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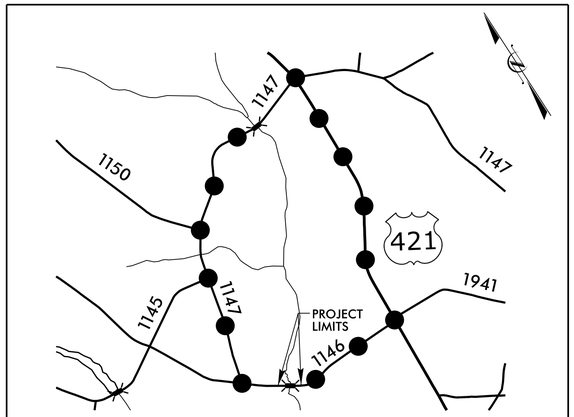
09/08/99

TIP PROJECT: 17BP.3.R.50

CONTRACT: DC0175

See Sheet 1-A For Index of Sheets



VICINITY MAP

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

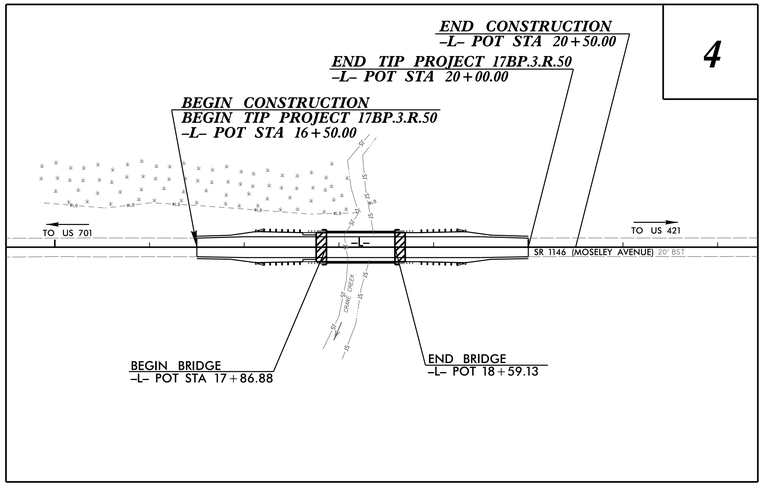
SAMPSON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.50	1	35

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.3.R.50		PE
17BP.3.R.50		ROW/UTIL.
17BP.3.R.50		CONSTR.

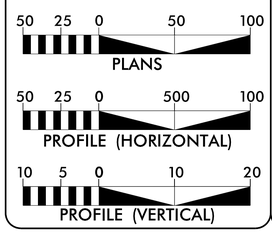
LOCATION: REPLACE BRIDGE NO. 17 OVER CRANE CREEK ON SR 1146 (MOSELEY AVENUE)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2013 = 330
ADT 2033 = 660
K = 10 %
D = 60 %
T = 6 % *
V = 60 MPH
* TTST = 2% DUAL 4%
FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 17BP.3.R.50 = 0.052 MILES

LENGTH OF STRUCTURE PROJECT 17BP.3.R.50 = 0.014 MILES

TOTAL LENGTH OF PROJECT 17BP.3.R.50 = 0.066 MILES

Prepared In the Office of:

HNTB

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 23, 2016

LETTING DATE:
MARCH 16, 2017

DAVID W. BASS, PE
PROJECT ENGINEER

MONICA J. DUVAL
PROJECT DESIGN ENGINEER

ALTON R. EDGERTON
NCDOT CONTACT

HYDRAULICS ENGINEER

DocuSigned by: James A. Byrd 2/3/2017

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

SIGNATURE:

ROADWAY DESIGN ENGINEER

DocuSigned by: David W. Bass, PE 2/3/2017

NORTH CAROLINA PROFESSIONAL SEAL 020107 ENGINEER DAVID W. BASS P.E.

SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

03-FEB-2017 13:20
\Roadway\Proj\8l0017_rdy_tsh.dgn
HNTB

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	1A–1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 020107 ENGINEER DAVID W. BASS

DocuSigned by: David W. Bass, PE
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2/3/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

GENERAL NOTES:

2012 SPECIFICATIONS

EFFECTIVE: 01–17–2012
REVISED: 10–31–2014

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE–IN.

CLEARING:

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

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

THE ENGINEER SHALL CHECK THE TRUCTURE END BENT PLANS, DETAILS, AND CROSS SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROCHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

WATER – SAMPSON COUNTY WATER
PHONE – CENTURYLINK
POWER – FOUR COUNTY EMC

RIGHT–OF–WAY MARKERS:

ALL RIGHT–OF–WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01–17–2012
REV. 02–29–2016

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

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.03	Method of Clearing – Modified Method III (Use detail in lieu of standard)
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	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
DIVISION 8 – INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet – for Cast Iron Double Frame and Grates
840.66	Drainage Structure steps
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Beg. March 2013 letting use detail in lieu of standard)
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

8/17/99

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04/06/15

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	1B-1

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

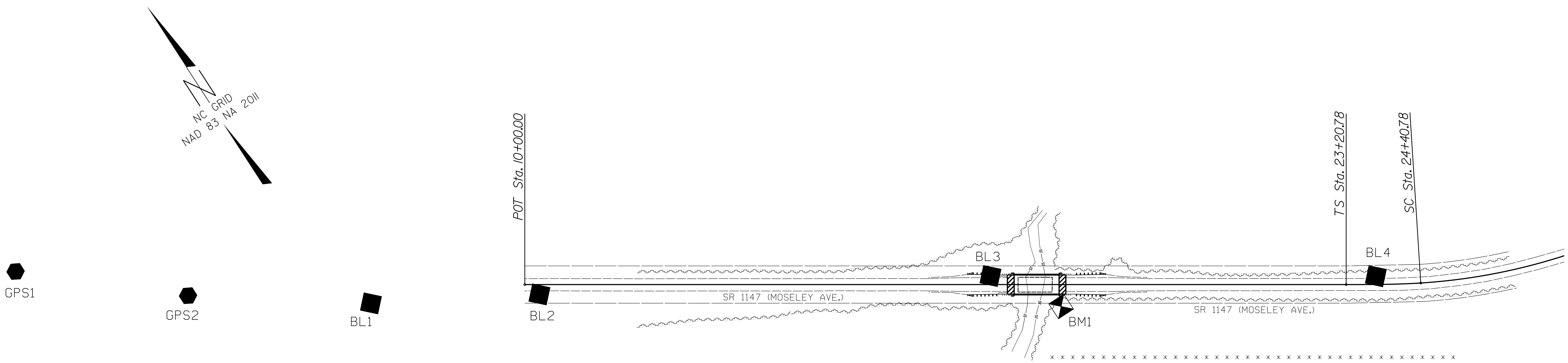
SANITARY SEWER:

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

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — 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.

SURVEY CONTROL SHEET 81-0017



* *

BM 1 ELEVATION = 74.13
N 412550 E 2215541
L STATION 18+62.00 35 RIGHT
RR_SPIKE_20"_GUM

* *

PDE

ALIGN	STATION	OFFSET	NORTH	EAST
L	17+50.00	50.00	412598.78521	2215438.50425
L	17+50.00	30.00	412615.55471	2215449.40305
L	17+75.00	30.00	412601.93121	2215470.36493
L	17+75.00	50.00	412585.16171	2215459.46613
L	18+30.00	30.00	412571.95950	2215516.48105
L	18+30.00	38.00	412565.25170	2215512.12153
L	18+50.00	-30.00	412611.36920	2215565.94696
L	18+50.00	-45.00	412623.94633	2215574.12106
L	19+00.00	-45.00	412596.69932	2215616.04481
L	19+00.00	-30.00	412584.12220	2215607.87071
L	19+15.00	38.00	412518.93180	2215583.39191
L	19+15.00	30.00	412525.63960	2215587.75143

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
GPS1	GPS CAP & REBAR	414620.1450	2212811.3540	115.09	OUTSIDE PROJECT LIMITS	
GPS2	GPS CAP & REBAR	413966.0260	2213637.3360	104.29	OUTSIDE PROJECT LIMITS	
BL1	TRV CAP & REBAR	413344.4180	2214375.1320	89.21	OUTSIDE PROJECT LIMITS	
BL2	TRV CAP & REBAR	413023.2660	2214847.8460	79.25	10+23.43	15.96 RT
BL3	TRV CAP & REBAR	412652.8450	2215472.1060	71.76	17+48.71	13.64 LT
BL4	TRV CAP & REBAR	412314.8140	2215991.5040	95.63	23+68.56	13.09 LT

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	413049.4140	2214836.8950
TS	23+20.78	412329.6690	2215944.3346
SC	24+40.78	412266.4314	2216046.2946
CS	30+73.99	412156.5263	2216657.9304
ST	31+93.99	412180.3116	2216775.5276
POT	33+27.39	412209.5180	2216905.6880

NOTES:

⬡ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL AND VERTICAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM).

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

THE FILES TO BE FOUND ARE AS FOLLOWS:
81-0017_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-2"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 413966.026(ft) EASTING: 2213637.336(ft)
ELEVATION: (ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998934300
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- L STATION 10+00.00 IS
S 52° 36′ 56″ E 1,509.68′
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 020107 ENGINEER DAVID W. BASS

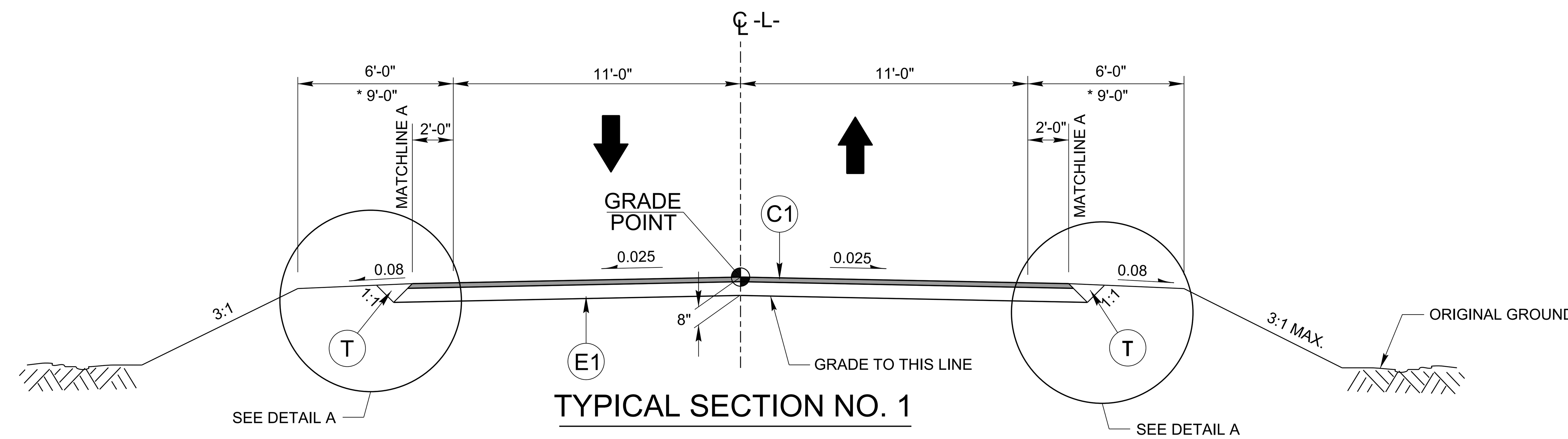
2/3/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

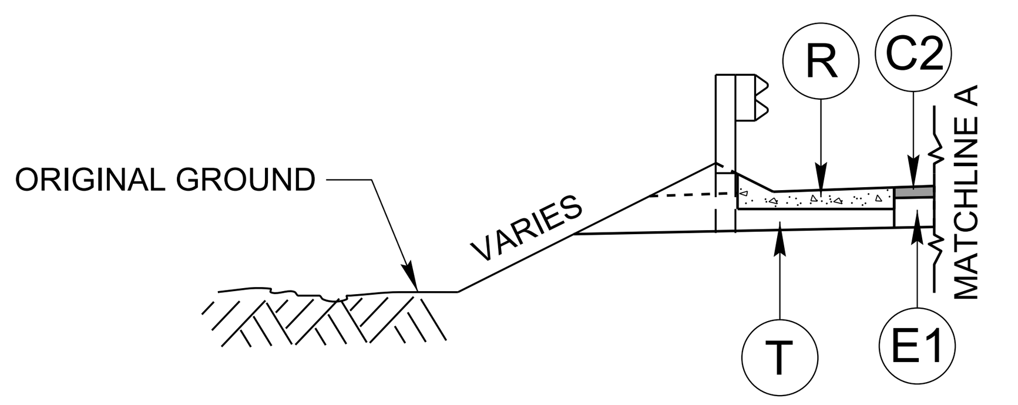
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL

ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



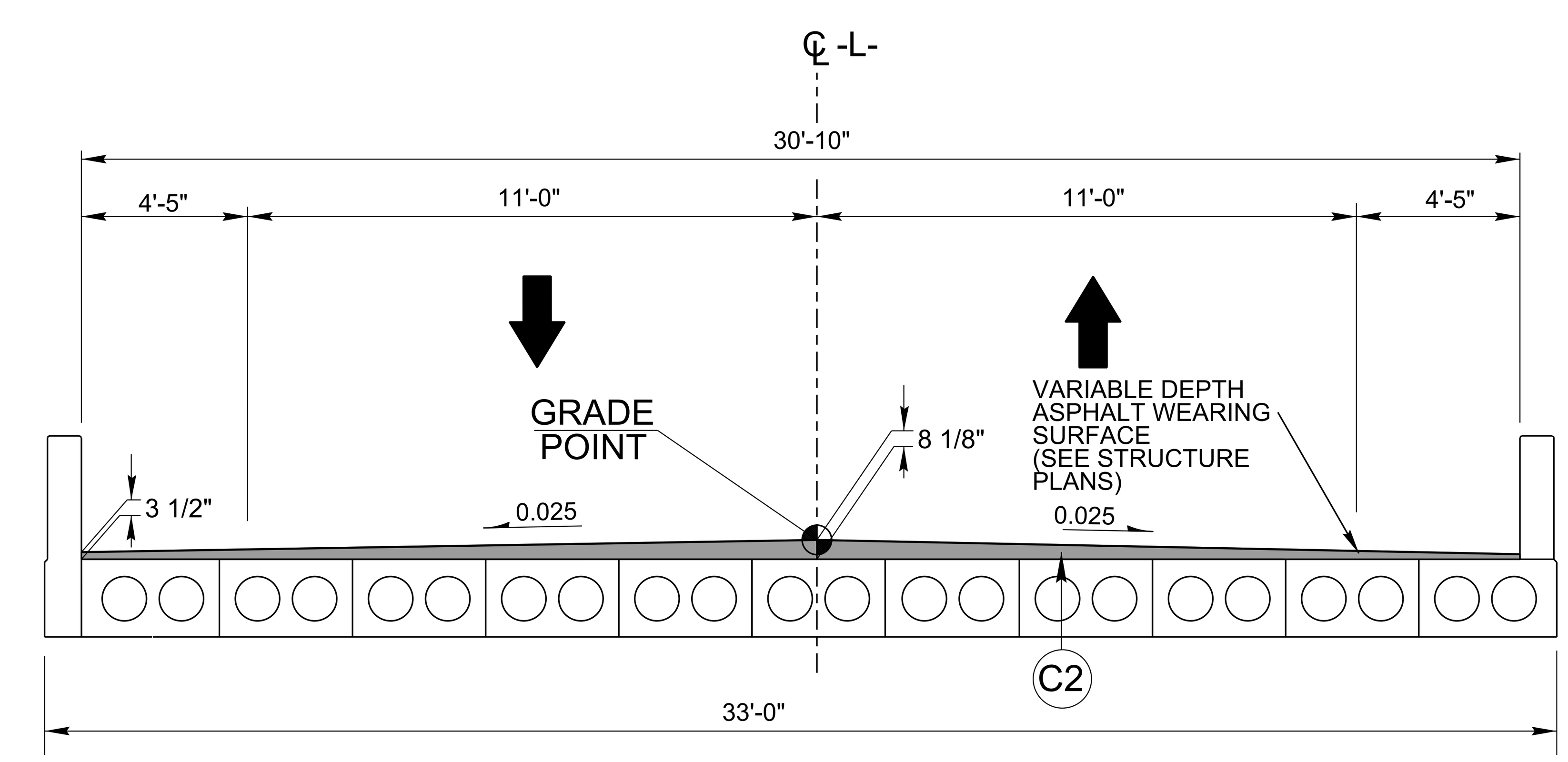
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FROM:
-L- STA 16+50.00 TO STA 17+86.88(BRIDGE)
-L- STA 18+59.13(BRIDGE) TO STA 20+00.00



DETAIL A

SHOULDER BERM GUTTER LOCATIONS
-L- STA 17+61.88 to STA 17+76.00 LT/RT



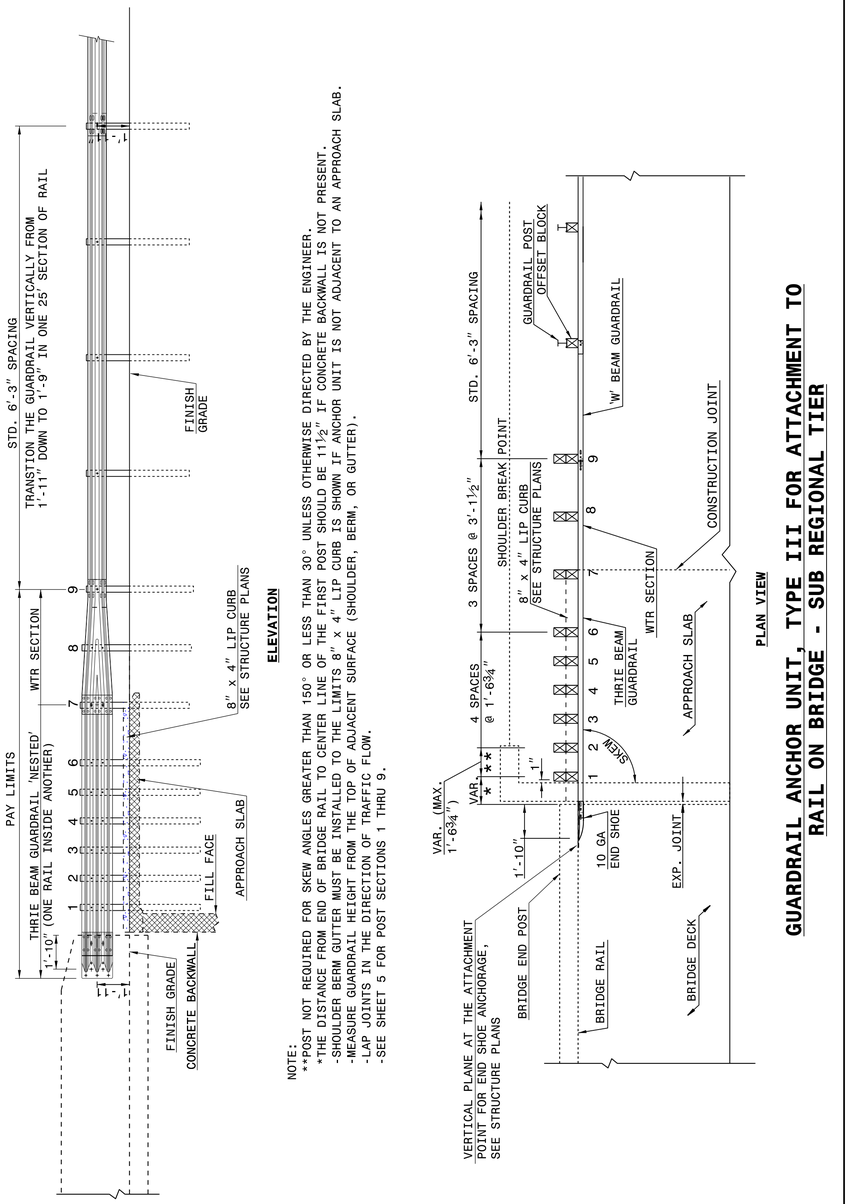
TYPICAL SECTION NO. 2

CORED SLAB BRIDGE OVERLAY

USE TYPICAL SECTION NO. 2 FROM:
-L- STA 17+86.88 TO STA 18+59.13

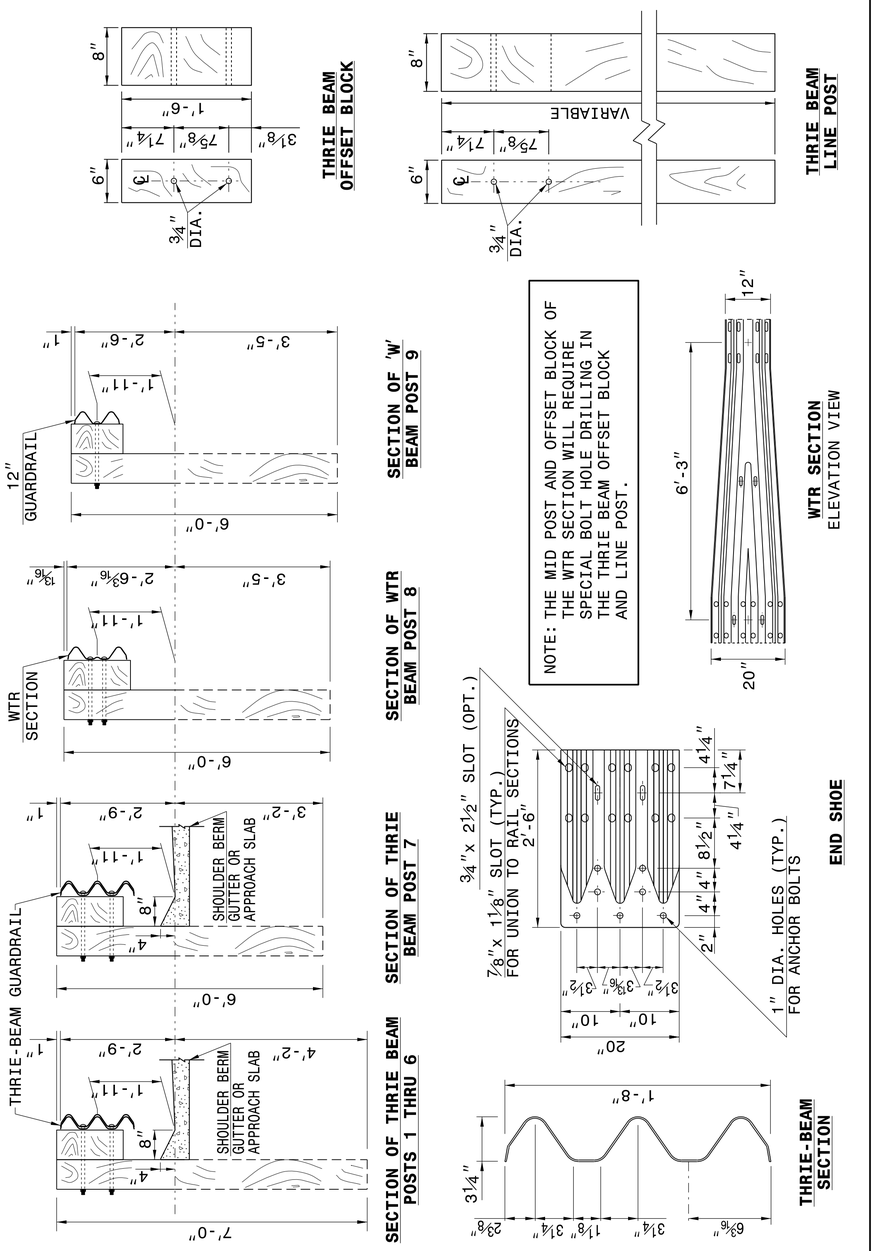
NOTES: * SHOULDER WIDTH INCREASED 3' WITH THE USE OF GUARDRAIL

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	2C-1



NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER



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

SEE TITLE BLOCK

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

$$$$USERNAME$$$$
$$$$SYSTIME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
17.BP.3.R.50	2C-2

