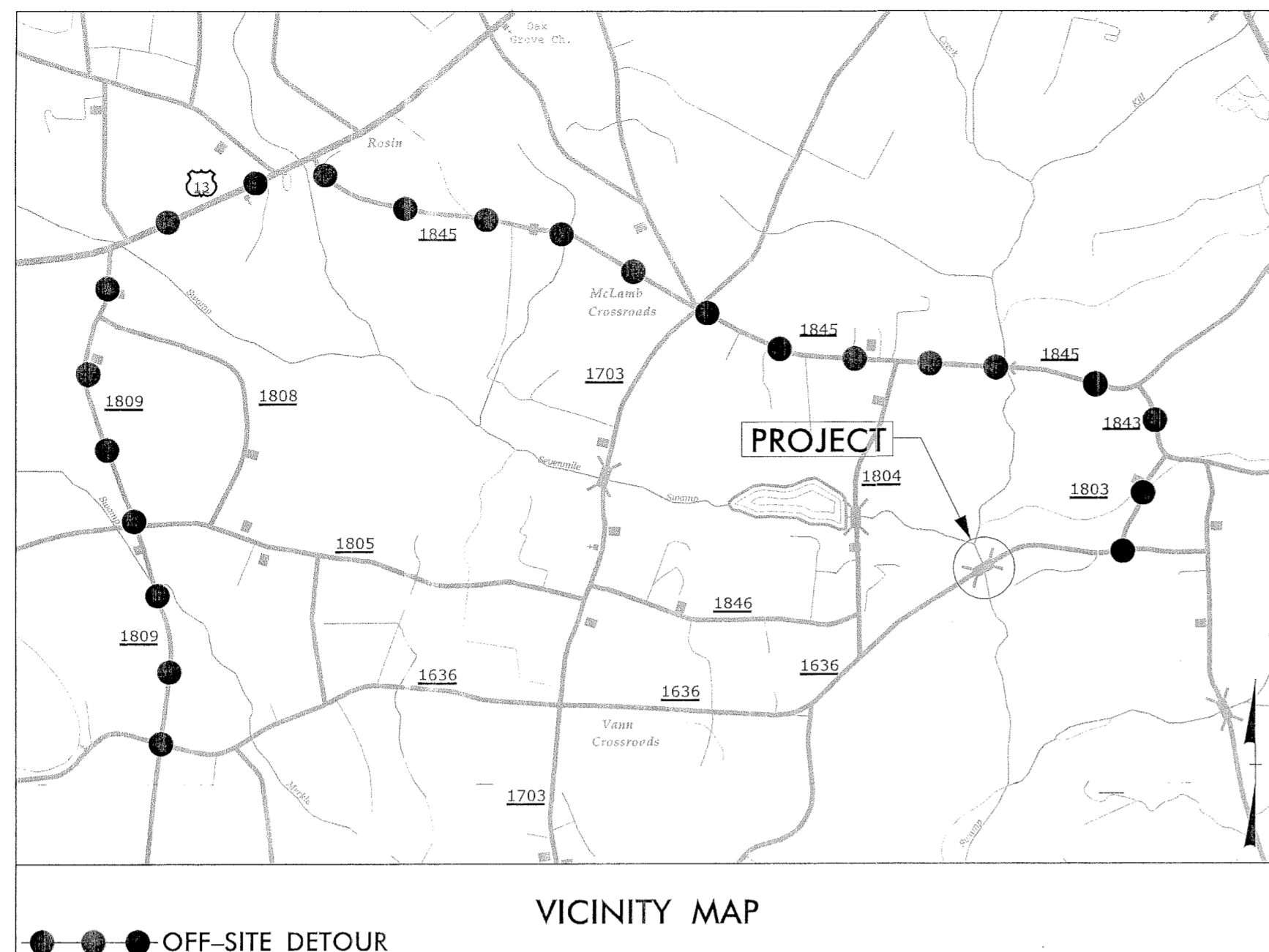


09/08/13

TIP PROJECT: 17BP.3.R.19



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

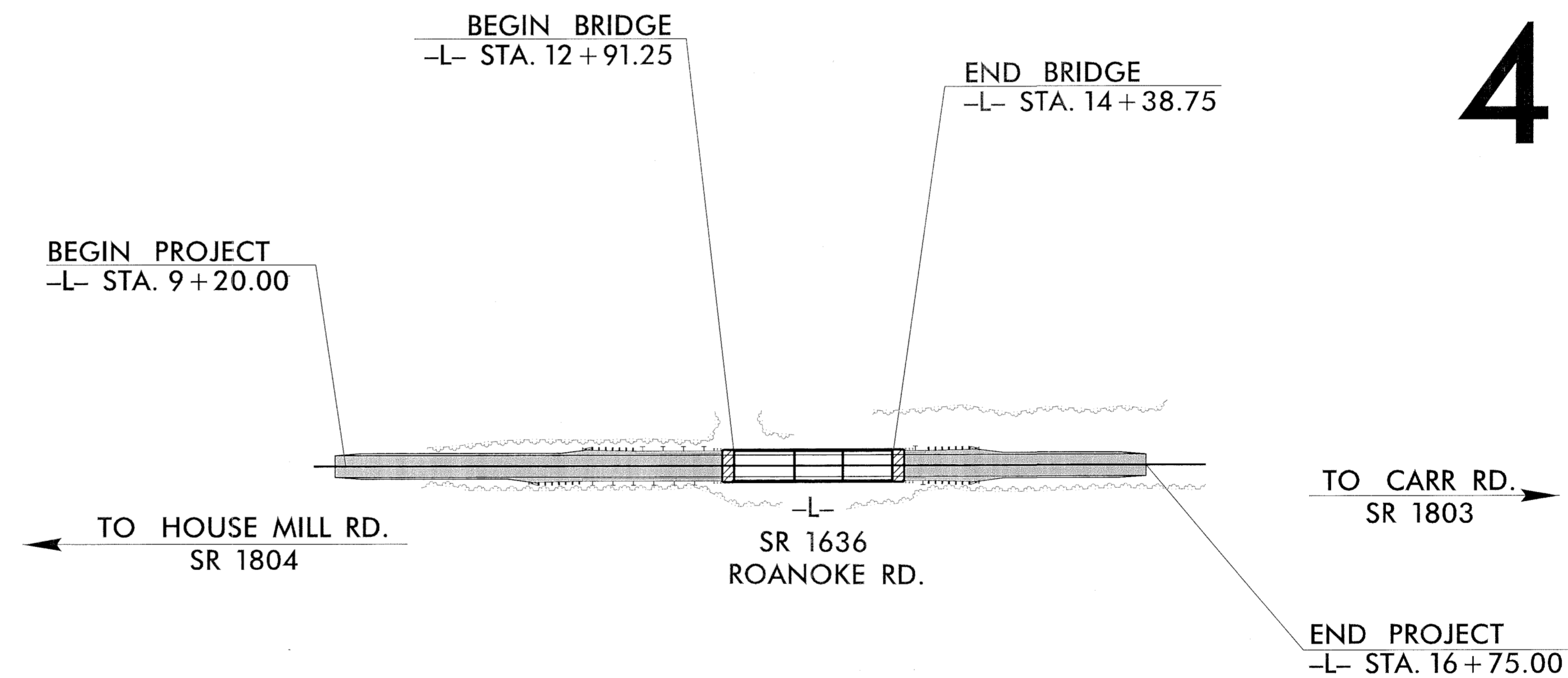
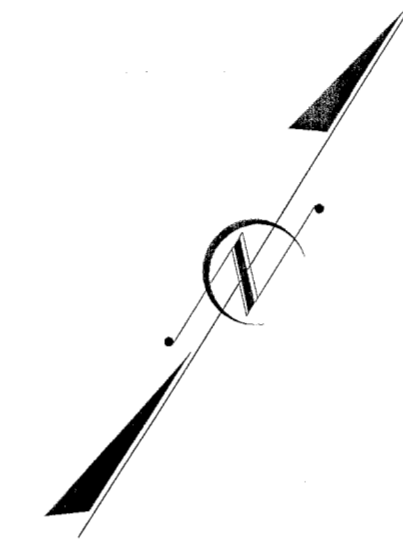
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**SAMPSON COUNTY**

**LOCATION: BRIDGE NO. 189 OVER  
COHARIE CREEK ON SR 1636**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND BRIDGE REPLACEMENT**

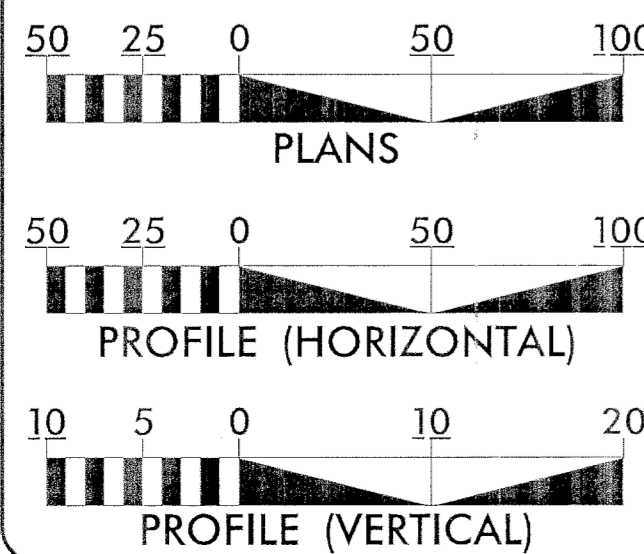
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.19	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



**4**

CONTRACT:

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2009 = 240  
 ADT 2030 = N/A  
 DHV = N/A  
 D = N/A  
 T=6 TTST = N/A  
 DUAL = N/A  
 V = 60 MPH  
 CLASS = RURAL LOCAL  
 SUBREGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT 17BP.3.R.19 = 0.115 mi.  
 LENGTH STRUCTURE TIP PROJECT 17BP.3.R.19 = 0.028 mi.  
 TOTAL LENGTH TIP PROJECT 17BP.3.R.19 = 0.143 mi.

Prepared in the Office of:

STEWART

For  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

10 /15 /12

LETTING DATE:

10 /17 /13

**BEN CRAWFORD, PE**  
PROJECT ENGINEER

**MICHAEL TAYLOR, PE**  
PROJECT DESIGN ENGINEER

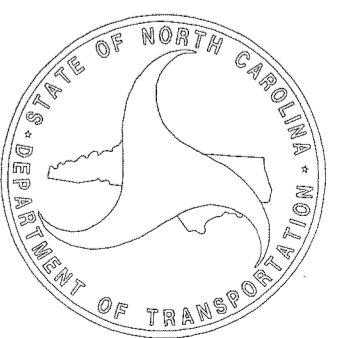
**AMANDA GLYNN, PE**  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

SIGNATURE: *[Signature]* PE

**ROADWAY DESIGN ENGINEER**

SIGNATURE: *[Signature]* PE



8/28/2013  
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USER:mjurnis

**INDEX OF SHEETS, GENERAL NOTES, AND LIST OF  
STANDARD DRAWINGS**

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	EARTHWORK, DRAINAGE, GUARDRAIL, SHOULDER BERM GUTTER, AND ASPHALT PAVEMENT REMOVAL SUMMARIES
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-2	TRANSPORTATION MANAGEMENT PLANS
TMP-3	SIGN DESIGN PLANS
EC-1 THRU EC-3	EROSION CONTROL PLANS
UC-1 THRU UC-3	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITY BY OTHERS PLANS
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-13	STRUCTURE PLANS

EFF. 01-17-12  
REV. 11-01-11

2006 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January 17, 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 - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 4 - MAJOR STRUCTURE	
422.10	Reinforced Bridge Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES:

2012 SPECIFICATIONS  
EFFECTIVE: 01-17-12  
REVISED: 11-01-11

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

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 STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE STAR VISION, SOUTH RIVER ELECTRIC, SAMPSON County (Water).

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

REVISIONS

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

# CONVENTIONAL PLAN SHEET SYMBOLS

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	✕
Property Monument	□ ECM
Parcel/Sequence Number	123
Existing Fence Line	---x---x---x---
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	---WLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
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	---WLB---
Proposed Lateral, Tail, Head Ditch	---FLDM---
False Sump	□

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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	○ R W
Proposed Right of Way Line with Iron Pin and Cap Marker	○ R W ▲
Proposed Right of Way Line with Concrete or Granite Marker	○ R W ▲
Existing Control of Access	○ C A
Proposed Control of Access	○ C A
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	-----

## 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	○
Storm Sewer	-----

## UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	□
Power Transformer	□
U/G Power Cable Hand Hole	□
H-Frame Pole	●
Recorded U/G Power Line	---P---
Designated U/G Power Line (S.U.E.*)	---P---

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	□
U/G Telephone Cable Hand Hole	□
Recorded U/G Telephone Cable	---T---
Designated U/G Telephone Cable (S.U.E.*)	---T---
Recorded U/G Telephone Conduit	---TC---
Designated U/G Telephone Conduit (S.U.E.*)	---TC---
Recorded U/G Fiber Optics Cable	---T FO---
Designated U/G Fiber Optics Cable (S.U.E.*)	---T FO---

## WATER:

Water Manhole	○
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	---W---
Designated U/G Water Line (S.U.E.*)	---W---
Above Ground Water Line	---A/G Water---

## TV:

TV Satellite Dish	□
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	□
Recorded U/G TV Cable	---TV---
Designated U/G TV Cable (S.U.E.*)	---TV---
Recorded U/G Fiber Optic Cable	---TV FO---
Designated U/G Fiber Optic Cable (S.U.E.*)	---TV FO---

## GAS:

Gas Valve	◇
Gas Meter	◇
Recorded U/G Gas Line	---G---
Designated U/G Gas Line (S.U.E.*)	---G---
Above Ground Gas Line	---A/G Gas---

## SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---SS---
Above Ground Sanitary Sewer	---A/G Sanitary Sewer---
Recorded SS Forced Main Line	---FSS---
Designated SS Forced Main Line (S.U.E.*)	---FSS---

## MISCELLANEOUS:

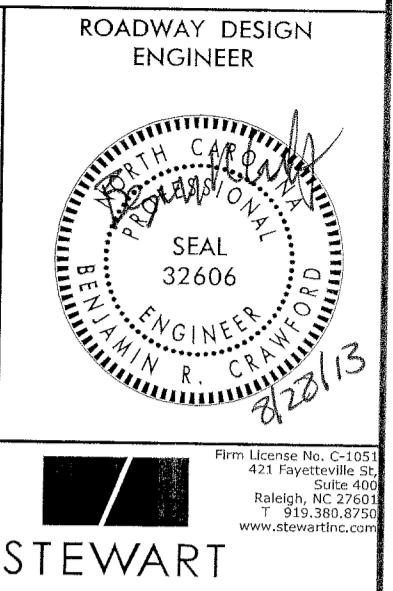
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	---UTIL---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	□
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to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

REVISIONS

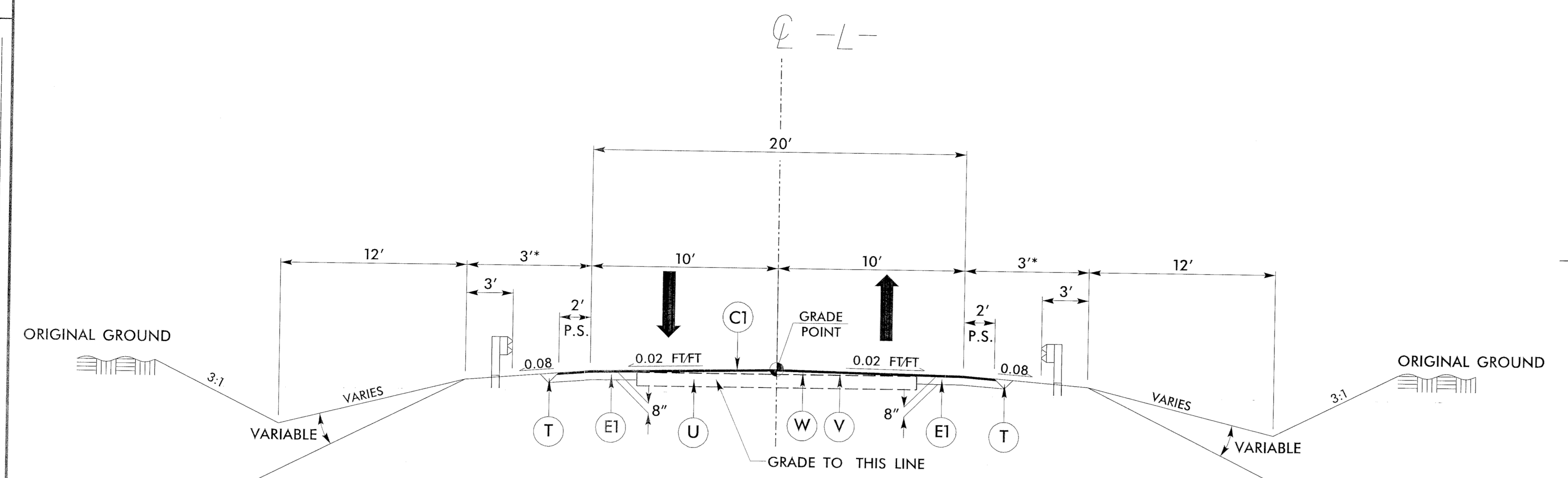
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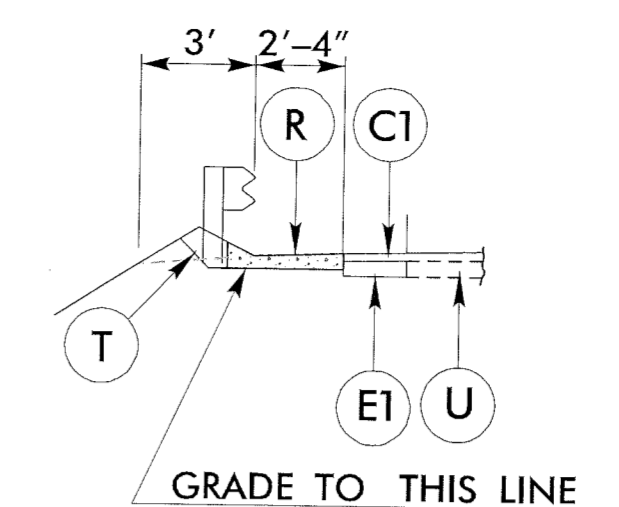
SEAL ONLY FOR  
ROADWAY DESIGN  
ELEMENTS



**ROADWAY TYPICAL SECTION NO. 1**

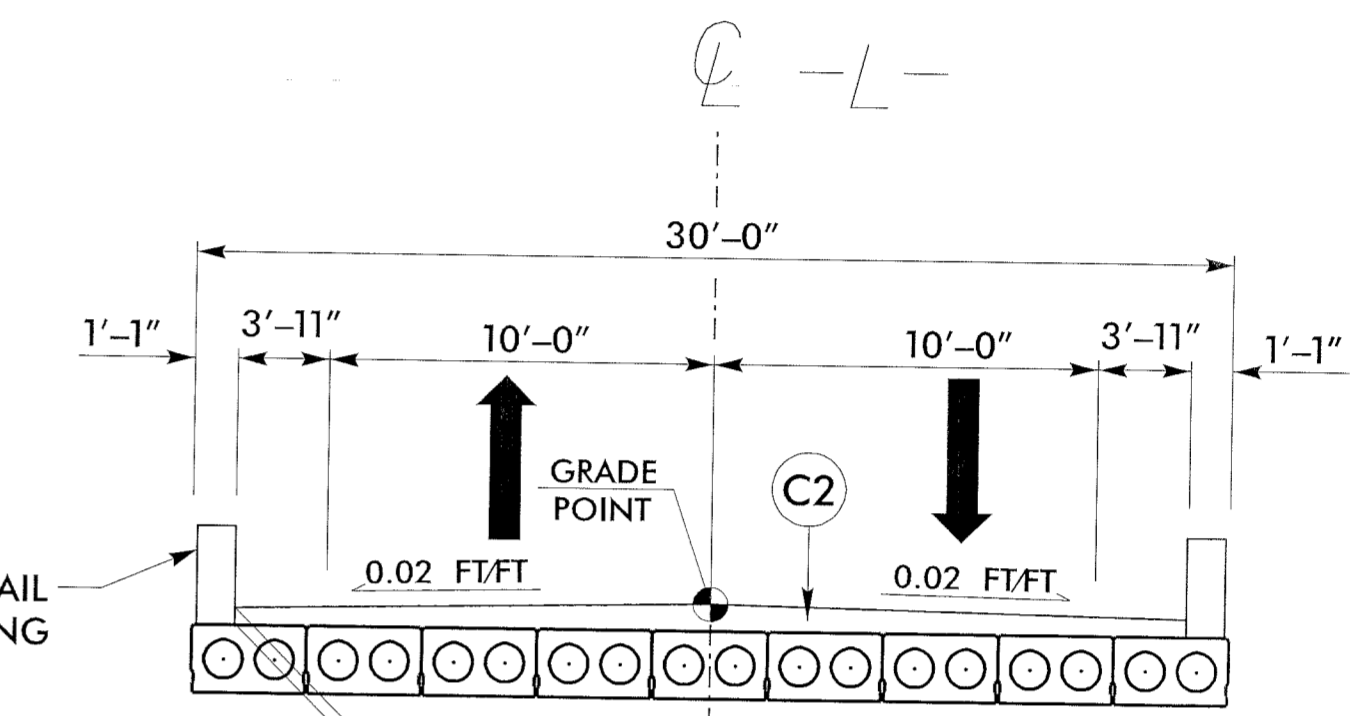
USE ROADWAY TYPICAL SECTION  
 -L- STA. 9+20.00 TO -L- STA. 12+91.25 (BEGIN BRIDGE)  
 -L- STA. 14+38.75 (END BRIDGE) TO -L- STA. 16+75.00

NOTES: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.  
 MINIMUM DEPTH OF 1.5" OF SF9.5A ON STRUCTURE.



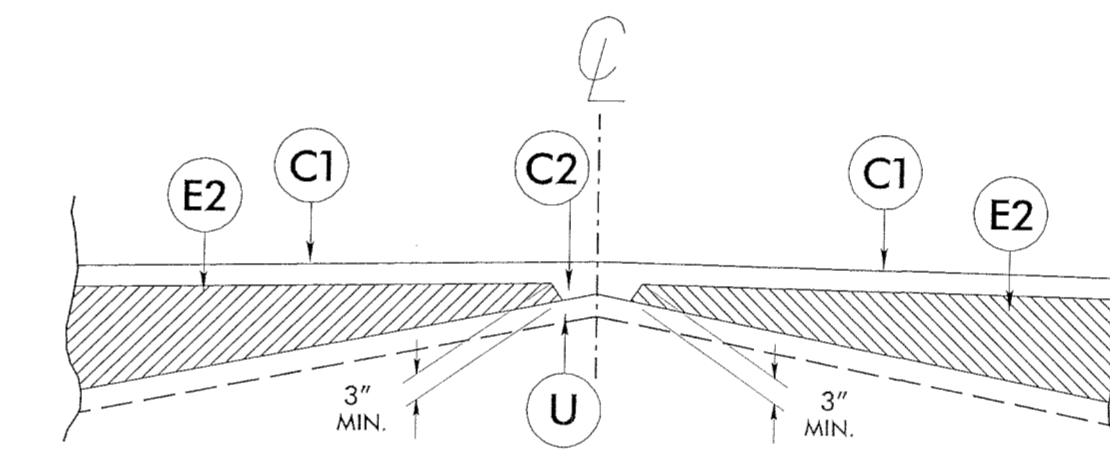
SHOULDER BERM GUTTER DETAIL

SEE SHEET 4 FOR LOCATIONS



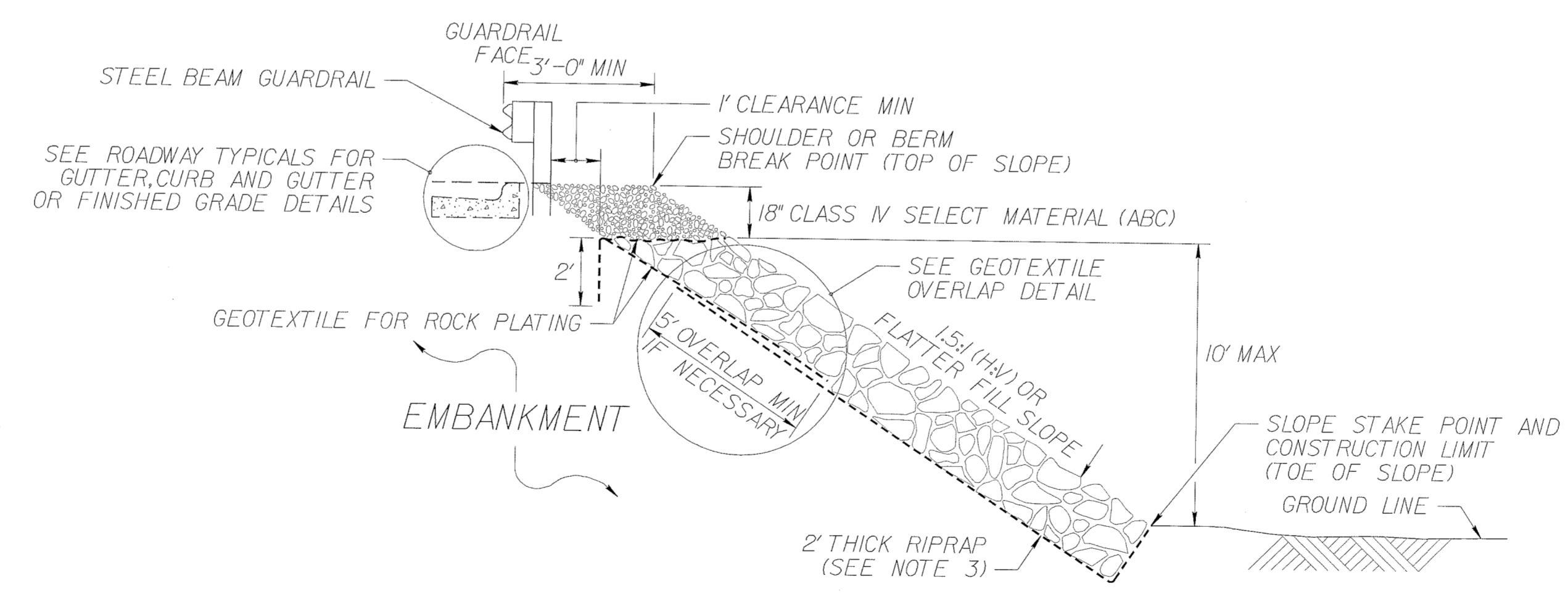
**BRIDGE TYPICAL SECTION**

USE BRIDGE TYPICAL SECTION  
 -L- STA. 12+91.25 TO -L- STA. 14+38.75  
 BRIDGE TYPE = CORED SLAB



DETAIL SHOWING METHOD OF WEDGING

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

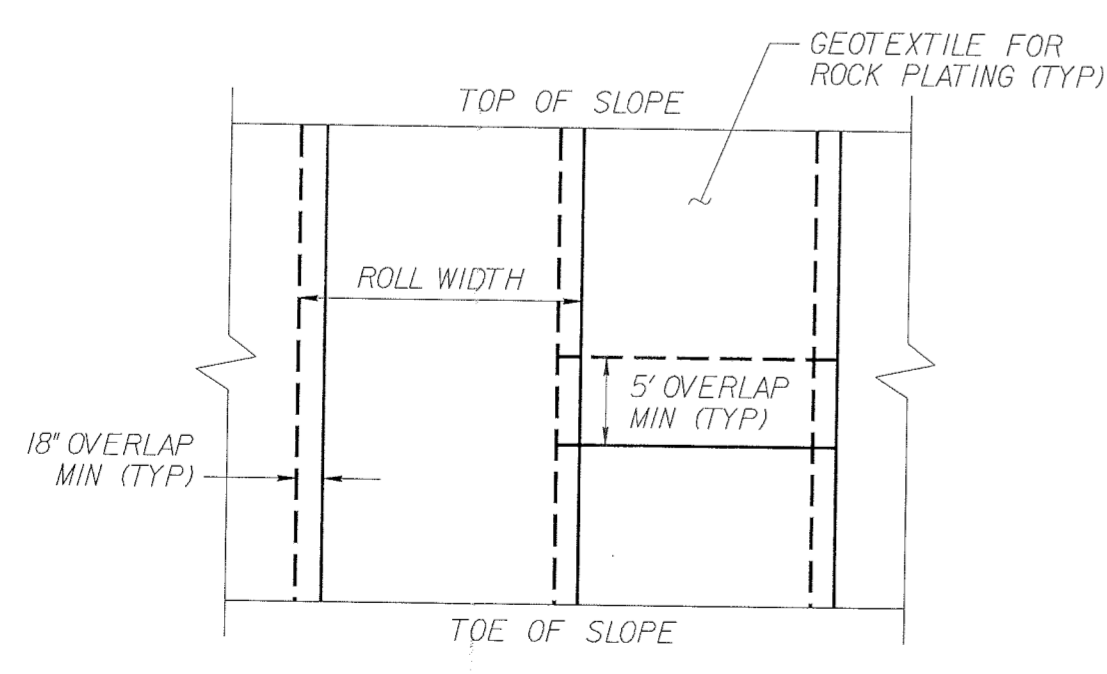


**ROCK PLATING DETAIL - TYPICAL SECTION**

-L- 10+75 TO BRIDGE EMBANKMENT RT  
 -L- 11+25 TO 12+25 LT  
 -L- BRIDGE EMBANKMENT TO 16+25 RT  
 -L- 14+75 TO 15+75 LT

**NOTES:**

- SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
- FOR STANDARD ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
- USE CLASS 1, 2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.



