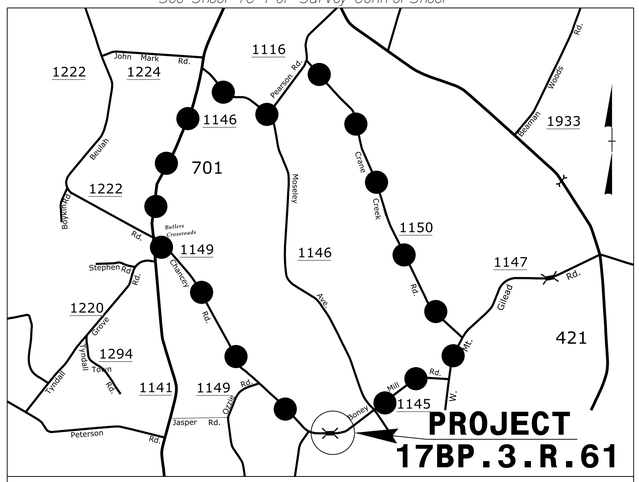
09/08/99

TIP PROJECT: 17BP.3.R.61

CONTRACT: DC-00212

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C For Survey Control Sheet



VICINITY MAP

DENOTES OFF–SITE DETOUR

100% SUBMITTAL – JANUARY 31, 2018

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

LOCATION: BRIDGE NO. 16 OVER BUCKHORN CREEK ON SR 1145 (BONEY MILL RD)

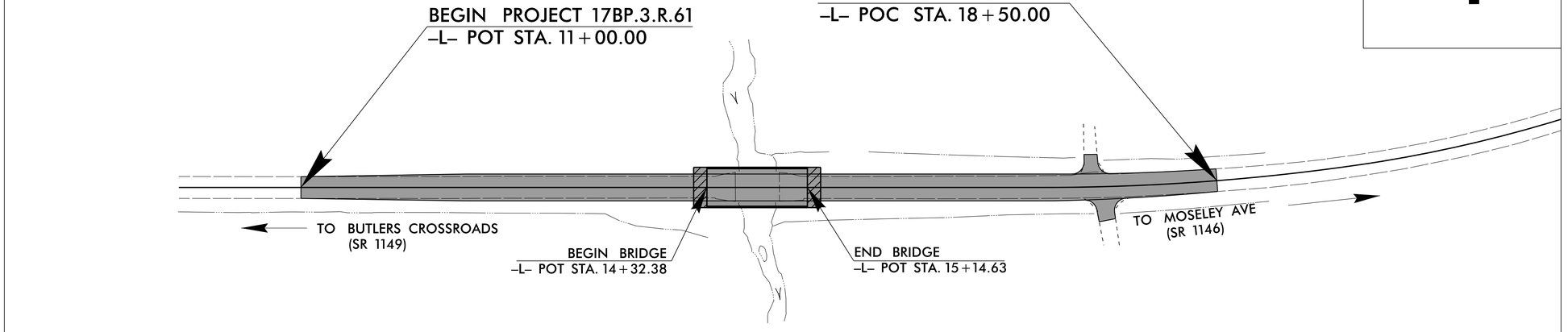
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.61	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.3.R.61		PE
17BP.3.R.61		ROW
17BP.3.R.61		CONST

NAD 83/NA 2011

4



NCDOT CONTACT: AL EDGERTON

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 2015 = 500
ADT 2040 = 1000
K = 60 %
D = 10 %
T = 12 % *
V = 60 MPH
* TTST = 6% DUAL = 6%
FUNC CLASS =
MINOR COLLECTOR
SUB–REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT 17BP.3.R.61 = 0.126 MI.
LENGTH OF STRUCTURE TIP PROJECT 17BP.3.R.61 = 0.016 MI.
TOTAL LENGTH OF TIP PROJECT 17BP.3.R.61 = 0.142 MI.

Prepared for the North Carolina Department of Transportation in the office of:

PLANS PREPARED BY: PARSONS 5540 Centerview Drive, Suite 217 Raleigh, NC 27606 Tel: 919-851-2000 Fax: 919-851-2003 NC FIRM LICENSE NO: C-0910 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

SUNGATE DESIGN GROUP, P.A. 800 JONES FRANKLIN ROAD SUITE 280 RALEIGH, NC 27606 TEL (919) 854-6240 FAX (919) 854-6259 ENGINEERING FIRM LICENSE NO: C-3362

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 17, 2017

LETTING DATE: APRIL 19, 2018

DAVID L. WILVER, PE
PROJECT ENGINEER

J. MATTHEW PICKENS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 026971 ENGINEER JOSHUA G. DALTON

DocuSigned by: Joshua G. Dalton 2/8/2018
SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 37950 ENGINEER JASON M. PICKENS

DocuSigned by: Jason M. Pickens 2/8/2018
SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

8/17/99

PLANS PREPARED BY :
PARSONS
RALEIGH, NORTH CAROLINA, (919) 854-1345
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 37950 ENGINEER JASON M. RICKENS
DocuSigned by: Jason M. Rickens
20CE4383207A4DB...
1/31/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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 MODIFIED METHOD III.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

GUARDRAIL:

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

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 POWER - FOUR COUNTY EMC

(JOE DAIL), PHONE - CENTURYLINK (WAYNE HALL)

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	
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modiefied Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	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.

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	1C
Location and Surveys	

SURVEY CONTROL SHEET 810016

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

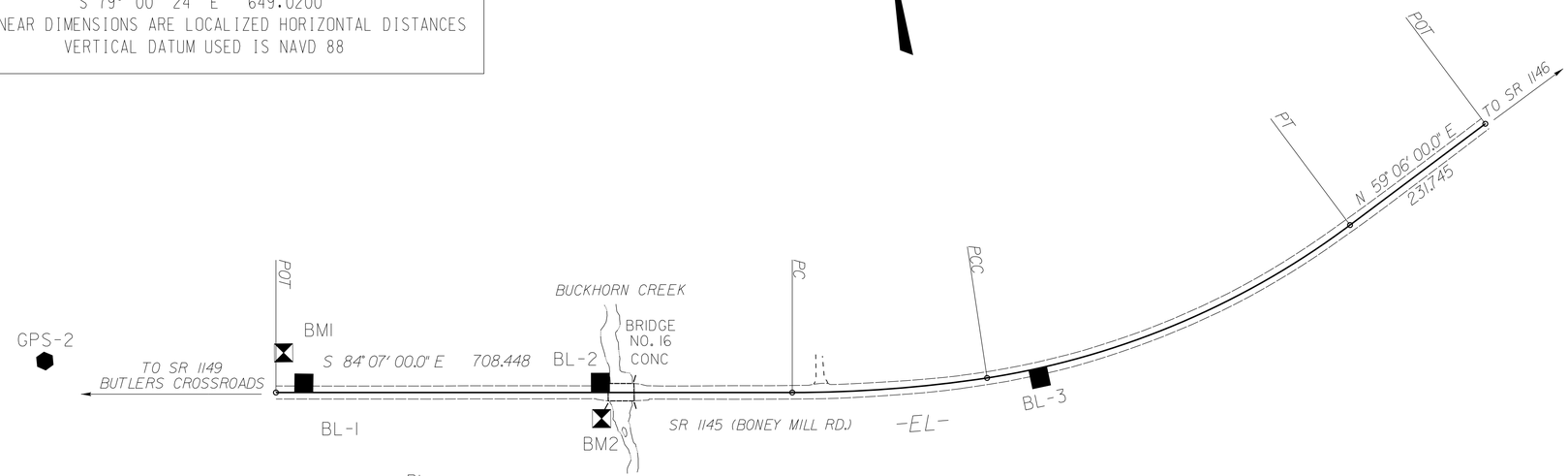
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 416930.6840(ft) EASTING: 2207470.9820(ft) ELEVATION: 126.4230(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989146
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS2" TO -L- STATION 10+00.00 IS S 79° 00' 24" E 649.0200'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NC GRID
NAD 83 NA 2011

BM1 ELEVATION = 94.82
N 416860 E 2208124
8" SPIKE SET IN 24" GUM TREE

BM2 ELEVATION = 84.93
N 416726 E 2208549
8" SPIKE SET IN 18" GUM TREE



GPS-1

BL

POINT	DESC.	NORTH	EAST	ELEVATION
GPS1	GPS CAP & REBAR	417852.3190	2206732.2120	141.47
GPS2	GPS CAP & REBAR	416930.6840	2207470.9820	126.42
BL1	TRV CAP & REBAR	416815.7600	2208147.6232	92.92
BL2	TRV CAP & REBAR	416775.3126	2208552.3081	85.40
BL3	TRV CAP & REBAR	416719.3619	2209152.4926	103.56

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	416806.919	2208108.092							
LINE			S 84°07'00.0" E	708.45					
PC	416734.300	2208812.808							
CURVE			S 88°22'49.3" E	268.04	08°32'23.8"(LT)	03°10'59.2"	268.29	134.39	1800.00
PCC	416726.724	2209080.744							
CURVE			N 73°03'30.0" E	540.32	27°55'00.0"(LT)	05°06'56.5"	545.71	278.38	1120.00
PT	416884.174	2209597.619							
LINE			N 59°06'00.0" E	231.74					
POT	417003.184	2209796.471							

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.

31-JAN-2018 09:44
J:\DOT\Sonia Bridge Replacement\17BP.3.R.61 Sampson 16\Roadway\Proj\810016_LS_1C_180130.dgn
$$$$USERNAME$$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	1D
Location and Surveys	

PROPOSED ALIGNMENT CONTROL SHEET 810016

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	416806.9185	2208108.0919
PC	17+08.65	416734.2801	2208813.0047
PT	19+76.74	416726.7243	2209080.7438
PC	19+76.74	416726.7243	2209080.7438
PT	25+22.45	416884.1737	2209597.6190
POT	27+54.19	417003.1843	2209796.4712

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.

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$$$$FRAME$$$$
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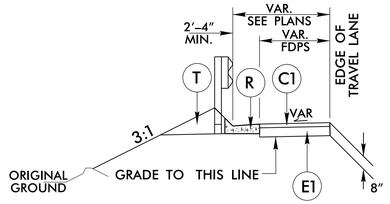
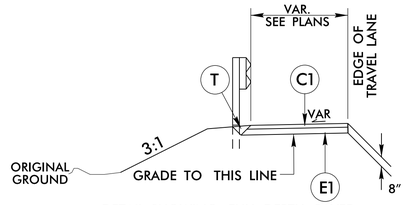
8/17/99

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2″ IN DEPTH.
E1	PROP. APPROX. 5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING)

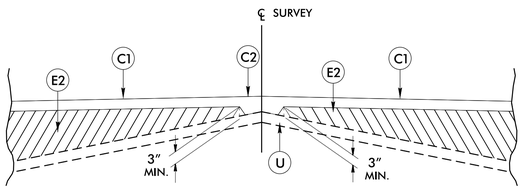
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



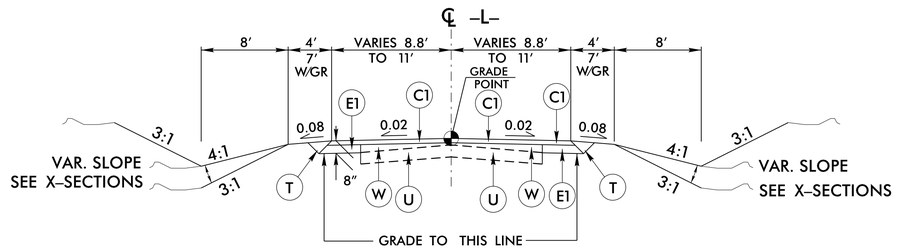
DETAIL SHOWING SHOULDER BERM GUTTER (SBG)
FROM STA. 13+96.00 TO STA. 14+21.50 –L– LT



DETAIL SHOWING FULL DEPTH PAVED SHOULDERS TO FACE OF GUARDRAIL
FROM STA. 13+57.39 TO STA. 13+96.00 –L– LT
FROM STA. 13+57.39 TO STA. 14+21.50 –L– RT
FROM STA. 15+25.50 TO STA. 15+89.62 –L– LT
FROM STA. 15+25.50 TO STA. 15+89.62 –L– RT

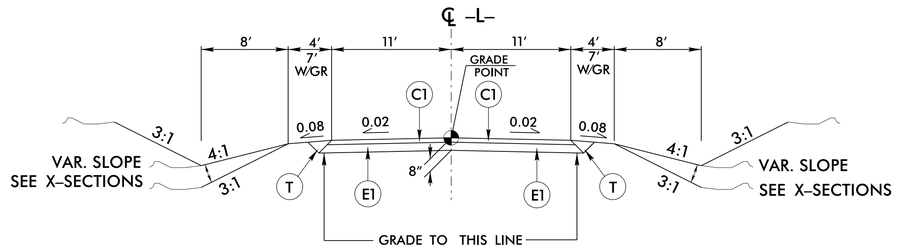


Detail Showing Method of Wedging



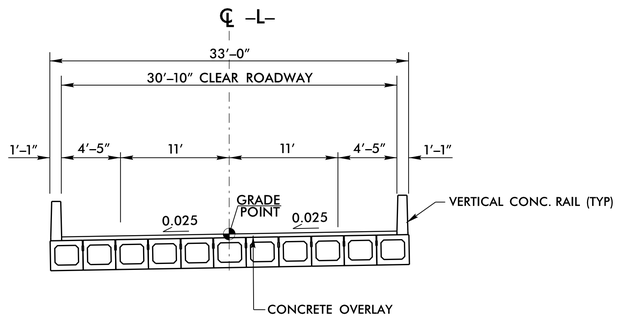
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
–L– STA. 11+00.00 TO –L– STA. 14+00.00
–L– STA. 16+25.00 TO –L– STA. 18+50.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
–L– STA. 14+00.00 TO –L– STA. 14+32.38 (BEGIN BRIDGE)
–L– STA. 15+14.63 (END BRIDGE) TO –L– STA. 16+25.00



TYPICAL SECTION ON STRUCTURE
–L– STA. 14+32.38 TO –L– STA. 15+14.63

PLANS PREPARED BY :
PARSONS
RALEIGH, NORTH CAROLINA, (919) 854-1345
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 37950 ENGINEER
JASON M. PICKENS
3/14/2018

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER
CLARK MONTGOMERY
3/17/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

14-MAR-2018 09:24
J:\Division 3 Bridge Replacement\17BP.3.R.61 Sampson 16\Roadway\Proj\17BP3R61_rdy_typ.dgn
$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	2C-1

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

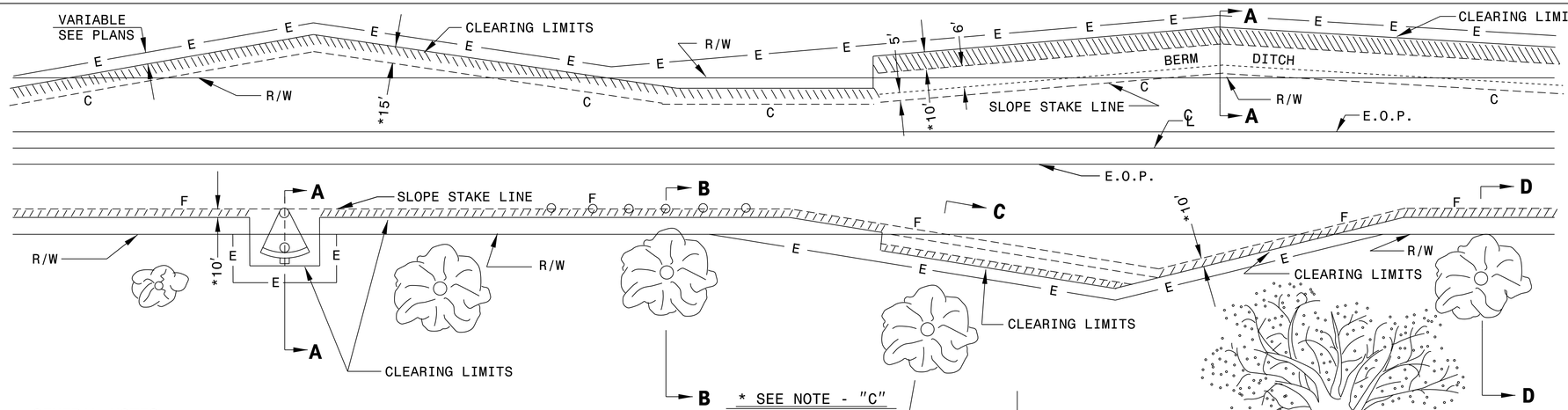
ENGLISH DETAIL DRAWING FOR

METHOD OF CLEARING

MODIFIED METHOD - III

SHEET 1 OF 1

200D03



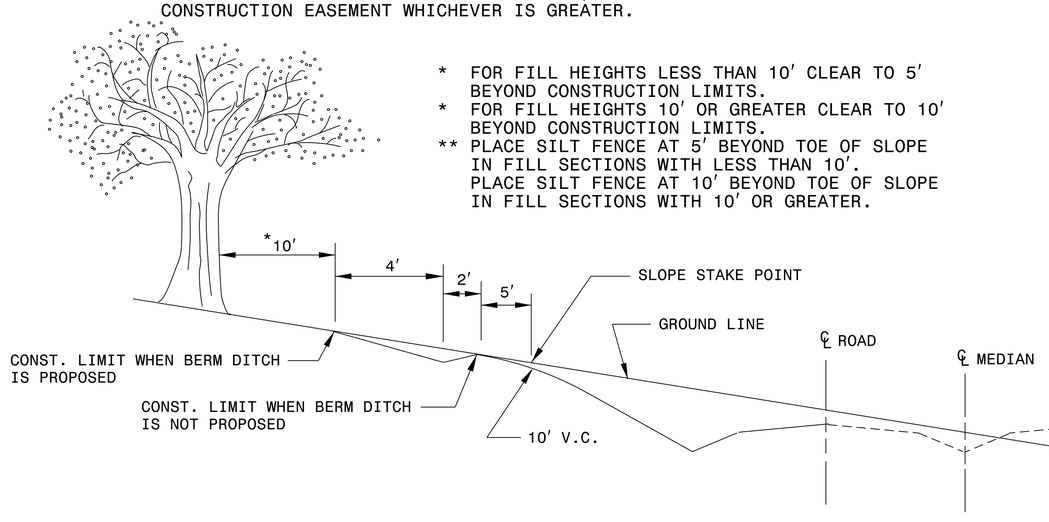
GENERAL NOTES:

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

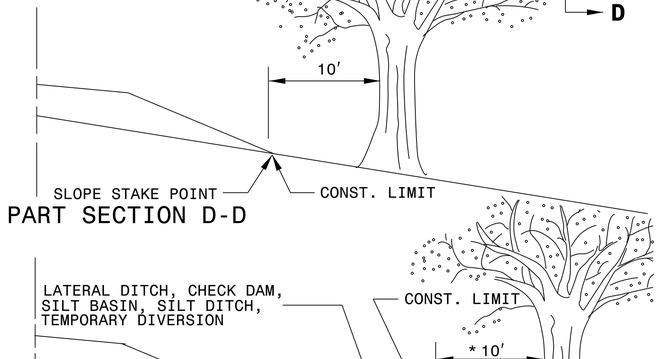
METHOD III CLEARING LIMITS

(A) CUTS -- CLEAR TO CONSTRUCTION LIMITS.
(B) FILLS - CLEAR TO 5′/10′ * BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
(C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.

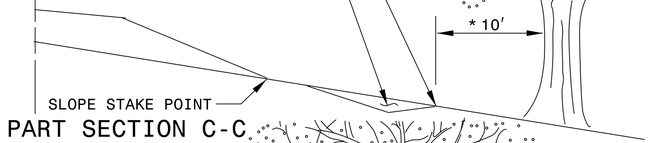
* FOR FILL HEIGHTS LESS THAN 10′ CLEAR TO 5′ BEYOND CONSTRUCTION LIMITS.
* FOR FILL HEIGHTS 10′ OR GREATER CLEAR TO 10′ BEYOND CONSTRUCTION LIMITS.
** PLACE SILT FENCE AT 5′ BEYOND TOE OF SLOPE IN FILL SECTIONS WITH LESS THAN 10′. PLACE SILT FENCE AT 10′ BEYOND TOE OF SLOPE IN FILL SECTIONS WITH 10′ OR GREATER.



SECTION A-A



PART SECTION D-D



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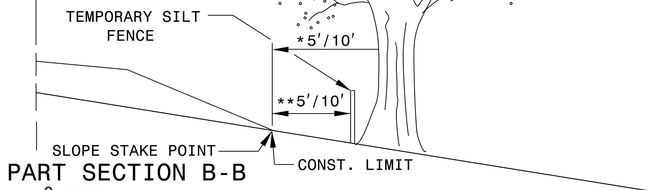
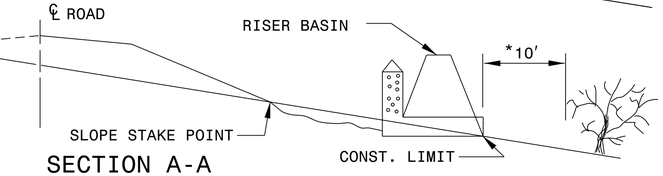


PART SECTION B-B



SECTION A-A

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

ENGLISH DETAIL DRAWING FOR

METHOD OF CLEARING

MODIFIED METHOD - III

SHEET 1 OF 1

200D03

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER
1/31/2018

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:	T.S.S.	DATE:	FEB.2000
MODIFIED BY:	K.A.K.	DATE:	AUG.2016
CHECKED BY:		DATE:	
FILE SPEC.:	kkempf/english/0200d301.dgn		

05-DEC-2017 09:31
S:\Contracts\Special Details\kkempf\english\0200D301_modified method III CandG.dgn
jhoverton
ATT CSD-292695

5/28/99

COMPUTED BY: JMP DATE: 12-2017
CHECKED BY: DLW DATE: 12-2017

PLANS PREPARED BY :
PARSONS
RALEIGH, NORTH CAROLINA, (919) 854-1345
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	UNDERCUT	EMBANK.	BORROW	WASTE
–L– 11+00.00	–L– 14+32.38 (BEGIN BRIDGE)	84		334	250	
–L– 15+14.63 (END BRIDGE)	–L– 18+50.00	305		783	478	
SUBTOTALS:		389		1,117	728	
SUBTOTALS:						
SUBTOTALS:						
PROJECT TOTALS:		389		1,117	728	
EST. SHOULDER MATERIAL				50	50	
LOSS DUE TO CLEARING & GRUBBING (PER GEOTECH REPORT)		–50			50	
PROJECT TOTAL		339		1,167	828	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					41	
GRAND TOTALS:		339		1,167	869	
SAY:		340			870	

UNDERCUT FOR EMBANKMENT STABILITY CONTINGENCY PER GEOTECH RECS: 200 CY
GRADE POINT UNDERCUT CONTINGENCY PER GEOTECH RECS: 50 CY
SELECT GRANULAR MATERIAL, CLASS III CONTINGENCY PER GEOTECH RECS: 200 CY
GEOTEXTILE FOR SOIL STABILIZATION CONTINGENCY PER GEOTECH RECS: 500 SY
SHALLOW UNDERCUT CONTINGENCY PER GEOTECH RECS: 100 CY
CLASS IV SUBGRADE STABLIZATION CONTINGENCY PER GEOTECH RECS: 200 TONS

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–L–	14+00	14+56	CL	116.16
–L–	14+92	15+30	CL	85.06
			TOTAL:	201.22
			SAY:	210

PAVEMENT BREAKING SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–L–	15+30	16+25	CL	191.99
			TOTAL:	191.99
			SAY:	200

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

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM.	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE: 12" 15" 18" 24" 30" 36" 42" 48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE THICKNESS OR GAUGE: 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	R.C. PIPE (CLASS III): 15" 18" 24" 30" 36" 42" 48"	R.C. PIPE (CLASS IV): 12" 15" 18" 24" 30" 36" 42" 48"	** R.C. PIPE (CLASS V)	*** R.C. PIPE CULVERTS, CONTRACTOR DESIGN	*** R.C. PIPE CULVERTS, CONTRACTOR DESIGN	15" 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') LIN. FT. A	B	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	C.B. STD. 840.01 OR STD. 840.02 PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	T.B.G.D.I. STD. 840.35	G.D.I. (N.S. FLAT) FRAME W/2 GRATES STD. 840.29	C.S. ELBOW NO. & SIZE	PIPE REMOVAL LIN.FT.	REMARKS
–L– 14+15	LT	401		85.7																															1														
		401	402		82.9	81.9								24																																			32	
TOTAL														24																					1														
SAY														24																					1														

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

W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL. "N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
NG = NON-GATING IMPACT ATTENUATOR TYPE 350 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH: STRAIGHT	SHOP CURVED	DOUBLE FACED	WARRANT POINT: APPROACH END	TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH: APPROACH END	TRAILING END	W: APPROACH END	TRAILING END	ANCHORS: XI MOD	XI	GREU TL-3	M-350	III	CAT-1	VI MOD	BIC	AT-1	IMPACT ATTENUATOR TYPE 350 TL-2: EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–L–	13+57.39	14+32.38	LT	75.00				14+32.38	4	7		50		1					1											
–L–	13+57.39	14+32.38	RT	75.00			14+32.38		4	7	50		1				1		1											
–L–	15+14.63	15+89.62	LT	75.00			15+14.63		4	7	50		1				1		1											
–L–	15+14.63	15+89.62	RT	75.00				15+14.63	4	7		50		1			1		1											
TOTAL				300.00																										
		DEDUCT FOR ANCHOR UNITS															4		4											
		GREU, TL-3 4 @ 50' =		–200																										
		TYPE III 4 @ 18.75' =		–75																										
SAY				25.00			8 EA ADDITIONAL GUARDRAIL POSTS										4		4											

COMPUTED BY: A. A. Nash DATE: 1/26/2018

CHECKED BY: M. J. Alexander DATE: 1/26/2018

(1-16-18)

PROJECT NO.	SHEET NO.
17BP.3.R.61	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

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

SUMMARY OF GEOTEXTILE FOR PAVEMENT STABILIZATION

LINE	Station	Station	Geotextile for Pavement Stabilization SY	Class IV Subgrade Stabilization TONS
CONTINGENCY				
		TOTAL SY/TONS:	0	0*

*Total tons of "Class IV Subgrade Stabilization" is only the estimated quantity for pavement stabilization and may only represent a portion of the subgrade stabilization quantity shown in the Item Sheets of the Proposal.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU	12	100	200	300		
			TOTAL CY/TONS/SY:		100	200**	300**	0	0

*ASU = Aggregate Subgrade
*AST = Aggregate Stabilization
**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
							TOTAL SY:	0

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL

LINE	Beginning Slope/ RSS (H:V)	Approx. Station	Ending Slope/ RSS (H:V)	Approx. Station	Location LT/RT	Reinforced Soil Slope (RSS) SY	Geocells SY	Coir Fiber Mat SY	Matting for Erosion Control SY
					TOTAL SY:	0	0	0*	0**

*Total square yards of "Coir Fiber Mat" is only the estimated quantity for slopes steeper than 2:1 (H:V) and may only represent a portion of the coir fiber mat quantity shown in the Item Sheets of the Proposal.
**Total square yards of "Matting for Erosion Control" is only the estimated quantity for RSS and may only represent a portion of the matting quantity shown in the Item Sheets of the Proposal.