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

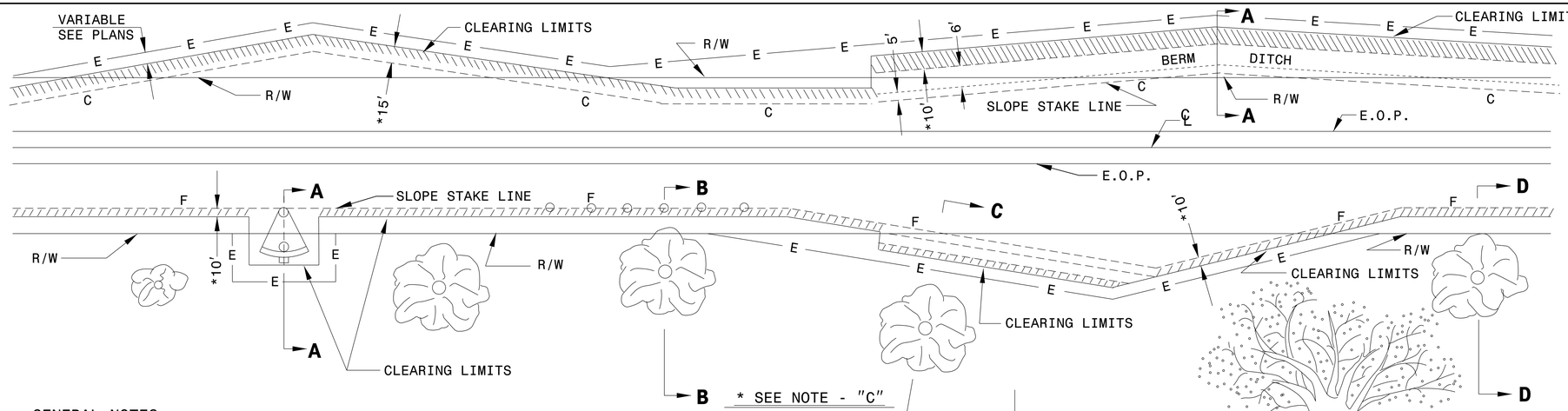
ENGLISH DETAIL DRAWING FOR

METHOD OF CLEARING

MODIFIED METHOD - III

SHEET 1 OF 1

200D03



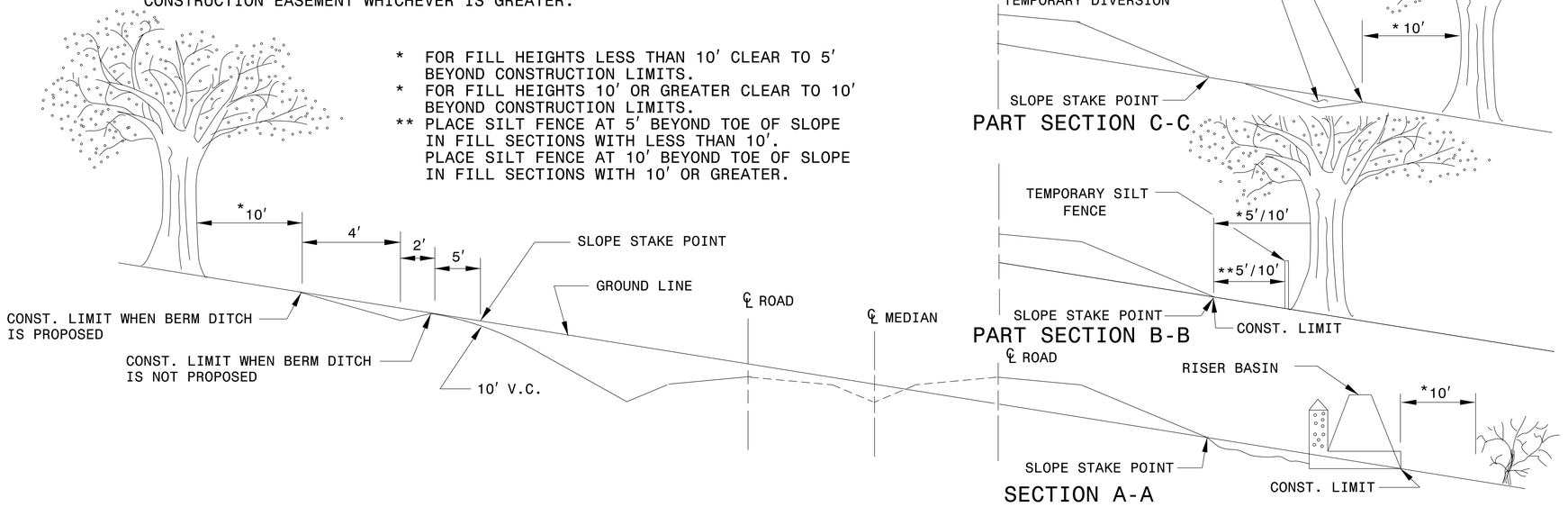
GENERAL NOTES:

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.



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

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

$$$$$SYSTIME$$$$
$$$$USERNAME$$$$ DGN$$$$$$$$$$$$$$$$

12/06/07

COMPUTED BY: MONICA DUVAL DATE: 11/01/16
CHECKED BY: DAVID W. BASS, PE DATE: 11/01/16

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	3B–1

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
–L– STA 16+50.00	–L– STA 17+86.88(BRIDGE)	58	104	46	
–L– STA 18+59.13(BRIDGE)	–L– STA 20+00.00	394	230		164
TOTALS:		452	334	46	164
WASTE IN LIEU OF BORROW				–46	–46
PROJECT TOTALS:		452	334	0	118
GRAND TOTALS:		452	334	0	118
SAY:		460			118

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

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
–L–	16+50.00	17+92.82	CL	317
	18+48.26	20+00.00	CL	331
			TOTAL:	648
			SAY:	650

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH (FT)
–L–	17+61.88 RT	17+76.00 RT	14.12
	17+61.88 LT	17+76.00 LT	14.12
		TOTAL:	28.24
		SAY:	30

ROW AREA DATA SUMMARY

PARCEL NO.	PROPERTY OWNERS NAMES	PROP. R/W	PERM. UTILTIY EASE.	PERM. DRAIN. EASE.	PERM. DRAINAGE UTILITY EASE.	CONST. EASE.
1	TONY INGRAM MATTHIS AND WIFE					1416.00 S.F.
2	J. KEITH JONES AND WIFE LEANNE B.			500.00 S.F.		
3	R. FLETCHER PEARSON			680.00 S.F.		2040.00 S.F.
4	RONALD CLAYTON MATTHIS & TONY I.			750.00 S.F.		3109.00 S.F.

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CAAP 12"	CAAP 15"	CAAP 18"	CAAP 24" .064	CAAP 30" .079	CAAP 36"	CAAP 42" .109	CAAP 48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE) 12" .064	15" .064	18" .064	24" .064	24"	30" .079	30"	36" .079	36"	42" .109	42"	48" .109	48"	CLASS III R.C. PIPE OR ALUMINIZED C.S. PIPE, TYPE IR OR HDPE PIPE, TYPE S OR D 12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G			D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	TB GRATED D.I., TYPE 'B' STD. 840.35	T.B.D.I. (N.S.) FRAME AND TWO GRATES STD. 840.29					CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
–L– 17+65.00	LT	0401		72.72																																							1																				1	1									
		0401	0402		69.97	68.41																								24																																										
–L– 17+65.00	LT	0402		72.72																																							1																				1	1									
		0402	OUT		68.41	67.53																								16																																										
TOTAL																														40													2																				2	2									

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS XI MOD	TYPE III	GRAU 350	M–350	XIII	CAT–1	VI MOD	BIC	AT–1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–L–	STA 17+11.88	STA 17+86.88(BRIDGE)	RT	75'			STA 17+86.88(BRIDGE)		4.42'	7.42'	50'		1'			1	1													
	STA 17+11.88	STA 17+86.88(BRIDGE)	LT	75'				STA 17+86.88(BRIDGE)	4.42'	7.42'		50'		1'		1	1													
	STA 18+59.13(BRIDGE)	STA 19+34.13	RT	75'				STA 18+59.13(BRIDGE)	4.42'	7.42'		50'		1'		1	1													
	STA 18+59.13(BRIDGE)	STA 19+34.13	LT	75'			STA 18+59.13(BRIDGE)		4.42'	7.42'	50'		1'			1	1													
			SUBTOTAL:	300'												4	4													
			ANCHOR DEDUCTIONS:																											
			GRAU 350: 4@50'	–200'																										
			TYPE III:4@18.75'	–75'																										
			TOTAL:	25'																										
			SAY:	37.5'												4	4													
			5 ADDITIONAL POST																											

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8/17/99

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

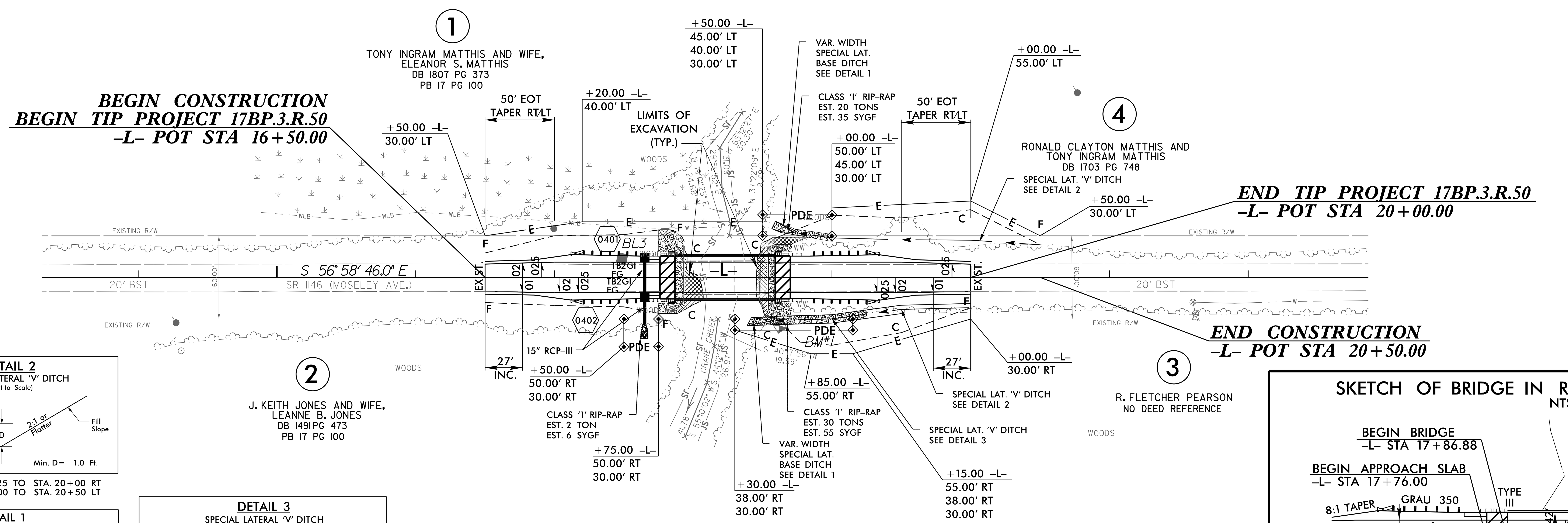
PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	4
R/W SHEET NO.	

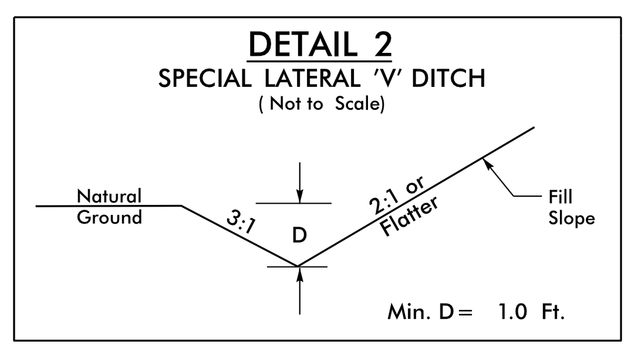
ROADWAY DESIGN ENGINEER — SEAL 020107 — DocuSigned by: David W. Bass — 2/3/2017

HYDRAULICS ENGINEER — SEAL 15764 — DocuSigned by: James A. Byrd — 2/3/2017

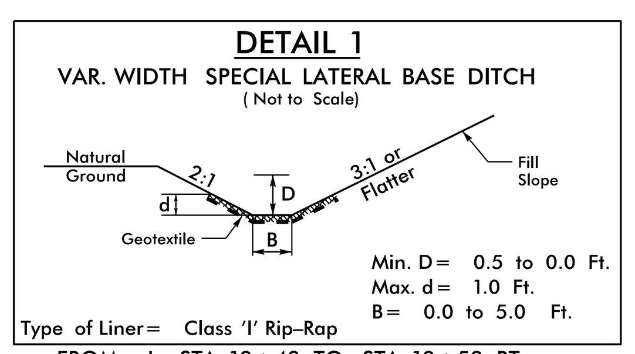
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

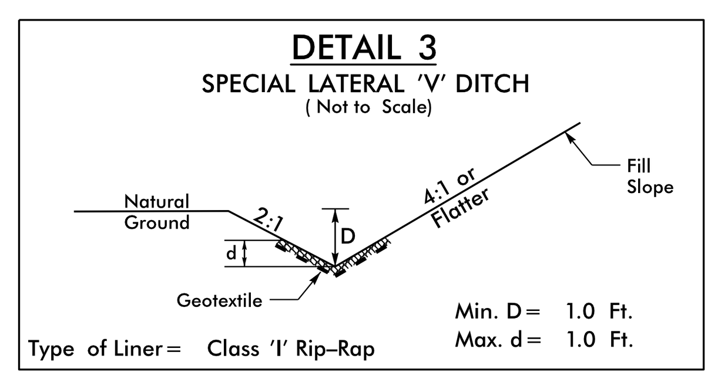




FROM -L- STA. 19+25 TO STA. 20+00 RT
FROM -L- STA. 19+00 TO STA. 20+50 LT



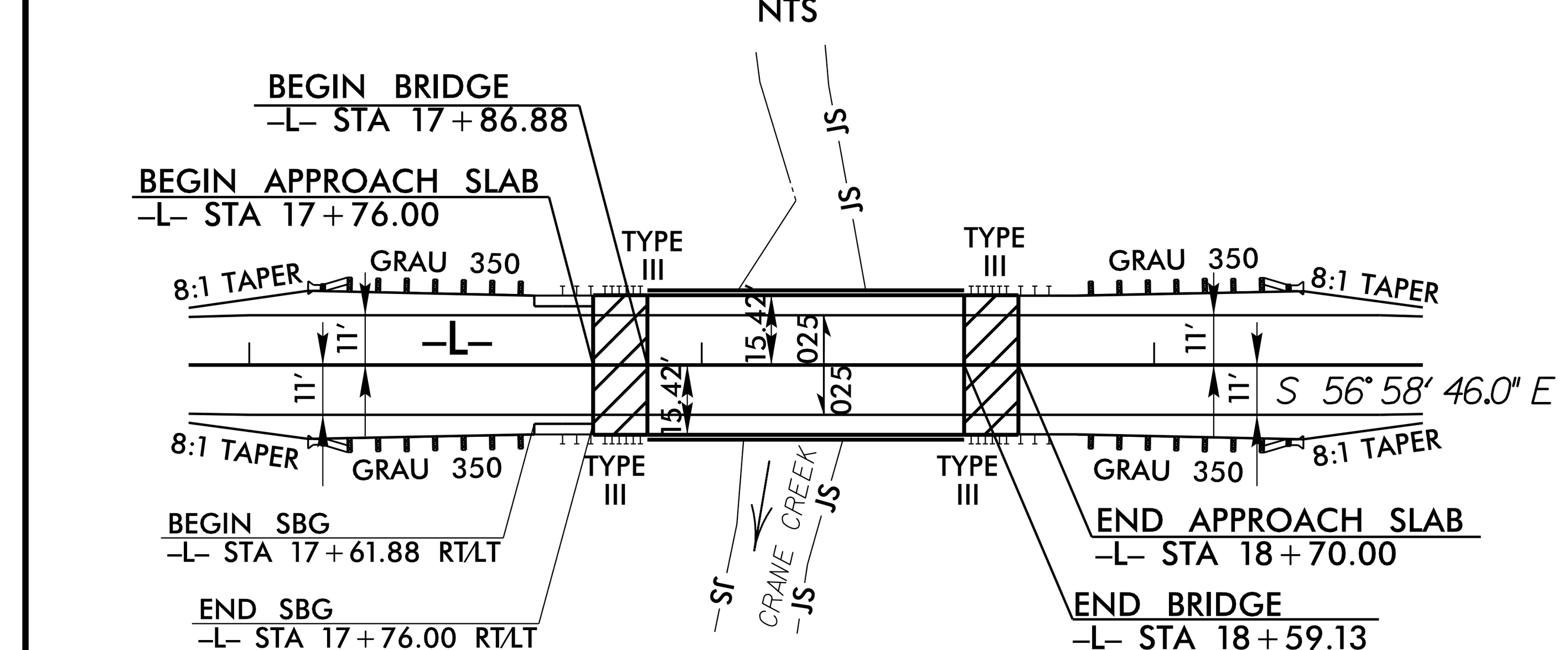
FROM -L- STA. 18+43 TO STA. 18+58 RT
FROM -L- STA. 18+58 TO STA. 18+73 LT

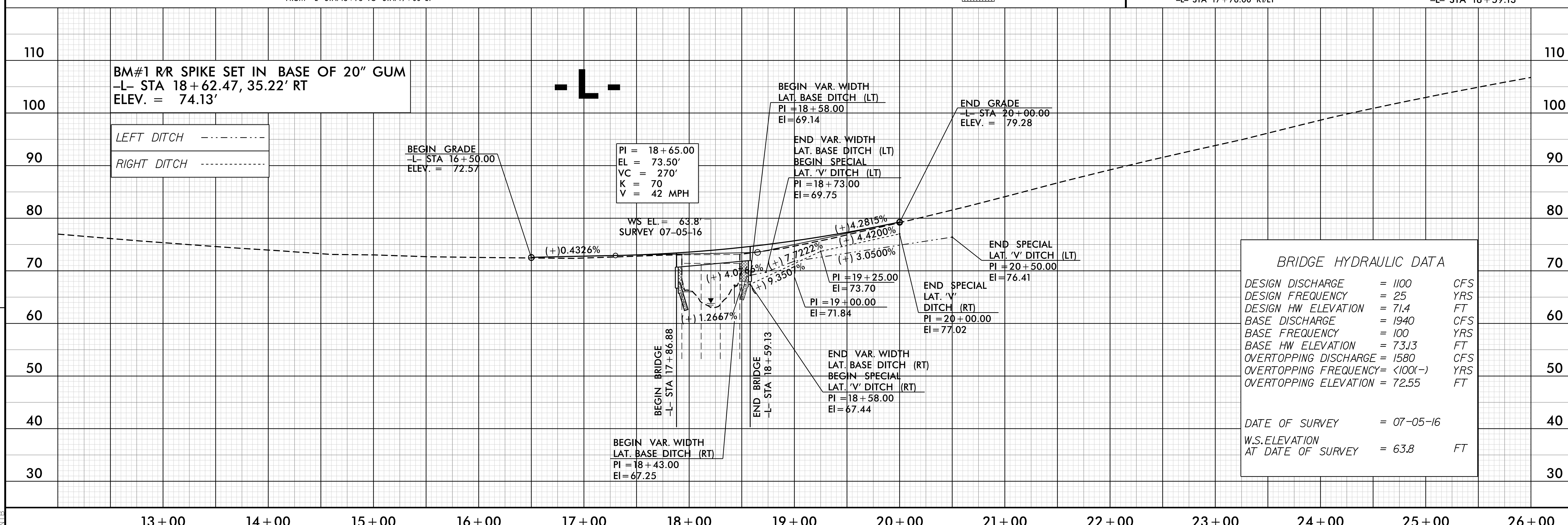


FROM -L- STA. 18+58 TO STA. 19+25 RT
FROM -L- STA. 18+73 TO STA. 19+00 LT

SKETCH OF BRIDGE IN RELATIONSHIP TO PAVEMENT

NTS





BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	1100	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	71.4	FT
BASE DISCHARGE	=	1940	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	73.13	FT
OVERTOPPING DISCHARGE	=	1580	CFS
OVERTOPPING FREQUENCY	=	<100(-)	YRS
OVERTOPPING ELEVATION	=	72.55	FT
DATE OF SURVEY	=	07-05-16	
W.S. ELEVATION AT DATE OF SURVEY	=	63.8	FT