GEOTEXTILE OVERLAP DETAIL  
(PLAN VIEW)

REVISIONS

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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - _____				
Item Number	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0029000000-N	SP	Lump Sum		REINF BRG APPR ***** (-L2- STA. 13+65.00)
0043000000-N	226	Lump Sum		GRADING
0223000000-E	275	750	SY	ROCK PLATING IV
0366000000-E	310	48	LF	15" RC PIPE CULV III
1330000000-E	607	140	SY	INCIDENTAL MILLING
1489000000-E	610	520	TON	ASP CONC BASE CRS B25.0B
1525000000-E	610	400	TON	ASP CONC SURF CRS SF9.5A
1575000000-E	620	55	TON	ASP FOR PLANT MIX
2286000000-N	840	2	EA	MASNRY DRAINAGE STRUCT
2355000000-N	840	2	EA	FRAME W/GRATE 840.29 STD
2556000000-E	846	281	LF	SHOULDER BERM GUTTER
3030000000-E	862	225	LF	STL BM GUARDRAIL
3150000000-N	862	6	EA	ADDIT GUARDRAIL POSTS
3215000000-N	862	4	EA	GR ANCHOR TYPE III
3270000000-N	862	4	EA	GR ANCHOR TYPE 350
3649000000-E	876	2	TON	RIP RAP, CLASS B
3656000000-E	876	10	SY	GEOTEXTILE FOR DRAINAGE

Item Number	Sec #	Quantity	Unit	Description
4400000000-E	1110	420	SF	WORK ZONE SIGNS (STAT)
4410000000-E	1110	139	SF	WORK ZONE SIGNS (BARR)
4445000000-E	1145	96	LF	BARRICADES (TYPE III)
4810000000-E	1205	6040	LF	PAINT PVMT MARKINGS 4"
4900000000-N	1251	10	EA	PERM RAISED PVMT MARKERS
5325400000-E	1510	69	LF	4" WATER LINE
5798000000-E	1530	350	LF	ABANDON *** UTILITY PIPE -4
5871300000-E	1550	305	LF	4" TRENCHLESS INSTALL (IN SOIL)
6000000000-E	1605	1223	LF	TEMPORARY SILT FENCE
6012000000-E	1610	10	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	2	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMP SEEDING
6021000000-E	1620	0.25	TON	FERT FOR TEMP SEEDING
6038000000-E	SP	1250	SY	PERM SOIL REINF MAT
6042000000-E	1632	50	LF	1/4" HARDWARE CLOTH
6048000000-E	SP	95	SY	FLOAT TURBIDITY CURTAIN
6071012000-E	SP	73	LF	COIR FIBER WATTLE
6071020000-E	SP	1	LB	POLYACRYLAMIDE (PAM)
6084000000-E	1660	3	ACR	SEEDING AND MULCHING

Item Number	Sec #	Quantity	Unit	Description
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERT FOR REPAIR SEEDING
6096000000-E	1662	50	LB	SEED FOR SUPP SEEDING
6108000000-E	1665	1.25	TON	FERTILIZER TOPDRESSING
6117000000-N	1667	4	EA	RESPONSE FOR EROS CONTROL
8035000000-N	402	1	LS	REMOV EXIST STR ***** (-L2- STA. 13+65.00)
8112730000-N	450	2	EA	PDA TESTING
8121000000-N	412	1	LS	UNCL STR EXCAV STA ***** (-L2- STA. 13+65.00)
8182000000-E	420	59.8	CY	CLASS A CONCRETE (BRIDGE)
8210000000-N	422	1	LS	BRG APPR SLAB ***** (-L2- STA. 13+65.00)
8217000000-E	425	8816	LB	REINF STEEL (BRIDGE)
8364000000-E	450	550	LF	HP12X53 PILES
8384000000-E	450	980	LF	HP14X73 PILES
8393000000-N	450	8	EA	PILE REDRIVES
8505000000-E	460	290.75	LF	VERT CONC BARRIER RAIL
8608000000-E	876	200	TON	RIP RAP II (2'-0")
8657000000-N	430	1	LS	ELASTOMERIC BEARINGS
8762000000-E	430	1450	LF	3'-0"X 1'-9"PRESTR SLABS

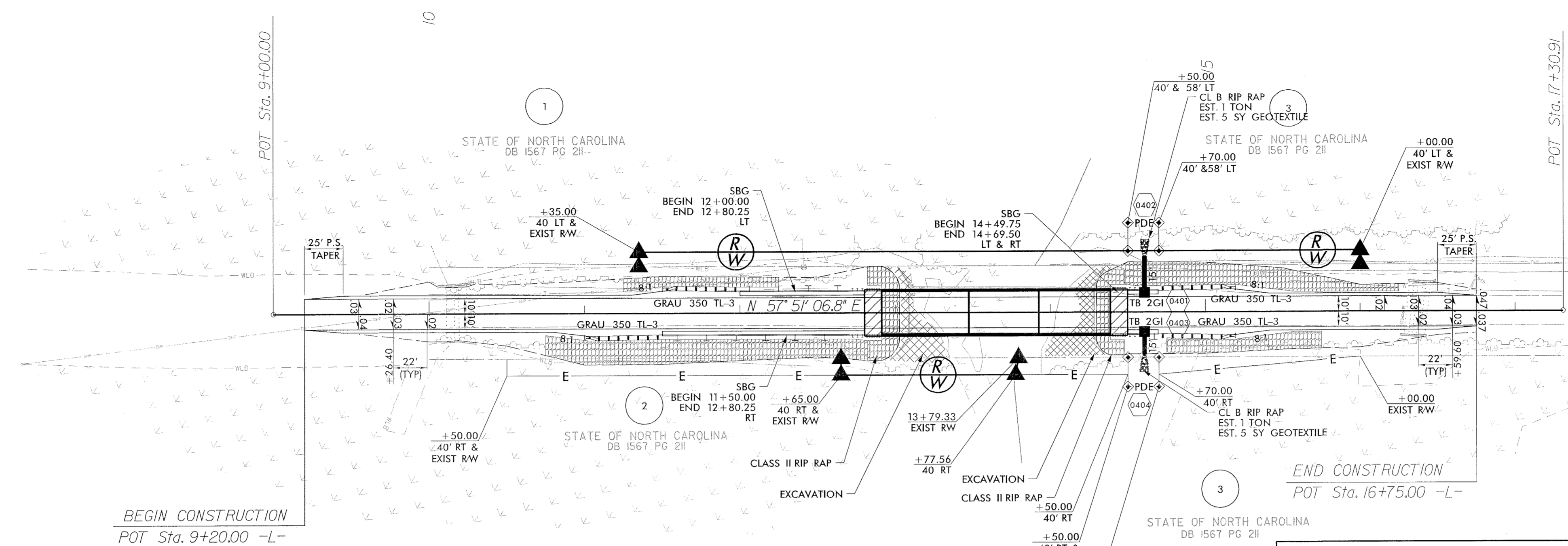
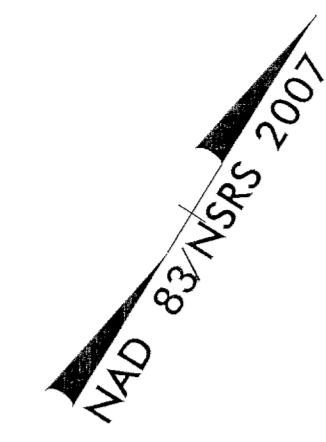
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8/17/99

BRIDGE 810189



REVISIONS

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-1-SIR"

WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 522332.230(ft) EASTING: 2189480.654(ft) ELEVATION: 130.23(ft)

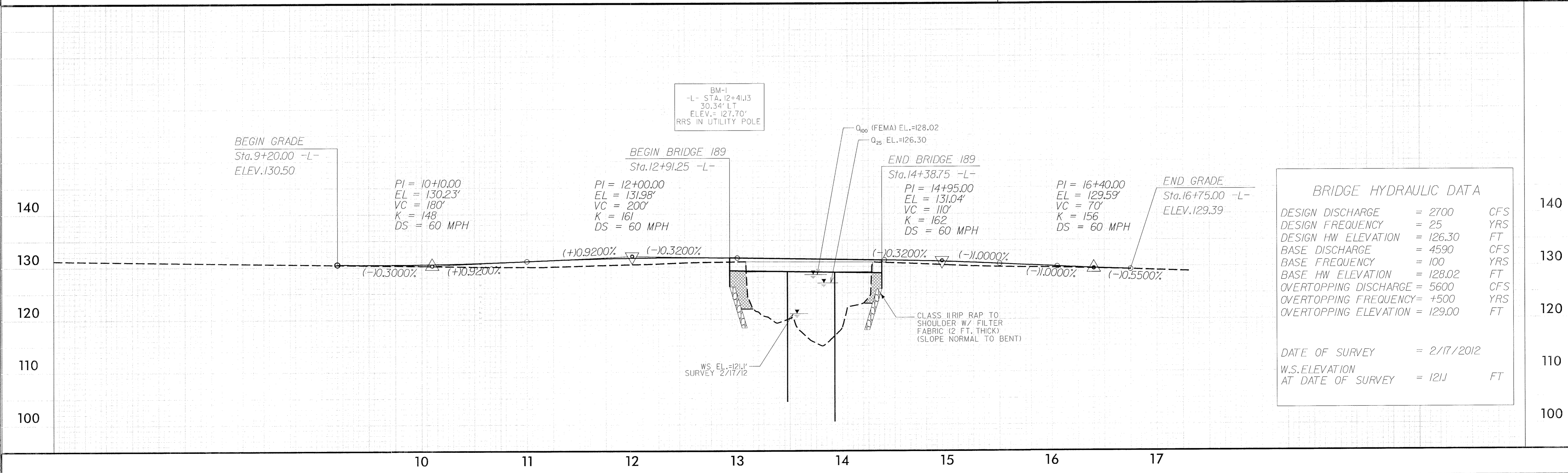
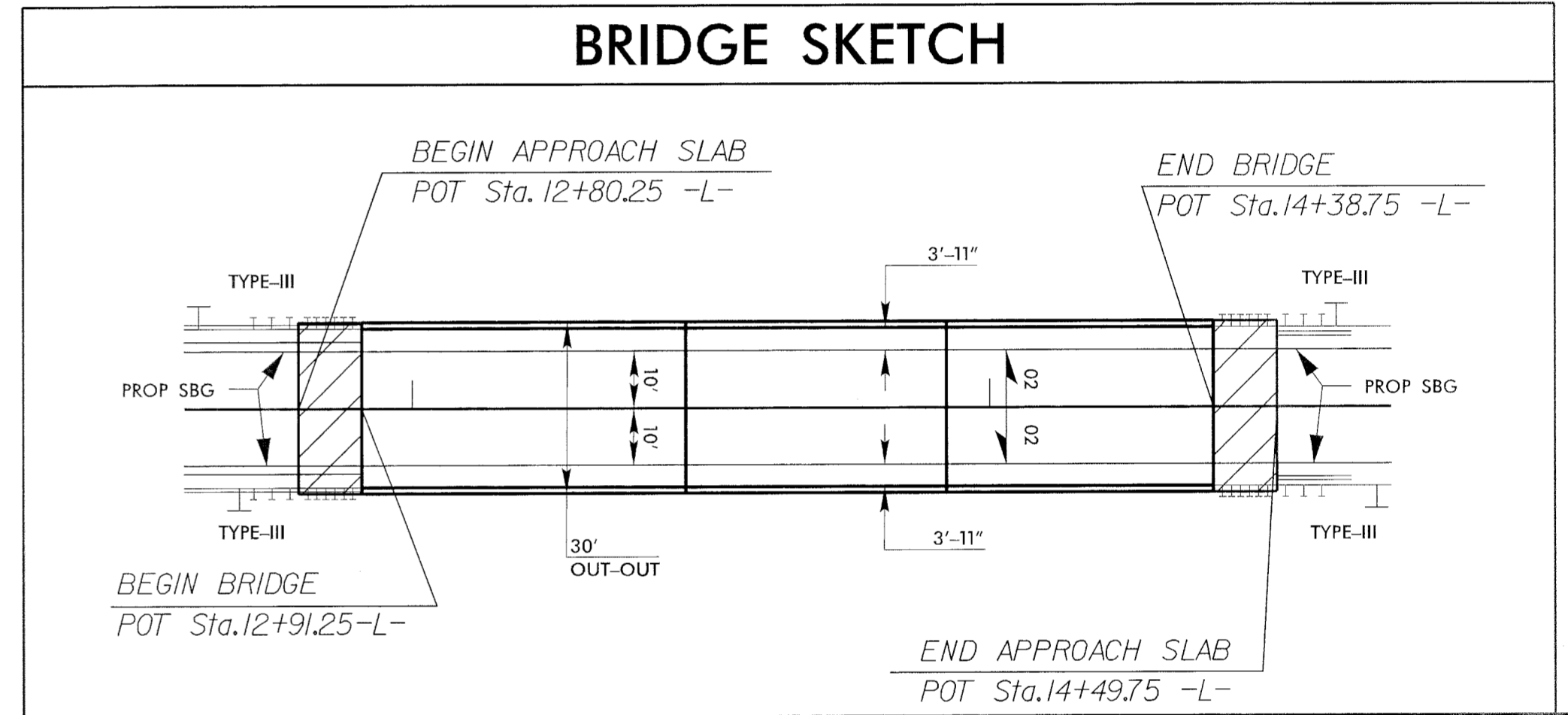
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987260

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-1-SIR" TO -EL- STATION 10+00 IS N 60°11'23.78" E 396.32'

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

USE ROCK PLATING DETAIL (SEE SHEET 2):

- L- 10+75 TO BRIDGE EMBANKMENT RT
- L- 11+25 TO 12+25 LT
- L- BRIDGE EMBANKMENT TO 16+25 RT
- L- 14+75 TO 15+75 LT



**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 2700	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 126.30	FT
BASE DISCHARGE	= 4590	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 128.02	FT
OVERTOPPING DISCHARGE	= 5600	CFS
OVERTOPPING FREQUENCY	= +500	YRS
OVERTOPPING ELEVATION	= 129.00	FT

DATE OF SURVEY	= 2/17/2012
W.S. ELEVATION AT DATE OF SURVEY	= 121.1 FT

PROJECT REFERENCE NO. <b>17BP.3.R.19</b>	SHEET NO. <b>4</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

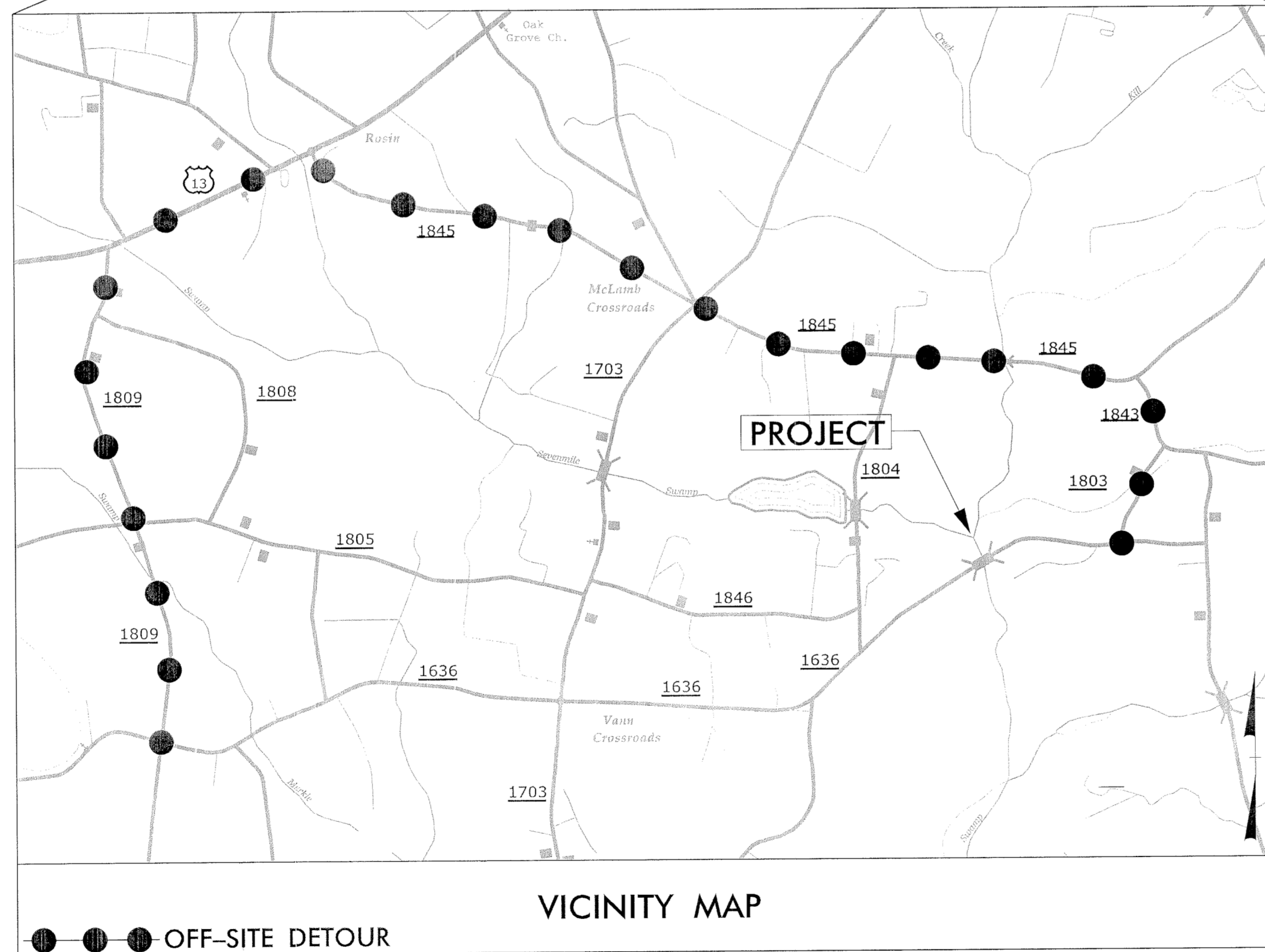
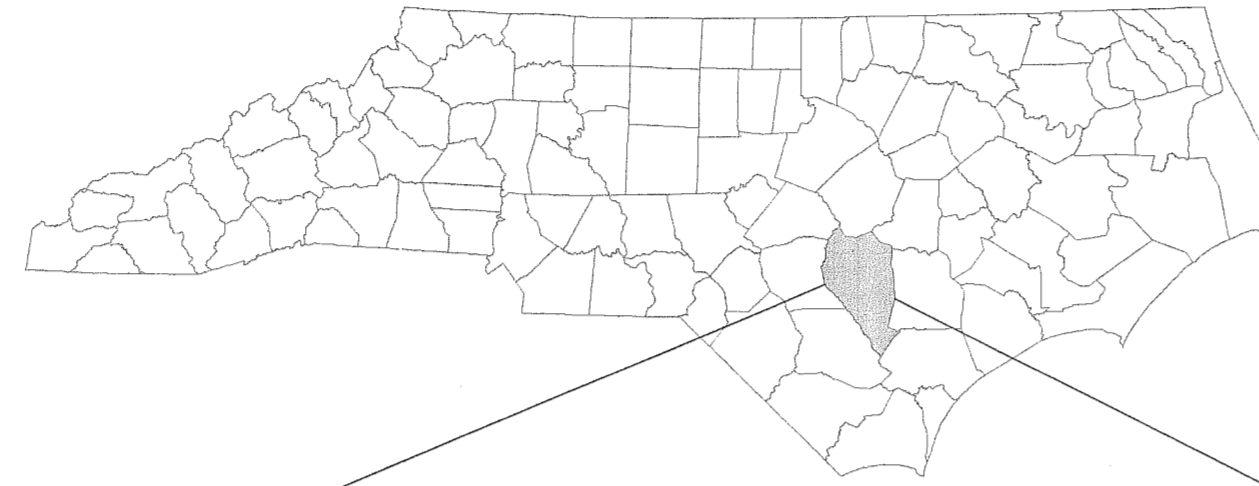
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**SAMPSON COUNTY**



VICINITY MAP

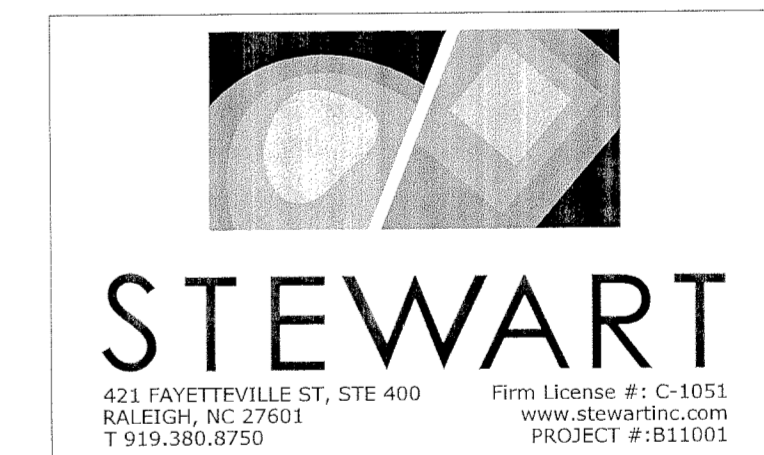
**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, INDEX OF SHEETS, AND LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1A	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES, MANAGEMENT STRATEGIES, AND PHASING)
TMP-2	OFF-SITE DETOUR
TMP-3	SPECIAL SIGN DESIGN

**ROADWAY STD. DRAWINGS**

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

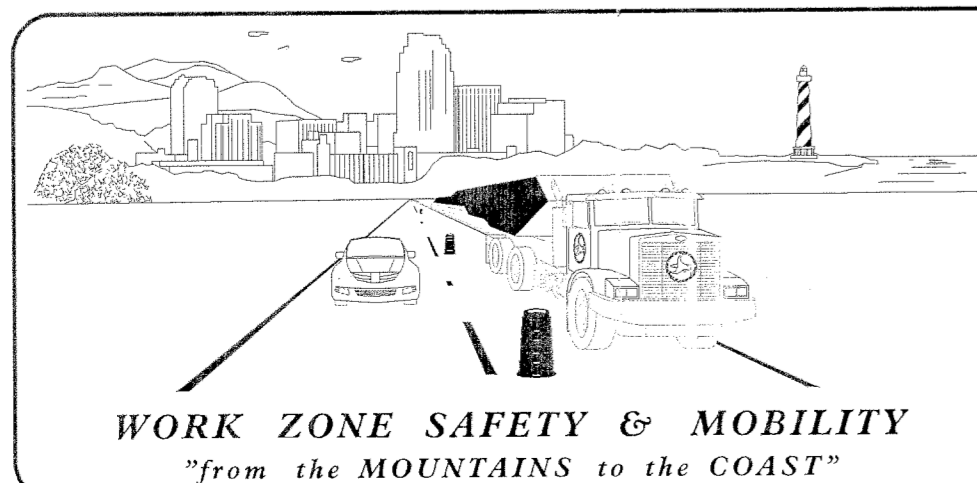
STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED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



BEN CRAWFORD, PE            **TRAFFIC CONTROL PROJECT ENGINEER**

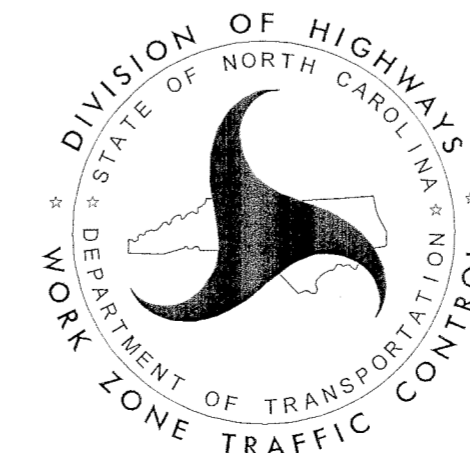
JONATHAN HEFNER, PE            **TRAFFIC CONTROL DESIGN ENGINEER**

8/28/2013  
TCF\B10189\_TCP\_01\_tsh.dgn  
US:ERmburms



**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

KATHERINE HITE, PE            **DIVISION TRAFFIC ENGINEER**



APPROVED: Ben Crawford  
DATE: 8/28/13



SHEET NO. TMP-1  
**17BP.3.R.19**  
**TIP PROJECT:**



## GENERAL NOTES / LOCAL NOTES

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

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

### TRAFFIC PATTERN ALTERATIONS

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

### SIGNING

- B) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

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

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

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

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

### TRAFFIC CONTROL DEVICES

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

### PAVEMENT MARKINGS AND MARKERS

- G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON PAVEMENT AS FOLLOWS:

<u>ROAD NAME</u>	<u>MARKINGS</u>	<u>MARKER</u>
SR 1636 (ROANOKE ROAD)	PAINT	RAISED

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

## MANAGEMENT STRATEGIES

- CLOSE SR 1636 (ROANOKE ROAD) TO THROUGH TRAFFIC BETWEEN SR 1804 AND SR 1803.
- DIRECT THROUGH TRAFFIC TO OFF SITE DETOUR.
- MAINTAIN LOCAL TRAFFIC.

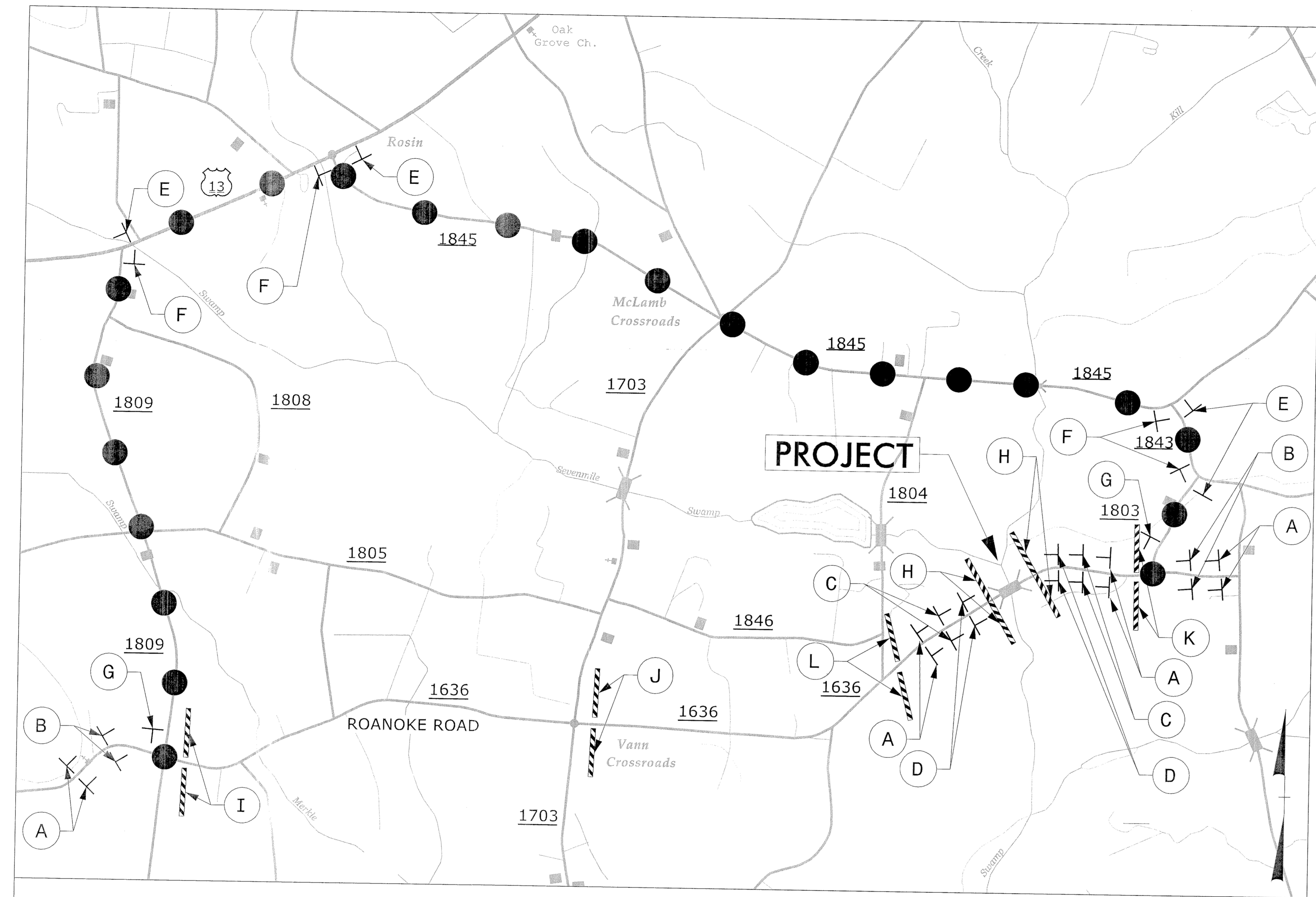
## PHASING

- STEP 1 INSTALL DETOUR SIGNING AS SHOWN ON SHEET TMP-2 IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9. SIGNS SHALL BE COVERED IF DETOUR IS NOT OPENED WITHIN 3 DAYS OF SIGN INSTALLATION.
- STEP 2 INSTALL BARRICADES AND CLOSE SR 1636 (ROANOKE ROAD) TO THROUGH TRAFFIC AS SHOWN ON TMP-2 AND IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9.
- STEP 3 PERFORM THE FOLLOWING WORK WITHIN THE ROAD CLOSURE:
- REMOVE THE EXISTING STRUCTURE.
  - CONSTRUCT THE PROPOSED STRUCTURE.
  - CONSTRUCT THE PROPOSED ROADWAY SECTION -L- UP TO AND INCLUDING THE FINAL LAYER OF SURFACE, THE FINAL PAVEMENT MARKINGS, AND THE FINAL PAVEMENT MARKERS FROM -L- STA. 9+20 TO -L- STA. 16+75.
- STEP 4 REMOVE ALL ROAD CLOSURE SIGNS AND BARRICADES AND OPEN SR 1636 (ROANOKE ROAD) TO THROUGH TRAFFIC.