SUMMARY OF PRE-SPLITTING OF ROCK

LINE	Beginning Rock Cut Slope (H:V)	Approx. Station	Ending Rock Cut Slope (H:V)	Approx. Station	Location LT/RT	Pre-splitting of Rock SY
					TOTAL SY:	0

SUMMARY OF SURCHARGES AND SURCHARGE WAITING PERIODS

LINE	Station	Station	Surcharge Height FT	MONTHS

SUMMARY OF SETTLEMENT GAUGES

Gauge No.	LINE and Station	Offset	
		Distance FT	Direction LT/RT
	TOTAL GAUGES (EACH):		

SUMMARY OF EMBANKMENT WAITING PERIODS

LINE	Station	Station	MONTHS

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS

8/17/99

PLANS PREPARED BY :

PARSONS
RALEIGH, NORTH CAROLINA, (919) 854-1345
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258
ENGINEERING LICENSE NO. C-990

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	4

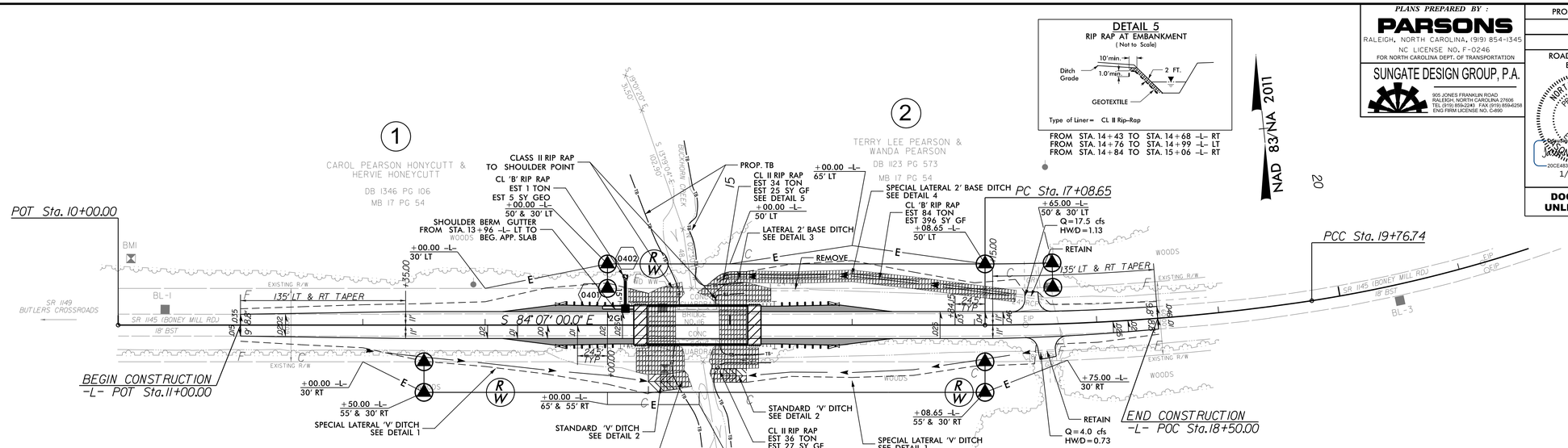
R/W SHEET NO.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 37950 ENGINEER JOSHUA G. PATON
20CE4830AA4A4A7...
1/31/2018

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 026971 ENGINEER JOSHUA G. PATON
1089ADF...
1/31/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

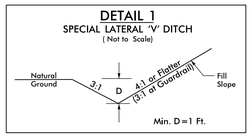


-L-

PI Sta 18+42.94	PI Sta 22+55.12
△ = 8° 32' 01.2" (LT)	△ = 27° 55' 00.0" (LT)
D = 3° 10' 59.2"	D = 5° 06' 56.5"
L = 268.09'	L = 545.71'
T = 134.30'	T = 278.38'
R = 1,800.00'	R = 1,120.00'
R.O.= 147'	R.O.= EXIST.
SE = 0.06	SE = 0.06
DS = 60 MPH	DS = 55 MPH

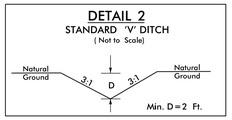
SEE SHEETS S16-ITHRU S16-18 FOR STRUCTURE PLANS

DETAIL 1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



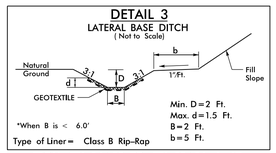
FROM STA. 12+00 TO STA. 14+33 -L- RT
FROM STA. 15+14 TO STA. 17+50 -L- RT

DETAIL 2
STANDARD 'V' DITCH
(Not to Scale)



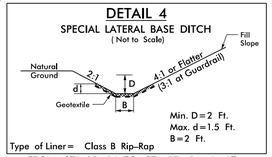
FROM STA. 14+33 TO STA. 14+53 -L- RT
FROM STA. 14+96 TO STA. 15+14 -L- RT

DETAIL 3
LATERAL BASE DITCH
(Not to Scale)



Type of Liner = Class B Rip-Rap
FROM STA. 14+89 TO STA. 15+14 -L- LT

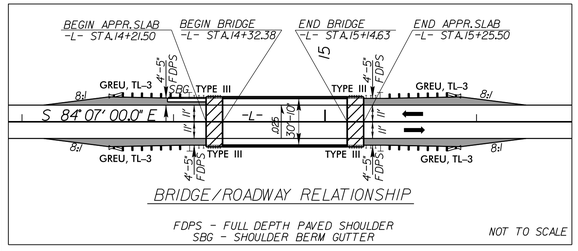
DETAIL 4
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner = Class B Rip-Rap
FROM STA. 15+14 TO STA. 17+34 -L- LT

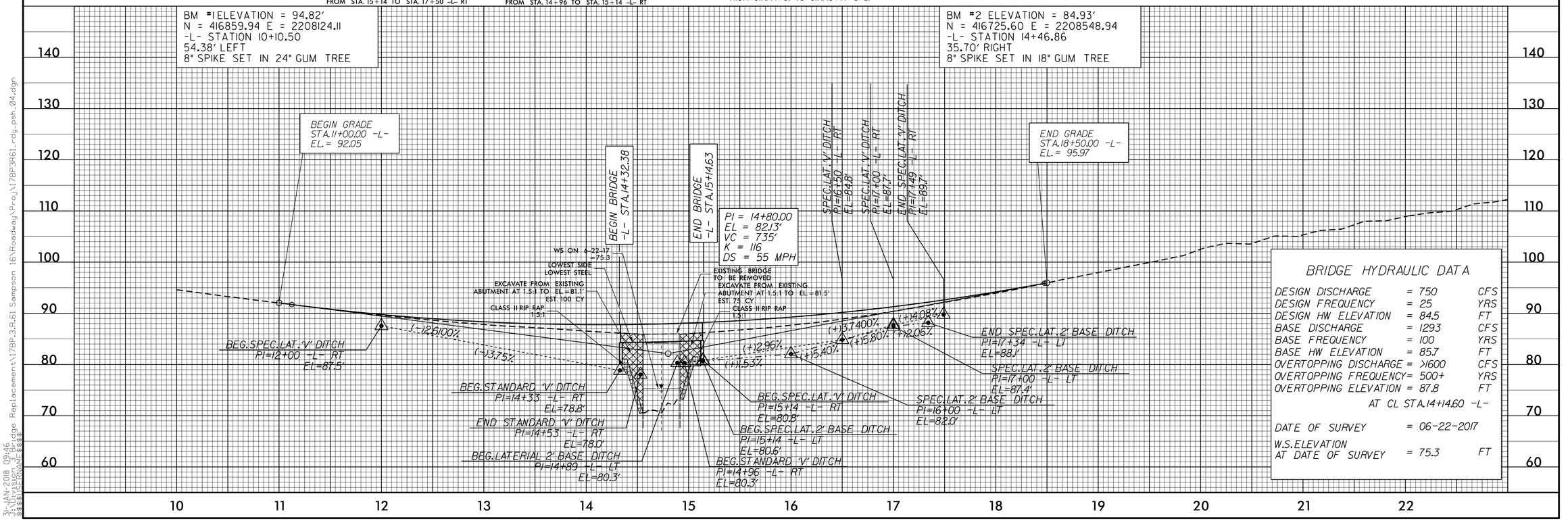
DETAIL 5
RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner = CL II Rip-Rap
FROM STA. 14+43 TO STA. 14+68 -L- RT
FROM STA. 14+76 TO STA. 14+99 -L- LT
FROM STA. 14+84 TO STA. 15+06 -L- RT



BM #1 ELEVATION = 94.82'
N = 416859.94 E = 2208124.11
-L- STATION 10+10.50
54.38' LEFT
8" SPIKE SET IN 24" GUM TREE

BM #2 ELEVATION = 84.93'
N = 416725.60 E = 2208548.94
-L- STATION 14+46.86
35.70' RIGHT
8" SPIKE SET IN 18" GUM TREE



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 750	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 84.5	FT
BASE DISCHARGE	= 1293	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 85.7	FT
OVERTOPPING DISCHARGE	= >1600	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 87.8	FT
	AT CL STA.14+14.60 -L-	
DATE OF SURVEY	= 06-22-2017	
W.S. ELEVATION AT DATE OF SURVEY	= 75.3	FT

31-JAN-2018 09:46
J:\Division 3 Bridge Replacement\17BP.3.R.61 Sampson 16\Roadway\Proj\17BP3R61_rdy_psh_04.dgn
$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

SAMPSON COUNTY

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS APPEAR IN "ROADWAY STANDARD DRAWINGS"- PROJECT SERVICES UNIT - 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
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

PROJECT PHASING

PHASE 1

STEP 1: USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, CONTRACTOR TO INSTALL ALL ADVANCE WARNING SIGNS FOR DETOUR, KEEPING SIGNS COVERED (SEE TMP-2A AND ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 OF 9 AND 2 OF 9).

WORKING IN A CONTINOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 2.

STEP 2: CLOSE SR 1145 (BONEY MILL RD) TO TRAFFIC, UNCOVER ALL ADVANCE WARNING SIGNS FOR ROAD CLOSURE AND SHIFT TRAFFIC TO TEMPORARY DETOUR.

STEP 3: DISMANTLE AND REMOVE EXISTING BRIDGE NO. 16 OVER BUCKHORN CREEK.

STEP 4: COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY WIDENING AND PAVING (SEE ROADWAY PLANS).

STEP 5: CONTRACTOR TO PLACE FINAL PAVEMENT MARKINGS (PAINT) ON SR 1145 (BONEY MILL RD).

WORKING IN A CONTINOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 6.

STEP 6: USING ROADWAY STANDARD DRAWINGS NO. 1101.04, SHEET 1 OF 1, REMOVE ALL ADVANCE WARNING SIGNS FOR ROAD CLOSURE, ALL TRAFFIC CONTROL DEVICES AND OPEN SR 1145 (BONEY MILL RD) TO TRAFFIC.

PROJECT NOTES

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATIONS MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATIONS.

SIGNING

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

CONTRACTOR WILL PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS, UNLESS OTHERWISE NOTED.

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

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

TRAFFIC CONTROL DEVICES

E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICENT LENGTH TO CLOSE ENTIRE ROADWAY.

LOCAL NOTES

1. CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAYS WITHIN THE PROJECT LIMITS AT ALL TIMES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

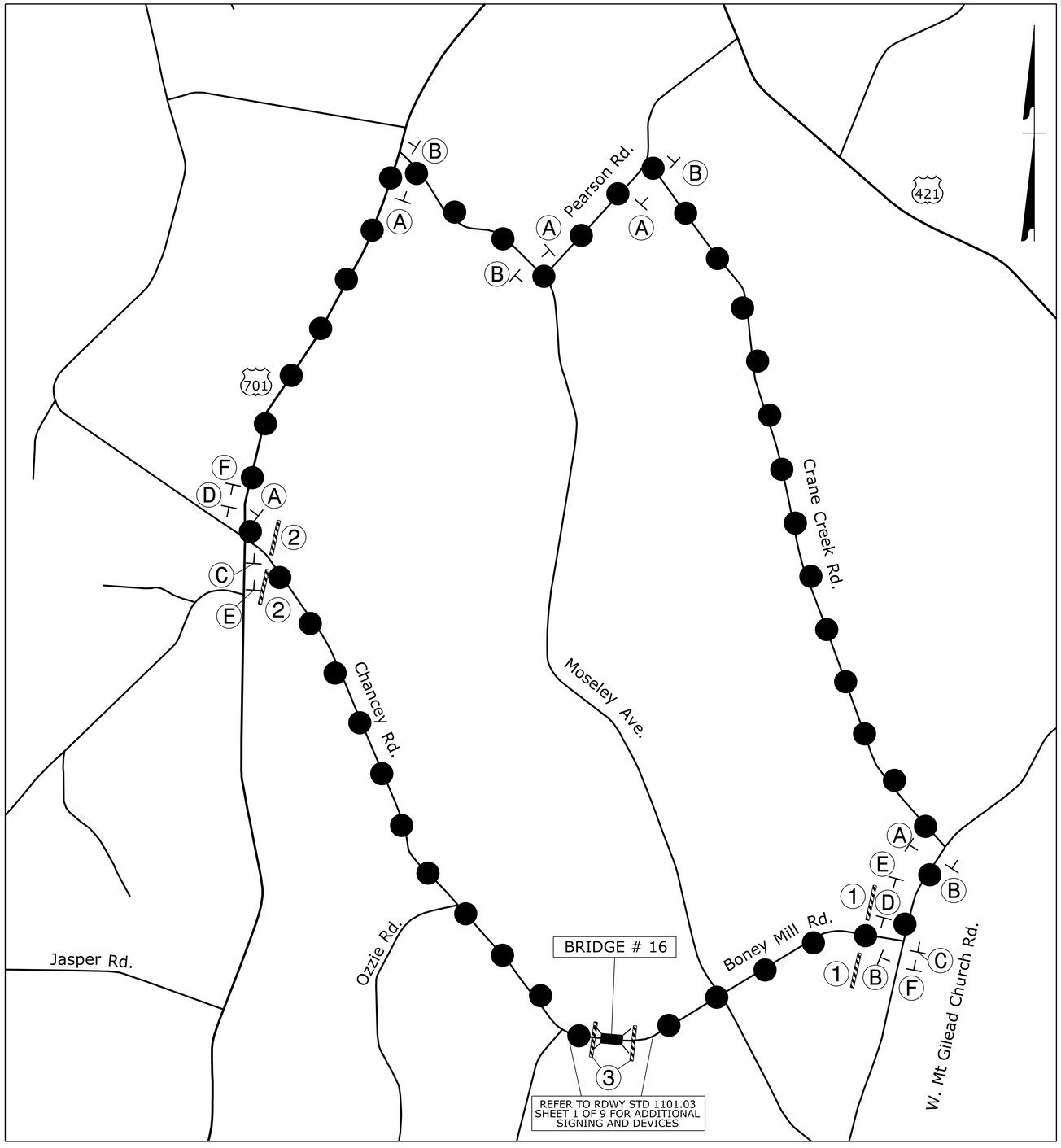
PLANS PREPARED BY :
PARSONS
RALEIGH, NORTH CAROLINA, (919) 854-1345
NC LICENSE NO. F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 37950 ENGINEER JASON M. PICKENS
JASON M. PICKENS
20CE48382F2A4DE...
3/31/2018

EDWARD S. ROBBINS, PE *TRAFFIC CONTROL PROJECT ENGINEER*

J. MATTHEW PICKENS, PE *TRAFFIC CONTROL ENGINEER*

PROJ. REFERENCE NO.	SHEET NO.
17BP.3.R.61	TMP-2A



A

BONEY MILL ROAD — SP-1

DETOUR — M4-8, 24″ X 12″

M6-1, 21″ X 15″

B

BONEY MILL ROAD — SP-1

DETOUR — M4-8, 24″ X 12″

M6-1 L, 21″ X 15″

C

BONEY MILL ROAD — SP-1

DETOUR — M4-8, 24″ X 12″

M6-3, 21″ X 15″

D

BONEY MILL ROAD — SP-1

END DETOUR — M4-8 A, 24″ X 18″

ROAD CLOSED AHEAD — W20-3, 48″ x 48″

NEXT RIGHT — SP-4R, 42″ X 12″

E

ROAD CLOSED AHEAD — W20-3, 48″ x 48″

NEXT LEFT — SP-4L, 42″ X 12″

F

1

R11-3, 60″ x 30″

ROAD CLOSED
1.3 MILES AHEAD
LOCAL TRAFFIC ONLY
DETOUR

M4-10R, 48″ x 18″

TYPE III BARRICADE

2

R11-3, 60″ x 30″

ROAD CLOSED
2.7 MILES AHEAD
LOCAL TRAFFIC ONLY
DETOUR

M4-10L, 48″ x 18″

TYPE III BARRICADE

3

R11-2, 48″ x 30″

ROAD CLOSED

TYPE III BARRICADE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY :

PARSONS

RALEIGH, NORTH CAROLINA, (919) 854-1345

NC LICENSE NO. F-0246

FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 37950 ENGINEER JASON M. PARSONS — Jason Parsons 20CE483822F8406B... — 1/31/2018

SR 1145 BONEY MILL RD.
OFF-SITE DETOUR

SCALE:	NONE
DATE:	10/2017
DWG. BY:	JMP
DESIGN BY:	JMP
REVIEWED BY:	ESR

REVISIONS

CADD FILE

26-JAN-2018 12:31
J:\Division 3 Bridge Replacement\17BP.3.R.61 Sampson 16\Traffic\TrafficControl\TCP\17BP.3.R.61 Sampson 16_TC_TMP_02A.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
17BP.3.R.61	TMP-2B

SIGN NUMBER: SP-1
TYPE: D
QUANTITY: SEE PLANS

SIGN WIDTH: 4′-6″
HEIGHT: 2′-0″
TOTAL AREA: 9.0 Sq.Ft.

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

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT′L: 0.125″ (3.2 mm) ALUMINUM

NOTES:

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be Grade B, flourescent orange, retroreflective sheeting.
3. To be mounted with Detour signing.

DESIGN BY: JMP
PROJECT ID: 17BP.3.R.61
CHECKED BY: ESR
DIV: 3
DATE: OCTOBER 2017

BORDER
R=1.5"
TH=0.38"
IN=0.38"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																										Series/Size Text Length
		B	O	N	E	Y		M	I	L	L															C 2000
	6.3	4.3	4.8	4.5	3.7	3.8	6.0	5.1	2.1	4.0	3.1	6.3														41.4
		R	O	A	D																					C 2000
	18.6	4.3	4.5	4.7	3.3	18.6																				16.8

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
PARSONS
5941 CENTERVIEW DR., SUITE 201
RALEIGH, NORTH CAROLINA 27606
NC LICENSE NO: F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

APPROVED: _____ DATE: _____

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 37950 ENGINEER JASON MORRISON
11/31/2018
Jason Morrison
20CE483822FA40B...

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

TRANSPORTATION MANAGEMENT PLAN

SPECIAL SIGN DESIGNS

PROJECT: 17B.3.R.61

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
SAMPSON COUNTY

LOCATION: BRIDGE NO. 16 OVER BUCKHORN CREEK ON SR 1145 (BONEY MILL RD.)

TIP NO.	SHEET NO.
17BP.3.R.61	PMP - 1

APPROVED: DocuSigned by: Steve Miller 9FBC6C15CEEB486...

DATE: 2/27/2018

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 037026 STEVEN D. MILLER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

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

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

ROAD NAME	MARKING	MARKER
SR 1145 (BONEY MILL RD.)	PAINT	NONE

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

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

D) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

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

PAVEMENT MARKING SCHEDULE

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

PLAN PREPARED BY: SEPI Engineering

STEVE MILLER, P.E. PROJECT MANAGER

MAROUN ISHAK TRAFFIC ENGINEER

SEPI ENGINEERING & CONSTRUCTION

1025 Wade Avenue
Raleigh, NC 27605
Tel:919-789-9977
Fax:919-789-9591
License: C-2197

2/27/2018
8:27:20 AM
17BP3R61_SE17.045.01.BRG016\TP\Traffic\PMP\DESIGN\PMP DESIGN PLANS\PMP-1.dgn

TIP NO.	SHEET NO.
17BP.3.R.61	PMP-2

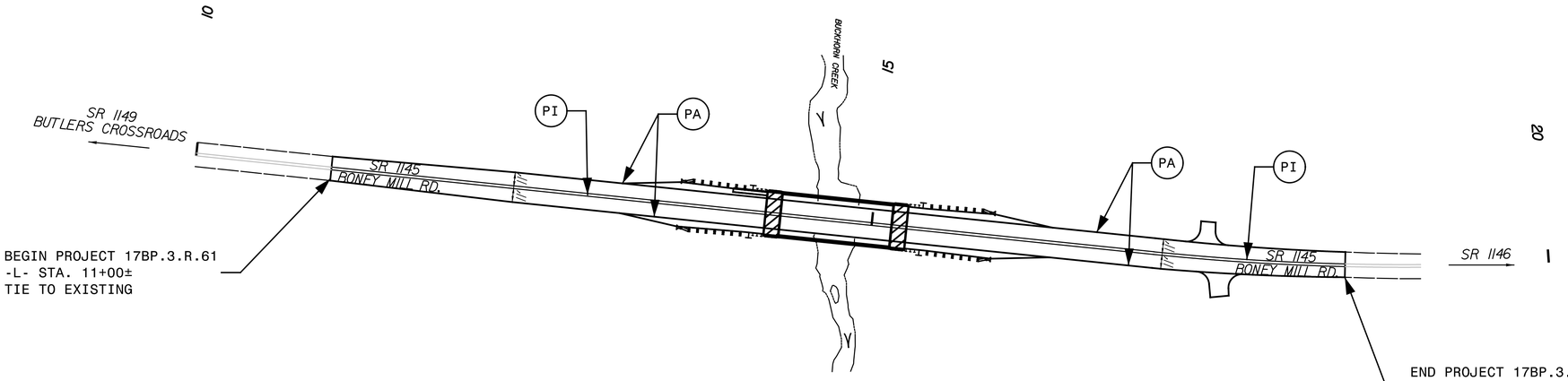
APPROVED: DocuSigned by: Steve Miller 9FBC8C15CEEB486...