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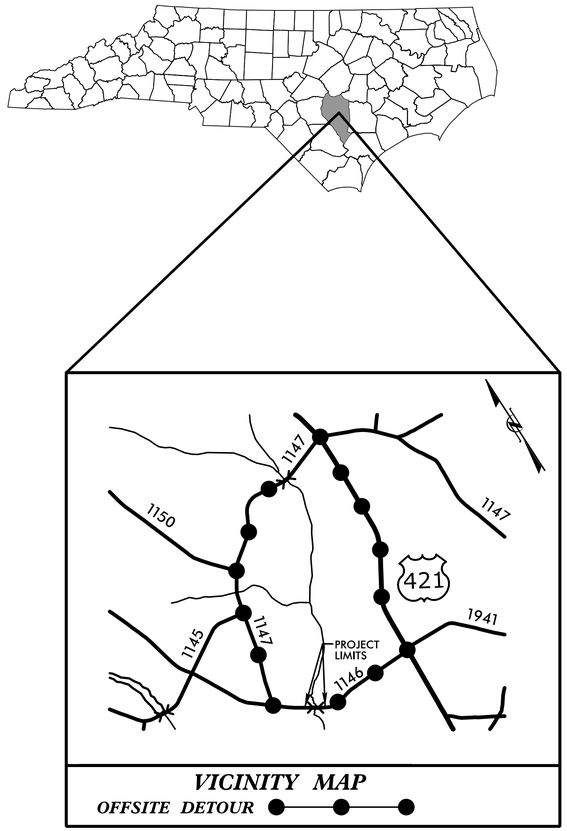
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

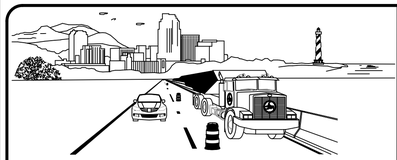
TRANSPORTATION MANAGEMENT PLAN

SAMPSON COUNTY



VICINITY MAP
OFFSITE DETOUR

LOCATION: REPLACE BRIDGE NO. 17 OVER CRANE CREEK ON SR 1146 (MOSELEY AVENUE)



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

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

JESSI LEONARD, PE ***DIVISION TRAFFIC ENGINEER***

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

INDEX OF SHEETS

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. DATED JAN 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPE
1262.01	GUARDRAIL END DELINEATION

R. B. EARLY, PE ***TRAFFIC CONTROL PROJECT ENGINEER***
R. B. EARLY, PE ***TRAFFIC CONTROL PROJECT DESIGN ENGINEER***
J. A. PHILLIPS ***TRAFFIC CONTROL DESIGN ENGINEER***

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

APPROVED: DocuSigned by: Rhonda B. Early F34CAF5AC68F48A...
DATE: 1/31/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

SHEET NO.
TMP-1

17BP.3.R.50

TIP PROJECT:

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PROJ. REFERENCE NO.	SHEET NO.
17BP.3.R.50	TMP-2

GENERAL NOTES

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

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN ON THIS SHEET.

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

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

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKING AND MARKERS

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

ROAD NAME	MARKING	MARKERS
SR 1146 (MOSELEY RD)	PAINT	RAISED

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

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

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

PHASING

PHASE I

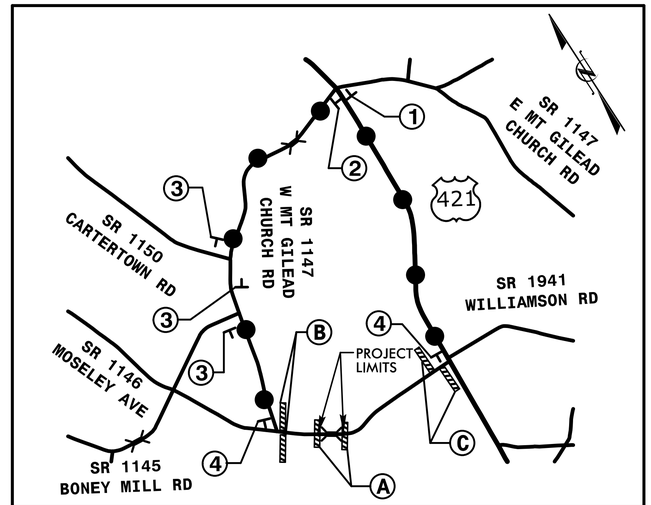
PRIOR TO ANY CONSTRUCTION OPERATIONS, PLACE AND COVER OFF-SITE DETOUR SIGNS AS SHOWN AND IN ACCORDANCE WITH RSD 1101.03 (SHEETS 1 OF 9).

PHASE II

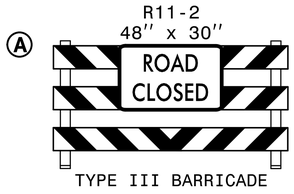
USING OFF-SITE DETOUR, UNCOVER DETOUR SIGNS, CLOSE -L- (SR 1146 / MOSELEY AVE) TO TRAFFIC AND CONSTRUCT BRIDGE, APPROACHES AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE.

PHASE III

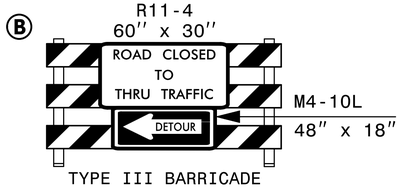
UPON COMPLETION OF BRIDGE, APPROACHES AND ROADWAY, PLACE FINAL PAVEMENT MARKINGS AND MARKERS IN ACCORDANCE WITH RSD 1205.01, 1205.02, 1205.12, 1250.01 AND 1251.01. REMOVE BARRICADES AND DETOUR SIGNS AND OPEN -L- (SR 1146 / MOSELEY AVE) TO TRAFFIC.



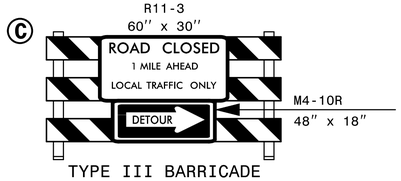
VICINITY MAP
OFFSITE DETOUR



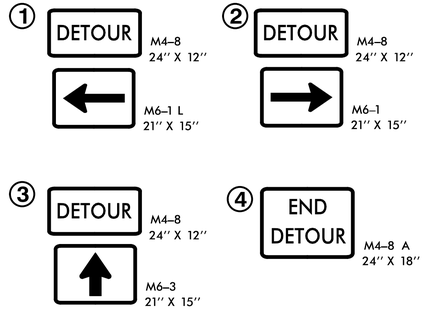
TYPE III BARRICADE



TYPE III BARRICADE



TYPE III BARRICADE



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APPROVED: DocuSigned by: Rhonda B. Early F34CAF5AC8BF48A...

DATE: 1/31/2017

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY SEAL

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

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

PHASING, PROJECT NOTES, AND DETOUR

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.50	EC-1	

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

TIP PROJECT: 17BP.3.R.50

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

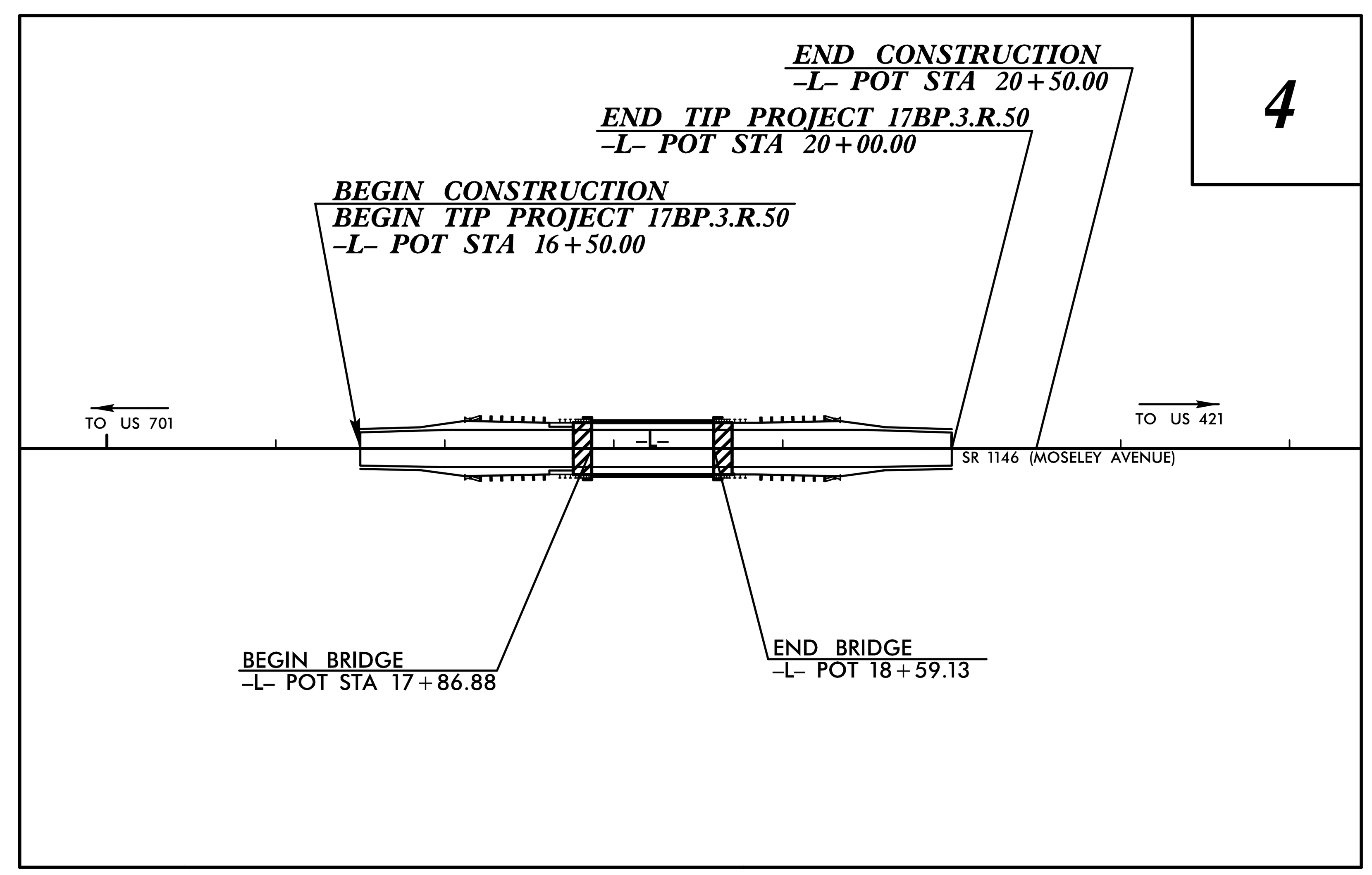
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

SAMPSON COUNTY

LOCATION: REPLACE BRIDGE NO. 17 OVER CRANE CREEK
ON SR 1146 (MOSELEY AVENUE)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NAD 83/
NA 2011



EROSION AND SEDIMENT CONTROL MEASURES

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

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

2012 STANDARD SPECIFICATIONS

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

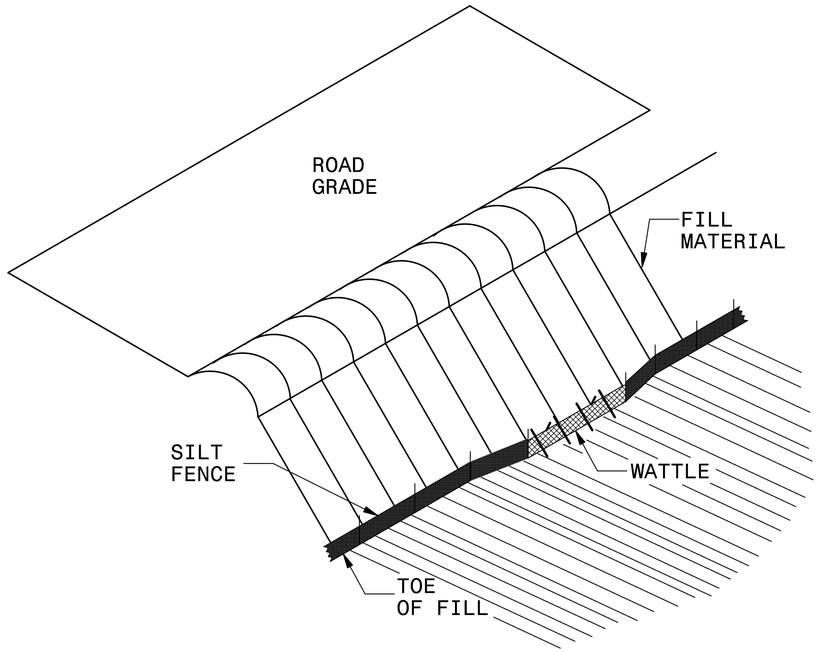
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

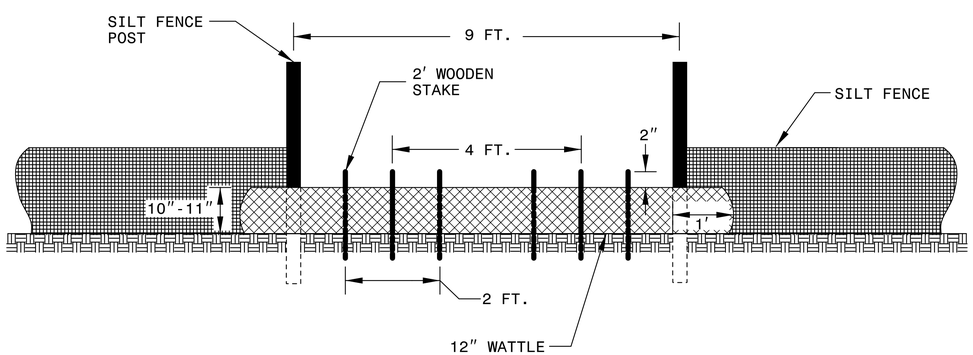
1604.01 *Railroad Erosion Control Detail*
1605.01 *Temporary Silt Fence*
1606.01 *Special Sediment Control Fence*
1607.01 *Gravel Construction Entrance*
1622.01 *Temporary Berms and Slope Drains*
1630.01 *Riser Basin*
1630.02 *Silt Basin Type B*
1630.03 *Temporary Silt Ditch*
1630.04 *Stilling Basin*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

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	EC-2

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

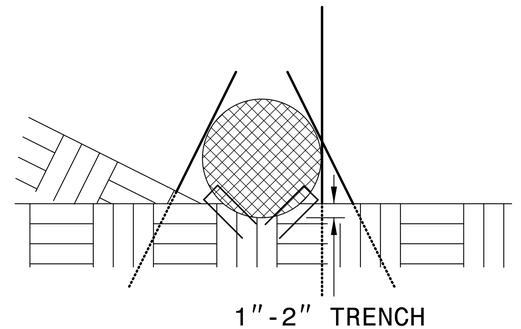
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

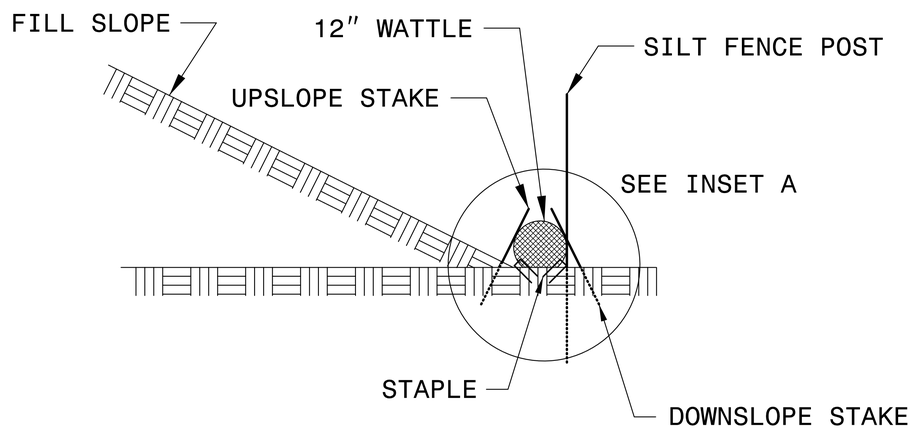
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A



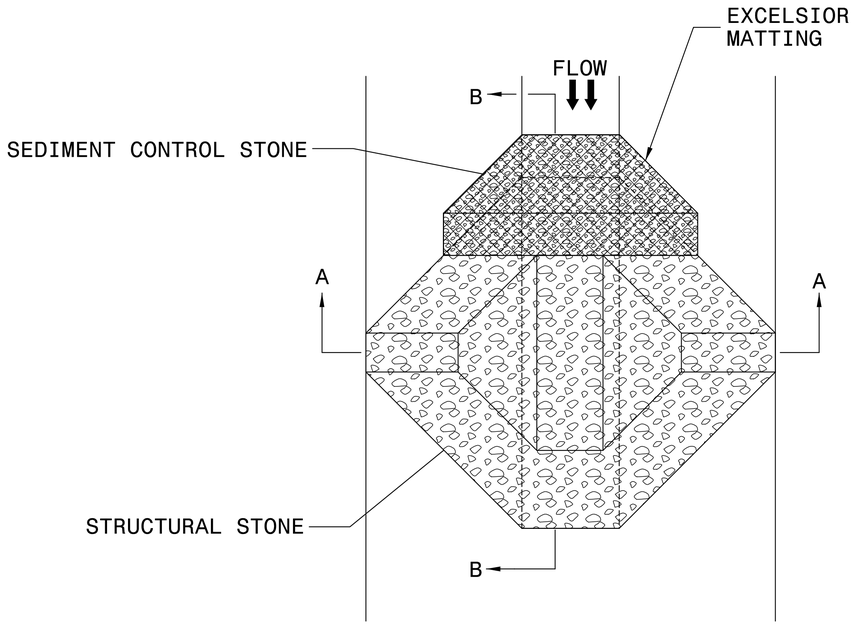


SIDE VIEW

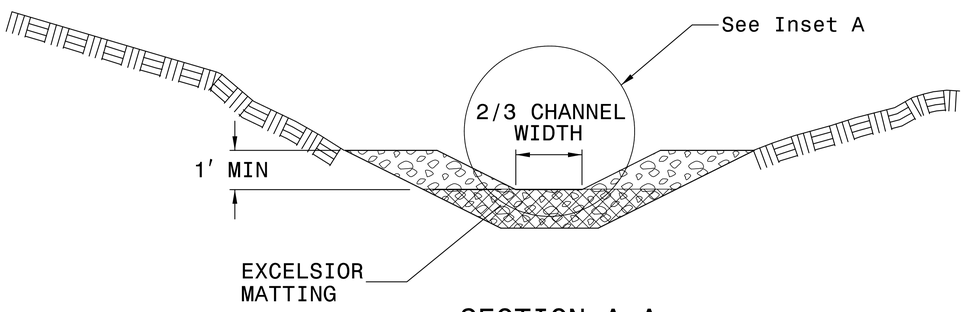
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	EC-2A

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



PLAN



SECTION A-A

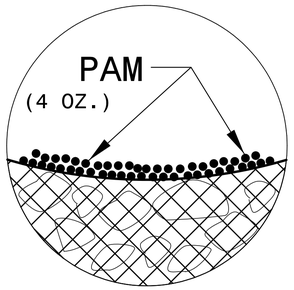
NOTES:

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

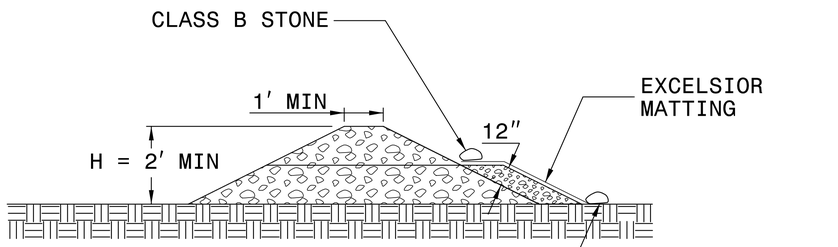
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.50	EC-3

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	18+73	20+50	LT	50
				SUBTOTAL	50
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					1300
				TOTAL	1350
				SAY	1350

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	L	18+58	20+00	RT	25
				SUBTOTAL	25
		ADDITIONAL PSRM TO BE INSTALLED			Ø
				TOTAL	25
				SAY	25

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	EC-3A

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.