APPROVED:  DATE: 9/2/13			<h1 style="margin: 0;">TRANSPORTATION OPERATIONS PLAN</h1>
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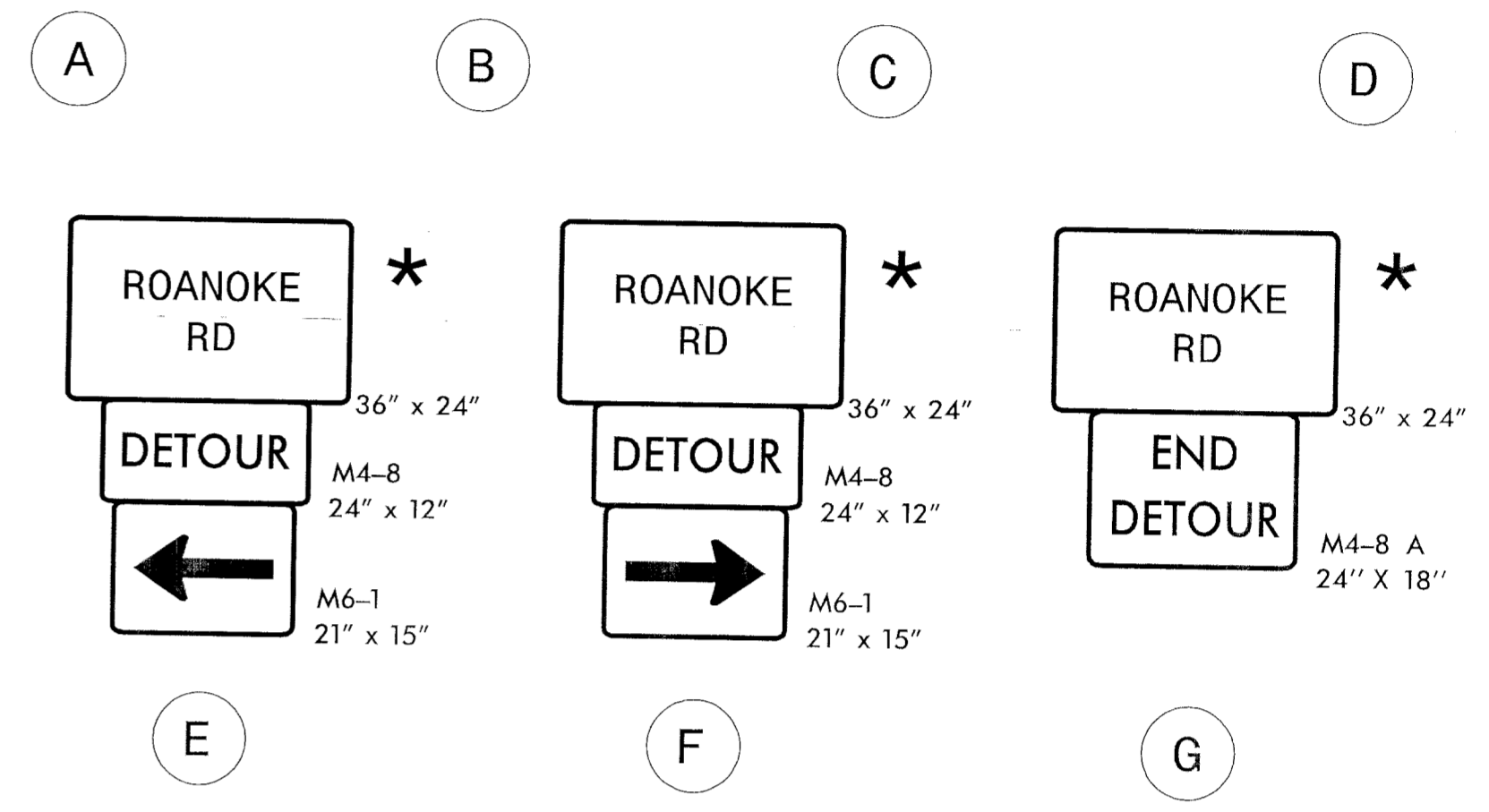
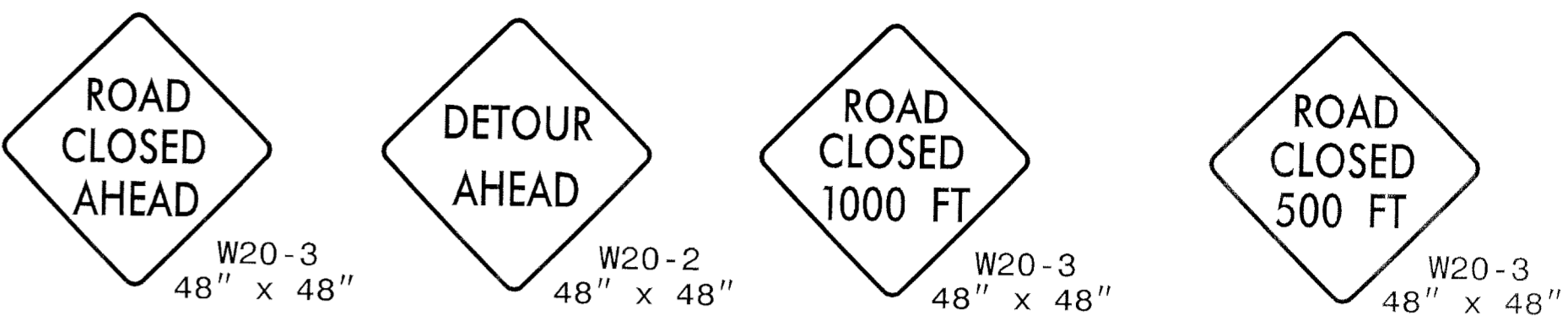




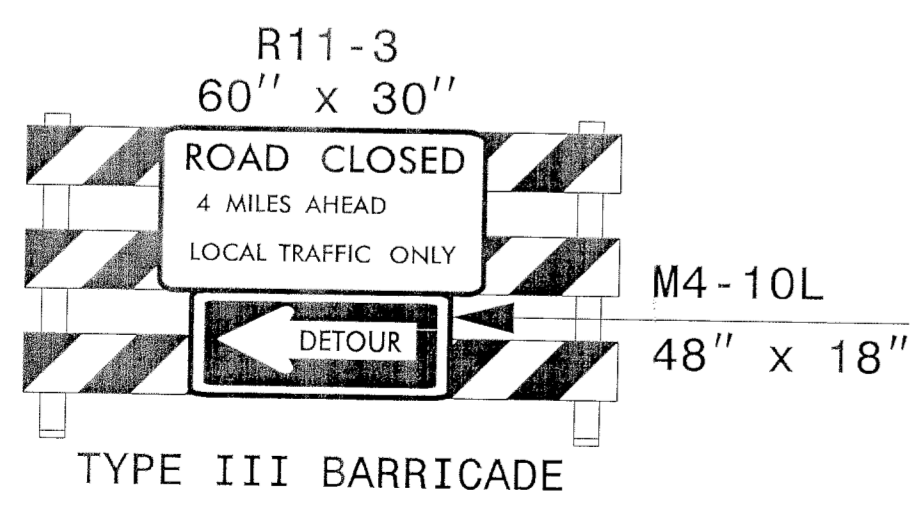
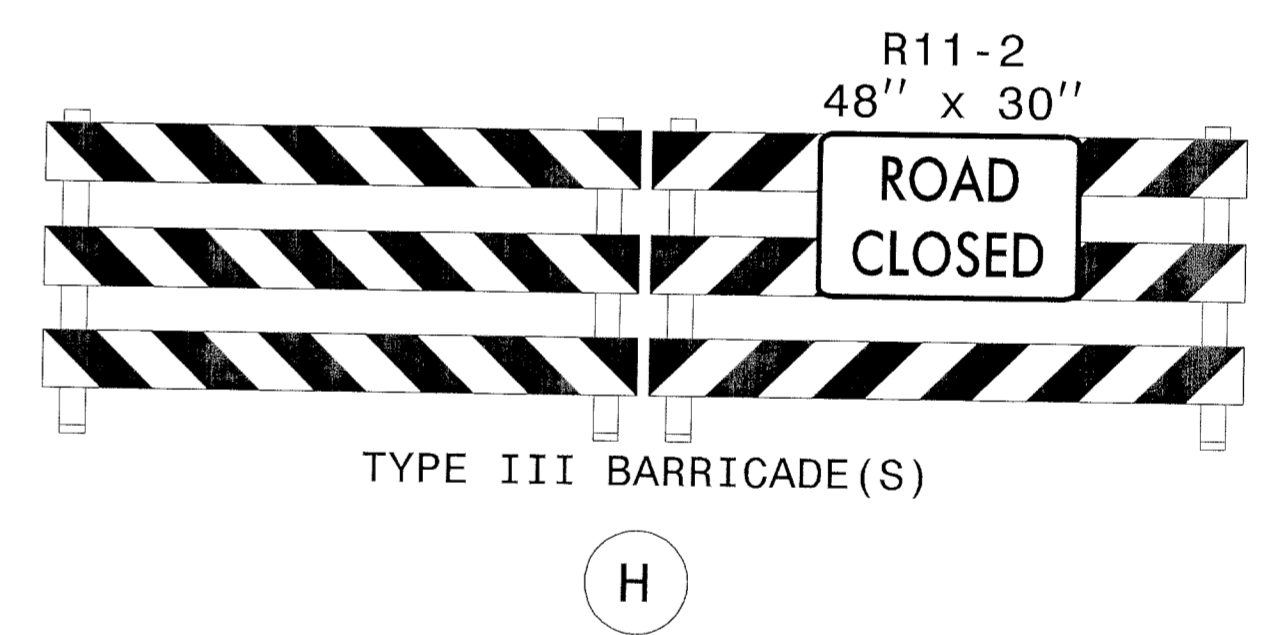
**VICINITY MAP**

● ● ● OFF-SITE DETOUR

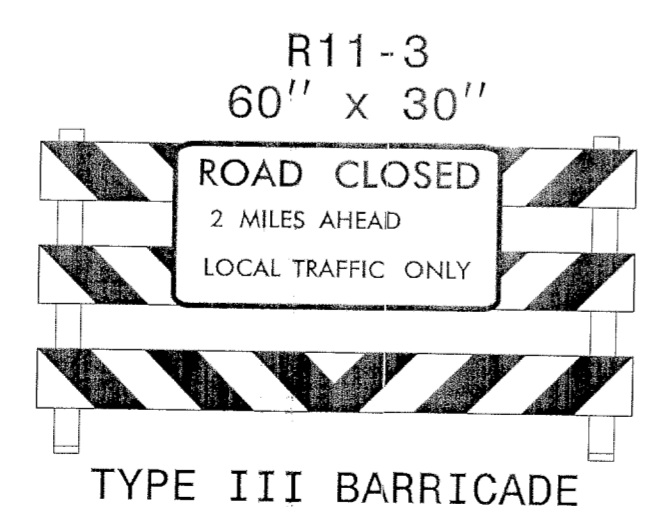
NOTE:  
SEE ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9 FOR SIGN SPACING



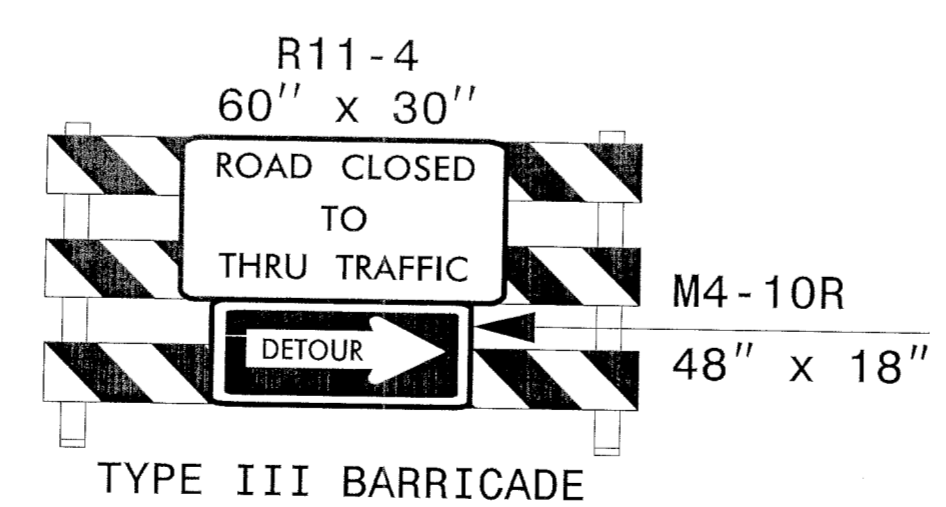
\* SEE SHEET SD-1 FOR SIGN DESIGN



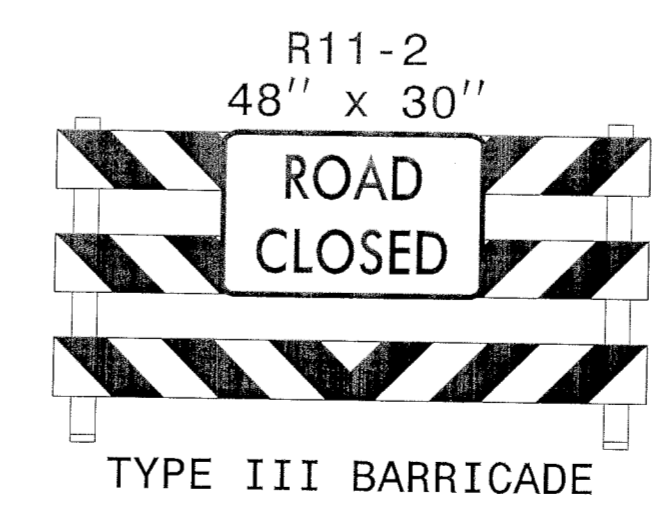
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J



K



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8/28/2013 \\BI0189.TC.TCP\_02.OFFSITE\_DETOUT.dgn USER:mburns

Firm License No. C-1051  
421 Fayetteville St., Suite 400  
Raleigh, NC 27601  
T 919.380.8750  
www.stewartinc.com

**STEWART**

APPROVED: [Signature] DATE: 7/22/13

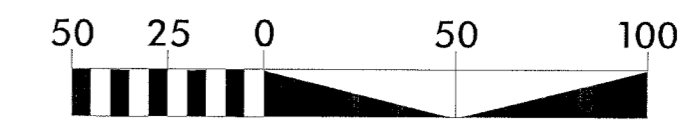
SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 32606  
BRYAN R. CRIVELLO

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





# Erosion Control Plan



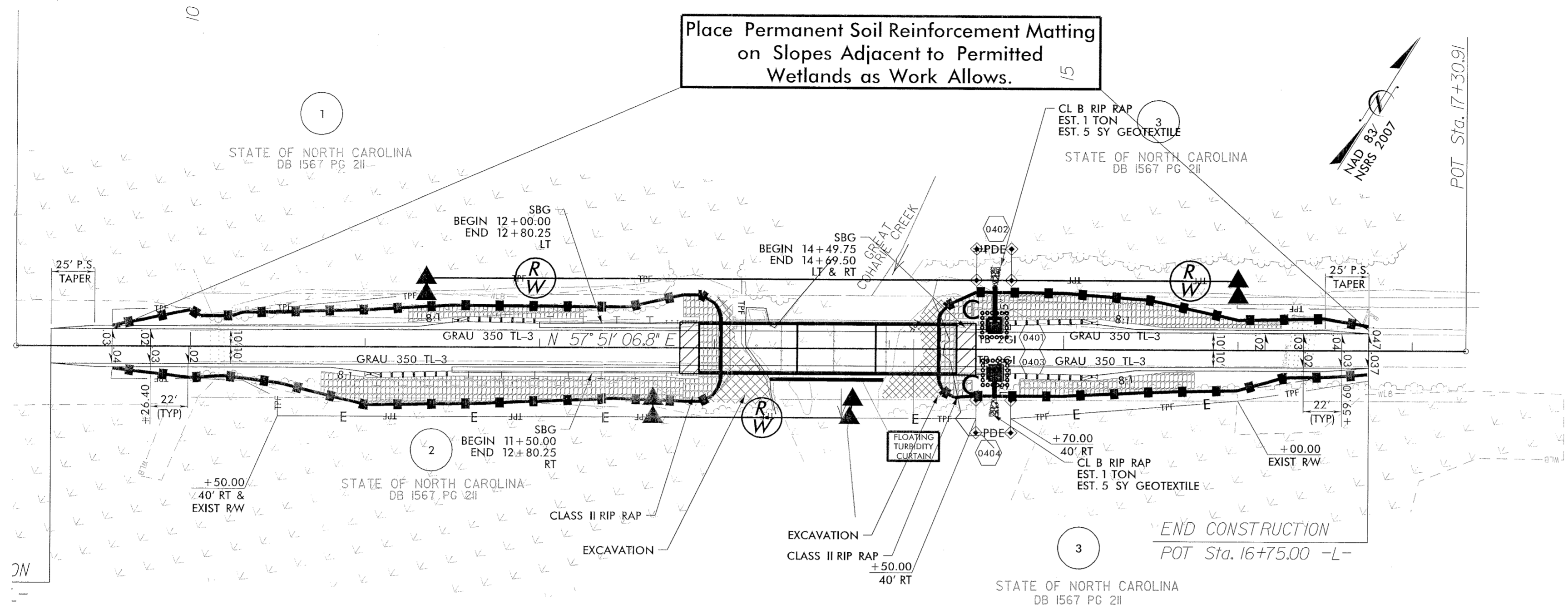
PROJECT REFERENCE NO.	SHEET NO.
810189	EC-01/CONST.04
RW SHEET NO.	

Jenny Fleming, PE  
 LEVEL III NAME  
 3340  
 LEVEL III CERTIFICATION NO.

ROADSIDE ENVIRONMENTAL UNIT  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.  
 2012 STANDARD SPECIFICATIONS

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.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.  
 ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

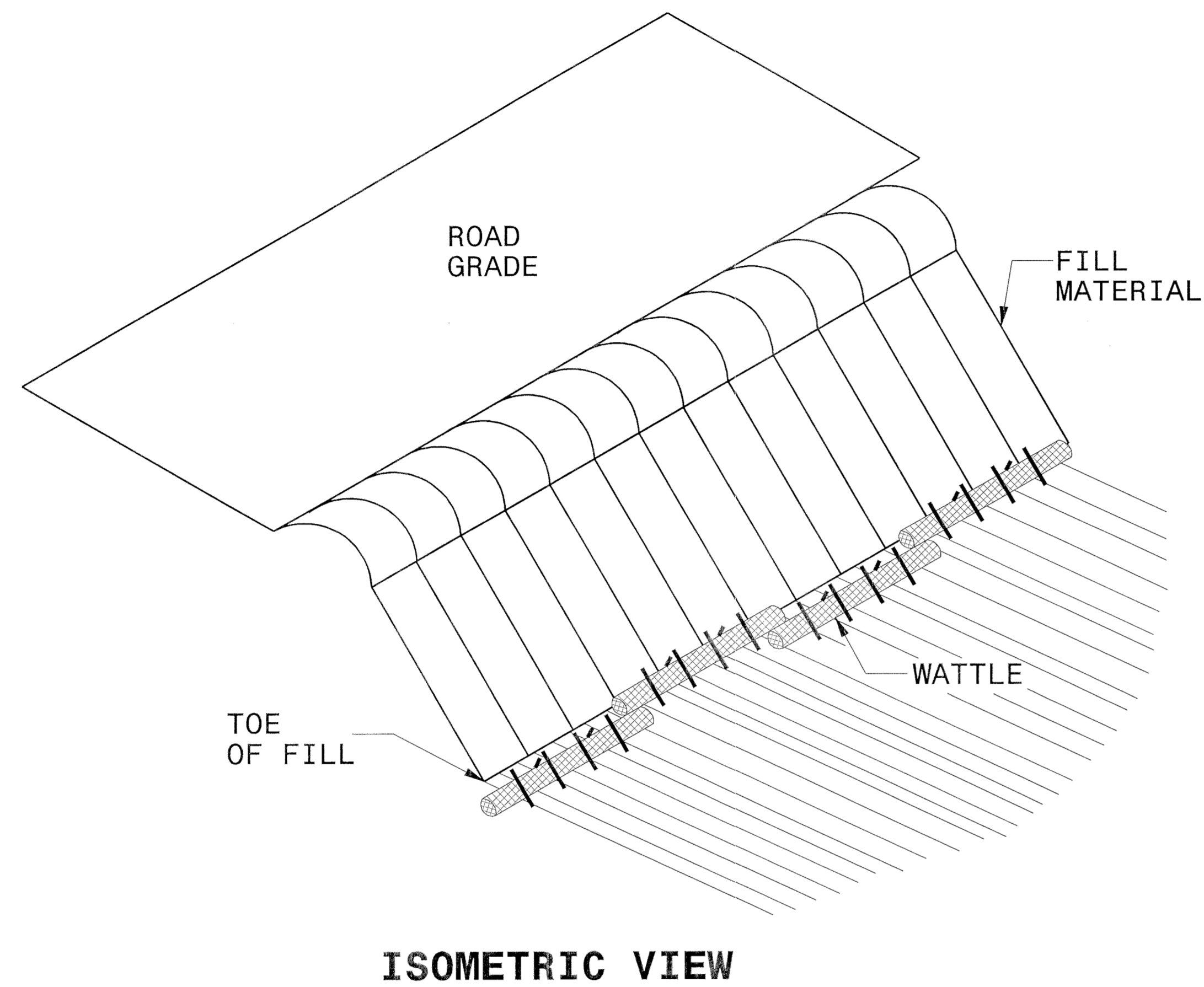


Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	

2012 STANDARD DRAWINGS

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

# COIR FIBER WATTLE BARRIER DETAIL



**NOTES:**

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

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

DO NOT PLACE WATTLES ON TOE OF SLOPE.

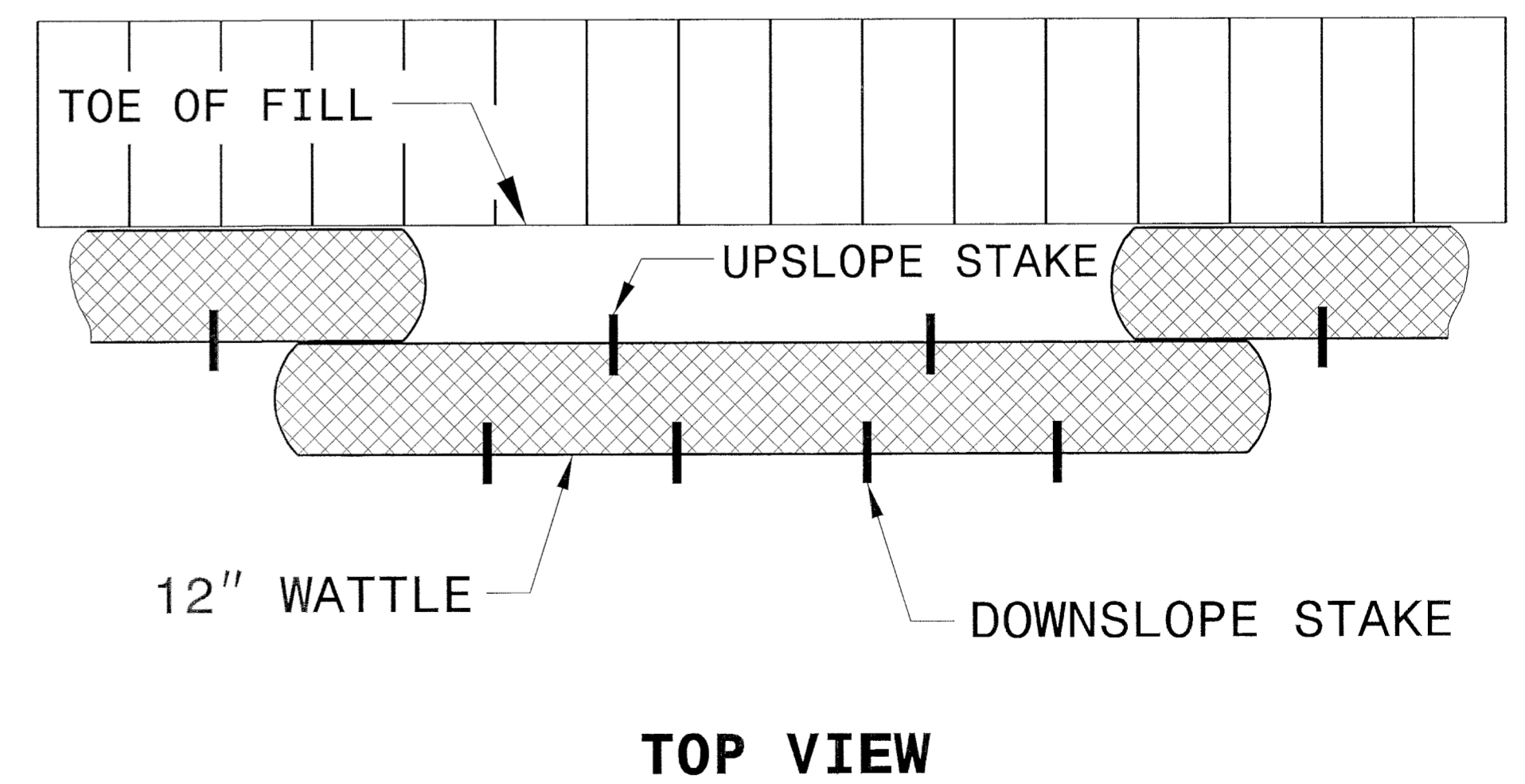
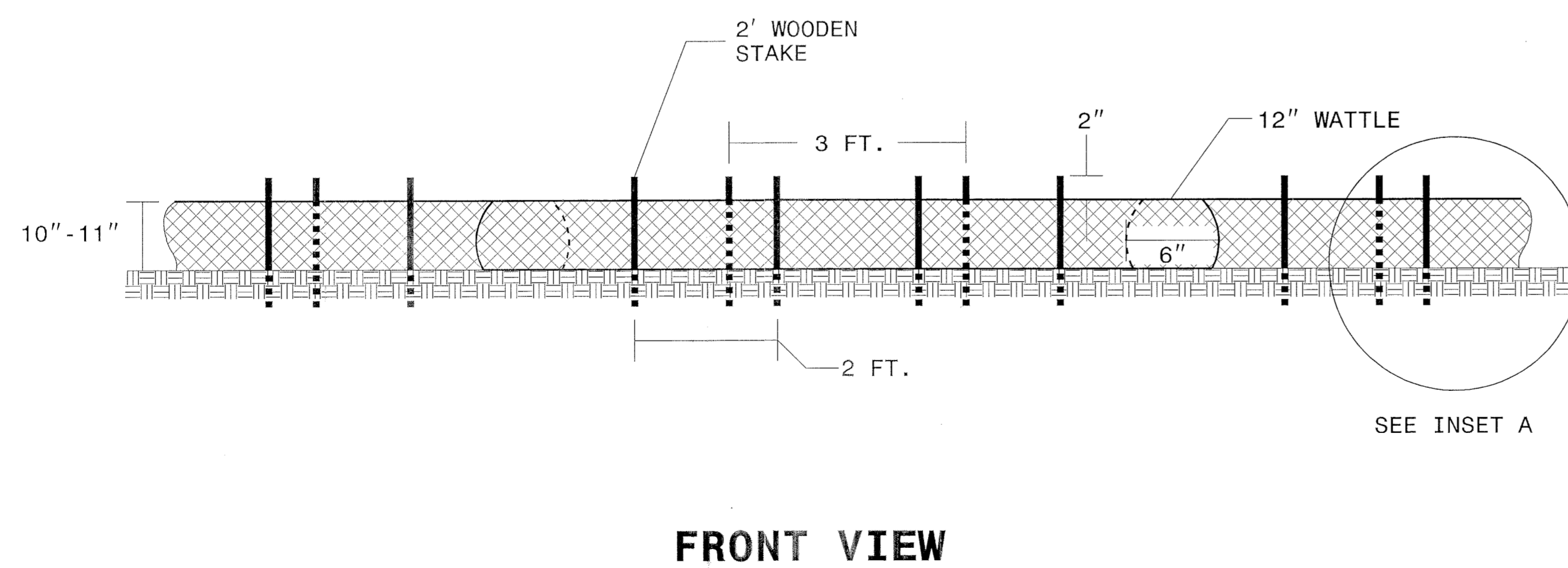
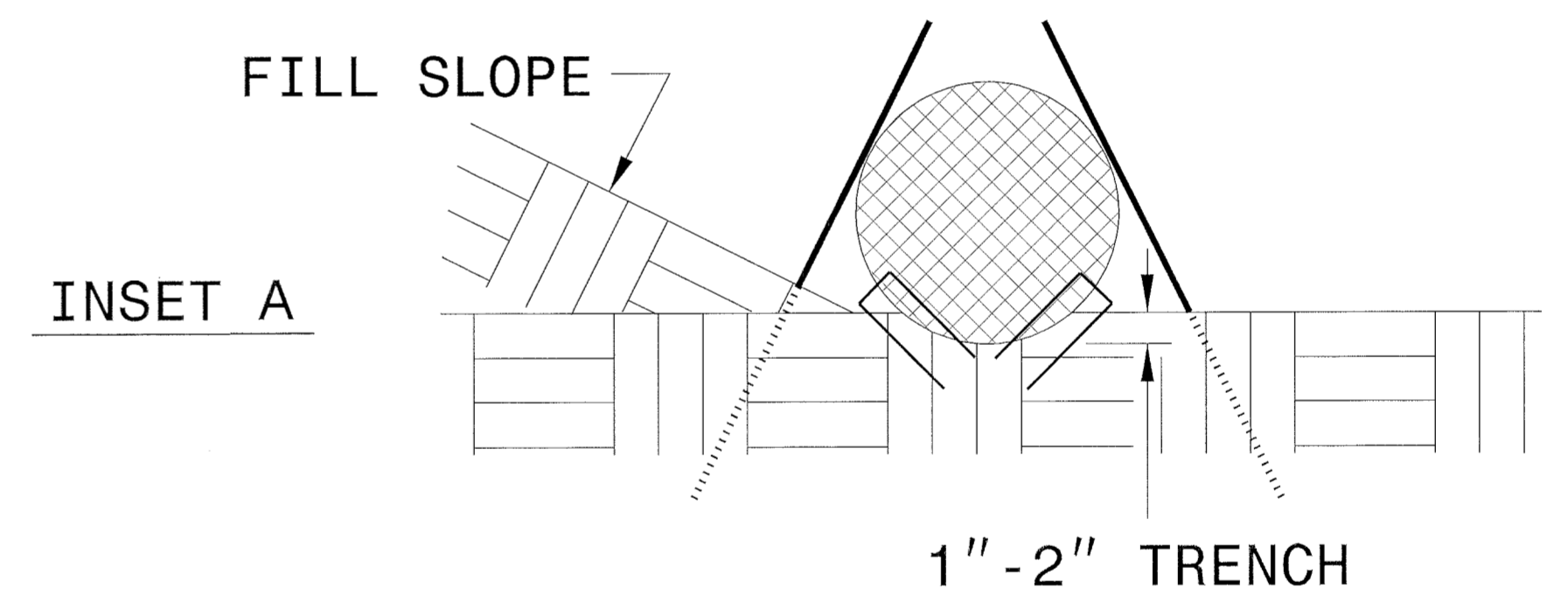
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.





DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

## ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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.

09/08/19

**TIP PROJECT: 17BP.3.R.19**

**CONTRACT:**

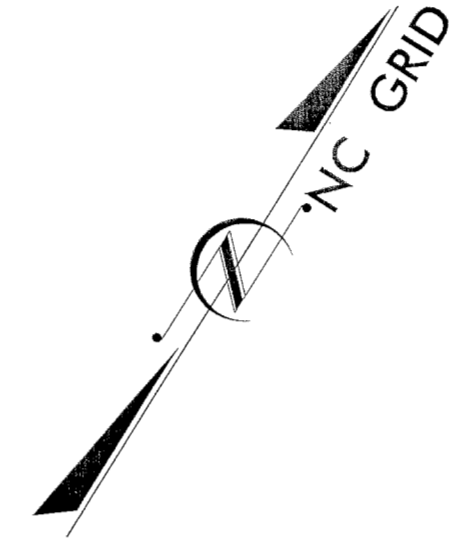
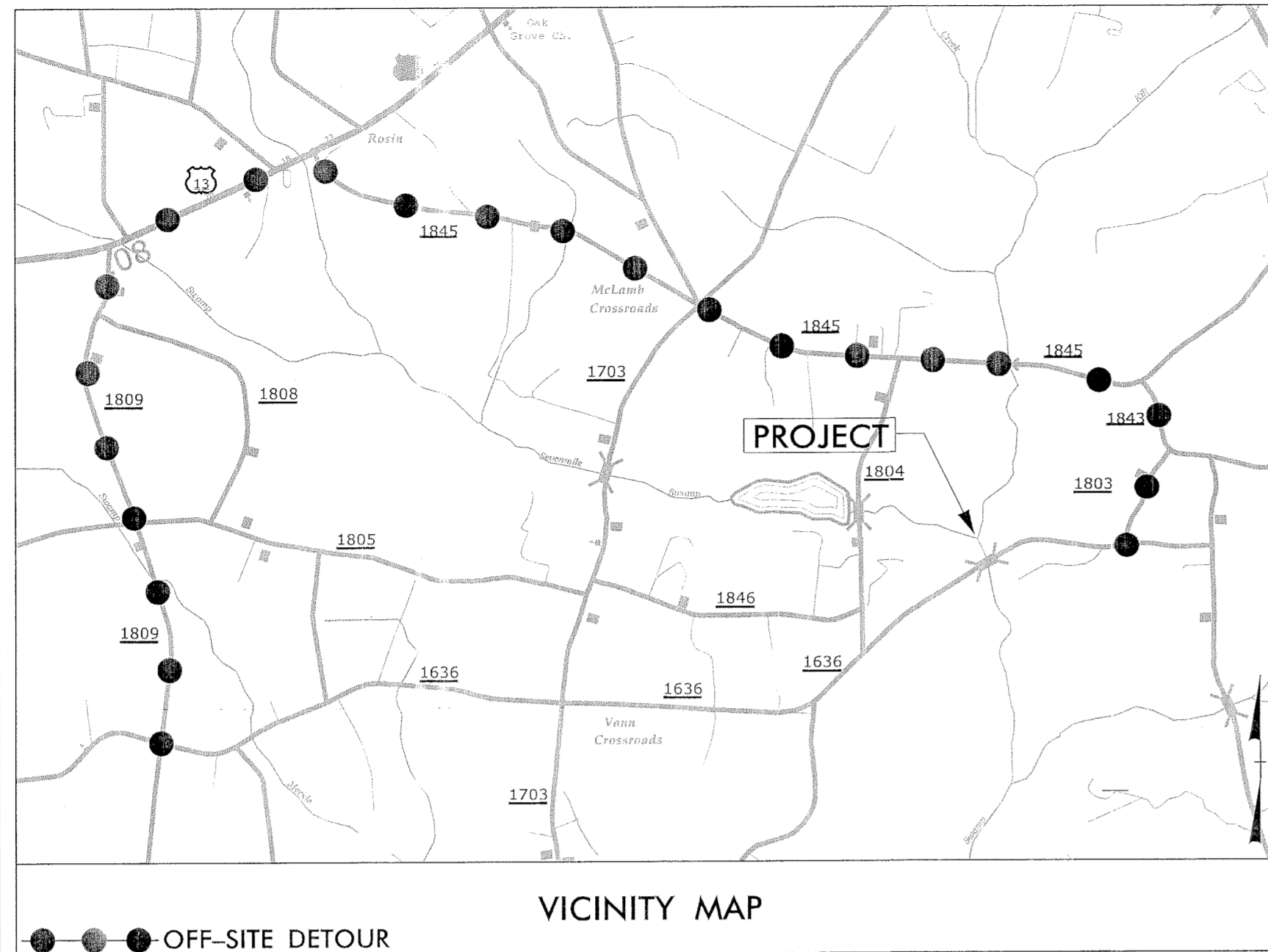
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**SAMPSON COUNTY**

