Manhole
- Hand Hole for Cable — HH
- Power Transformer
- Telephone Pedestal — T
- CATV Pedestal — C
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line — P
- *Underground Telephone Cable — T
- *Underground Telephone Conduit — TC
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — TV FO
- *Underground Gas Pipeline — G
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line — W
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Forced Main Line — FSS
- Underground Unknown Utility Line — ?UTL
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown) — W
- Designated Utility Line (Type as Shown) — W

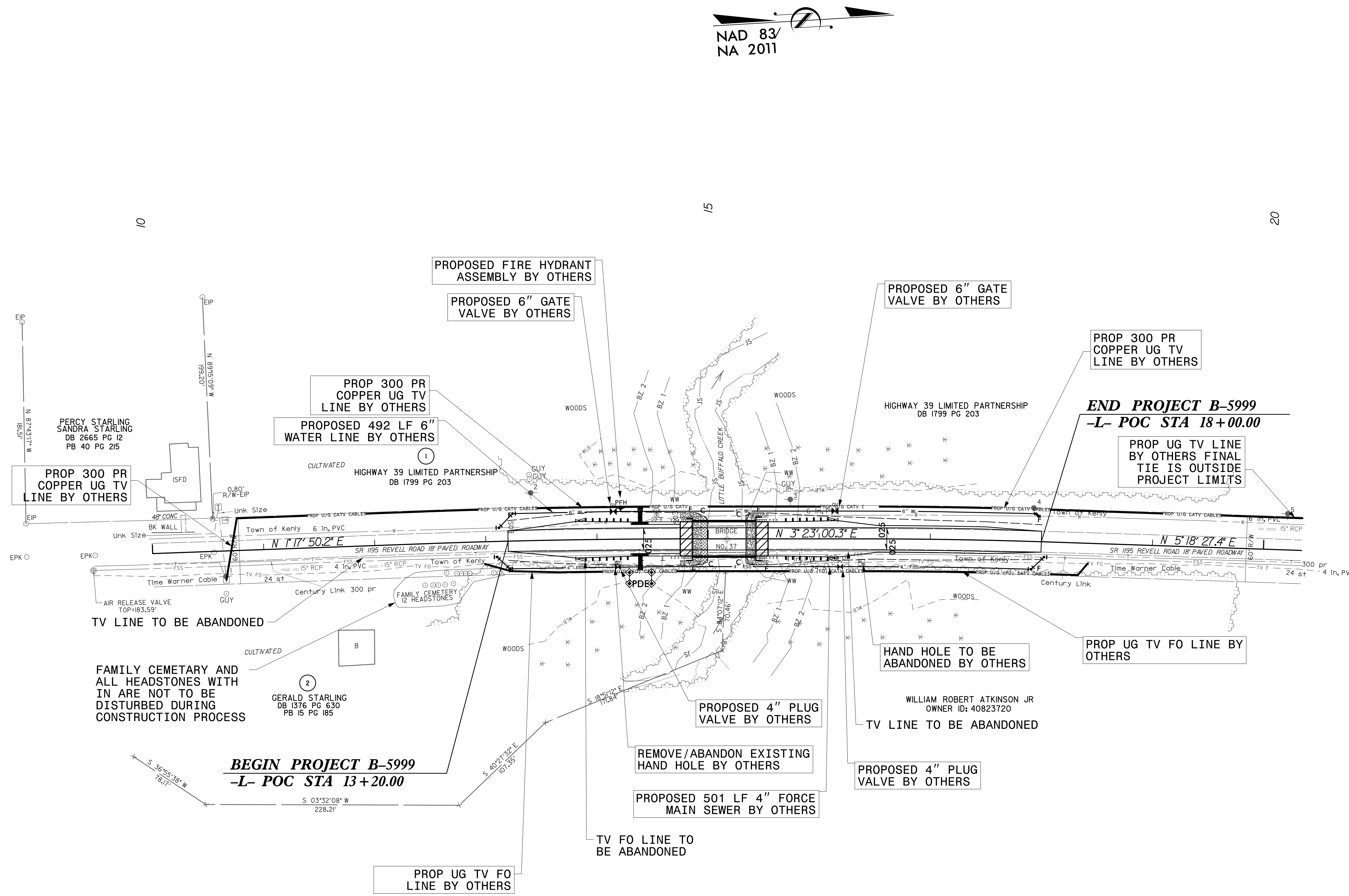
REV: 2/1/2012

31-AUG-2018 09:09
Wilson B0023\Utilities\17BP-4.R.88_ut_sym_ue02_psh.dgn
bnite

PROJECT REFERENCE NO.	SHEET NO.
B-5999	UO-4
THIS SHEET CORRESPONDS TO RDY- 4	

UTILITIES BY OTHERS

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



NAD 83/
NA 2011
10
15
20
PROPOSED FIRE HYDRANT ASSEMBLY BY OTHERS
PROPOSED 6" GATE VALVE BY OTHERS
PROPOSED 6" GATE VALVE BY OTHERS
PROP 300 PR COPPER UG TV LINE BY OTHERS
PROPOSED 492 LF 6" WATER LINE BY OTHERS
PROP 300 PR COPPER UG TV LINE BY OTHERS
PROP 300 PR COPPER UG TV LINE BY OTHERS
END PROJECT B-5999
-L- POC STA 18+00.00
PROP UG TV LINE BY OTHERS FINAL TIE IS OUTSIDE PROJECT LIMITS
PERCY STARLING
SANDRA STARLING
DB 2665 PG 12
PB 40 PG 215
HIGHWAY 39 LIMITED PARTNERSHIP
DB 1799 PG 203
HIGHWAY 39 LIMITED PARTNERSHIP
DB 1799 PG 203
WOODS
CULTIVATED
LITTLE BUFFALO CREEK
N 1°17' 50.2" E
N 3°23'00.3" E
N 5°18' 27.4" E
SR 1195 REVELL ROAD 18' PAVED ROADWAY
BRIDGE
NO. 37
Town of Kenly 6 In. PVC
Time Warner Cable
Century Link 300 pr
Century Link
FAMILY CEMETERY
12 HEADSTONES
AIR RELEASE VALVE
TOP=183.59'
TV LINE TO BE ABANDONED
FAMILY CEMETARY AND ALL HEADSTONES WITH IN ARE NOT TO BE DISTURBED DURING CONSTRUCTION PROCESS
GERALD STARLING
DB 1376 PG 630
PB 15 PG 185
WILLIAM ROBERT ATKINSON JR
OWNER ID: 40823720
HAND HOLE TO BE ABANDONED BY OTHERS
PROP UG TV FO LINE BY OTHERS
PROPOSED 4" PLUG VALVE BY OTHERS
TV LINE TO BE ABANDONED
REMOVE/ABANDON EXISTING HAND HOLE BY OTHERS
PROPOSED 4" PLUG VALVE BY OTHERS
PROPOSED 501 LF 4" FORCE MAIN SEWER BY OTHERS
TV FO LINE TO BE ABANDONED
PROP UG TV FO LINE BY OTHERS
BEGIN PROJECT B-5999
-L- POC STA 13+20.00
S 03°32'08" W
228.21'

8/17/99

31-AUG-2018 09:49

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B–5999	X–1

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

180 / 170

WETLANDS | EX. R/W | 3:1 | 0.025 | 0.025 | 3:1 | EX. R/W | WETLANDS

176.83

14 + 00.00

180 / 170

EX. R/W | 3:1 | 0.025 | 0.025 | 3:1 | EX. R/W

177.20

13 + 50.00

180 / 170

EX. R/W | EX. R/W

177.56

13 + 20.00

BEGIN GRADE
–L– STA 13 + 20.00

180 / 170

EX. R/W | EX. R/W

177.80

13 + 00.00

190 / 180 / 170

EX. R/W | EX. R/W

178.78

12 + 50.00

190 / 180 / 170

EX. R/W | EX. R/W

179.78

12 + 00.00

–L–

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

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-AUG-2018 16:14
V:\Projects\Highway Corridor Modeling\17BP.4.R.88_rdy_xpl.1.dgn
HNTB

6/23/16

PROJ. REFERENCE NO.	SHEET NO.
B-5999	X-2

29-AUG-2018 16:15
\Roadway\CorridorModeling\17BP.4.R.88_rdy_xpl_1.dgn
HNTB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B–5999	X–3

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

180
170

EX. R/W

177.64
19 + 00.00

EX. R/W

180
170

EX. R/W

177.16
18 + 50.00

EX. R/W

180
170

END GRADE
–L– STA 18 + 00.00

EX. R/W

0.025 0.025 3:1
176.96
18 + 00.00

EX. R/W

180
170

EX. R/W

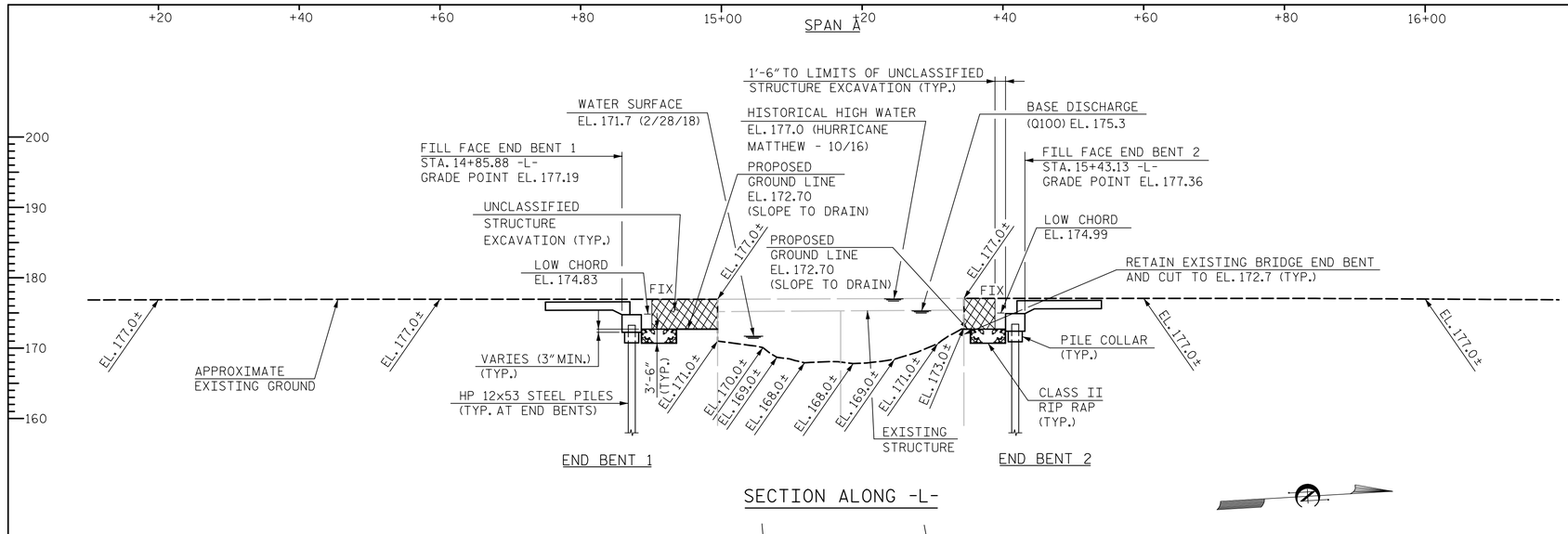
3:1 0.025 0.025 3:1
176.87
17 + 50.00
–L–