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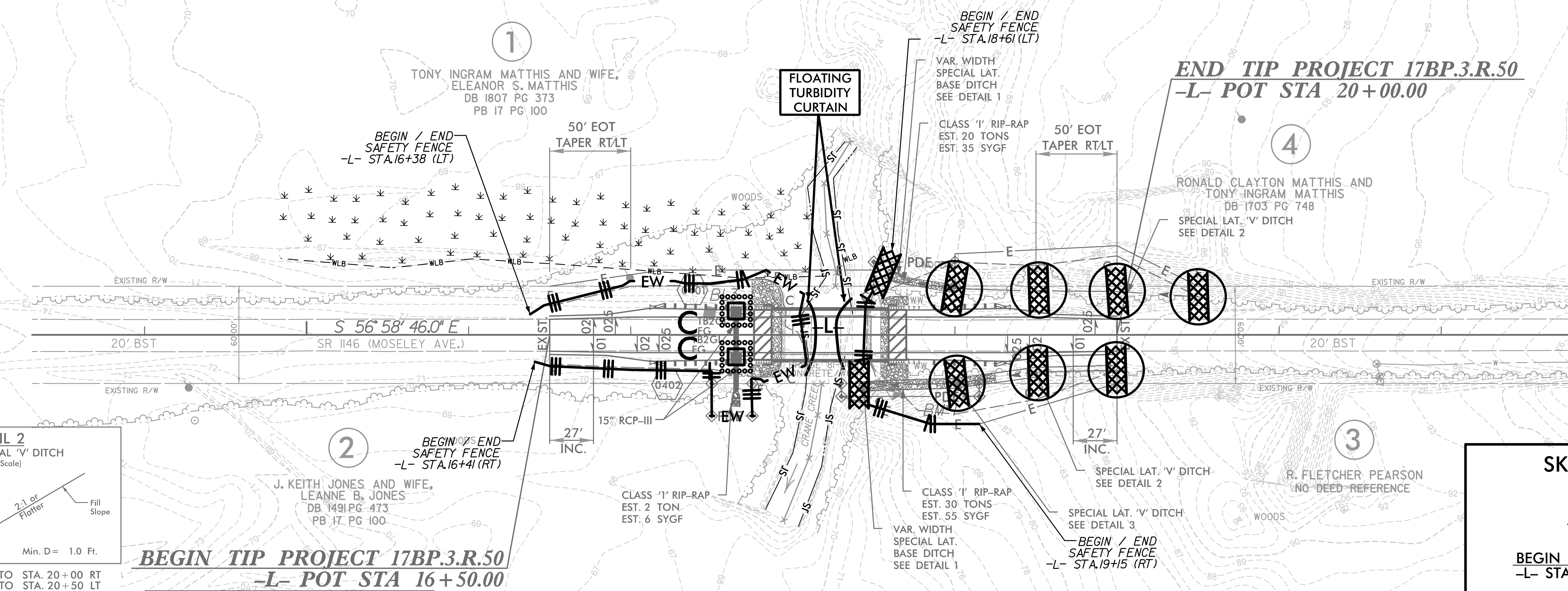
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.50	EC-4
R/W SHEET NO.	

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

8/17/99



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: 413966.026(ft) EASTING: 2213637.336(ft) ELEVATION: 104.289(ft)

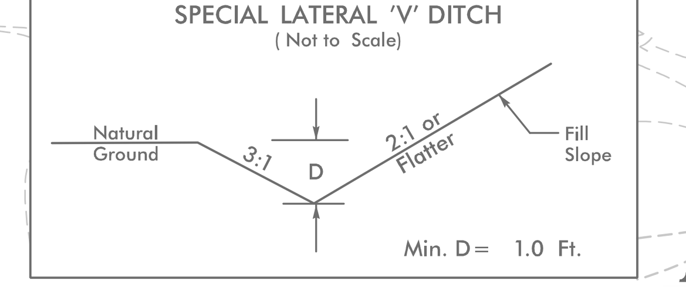
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998934300

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS2" TO -L- STATION IS

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

DETAIL 2

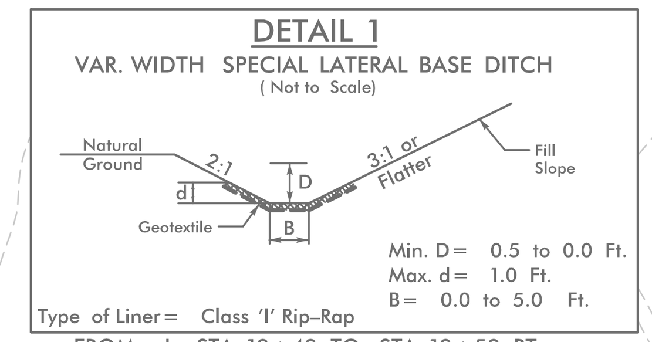
SPECIAL LATERAL 'V' DITCH (Not to Scale)



FROM -L- STA. 19+25 TO STA. 20+00 RT
FROM -L- STA. 19+00 TO STA. 20+50 LT

DETAIL 1

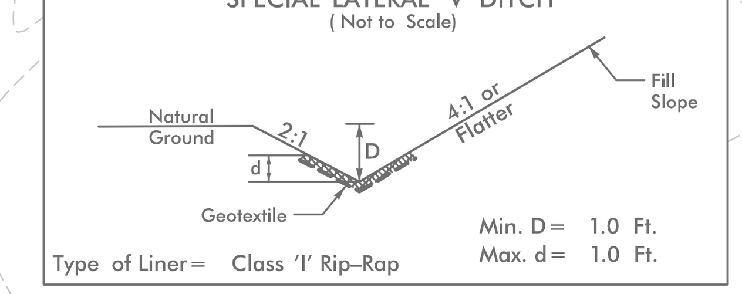
VAR. WIDTH SPECIAL LATERAL BASE DITCH (Not to Scale)



FROM -L- STA. 18+43 TO STA. 18+58 RT
FROM -L- STA. 18+58 TO STA. 18+73 LT

DETAIL 3

SPECIAL LATERAL 'V' DITCH (Not to Scale)

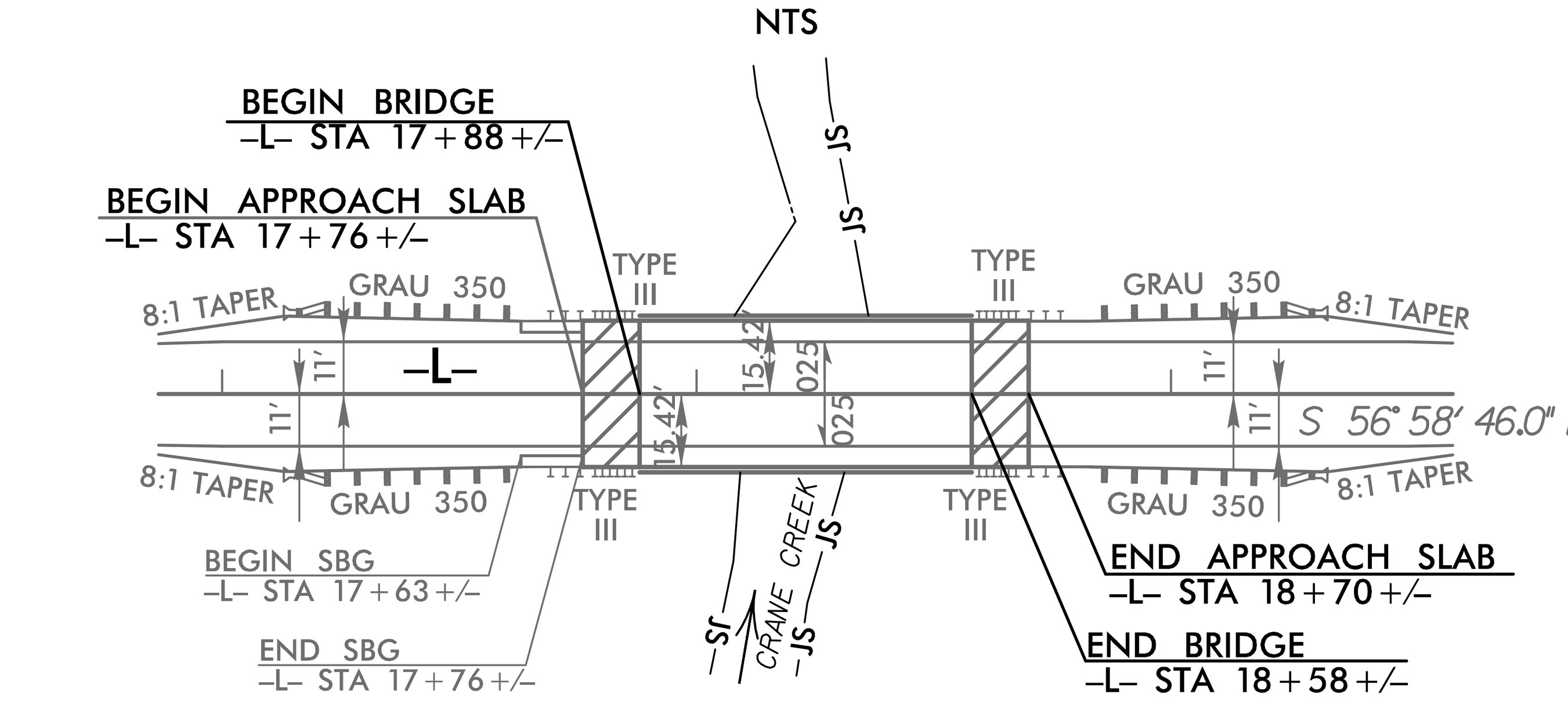


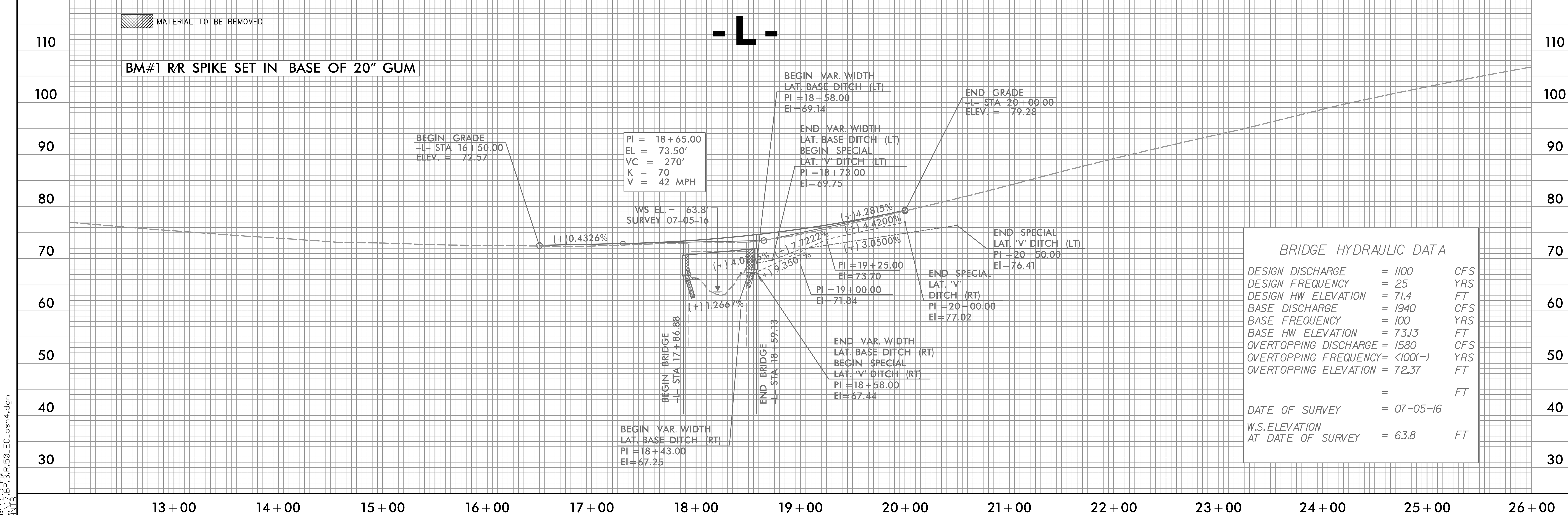
FROM -L- STA. 18+58 TO STA. 19+25 RT
FROM -L- STA. 18+73 TO STA. 19+00 LT

NOTE: THE CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AND UNDER THE BRIDGE, AS NEEDED OR DIRECTED BY THE ENGINEER.

SKETCH OF BRIDGE IN RELATIONSHIP TO PAVEMENT

NTS





BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1100	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 71.4	FT
BASE DISCHARGE	= 1940	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 73.13	FT
OVERTOPPING DISCHARGE	= 1580	CFS
OVERTOPPING FREQUENCY	= <100(-)	YRS
OVERTOPPING ELEVATION	= 72.37	FT
	=	FT
DATE OF SURVEY	= 07-05-16	
W.S. ELEVATION AT DATE OF SURVEY	= 63.8	FT

4:44:35 PM
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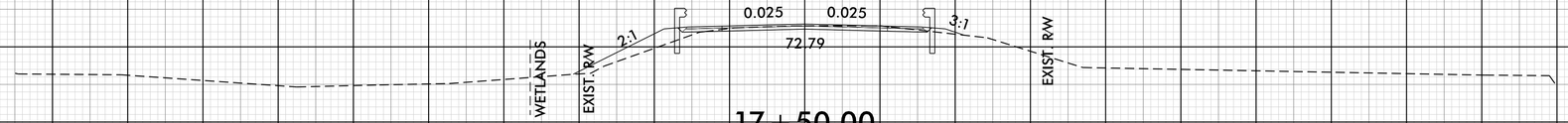
8/23/99

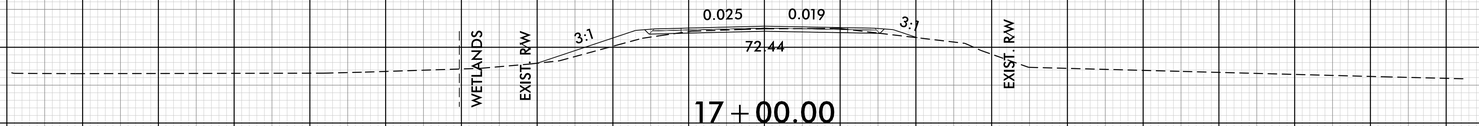
0 5 10

PROJ. REFERENCE NO.	SHEET NO.
17BP.3.R.50	X–1

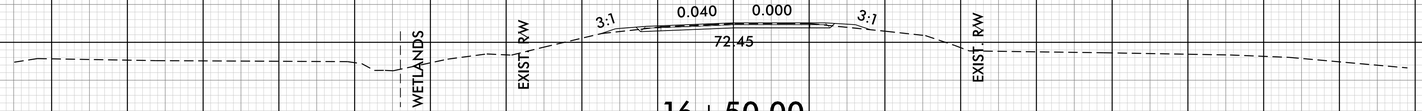
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."



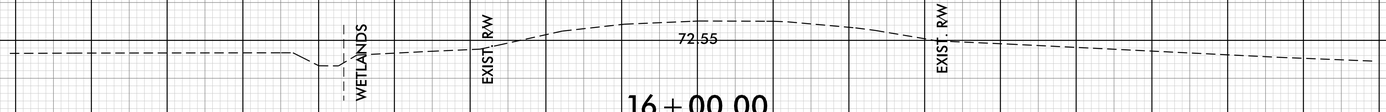
17+50.00



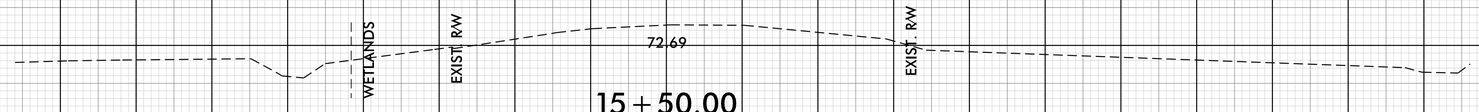
17+00.00



16+50.00
BEGIN GRADE
–L– STA 16+50.00



16+00.00



15+50.00
–L–

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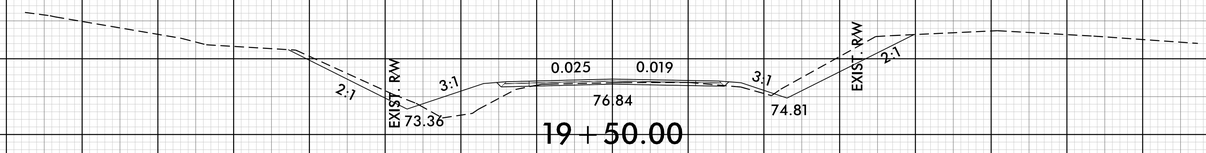
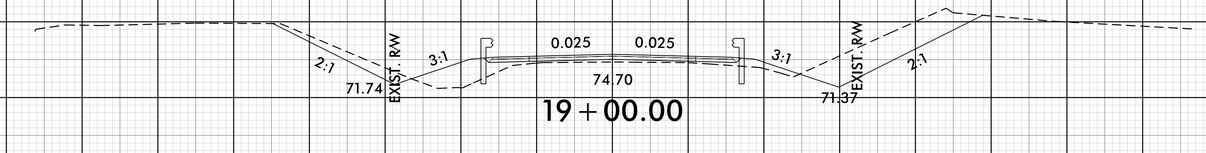
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	17BP.3.R.50	X–2