LOCATION: BRIDGE 189 ON SR 1636

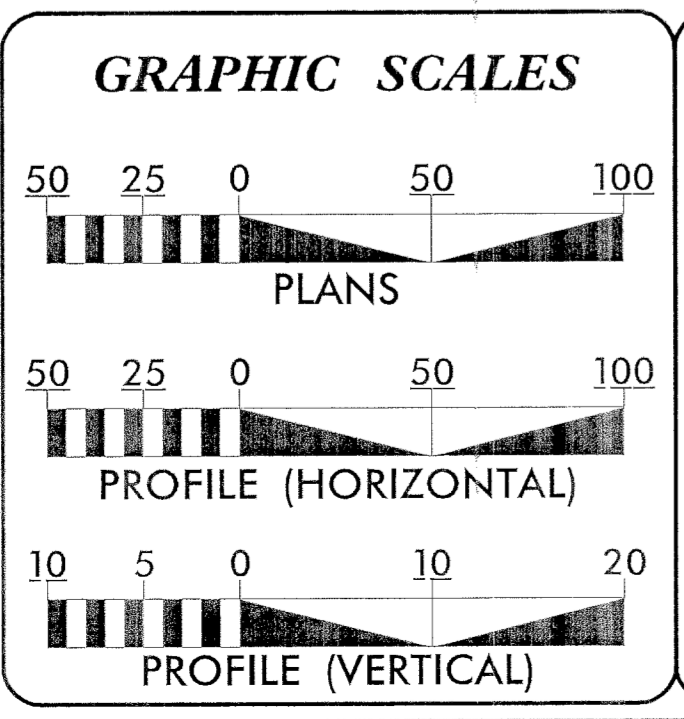
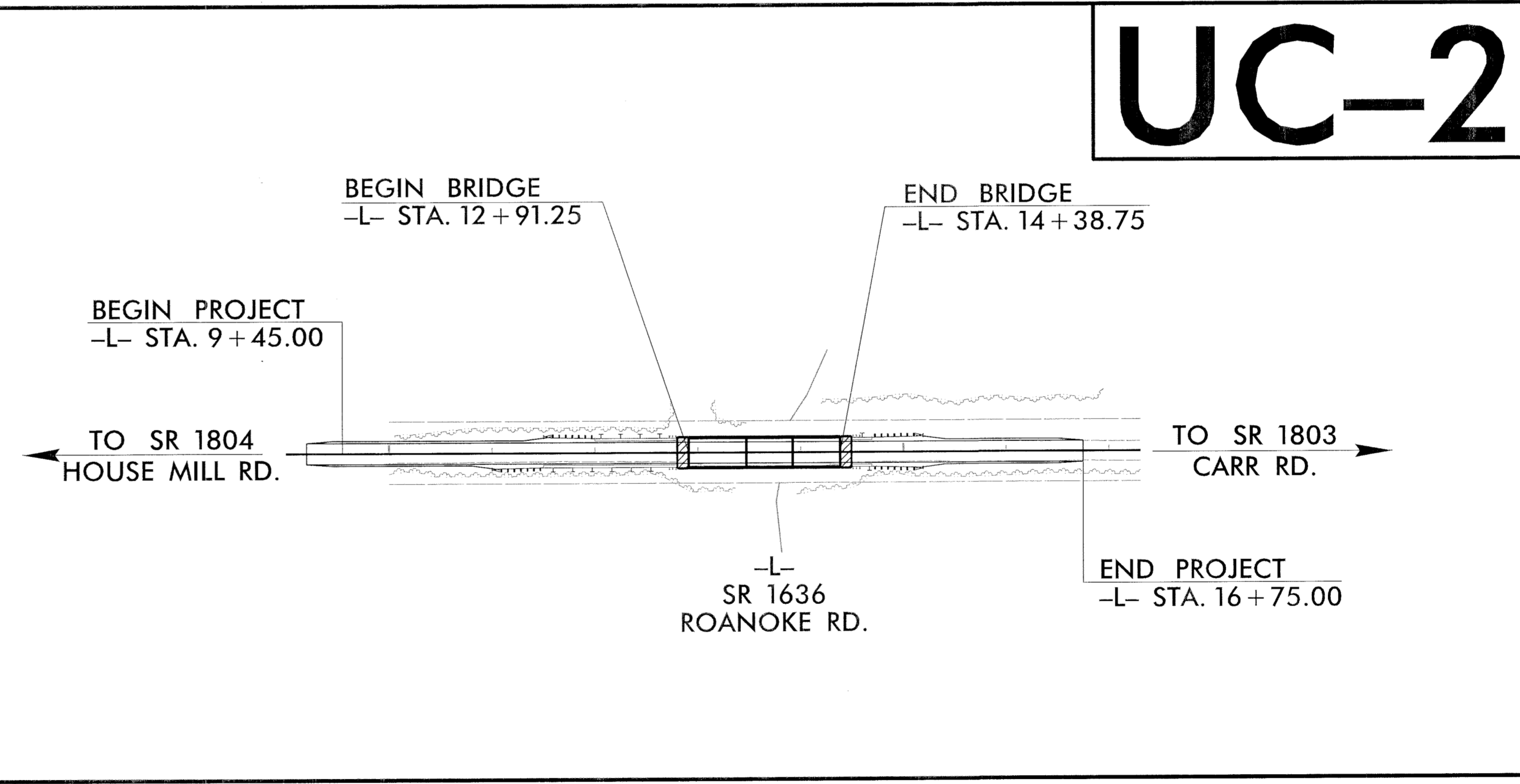
TYPE OF WORK: WATERLINE RELOCATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.19	UC-1	3
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



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

**UC-2**



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY CONSTRUCTION PLAN SHEET
UC-3	UTILITY DETAILS

**UTILITY OWNERS ON PROJECT**

1) WATER - SAMPSON COUNTY

Prepared in the Office of:  
STEWART ENGINEERING  
For  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
OCTOBER 15, 2012

LETTING DATE:  
OCTOBER 17, 2013

BEN CRAWFORD, PE  
PROJECT ENGINEER

UTILITY ENGINEER  
AMANDA GLYNN  
DIVISION BRIDGE  
PROGRAM MANAGER  
NCDOT CONTACT

UTILITY ENGINEER

SIGNATURE: *Ben Crawford* PE

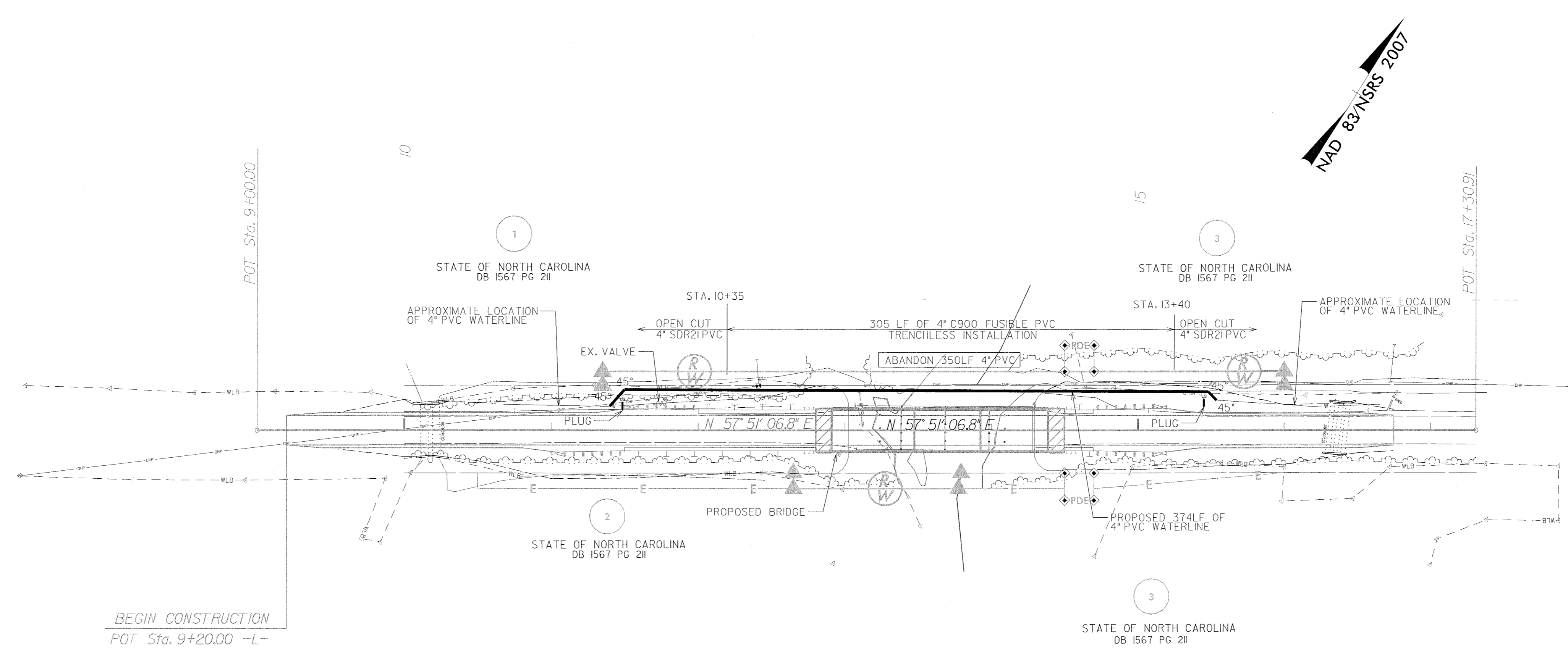
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

ART McMILLAN, PE  
STATE HIGHWAY DESIGN ENGINEER

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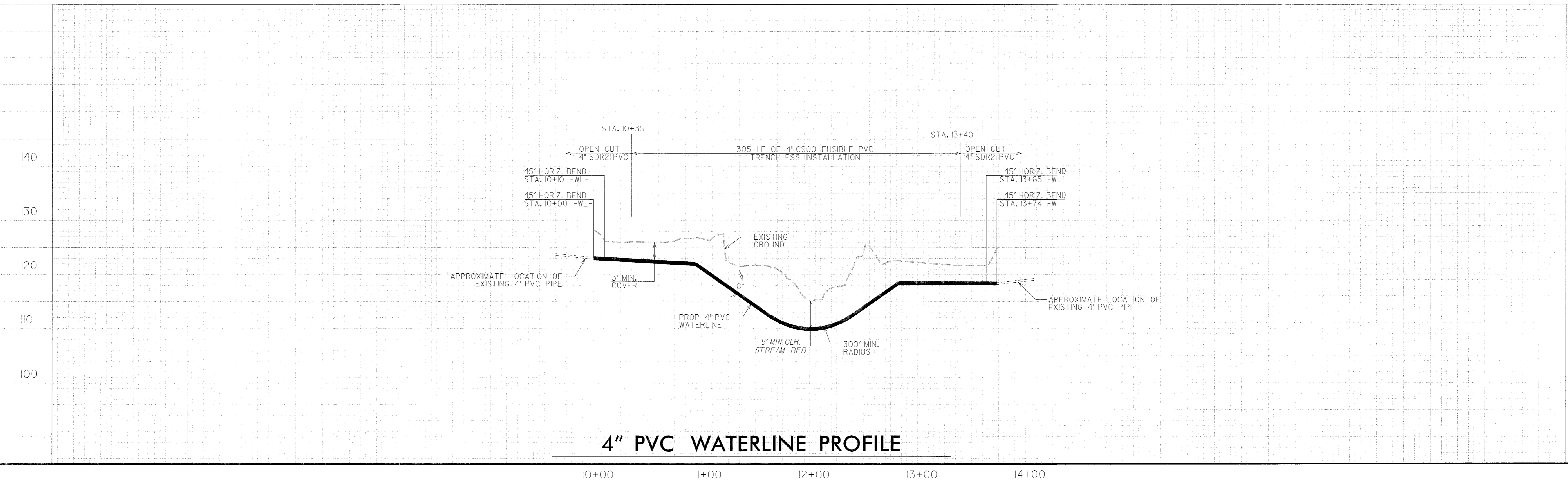
UTILITY ENGINEER

STEWART



NOTES:  
 CONTRACTOR TO CONSTRUCT WATERLINE RELOCATION IN ACCORDANCE WITH SAMPSON COUNTY AND NCDOT STANDARDS.  
 CONTACT LEE CANNADY OF SAMPSON COUNTY WATER DEPARTMENT AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. (910)592-0188

4" PVC WATERLINE PLAN VIEW



4" PVC WATERLINE PROFILE

REVISIONS

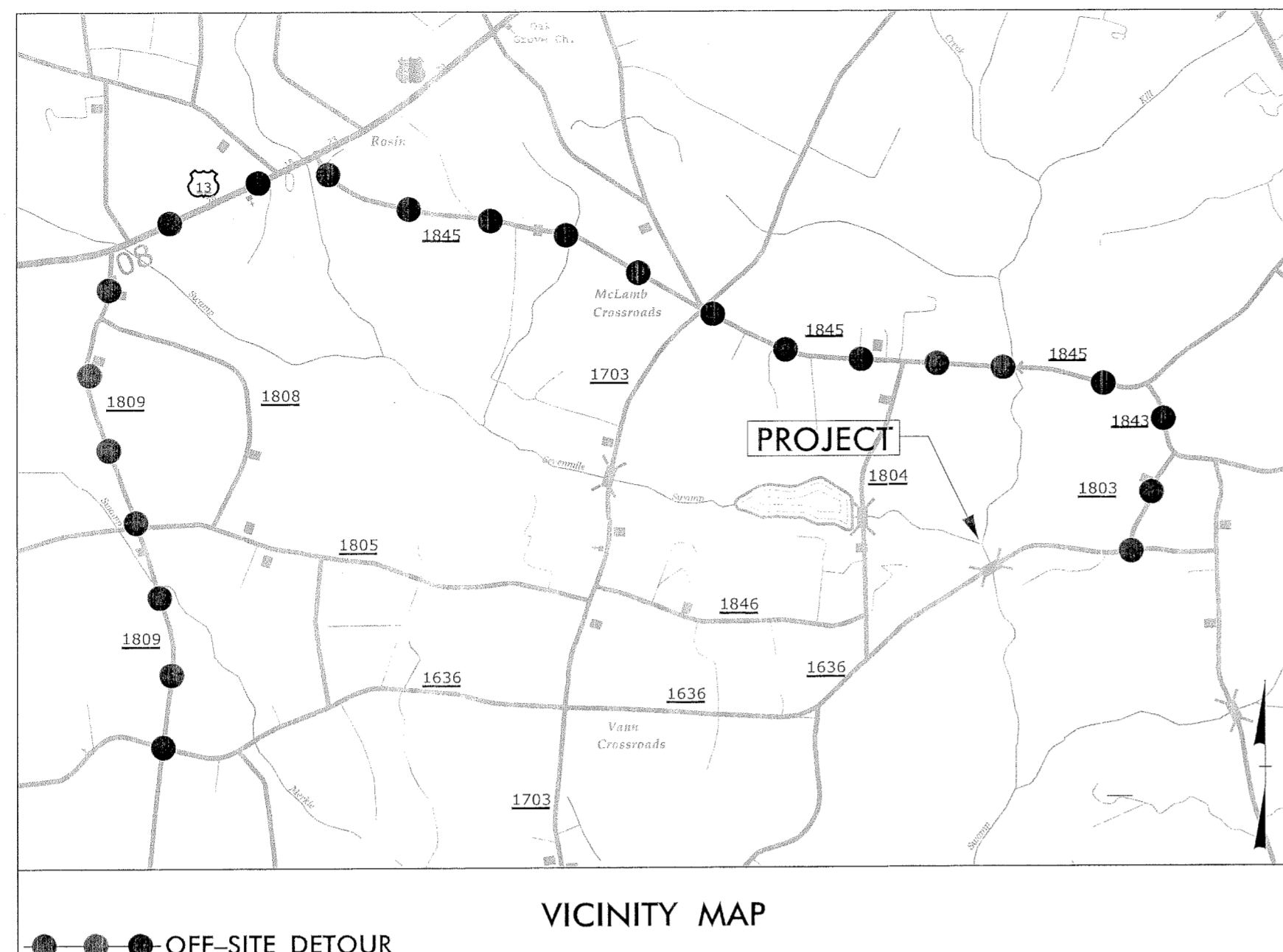
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09/08/09

TIP PROJECT: 17BP.3.R.19

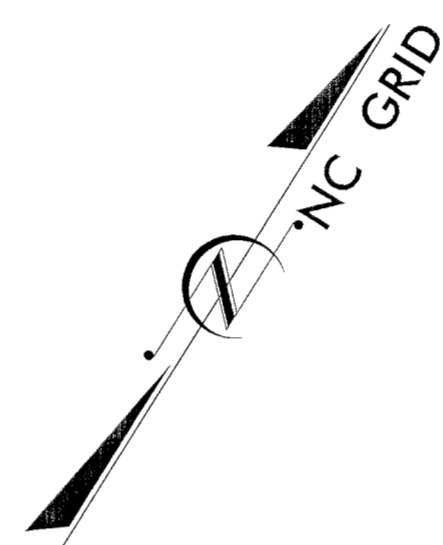


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**SAMPSON COUNTY**

LOCATION: BRIDGE NO. 810189 OVER  
COHARIE CREEK ON SR 1636

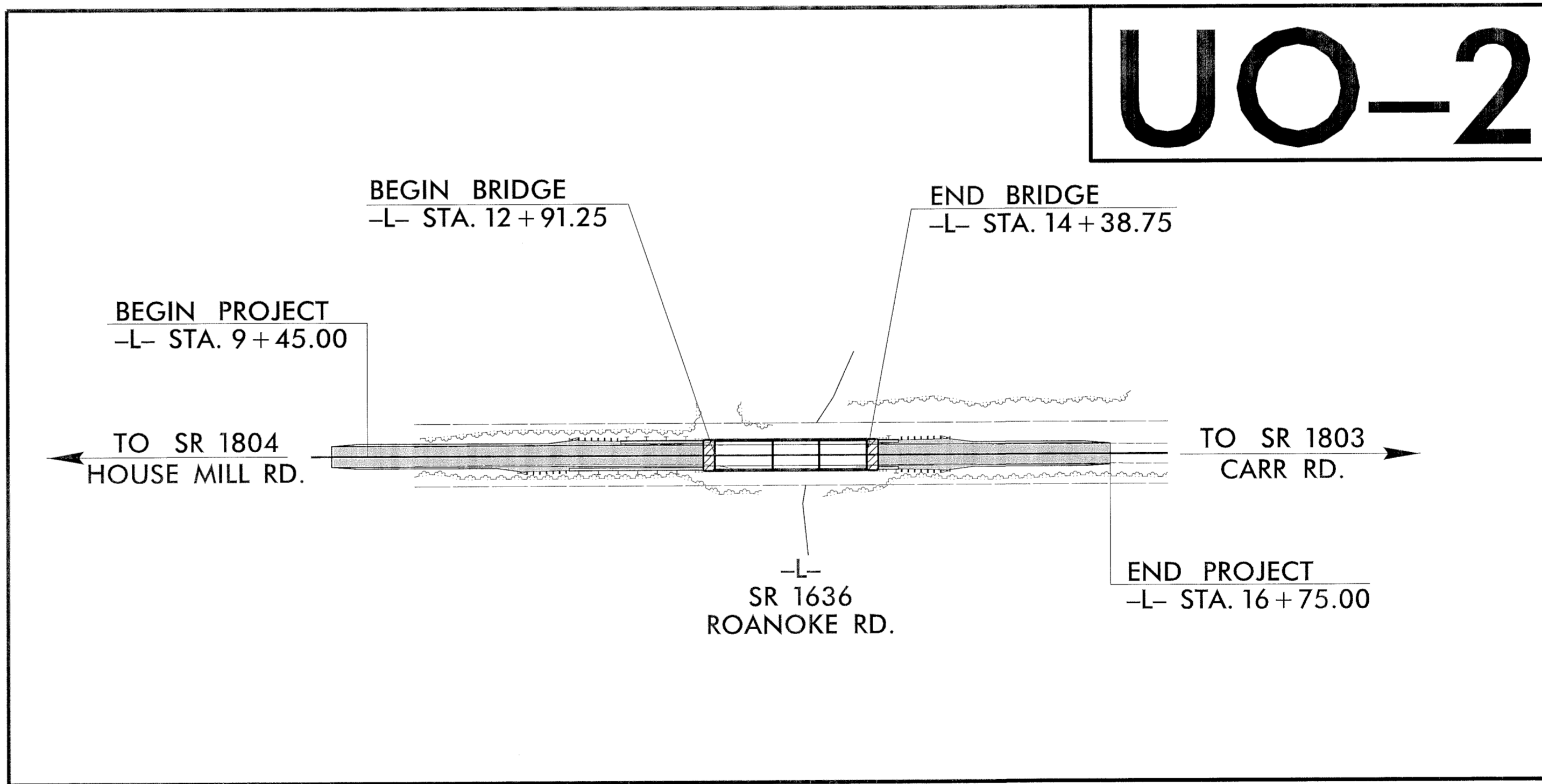
TYPE OF WORK: PERMANENT TELECOMMUNICATION FACILITIES AND  
TEMPORARY ELECTRIC FACILITIES RELOCATIONS



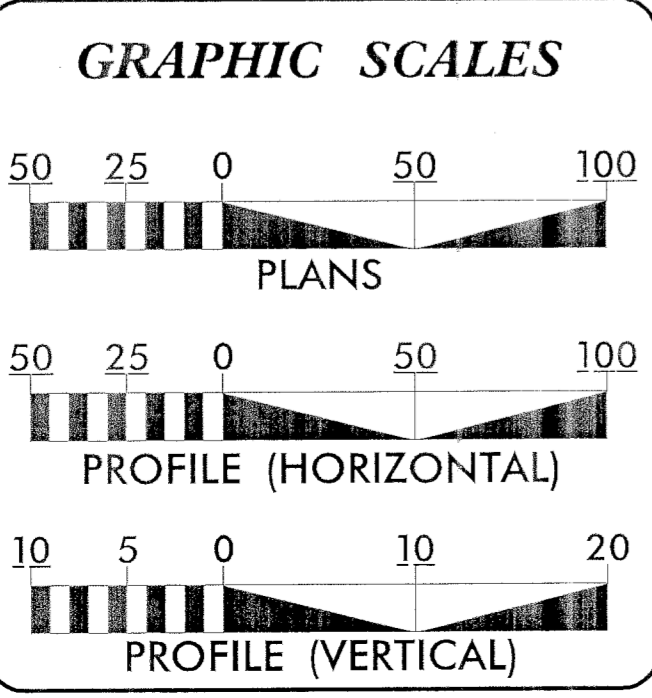
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.19	UO-1	2
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

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

**UO-2**



CONTRACT:



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY RELOCATION PLAN

- UTILITY OWNERS ON PROJECT**
- 1) ELECTRIC - SOUTH RIVER ELECTRIC
  - 2) TELECOMMUNICATIONS - STARVISION

Prepared in the Office of  
STEWART ENGINEERING  
For  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
OCTOBER 15, 2012

LETTING DATE:  
OCTOBER 17, 2013

BEN CRAWFORD, PE  
PROJECT ENGINEER

UTILITY ENGINEER

AMANDA GLYNN  
DIVISION BRIDGE  
PROGRAM MANAGER  
NCDOT CONTACT

**UTILITY ENGINEER**

\_\_\_\_\_  
SIGNATURE: PE

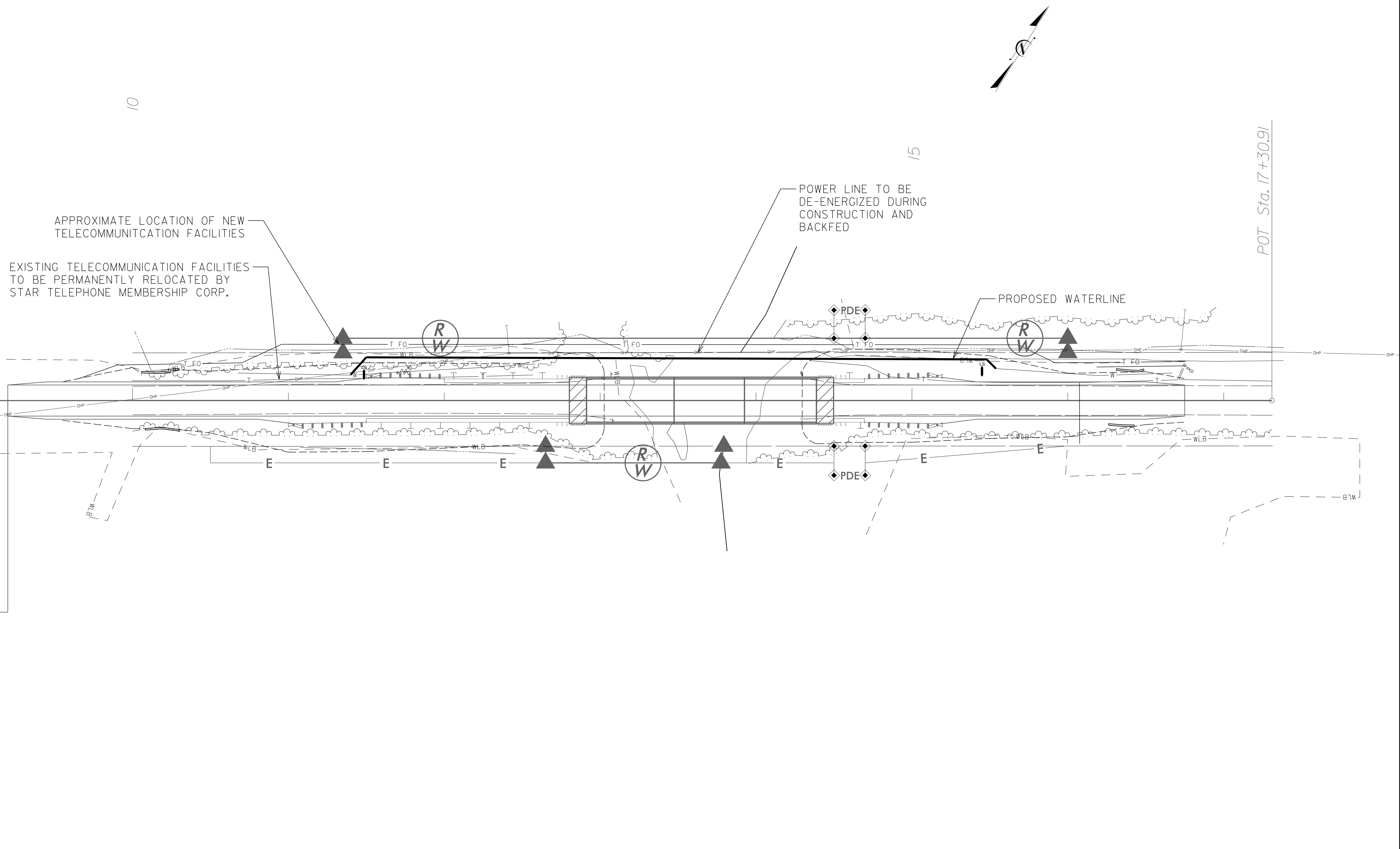
**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