DATE: 2/27/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SEPI ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel:919-789-9977
Fax:919-789-9591
License: C-2197

PAVEMENT MARKING DETAIL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.61	EC-1	

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

SAMPSON COUNTY

LOCATION: *BRIDGE NO. 16 OVER BUCKHORN CREEK ON SR 1145 (BONEY MILL RD)*

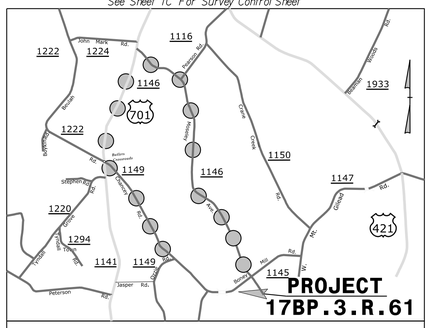
TYPE OF WORK: *GRADING, DRAINAGE, PAVING, AND STRUCTURE*

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 17, 2017

LETTING DATE:
APRIL 19, 2018

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C For Survey Control Sheet



VICINITY MAP

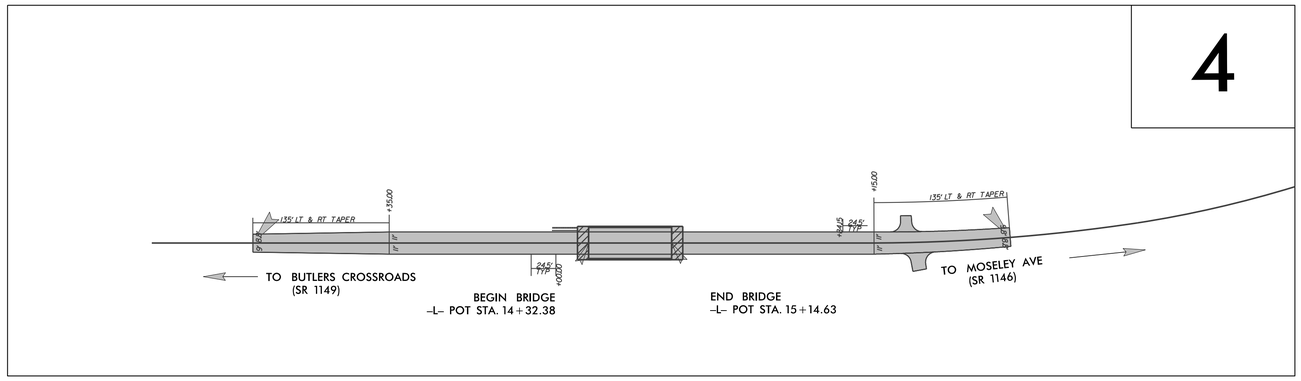
DENOTES OFF–SITE DETOUR

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	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SK
	Tiered Skimmer Basin	SK
	Infiltration Basin	

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

4



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III MOD.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDRIES.

GRAPHIC SCALE

50′ 25′ 0 50′ 100′

SCALE: 1″ = 50′

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 ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

Prepared in the Office of:

SUNGATE DESIGN GROUP, P.A.

905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

Designed by:

MATTHEW C. EDWARDS, EI ***3992***

NAME *LEVEL III CERTIFICATION NO.*

Reviewed in the Office of:

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

2018 STANDARD SPECIFICATIONS

Reviewed by:

MARK STALEY, EI, CPESC, CPSWQ

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.

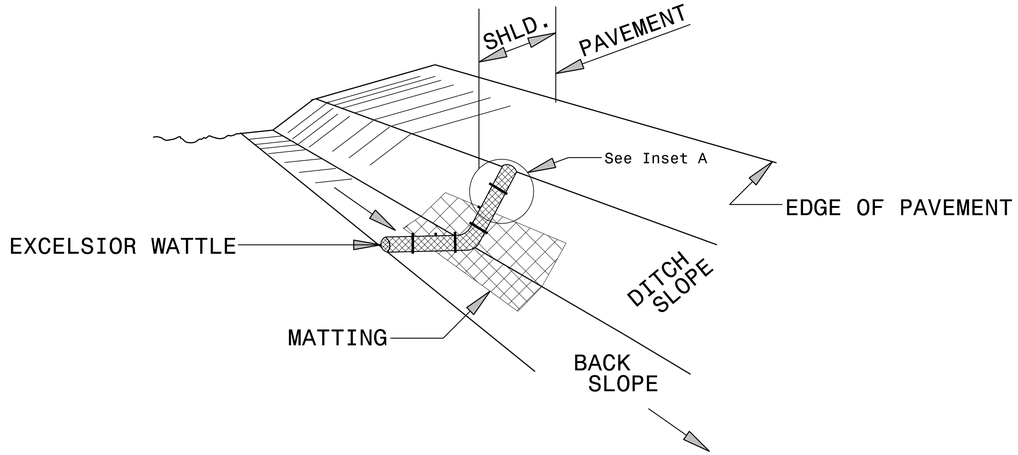
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

TIP PROJECT: 17BP.3.R.61

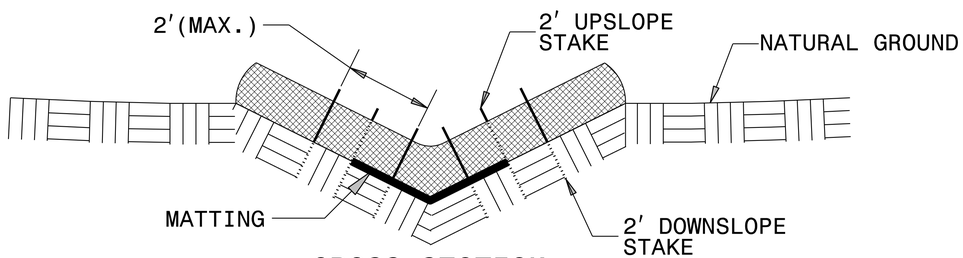
1/23/2018
17BP3R61_EC_dsn_psh_01.dgn
MCEdwards

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

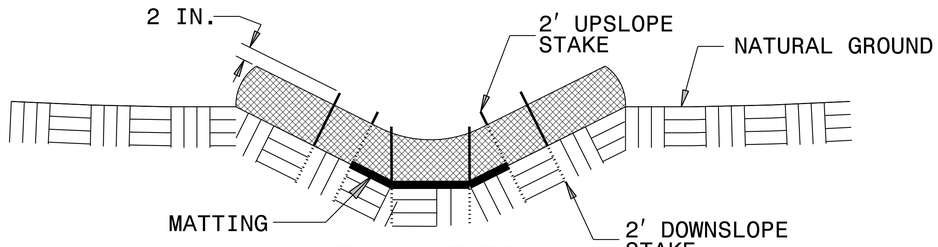
WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

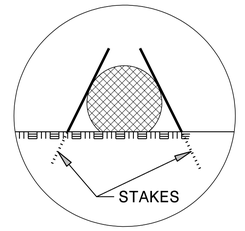
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

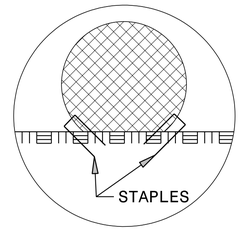
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

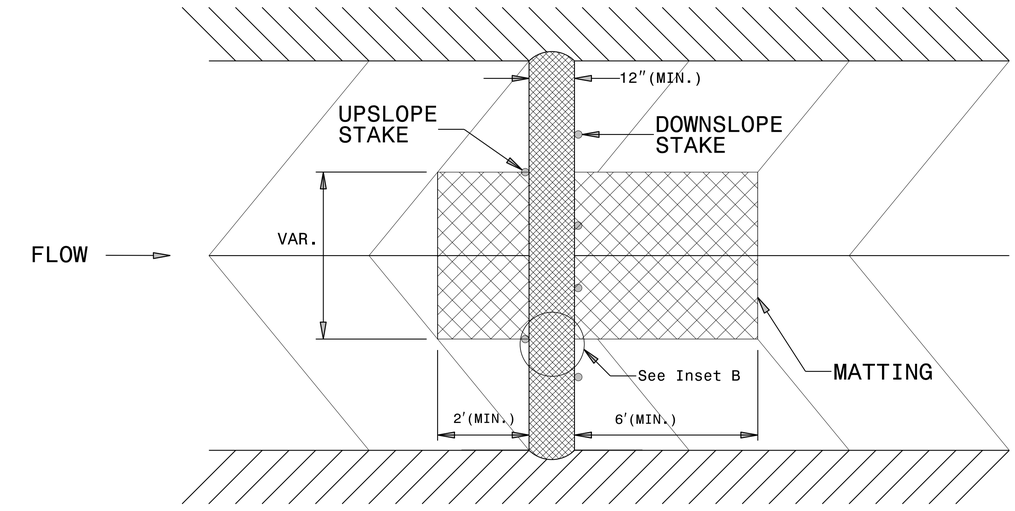
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



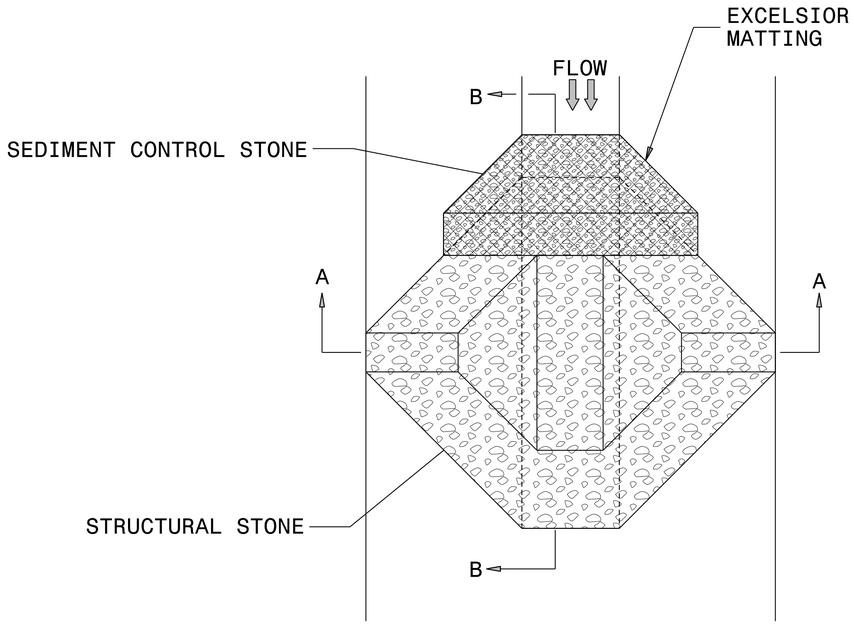
INSET B



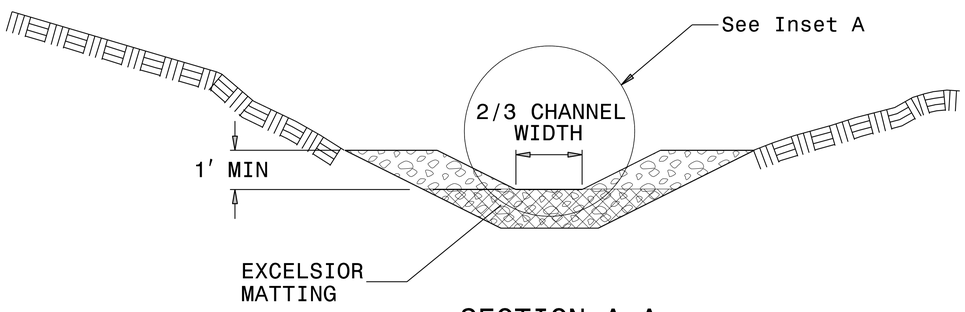
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

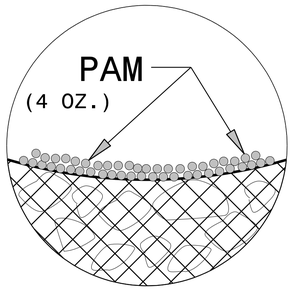
NOTES:

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

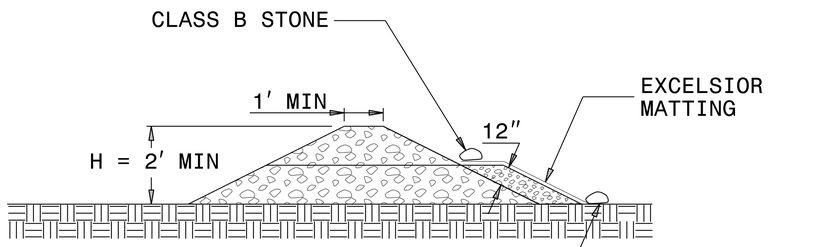
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

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



INSET A



SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	12+00	14+53	RT	205
4	-L-	14+96	16+50	RT	125
				SUBTOTAL	330
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					2360
				TOTAL	2690
				SAY	2700

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	16+50	17+49	RT	85
				SUBTOTAL	85
		ADDITIONAL PSRM TO BE INSTALLED			0
				TOTAL	85
				SAY	85

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

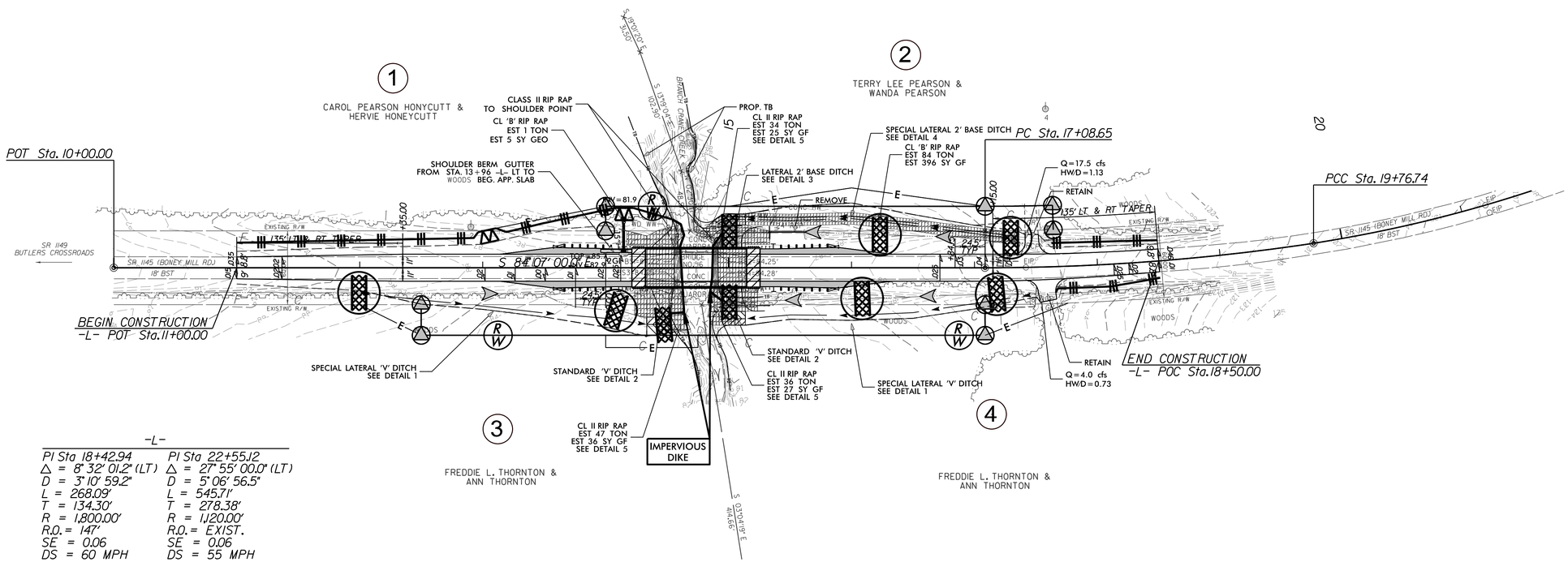
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS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

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	EC-04/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04



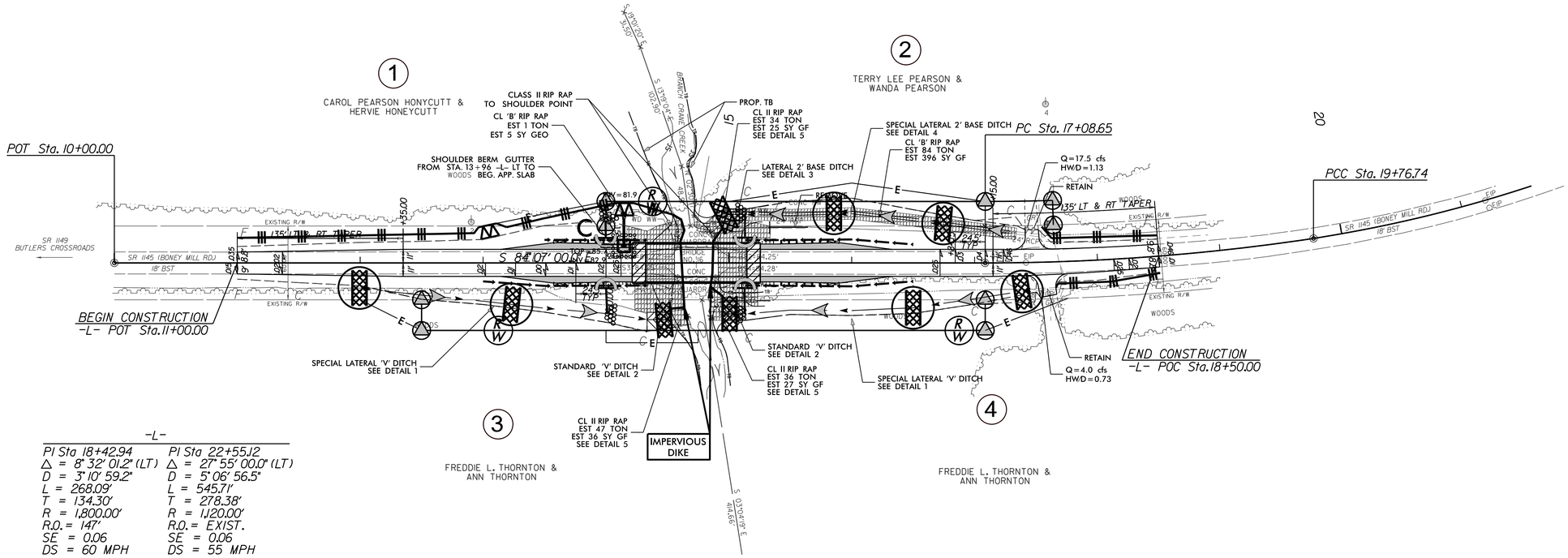
-L-	
PI Sta 18+42.94	PI Sta 22+55.12
△ = 8° 32' 01.2" (LT)	△ = 27° 55' 00.0" (LT)
D = 3° 10' 59.2"	D = 5° 06' 56.5"
L = 268.09'	L = 545.71'
T = 134.30'	T = 278.38'
R = 1,800.00'	R = 1,120.00'
R.O. = 147°	R.O. = EXIST.
SE = 0.06	SE = 0.06
DS = 60 MPH	DS = 55 MPH

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	EC-05/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Place Matting for Erosion Control on Slope as Work Allows.
Sta. 13+00 to Sta. 14+25 –L– RT
Sta. 13+00 to Sta. 14+15 –L– LT
Sta. 15+25 to Sta. 16+50 –L– LT
Sta. 15+35 to Sta. 16+50 –L– RT

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04


1
CAROL PEARSON HONEYCUTT &
HERVIE HONEYCUTT
2
TERRY LEE PEARSON &
WANDA PEARSON
3
FREDDIE L. THORNTON &
ANN THORNTON
4
FREDDIE L. THORNTON &
ANN THORNTON
POT Sta. 10+00.00
BEGIN CONSTRUCTION
-L- POT Sta.11+00.00
SR 1149
BUTLERS CROSSROADS
SR 1145 (BONEY MILL RD)
18' BST
EXISTING R/W
135' LT & RT TAPER
S 84°07'00" E
CLASS II RIP RAP
TO SHOULDER POINT
CL 'B' RIP RAP
EST 1 TON
EST 5 SY GEO
SHOULDER BERM GUTTER
FROM STA. 13+96 –L– LT TO
WOODS BEG. APP. SLAB
PROP. TB
CL II RIP RAP
EST 34 TON
EST 25 SY GF
SEE DETAIL 5
LATERAL 2' BASE DITCH
SEE DETAIL 3
REMOVE
SPECIAL LATERAL 2' BASE DITCH
SEE DETAIL 4
CL 'B' RIP RAP
EST 84 TON
EST 396 SY GF
PC Sta. 17+08.65
Q=17.5 cfs
HW/D=1.13
RETAIN
WOODS
PCC Sta. 19+76.74
EIP
CIP
SPECIAL LATERAL 'V' DITCH
SEE DETAIL 1
STANDARD 'V' DITCH
SEE DETAIL 2
STANDARD 'V' DITCH
SEE DETAIL 2
CL II RIP RAP
EST 36 TON
EST 27 SY GF
SEE DETAIL 5
SPECIAL LATERAL 'V' DITCH
SEE DETAIL 1
RETAIN
Q=4.0 cfs
HW/D=0.73
END CONSTRUCTION
-L- POC Sta.18+50.00
CL II RIP RAP
EST 47 TON
EST 36 SY GF
SEE DETAIL 5
IMPERVIOUS
DIKE
S 45°43'51" E
69.49'
S 80°20'20" E
34.50'
S 13°39'04" E
102.50'
BRANCH
CRANE CREEK
WOODS
CONC
RCP
TOP=83.85
INV Exp=80.60
INV In=80.85
INV Out=80.60
W=81.9
EL=84.25'
EL=84.28'
EL=84.41'
EL=84.47'
EL=84.51'
EL=84.54'
EL=84.57'
EL=84.61'
EL=84.64'
EL=84.67'
EL=84.71'
EL=84.74'
EL=84.77'
EL=84.81'
EL=84.84'
EL=84.87'
EL=84.91'
EL=84.94'
EL=84.97'
EL=85.01'
EL=85.04'
EL=85.07'
EL=85.11'
EL=85.14'
EL=85.17'
EL=85.21'
EL=85.24'
EL=85.27'
EL=85.31'
EL=85.34'
EL=85.37'
EL=85.41'
EL=85.44'
EL=85.47'
EL=85.51'
EL=85.54'
EL=85.57'
EL=85.61'
EL=85.64'
EL=85.67'
EL=85.71'
EL=85.74'

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.61	X-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

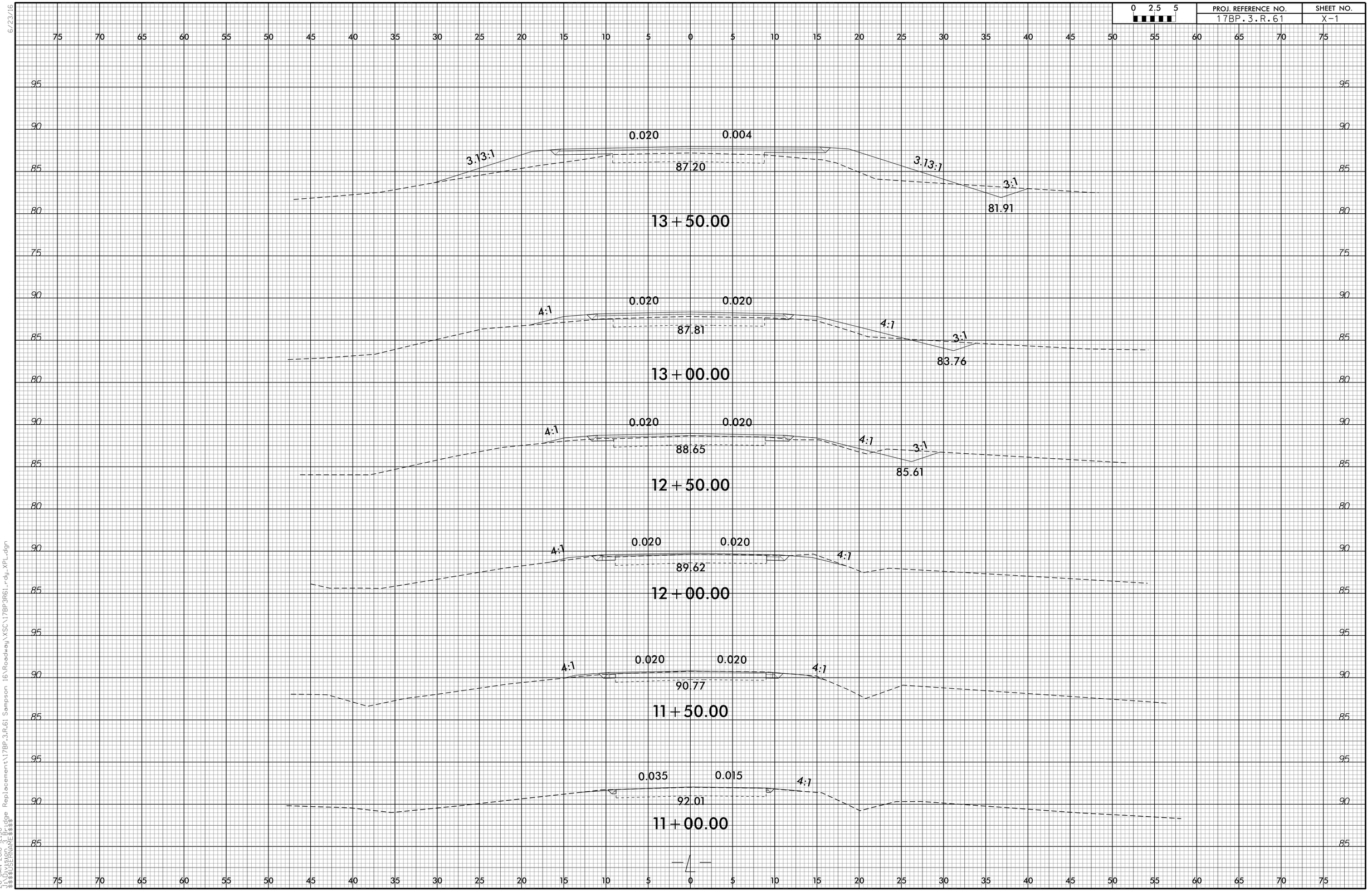
Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Removal of Existing Asphalt Pavement, and Clearing and Grubbing will be paid for at the contract lump sum price for "Grading."