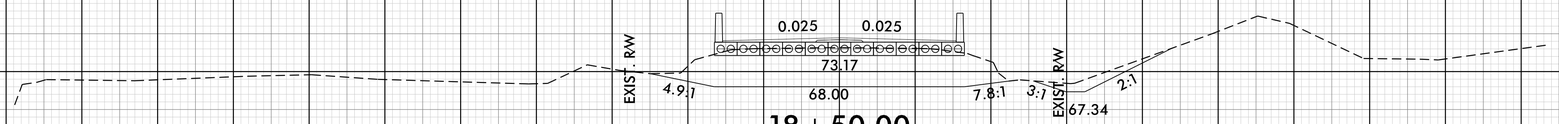


19 + 50.00

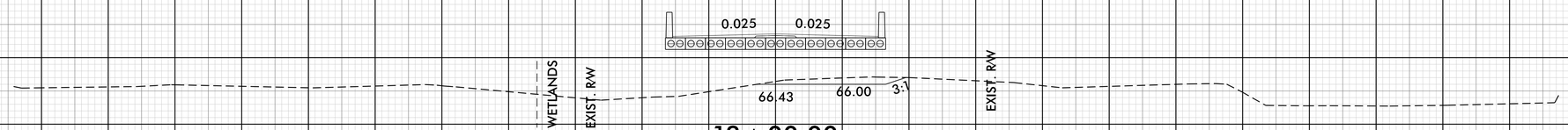


19 + 00.00

END BRIDGE
–L– STA 18 + 59.13



18 + 50.00



18 + 00.00
BEGIN BRIDGE
–L– STA 17 + 86.88

–L–

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	17BP.3.R.50	X–3

84.09
21+00.00

EXIST. R/W
81.56
20+50.00
EXIST. R/W

END GRADE
–L– STA 20+00.00

EXIST. R/W
2:1
3:1
0.030
0.000
3:1
79.16
74.89
20+00.00
EXIST. R/W

–L–

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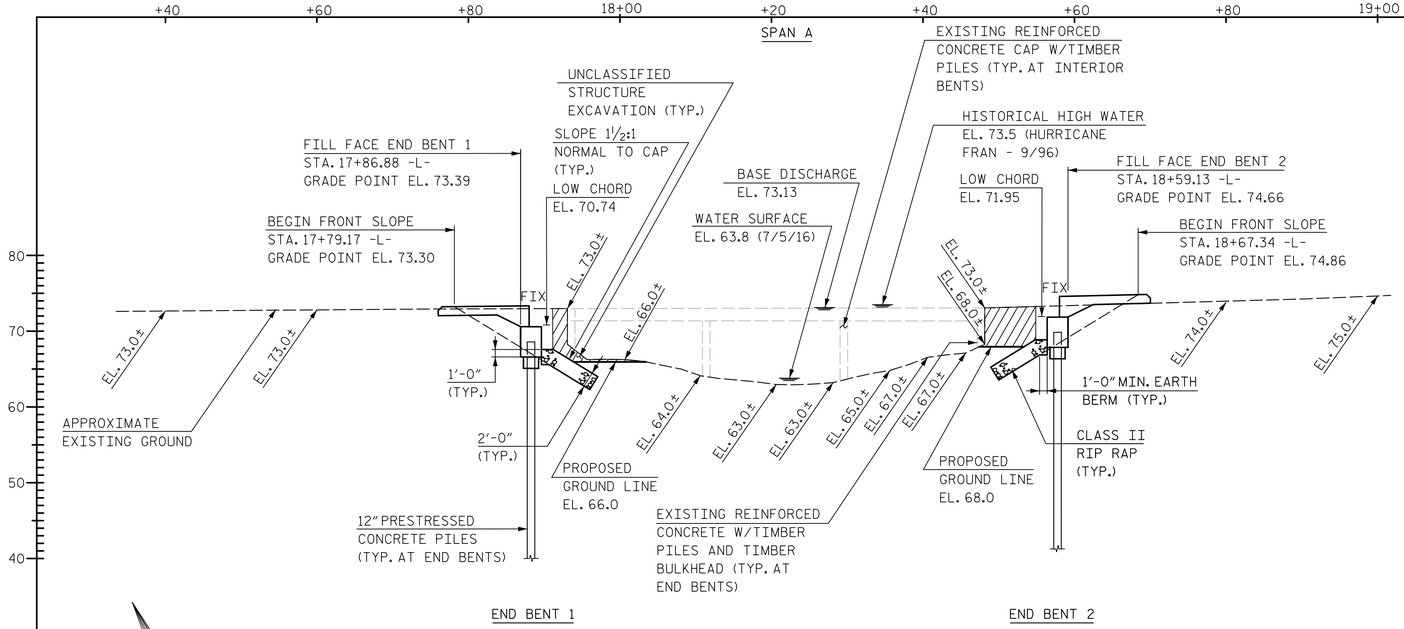
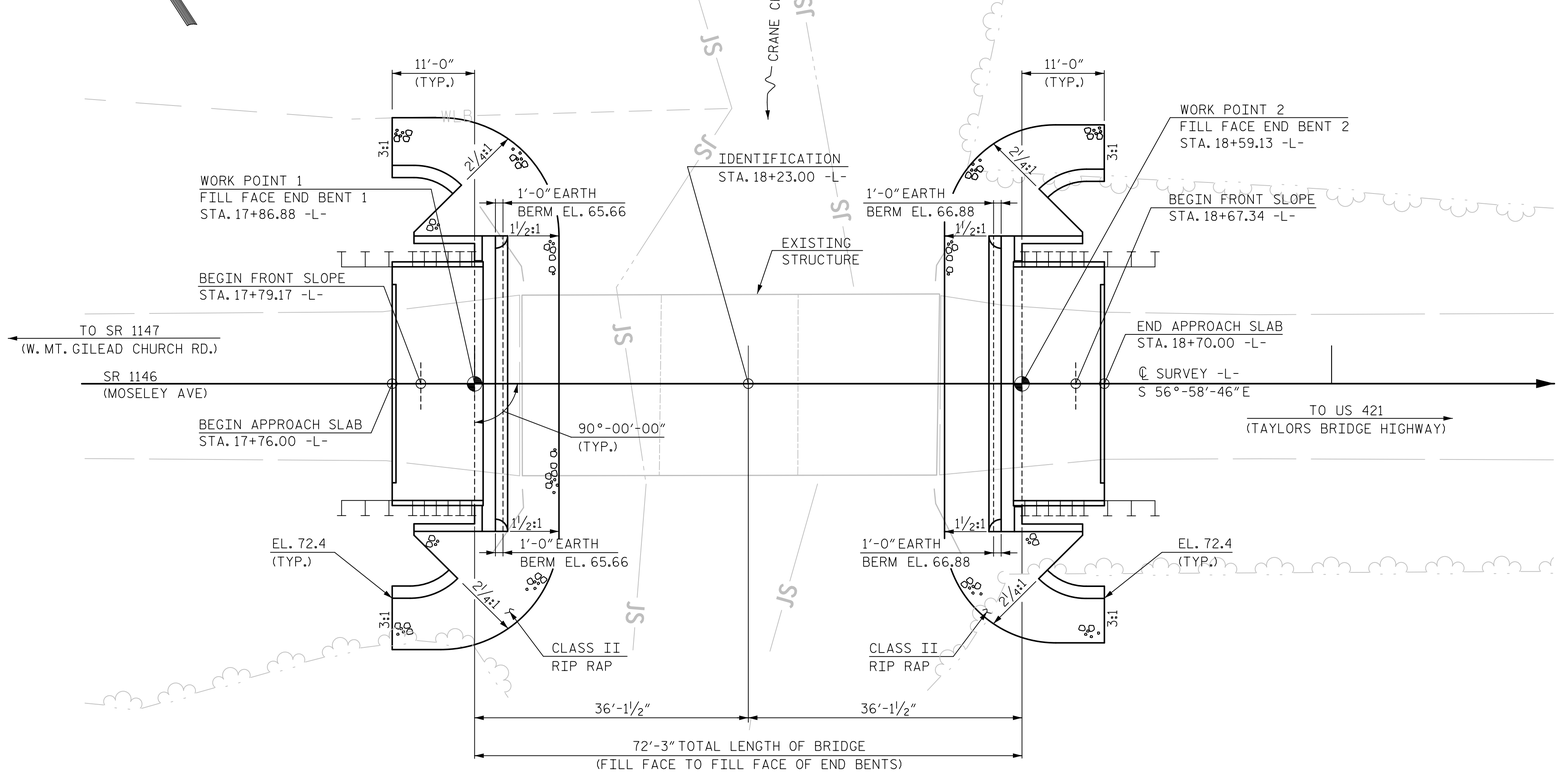
JNB



SECTION ALONG ℄ SURVEY -L-



PLAN

PILES NOT SHOWN FOR CLARITY.

CENTERLINE BRIDGE IS ON CENTERLINE SURVEY.

FOR GENERAL NOTES, SEE SHEET 2.

BRIDGE HYDRAULIC DATA

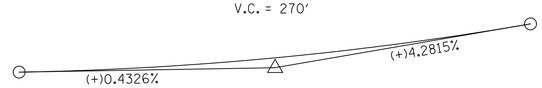
DESIGN DISCHARGE	=	1,100 CFS
FREQUENCY OF DESIGN FLOOD	=	25 YR
DESIGN HIGH WATER ELEVATION	=	71.4 FT.
DRAINAGE AREA	=	12.2 SQ. MI.
BASIC DISCHARGE (Q100)	=	1,940 CFS
BASIC HIGH WATER ELEVATION	=	73.13 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	1580 CFS
FREQUENCY OF OVERTOPPING FLOOD	=	< 100-YR (-)
OVERTOPPING FLOOD ELEVATION	=	72.55 FT.

NOTE: OVERTOPPING OCCURS AT ROADWAY STA. 16+00.00

PI STA. = 18+65.00
ELEV = 73.50
V.C. = 270'



GRADE DATA -L-

I HEREBY CERTIFY THESE PLANS ARE AS-BUILT PLANS

PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 17

DocuSigned by: Paul J. Barber

NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

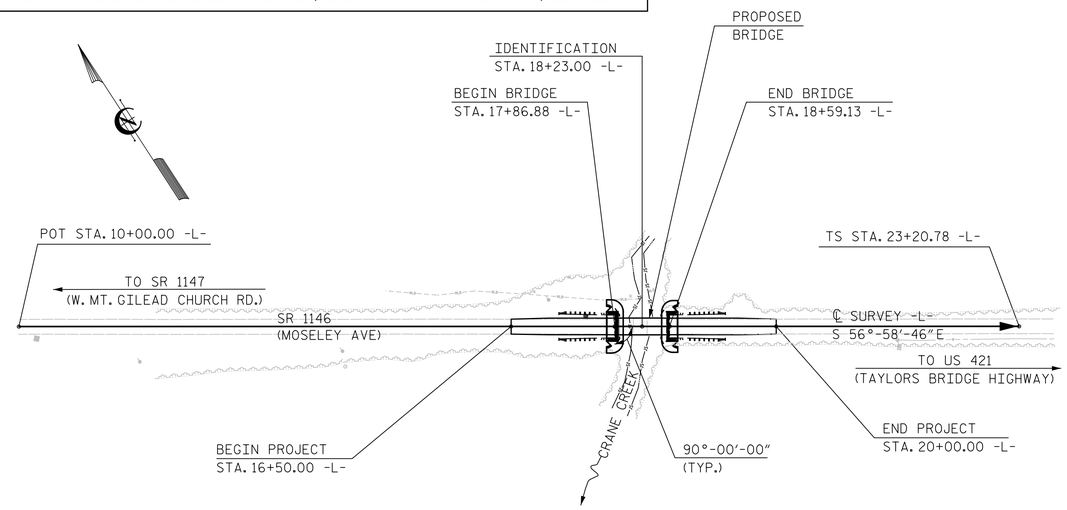
DRAWN BY J. BAYNE DATE 1/17
CHECKED BY P. BARBER DATE 1/17
DWG. NO. 1

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON SR 1146 OVER CRANE CREEK BETWEEN SR 1147 AND US421

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-1
1			3			TOTAL SHEETS
2			4			14

BM: - "BM1" RR SPIKE SET IN BASE OF 20" GUM, 35.2' RT. OF STA. 18+62.47 -L-, EL. 74.13



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

FOUNDATION NOTES:

FOR PILES, SEE GEOTECHNICAL SPECIAL PROVISIONS AND SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE.

PILES AT END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 TO A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.

DRIVE PILES AT END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 145 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.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STATION 18+23.00 -L-	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION 18+23.00 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS AT STATION 18+23.00 -L-	REINFORCING STEEL	12" PRESTRESSED CONCRETE PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0"x2'-0" PRESTRESSED CONCRETE CORED SLABS		ASBESTOS ASSESSMENT
	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.	LUMP SUM
SUPERSTRUCTURE	LUMP SUM	———	———	———	LUMP SUM	———	—	———	———	140.25	———	———	LUMP SUM	11	770	———
END BENT 1	———	———	LUMP SUM	20.6	———	2,636	7	210	7	———	150	165	———	—	———	———
END BENT 2	———	———	LUMP SUM	20.6	———	2,636	7	245	7	———	140	155	———	—	———	———
TOTAL	LUMP SUM	1	LUMP SUM	41.2	LUMP SUM	5,272	14	455	14	140.25	290	320	LUMP SUM	11	770	LUMP SUM

GENERAL NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICAL 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 18+23.00 -L-"

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

THE EXISTING THREE SPAN STRUCTURE WITH SPAN LENGTHS OF 18'-4", 18'-3", AND 18'-6" WITH 12 LINES OF W 12x16.5 I-BEAMS AT 2'-2½" CENTERS, WITH A REINFORCED CONCRETE DECK WITH A 25.33' OUT TO OUT DECK WIDTH ON REINFORCED CONCRETE CAPS AND TIMBER PILES (SOME ENCASED IN CONCRETE) SHALL BE REMOVED. IN ADDITION, ANY PILES REMAINING FROM PREVIOUS BRIDGE CONSTRUCTION OR MAINTENANCE OPERATIONS SHALL BE REMOVED AND INCLUDED IN THE LUMP SUM PAY ITEM FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 18+23.00 -L-".

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

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

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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

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

AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT AND BENT CAPS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY MATERIALS NEEDED WILL BE AT NO EXTRA COST TO THE CONTRACTOR.

DocuSigned by: Paul J. Barber

NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

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

DRAWN BY J. BAYNE DATE 1/17
CHECKED BY P. BARBER DATE 1/17

DWG. NO. 2

PROJECT NO. 17BP.3.R.50
SAMPSON COUNTY
STATION: 18+23.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON SR 1146 OVER CRANE CREEK BETWEEN SR 1147 AND US421

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-2
1			3			TOTAL SHEETS
2			4			14

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT						
							LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.006	--	1.75	0.273	1.03	70′	EL	34.5	0.507	1.32	70′	EL	6.9	0.80	0.273	**1.01**	70′	EL	**34.5**	
		HL-93(Opr)	N/A	--	1.341	--	1.35	0.273	1.34	70′	EL	34.5	0.507	1.72	70′	EL	6.9	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.306	47.02	1.75	0.273	1.34	70′	EL	34.5	0.507	1.65	70′	EL	6.9	0.80	0.273	**1.31**	70′	EL	**34.5**	
		HS-20(Opr)	36.000	--	1.74	62.64	1.35	0.273	1.74	70′	EL	34.5	0.507	2.14	70′	EL	6.9	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.917	39.379	1.4	0.273	3.75	70′	EL	34.5	0.507	4.87	70′	EL	6.9	0.80	0.273	2.92	70′	EL	34.5	
		SNGARBS2	20.000	--	2.187	43.741	1.4	0.273	2.81	70′	EL	34.5	0.507	3.47	70′	EL	6.9	0.80	0.273	2.19	70′	EL	34.5	
		SNAGRIS2	22.000	--	2.077	45.69	1.4	0.273	2.67	70′	EL	34.5	0.507	3.23	70′	EL	6.9	0.80	0.273	2.08	70′	EL	34.5	
		SNCOTTS3	27.250	--	1.452	39.565	1.4	0.273	1.87	70′	EL	34.5	0.507	2.43	70′	EL	6.9	0.80	0.273	1.45	70′	EL	34.5	
		SNAGGRS4	34.925	--	1.218	42.554	1.4	0.273	1.57	70′	EL	34.5	0.507	2.03	70′	EL	6.9	0.80	0.273	1.22	70′	EL	34.5	
		SNS5A	35.550	--	1.191	42.346	1.4	0.273	1.53	70′	EL	34.5	0.507	2.06	70′	EL	6.9	0.80	0.273	1.19	70′	EL	34.5	
		SNS6A	39.950	--	1.095	43.747	1.4	0.273	1.41	70′	EL	34.5	0.507	1.88	70′	EL	6.9	0.80	0.273	1.10	70′	EL	34.5	
		SNS7B	42.000	--	1.043	43.801	1.4	0.273	1.34	70′	EL	34.5	0.507	1.85	70′	EL	6.9	0.80	0.273	1.04	70′	EL	34.5	
	TTST	TNAGRIT3	33.000	--	1.336	44.087	1.4	0.273	1.72	70′	EL	34.5	0.507	2.23	70′	EL	6.9	0.80	0.273	1.34	70′	EL	34.5	
		TNT4A	33.075	--	1.342	44.401	1.4	0.273	1.72	70′	EL	34.5	0.507	2.17	70′	EL	6.9	0.80	0.273	1.34	70′	EL	34.5	
		TNT6A	41.600	--	1.1	45.746	1.4	0.273	1.41	70′	EL	34.5	0.507	1.98	70′	EL	6.9	0.80	0.273	1.10	70′	EL	34.5	
		TNT7A	42.000	--	1.106	46.462	1.4	0.273	1.42	70′	EL	34.5	0.507	1.94	70′	EL	6.9	0.80	0.273	1.11	70′	EL	34.5	
		TNT7B	42.000	--	1.147	48.18	1.4	0.273	1.47	70′	EL	34.5	0.507	1.8	70′	EL	6.9	0.80	0.273	1.15	70′	EL	34.5	
		TNAGRIT4	43.000	--	1.089	46.838	1.4	0.273	1.4	70′	EL	34.5	0.507	1.74	70′	EL	6.9	0.80	0.273	1.09	70′	EL	34.5	
		TNAGT5A	45.000	--	1.026	46.175	1.4	0.273	1.32	70′	EL	34.5	0.507	1.74	70′	EL	6.9	0.80	0.273	1.03	70′	EL	34.5	
		TNAGT5B	45.000	3	1.013	45.579	1.4	0.273	1.3	70′	EL	34.5	0.507	1.66	70′	EL	6.9	0.80	0.273	**1.01**	70′	EL	**34.5**	

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

1.
2.
3.
4.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

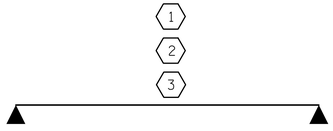
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

FOR SPAN 'A'

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NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

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PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR 70′ CORED SLAB UNIT 90° SKEW
(NON-INTERSTATE TRAFFIC)

ASSEMBLED BY : J. BAYNE	DATE : 12/16
CHECKED BY : P. BARBER	DATE : 1/17
DRAWN BY : CVC 6/10	
CHECKED BY : DNS 6/10	

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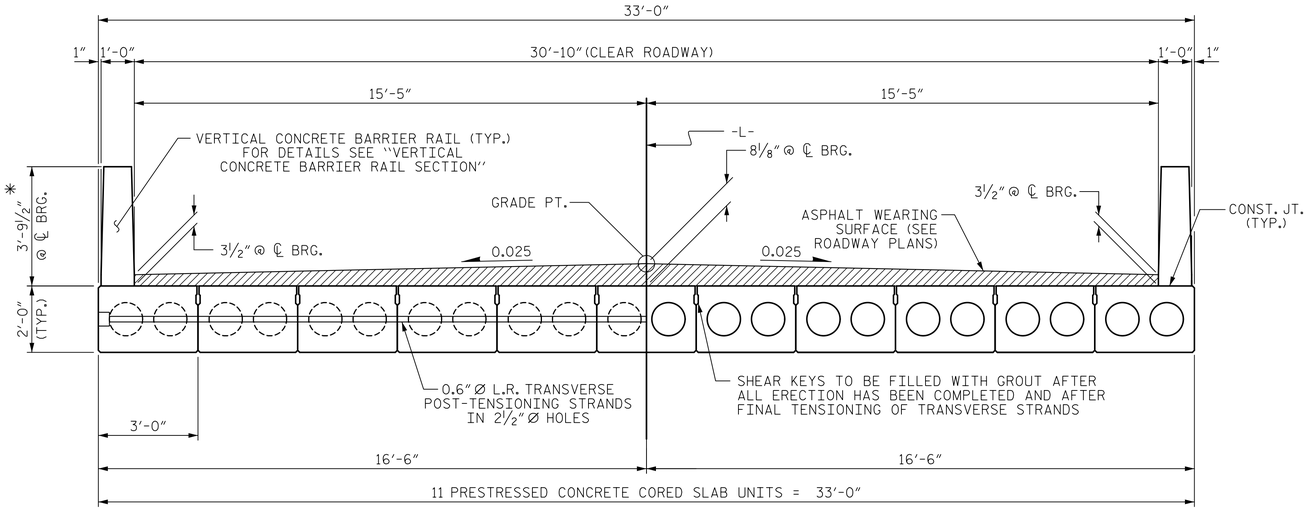
DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17
DWG. NO. 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			14

STD. NO. 24LRFR1_90S_70L



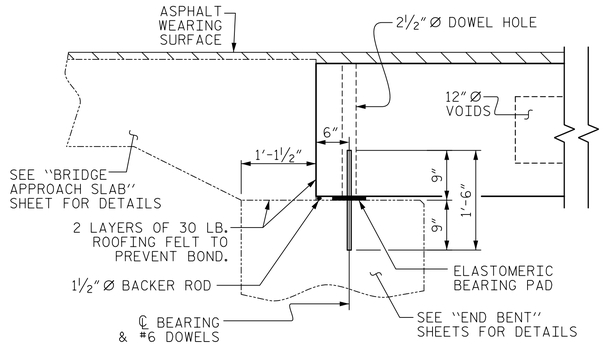
HALF SECTION AT INTERMEDIATE DIAPHRAGMS

HALF SECTION THROUGH VOIDS

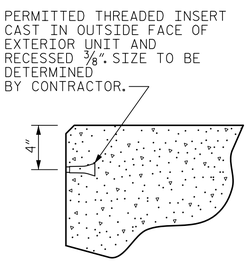
TYPICAL SECTION

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

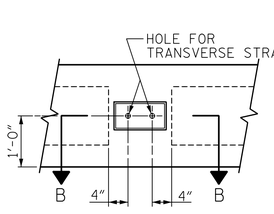
FIXED END



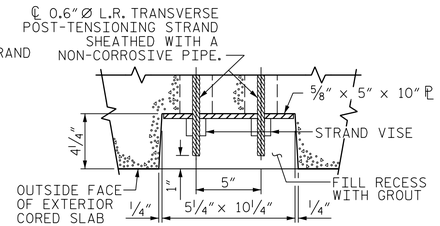
SECTION AT END BENT



THREADED INSERT DETAIL

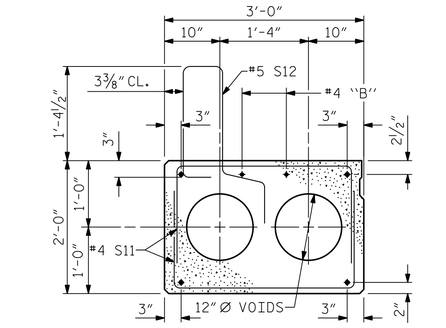


ELEVATION VIEW



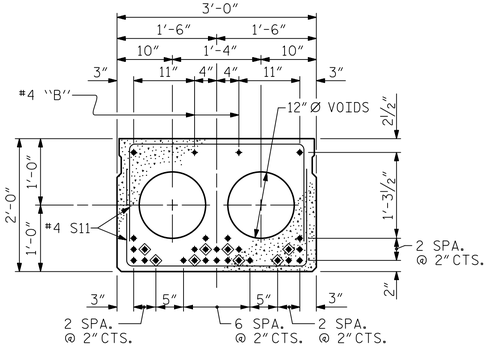
SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



EXTERIOR SLAB SECTION

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



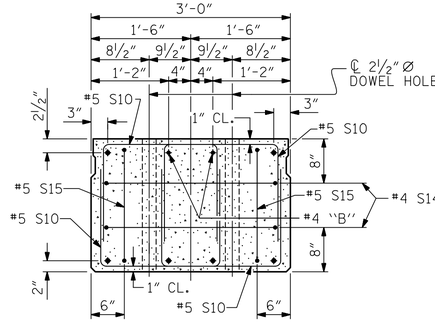
INTERIOR SLAB SECTION (70′ UNIT)

(28 STRANDS REQUIRED)

0.6′′ Ø LOW RELAXATION STRAND LAYOUT

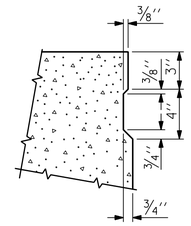
◈ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12′-0″ FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND



END ELEVATION

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



SHEAR KEY DETAIL

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

DocuSigned by: Paul J. Barber 18DF1B57368741E...

NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

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PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3′-0′′ X 2′-0′′ PRESTRESSED CONCRETE CORED SLAB UNIT

ASSEMBLED BY : J. BAYNE	DATE : 12/16		
CHECKED BY : P. BARBER	DATE : 1/17		
DRAWN BY : MAA	6/10	REV. 9/14	MAA/TMG
CHECKED BY : MKT	7/10		

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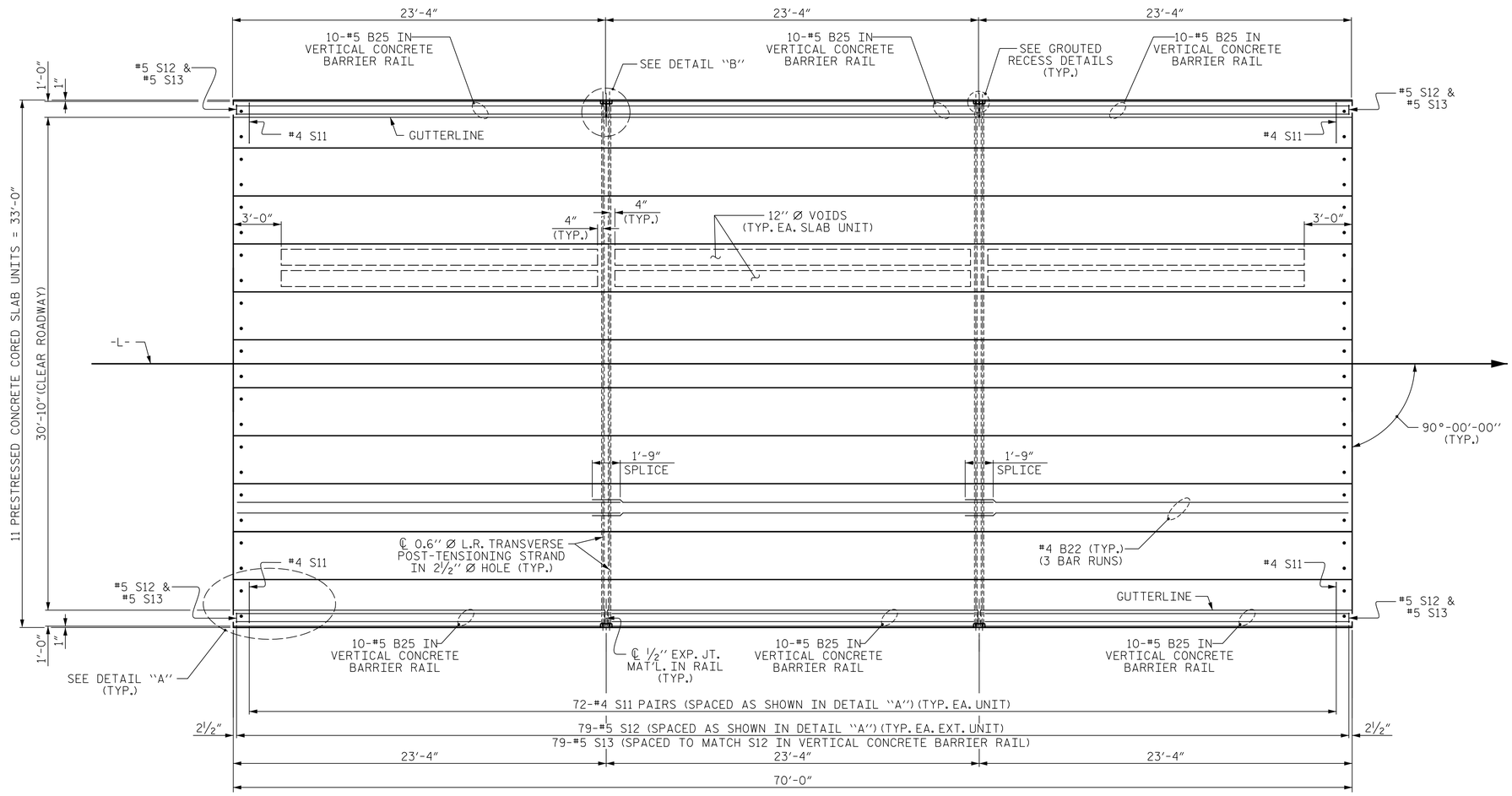
DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17

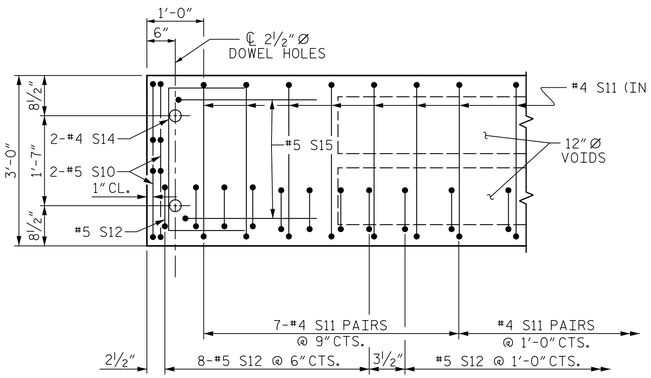
DWG. NO. 4

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			14

STD. NO. 24PCS4_33_90S

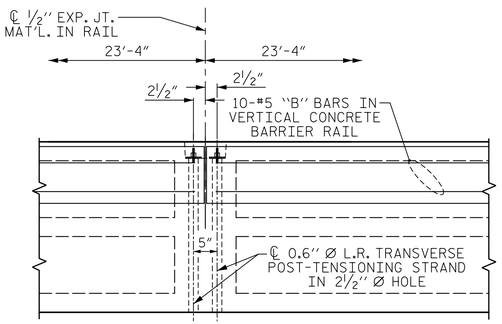


PLAN OF UNIT



DETAIL "A"

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1″ CLEAR TO GROUTED RECESS AND 2½″ Ø TRANSVERSE POST-TENSIONING STRAND HOLES

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1/30/2017

NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

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ASSEMBLED BY : J. BAYNE	DATE : 12/16		
CHECKED BY : P. BARBER	DATE : 1/17		
DRAWN BY : MAA	6/10	REV. 12/5/11	MAA/AAC
CHECKED BY : MKT	7/10	REV. 8/14	MAA/TMG

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DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17
DWG. NO. 5

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			14

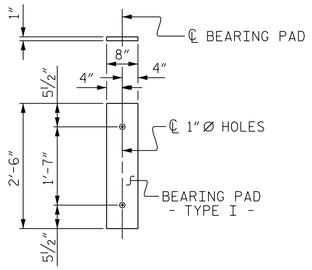
PROJECT NO. 17BP.3.R.50
SAMPSON COUNTY
STATION: 18+23.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 70′ UNIT 30′-10″ CLEAR ROADWAY 90° SKEW

STD. NO. 24PCS_33_90S_70L



FIXED END
(TYPE I - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

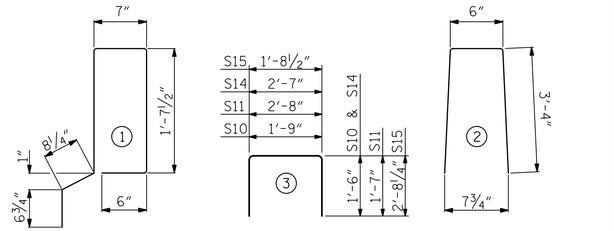
GRADE 270 STRANDS	
	0.6"Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
70' UNIT			
EXTERIOR C.S.	2	70'-0"	140'-0"
INTERIOR C.S.	9	70'-0"	630'-0"
TOTAL	11	70'-0"	770'-0"

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 2'-0"
70' CORED SLAB UNIT	0.6"Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2¼" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	¾" ↓
FINAL CAMBER	1½" ↑

** INCLUDES FUTURE WEARING SURFACE

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B22	6	#4	STR	24'-6"	98	24'-6"	98
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	144	#4	3	5'-10"	561	5'-10"	561
✳S12	79	#5	1	5'-7"	460		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL			LBS.		744		744
✳EPOXY COATED REINFORCING STEEL			LBS.		460		
7000 P.S.I. CONCRETE			CU. YDS.		11.8		11.8
0.6"Ø L.R. STRANDS			No.		28		28

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
70' UNITS	2"	3'-8"

CONCRETE RELEASE STRENGTH	
UNIT	PSI
70' UNITS	5500

NOTES

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

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

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

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

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

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

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

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

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

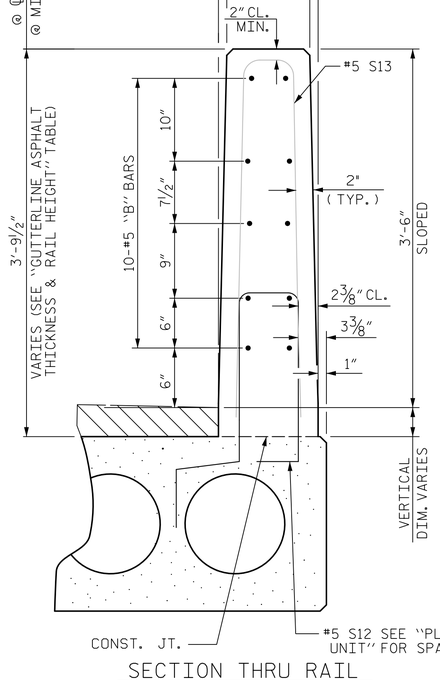
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

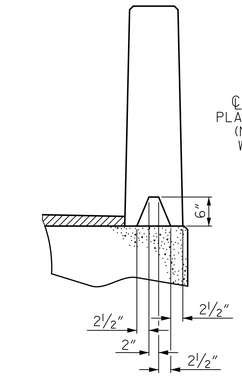
THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

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

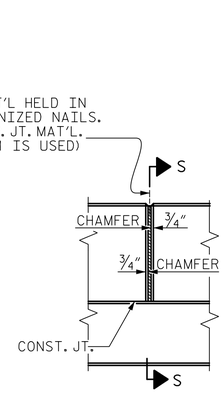
THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.



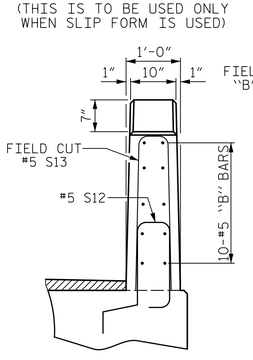
SECTION THRU RAIL



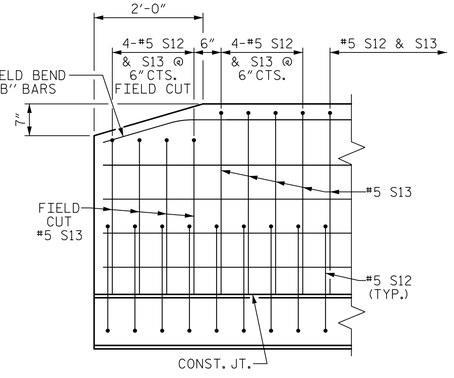
SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS



END VIEW



SIDE VIEW

END OF RAIL DETAILS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	70' UNIT					
✳B25	60	60	#5	STR	22'-11"	1434
✳S13	158	158	#5	2	7'-2"	1181
✳EPOXY COATED REINFORCING STEEL				LBS.		2615
CLASS AA CONCRETE				CU.YDS.		18.1
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		140.25

PROJECT NO. 17BP.3.R.50
SAMPSON COUNTY
STATION: 18+23.00 -L-

SHEET 3 OF 3

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NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT

VERTICAL CONCRETE BARRIER RAIL DETAILS

ASSEMBLED BY : J. BAYNE	DATE : 12/16		
CHECKED BY : P. BARBER	DATE : 1/17		
DRAWN BY : MAA 6/10	REV. 11/14	MAA/TMG	
CHECKED BY : MKT 7/10			

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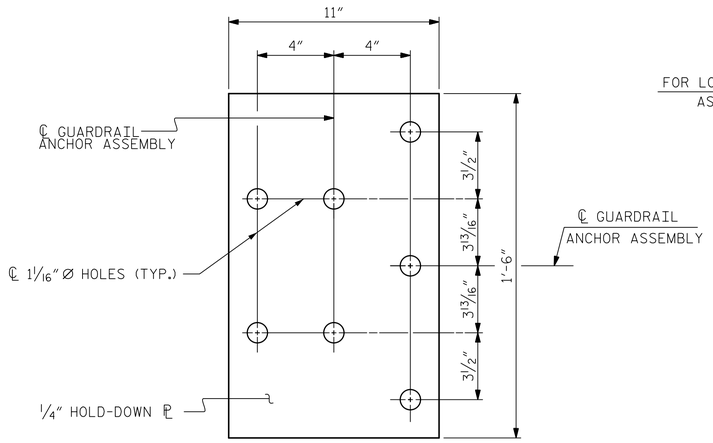
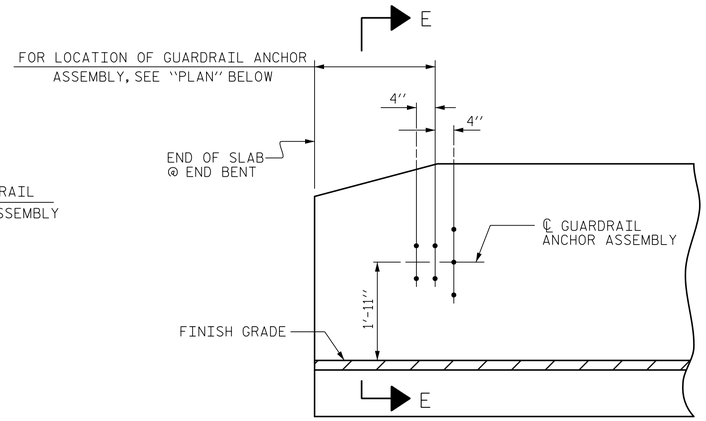
DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17
DWG. NO. 6

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			14

STD. NO. 24PCS3_33_90S



PLAN



ELEVATION

NOTES

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

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

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

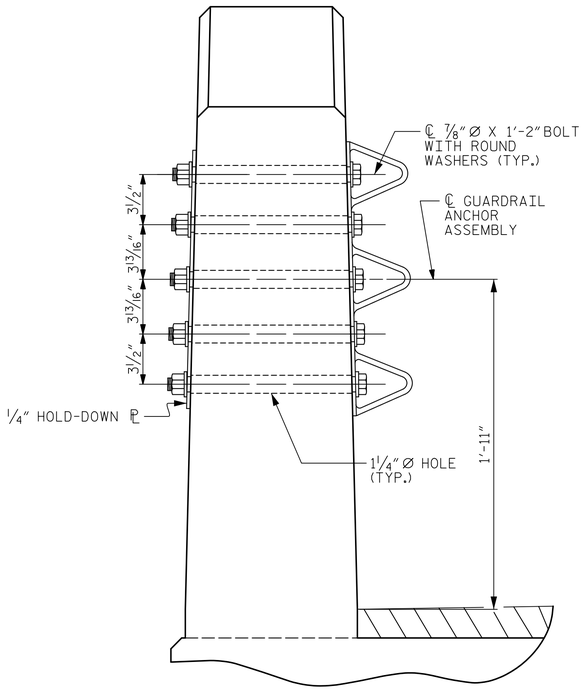
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

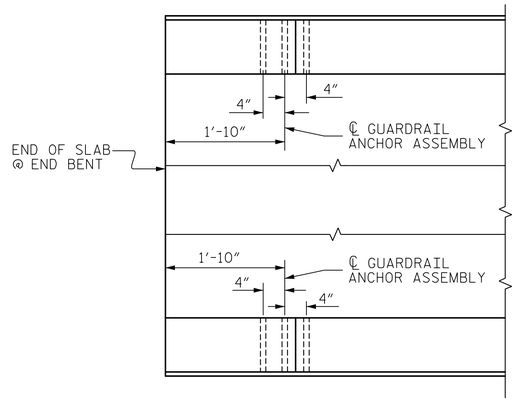
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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



SECTION E-E

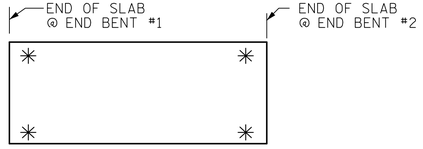
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENT

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

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NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL

ASSEMBLED BY : J. BAYNE	DATE : 12/16		
CHECKED BY : P. BARBER	DATE : 1/17		
DRAWN BY : MAA 5/10	REV. 12/5/11	MAA/GM	
CHECKED BY : GM 5/10	REV. 6/13	MAA/GM	
	REV. 1/15	MAA/TMG	

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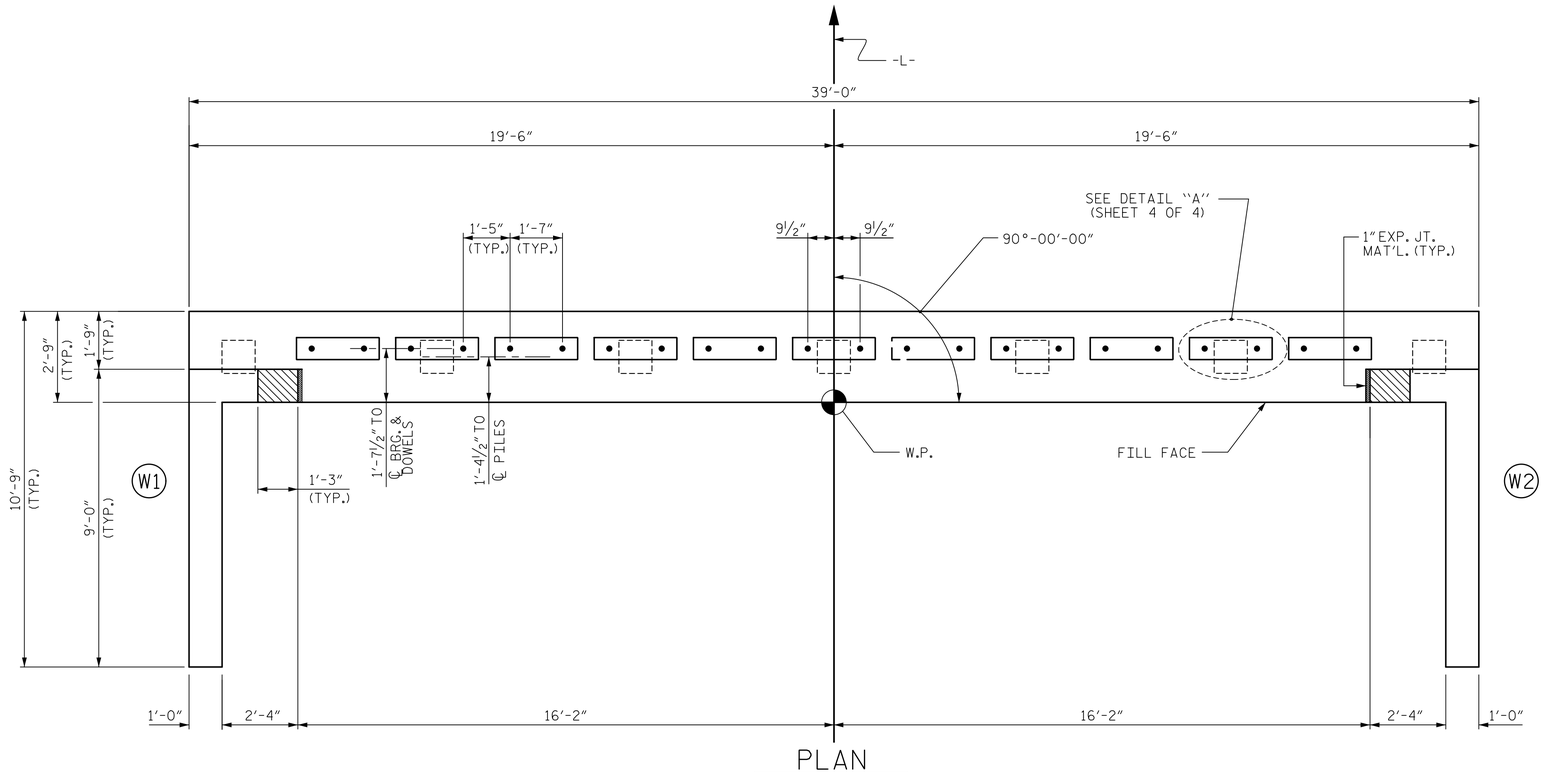
DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17
DWG. NO. 7

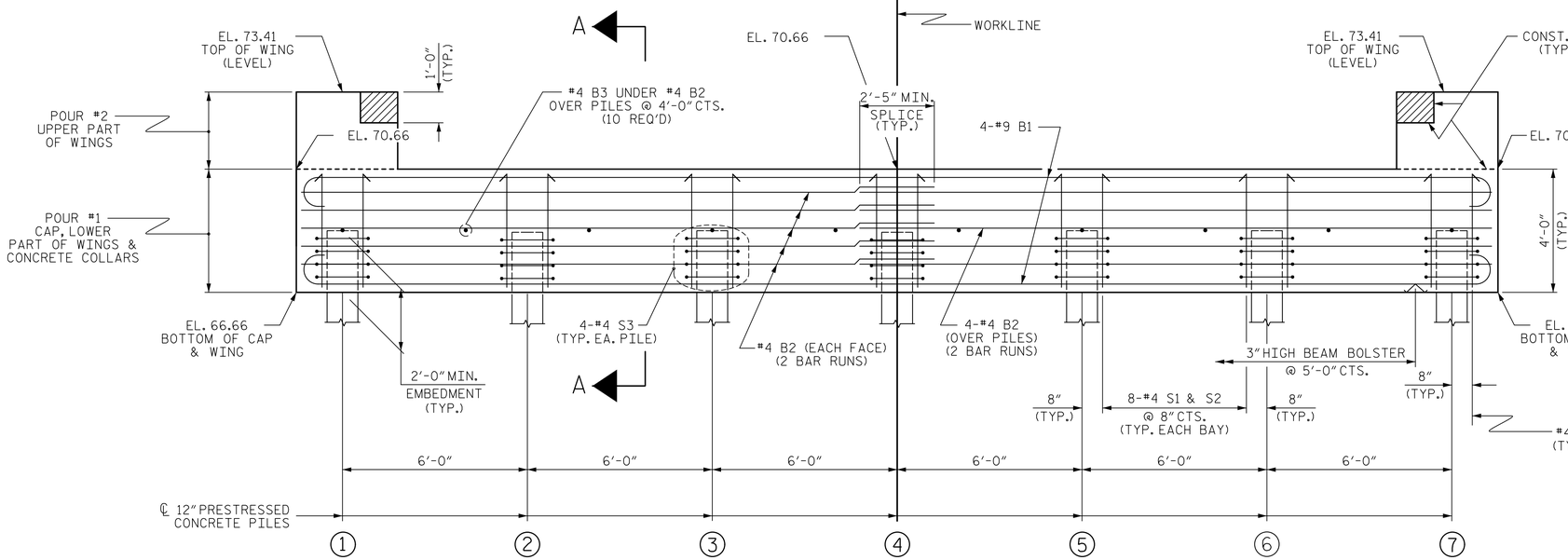
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-7
TOTAL SHEETS 14

(SHT 1) STD. NO. GRA3



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.