ART McMILLAN, PE  
STATE HIGHWAY DESIGN ENGINEER

8/29/2013  
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USER:mburns

REVISIONS

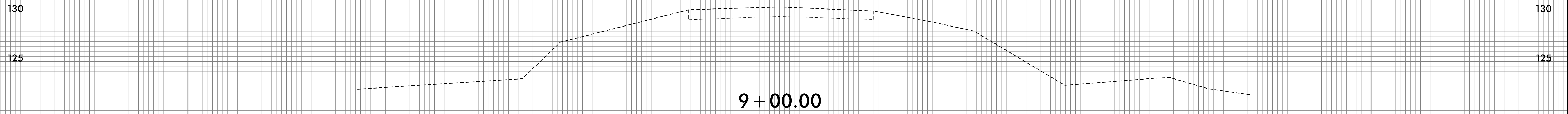
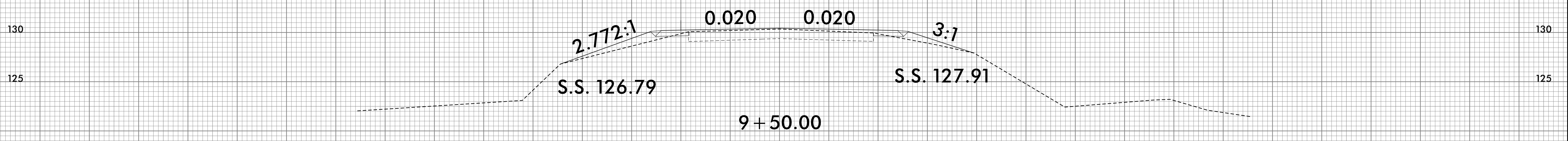
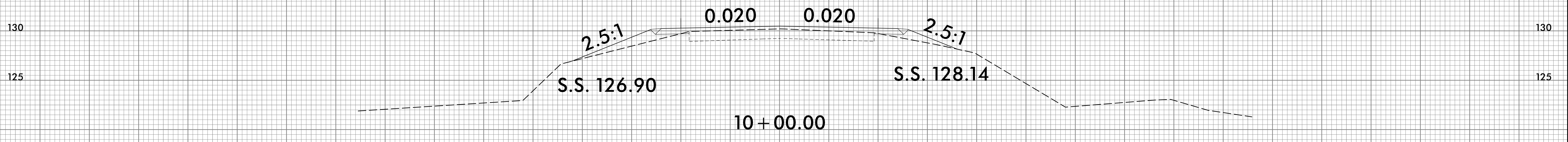
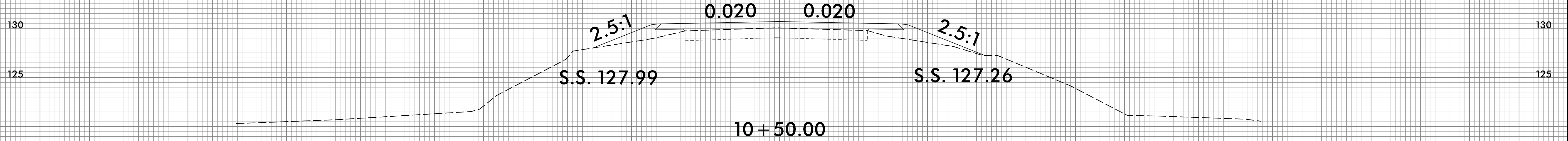
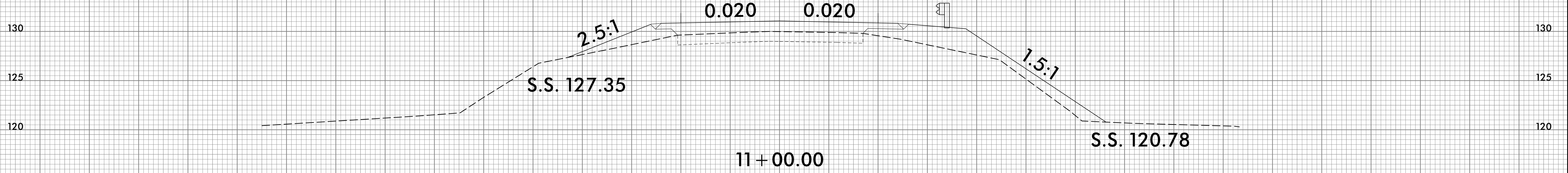
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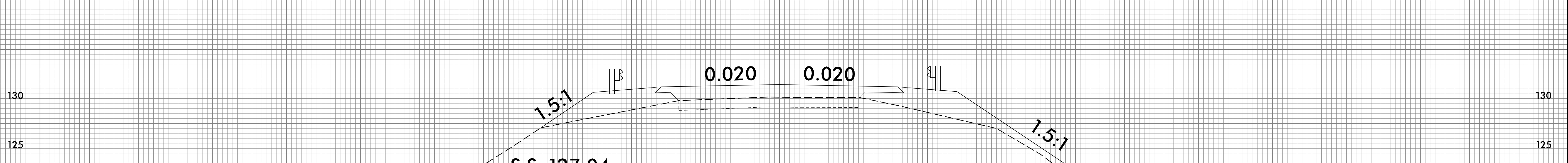
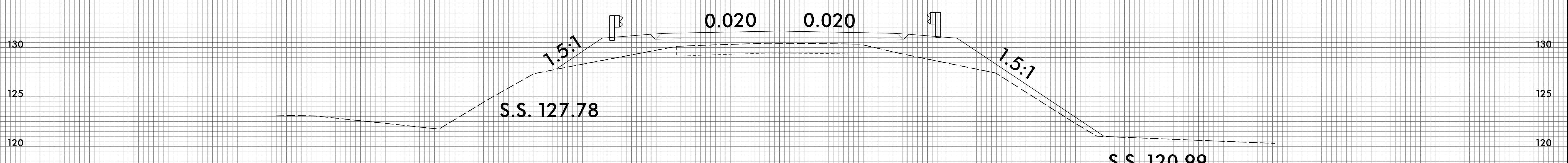
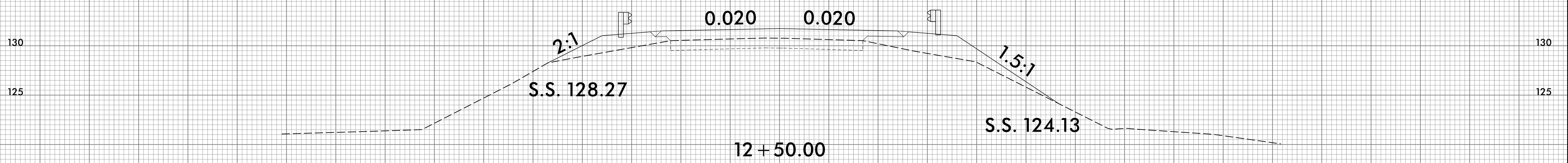
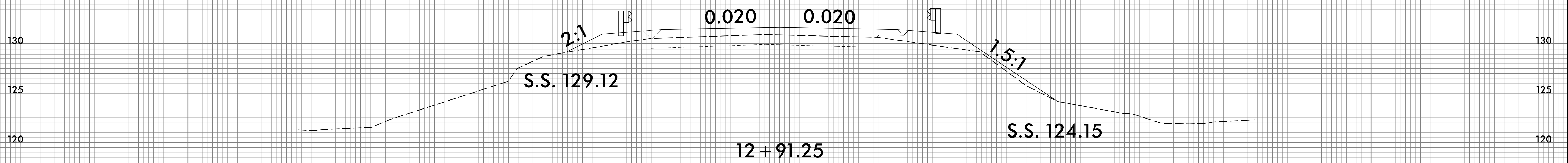
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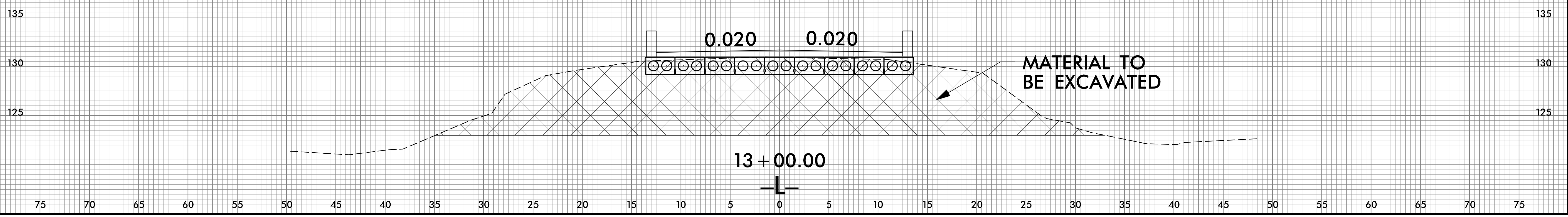
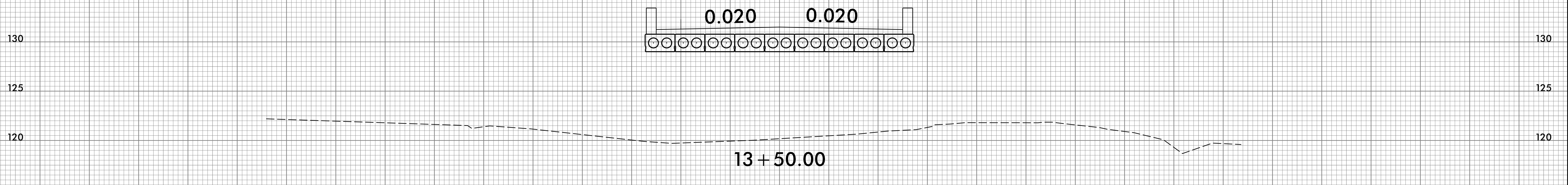
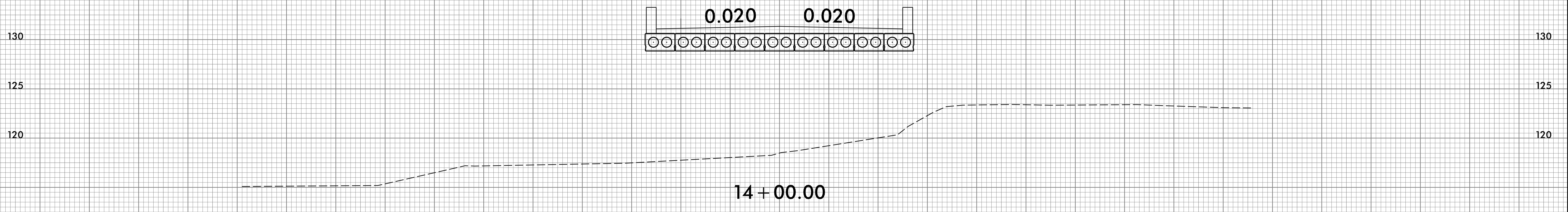
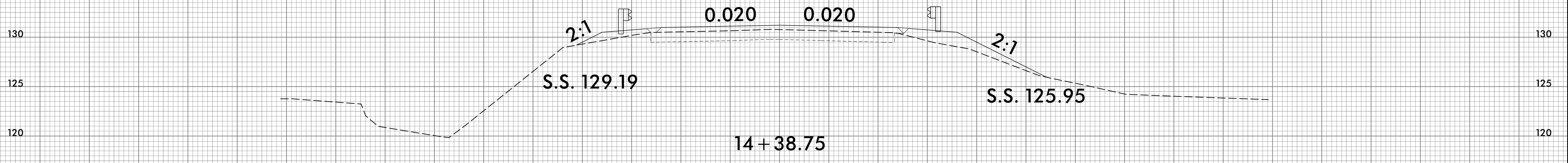
8/23/99



PROJ. REFERENCE NO.  
17BP.3.R.19

SHEET NO.  
X-3

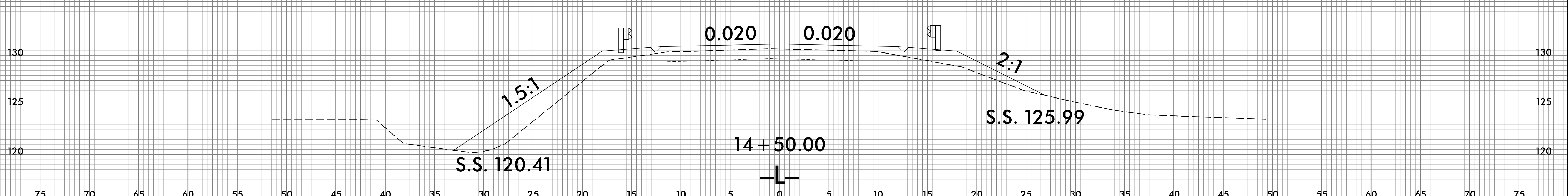
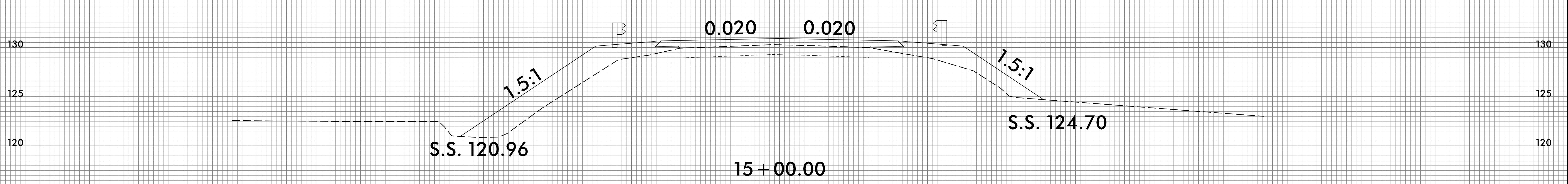
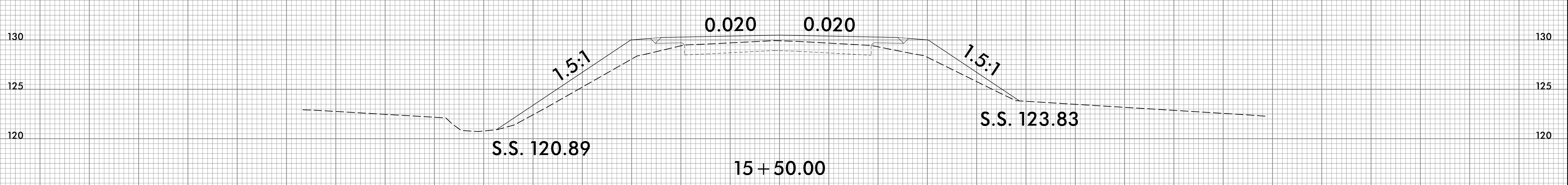
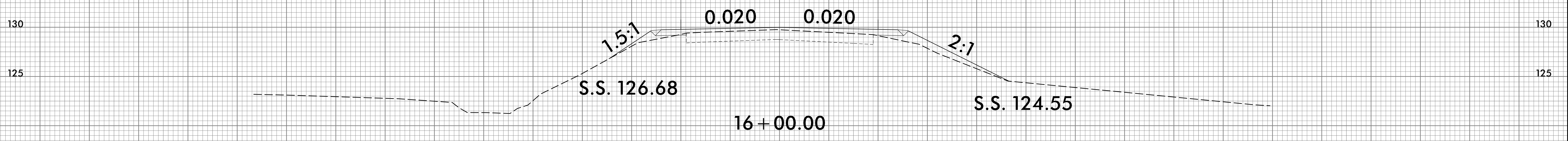
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9/12/2013  
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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
17BP.3.R.19	X-5

PROJ. REFERENCE NO.	SHEET NO.
17BP.3.R.19	X-5

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125 125

17 + 00.00

130 130

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0.036

0.026

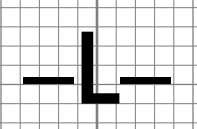
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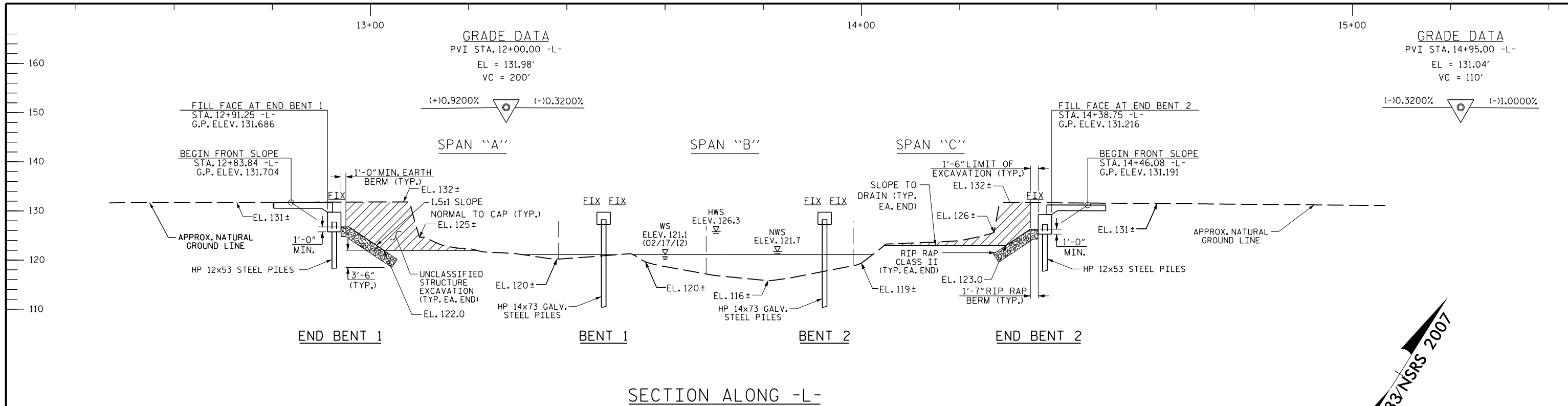
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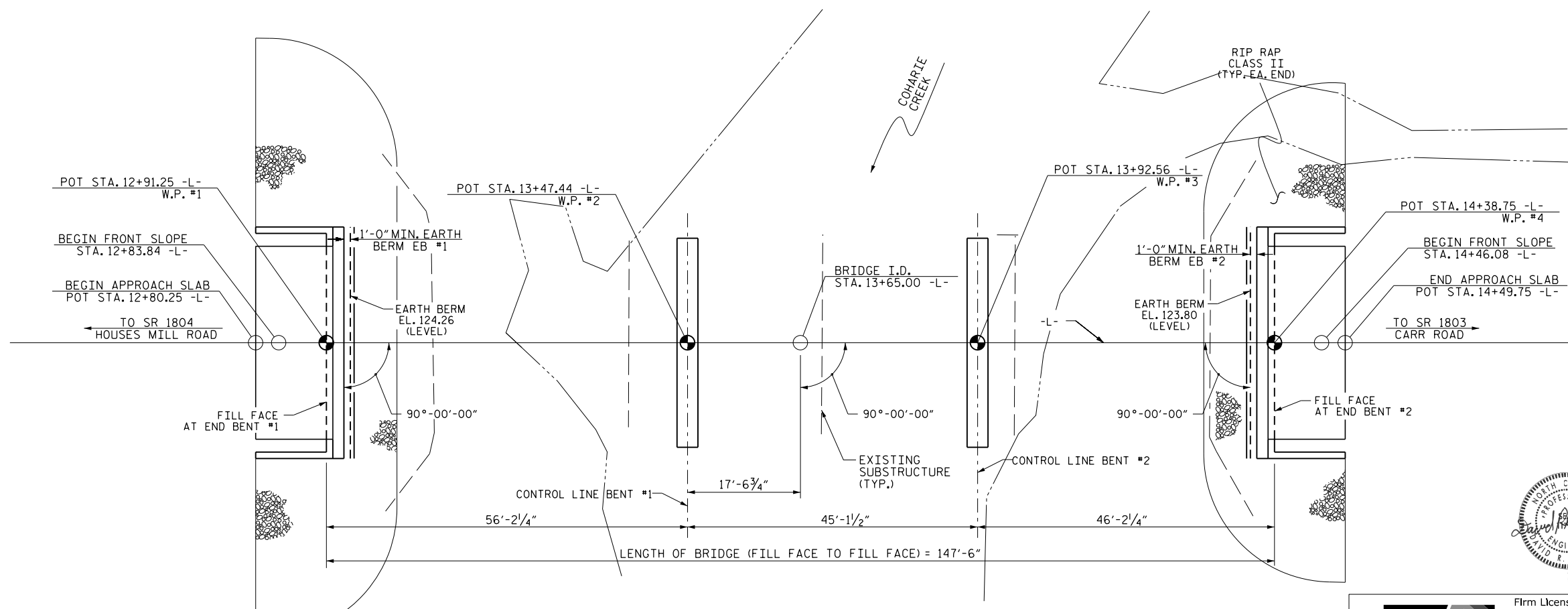
9/12/2013  
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NAD 83 NSRS 2007

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



PROJECT NO. 17BP.3.R.19  
 SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 1 OF 4 REPLACES BRIDGE No. 810189



Firm License No. C-1051  
 421 Fayetteville St,  
 Suite 400  
 Raleigh, NC 27601  
 T 919.380.8750  
 www.stewartinc.com



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 FOR BRIDGE OVER  
 COHARIE CREEK  
 ON SR 1636 BETWEEN  
 SR 1804 AND SR 1803

REVISIONS				SHEET NO.			
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1	
1			3			TOTAL SHEETS	
2			4			18	

ASSEMBLED BY: JMA  
 CHECKED BY: PLJ  
 DATE: 5/24/12  
 DATE: 5/28/12

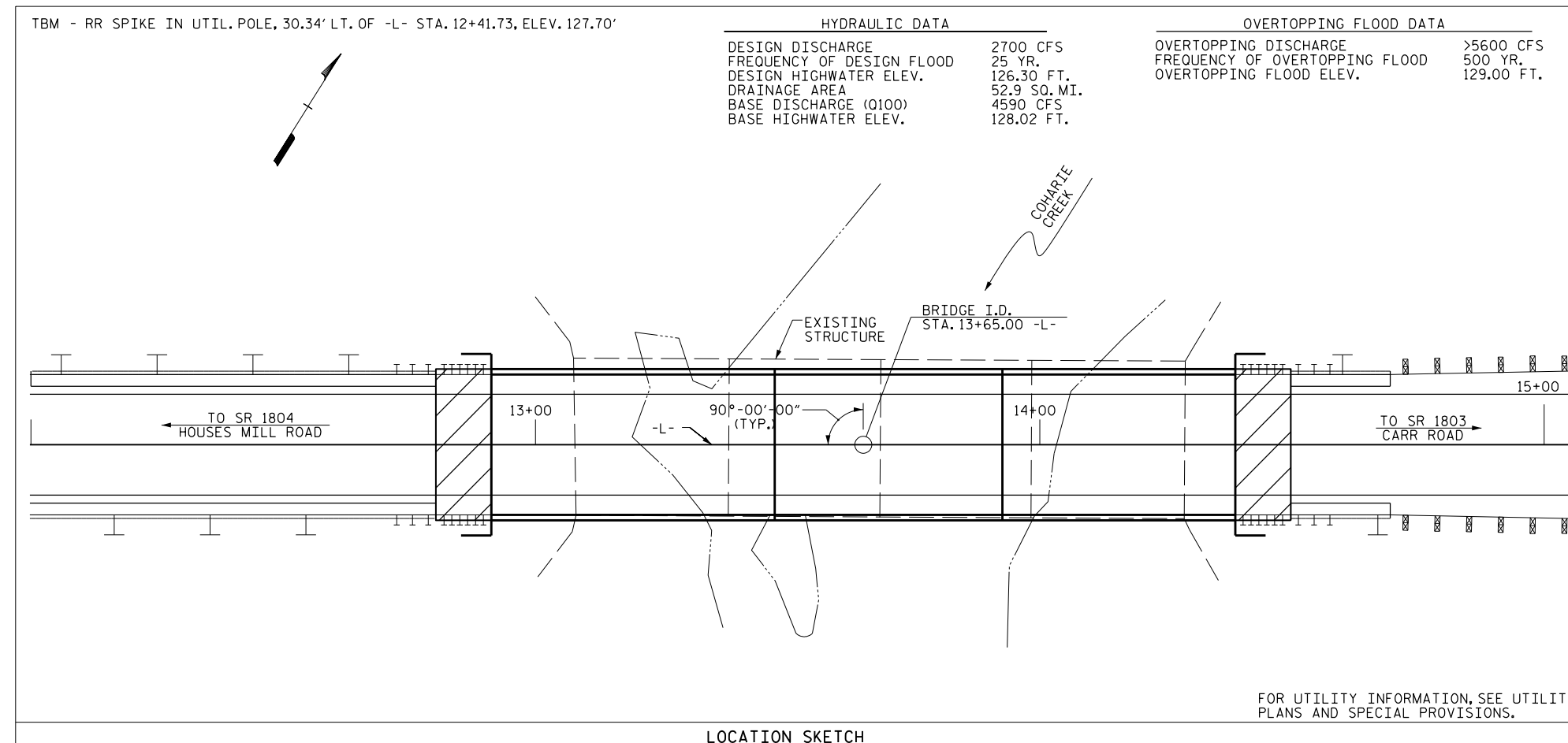
GENERAL NOTES:

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR SEISMIC PERFORMANCE ZONE 1.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY 2001.
- 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 401-2 OF THE STANDARD SPECIFICATIONS.
- REMOVAL OF EXISTING BRIDGE REMNANTS SHALL BE COMPLETED AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE INCLUDED WITH THE PAY ITEM REMOVAL OF EXISTING STRUCTURES (LUMP SUM).
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 20 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- FOR ALL OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOUNDATION NOTES:

- PILES AT END BENT No. 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.
- PILES AT BENT No. 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.
- DRIVE PILES AT END BENT No. 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 125 TONS PER PILE.
- DRIVE PILES AT BENT No. 1 TO A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW AND SCOUR.
- DRIVE PILES AT BENT No. 2 TO A REQUIRED DRIVING RESISTANCE OF 165 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW OR SCOUR.
- INSTALL PILES AT BENT No. 1 TO A TIP ELEVATION NO HIGHER THAN 101.0 FT.
- INSTALL PILES AT BENT No. 2 TO A TIP ELEVATION NO HIGHER THAN 87.0 FT.
- THE SCOUR CRITICAL ELEVATION FOR BENT No. 1 IS ELEVATION 114.5 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- THE SCOUR CRITICAL ELEVATION FOR BENT No. 2 IS ELEVATION 100.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT BENTS No. 1 AND 2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILE RESTRIKES ARE LIKELY TO BE REQUIRED.
- PILE SPLICES ANTICIPATED.
- EDGE PILES (PILES #1 AND #7) ON BOTH INTERIOR BENTS MUST BE BATTERED 1.5H:12V.

	REMOVAL OF EXISTING STRUCTURE AT STATION 13+65.00 -L-	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION 13+65.00 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS AT STATION 13+65.00 -L-	REINFORCING STEEL	HP 12X53 STEEL PILES	HP 14X73 GALV. STEEL PILES	PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLABS
	LUMP SUM	EACH	LUMP SUM	CY	LUMP SUM	LBS	No., LF	No., LF	EACH	LF	TON	LUMP SUM	No., LF
SUPERSTRUCTURE	LUMP SUM	---	---	---	LUMP SUM	---	---	---	---	290.75	---	LUMP SUM	30, 1450
END BENT No. 1	---	---	LUMP SUM	20.0	---	2449	5, 275	---	2	---	112	---	---
BENT No. 1	---	1	---	9.9	---	1959	---	7, 455	2	---	---	---	---
BENT No. 2	---	1	---	9.9	---	1959	---	7, 525	2	---	---	---	---
END BENT No. 2	---	---	LUMP SUM	20.0	---	2449	5, 275	---	2	---	88	---	---
TOTAL	LUMP SUM	2	LUMP SUM	59.8	LUMP SUM	8816	10, 550	14, 980	8	290.75	200	LUMP SUM	30, 1450



PROJECT NO. 17BP.3.R.19  
 SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 2 OF 4



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 FOR BRIDGE OVER  
 COCHARIE CREEK  
 ON SR 1636 BETWEEN  
 SR 1804 AND SR 1803

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**STEWART**

REVISIONS				SHEET NO.			
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2	
1			3			TOTAL SHEETS	
2			4			18	

ASSEMBLED BY : PLJ  
 CHECKED BY : DRR  
 DATE : 2/26/13  
 DATE : 2/27/13

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

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

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	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)

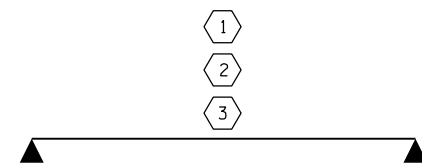
3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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GIRDER LOCATION

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



LRFR SUMMARY  
FOR SPAN 'A'

PROJECT NO. 17BP.3.R.19  
SAMPSON COUNTY  
STATION: 13+65.00 -L-

SHEET 3 OF 4



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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			18

ASSEMBLED BY : JMA DATE : 5/24/12  
CHECKED BY : PLJ DATE : 5/28/12  
DRAWN BY : CVC 6/10  
CHECKED BY : DNS 6/10



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			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							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)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.088	--	1.75	0.277	1.34	45'	EL	22	0.539	1.23	45'	EL	2.2	0.80	0.277	1.09	45'	EL	22		
	HL-93(Opr)	N/A	--	1.590	--	1.35	0.277	1.74	45'	EL	22	0.539	1.59	45'	EL	2.2	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.336	48.104	1.75	0.277	1.65	45'	EL	22	0.539	1.45	45'	EL	2.2	0.80	0.277	1.34	45'	EL	22		
	HS-20(Opr)	36.000	--	1.882	67.763	1.35	0.277	2.14	45'	EL	22	0.539	1.88	45'	EL	2.2	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.611	35.252	1.4	0.277	4.02	45'	EL	22	0.539	4.01	45'	EL	2.2	0.80	0.277	2.61	45'	EL	22	
		SNGARBS2	20.000	--	2.108	42.166	1.4	0.277	3.25	45'	EL	22	0.539	2.94	45'	EL	2.2	0.80	0.277	2.11	45'	EL	22	
		SNAGRIS2	22.000	--	2.067	45.466	1.4	0.277	3.15	45'	EL	17.6	0.539	2.77	45'	EL	2.2	0.80	0.277	2.07	45'	EL	22	
		SNCOTTS3	27.250	--	1.304	35.527	1.4	0.277	2.01	45'	EL	22	0.539	2.01	45'	EL	2.2	0.80	0.277	1.30	45'	EL	22	
		SNAGGRS4	34.925	--	1.150	40.181	1.4	0.277	1.77	45'	EL	22	0.539	1.74	45'	EL	2.2	0.80	0.277	1.15	45'	EL	22	
		SNS5A	35.550	--	1.121	39.841	1.4	0.277	1.73	45'	EL	22	0.539	1.79	45'	EL	2.2	0.80	0.277	1.12	45'	EL	22	
		SNS6A	39.950	--	1.056	42.175	1.4	0.277	1.63	45'	EL	22	0.539	1.67	45'	EL	2.2	0.80	0.277	1.06	45'	EL	22	
	SNS7B	42.000	3	1.006	42.268	1.4	0.277	1.55	45'	EL	22	0.539	1.68	45'	EL	2.2	0.80	0.277	1.01	45'	EL	22		
	TTST	TNAGRIT3	33.000	--	1.296	42.759	1.4	0.277	2	45'	EL	22	0.539	1.96	45'	EL	2.2	0.80	0.277	1.30	45'	EL	22	
		TNT4A	33.075	--	1.309	43.305	1.4	0.277	2.02	45'	EL	22	0.539	1.88	45'	EL	2.2	0.80	0.277	1.31	45'	EL	22	
		TNT6A	41.600	--	1.099	45.712	1.4	0.277	1.69	45'	EL	22	0.539	1.83	45'	EL	2.2	0.80	0.277	1.10	45'	EL	22	
		TNT7A	42.000	--	1.120	47.043	1.4	0.277	1.73	45'	EL	22	0.539	1.69	45'	EL	2.2	0.80	0.277	1.12	45'	EL	22	
		TNT7B	42.000	--	1.166	48.975	1.4	0.277	1.8	45'	EL	22	0.539	1.61	45'	EL	2.2	0.80	0.277	1.17	45'	EL	22	
		TNAGRIT4	43.000	--	1.111	47.757	1.4	0.277	1.71	45'	EL	22	0.539	1.55	45'	EL	2.2	0.80	0.277	1.11	45'	EL	22	
TNAGT5A		45.000	--	1.033	46.505	1.4	0.277	1.59	45'	EL	22	0.539	1.59	45'	EL	2.2	0.80	0.277	1.03	45'	EL	22		
TNAGT5B	45.000	--	1.009	45.408	1.4	0.277	1.56	45'	EL	22	0.539	1.47	45'	EL	2.2	0.80	0.277	1.01	45'	EL	22			

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	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:

- 
- 
- 
- 

# CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

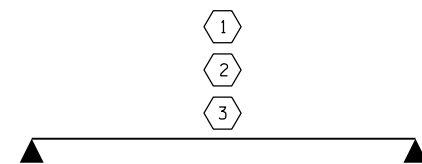
3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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GIRDER LOCATION

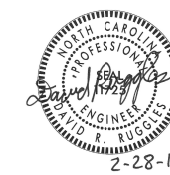
I - INTERIOR GIRDER  
EL - EXTERIOR LEFT GIRDER  
ER - EXTERIOR RIGHT GIRDER



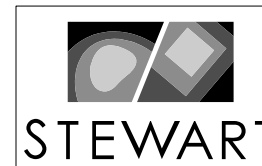
LRFR SUMMARY  
FOR SPANS 'B' AND 'C'

PROJECT NO. 17BP.3.R.19  
SAMPSON COUNTY  
STATION: 13+65.00 -L-

SHEET 4 OF 4



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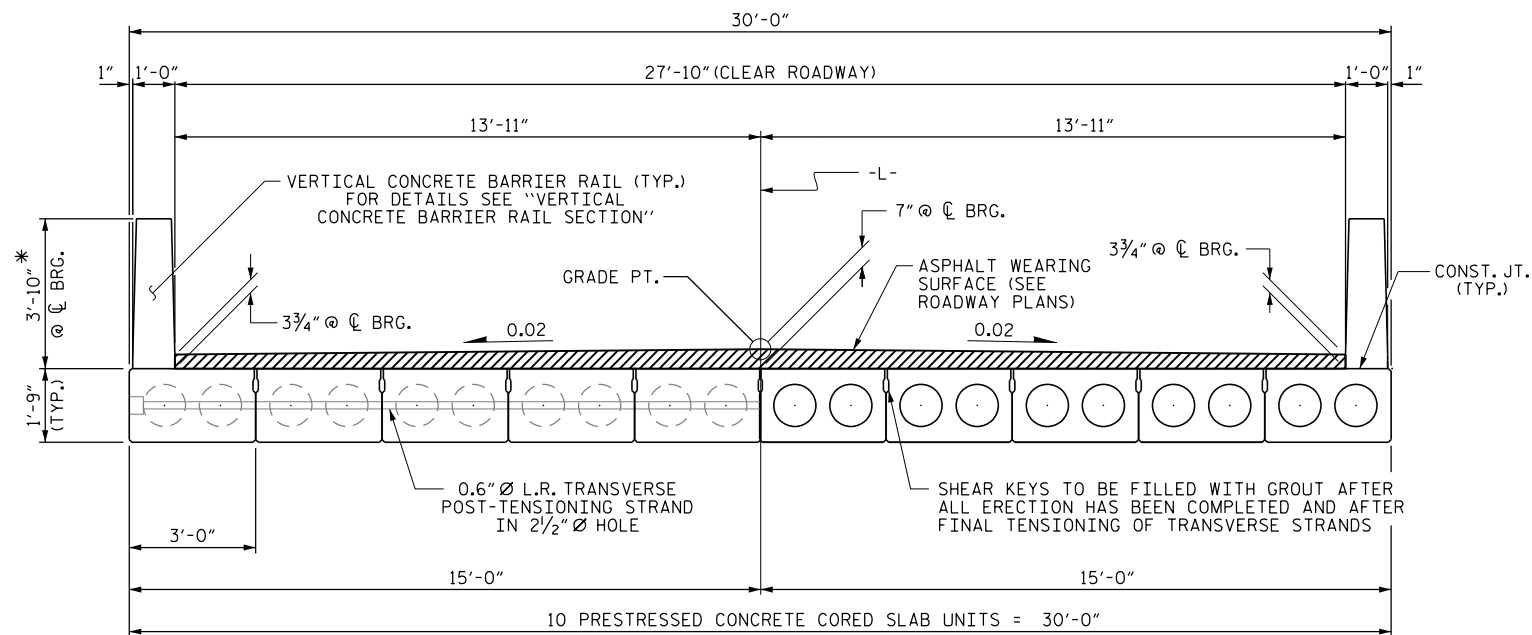
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