CROSS-SECTION SUMMARY

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+00.00	0	0															
11+50.00	3	1															
12+00.00	6	1															
12+50.00	11	5															
13+00.00	11	14															
13+50.00	9	55															
14+00.00	19	115															
14+32.28	25	76															
SKIP STATION RANGE 14+32.38 TO 15+14.63																	
15+14.73	0	1															
15+50.00	48	154															
16+00.00	102	214															
16+50.00	84	159															
17+00.00	51	68															
17+50.00	17	23															
18+00.00	1	5															
18+50.00	2	2															

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.3.R.61	X-1



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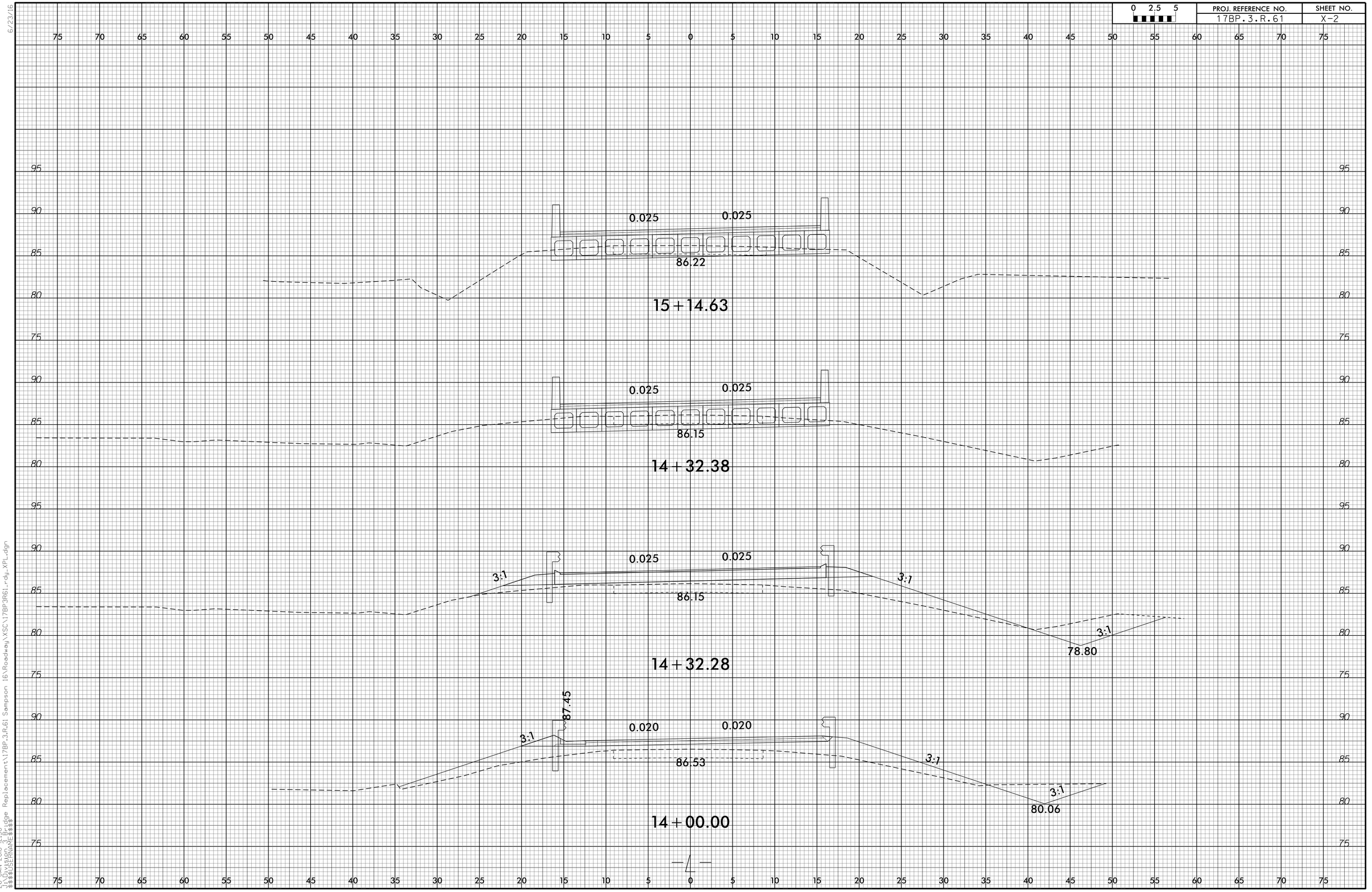
	17BP.3.R.61	X-2



6/23/16

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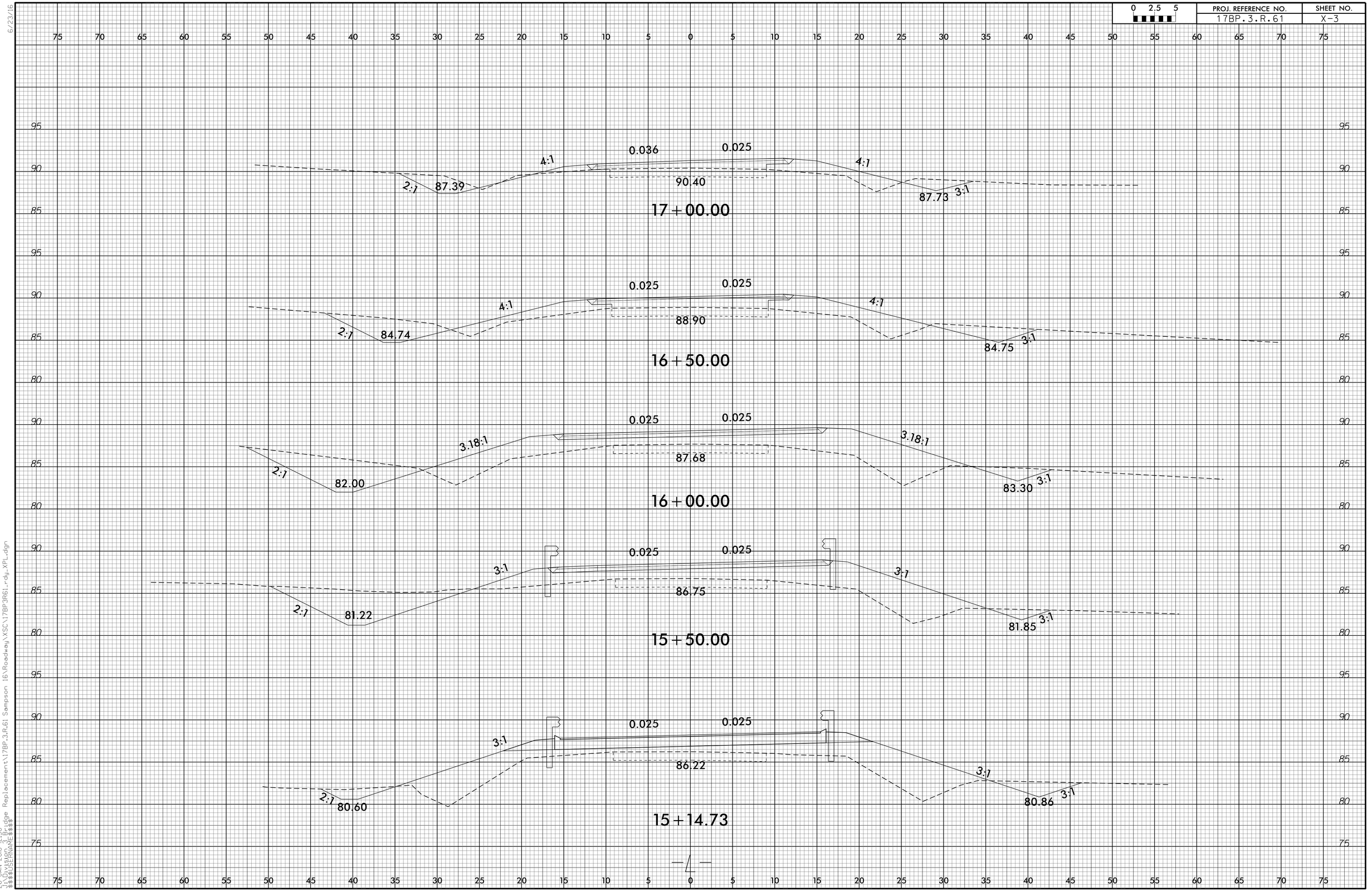
	17BP.3.R.61	X-3



6/23/16

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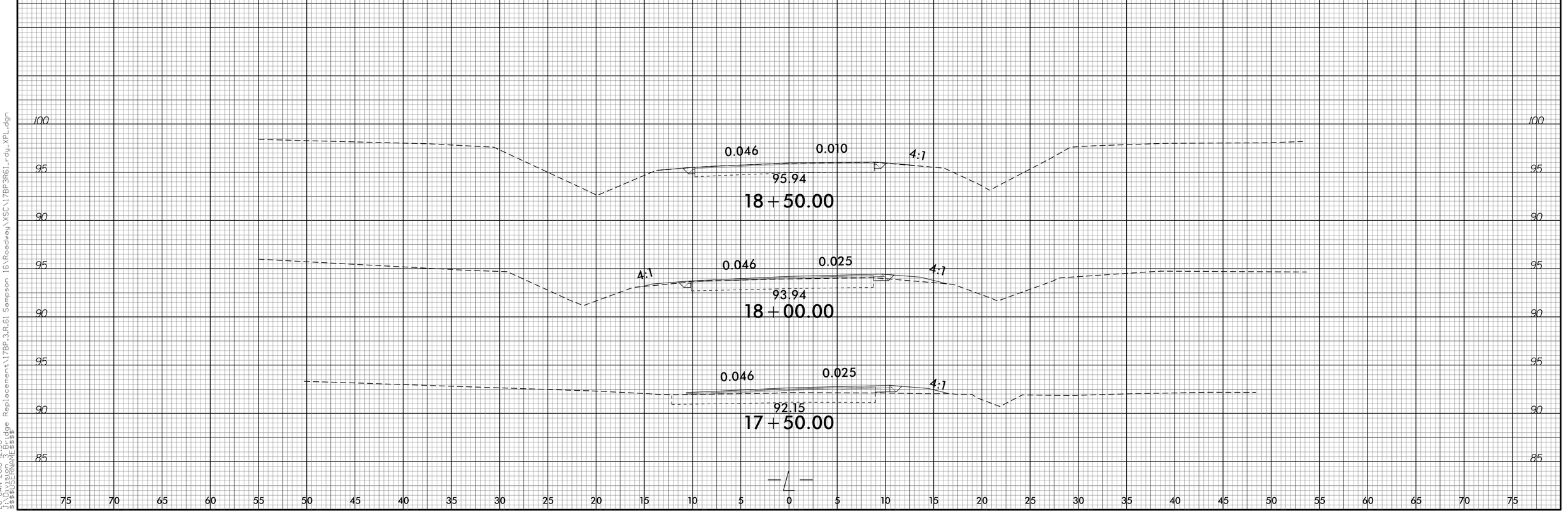

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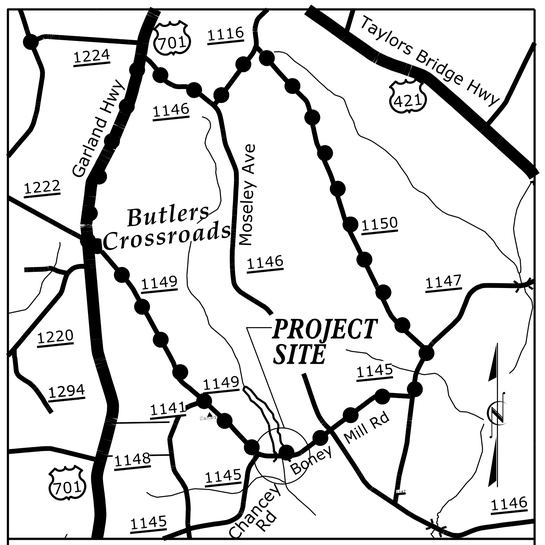
09/08/99

CONTRACT: DC00212 TIP PROJECT: 17BP.3.R.61

STRUCTURE

OFF–SITE DETOUR



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

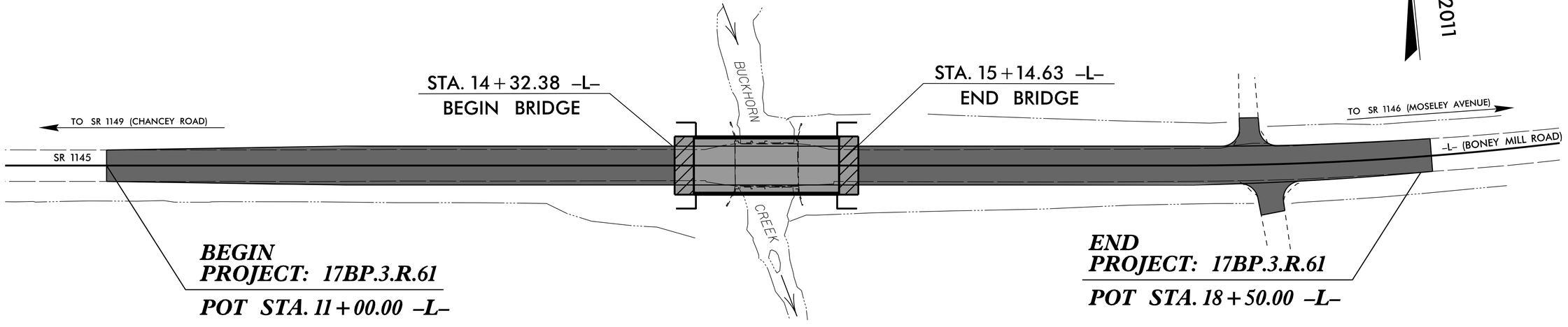
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.61		17

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.3.R.61		CONST

LOCATION: BRIDGE No. 16 OVER BUCKHORN CREEK ON SR 1145 (BONEY MILL ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NAD 83 /NA 2011



BEGIN PROJECT: 17BP.3.R.61

POT STA. 11 + 00.00 –L–

END PROJECT: 17BP.3.R.61

POT STA. 18 + 50.00 –L–

DESIGN DATA

ADT 2015 = 500
ADT 2040 = 1000
K = 60 %
D = 10 %
T = 45 % *
V = 60 MPH
* TTST = 39% DUAL = 6%
FUNC CLASS =
MINOR COLLECTOR
SUB–REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT: 17BP.3.R.61 = 0.126 MILES

LENGTH OF STRUCTURE TIP PROJECT: 17BP.3.R.61 = 0.016 MILES

TOTAL LENGTH OF TIP PROJECT: 17BP.3.R.61 = 0.142 MILES

PLANS PREPARED BY :

PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606–3386
NC LICENSE No. F–0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

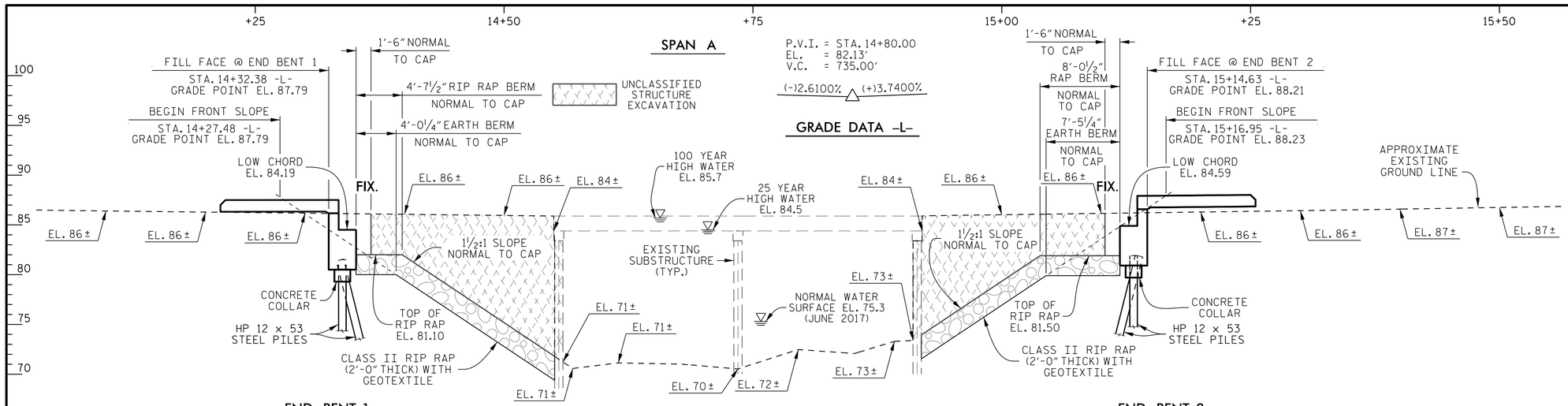
2018 STANDARD SPECIFICATIONS

LETTING DATE:
APRIL 19, 2018

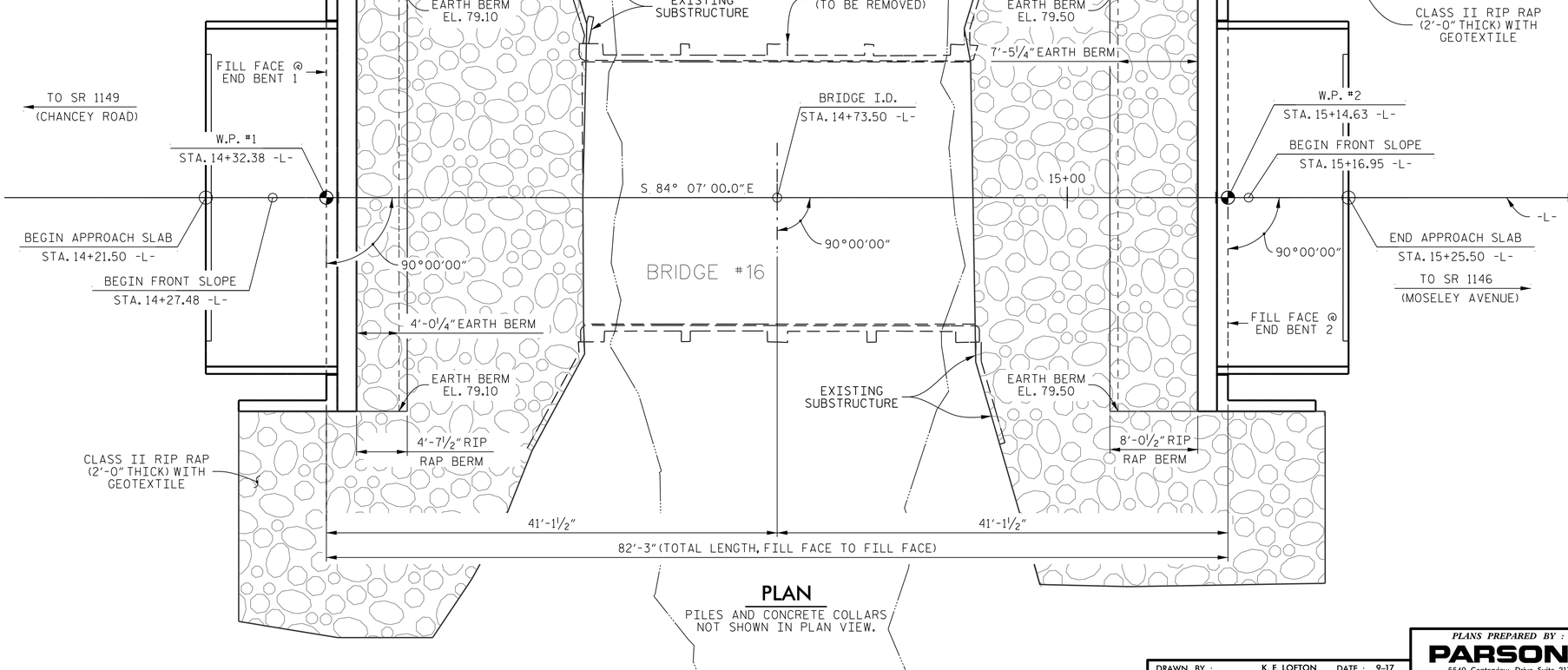
DAVID L. WILVER, P.E.
PROJECT ENGINEER

PATRICK R. GALLAGHER, P.E.
PROJECT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Patrick R. Gallagher
7DC4BCBEE0A3842...
3/27/2018



SECTION ALONG –L–
(SECTION AT RIGHT ANGLES TO END BENTS)



PLAN
PILES AND CONCRETE COLLARS NOT SHOWN IN PLAN VIEW.

NOTE
FOR NOTES, SEE SHEET 3 OF 3.

HYDRAULIC DATA

DESIGN DISCHARGE	= 750 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YEARS
DESIGN HIGH WATER ELEVATION	= 84.50 FT.
DRAINAGE AREA	= 6.06 SQ. MI.
BASE DISCHARGE (Q100)	= 1293 CFS
BASE HIGH WATER ELEVATION	= 85.70 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= > 1600 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YEARS
OVERTOPPING FLOOD ELEVATION	= 87.80 FT.

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

SHEET 1 OF 3 REPLACES BRIDGE No. 16

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER BUCKHORN CREEK ON SR 1145 (BONEY MILL ROAD) BETWEEN SR 1149 AND SR 1146

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
DocuSigned by: Patrick R. Gallagher 7DC4BCB6E0C5444...
3/7/2018

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1-1
1			3			TOTAL SHEETS
2			4			17

STR. #1

DRAWN BY : K. E. LOFTON DATE : 9-17
CHECKED BY : P. R. GALLAGHER DATE : 9-17
DESIGN ENGINEER : D. N. PRETORIUS DATE : 12-17

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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DATE: 3/7/2018 10:16:36 AM

NOTES

ALL END BENT PILES ARE HP 12 x 53 STEEL PILES.

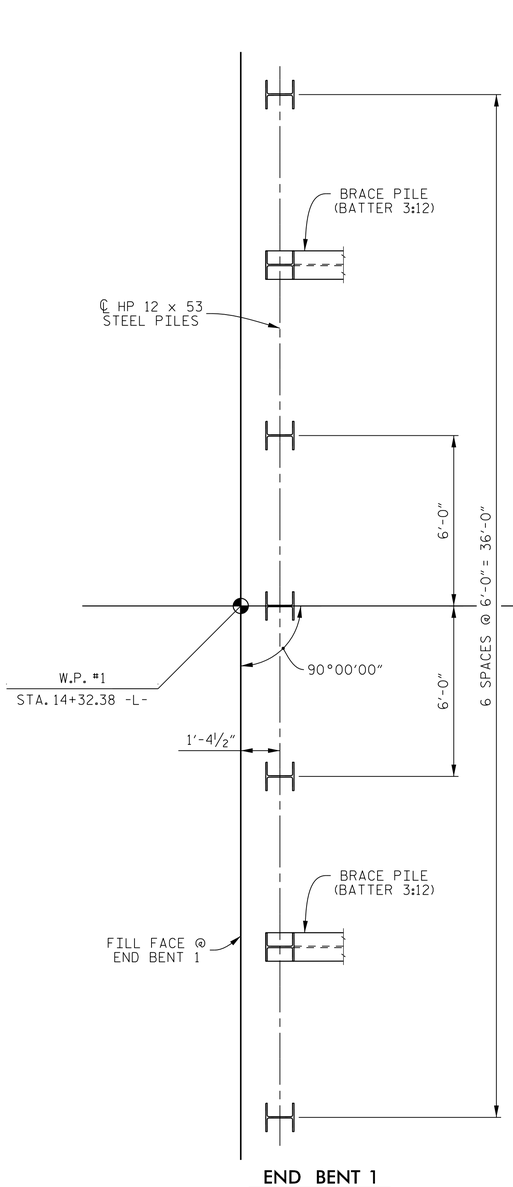
DIMENSIONS LOCATING PILES ARE SHOWN TO PILE CENTERLINES AT THE BOTTOM OF THE END BENT CAPS.