NOTES

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

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

FOR WING DETAILS, SEE SHEET 3 OF 4.

INSTALL THE 4″DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED. FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

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ASSEMBLED BY : J. BAYNE	DATE : 12/16		
CHECKED BY : P. BARBER	DATE : 1/17		
DRAWN BY : WJH 12/11	REV. 4/15 MAA/TMG		
CHECKED BY : AAC 12/11			

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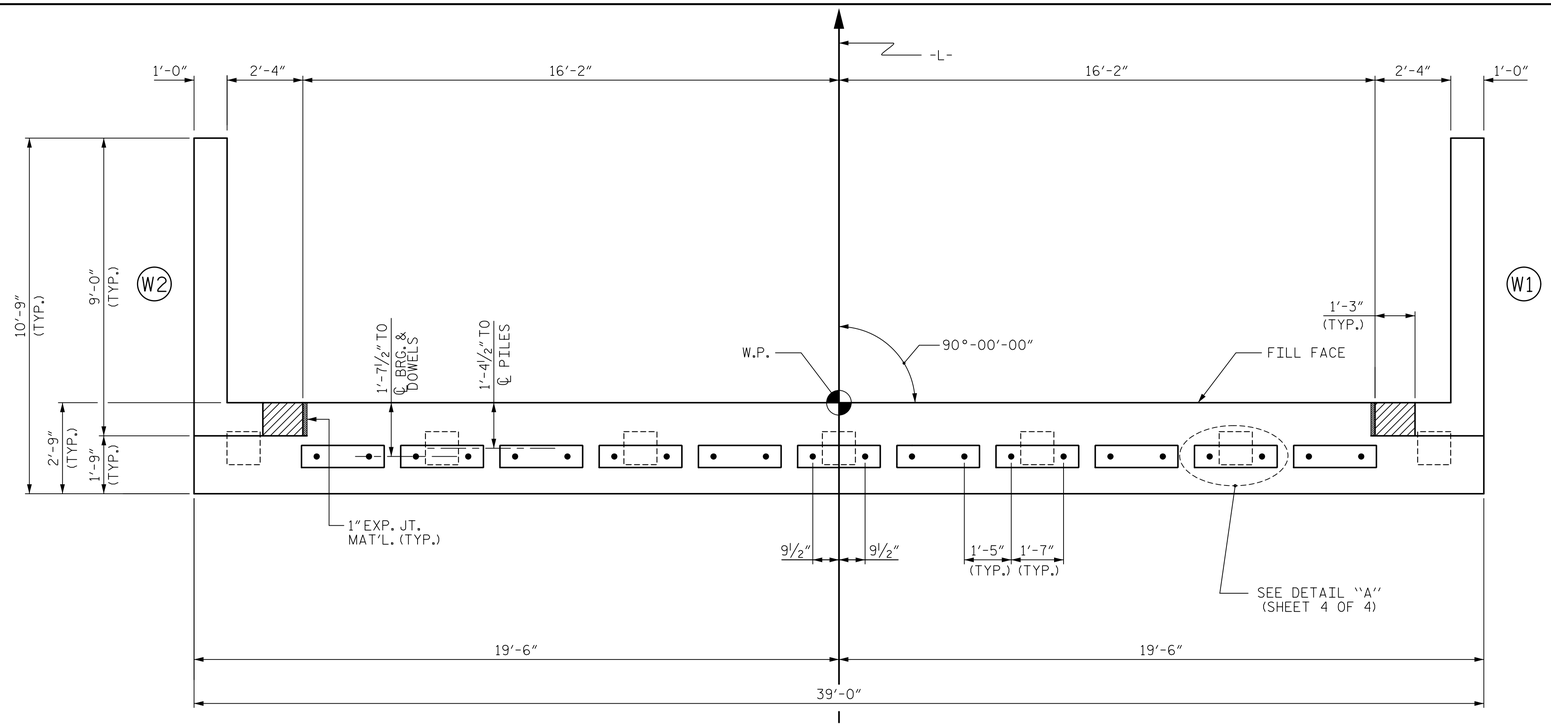
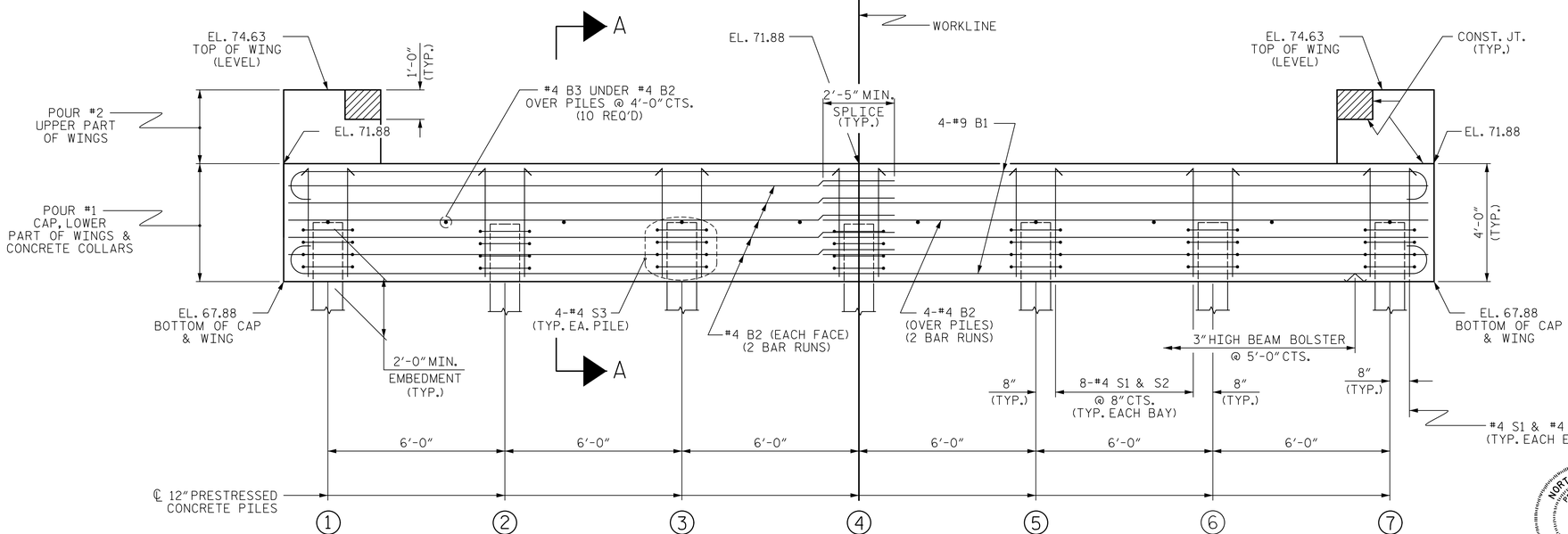
DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17
DWG. NO. 8

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			14

STD. NO. EB_33_90S4



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.

NOTES

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

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

FOR WING DETAILS, SEE SHEET 3 OF 4.

INSTALL THE 4"DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED. FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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B57368741E...

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1/30/2017

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PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

ASSEMBLED BY : J. BAYNE	DATE : 12/16		
CHECKED BY : P. BARBER	DATE : 1/17		
DRAWN BY : WJH 12/11	REV. 4/15 MAA/TMG		
CHECKED BY : AAC 12/11			

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DRAWN BY J. BAYNE DATE 12/16
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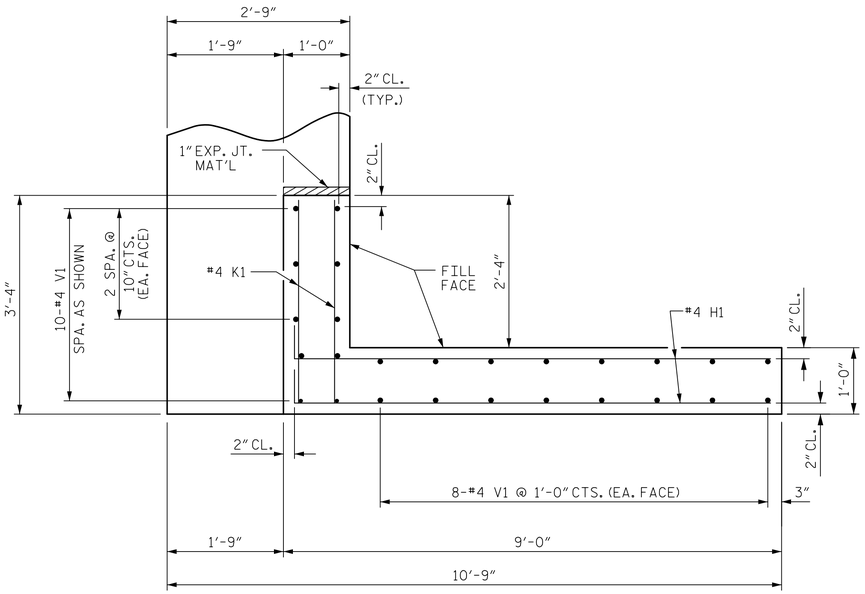
DWG. NO. 9

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

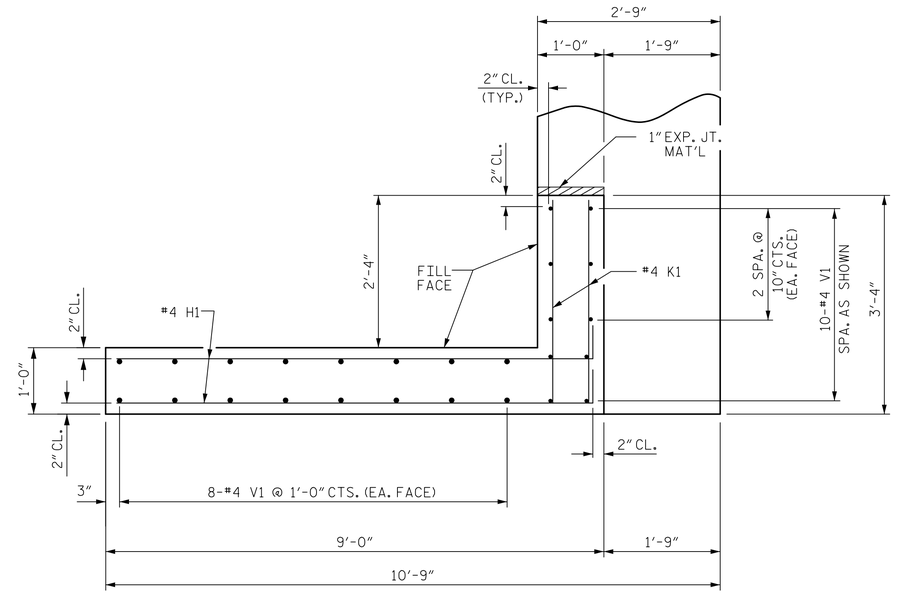
SHEET NO. S-9

TOTAL SHEETS 14

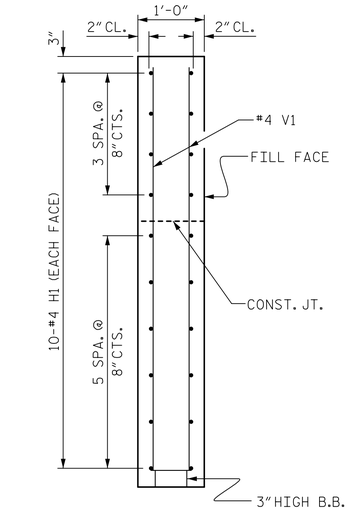
STD. NO. EB_33_90S4



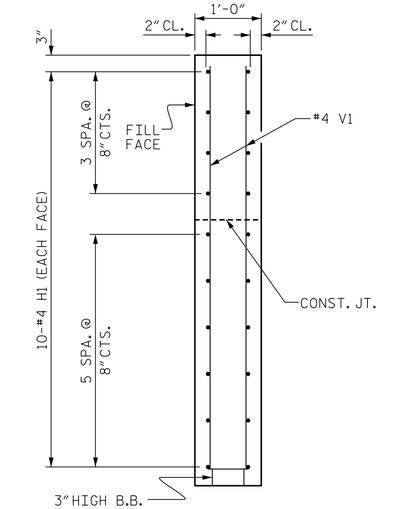
PLAN OF WING (W1)



PLAN OF WING (W2)

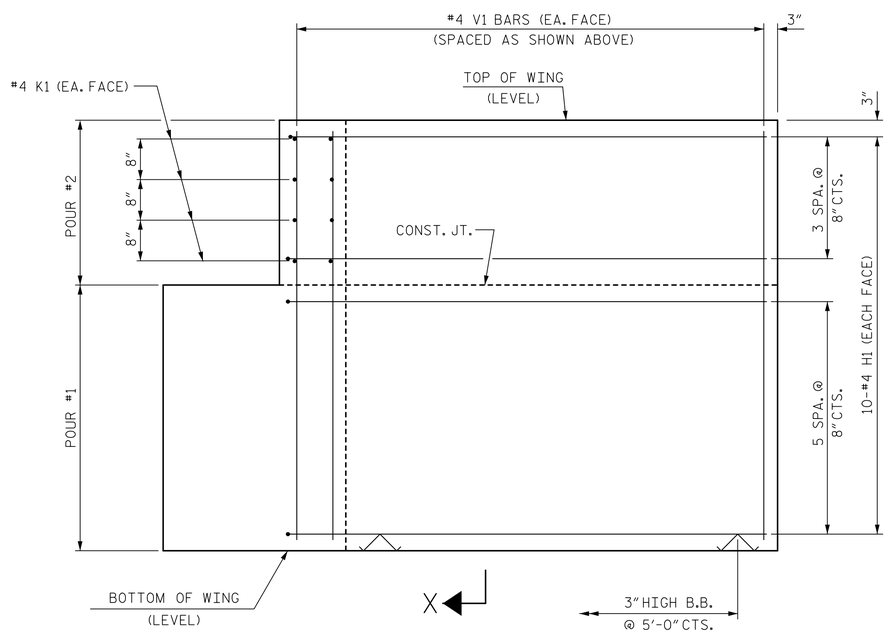


SECTION X-X



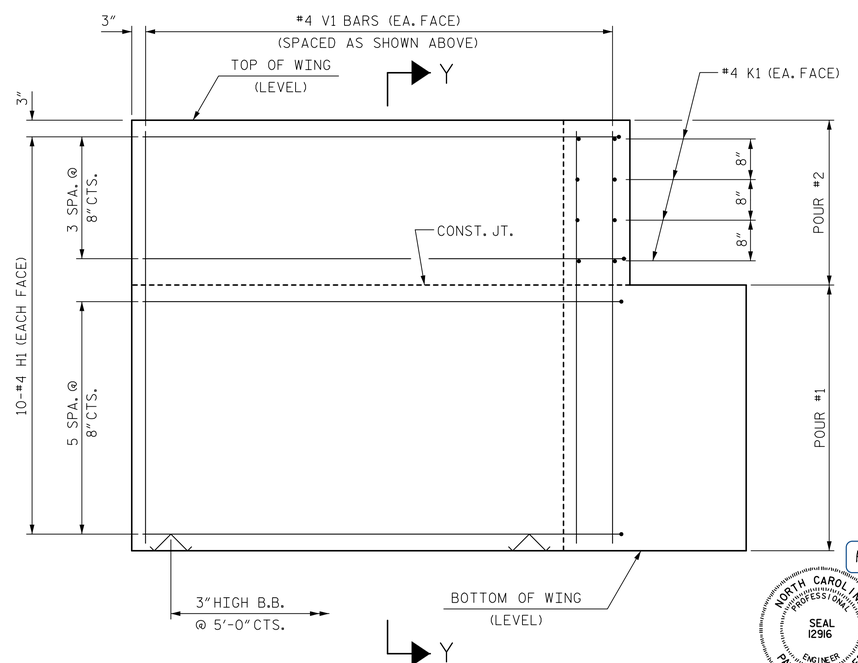
SECTION Y-Y

X



ELEVATION OF WING (W1)

Y



ELEVATION OF WING (W2)

WING DETAILS

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NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

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PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT
WING DETAILS

ASSEMBLED BY : J. BAYNE	DATE : 12/16
CHECKED BY : P. BARBER	DATE : 1/17
DRAWN BY : WJH 12/11	REV. 4/15 MAA/TMG
CHECKED BY : AAC 12/11	

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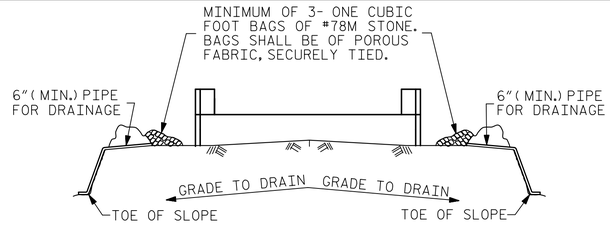
CHECKED BY P. BARBER DATE 1/17

DWG. NO. 10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			14

STD. NO. EB_33_90S4

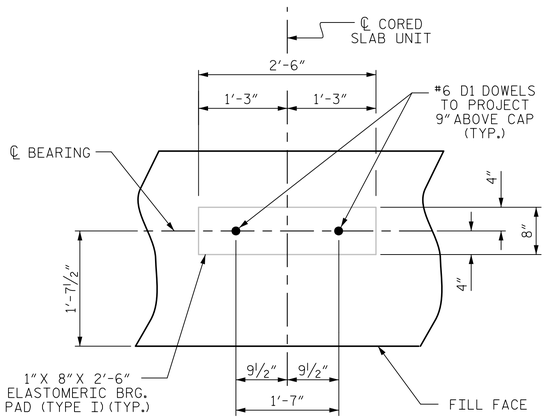


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

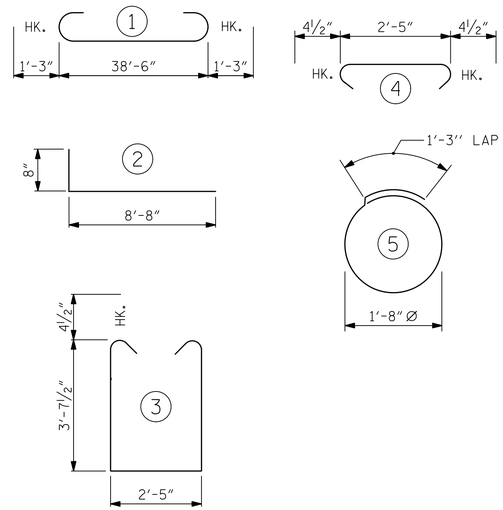
TEMPORARY DRAINAGE AT END BENT



DETAIL ''A''

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1		END BENT No. 2	
12" PRESTRESSED CONCRETE PILES		12" PRESTRESSED CONCRETE PILES	
NO: 7	LIN. FT.= 210	NO: 7	LIN. FT.= 245
PILE REDRIVES	7 EA.	PILE REDRIVES	7 EA.

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-2"	214

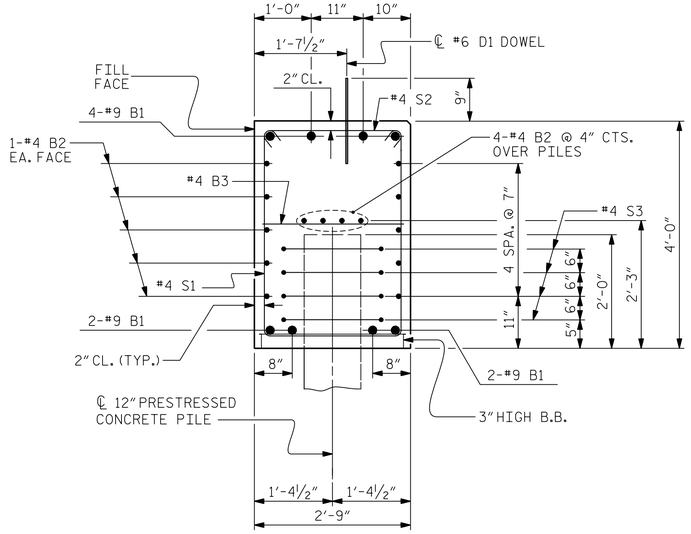
REINFORCING STEEL (FOR ONE END BENT) 2636 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS 18.3 C.Y.

POUR #2 UPPER PART OF WINGS 2.3 C.Y.

TOTAL CLASS A CONCRETE 20.6 C.Y.