EX. R/W

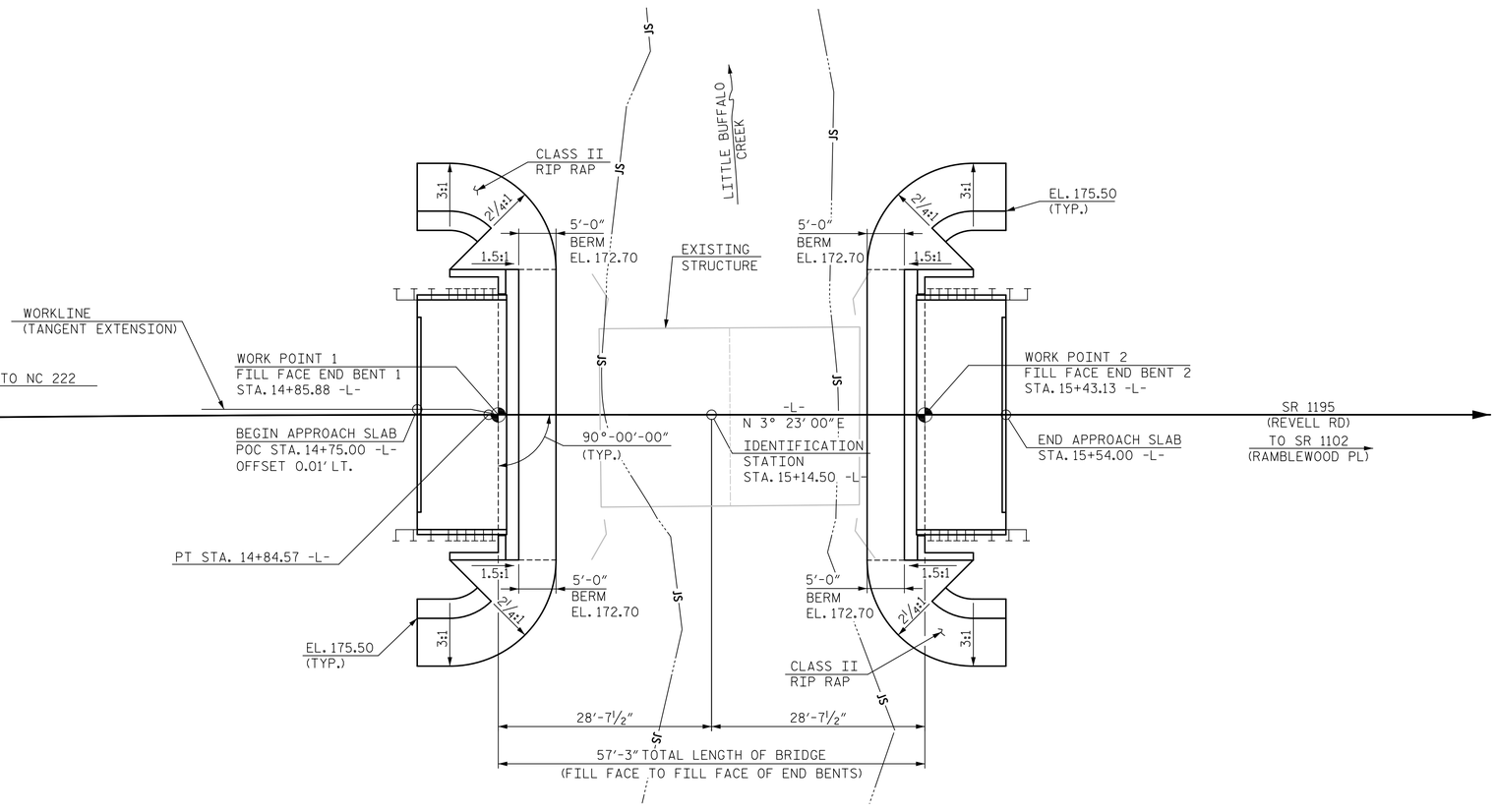
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-AUG-2018 16:15
\\Roadway\Corridor Modeling\17BP.4.R.88.rdy_xpl.1.dgn
HNTB

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



SECTION ALONG -L-



PLAN

PILES NOT SHOWN FOR CLARITY.

WORKLINE FOR BRIDGE SHALL BE -L- TANGENT AND
ITS EXTENSION PRECEEDING PT AT STA. 14+84.57 -L-

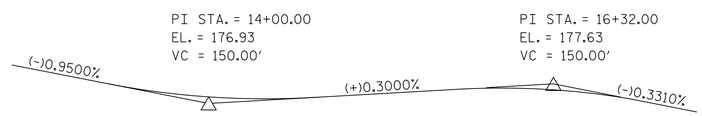
BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	700 CFS
FREQUENCY OF DESIGN FLOOD	=	25 YR
DESIGN HIGH WATER ELEVATION	=	174.5 FT.
DRAINAGE AREA	=	5.9 SQ. MI.
BASE DISCHARGE (Q100)	=	1,100 CFS
BASE HIGH WATER ELEVATION	=	175.3 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	> 1500 (+) CFS
FREQUENCY OF OVERTOPPING FLOOD	=	> 500-YR (+)
OVERTOPPING FLOOD ELEVATION	=	177.07 FT.

NOTE: ROADWAY OVERTOPS AT STA. 18+00.00



GRADE DATA -L-

CURVE DATA -L-

PI STA. = 13+65.19
Δ = 2°-05'-10.2" (RT.)
D = 0°-52'-25.1"
L = 238.79'
T = 119.41'
R = 6,558.39'

PROJECT NO. B-5999

WILSON **COUNTY**

STATION: 15+14.50 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 37

8/29/2018

DocuSigned by: James J. Barcomb 1B415C7D2A29488...

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE	6/18
CHECKED BY	J. BARCOMB	DATE	6/18
DESIGN ENGINEER OF RECORD	J. BARCOMB	DATE	7/18

DWG. NO. 1

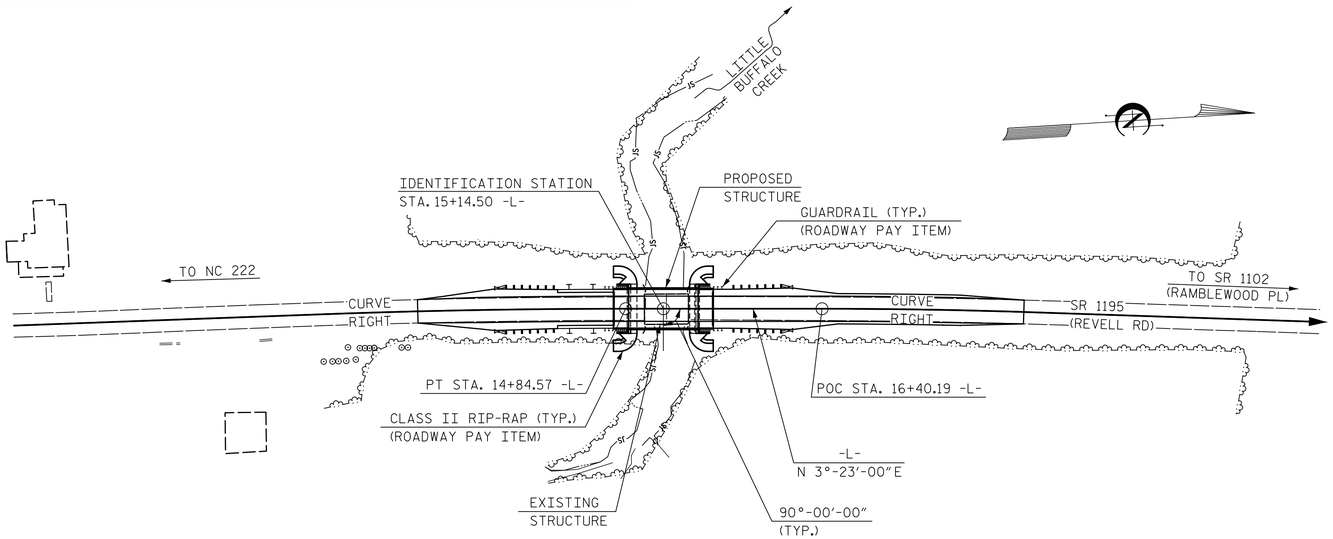
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1195 OVER LITTLE BUFFALO CREEK BETWEEN NC 222 AND SR 1102

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-1
1			3			TOTAL SHEETS
2			4			13

DocuSign Envelope ID: A1C3AF70-099C-45A8-9465-AD90F975071C

BM: "BM2" - BENCHTIE SET IN BASE OF 18" OAK, 23.3' RT. OF STA. 13+94.11 -L-, EL. 177.22



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 71 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT NO. 1 AND END BENT NO. 2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

DRILLED IN PILES ARE REQUIRED FOR END BENT NO. 1 PILES NO. 1, NO. 2 AND NO. 3. EXCAVATE HOLES AT PILE LOCATIONS TO ELEVATION 162.2 FT. FOR PILE EXCAVATION, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

DRILLED IN PILES ARE REQUIRED FOR END BENT NO. 2 PILES NO. 5, NO. 6 AND NO. 7. EXCAVATE HOLES AT PILE LOCATIONS TO ELEVATION 162.4 FT. FOR PILE EXCAVATION, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

CONCRETE OR GROUT IS REQUIRED TO FILL HOLES FOR PILE EXCAVATION AT END BENT NO. 1 AND END BENT NO. 2.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STATION 15+14.50 -L-	ASBESTOS ASSESSMENT	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION 15+14.50 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS AT STATION 15+14.50 -L-	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	HP 12x53 STEEL PILES		STEEL PILE POINTS	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0"x1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EACH	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE	LUMP SUM	———	———	———	———	———	LUMP SUM	———	———	———	———	———	110.25	———	———	LUMP SUM	11	605
END BENT 1	———	———	25	5	LUMP SUM	14.2	———	2,115	7	7	85	7	———	110	105	———	———	———
END BENT 2	———	———	25	5	LUMP SUM	14.2	———	2,115	7	7	85	7	———	115	110	———	———	———
TOTAL	LUMP SUM	LUMP SUM	50	10	LUMP SUM	28.4	LUMP SUM	4,230	14	14	170	14	110.25	225	215	LUMP SUM	11	605

GENERAL NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+14.50 -L-.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 19.5 FT. ON EACH SIDE OF CENTERLINE BRIDGE AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE EXISTING TWO SPAN STRUCTURE WITH SPAN LENGTHS OF 17'-5" AND 17'-5" WITH 12 LINES OF STEEL I BEAMS WITH A REINFORCED CONCRETE DECK WITH A 27.3' OUT TO OUT DECK WIDTH ON REINFORCED CAPS AND TIMBER PILES SHALL BE REMOVED. IN ADDITION, ANY PILES REMAINING FROM PREVIOUS BRIDGE CONSTRUCTION OR MAINTENANCE OPERATIONS SHALL BE REMOVED AND INCLUDED IN THE LUMP SUM PAY ITEM FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+14.50 -L-"

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES."