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

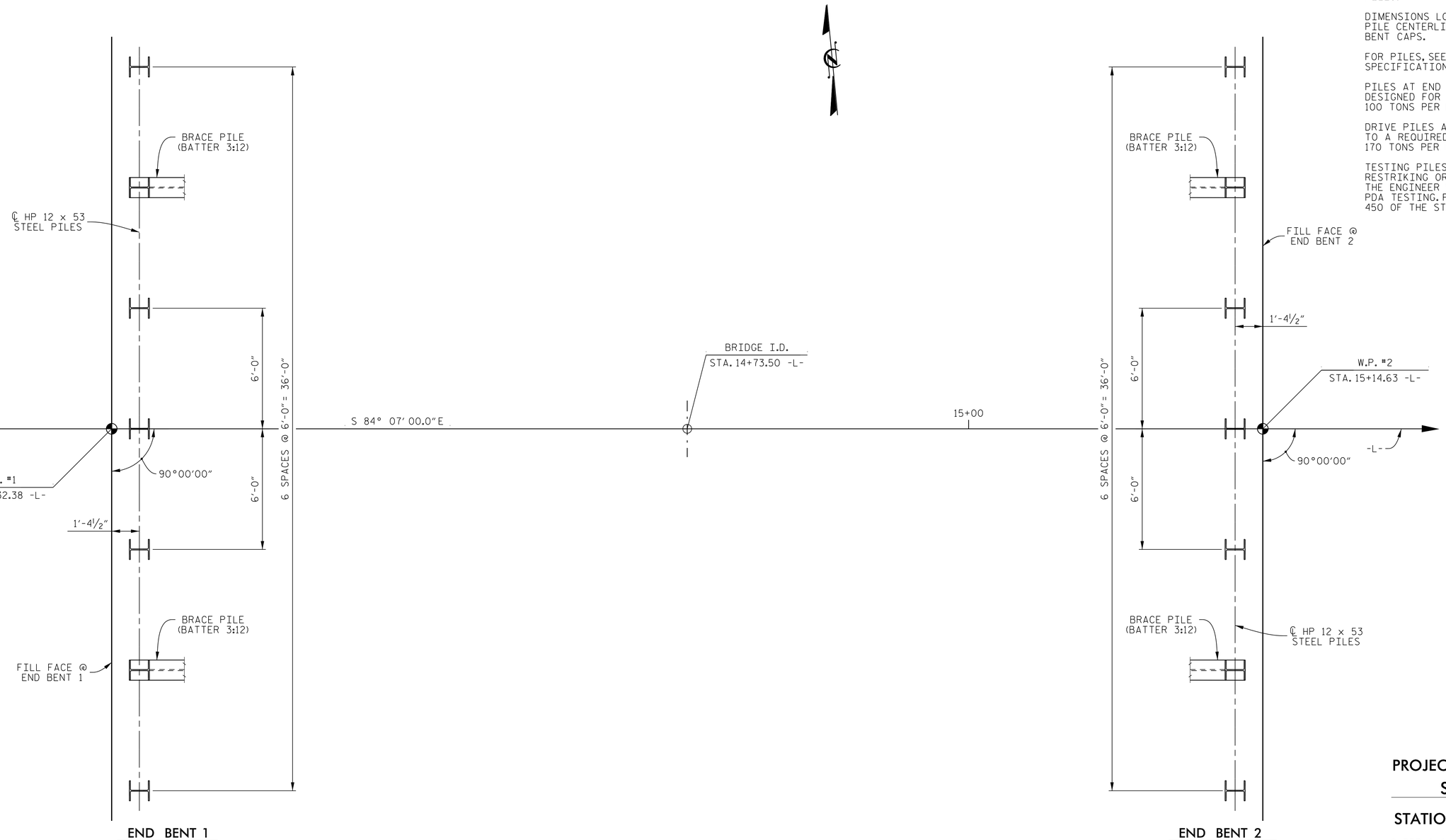
PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 100 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 170 TONS PER PILE.

TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.



END BENT 1



END BENT 2

FOUNDATION LAYOUT

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER BUCKHORN CREEK ON SR 1145 (BONEY MILL ROAD) BETWEEN SR 1149 AND SR 1146

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Patrick R. Gallagher
7DCA8C3B1B8F4A9...
3/7/2018

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : K. E. LOFTON DATE : 9-17
CHECKED BY : P. R. GALLAGHER DATE : 9-17
DESIGN ENGINEER : D. N. PRETORIUS DATE : 12-17

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1-2
1			3			TOTAL SHEETS
2			4			17

STR. #1

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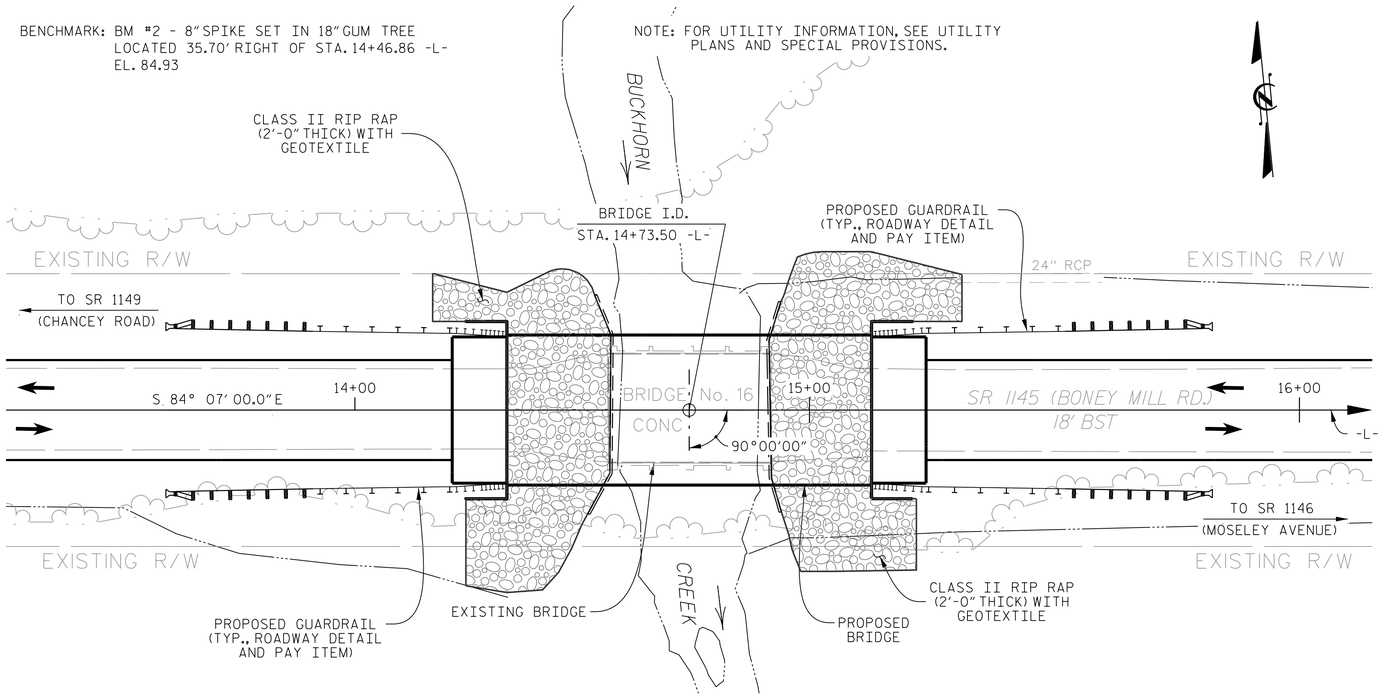

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

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

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE "STANDARD NOTES" SHEET.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

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

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR SURVEY CONTROL SHEET, SEE ROADWAY PLANS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 35'-0" EACH SIDE OF CENTERLINE ROADWAY 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.

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.

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.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STA. 14+73.50 -L-	ASBESTOS ASSESSMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 14+73.50 -L-	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS AT STA. 14+73.50 -L-	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 x 53 STEEL PILES	HP 12 x 53 STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 2'-9" PRESTRESSED CONCRETE BOX BEAMS	
	LUMP SUM	LUMP SUM	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	EACH	No.	LIN. FT.	EACH	LIN. FT.	TON	SQ. YD.	LUMP SUM	No.	LIN. FT.
SUPERSTRUCTURE					3,214	2,864								160.0				11	880.0
END BENT 1							25.5		3,576	7	7	490	7		230	255			
END BENT 2							25.5		3,576	7	7	490	7		210	235			
TOTAL	LUMP SUM	LUMP SUM	1	LUMP SUM	3,214	2,864	51.0	LUMP SUM	7,152	14	14	980	14	160.0	440	490	LUMP SUM	11	880.0

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER BUCKHORN CREEK ON SR 1145 (BONEY MILL ROAD) BETWEEN SR 1149 AND SR 1146

DRAWN BY : K. E. LOFTON DATE : 9-17
CHECKED BY : P. R. GALLAGHER DATE : 9-17
DESIGN ENGINEER : D. N. PRETORIUS DATE : 12-17

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Patrick R. Gallagher
7DC48C86E5A4444...
3/7/2018

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1-3
1			3			TOTAL SHEETS
2			4			17

STR. #1

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W × RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT					
							LIVE-LOAD FACTORS (γ_{LL})	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)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.740	-	1.750	0.227	2.080	A	EL	39.250	0.543	1.740	A	EL	7.850	0.800	0.227	2.560	A	EL	39.250	--
		HL-93 (OPERATING)	N/A	-	2.310	-	1.350	0.227	2.700	A	EL	39.250	0.543	2.310	A	EL	7.850	N/A	0.227	-	-	-	-	--
		HS-20 (INVENTORY)	36.000	2	2.270	81.720	1.750	0.227	2.770	A	EL	39.250	0.543	2.270	A	EL	7.850	0.800	0.227	3.130	A	EL	39.250	--
		HS-20 (OPERATING)	36.000	-	2.990	107.640	1.350	0.227	3.590	A	EL	39.250	0.543	2.990	A	EL	7.850	N/A	0.227	-	-	-	-	--
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500	-	7.170	96.795	1.400	0.227	7.920	A	EL	39.250	0.543	7.170	A	EL	7.850	0.800	0.227	7.790	A	EL	39.250	--
		SNGARBS2	20.000	-	5.020	100.400	1.400	0.227	5.850	A	EL	39.250	0.543	5.020	A	EL	7.850	0.800	0.227	5.760	A	EL	39.250	--
		SNAGRIS2	22.000	-	4.640	102.080	1.400	0.227	5.520	A	EL	39.250	0.543	4.640	A	EL	7.850	0.800	0.227	5.430	A	EL	39.250	--
		SNCOTTS3	27.250	-	3.480	94.830	1.400	0.227	3.940	A	EL	39.250	0.543	3.480	A	EL	7.850	0.800	0.227	3.880	A	EL	39.250	--
		SNAGGRS4	34.925	-	2.840	99.187	1.400	0.227	3.270	A	EL	39.250	0.543	2.840	A	EL	7.850	0.800	0.227	3.220	A	EL	39.250	--
		SNS5A	35.550	-	2.870	102.029	1.400	0.227	3.200	A	EL	39.250	0.543	2.870	A	EL	7.850	0.800	0.227	3.150	A	EL	39.250	--
		SNS6A	39.950	-	2.590	103.471	1.400	0.227	2.930	A	EL	39.250	0.543	2.590	A	EL	7.850	0.800	0.227	2.880	A	EL	39.250	--
		SNS7B	42.000	-	2.530	106.260	1.400	0.227	2.790	A	EL	39.250	0.543	2.530	A	EL	7.850	0.800	0.227	2.750	A	EL	39.250	--
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	-	3.140	103.620	1.400	0.227	3.570	A	EL	39.250	0.543	3.140	A	EL	7.850	0.800	0.227	3.510	A	EL	39.250	--
		TNT4A	33.075	-	3.060	101.210	1.400	0.227	3.580	A	EL	39.250	0.543	3.060	A	EL	7.850	0.800	0.227	3.530	A	EL	39.250	--
		TNT6A	41.600	-	2.710	112.736	1.400	0.227	2.920	A	EL	39.250	0.543	2.710	A	EL	7.850	0.800	0.227	2.880	A	EL	39.250	--
		TNT7A	42.000	-	2.650	111.300	1.400	0.227	2.930	A	EL	39.250	0.543	2.650	A	EL	7.850	0.800	0.227	2.890	A	EL	39.250	--
		TNT7B	42.000	-	2.480	104.160	1.400	0.227	3.030	A	EL	39.250	0.543	2.480	A	EL	7.850	0.800	0.227	2.980	A	EL	39.250	--
		TNAGRIT4	43.000	-	2.400	103.200	1.400	0.227	2.890	A	EL	39.250	0.543	2.400	A	EL	7.850	0.800	0.227	2.840	A	EL	39.250	--
		TNAGRT5A	45.000	-	2.380	107.100	1.400	0.227	2.720	A	EL	39.250	0.543	2.380	A	EL	7.850	0.800	0.227	2.680	A	EL	39.250	--
		TNAGRT5B	45.000	3	2.280	102.600	1.400	0.227	2.690	A	EL	39.250	0.543	2.280	A	EL	7.850	0.800	0.227	2.650	A	EL	39.250	--

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. ALL GIRDERS ARE IDENTICAL.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

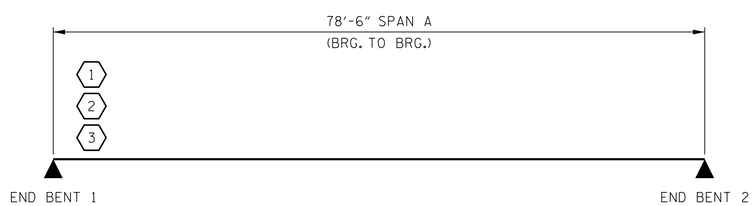
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
80' BOX BEAM UNIT
90° SKEW
(NON–INTERSTATE TRAFFIC)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1–4
1			3			TOTAL SHEETS
2			4			17

STD. No. 33LRFR1_90S_80L

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICIA A. GALLAGHER
7DC4BC8E2E5F4A0...
1/31/2018

PLANS PREPARED BY :
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Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : K. E. LOFTON DATE : 9-17
CHECKED BY : P. R. GALLAGHER DATE : 9-17
DESIGN ENGINEER : D. N. PRETORIUS DATE : 12-17

ASSEMBLED BY : K. E. LOFTON DATE : 9-17
CHECKED BY : P. R. GALLAGHER DATE : 9-17
DRAWN BY : TMG 11/11
CHECKED BY : AAC 11/11

FILE: i:\division 3 bridge replacement\17bp.3.r.61 sampson 16\structures\plans\final\BP_Div._3_810016_smu_lrf.dgn
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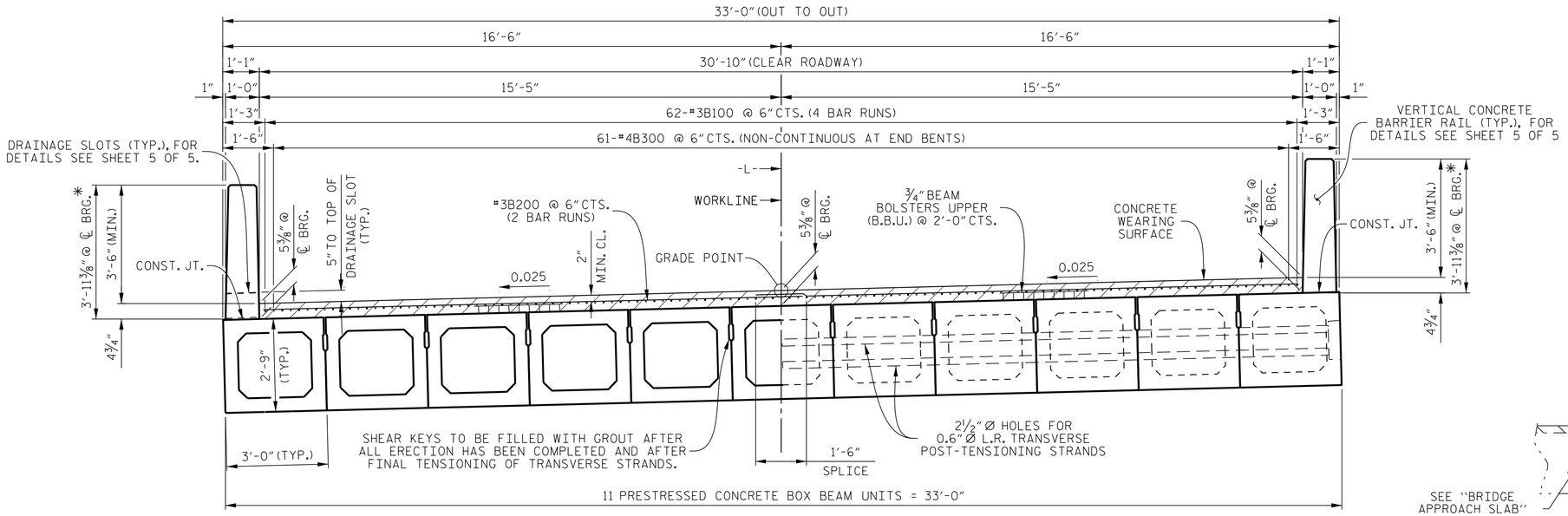
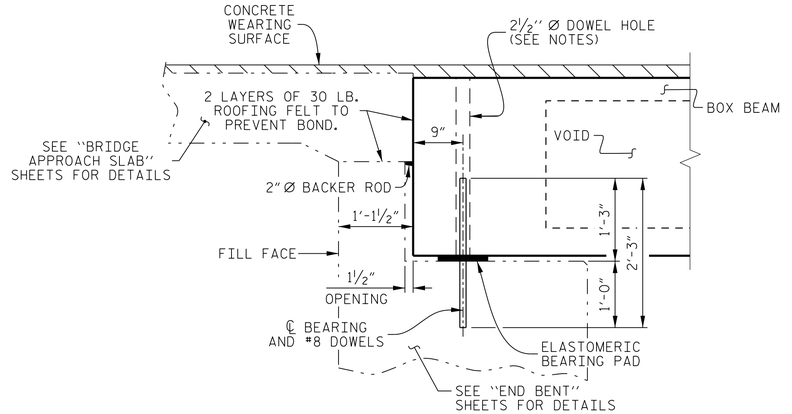


HALF SECTION
THROUGH VOIDS

HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

✳ - THE MAXIMUM BARRIER RAIL HEIGHT AND CONCRETE OVERLAY THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND CONCRETE OVERLAY THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND CONCRETE OVERLAY THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL DETAILS", SHEET 5 OF 5.



SECTION AT END BENT

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 BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

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

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF BOX BEAM 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.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6500 PSI.

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

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" 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 VERTICAL 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.

THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

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.

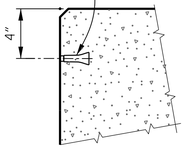
THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

THE DRAIN OPENING AT THE GUTTERLINE SHALL BE 11 3/8" x 5". THE HEIGHT OF THE BLOCKOUT IN THE VERTICAL CONCRETE BARRIER RAIL SHALL EXTEND FROM THE TOP OF THE BOX BEAM UNIT TO THE TOP OF THE DRAIN OPENING.

APPLY EPOXY PROTECTIVE COATING TO EXTERIOR FACE OF THE EXTERIOR BOX BEAM UNITS THAT REQUIRE DRAINS IN THE BARRIER RAIL.

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE RAIL. THE COST OF THE #3 BARS CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF CORED SLAB UNITS 1 AND 11, RECESSED 3/8". SIZE TO BE DETERMINED BY CONTRACTOR.



THREADED INSERT DETAIL

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3'-0" x 2'-9" PRESTRESSED CONCRETE BOX BEAM UNIT 90° SKEW

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
7DC48C2E5A5A433...
3/7/2018

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1-5
1			3			TOTAL SHEETS
2			4			17

PLANS PREPARED BY :
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Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	K. E. LOFTON	DATE : 9-17
CHECKED BY :	P. R. GALLAGHER	DATE : 9-17
DESIGN ENGINEER :	D. N. PRETORIUS	DATE : 12-17

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-17
CHECKED BY :	P. R. GALLAGHER	DATE :	9-17
DRAWN BY : DGE 8/11	REV. 9/14	MAA/TMG	
CHECKED BY : TMG 11/11			

STD. No. 33PCBB_33_90S

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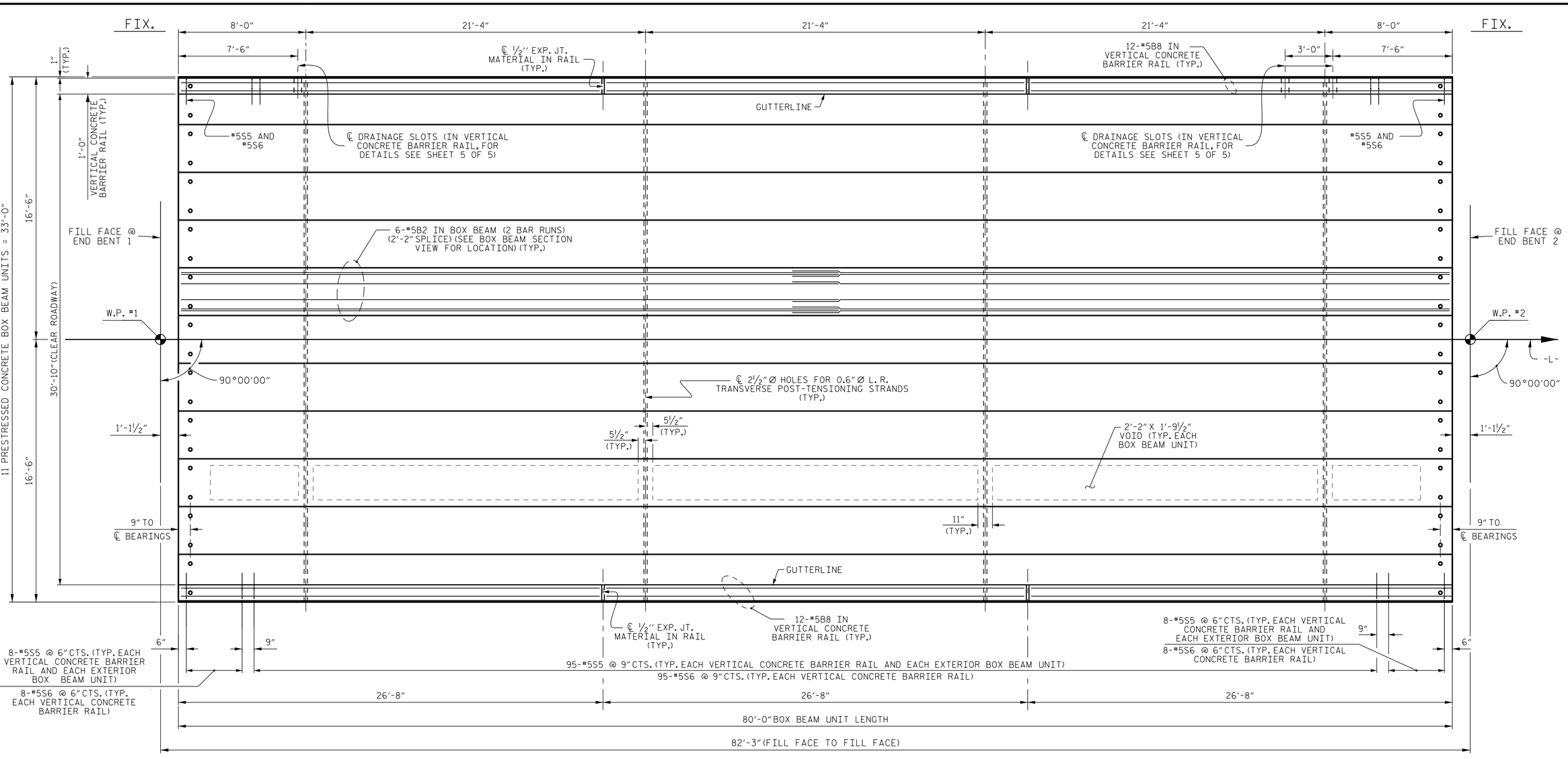
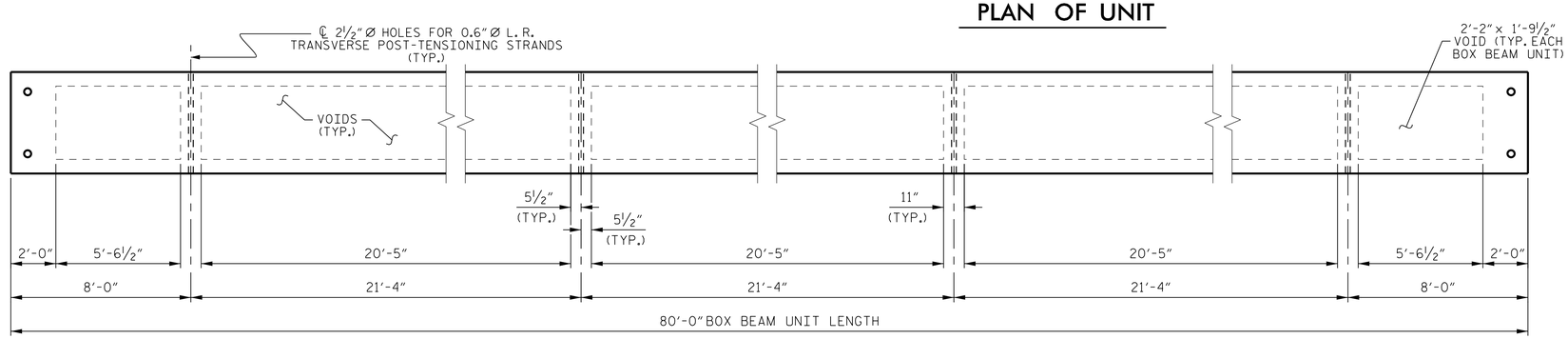


PLAN OF UNIT



DIAPHRAGM AND VOID LAYOUT

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'–0" x 2'–9" PRESTRESSED CONCRETE BOX BEAM UNIT PLAN OF 80'–0" UNIT 30'–10" CLEAR ROADWAY 90° SKEW

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Patrick R. Gallagher
1/31/2018

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1–6
1			3			TOTAL SHEETS
2			4			17

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-17
CHECKED BY :	P. R. GALLAGER	DATE :	9-17
DRAWN BY :	DGE 8/11	REV. 8/14	MAA/TMG
CHECKED BY :	TMG 11/11		

DRAWN BY :	K. E. LOFTON	DATE :	9–17
CHECKED BY :	P. R. GALLAGHER	DATE :	9–17
DESIGN ENGINEER :	D. N. PRETORIUS	DATE :	12–17

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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

STD. No. 33PCBB_33_90S_80L

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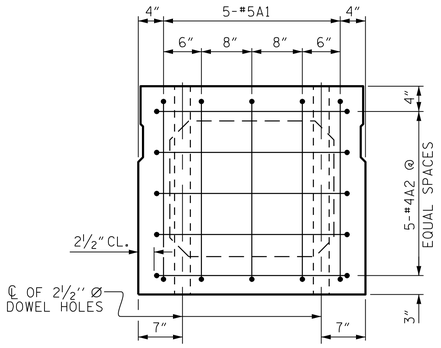
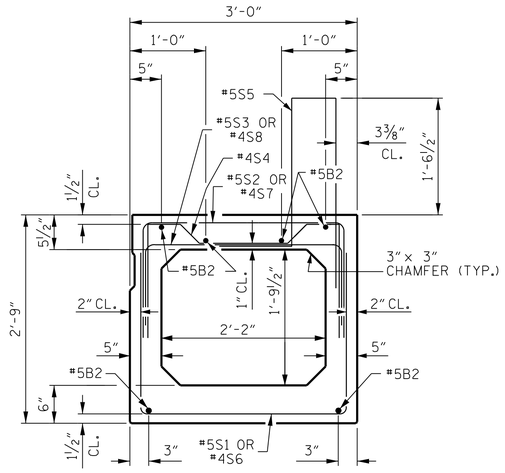


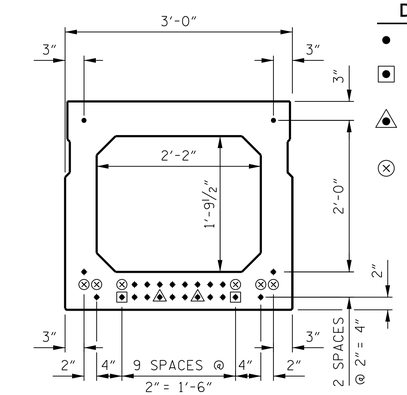
END ELEVATION

SHOWING PLACEMENT OF #5 AND #4 "A" BARS AND LOCATION OF DOWEL HOLES. (INTERIOR BOX BEAM SECTION SHOWN, EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



EXTERIOR SLAB SECTION

(STRAND LAYOUT NOT SHOWN)



TYPICAL STRAND LOCATION

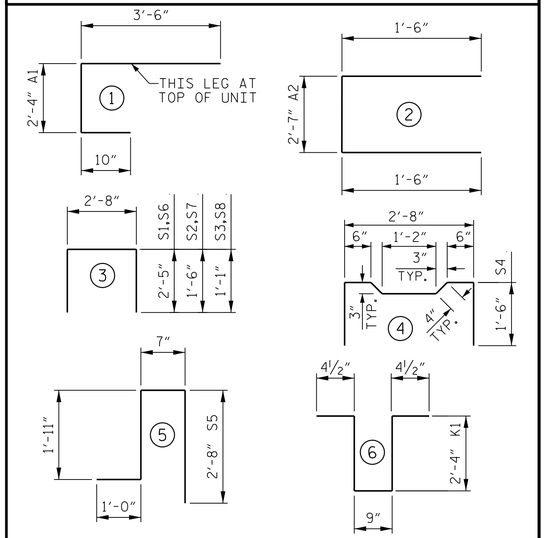
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ⊡ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- ◬ STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER
- ⊗ OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE BOX BEAM UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST.