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

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

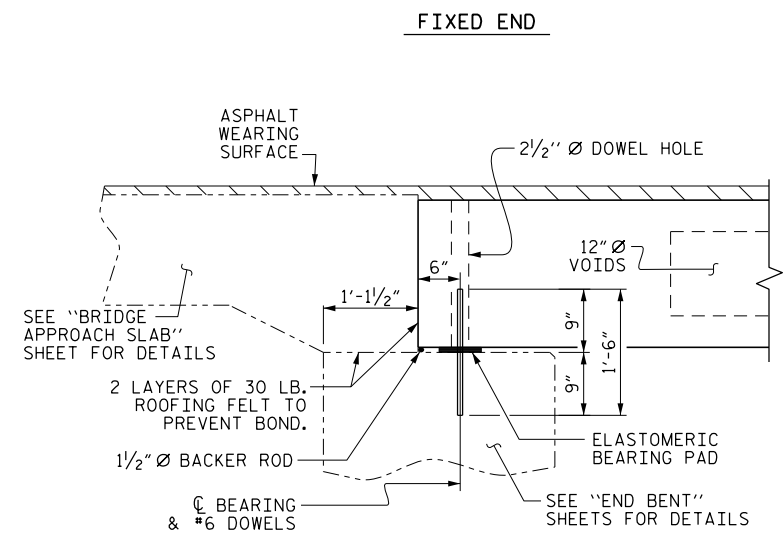
SHEET NO. S-4  
TOTAL SHEETS 18

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CHECKED BY : PLJ DATE : 5/28/12  
DRAWN BY : CVC 6/10  
CHECKED BY : DNS 6/10

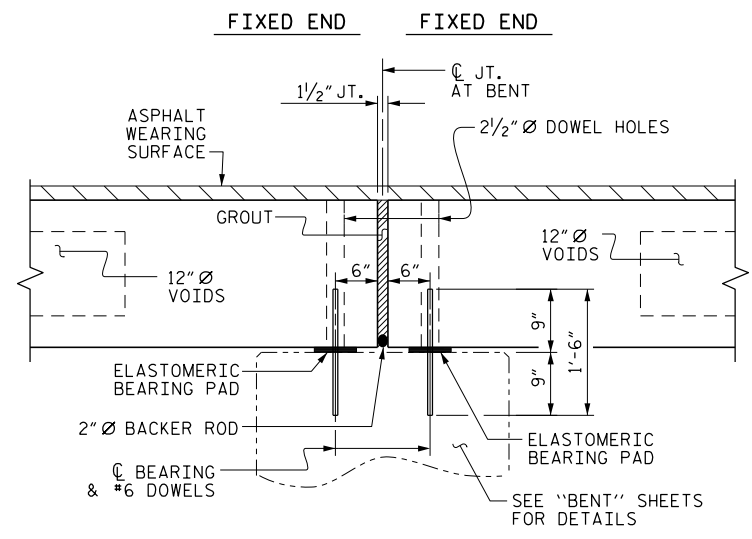


HALF SECTION AT INTERMEDIATE DIAPHRAGMS  
**TYPICAL SECTION**  
 HALF SECTION THROUGH VOIDS

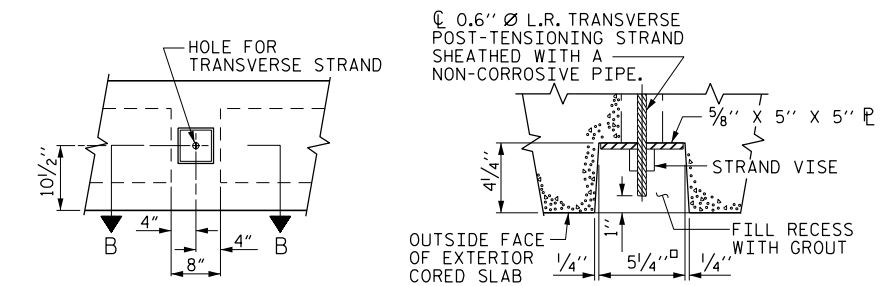
\* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



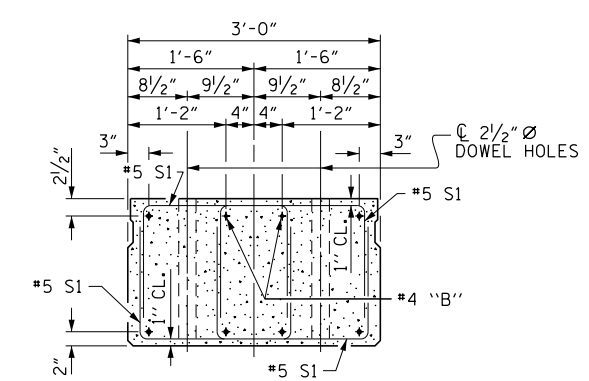
**SECTION AT END BENT**



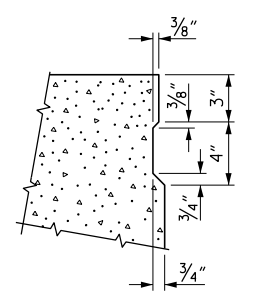
**SECTION AT BENT**



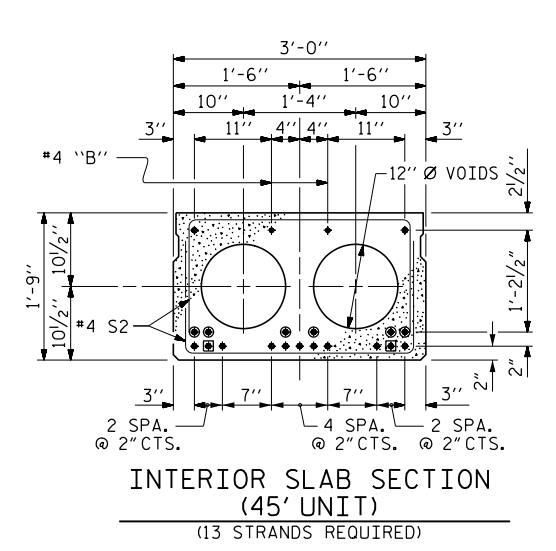
**ELEVATION VIEW**  
**SECTION B-B**  
**GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS**



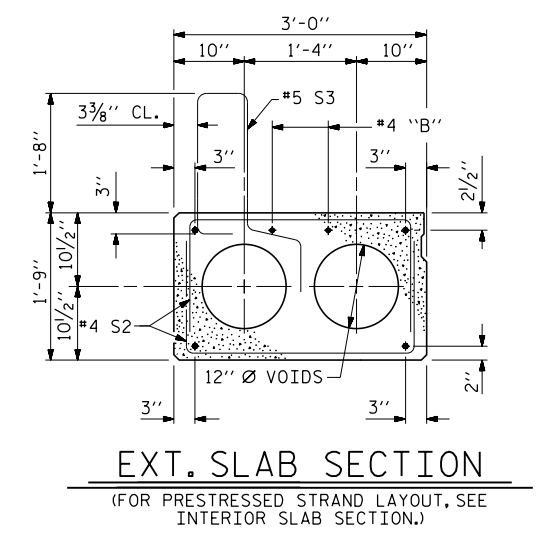
**END ELEVATION**  
 SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.)  
 INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



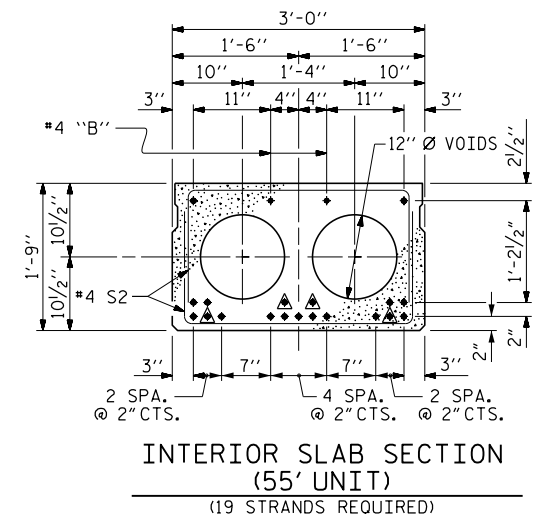
**SHEAR KEY DETAIL**  
 NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



**INTERIOR SLAB SECTION (45' UNIT)**  
 (13 STRANDS REQUIRED)



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



**INTERIOR SLAB SECTION (55' UNIT)**  
 (19 STRANDS REQUIRED)

**0.6" Ø LOW RELAXATION STRAND LAYOUT**

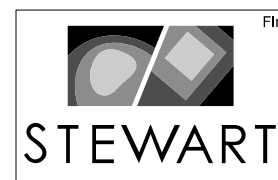
- ▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

**DEBONDING LEGEND**

PROJECT NO. 17BP.3.R.19  
 SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 1 OF 5

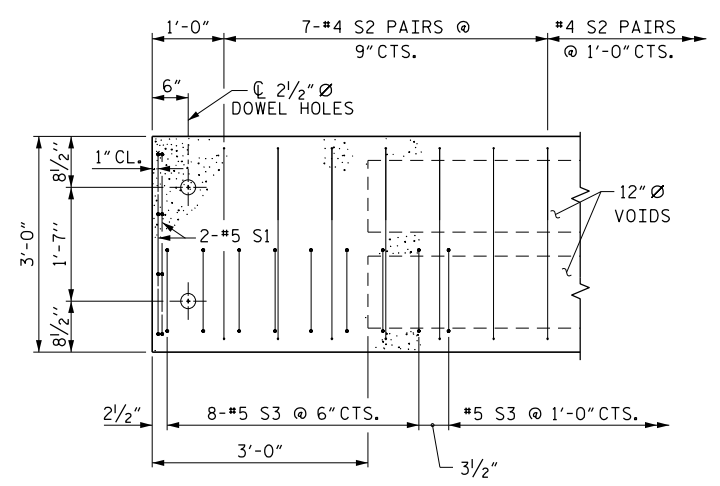
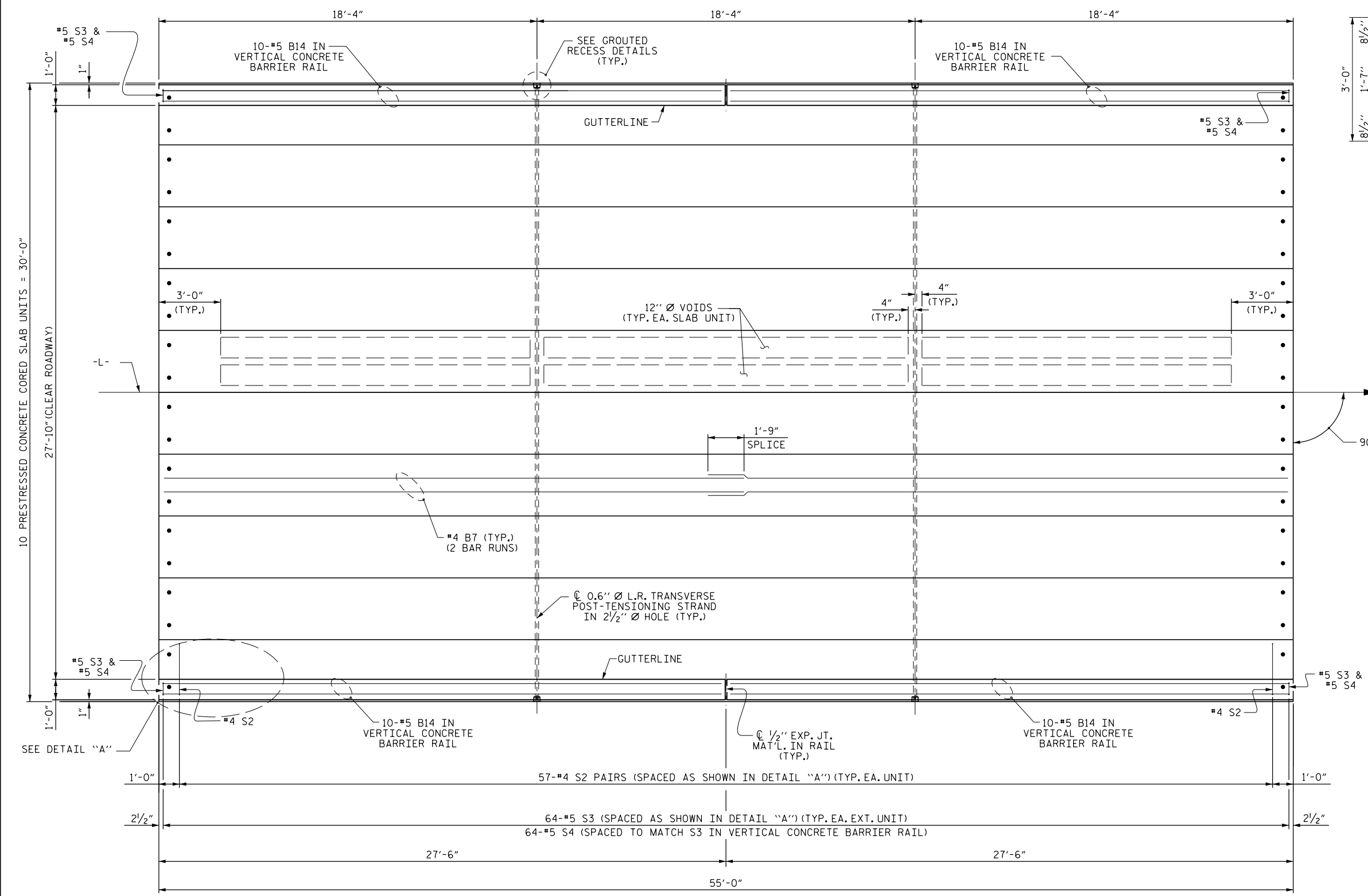


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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-5
					TOTAL SHEETS 18

ASSEMBLED BY : JMA	DATE : 5/24/12
CHECKED BY : PLJ	DATE : 5/28/12
DRAWN BY : DGE 5/09	REV. 12/11
CHECKED BY : BCH 6/09	MAA/AAC



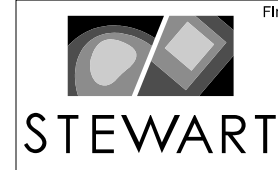
**DETAIL "A"**  
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

**PLAN OF UNIT**

PROJECT NO. 17BP.3.R.19  
SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 2 OF 5



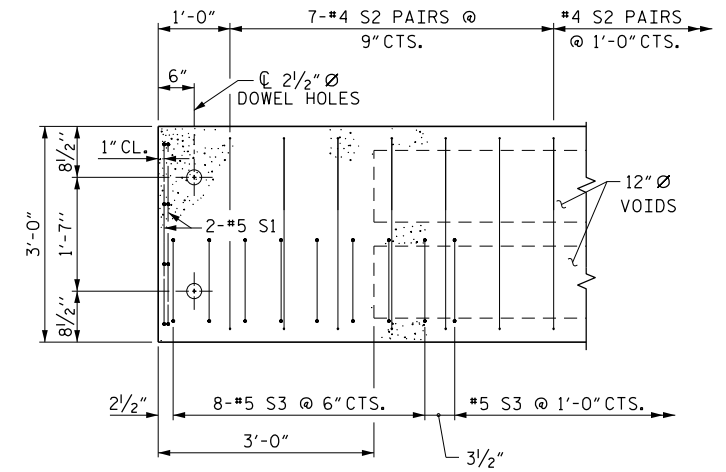
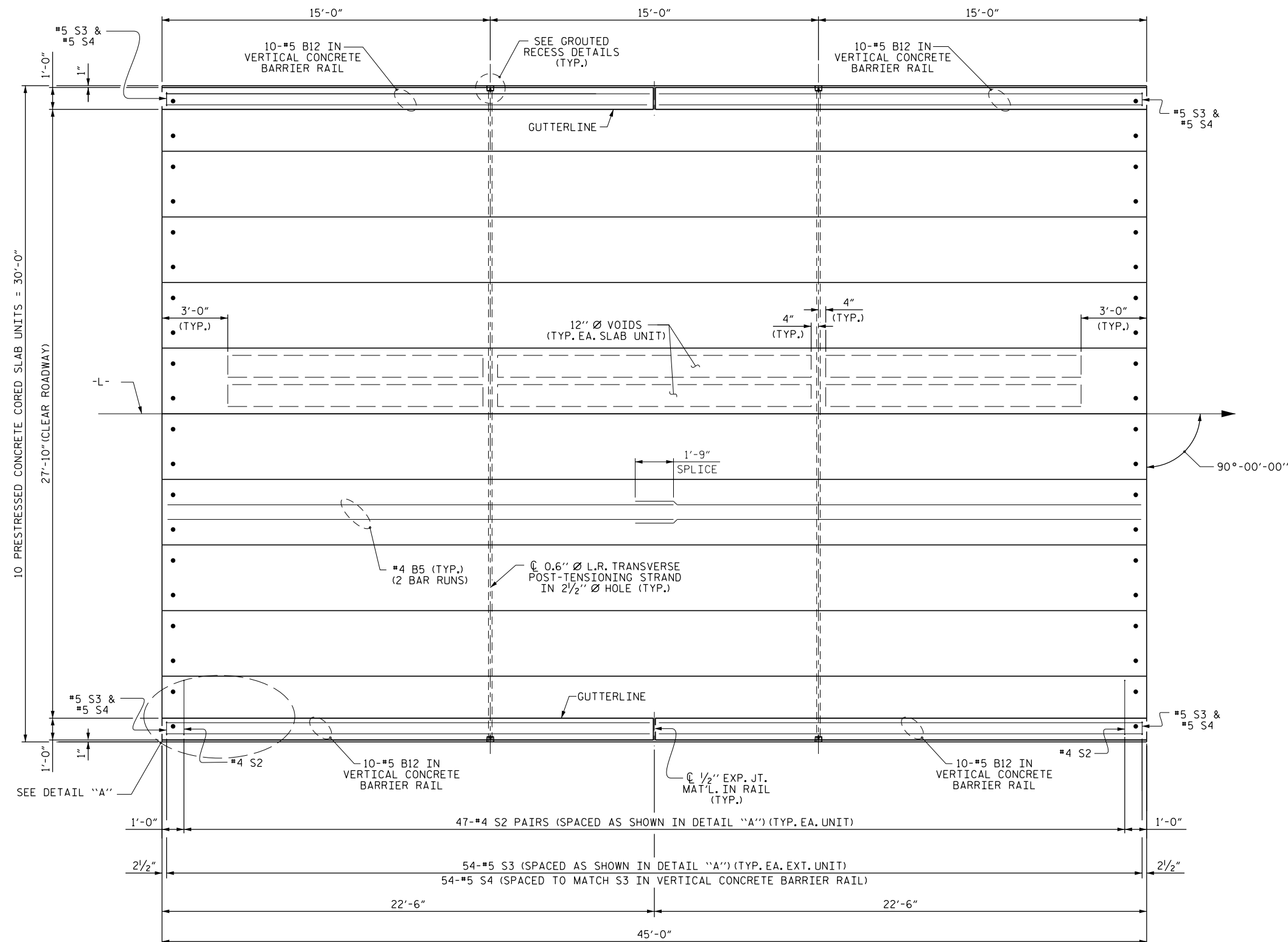
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF 55' UNIT 27'-10" CLEAR ROADWAY 90° SKEW					
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 18

ASSEMBLED BY : JMA	DATE : 5/24/12
CHECKED BY : PLJ	DATE : 5/28/12
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	





DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

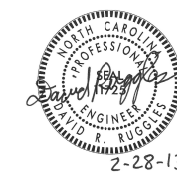
PLAN OF UNIT

PROJECT NO. 17BP.3.R.19

SAMPSON COUNTY

STATION: 13+65.00 -L-

SHEET 3 OF 5

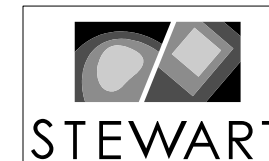


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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

PLAN OF 45' UNIT  
27'-10" CLEAR ROADWAY  
90° SKEW

ASSEMBLED BY :	JMA	DATE :	5/24/12
CHECKED BY :	PLJ	DATE :	5/28/12
DRAWN BY :	DGE 3/09	REV. 12/5/11	MAA/AAC
CHECKED BY :	BCH 3/09		



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			18

**BILL OF MATERIAL FOR ONE 45' CORED SLAB UNIT**

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B5	4	#4	STR	23'-3"	62	23'-3"	62
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	94	#4	3	5'-4"	335	5'-4"	335
*S3	54	#5	1	6'-2"	347		
REINFORCING STEEL				LBS.	432		432
*EPOXY COATED REINFORCING STEEL				LBS.	347		
6500 P.S.I. CONCRETE				CU. YDS.	6.5		6.5
0.6" Ø L.R. STRANDS				No.	13		13

**BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT**

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	114	#4	3	5'-4"	406	5'-4"	406
*S3	64	#5	1	6'-2"	412		
REINFORCING STEEL				LBS.	516		516
*EPOXY COATED REINFORCING STEEL				LBS.	412		
6500 P.S.I. CONCRETE				CU. YDS.	7.8		7.8
0.6" Ø L.R. STRANDS				No.	19		19

**BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL**

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
45' UNIT						
*B12	40	80	#5	STR	22'-1"	1842
*S4	108	216	#5	2	7'-2"	1614
*EPOXY COATED REINFORCING STEEL				LBS.		3456
CLASS AA CONCRETE				CU. YDS.		23.6
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		180.50

**BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL**

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
55' UNIT						
*B14	40	40	#5	STR	27'-1"	1130
*S4	128	128	#5	2	7'-2"	957
*EPOXY COATED REINFORCING STEEL				LBS.		2087
CLASS AA CONCRETE				CU. YDS.		14.4
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		110.25

**DEAD LOAD DEFLECTION AND CAMBER**

	3'-0" x 1'-9"
55' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 1/2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/4" ↓
FINAL CAMBER	2 1/4" ↑

\*\* INCLUDES FUTURE WEARING SURFACE

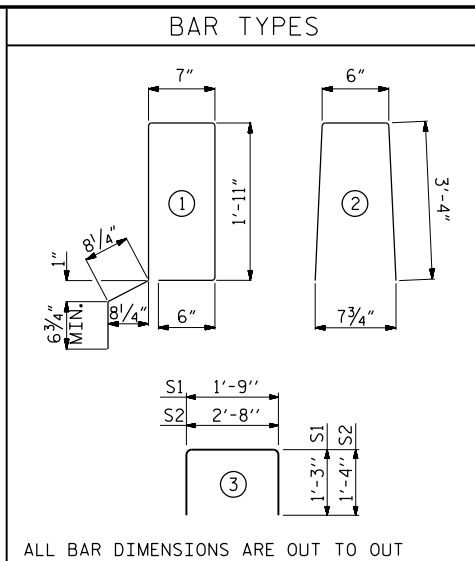
**DEAD LOAD DEFLECTION AND CAMBER**

	3'-0" x 1'-9"
45' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 1/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓
FINAL CAMBER	1 1/8" ↑

\*\* INCLUDES FUTURE WEARING SURFACE

**GRADE 270 STRANDS**

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



**NOTES**

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 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

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

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

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

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

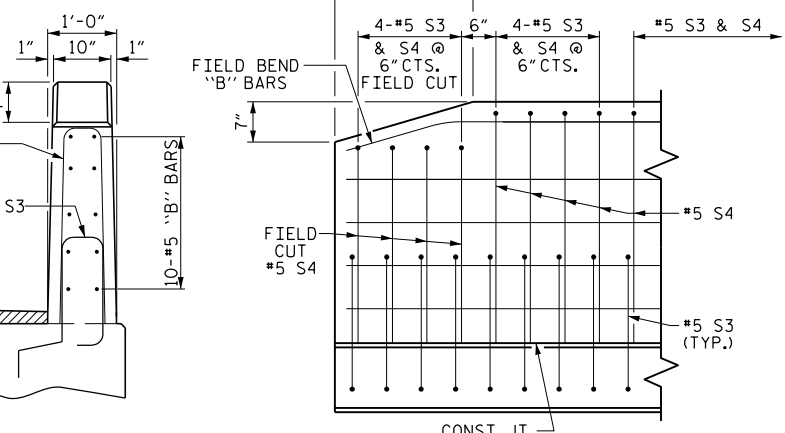
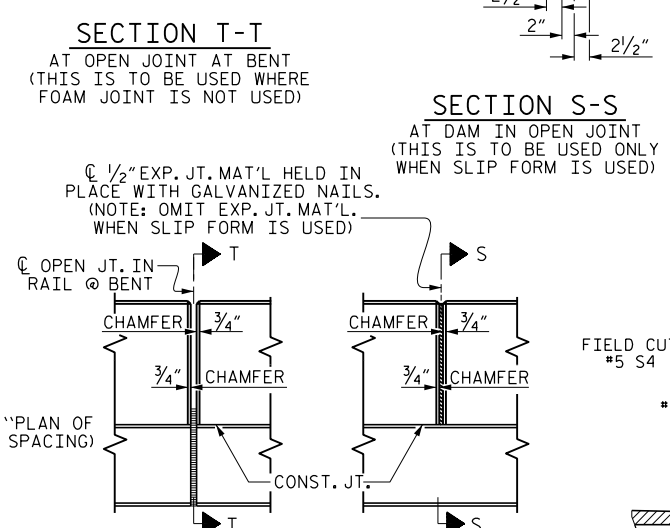
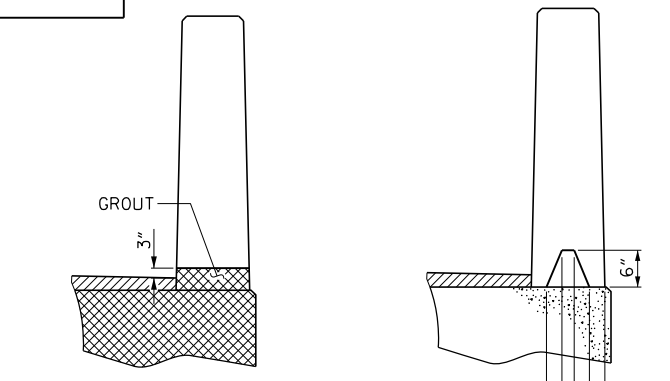
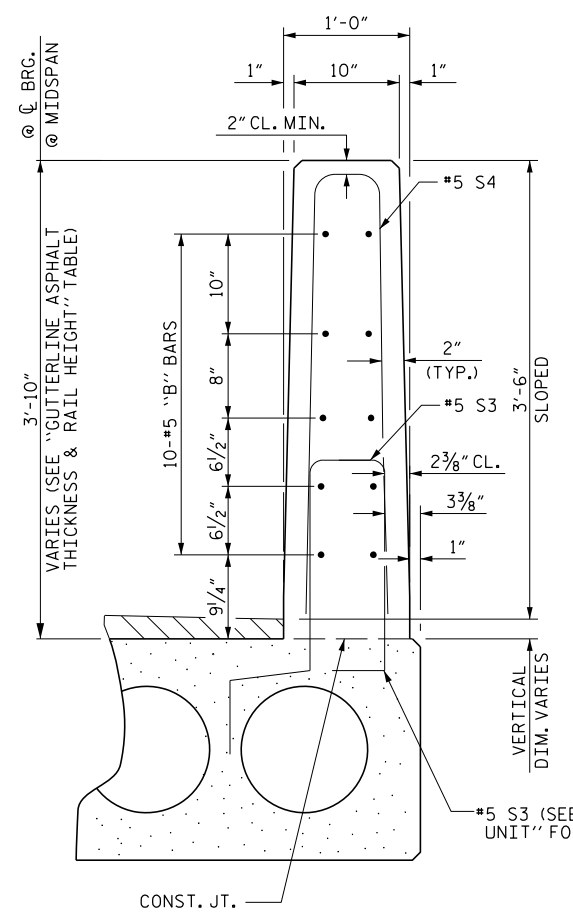
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A 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.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.



**END VIEW**      **SIDE VIEW**

**END OF RAIL DETAILS**

**ELASTOMERIC BEARING DETAILS**

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
27'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	NORMAL CROWN SECTION	
45' UNITS	2 5/8"	3'-8 1/8"
55' UNITS	1 1/2"	3'-7 3/4"

**CORED SLABS REQUIRED**

	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	8	55'-0"	440'-0"
TOTAL	10		550'-0"
45' UNIT			
EXTERIOR C.S.	4	45'-0"	180'-0"
INTERIOR C.S.	16	45'-0"	720'-0"
TOTAL	20		900'-0"

**CONCRETE RELEASE STRENGTH**

UNIT	PSI
45' UNITS	4000
55' UNITS	4900

PROJECT NO. 17BP.3.R.19  
SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 4 OF 5



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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**STANDARD**  
 3'-0" X 1'-9"  
 PRESTRESSED CONCRETE  
 CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			18

ASSEMBLED BY : PLJ      DATE : 2/26/13  
 CHECKED BY : DRR      DATE : 2/27/13  
 DRAWN BY : DGE 5/09      REV. 12/11      MAA/AAC  
 CHECKED BY : BCH 6/09

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.)

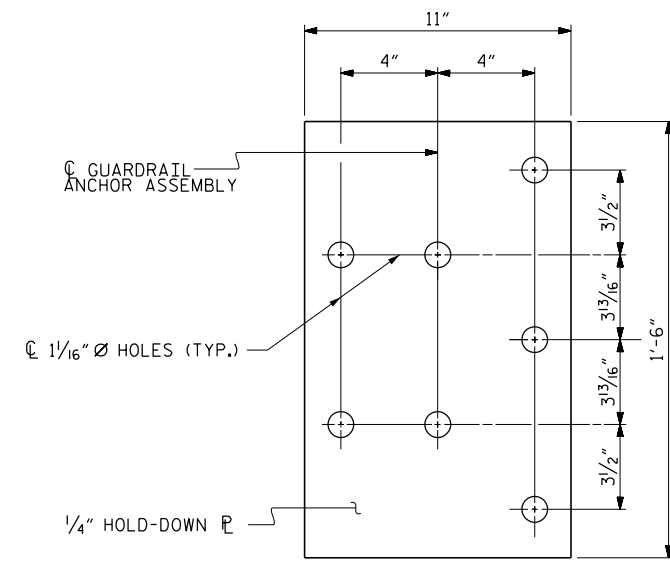
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

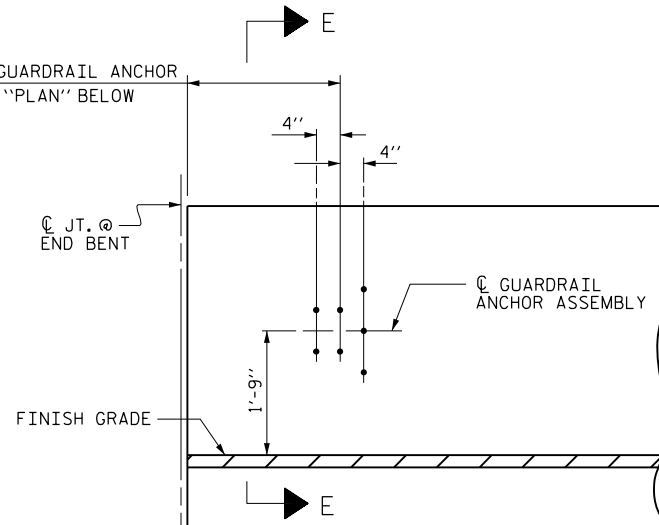
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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.