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

SAMPLE BAR REPLACEMENT

SIZE	LENGTH
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

NOTE:
SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND fy = 60ksi.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

DocuSigned by: James J. Barcomb 1B415C7D2A29488...

9/17/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY M. WRIGHT DATE 7/18
CHECKED BY J. BARCOMB DATE 7/18
DESIGN ENGINEER OF RECORD J. BARCOMB DATE 7/18

DWG. NO. 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1195
OVER LITTLE BUFFALO
CREEK BETWEEN
NC 222 AND SR 1102

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-2
1			3			TOTAL SHEETS
2			4			13

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT						
							LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.055	--	1.75	0.275	1.23	55′	EL	27	0.523	1.23	55′	EL	5.4	0.80	0.275	1.05	55′	EL	27	
		HL-93(Opr)	N/A	--	1.591	--	1.35	0.275	1.59	55′	EL	27	0.523	1.59	55′	EL	5.4	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.322	47.585	1.75	0.275	1.54	55′	EL	27	0.523	1.47	55′	EL	5.4	0.80	0.275	1.32	55′	EL	27	
		HS-20(Opr)	36.000	--	1.9	68.396	1.35	0.275	1.99	55′	EL	27	0.523	1.9	55′	EL	5.4	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.776	37.476	1.4	0.275	4.04	55′	EL	27	0.523	4.17	55′	EL	5.4	0.80	0.275	2.78	55′	EL	27	
		SNGARBS2	20.000	--	2.155	43.095	1.4	0.275	3.14	55′	EL	27	0.523	3.02	55′	EL	5.4	0.80	0.275	2.15	55′	EL	27	
		SNAGRIS2	22.000	--	2.079	45.734	1.4	0.275	3.03	55′	EL	27	0.523	2.83	55′	EL	5.4	0.80	0.275	2.08	55′	EL	27	
		SNCOTTS3	27.250	--	1.384	37.708	1.4	0.275	2.01	55′	EL	27	0.523	2.09	55′	EL	5.4	0.80	0.275	1.38	55′	EL	27	
		SNAGGRS4	34.925	--	1.189	41.527	1.4	0.275	1.73	55′	EL	27	0.523	1.77	55′	EL	5.4	0.80	0.275	1.19	55′	EL	27	
		SNS5A	35.550	--	1.16	41.255	1.4	0.275	1.69	55′	EL	27	0.523	1.82	55′	EL	5.4	0.80	0.275	1.16	55′	EL	27	
		SNS6A	39.950	--	1.079	43.102	1.4	0.275	1.57	55′	EL	27	0.523	1.68	55′	EL	5.4	0.80	0.275	1.08	55′	EL	27	
		SNS7B	42.000	--	1.028	43.175	1.4	0.275	1.5	55′	EL	27	0.523	1.67	55′	EL	5.4	0.80	0.275	1.03	55′	EL	27	
	TTST	TNAGRIT3	33.000	--	1.32	43.556	1.4	0.275	1.92	55′	EL	27	0.523	1.98	55′	EL	5.4	0.80	0.275	1.32	55′	EL	27	
		TNT4A	33.075	--	1.33	43.979	1.4	0.275	1.94	55′	EL	27	0.523	1.91	55′	EL	5.4	0.80	0.275	1.33	55′	EL	27	
		TNT6A	41.600	--	1.101	45.811	1.4	0.275	1.6	55′	EL	27	0.523	1.83	55′	EL	5.4	0.80	0.275	1.10	55′	EL	27	
		TNT7A	42.000	--	1.114	46.804	1.4	0.275	1.62	55′	EL	27	0.523	1.71	55′	EL	5.4	0.80	0.275	1.11	55′	EL	27	
		TNT7B	42.000	--	1.163	48.848	1.4	0.275	1.69	55′	EL	27	0.523	1.62	55′	EL	5.4	0.80	0.275	1.16	55′	EL	27	
		TNAGRIT4	43.000	--	1.101	47.33	1.4	0.275	1.6	55′	EL	27	0.523	1.56	55′	EL	5.4	0.80	0.275	1.10	55′	EL	27	
		TNAGT5A	45.000	--	1.031	46.405	1.4	0.275	1.5	55′	EL	27	0.523	1.58	55′	EL	5.4	0.80	0.275	1.03	55′	EL	27	
		TNAGT5B	45.000	3	1.013	45.582	1.4	0.275	1.47	55′	EL	27	0.523	1.48	55′	EL	5.4	0.80	0.275	1.01	55′	EL	27	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1.
2.
3.
4.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

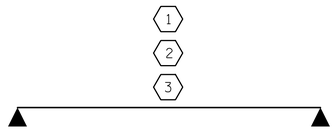
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY

FOR SPAN 'A'

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

DocuSigned by: James J. Barcomb 1B415C7D2A29488...

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

8/29/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR 55′ CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-3
1			3			TOTAL SHEETS
2			4			13

ASSEMBLED BY : M. WRIGHT DATE : 7/18
CHECKED BY : J. BARCOMB DATE : 7/18

DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

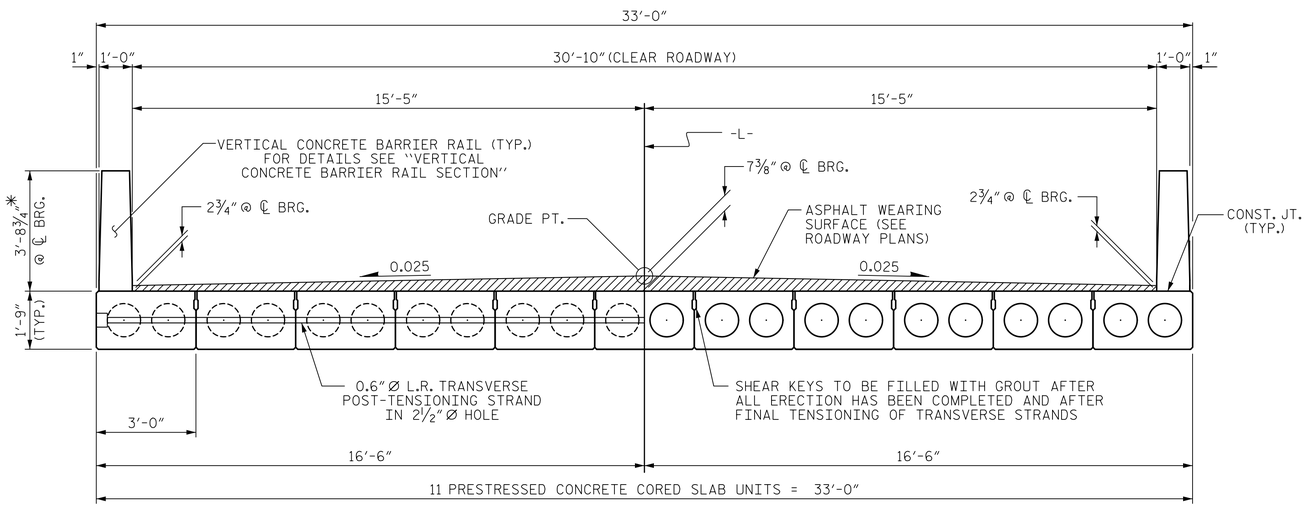
HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY M. WRIGHT DATE 6/18
CHECKED BY J. BARCOMB DATE 7/18
DESIGN ENGINEER OF RECORD J. BARCOMB DATE 7/18

DWG. NO. 3

STD. NO. 21LRFR1_90S_55L

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



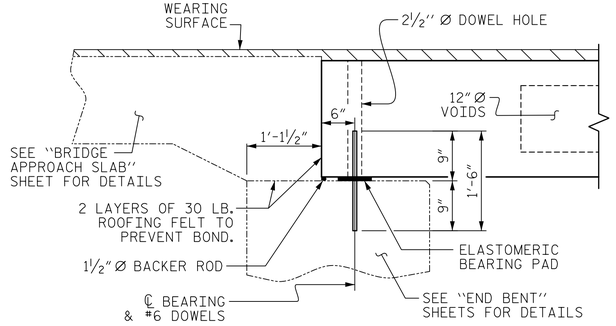
HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

HALF SECTION
THROUGH VOIDS

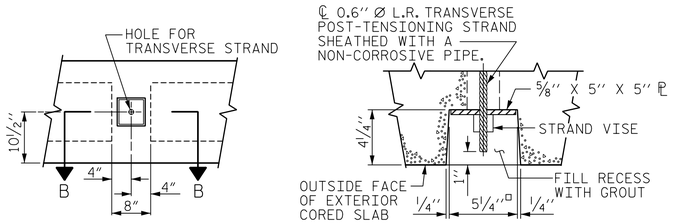
TYPICAL SECTION

* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE ''VERTICAL CONCRETE BARRIER RAIL SECTION'' DETAIL.

FIXED END



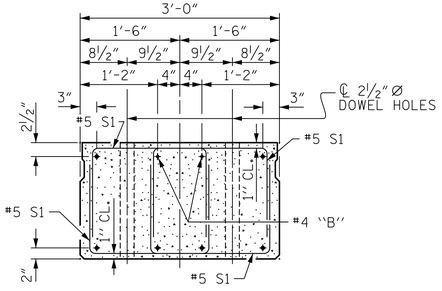
SECTION AT END BENT



ELEVATION VIEW

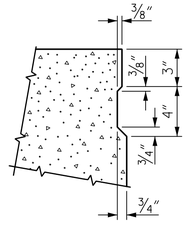
SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS



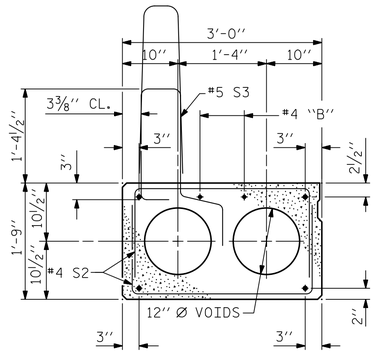
END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



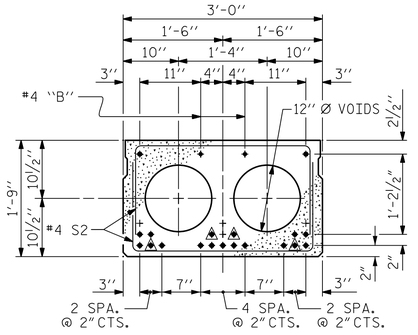
SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



EXT. SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION (55′ UNIT)

(19 STRANDS REQUIRED)

0.6'' Ø LOW RELAXATION STRAND LAYOUT

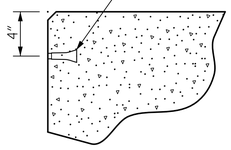
▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6′-0″FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

■ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2′-0″FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

● OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED ⅜″. SIZE TO BE DETERMINED BY CONTRACTOR.



THREADED INSERT DETAIL

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

SHEET 1 OF 3

8/29/2018

DocuSigned by: James J. Barcomb 1B415C7D2A29488...