BOND SHALL BE BROKEN ON STRANDS AS SHOWN FOR THE SPECIFIED LENGTH FROM EACH END OF THE BOX BEAM. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

24 – 0.6" Ø LOW RELAXATION STRAND LAYOUT

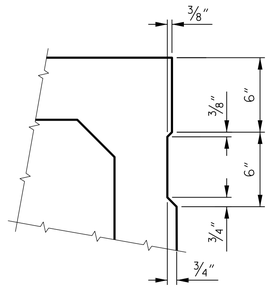
BAR TYPES



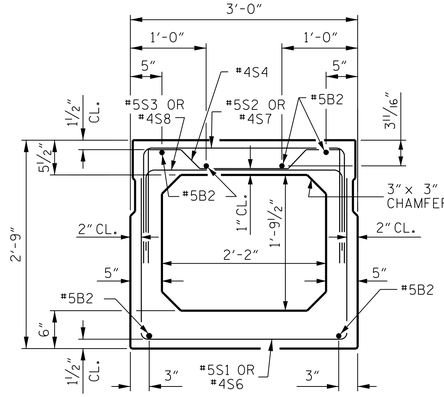
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE BOX BEAM SECTION

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
A1	10	#5	1	6'- 8"	70	6'- 8"	70
A2	34	#4	2	5'- 7"	127	5'- 7"	127
B2	12	#5	STR	40'-11"	512	40'-11"	512
K1	12	#4	6	6'- 2"	49	6'- 2"	49
K2	8	#4	STR	2'- 7"	14	2'- 7"	14
S1	18	#5	3	7'- 6"	141	7'- 6"	141
S2	18	#5	3	5'- 8"	106	5'- 8"	106
S3	18	#5	3	4'-10"	91	4'-10"	91
S4	47	#4	4	5'-10"	183	5'-10"	183
✳S5	111	#5	5	6'- 2"	714	--	--
S6	48	#4	3	7'- 6"	240	7'- 6"	240
S7	48	#4	3	5'- 8"	182	5'- 8"	182
S8	95	#4	3	4'-10"	307	4'-10"	307
REINFORCING STEEL				2,022 LBS.		2,022 LBS.	
✳EPOXY COATED REINFORCING STEEL				714 LBS.		--	
9000 P.S.I. CONCRETE				14.2 CU. YDS.		14.1 CU. YDS.	
0.6" Ø L.R. STRANDS				No. = 24		No. = 24	

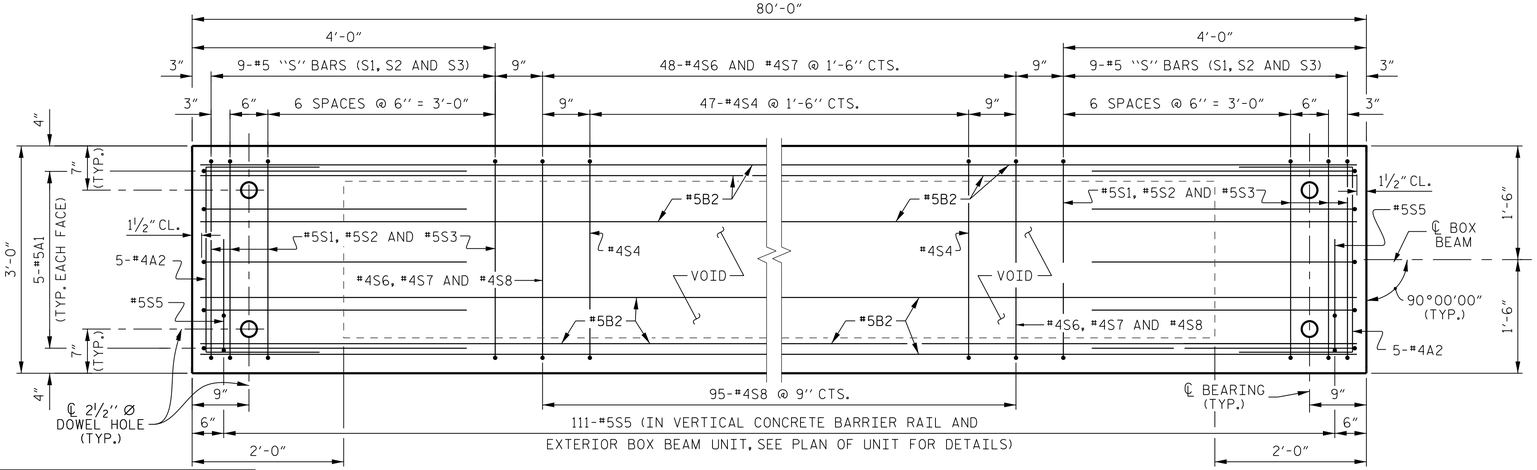


SHEAR KEY DETAIL



INTERIOR SLAB SECTION

(STRAND LAYOUT NOT SHOWN)



PLAN OF BOX BEAM

(STRAND LAYOUT NOT SHOWN)

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

NOTES

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5S5 BARS.

FOR LOCATION OF DIAPHRAGMS, SEE "PLAN OF UNIT", SHEET 2 OF 5.

FOR THREADED INSERTS, SEE "THREADED INSERT DETAIL", SHEET 1 OF 5.

FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS", SHEET 4 OF 5.

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3'–0" x 2'–9" PRESTRESSED CONCRETE BOX BEAM UNIT 90° SKEW

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1–7
1			3			TOTAL SHEETS
2			4			17

STD. No. 33PCBB4_90S_80L

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NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
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1/31/2018

PLANS PREPARED BY :
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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	K. E. LOFTON	DATE :	9–17
CHECKED BY :	P. R. GALLAGHER	DATE :	9–17
DESIGN ENGINEER :	D. N. PRETORIUS	DATE :	12–17

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DRAWN BY : DGE	10/11	REV. 9/14	MAA/TMG
CHECKED BY : TMG	11/11		

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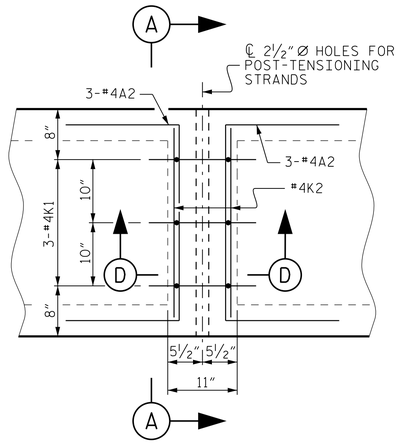
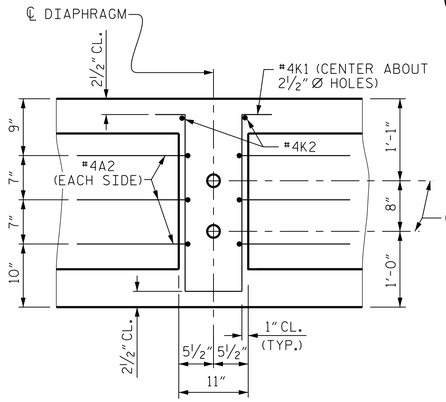
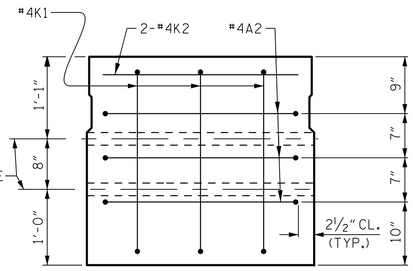


PLAN



SECTION D–D

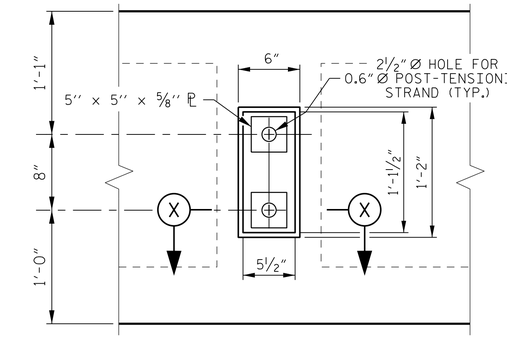


SECTION A–A

VOIDS NOT SHOWN

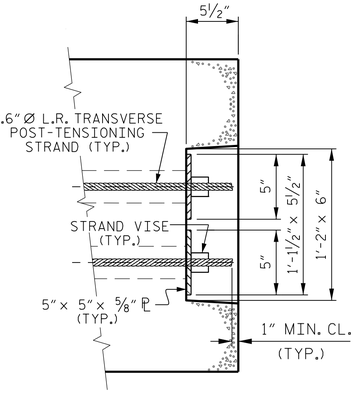
DOUBLE DIAPHRAGM DETAILS

#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2½" Ø HOLE.

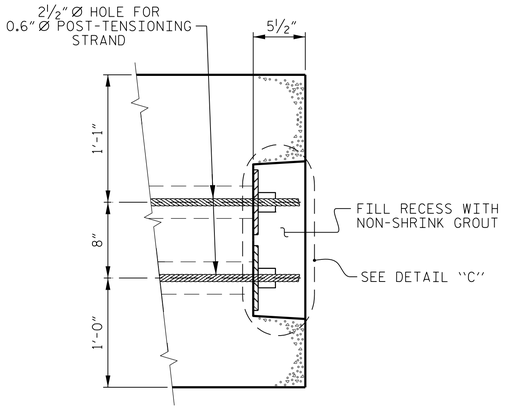


VIEW Y–Y

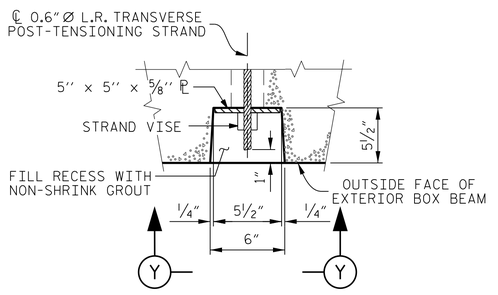
SHOWING ELEVATION VIEW OF GROUTED RECESS



DETAIL "C"



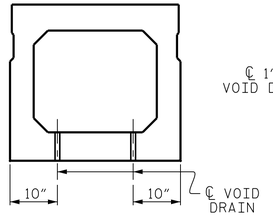
PART SECTION AT RECESS



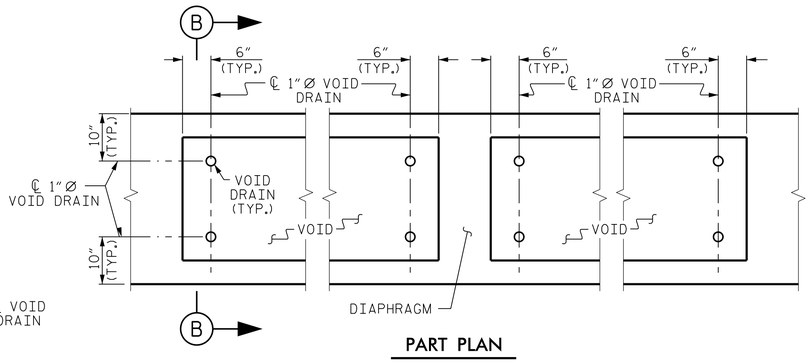
SECTION X–X

SHOWING PLAN VIEW OF GROUTED RECESS

GROUTED RECESS AT END OF POST–TENSIONED STRAND – BOX BEAM



SECTION B–B



PART PLAN

VOID DRAIN DETAILS

(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID DRAIN)

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 2'-9"
SPAN A	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1¾" ↑
** DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD	1¾" ↓
FINAL CAMBER	0

** INCLUDES FUTURE WEARING SURFACE

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3'–0" x 2'–9" PRESTRESSED CONCRETE BOX BEAM UNIT 90° SKEW

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1–8
1			3			TOTAL SHEETS
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STD. No. 33PCBB5_90S

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NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
7DC48C8F5558483...
1/31/2018

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	K. E. LOFTON	DATE :	9-17
CHECKED BY :	P. R. GALLAGHER	DATE :	9-17
DESIGN ENGINEER :	D. N. PRETORIUS	DATE :	12-17

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-17
CHECKED BY :	P. R. GALLAGER	DATE :	9-17
DRAWN BY : DGE	10/11	REV. 8/14	MAA/TMG
CHECKED BY : TMG	11/11		

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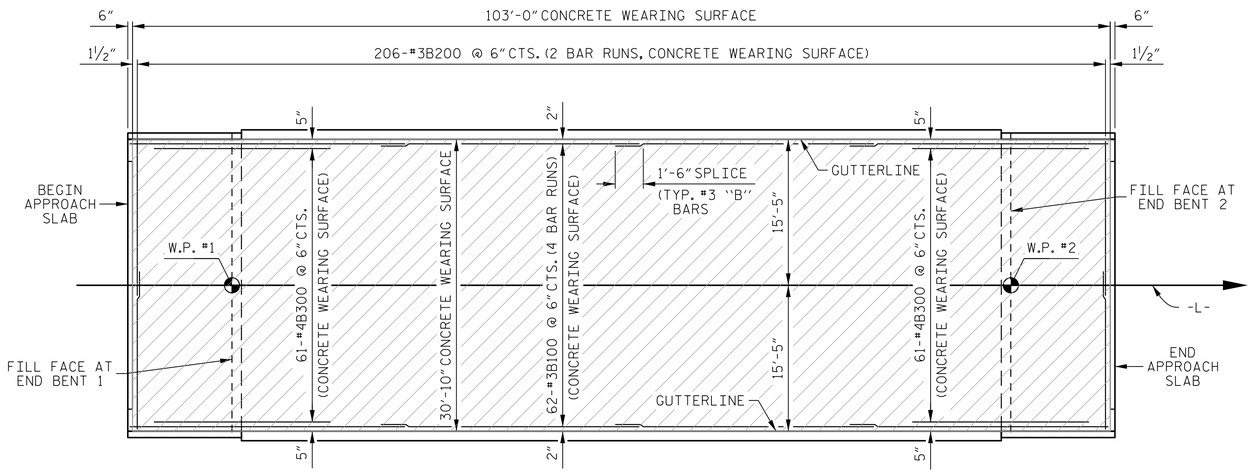
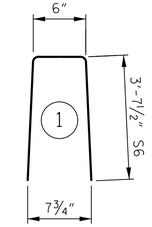


CONCRETE WEARING SURFACE LAYOUT

BILL OF MATERIAL FOR CONCRETE WEARING SURFACE

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✳ B100	248	#3	STR	26'-10"	2,502
✳ B200	412	#3	STR	16'- 0"	2,479
✳ B300	122	#4	STR	20'- 0"	1,630
✳ EPOXY COATED REINFORCING STEEL					6,611 LBS.
CONCRETE WEARING SURFACE					41.1 CU. YDS.
CONCRETE WEARING SURFACE AREA					3,214 SQ. FT.
CONCRETE WEARING SURFACE GROOVING AREA					2,864 SQ. FT.

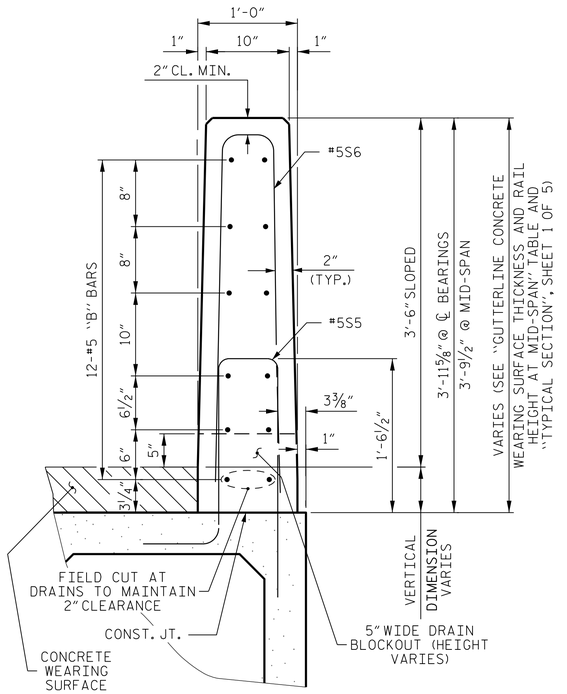
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER ONE EXTERIOR UNITS	TOTAL No.	SIZE	TYPE	LENGTH	WEIGHT
	80'-0" UNIT					
✳ B8	36	36	#5	STR	26'- 3"	986
✳ S6	111	111	#5	1	7'- 9"	897
✳ EPOXY COATED REINFORCING STEEL (PER EXTERIOR UNIT)						1,883 LBS.
CLASS AA CONCRETE (PER EXTERIOR UNIT)						10.6 CU. YDS.
VERTICAL CONCRETE BARRIER RAIL (PER EXTERIOR UNIT)						80.0 LIN. FT.

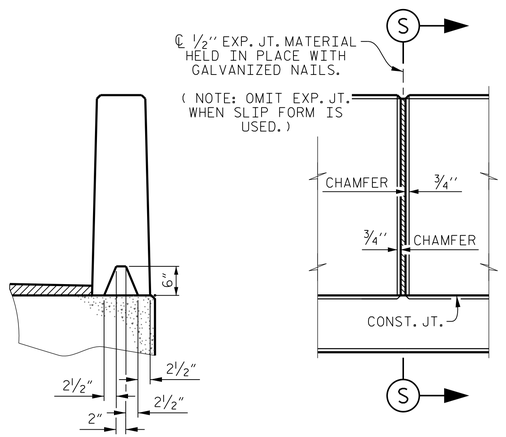


VERTICAL CONCRETE BARRIER RAIL SECTION

GUTTERLINE CONCRETE WEARING SURFACE THICKNESS AND RAIL HEIGHT AT MID-SPAN

	CONCRETE WEARING SURFACE THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
LEFT	3½"	3'-9½"
RIGHT	3½"	3'-9½"

NOTE: FOR CONCRETE WEARING SURFACE THICKNESS AND RAIL HEIGHT AT END BENTS, SEE TYPICAL SECTION, SHEET 1 OF 5.



SECTION S–S

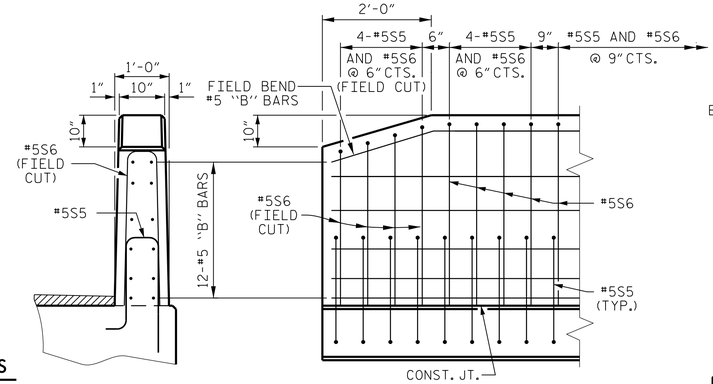
AT DAM IN OPEN JOINT (THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS

BOX BEAMS REQUIRED

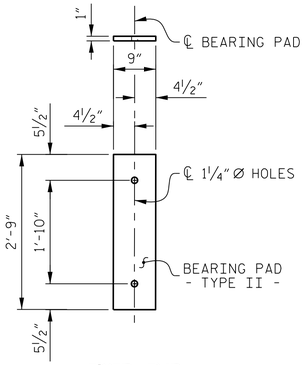
SPAN A	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR BOX BEAM	2	80'-0"	160'-0"
INTERIOR BOX BEAM	9	80'-0"	720'-0"
TOTAL	11		880'-0"



END VIEW

ELEVATION VIEW

END OF RAIL DETAILS



FIXED END

(TYPE II - 22 REQUIRED)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3'–0" x 2'–9" PRESTRESSED CONCRETE BOX BEAM UNIT 90° SKEW

ASSEMBLED BY : K. E. LOFTON	DATE : 9-17
CHECKED BY : P. R. GALLAGER	DATE : 9-17
DRAWN BY : DGE 10/11	REV. 4/15 MAA/TMG
CHECKED BY : TMG 11/11	

DRAWN BY : K. E. LOFTON	DATE : 9–17
CHECKED BY : P. R. GALLAGHER	DATE : 9–17
DESIGN ENGINEER : D. N. PRETORIUS	DATE : 12–17

PLANS PREPARED BY :
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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
3/7/2018

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No.	BY:	DATE:	No.	BY:	DATE:	S1–9
1			3			TOTAL SHEETS
2			4			17

STD. No. 33PCBB8_90S

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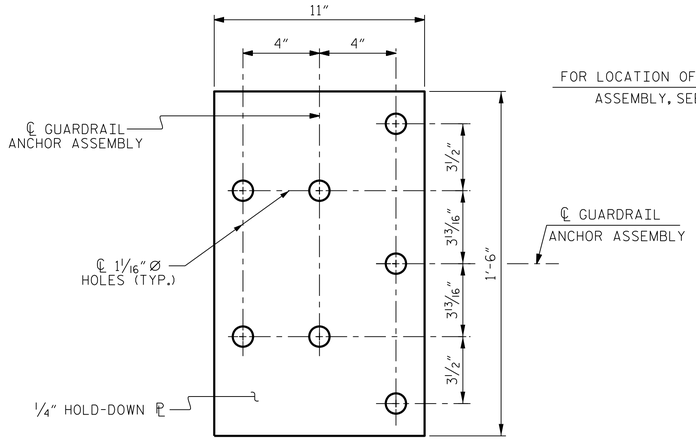
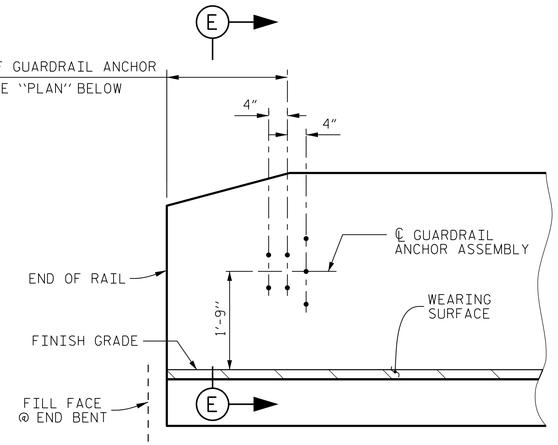
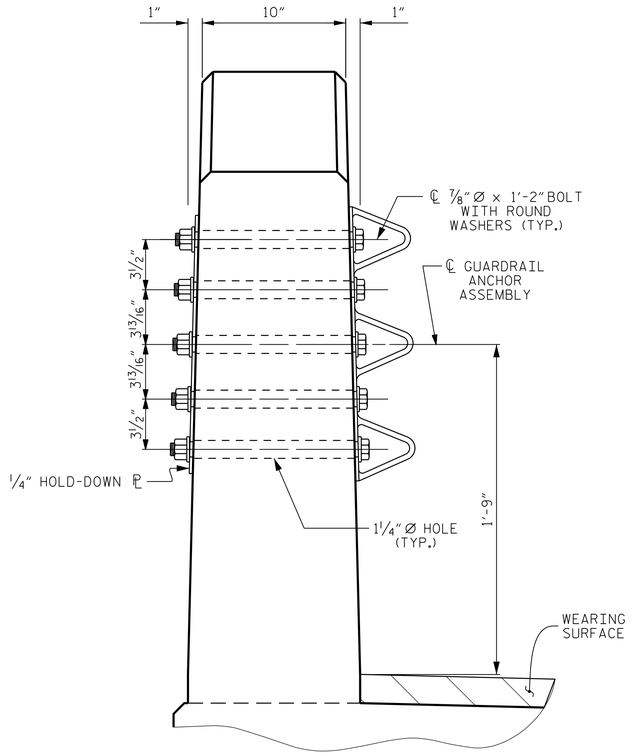


PLAN

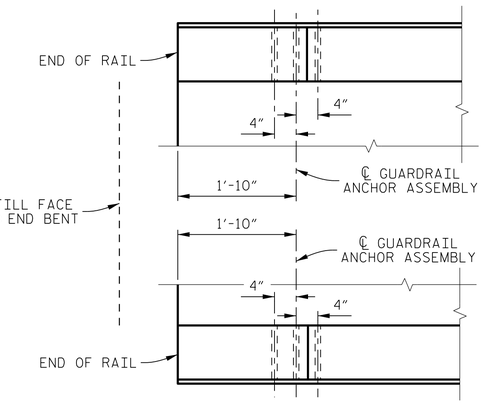


ELEVATION



SECTION E–E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.