SECTION A-A

DocuSigned by: Paul J. Barber

NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

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PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2 DETAILS

ASSEMBLED BY : J. BAYNE	DATE : 12/16
CHECKED BY : P. BARBER	DATE : 1/17
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11

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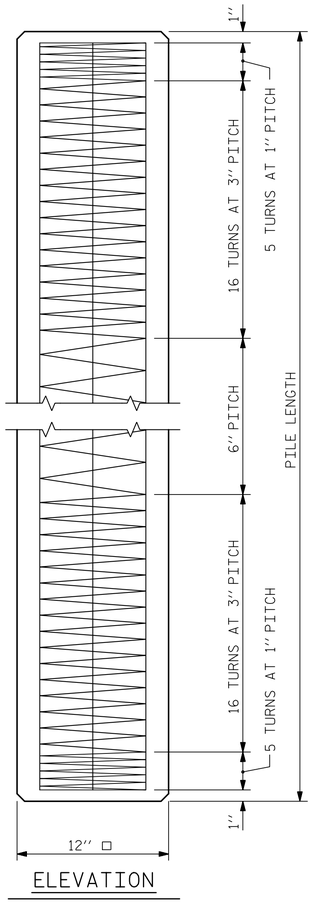
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17

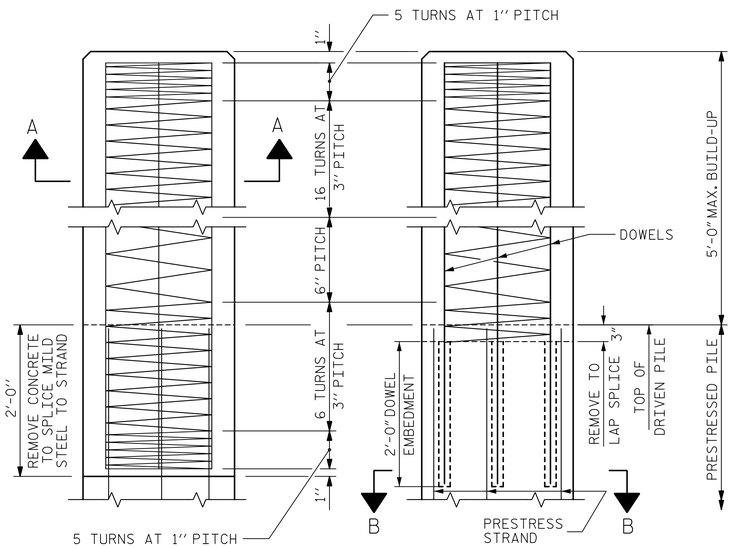
DWG. NO. 11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			14

STD. NO. EB_33_90S4

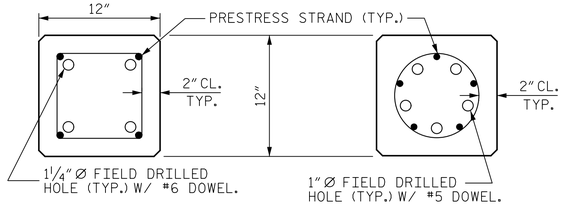


ELEVATION



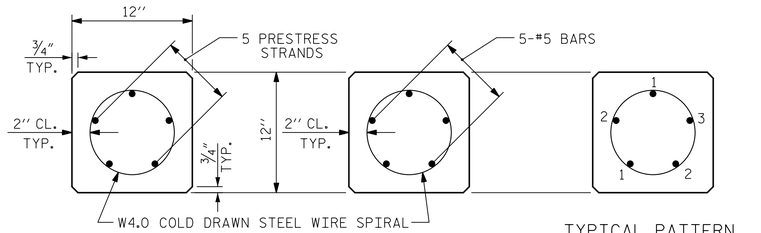
BUILD-UP AND SPIRAL REINFORCING

OPTIONAL BUILD-UP WITH DOWELS



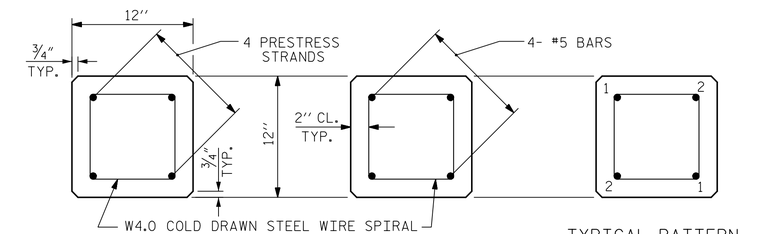
SECTION ''B-B''

(AT THE CONTRACTOR'S OPTION, PILE BUILD-UP MAY BE CONSTRUCTED WITH DOWELS.)



TYPICAL SECTION SECTION ''A-A'' TYPICAL PATTERN FOR BURNING STRANDS

½'' OR 0.6''Ø GRADE 270 L.R. PRESTRESS STRANDS



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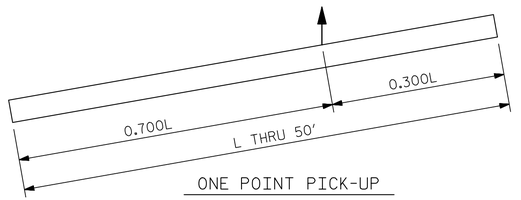
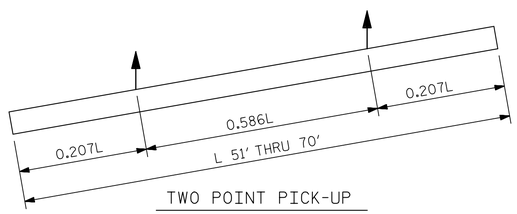


ONE POINT PICK-UP



TWO POINT PICK-UP

PICK-UP POINTS

NOTES

PRESTRESSED CONCRETE STRENGTH : f'c= 7,500 PSI

BUILD-UP CONCRETE STRENGTH : f'c= 7,500 PSI

STRAND DATA:

SIZE	GRADE	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
½''	270 L.R.	0.153	41,300# PER STRAND	30,980# PER STRAND
0.6''	270 L.R.	0.217	58,600# PER STRAND	43,940# PER STRAND

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS CONFORMING TO AASHTO M203. STRAND SAMPLING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT THE CONTRACTOR'S OPTION, ½'' OR 0.6'' STRANDS MAY BE USED IN EITHER THE 4 OR 5 STRAND CONFIGURATION SHOWN IN THE TYPICAL SECTION DETAIL. MIXING OF STRAND SIZE IS NOT ALLOWED.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

TRANSFER THE LOAD FROM THE ANCHORAGES TO THE PILE AFTER THE CONCRETE HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN PAIRS, EXCEPT WHERE 5 STRANDS ARE USED, THE LAST STRAND MAY BE BURNED SINGLY ACCORDING TO BURNING PATTERNS SHOWN. NOT MORE THAN 4 STRANDS MAY BE BURNED AT ANY ONE SECTION BEFORE THE SAME STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS ARE TO BE INDICATED WITH A 2'' WIDE BLACK MARK.

DRIVE PILES USING A METHOD APPROVED BY THE ENGINEER, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

DRIVING OF THE BUILT-UP PILE WILL NOT BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 5,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

DOWEL INSTALLATION FOR OPTIONAL BUILD-UP

GROUT COMPRESSIVE STRENGTH: f'c= 5,000 PSI

BEFORE DRILLING DOWEL HOLES, REMOVE THE UPPER 3'' OF CONCRETE FROM THE TOP OF THE PILE WITHOUT DAMAGE TO THE REINFORCING STEEL. THE REMOVAL PLANE SHOULD BE NORMAL TO THE EDGE OF THE PILE.

DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN ½'' CLEAR TO ALL EXISTING PRESTRESSING STRANDS IN THE CONCRETE PILE.

FIELD DRILLED HOLES SHALL BE CLEAN AND FREE OF ANY OBSTRUCTIONS BEFORE GROUTING OF DOWELS. DOWEL BARS SHALL BE INSTALLED AND GROUTED WITH AN APPROVED NON-SHRINK GROUT.

THE SPIRAL REINFORCING IN ALL BUILD-UPS SHALL BE W4.0 COLD DRAWN WIRE WHICH SHALL BE SECURED TO THE LONGITUDINAL REINFORCEMENT TO MAINTAIN PITCH.

THE SPIRAL REINFORCING IN THE BUILD-UP AND THE PRESTRESSED CONCRETE PILE SHALL BE SPLICED BY OVERLAPPING A MIN. OF ONE TURN.

QUANTITIES FOR ONE 12'' PRESTRESSED PILE

LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE POINT PICK-UP 0.300L	ONE POINT PICK-UP 0.700L	TWO POINT PICK-UP 0.207L	TWO POINT PICK-UP 0.586L
25'-0''	0.91	1.85	7'-6''	17'-6''		
30'-0''	1.10	2.22	9'-0''	21'-0''		
35'-0''	1.28	2.59	10'-6''	24'-6''		
40'-0''	1.46	2.96	12'-0''	28'-0''		
45'-0''	1.64	3.33	13'-6''	31'-6''		
50'-0''	1.83	3.72	15'-0''	35'-0''		
55'-0''	2.01	4.09			11'-4½''	32'-3''
60'-0''	2.19	4.46			12'-5''	35'-2''
65'-0''	2.38	4.81			13'-5½''	38'-1''
70'-0''	2.57	5.18			14'-6''	41'-0''

PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

DocuSigned by: Paul J. Barber

NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

12'' PRESTRESSED CONCRETE PILE

ASSEMBLED BY : J. BAYNE	DATE : 1/17
CHECKED BY : P. BARBER	DATE : 1/17

DRAWN BY : FCJ 7/88	REV. 11/30/10	WMC/GM
CHECKED BY : CRK 3/89	REV. 10/1/11	MAA/GM
	REV. 12/14	MAA/TMG

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

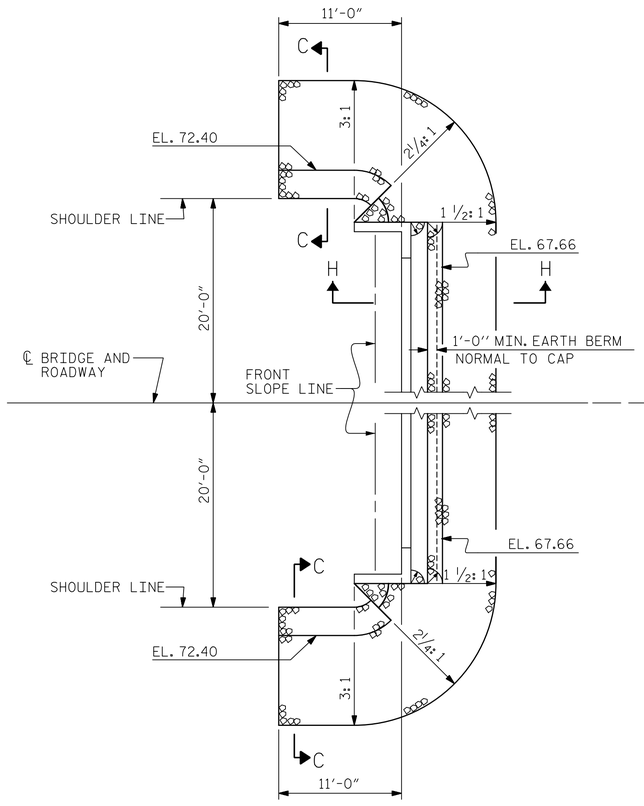
DRAWN BY J. BAYNE DATE 1/17
CHECKED BY P. BARBER DATE 1/17
DWG. NO. 12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			14

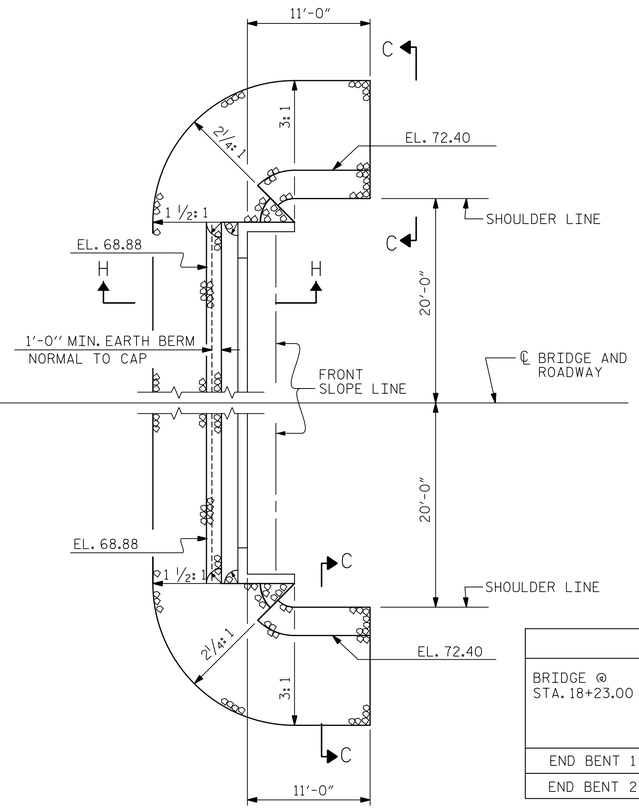
STD. NO. PCP1

NOTES :

FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



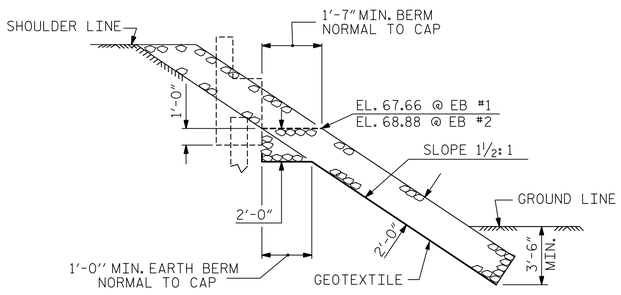
END BENT 1



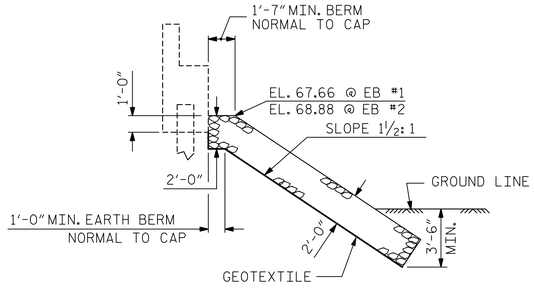
END BENT 2

ESTIMATED QUANTITIES

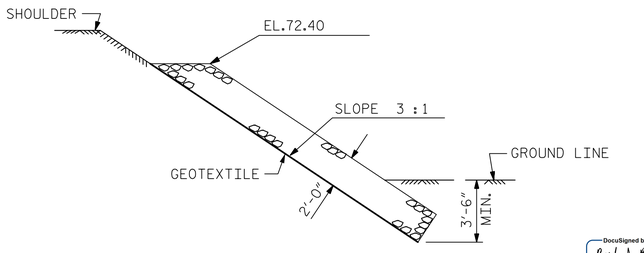
BRIDGE @ STA. 18+23.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	150	165
END BENT 2	140	155



SECTION H-H



℄ SECTION
BERM RIP RAPPED



SECTION C-C

DocuSigned by:
Paul J. Barber
NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER
1/30/2017

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PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

RIP RAP DETAILS

ASSEMBLED BY : J. BAYNE	DATE : 12/16
CHECKED BY : P. BARBER	DATE : 1/17
DRAWN BY : REK 1/84	REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84	REV. 10/1/11 MAA/GM
	REV. 12/21/11 MAA/GM

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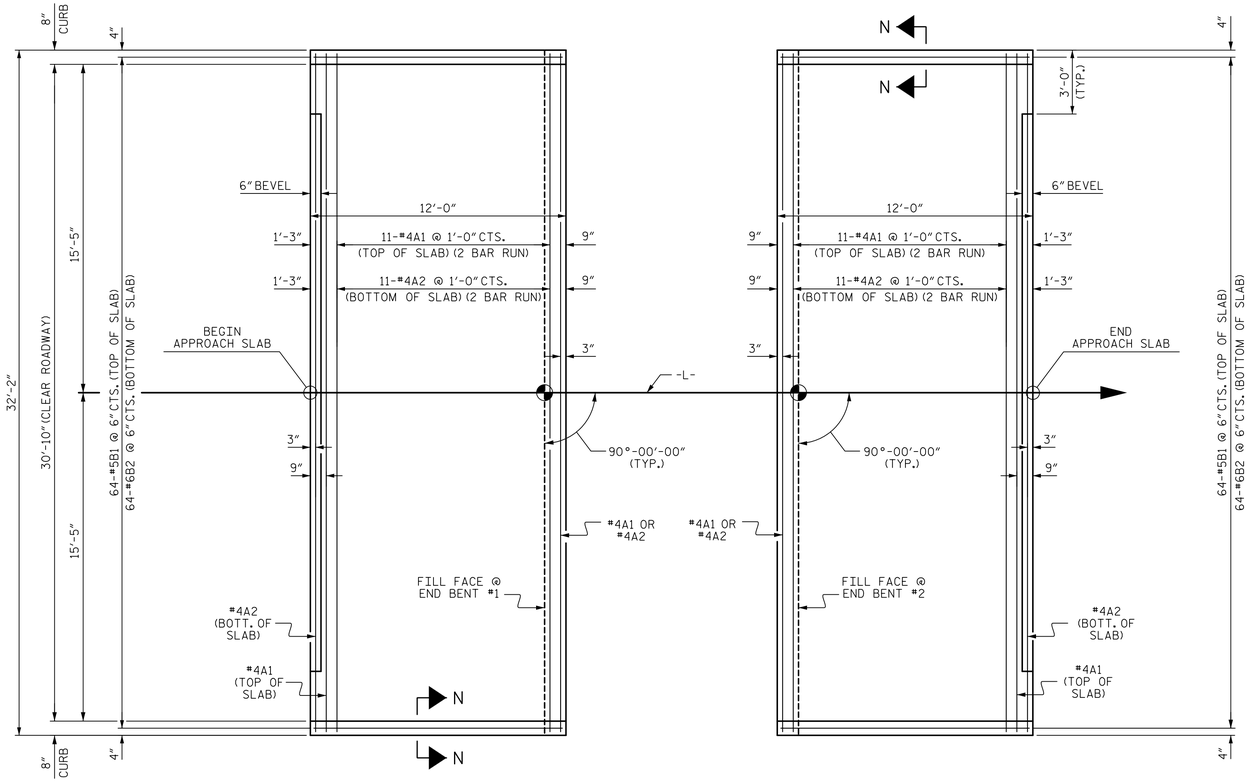
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17
DWG. NO. 13

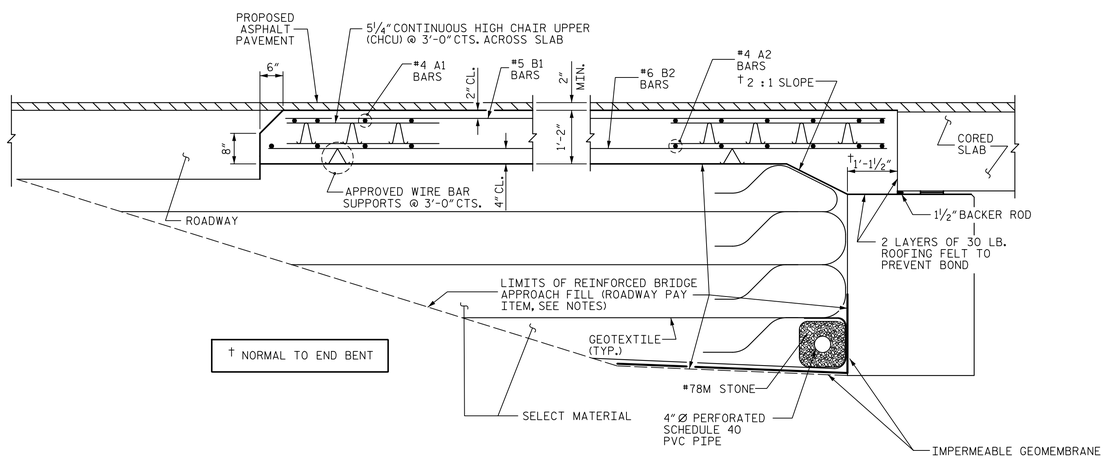
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			14

STD. NO. RR1



PLAN @ END BENT #1 PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



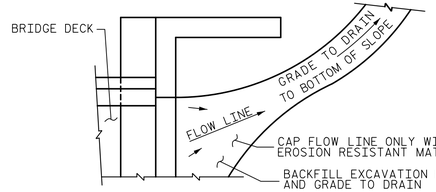
SECTION THRU SLAB

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

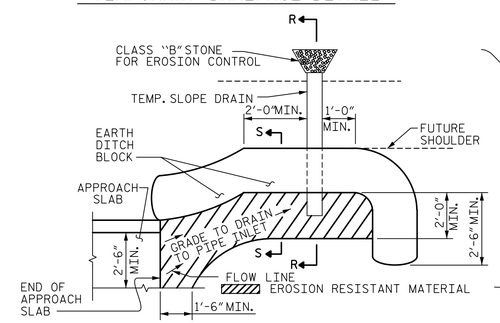
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



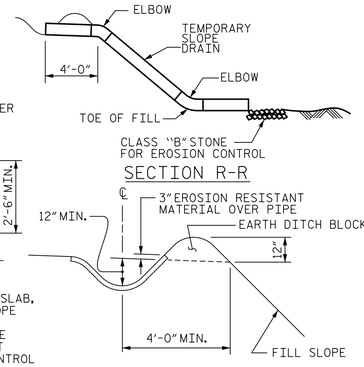
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



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

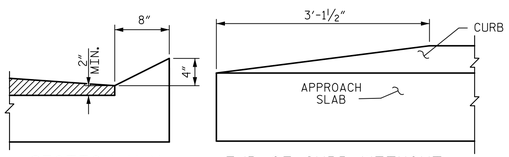
PLAN VIEW



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



CURB DETAILS

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

BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
✱ B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
✱ EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	19.5

APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-9"	291
✱ B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1412
✱ EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	19.5

PROJECT NO. 17BP.3.R.50

SAMPSON COUNTY

STATION: 18+23.00 -L-

DocuSigned by: Paul J. Barber

NORTH CAROLINA PROFESSIONAL SEAL 12916 ENGINEER PAUL J. BARBER

1/30/2017

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

ASSEMBLED BY : J. BAYNE DATE : 12/16
CHECKED BY : P. BARBER DATE : 1/17

DRAWN BY : SHS/MAA 5-09
CHECKED BY : BCH 5-09

REV. 9-15 MAA/TMG

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

DRAWN BY J. BAYNE DATE 12/16
CHECKED BY P. BARBER DATE 1/17

DWG. NO. 14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			14

STD. NO. BAS_33_90S

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 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" 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 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" 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 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

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