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3′-0'' X 1′-9''
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-4
1			3			TOTAL SHEETS
2			4			13

HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY M. WRIGHT DATE 7/18
CHECKED BY J. BARCOMB DATE 7/18
DESIGN ENGINEER OF RECORD J. BARCOMB DATE 7/18

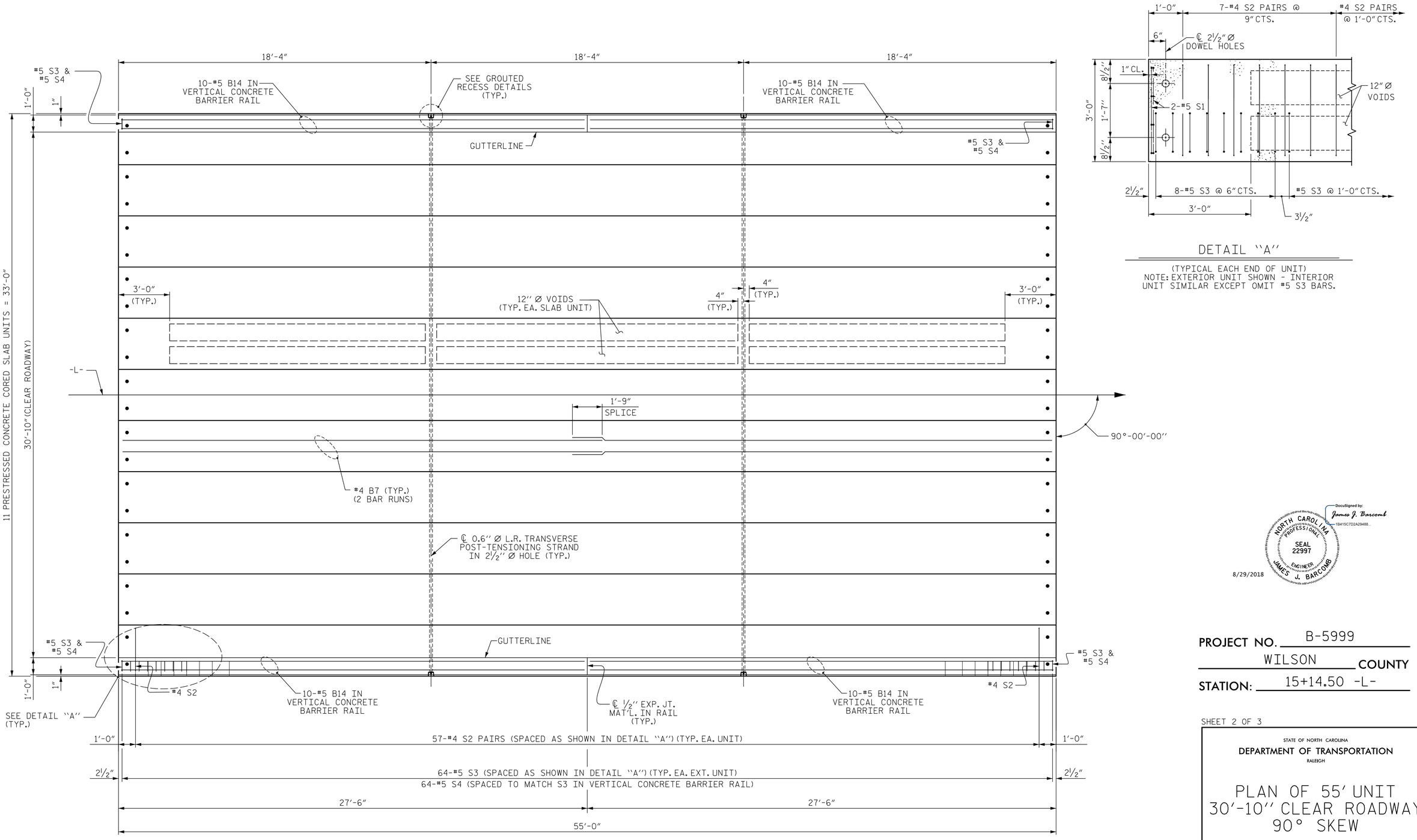
DWG. NO. 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : M. WRIGHT		DATE : 7/18	
CHECKED BY : J. BARCOMB		DATE : 7/18	
DRAWN BY : DGE 5/09	REV. 9/14	MAA/TMG	
CHECKED BY : BCH 6/09			

STD. NO. 21″PCS2_33_90S

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



DETAIL ″A″

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR
UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

DocuSigned by:
James J. Barcomb
1B415C7D2A29488...

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

8/29/2018

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 55′ UNIT
30′-10″ CLEAR ROADWAY
90° SKEW

PLAN OF UNIT

ASSEMBLED BY : M. WRIGHT		DATE : 7/18			
CHECKED BY : J. BARCOMB		DATE : 7/18			
DRAWN BY : DGE 3/09	REV. 12/5/11	MAA/AAC			
CHECKED BY : BCH 3/09	REV. 8/14	MAA/TMG			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

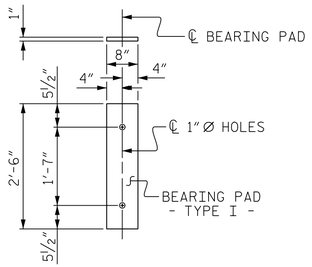
DRAWN BY	M. WRIGHT	DATE 7/18
CHECKED BY	J. BARCOMB	DATE 7/18
DESIGN ENGINEER OF RECORD	J. BARCOMB	DATE 7/18

DWG. NO. 5

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-5
1			3			TOTAL SHEETS
2			4			13

STD. NO. 21″PCS_33_90S_55L

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



FIXED END
(TYPE I - 22 REQ'D)

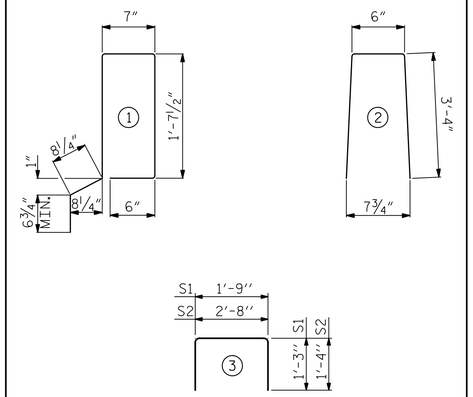
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	114	#4	3	5'-4"	406	5'-4"	406
✳ S3	64	#5	1	5'-7"	373		
REINFORCING STEEL			LBS.		516		516
✳EPOXY COATED REINFORCING STEEL			LBS.		373		
6500 P.S.I. CONCRETE			CU. YDS.		7.8		7.8
0.6" Ø L.R. STRANDS			No.		19		19

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2½" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	℗ MID-SPAN	℗ MID-SPAN
55' UNITS	1⅝"	3'-7⅝"

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-9"
55' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1½" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✳✳	⅜" ↓
FINAL CAMBER	1⅛" ↑

✳✳ INCLUDES FUTURE WEARING SURFACE

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	55' UNIT					
✳B14	40	40	#5	STR	27'-1"	1130
✳ S4	128	128	#5	2	7'-2"	957
✳EPOXY COATED REINFORCING STEEL				LBS.		2087
CLASS AA CONCRETE				CU.YDS.		14.1
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		110.25

CORED SLABS REQUIRED

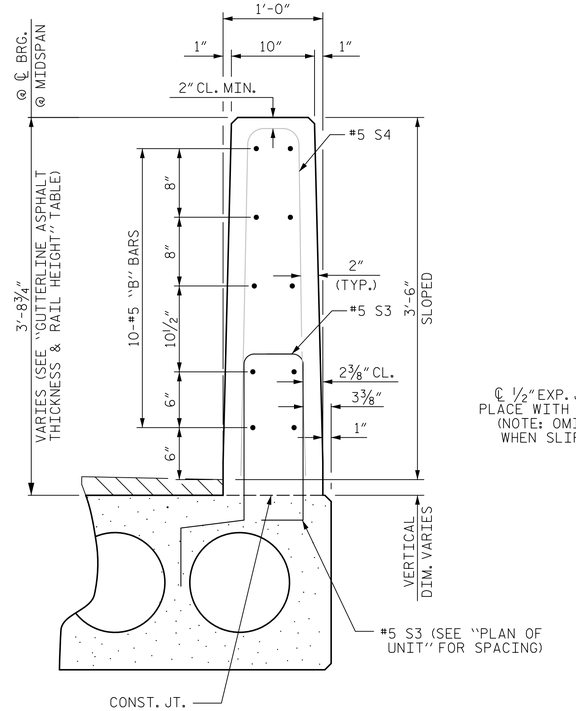
	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	9	55'-0"	495'-0"
TOTAL	11		605'-0"

GRADE 270 STRANDS

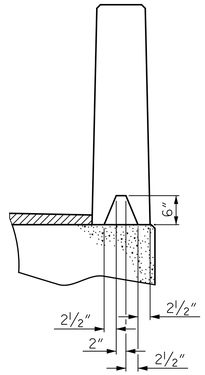
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

CONCRETE RELEASE STRENGTH

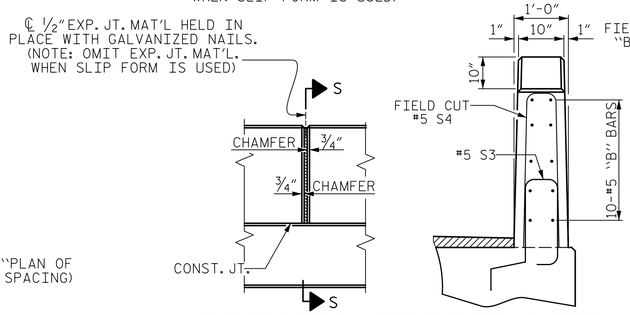
UNIT	PSI
55' UNITS	4900



VERTICAL CONCRETE BARRIER RAIL SECTION



SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

END VIEW

SIDE VIEW

END OF RAIL DETAILS

PROJECT NO. B-5999
WILSON COUNTY
STATION: 15+14.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB
DocuSigned by: James J. Barcomb
8/29/2018

ASSEMBLED BY : M. WRIGHT	DATE : 7/18
CHECKED BY : J. BARCOMB	DATE : 7/18
DRAWN BY : DGE 5/09	REV. 5/18 MAA/THC
CHECKED BY : BCH 6/09	

HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE	7/18
CHECKED BY	J. BARCOMB	DATE	7/18
DESIGN ENGINEER OF RECORD	J. BARCOMB	DATE	7/18

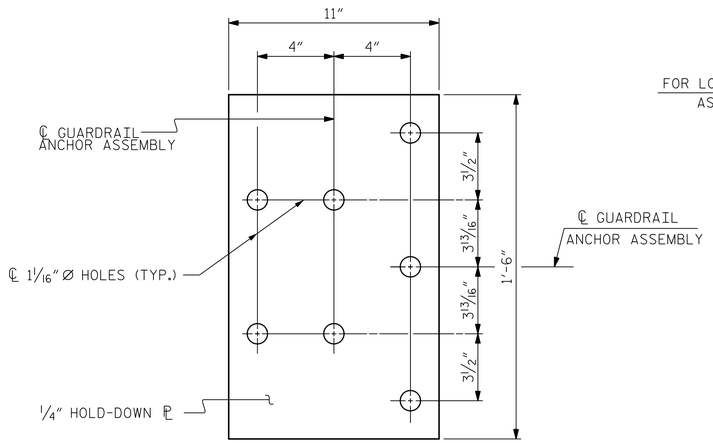
DWG. NO. 6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