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.

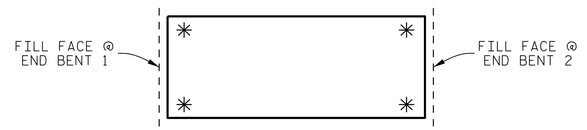
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

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.



SKETCH SHOWING POINTS OF ATTACHMENT

✱ LOCATION OF GUARDRAIL ATTACHMENT

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL

ASSEMBLED BY : K. E. LOFTON	DATE : 9-17
CHECKED BY : P. R. GALLAGHER	DATE : 9-17
DRAWN BY: MAA 5/10	REV. 6/13 MAA/GM
CHECKED BY: GM 5/10	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

DRAWN BY : K. E. LOFTON	DATE : 9–17
CHECKED BY : P. R. GALLAGHER	DATE : 9–17
DESIGN ENGINEER : D. N. PRETORIUS	DATE : 12–17

PLANS PREPARED BY :
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NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICIA H. CONNER
7DC48C... 1/31/2018

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No.	BY:	DATE:	No.	BY:	DATE:	S1–10
1			3			TOTAL SHEETS
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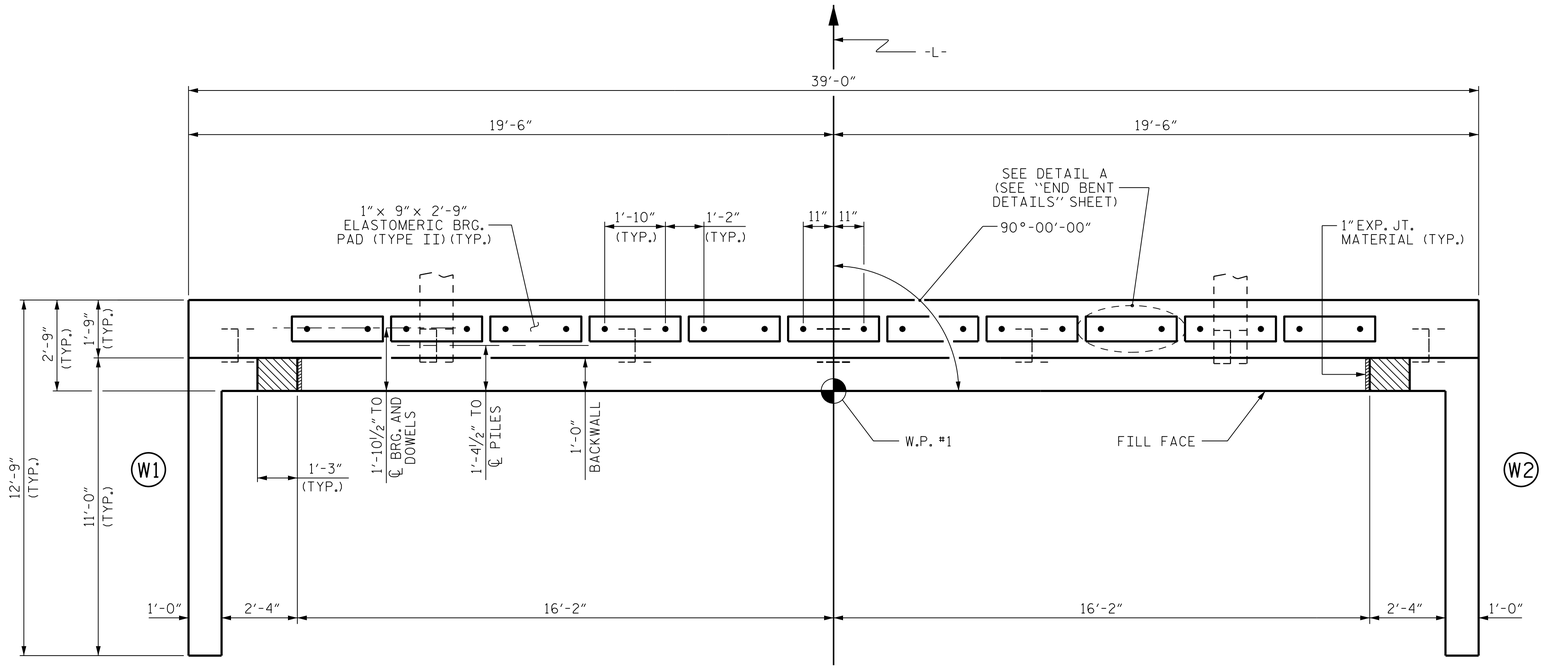
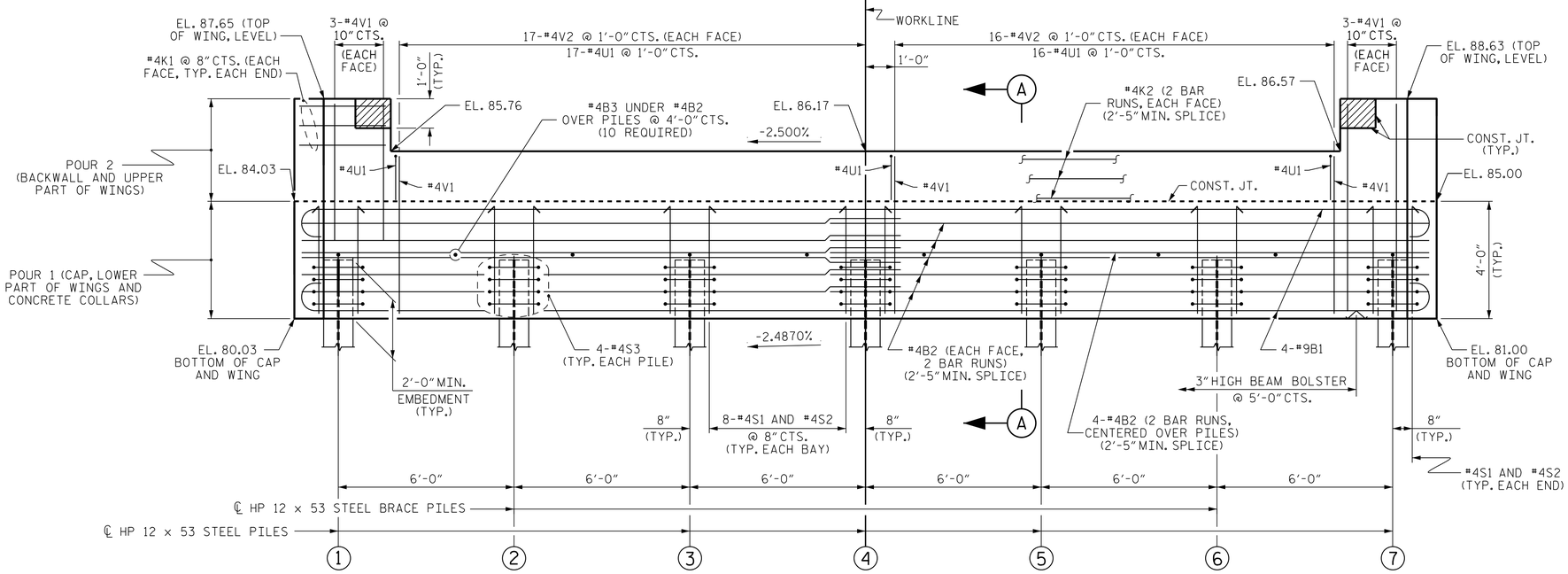


PLAN



ELEVATION

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 "END BENT DETAILS" SHEET.

FOR WING DETAILS, SEE "END BENT WING DETAILS" SHEET.

FOR SECTION A-A, SEE "END BENT DETAILS" SHEET.

FOR TEMPORARY DRAINAGE AT END BENT DETAIL, SEE "END BENT DETAILS" SHEET.

CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL" ON "END BENT DETAILS" SHEET.

PILE CHART	
LOCATION	TOP OF PILE ELEVATION
①	82.06
②	82.21
③	82.36
④	82.51
⑤	82.66
⑥	82.81
⑦	82.96

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

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NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
7DC48C2...
3/7/2018

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1			3			TOTAL SHEETS
2			4			17

STD. No. EB_33_90S4_33BB

ASSEMBLED BY :	K. E. LOFTON	DATE : 9-17
CHECKED BY :	P. R. GALLAGHER	DATE : 9-17
DRAWN BY :	WJH	12/11
CHECKED BY :	AAC	12/11
REV. 4/15	MAA/TMG	

DRAWN BY :	K. E. LOFTON	DATE : 9-17
CHECKED BY :	P. R. GALLAGHER	DATE : 9-17
DESIGN ENGINEER :	D. N. PRETORIUS	DATE : 12-17

PLANS PREPARED BY :
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5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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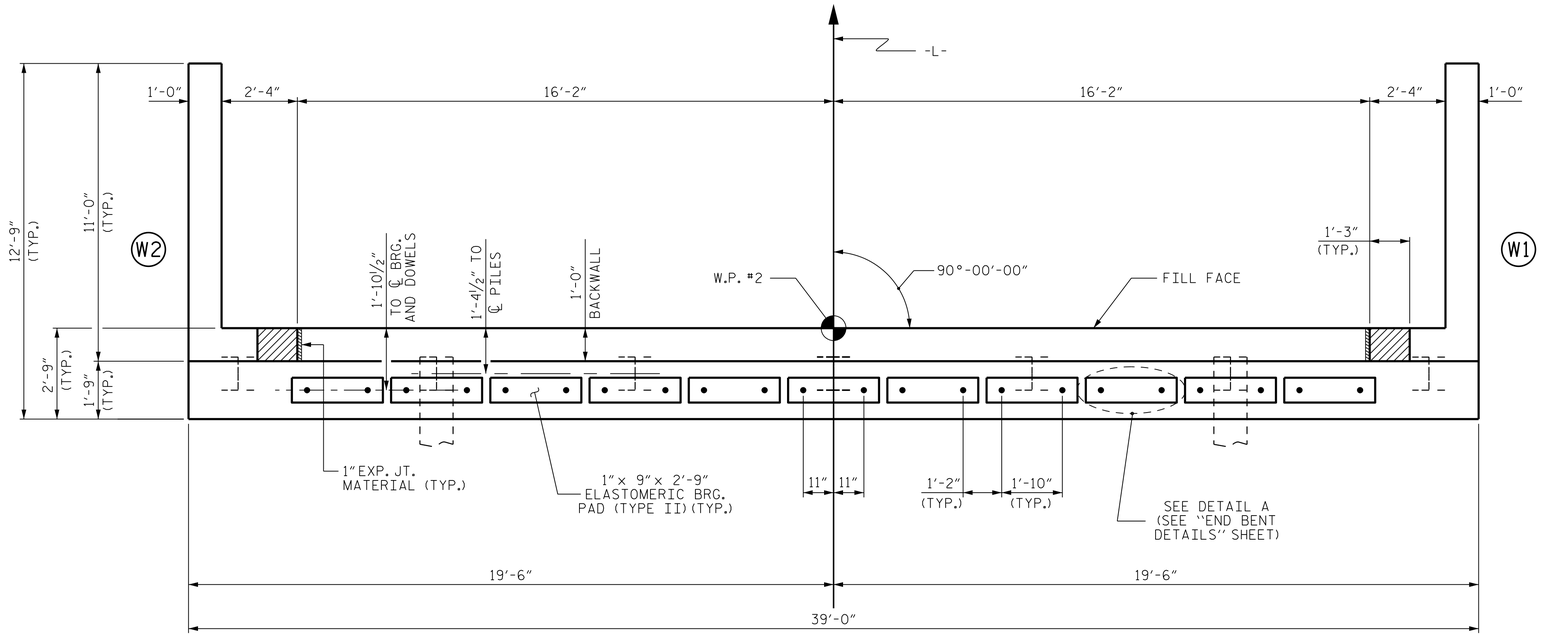
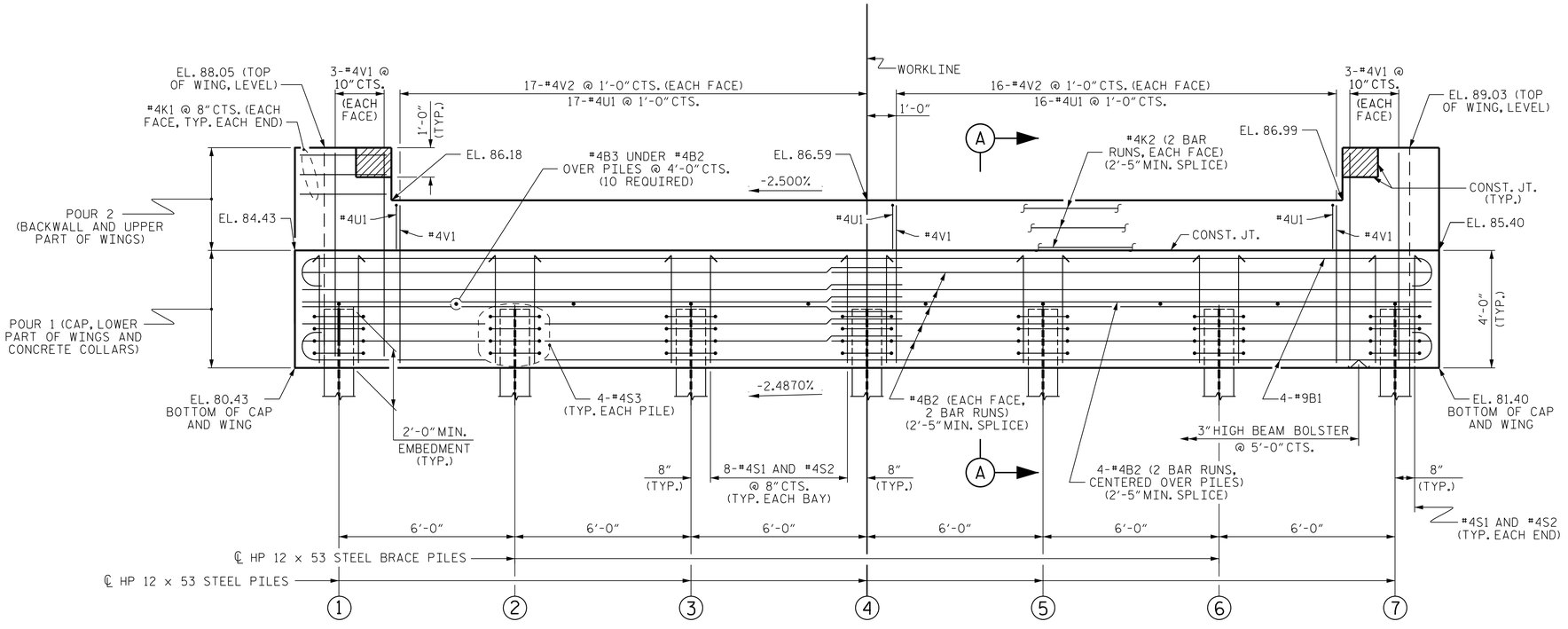


PLAN



ELEVATION

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 "END BENT DETAILS" SHEET.

FOR WING DETAILS, SEE "END BENT WING DETAILS" SHEET.

FOR SECTION A-A, SEE "END BENT DETAILS" SHEET.

FOR TEMPORARY DRAINAGE AT END BENT DETAIL, SEE "END BENT DETAILS" SHEET.

CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL" ON "END BENT DETAILS" SHEET.

PILE CHART	
LOCATION	TOP OF PILE ELEVATION
①	82.46
②	82.61
③	82.76
④	82.91
⑤	83.06
⑥	83.21
⑦	83.36

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2

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NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
7DC48C0A8F4F4E3...
3/7/2018

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1-12
1			3			TOTAL SHEETS
2			4			17

STD. No. EB_33_90S4_33BB

ASSEMBLED BY : K. E. LOFTON	DATE : 9-17	
CHECKED BY : P. R. GALLAGHER	DATE : 9-17	
DRAWN BY : WJH 12/11	REV. 4/15 MAA/TMG	
CHECKED BY : AAC 12/11		

DRAWN BY : K. E. LOFTON	DATE : 9-17	
CHECKED BY : P. R. GALLAGHER	DATE : 9-17	
DESIGN ENGINEER : D. N. PRETORIUS	DATE : 12-17	

PLANS PREPARED BY :
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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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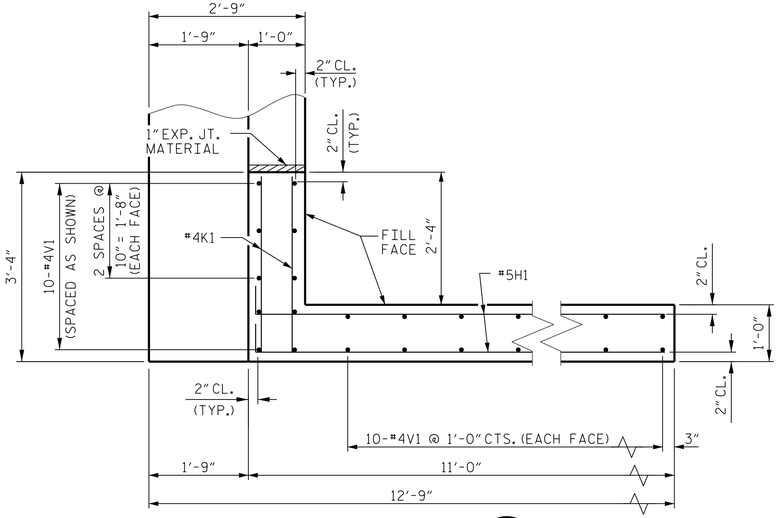
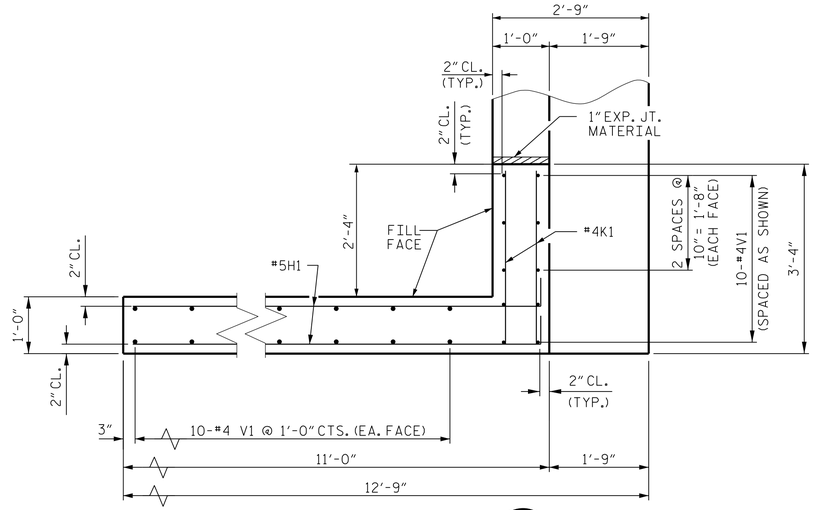
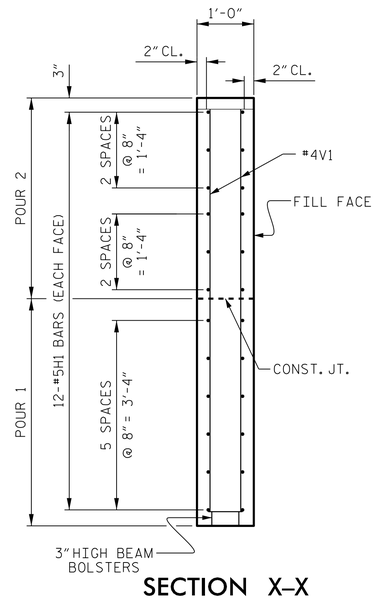


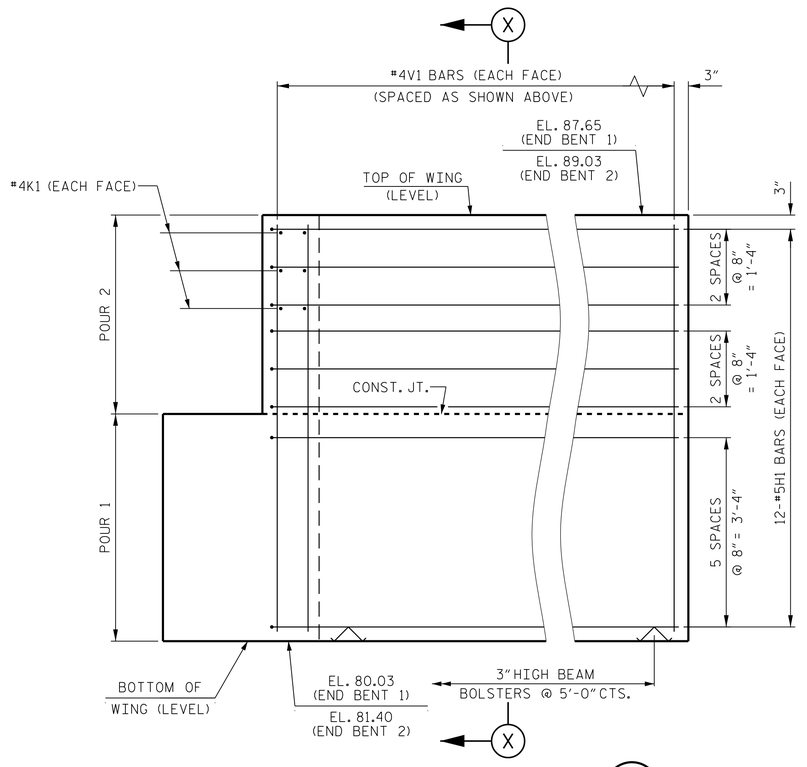
PLAN OF WING W1



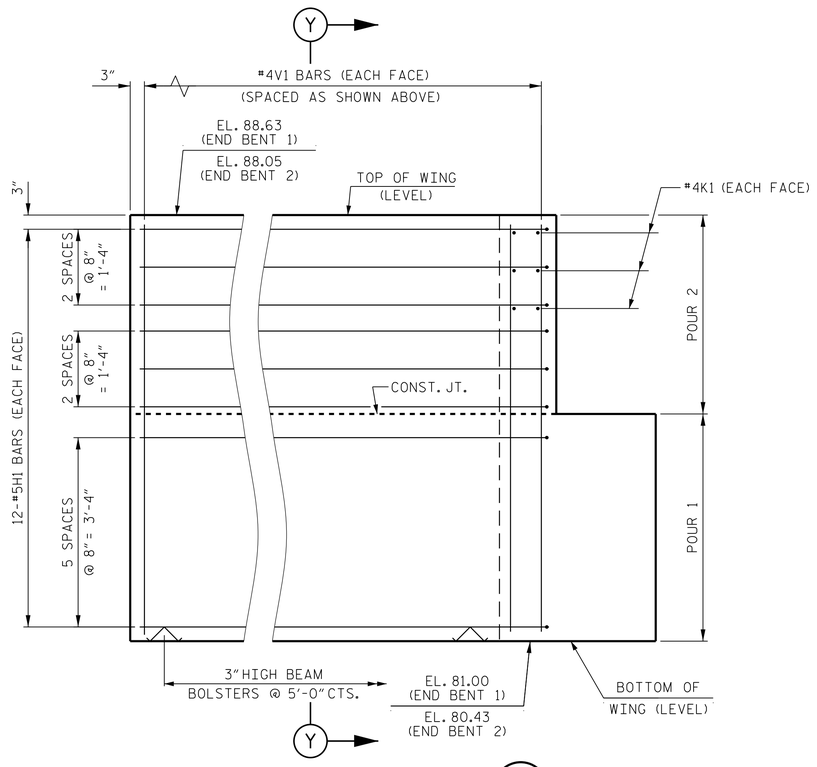
PLAN OF WING W2



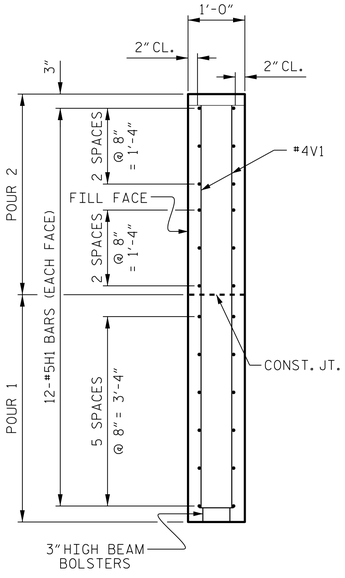
SECTION X–X



ELEVATION OF WING W1



ELEVATION OF WING W2



SECTION Y–Y

WING DETAILS

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT WING DETAILS

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NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
7DC48b1f... Patrick R. Gallagher
1/31/2018