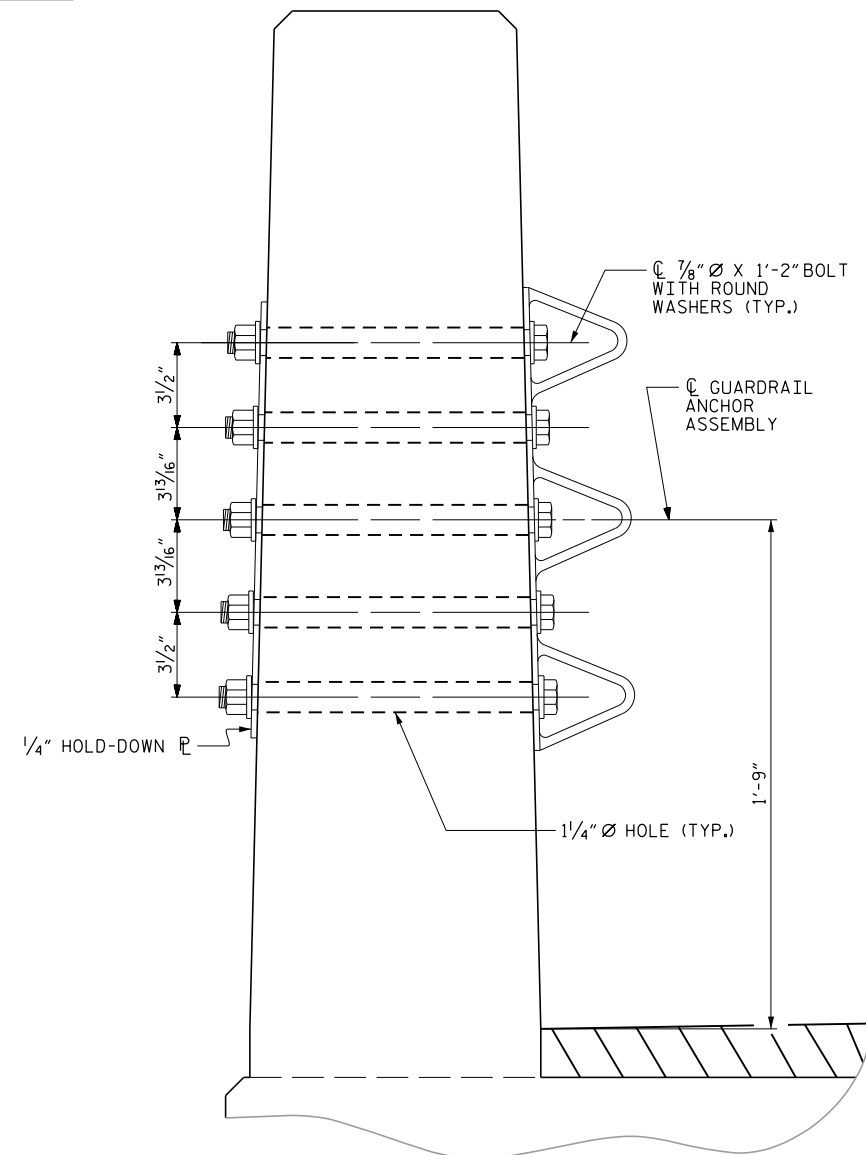


PLAN

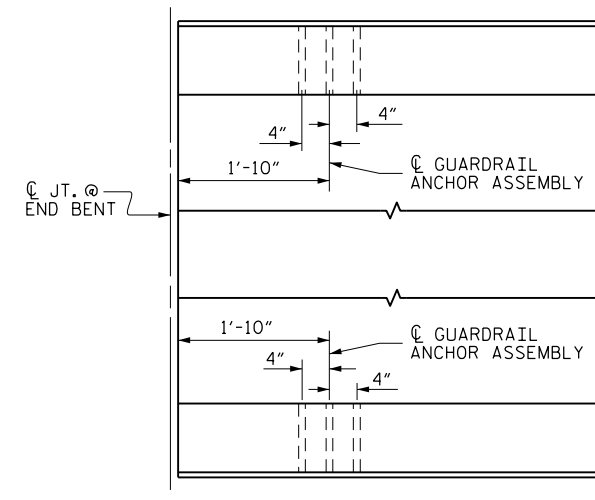
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



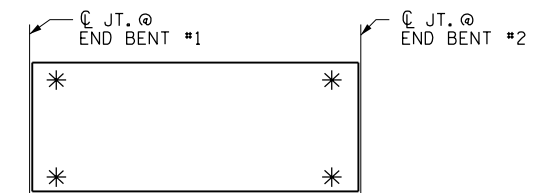
SECTION E-E  
GUARDRAIL ANCHOR ASSEMBLY DETAILS



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.19  
SAMPSON COUNTY  
STATION: 13+65.00 -L-

SHEET 5 OF 5



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
GUARDRAIL ANCHORAGE  
FOR VERTICAL CONCRETE  
BARRIER RAIL

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CHECKED BY : GM 5/10	REV. 10/1/11
	REV. 12/5/11
	MAA/GM
	MAA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			18



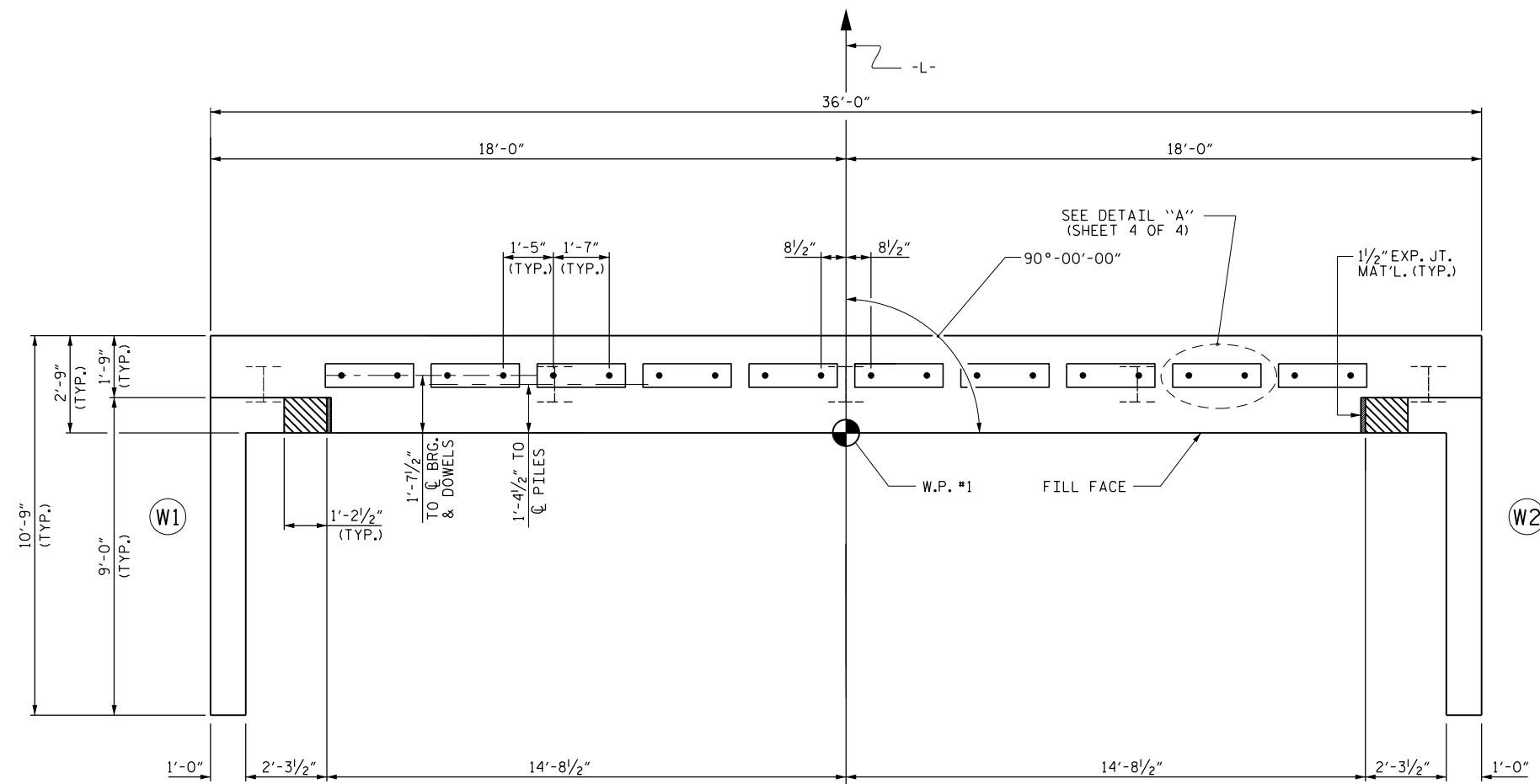
NOTES

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

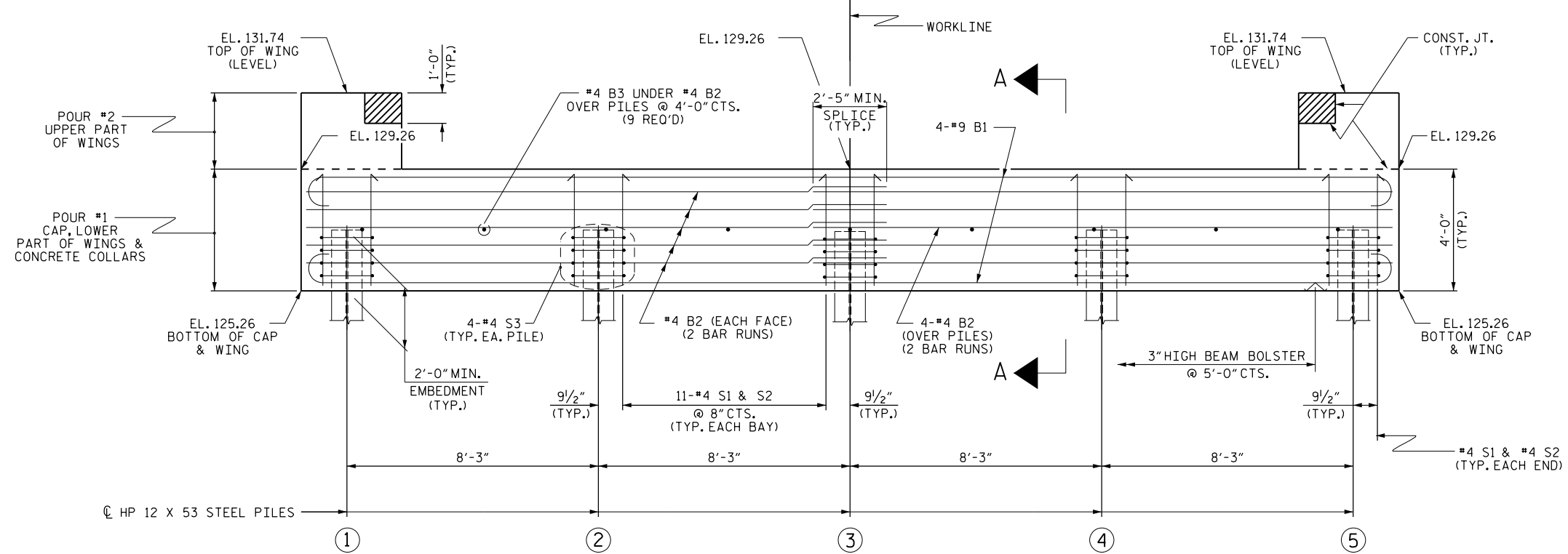
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



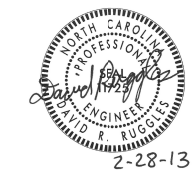
PLAN



ELEVATION

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

PROJECT NO. 17BP.3.R.19  
SAMPSON COUNTY  
STATION: 13+65.00 -L-  
SHEET 1 OF 4



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
SUBSTRUCTURE  
END BENT No. 1

ASSEMBLED BY : JMA	DATE : 5/24/12
CHECKED BY : PLJ	DATE : 5/28/12
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			18

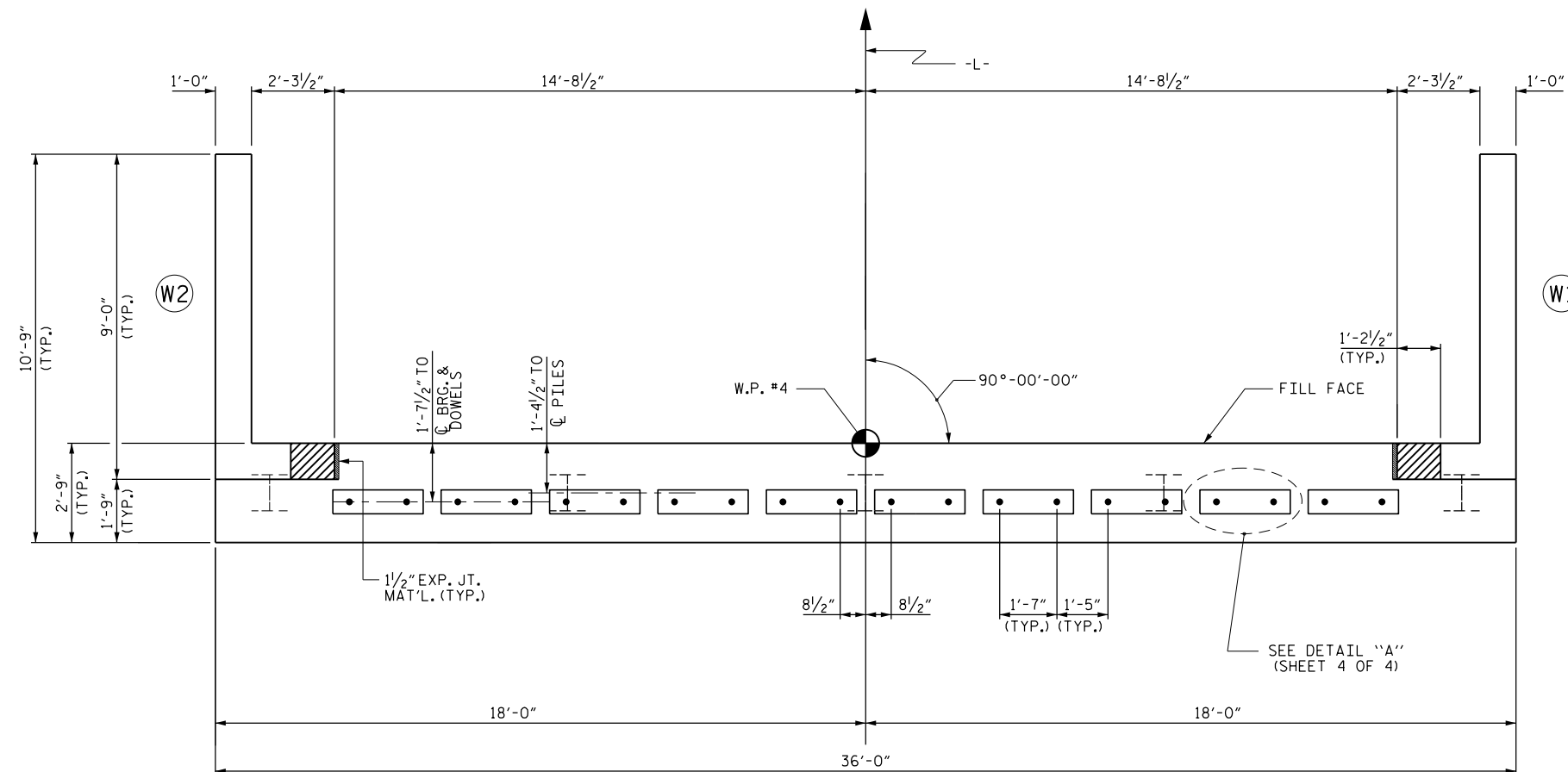
NOTES

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

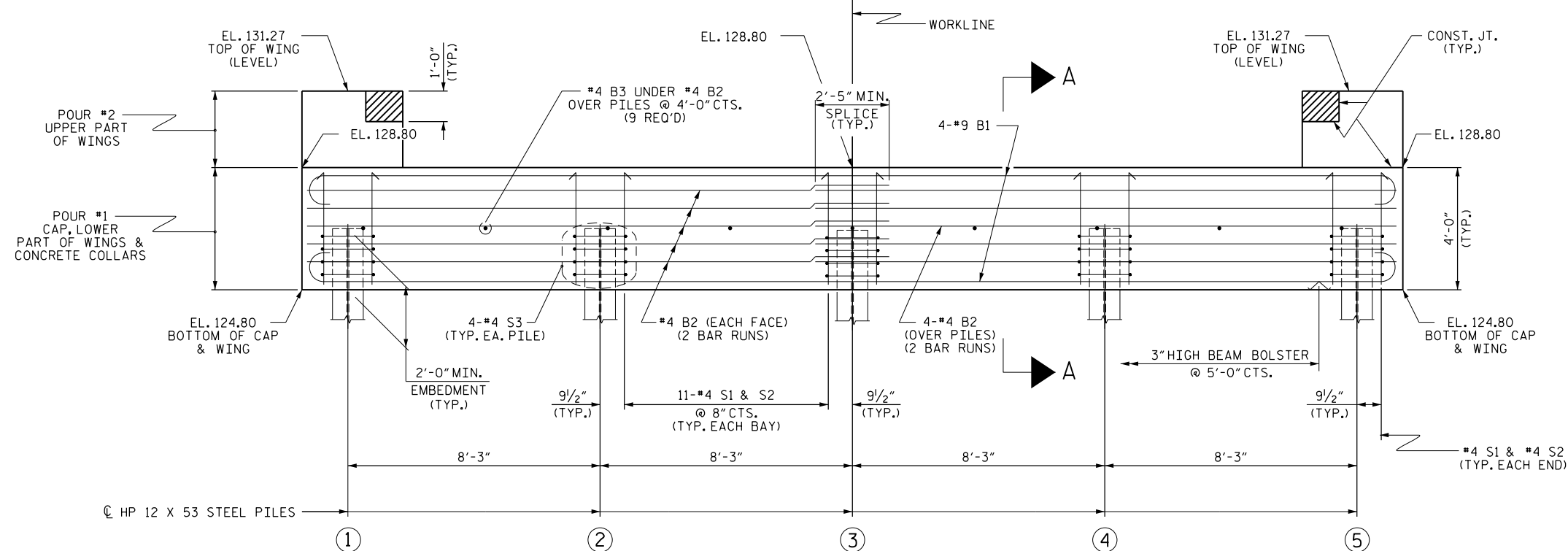
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

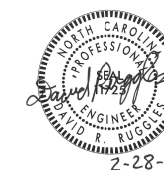
WINGS NOT SHOWN FOR CLARITY.  
FOR SECTION A-A, SEE SHEET 4 OF 4.  
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.  
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. 17BP.3.R.19

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STATION: 13+65.00 -L-

SHEET 2 OF 4



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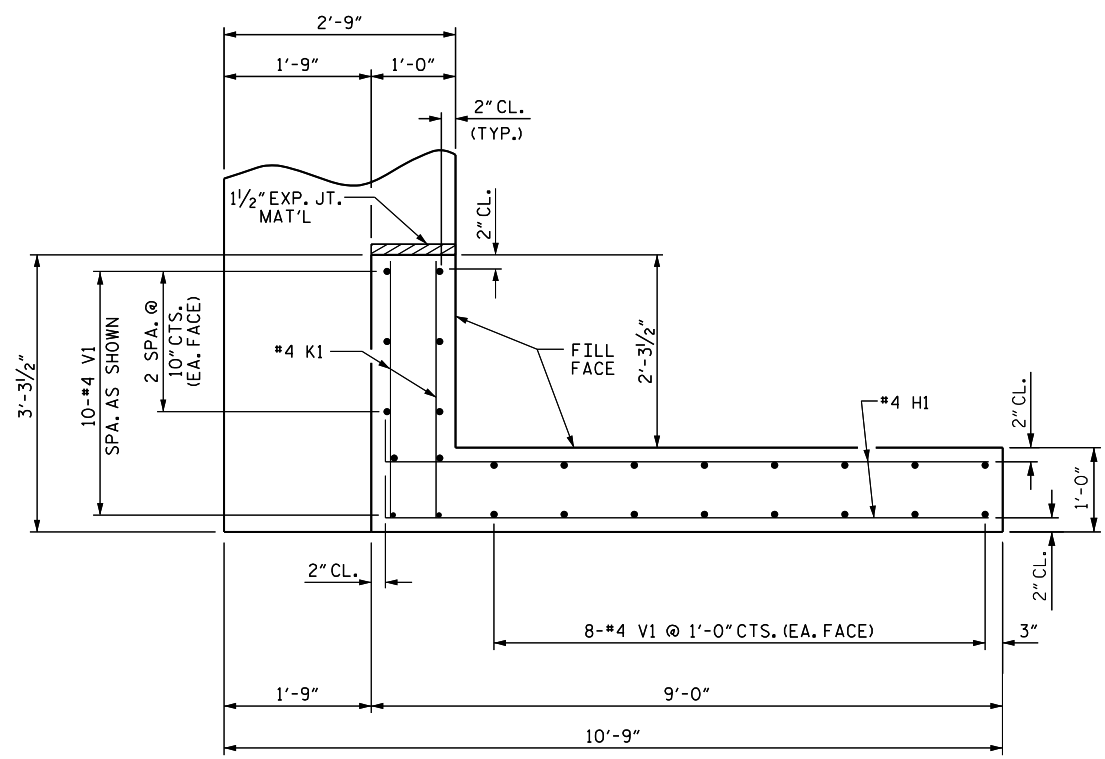
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT No. 2

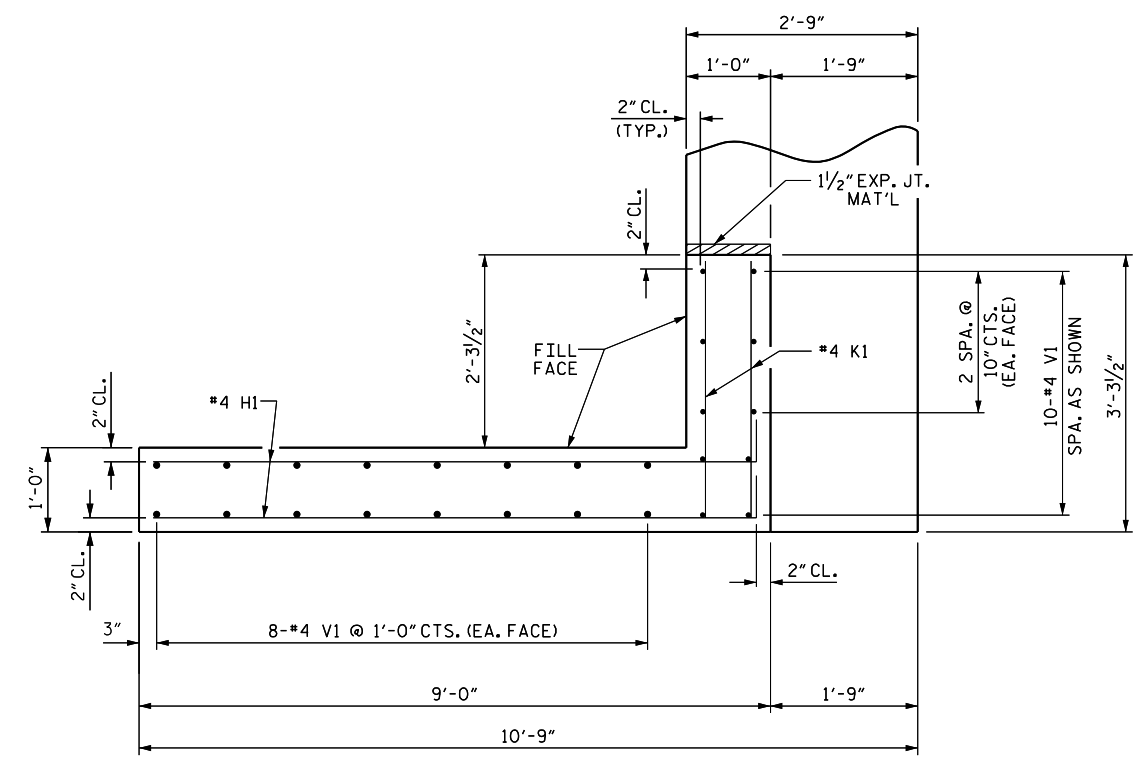
ASSEMBLED BY : JMA	DATE : 5/24/12
CHECKED BY : PLJ	DATE : 5/28/12
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS 18
2			4			

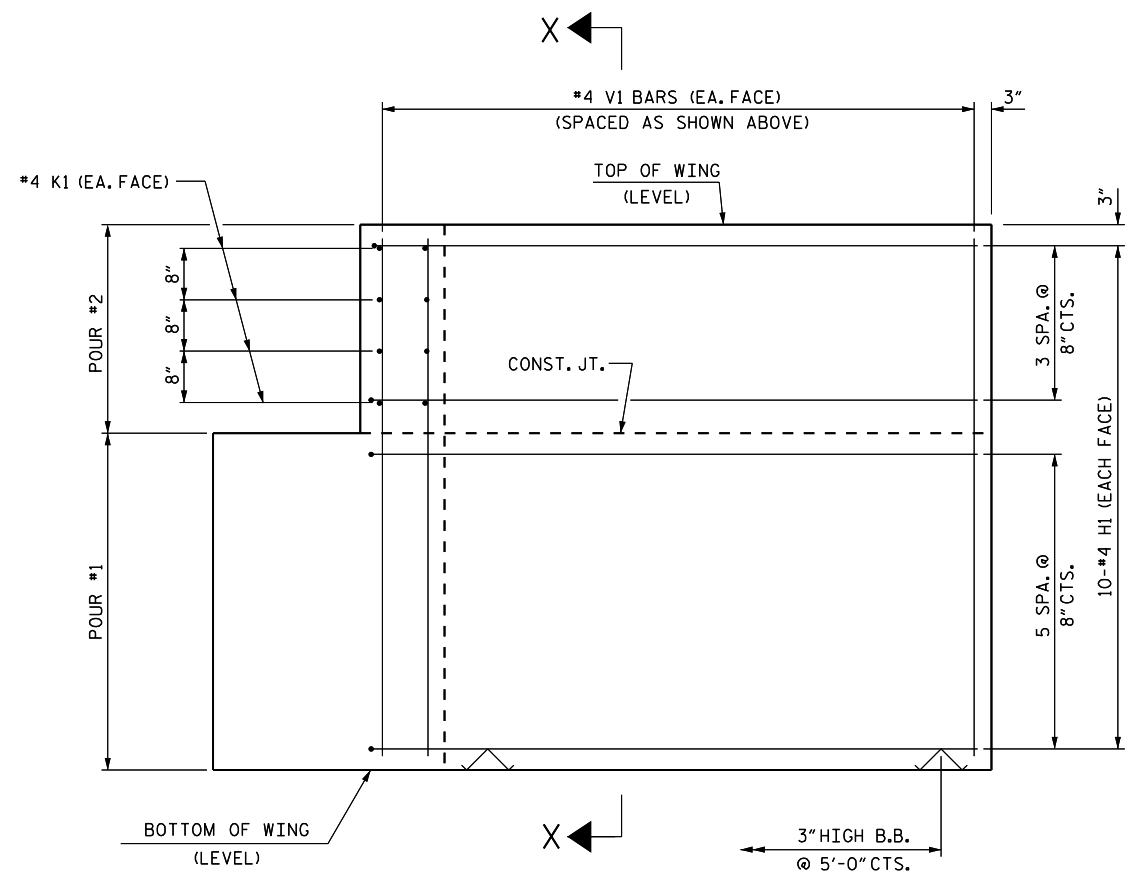
STD. NO. EB.33.90S4



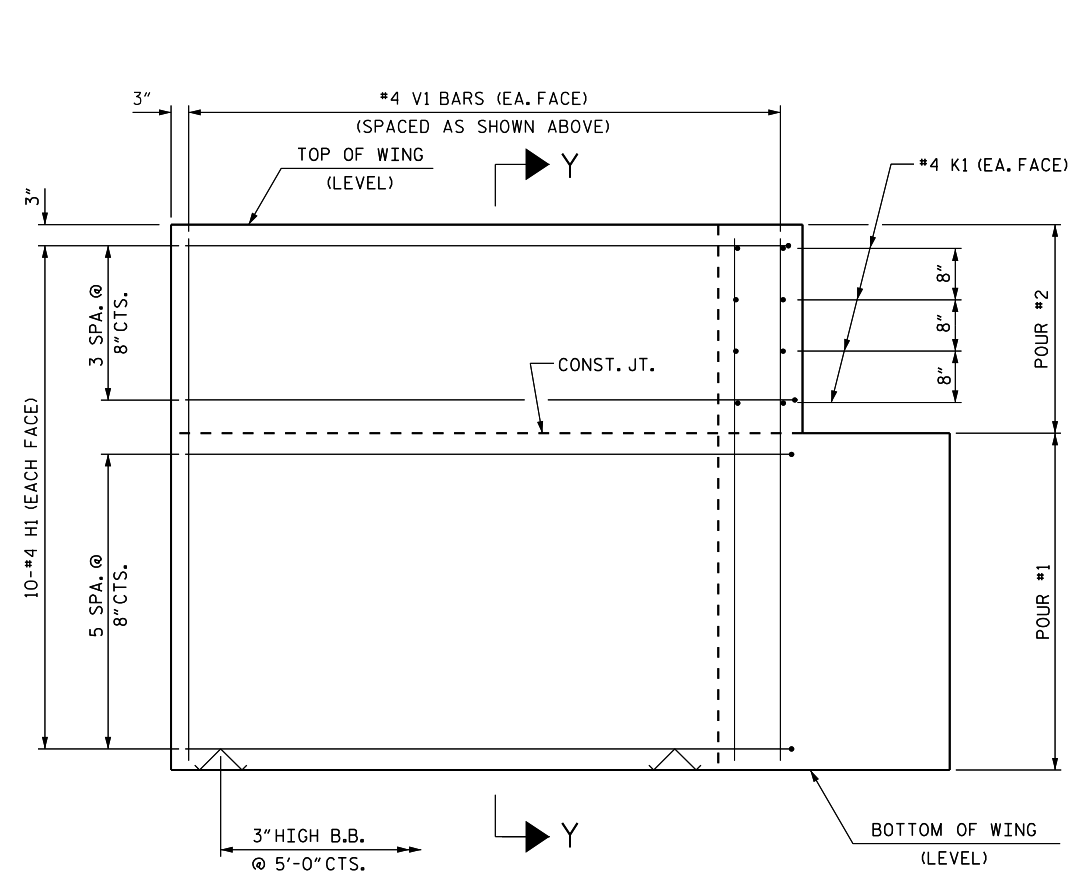
PLAN OF WING (W1)



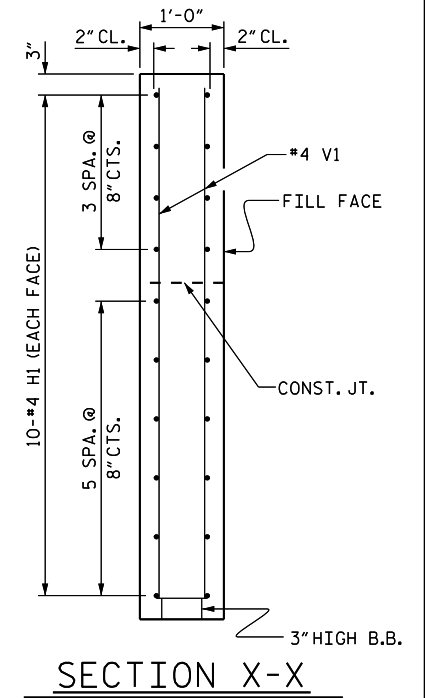
PLAN OF WING (W2)



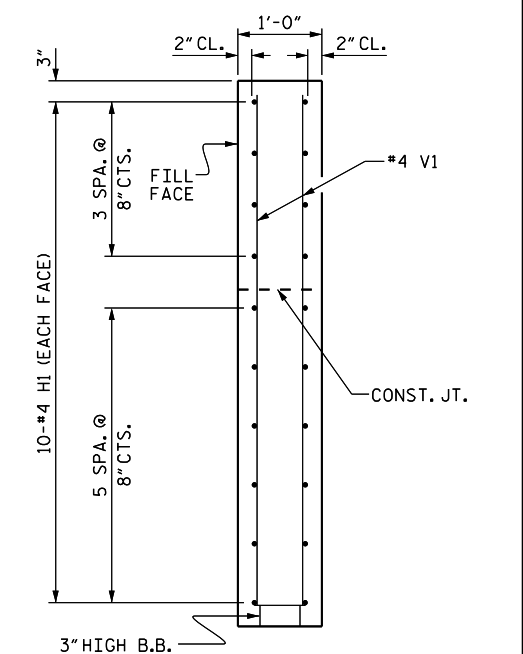
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