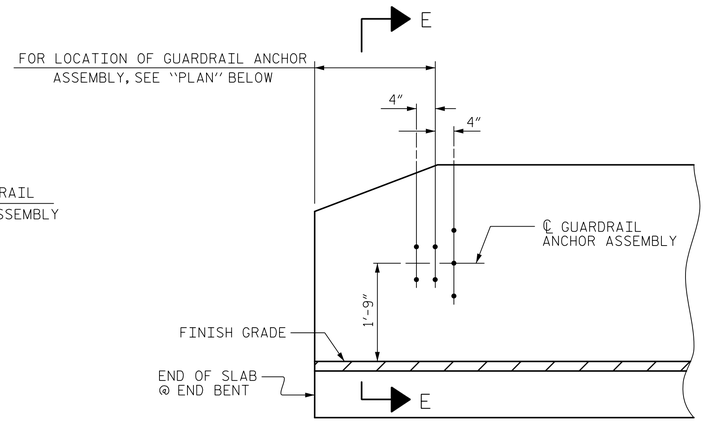
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-5
1			3			TOTAL SHEETS
2			4			13

STD. NO. 21"PCS3_33_90S

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



PLAN



ELEVATION

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4″ HOLD DOWN PLATE AND 7 - 7/8″ Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8″ Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

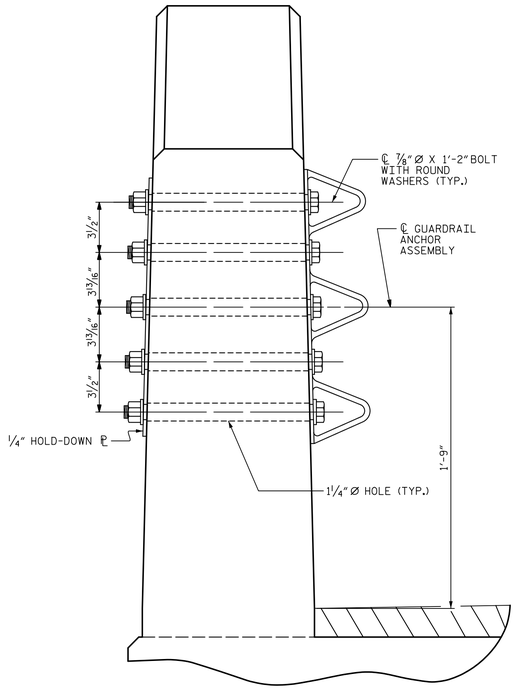
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

THE 1 1/4″ Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS

PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.

SKETCH SHOWING POINTS OF ATTACHMENT

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-5999

WILSON **COUNTY**

STATION: 15+14.50 -L-

DocuSigned by: James J. Barcomb 1B415C7D2A29488...

8/29/2018

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-7
1			3			TOTAL SHEETS
2			4			13

ASSEMBLED BY : M. WRIGHT		DATE : 7/18
CHECKED BY : J. BARCOMB		DATE : 7/18
DRAWN BY : MAA 5/10	REV. 1/15	MAA/TMG
CHECKED BY : GM 5/10	REV. 12/17	MAA/THC
	REV. 5/18	MAA/THC

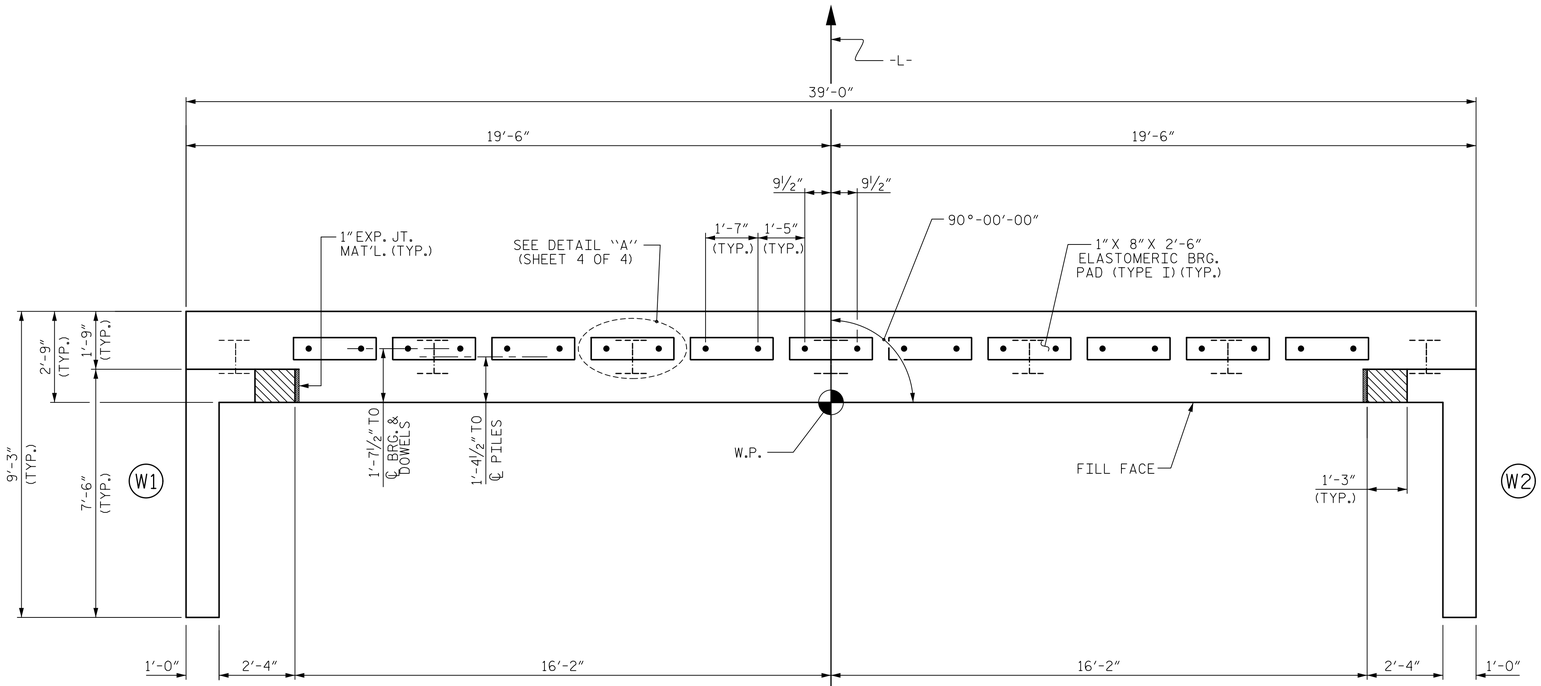
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HNTB HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

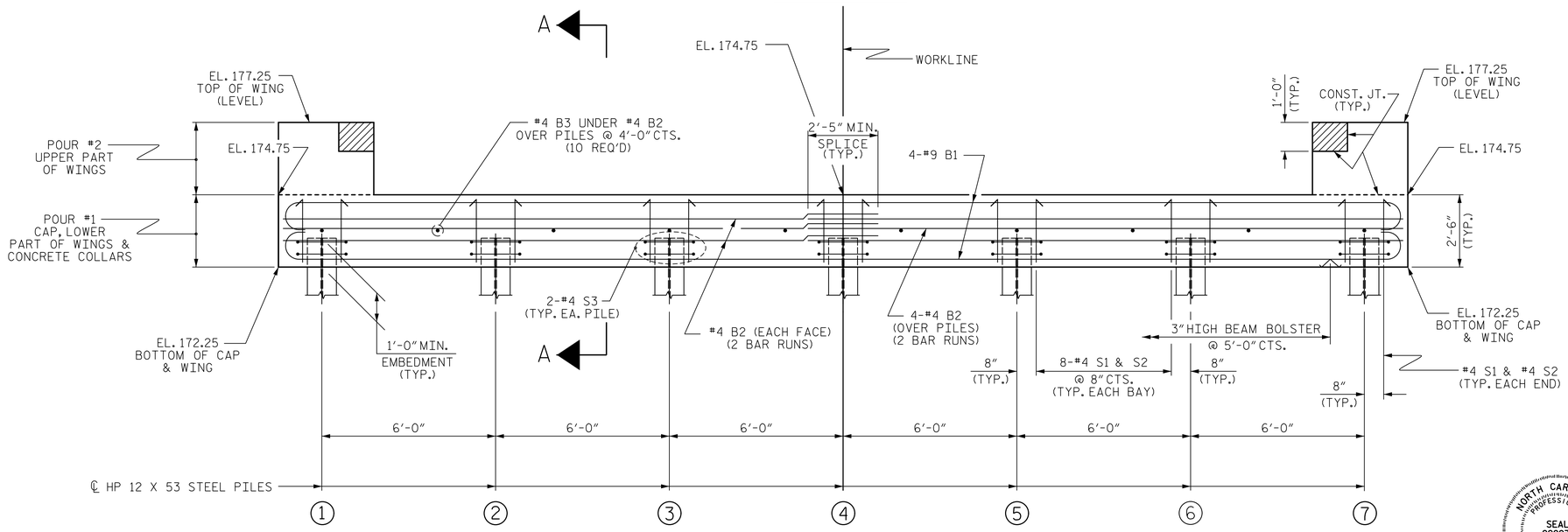
DRAWN BY	M. WRIGHT	DATE 7/18	DWG. NO. 7
CHECKED BY	J. BARCOMB	DATE 7/18	
DESIGN ENGINEER OF RECORD	J. BARCOMB	DATE 7/18	

(SHT 1) STD. NO. GRA3

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

DocuSigned by: James J. Barcomb 1B415C7D2A29488...