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2			4			17

PLANS PREPARED BY :
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Raleigh, NC 27606–3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	K. E. LOFTON	DATE : 9–17
CHECKED BY :	P. R. GALLAGHER	DATE : 9–17
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DRAWN BY : WJH	12/11	REV. 4/15 MAA/TMC
CHECKED BY : AAC	12/11	

STD. No. EB_33_90S4BB

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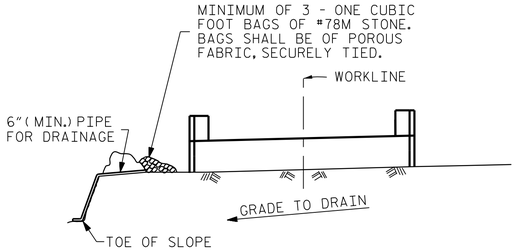
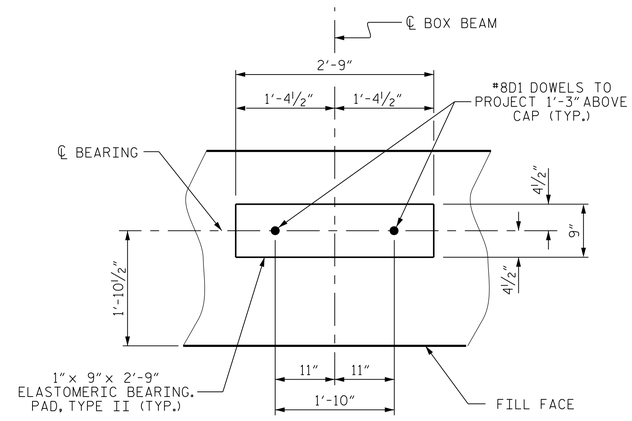


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

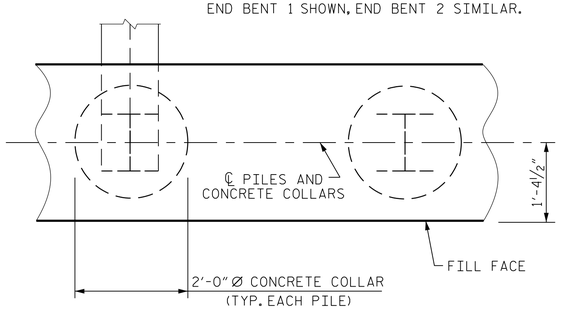
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

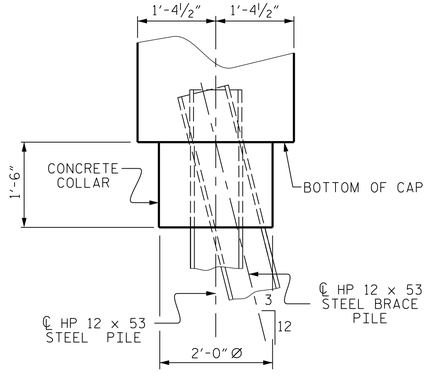


DETAIL A

END BENT 1 SHOWN, END BENT 2 SIMILAR.



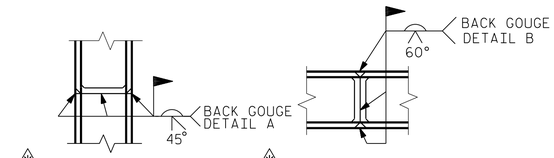
PLAN



ELEVATION

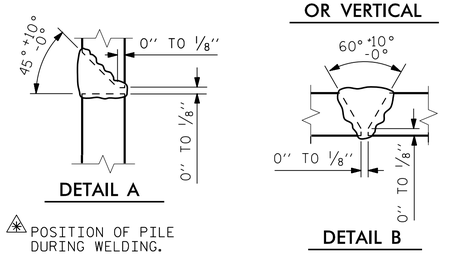
CORROSION PROTECTION FOR STEEL PILES DETAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.



PILE VERTICAL

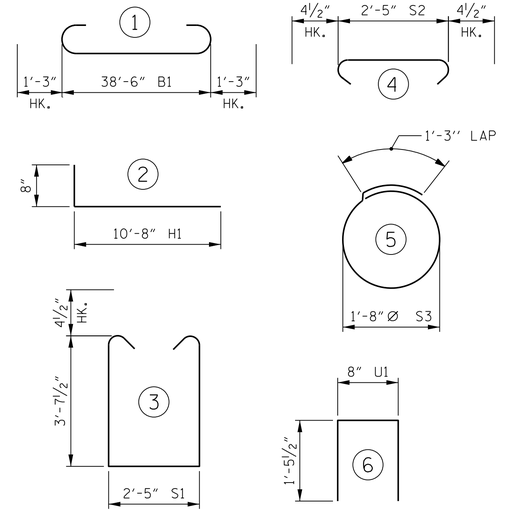
PILE HORIZONTAL OR VERTICAL



POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT 1	END BENT 2
PILE DRIVING EQUIPMENT SETUP FOR HP 12 x 53 STEEL PILES 7 EACH	PILE DRIVING EQUIPMENT SETUP FOR HP 12 x 53 STEEL PILES 7 EACH
HP 12 x 53 STEEL PILES 7 REQUIRED 490.0 LIN. FT.	HP 12 x 53 STEEL PILES 7 REQUIRED 490.0 LIN. FT.
PILE REDRIVES 7 EACH	PILE REDRIVES 7 EACH

BILL OF MATERIAL FOR ONE END BENT

BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		41'-0"	1,115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#8	STR	2'-3"	132
H1	48	#5	2	11'-4"	567
K1	12	#4	STR	2'-11"	23
K2	12	#4	STR	20'-7"	165
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
U1	33	#4	6	3'-7"	79
V1	60	#4	STR	7'-2"	287
V2	66	#4	STR	5'-3"	231

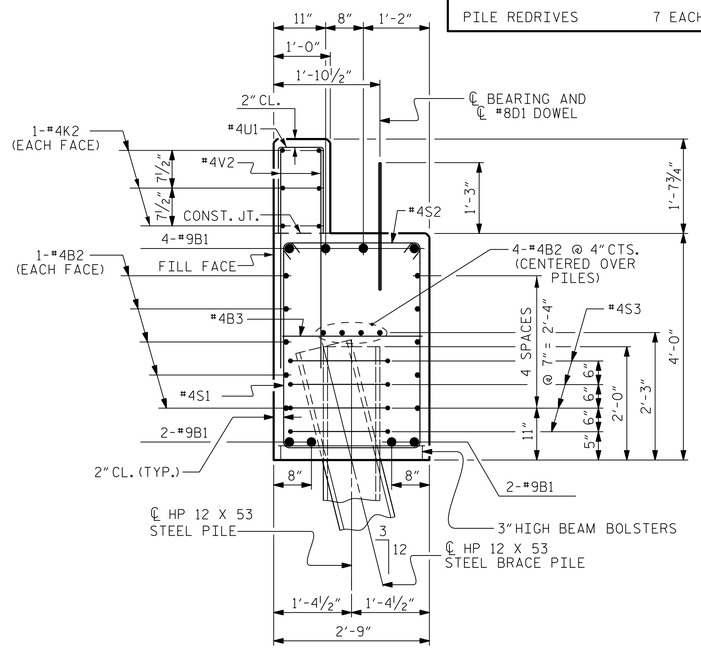
REINFORCING STEEL (FOR ONE END BENT) 3,576 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR 1 CAP, LOWER PART OF WINGS AND CONCRETE COLLARS 20.1 C.Y.

POUR 2 BACKWALL AND UPPER PART OF WINGS 5.4 C.Y.

TOTAL CLASS A CONCRETE 25.5 C.Y.



SECTION A–A

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

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
7DC4BC8E3E8F4A4...
3/7/2018

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1-14
1			3			TOTAL SHEETS
2			4			17

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	K. E. LOFTON	DATE : 9-17
CHECKED BY :	P. R. GALLAGHER	DATE : 9-17
DESIGN ENGINEER :	D. N. PRETORIUS	DATE : 12-17

ASSEMBLED BY :	K. E. LOFTON	DATE :	9-17
CHECKED BY :	P. R. GALLAGHER	DATE :	9-17
DRAWN BY : WJH 12/11	REV. 8/14		MAA/TMG
CHECKED BY : AAC 12/11			

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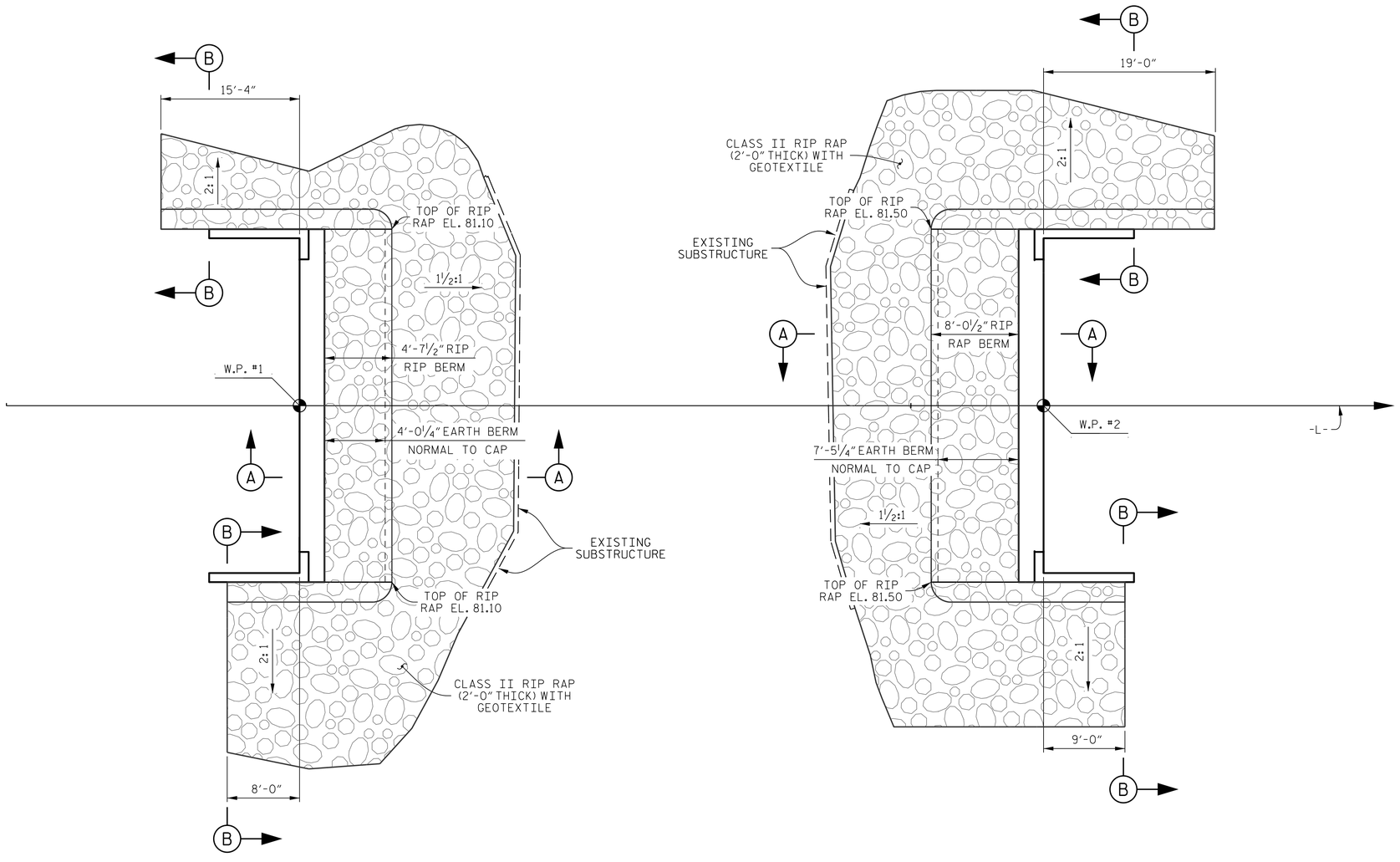

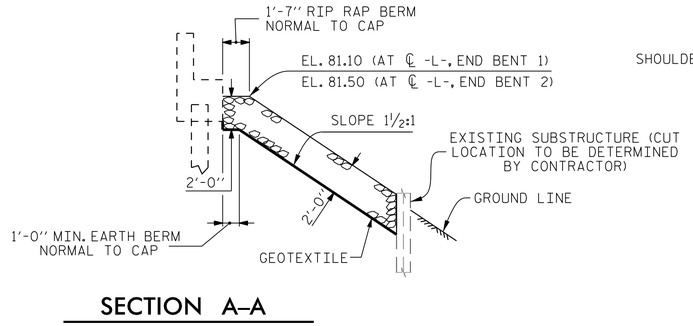

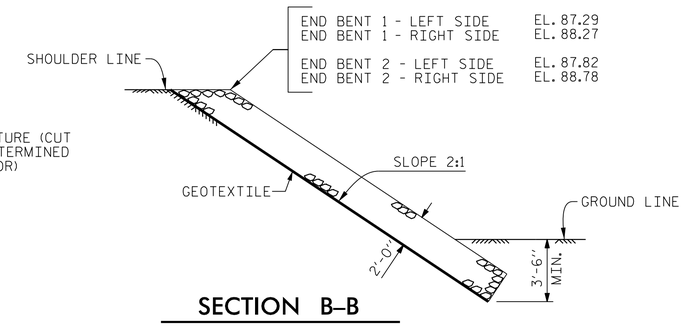

ESTIMATED QUANTITIES

BRIDGE @ STA. 14+73.50 -L-	PLAIN RIP RAP CLASS II (TONS)	GEOTEXTILE FOR DRAINAGE (SQUARE YARDS)
END BENT 1	230	255
END BENT 2	210	235

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

DRAWN BY : K. E. LOFTON DATE : 9–17
CHECKED BY : P. R. GALLAGHER DATE : 9–17
DESIGN ENGINEER : D. N. PRETORIUS DATE : 12–17

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606–3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Patrick R. Gallagher
7DC48C6E5555444...
3/7/2018

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1–15
1			3			TOTAL SHEETS
2			4			17

STR. #1

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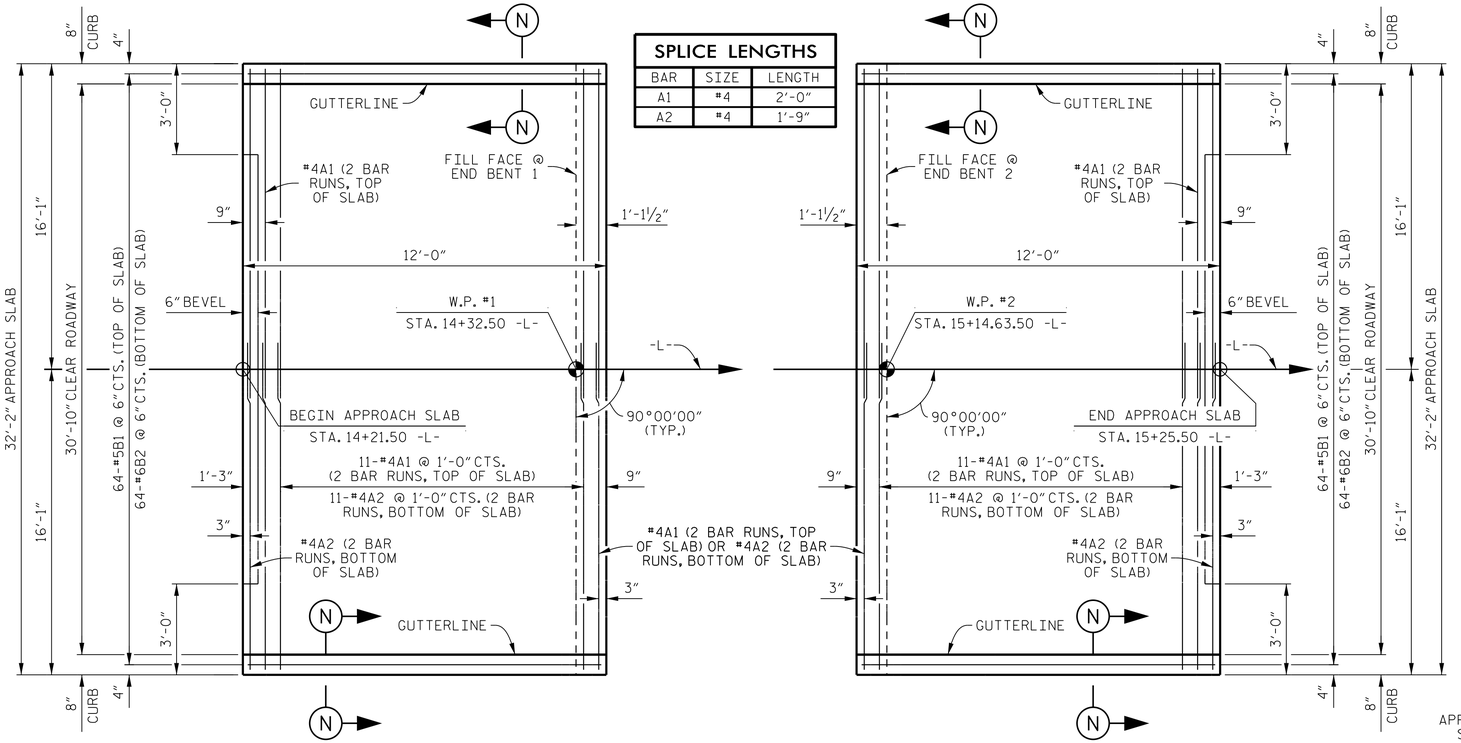
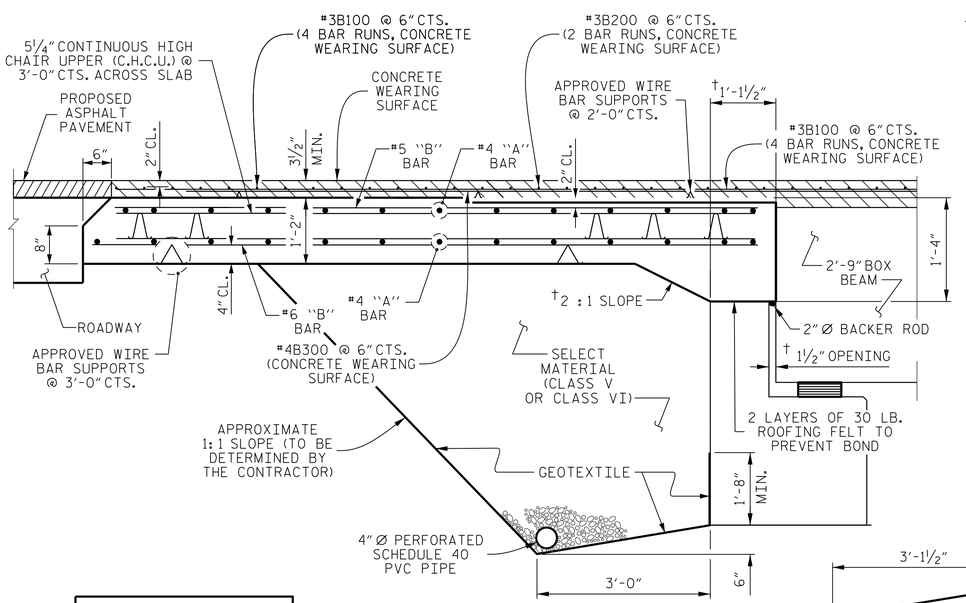


PLAN OF APPROACH SLAB AT END BENT 1

PLAN OF APPROACH SLAB AT END BENT 2

SPLICE LENGTHS		
BAR	SIZE	LENGTH
A1	#4	2'-0"
A2	#4	1'-9"



† NORMAL TO END BENT

SECTION THRU SLAB

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.

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.

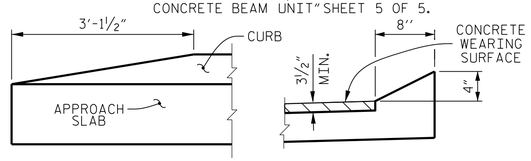
FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

THE CONTRACTOR HAS THE OPTION TO OMIT GROUT BETWEEN THE APPROACH SLAB AND THE CORED SLAB UNITS AND POUR THE APPROACH SLAB DIRECTLY AGAINST THE CORED SLAB UNITS. SEE "OPTIONAL JOINT DETAIL".

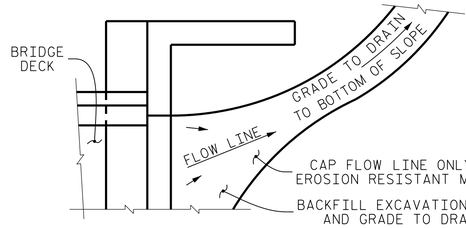
FOR QUANTITIES AND REINFORCEMENT OF CONCRETE WEARING SURFACE, SEE "3'-0" x 2'-9" PRESTRESSED CONCRETE BEAM UNIT" SHEET 5 OF 5.



END OF CURB WITHOUT SHOULDER BERM GUTTER

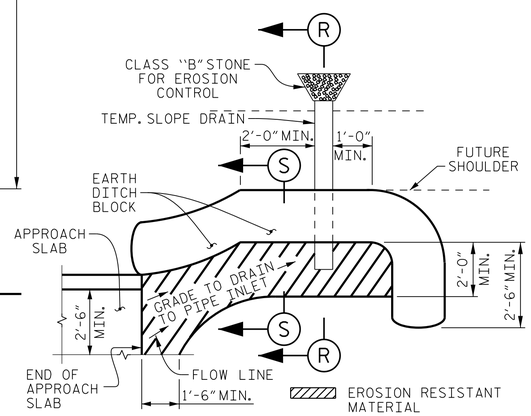
SECTION N–N

CURB DETAILS



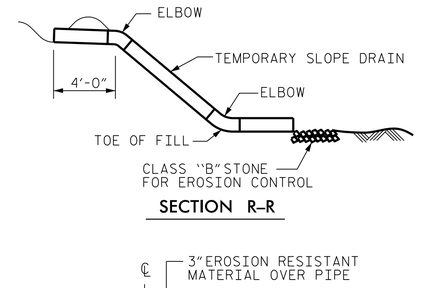
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

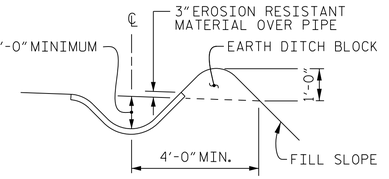


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 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 R–R



SECTION S–S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

BILL OF MATERIAL

APPROACH SLAB AT END BENT 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"	1,121
REINFORCING STEEL					1,412 LBS.
* EPOXY COATED REINFORCING STEEL					1,039 LBS.
CLASS "AA" CONCRETE					
POUR 1	SLAB AND CURBS				17.0 CU. YDS.

APPROACH SLAB AT END BENT 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"	1,121
REINFORCING STEEL					1,412 LBS.
* EPOXY COATED REINFORCING STEEL					1,039 LBS.
CLASS "AA" CONCRETE					
POUR 1	SLAB AND CURB				17.0 CU. YDS.

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

ASSEMBLED BY : K. E. LOFTON	DATE : 9-17
CHECKED BY : P. R. GALLAGHER	DATE : 9-17
DRAWN BY : MAA 11/11	REV. 12-17 MAA/THC
CHECKED BY : AAC 11/11	

DRAWN BY : K. E. LOFTON	DATE : 9–17
CHECKED BY : P. R. GALLAGHER	DATE : 9–17
DESIGN ENGINEER : D. N. PRETORIUS	DATE : 12–17

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
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NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
1/31/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE BOX BEAM UNIT (SUB–REGIONAL TIER – 90° SKEW)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S1–16
1			3			TOTAL SHEETS
2			4			17

STD. No. BAS_BB_33_90S STR. #1

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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 2012 "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 1'-0" 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 7/8" 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" 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.

PROJECT NO. 17BP.3.R.61

SAMPSON COUNTY

STATION: 14+73.50 –L–

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD NOTES

ENGLISH

JANUARY, 1990

DRAWN BY : K. E. LOFTON DATE : 9-17
CHECKED BY : P. R. GALLAGHER DATE : 9-17
DESIGN ENGINEER : D. N. PRETORIUS DATE : 12-17

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

REV. 6-16-95 EEM (-) RGW REV. 5-7-03 RWW (-) JTE REV. 10-1-11 MAA (-) GM
REV. 8-16-99 RWW (-) LES REV. 5-1-06 TLA (-) GM

STD. No. SN STR. #1

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