8/29/2018

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-8
1			3			TOTAL SHEETS
2			4			13

ASSEMBLED BY : M. WRIGHT	DATE : 7/18		
CHECKED BY : J. BARCOMB	DATE : 7/18		
DRAWN BY : DGE 01/10	REV. 4/15 MAA/TMG		
CHECKED BY : MKT 01/10			

HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE	7/18
CHECKED BY	J. BARCOMB	DATE	7/18
DESIGN ENGINEER OF RECORD	J. BARCOMB	DATE	7/18

DWG. NO. 8

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STD. NO. EB_33_90S

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4

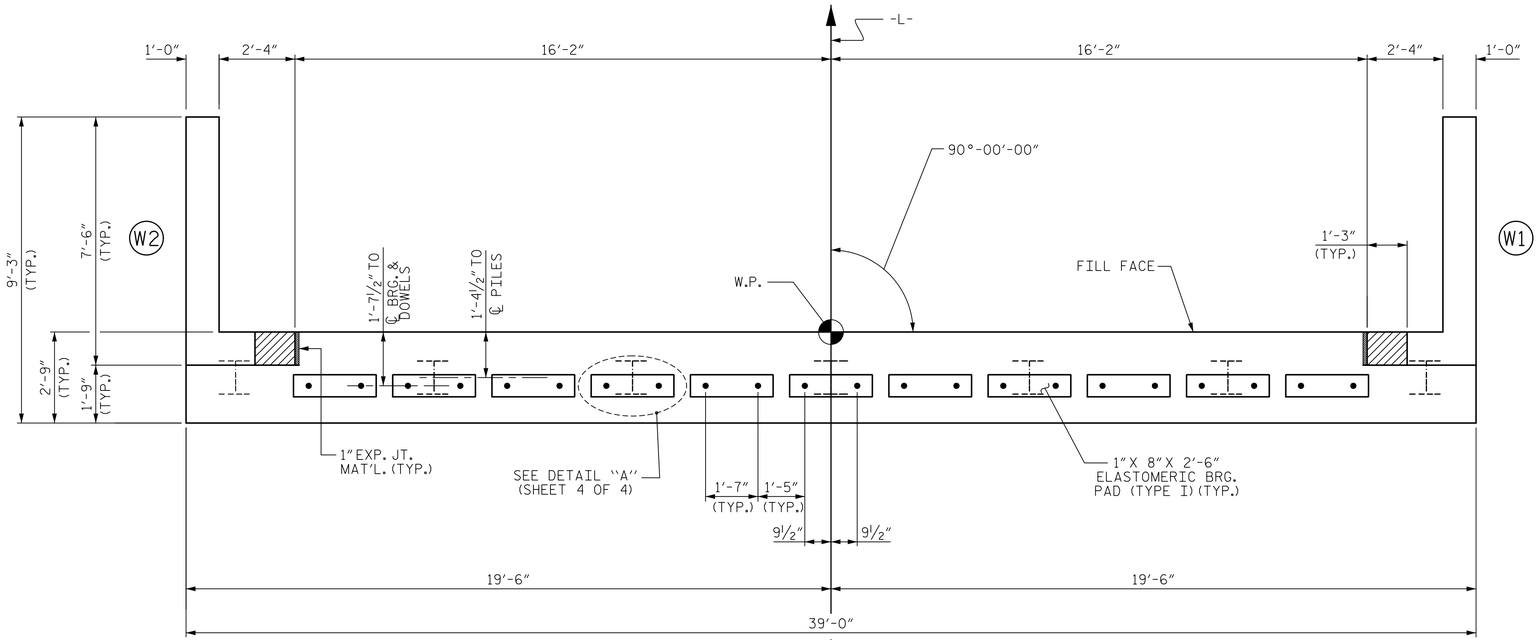
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

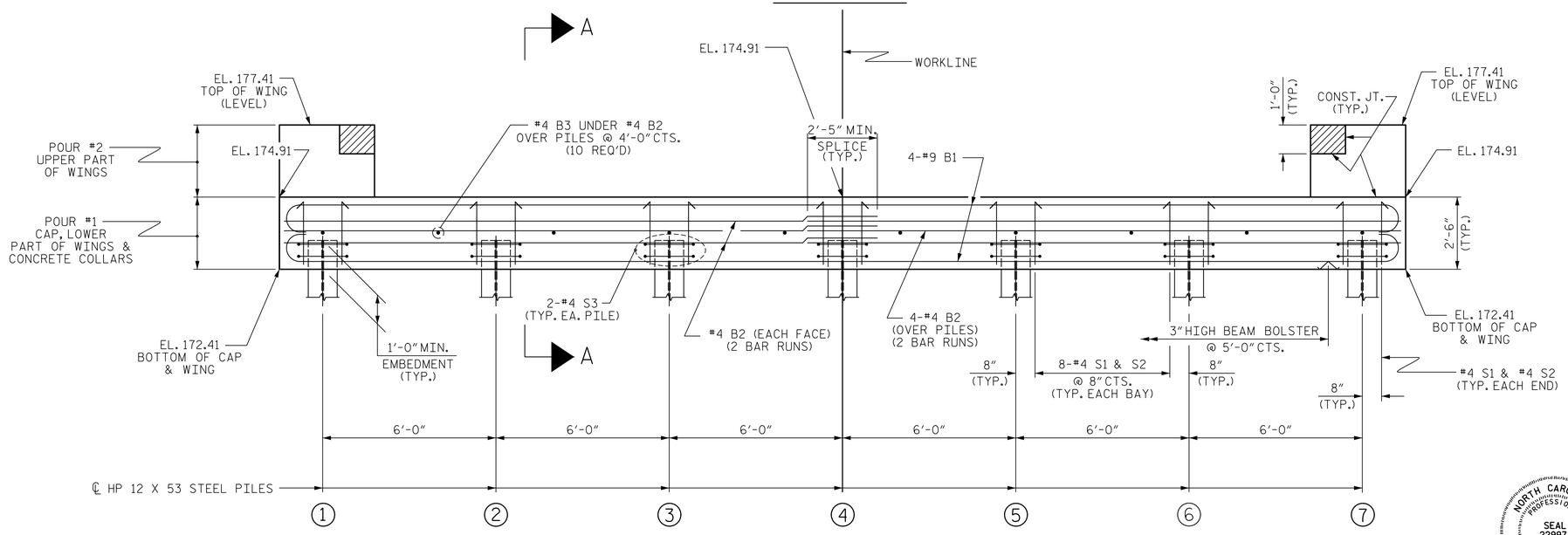
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB
DocuSigned by: James J. Barcomb 1B415C7D2A29488...
8/29/2018

PROJECT NO. B-5999
WILSON COUNTY
STATION: 15+14.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2

REVISIONS						SHEET NO. S-9
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 13
2			4			

ASSEMBLED BY : M. WRIGHT	DATE : 7/18
CHECKED BY : J. BARCOMB	DATE : 7/18
DRAWN BY : DGE 01/10	REV. 4/15 MAA/TMG
CHECKED BY : MKT 01/10	

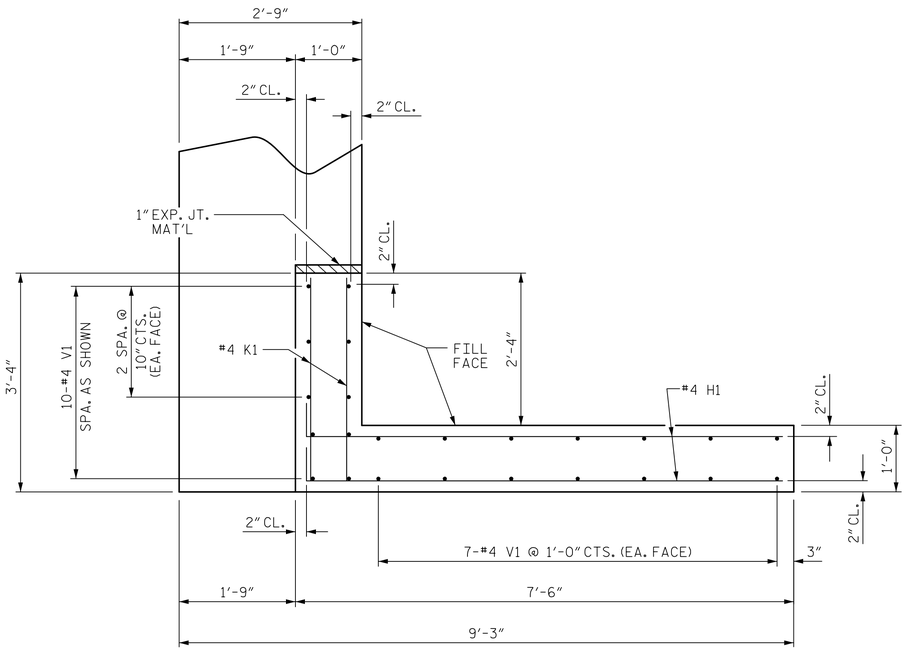
HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE 7/18
CHECKED BY	J. BARCOMB	DATE 7/18
DESIGN ENGINEER OF RECORD	J. BARCOMB	DATE 7/18

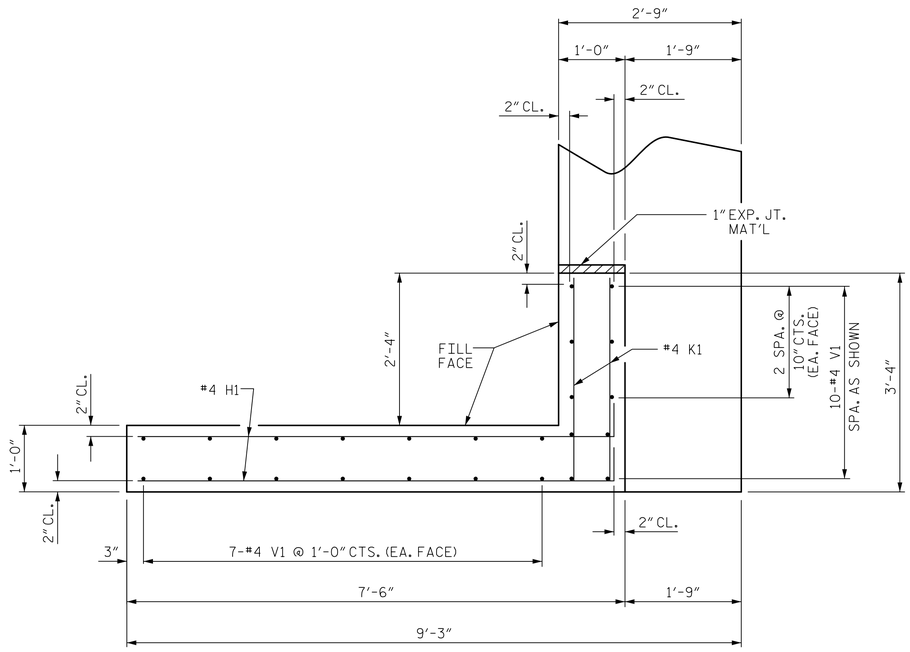
DWG. NO. 9

STD. NO. EB_33_90S

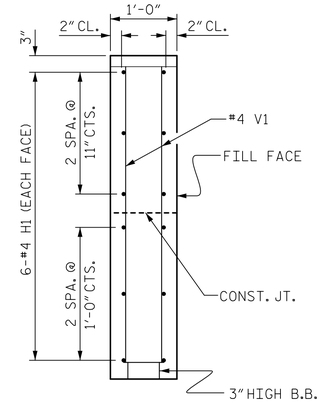
DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



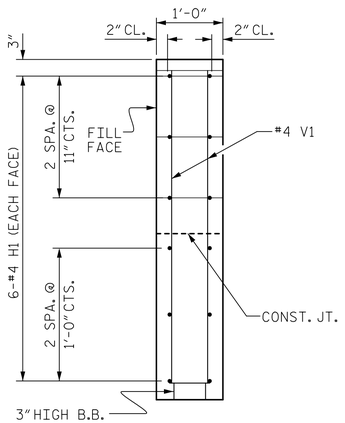
PLAN OF WING (W1)



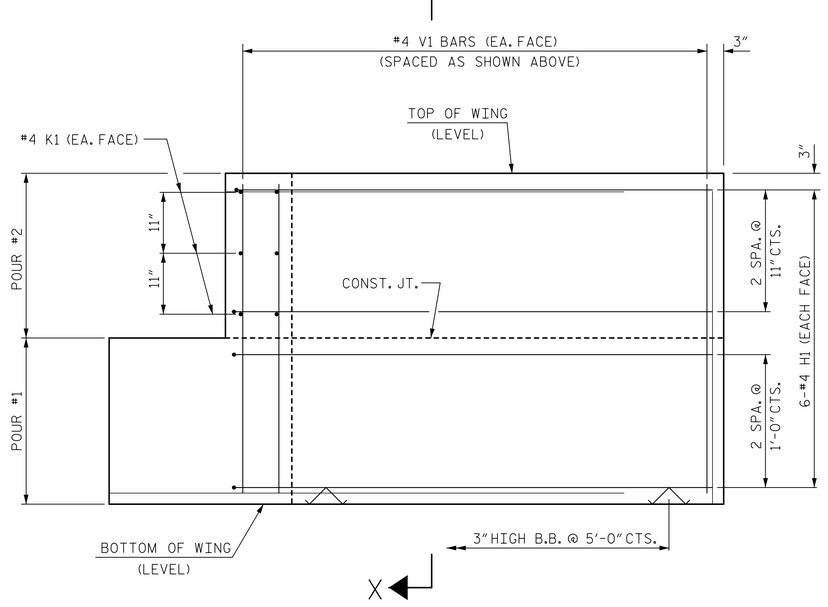
PLAN OF WING (W2)



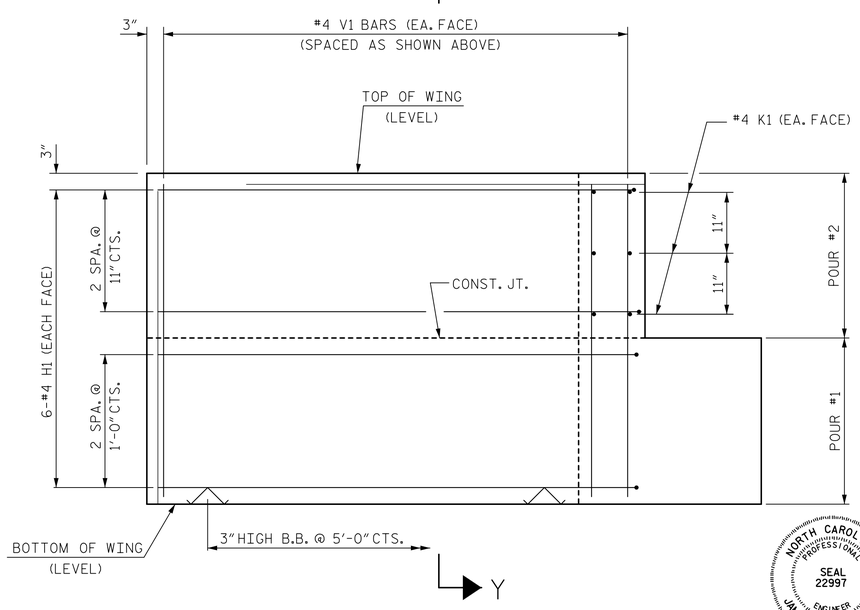
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

DocuSigned by: James J. Barcomb 1B415C7D2A29488...

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

8/29/2018

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT
WING DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-10
1			3			TOTAL SHEETS
2			4			13

WING DETAILS

ASSEMBLED BY : M. WRIGHT	DATE : 7/18		
CHECKED BY : J. BARCOMB	DATE : 7/18		
DRAWN BY : DGE 02/10	REV. 4/15 MAA/TMG		
CHECKED BY : MKT 02/10			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

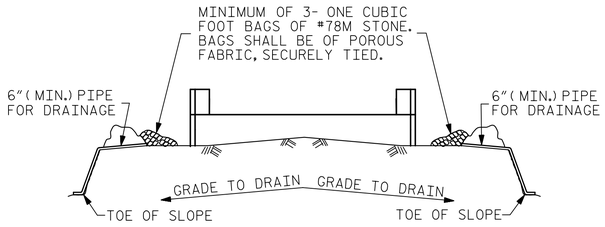
HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE	7/18
CHECKED BY	J. BARCOMB	DATE	7/18
DESIGN ENGINEER OF RECORD	J. BARCOMB	DATE	7/18

DWG. NO. 10

STD. NO. EB_33_90S

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4

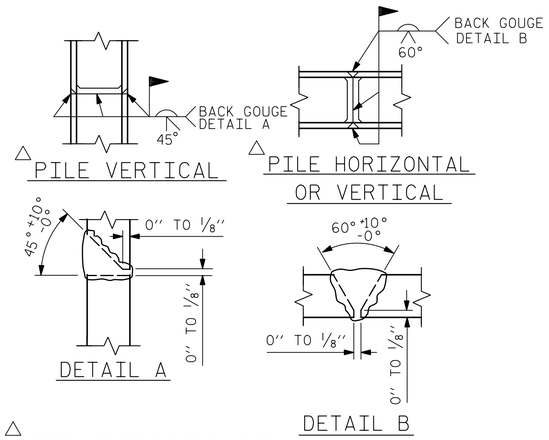


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

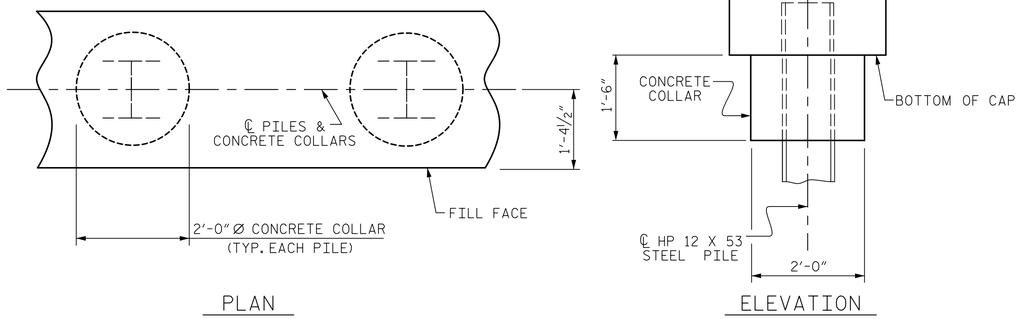
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



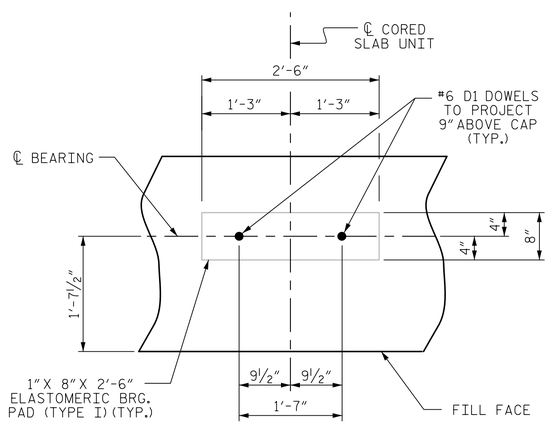
△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



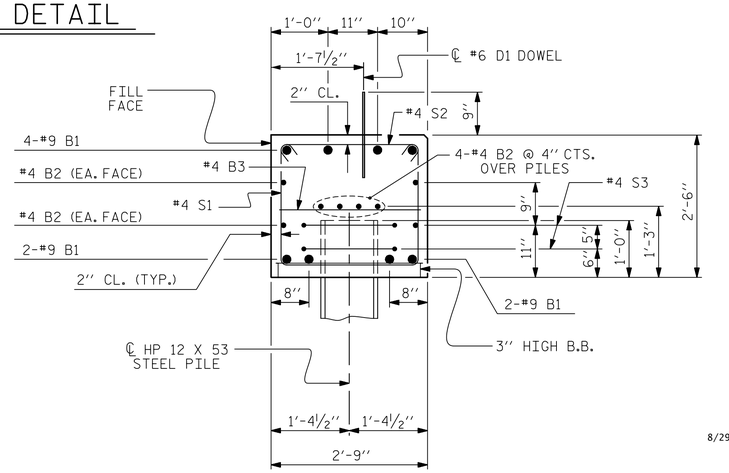
CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



DETAIL "A"

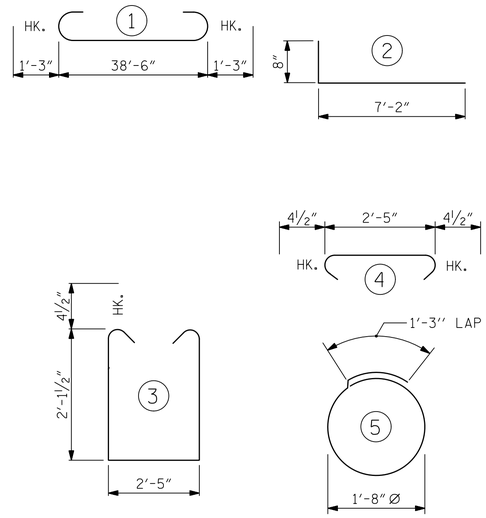
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 80	HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 80
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7
STEEL PILE POINTS NO: 7	STEEL PILE POINTS NO: 7

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	16	#4	STR	20'-7"	220
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	24	#4	2	7'-10"	126
K1	12	#4	STR	2'-11"	23
S1	50	#4	3	7'-5"	248
S2	50	#4	4	3'-2"	106
S3	14	#4	5	6'-6"	61
V1	48	#4	STR	4'-8"	150

REINFORCING STEEL (FOR ONE END BENT) 2115 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 12.4 C.Y.

POUR #2 UPPER PART OF WINGS 1.8 C.Y.

TOTAL CLASS A CONCRETE 14.2 C.Y.

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2 DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

DocuSigned by: James J. Barcomb 184I5C7D2A29488...

8/29/2018

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-11
1			3			TOTAL SHEETS
2			4			13

HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY M. WRIGHT DATE 7/18
CHECKED BY J. BARCOMB DATE 7/18
DESIGN ENGINEER OF RECORD J. BARCOMB DATE 7/18

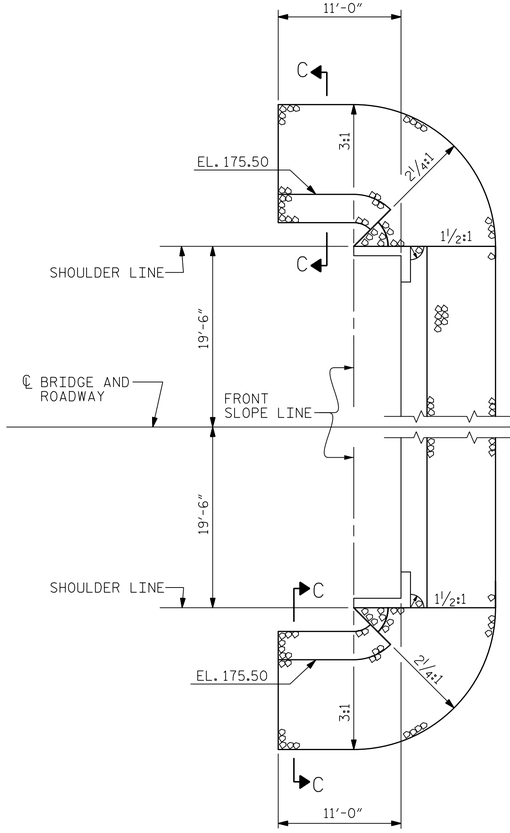
DWG. NO. II

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

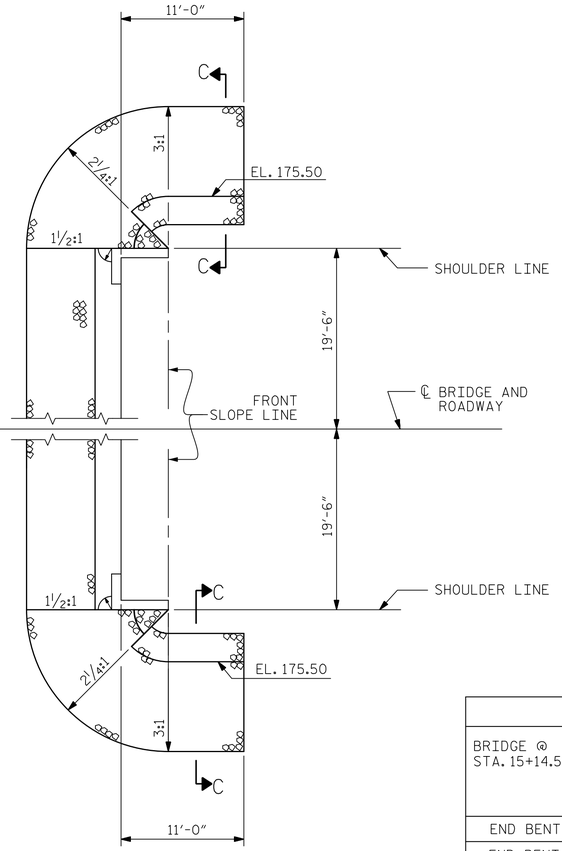
ASSEMBLED BY : M. WRIGHT	DATE : 7/18
CHECKED BY : J. BARCOMB	DATE : 7/18
DRAWN BY : DGE 12/09	REV. 4/17 MAA/THC
CHECKED BY : MKT 01/10	

STD. NO. EB_33_90S

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



END BENT 1



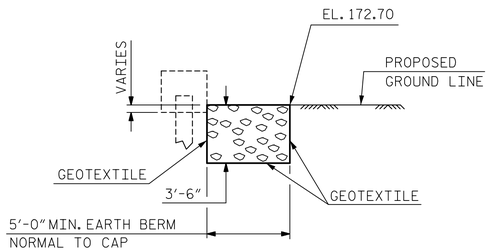
END BENT 2

NOTES :

FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

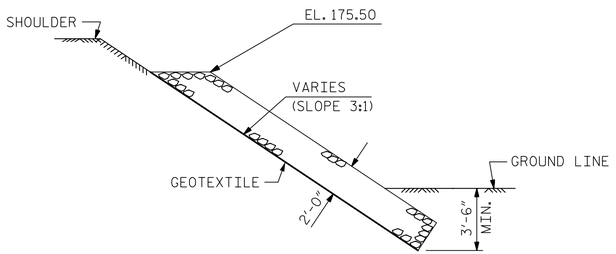
ESTIMATED QUANTITIES

BRIDGE @ STA. 15+14.50 -L-	RIP RAP CLASS II	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	110	105
END BENT 2	115	110



℄ SECTION

BERM RIP RAPPED



SECTION C-C

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

DocuSigned by: James J. Barcomb 18415C7D2A29488...

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

8/29/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

RIP RAP DETAILS

REVISIONS						SHEET NO.	S-12
NO.	BY	DATE	NO.	BY	DATE		
1			3			TOTAL SHEETS	13
2			4				

ASSEMBLED BY : M. WRIGHT DATE : 7/18
CHECKED BY : J. BARCOMB DATE : 7/18

DRAWN BY : REK 1/84
CHECKED BY : RDU 1/84

REV. 10/1/11 MAA/GM
REV. 12/21/11 MAA/GM
REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

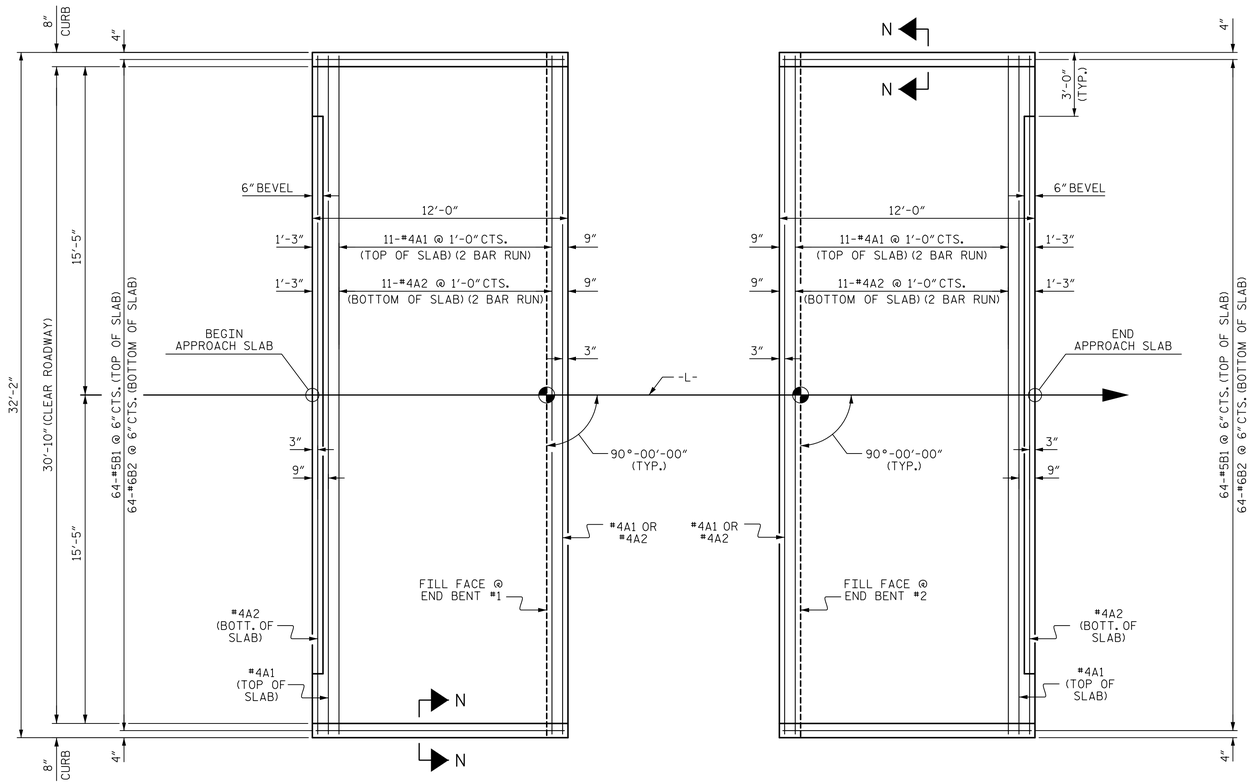
HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY M. WRIGHT DATE 7/18
CHECKED BY J. BARCOMB DATE 7/18
DESIGN ENGINEER OF RECORD J. BARCOMB DATE 7/18

DWG. NO. 12

STD. NO. RR1

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4



PLAN @ END BENT #1

PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

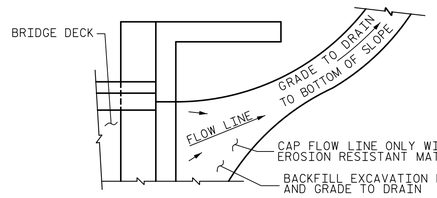
BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
✱ B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
✱ EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C.Y.	18.4

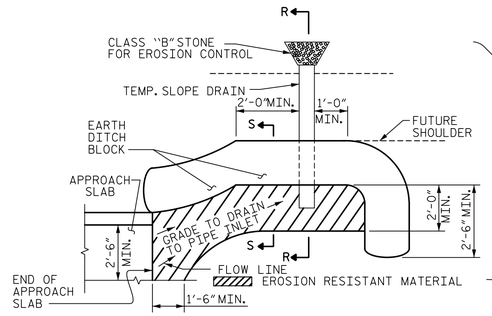
APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
✱ B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
✱ EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C.Y.	18.4



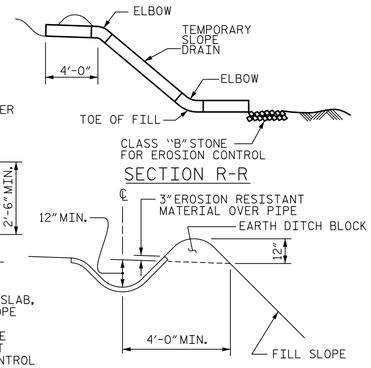
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

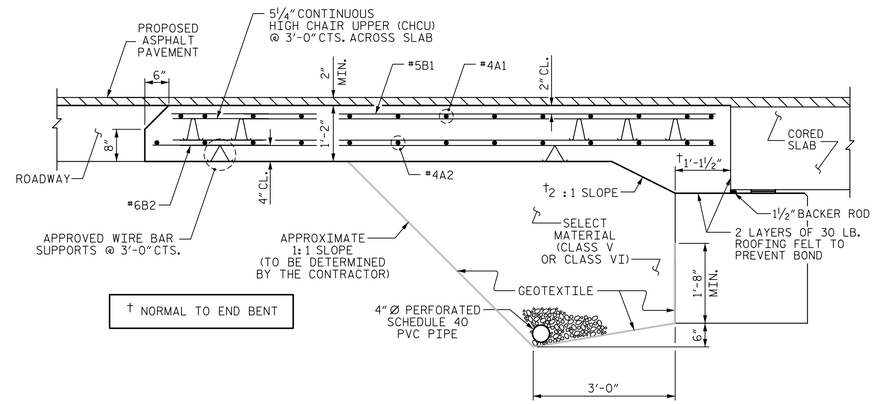
PLAN VIEW



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

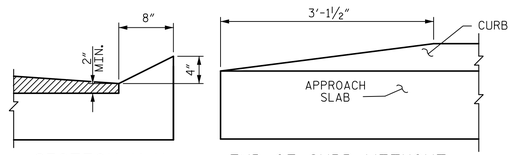
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



† NORMAL TO END BENT

SECTION THRU SLAB

(TYPE II - MODIFIED APPROACH FILL)



CURB DETAILS

SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

PROJECT NO. B-5999

WILSON COUNTY

STATION: 15+14.50 -L-

DocuSigned by: James J. Barcomb 1B415C7D2A29488...

NORTH CAROLINA PROFESSIONAL SEAL 22997 ENGINEER JAMES J. BARCOMB

8/29/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER) 90° SKEW

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-13
1			3			TOTAL SHEETS
2			4			13

ASSEMBLED BY : M. WRIGHT	DATE : 7/18	
CHECKED BY : J. BARCOMB	DATE : 7/18	
DRAWN BY : SHS/MAA 5-09	REV. 12-17	MAA/THC
CHECKED BY : BCH 5-09		

HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE 7/18
CHECKED BY	J. BARCOMB	DATE 7/18
DESIGN ENGINEER OF RECORD	J. BARCOMB	DATE 7/18

DWG. NO. 13

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STD. NO. BAS_33_90S

DocuSign Envelope ID: A3999859-7F71-4CA2-B250-65623BA1B1D4

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990