PROJECT NO. 17BP.3.R.19  
 SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 3 OF 4



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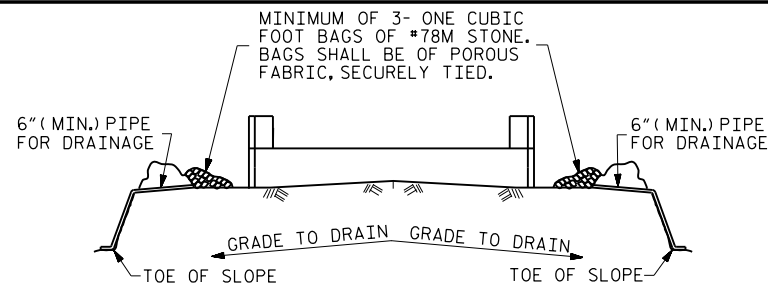


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			18

ASSEMBLED BY : JMA	DATE : 5/24/12
CHECKED BY : PLJ	DATE : 5/28/12
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

WING DETAILS



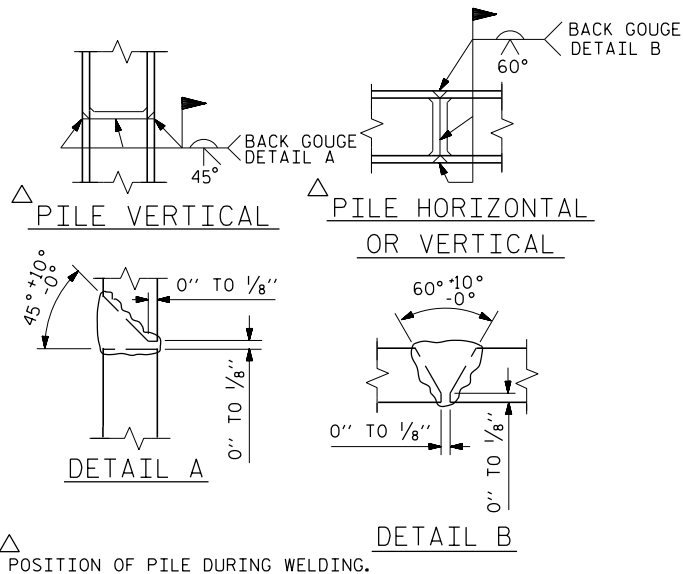


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

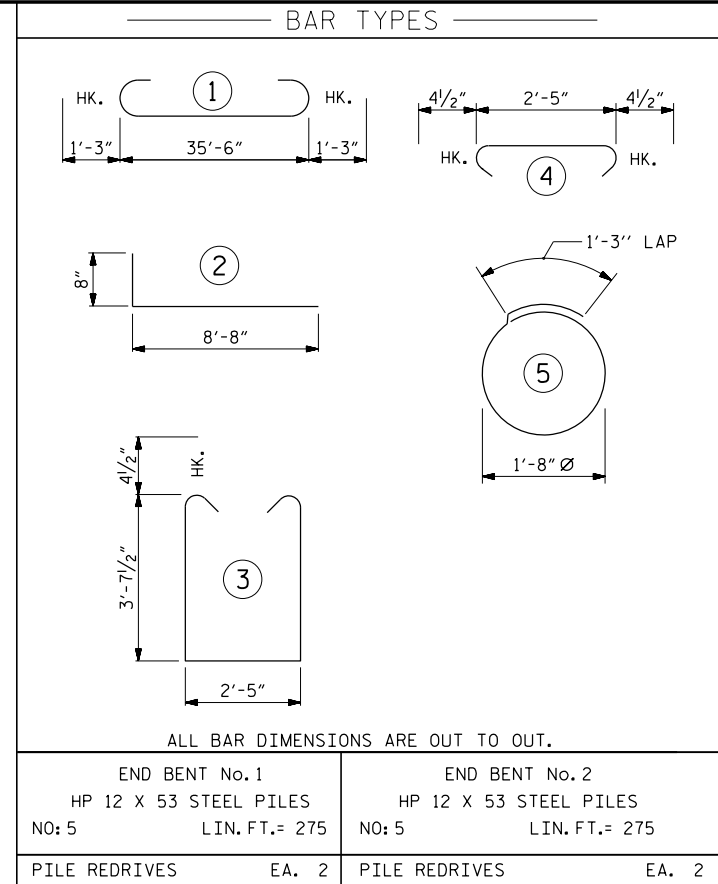
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

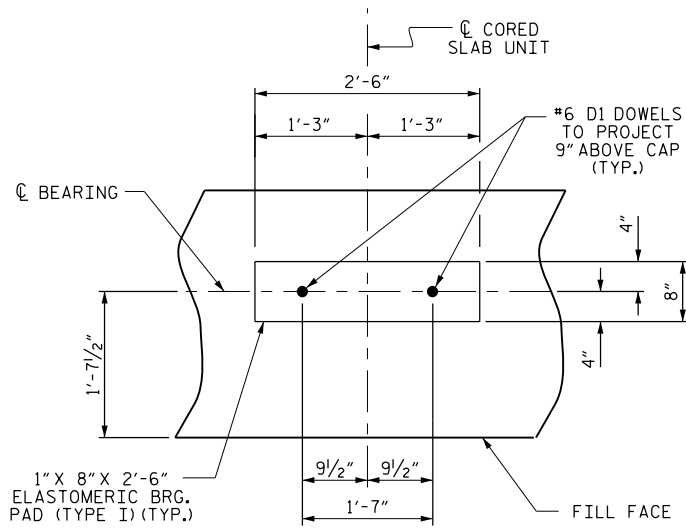
### TEMPORARY DRAINAGE AT END BENT



### PILE SPLICE DETAILS

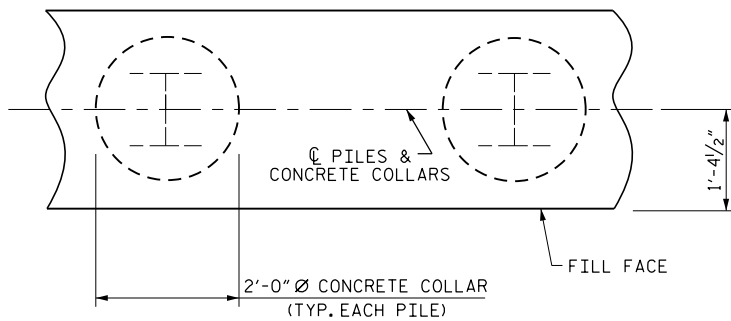


BILL OF MATERIAL FOR ONE END BENT					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		38'-0"	1034
B2	28	#4	STR	19'-1"	357
B3	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	46	#4	3	10'-5"	320
S2	46	#4	4	3'-2"	97
S3	20	#4	5	6'-6"	87
V1	52	#4	STR	6'-2"	214
REINFORCING STEEL (FOR ONE END BENT)					2449 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1	CAP, LOWER PART OF WINGS & COLLARS				17.9 C.Y.
POUR #2	UPPER PART OF WINGS				2.1 C.Y.
TOTAL CLASS A CONCRETE					20.0 C.Y.



### DETAIL "A"

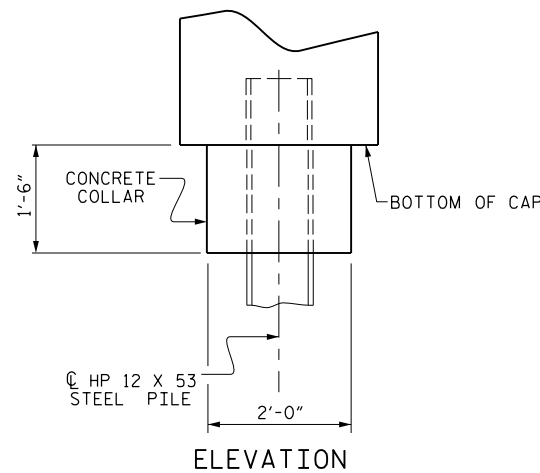
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



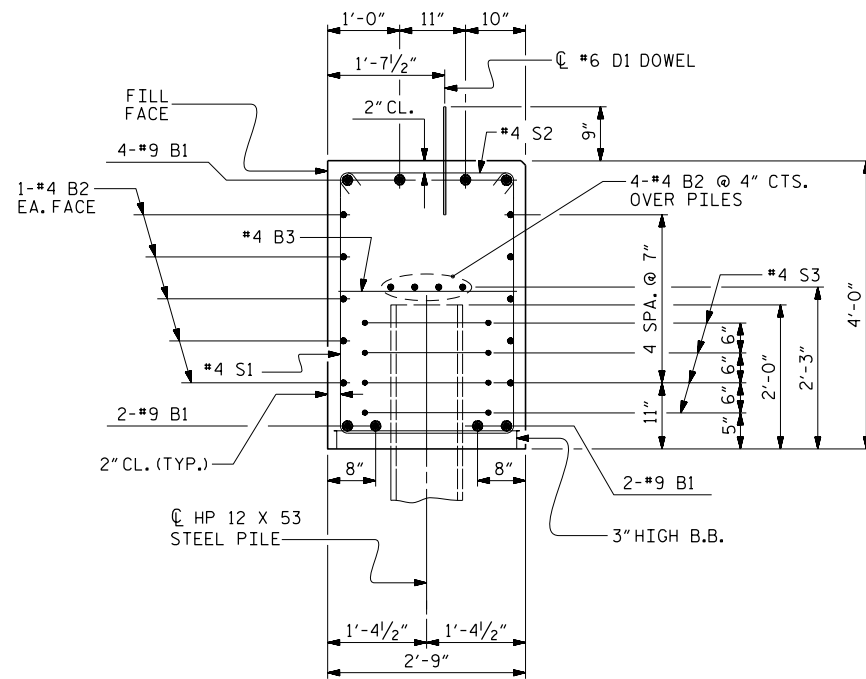
### PLAN

### CORROSION PROTECTION FOR STEEL PILES DETAIL

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



### ELEVATION



### SECTION A-A

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

PROJECT NO. 17BP.3.R.19

SAMPSON COUNTY

STATION: 13+65.00 -L-

SHEET 4 OF 4



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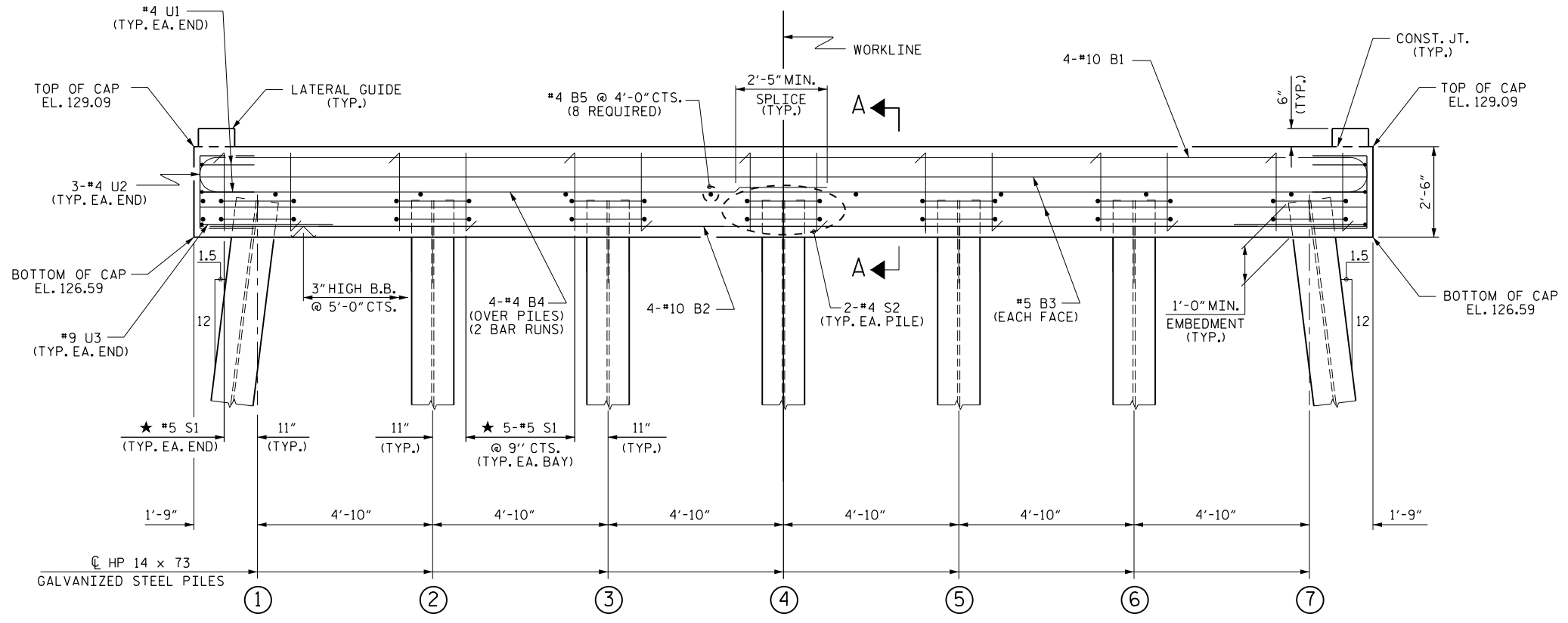
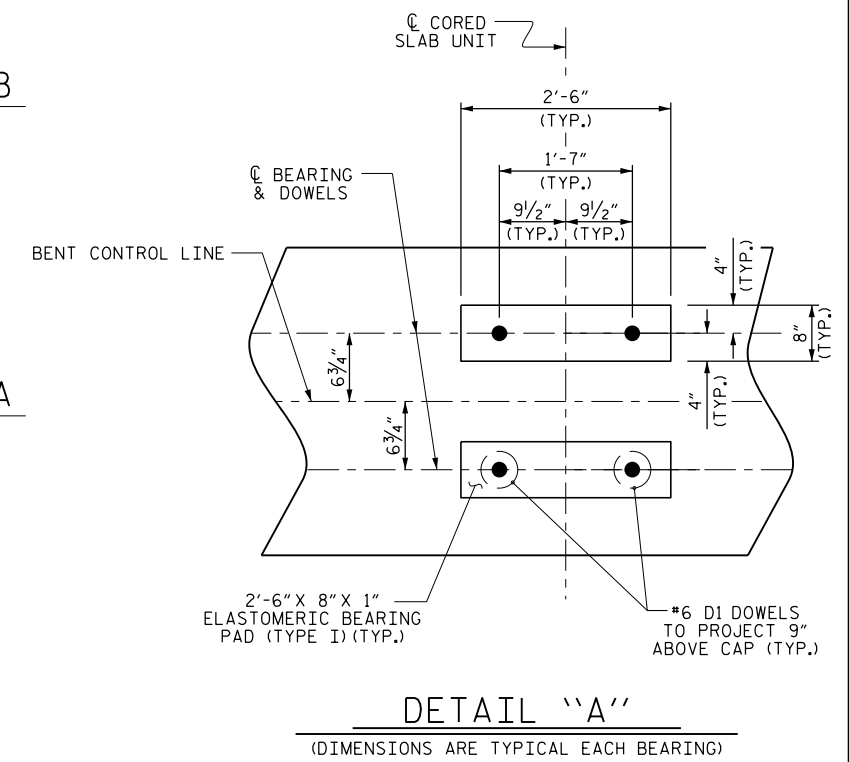
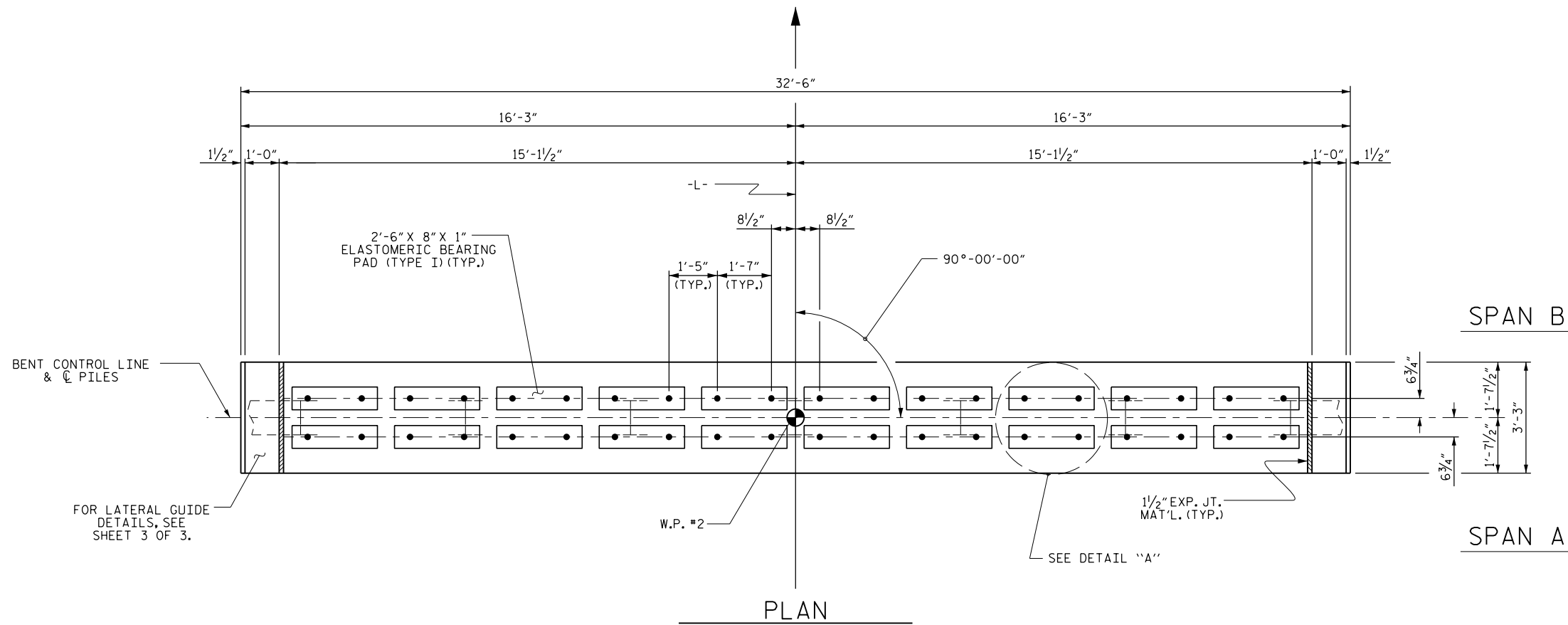


ASSEMBLED BY : JMA	DATE : 5/24/12
CHECKED BY : PLJ	DATE : 5/28/12
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			18

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.
- ★ INVERT ALTERNATE STIRRUPS.
- GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 27 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



PROJECT NO. 17BP.3.R.19  
 SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 1 OF 3



STATE OF NORTH CAROLINA  
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 RALEIGH

SUBSTRUCTURE  
 BENT No. 1

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ASSEMBLED BY : JMA DATE : 5/24/12  
 CHECKED BY : PLJ DATE : 5/28/12  
 DRAWN BY : DGE 05/10  
 CHECKED BY : MKT 05/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			18
2			4			

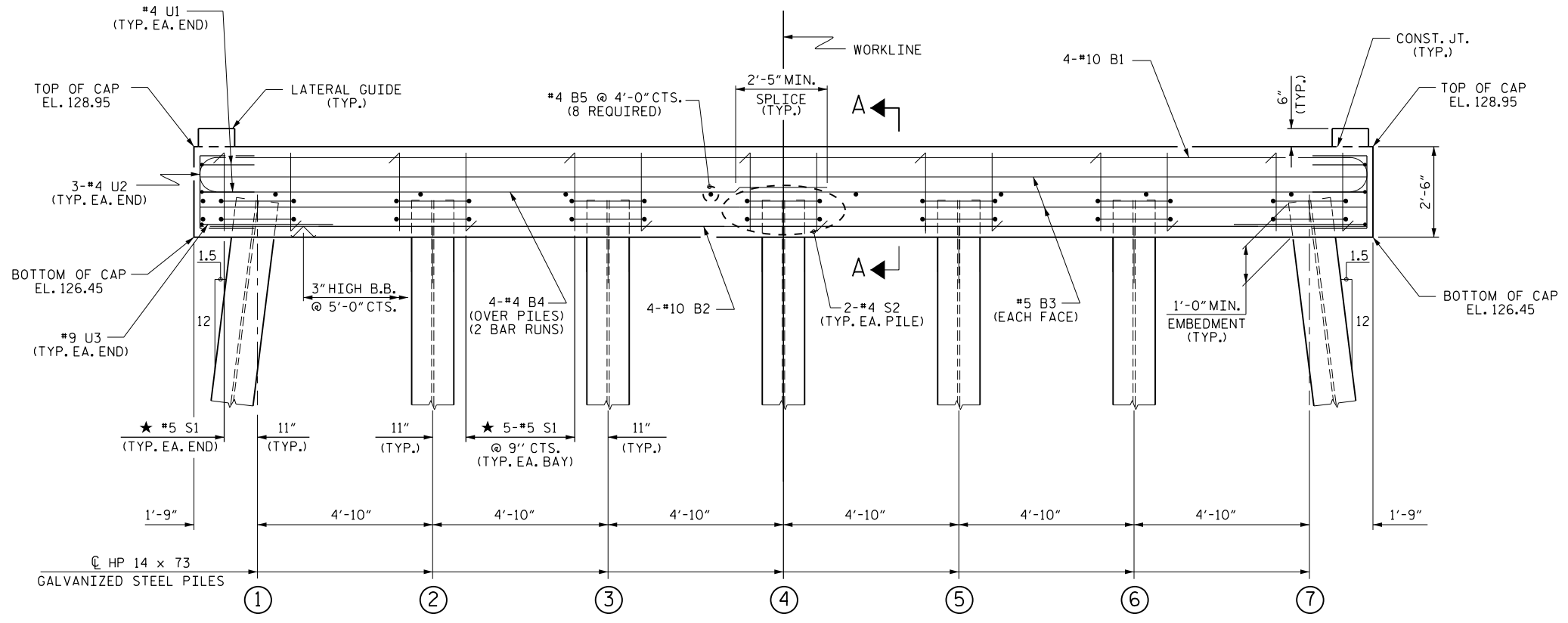
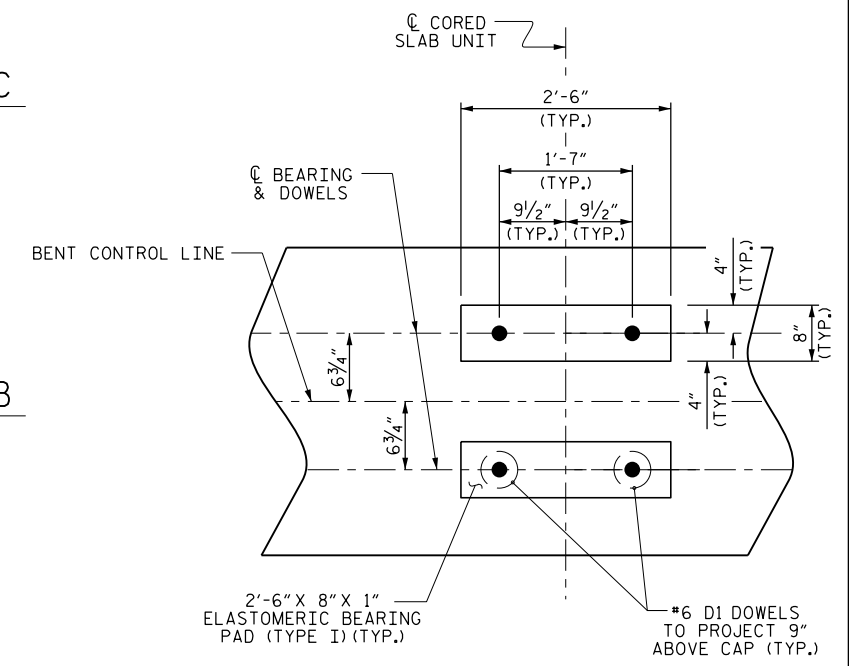
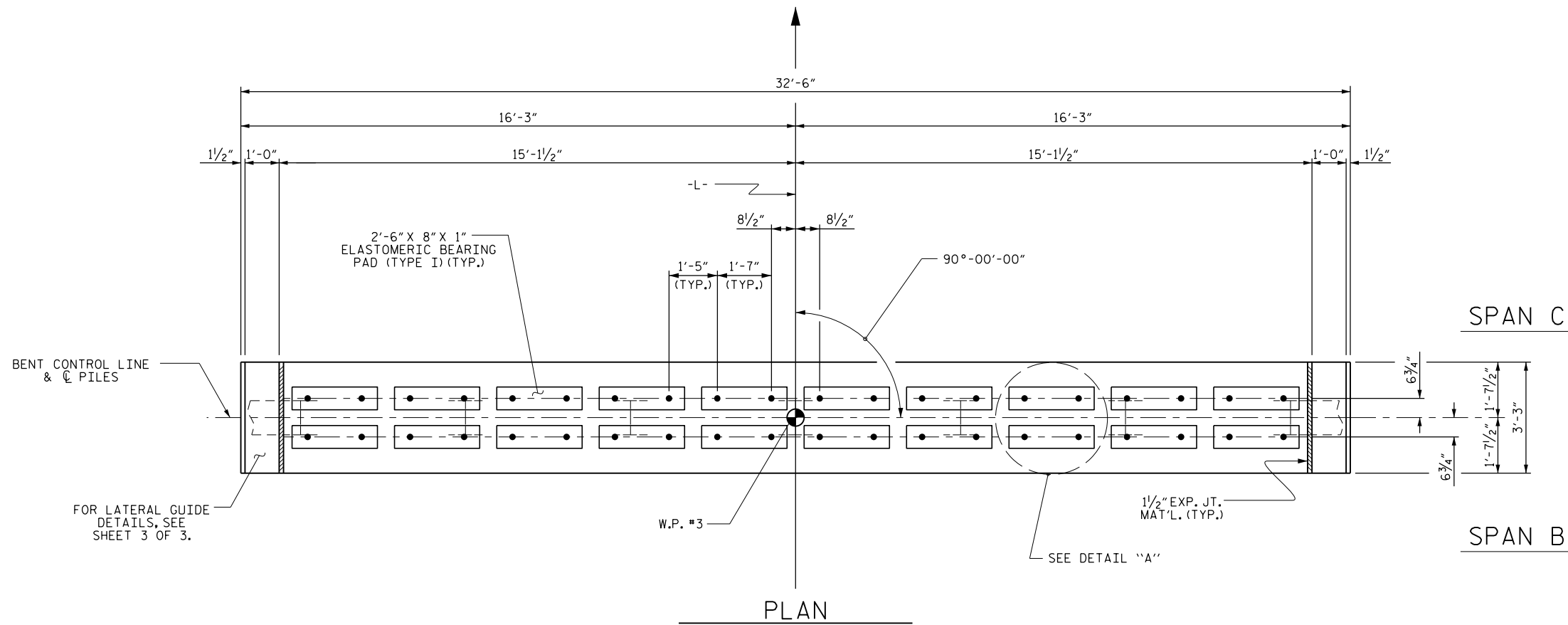
NOTES

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

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 30 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



PROJECT NO. 17BP.3.R.19  
 SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 2 OF 3



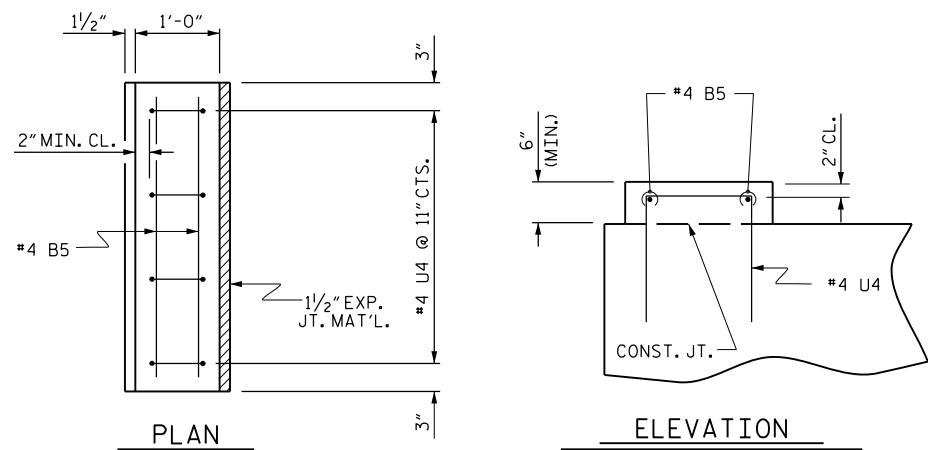
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 BENT No. 2

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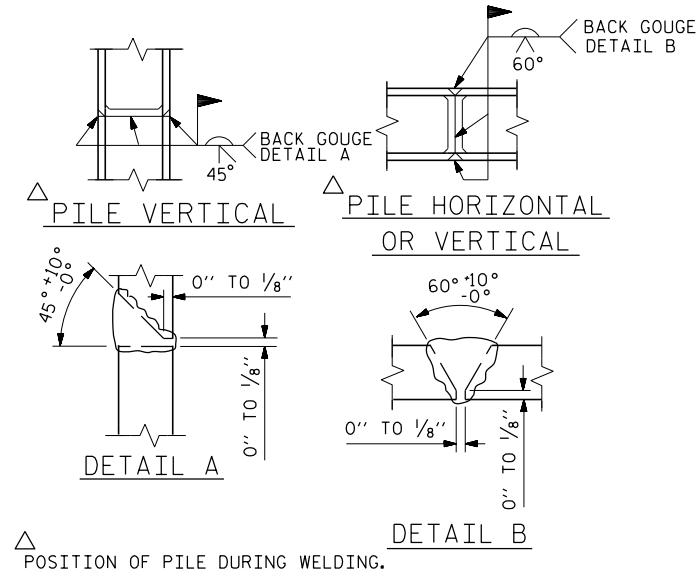
ASSEMBLED BY: JMA DATE: 5/24/12  
 CHECKED BY: PLJ DATE: 5/28/12  
 DRAWN BY: DGE 05/10  
 CHECKED BY: MKT 05/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			18
2			4			

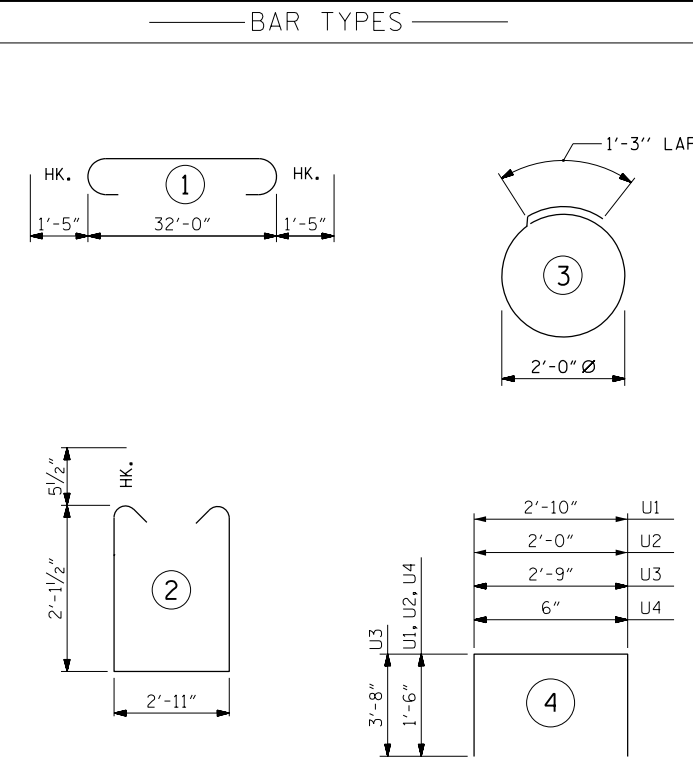




**LATERAL GUIDE DETAILS**  
(LEFT LATERAL GUIDE SHOWN, RIGHT SIDE SIMILAR)

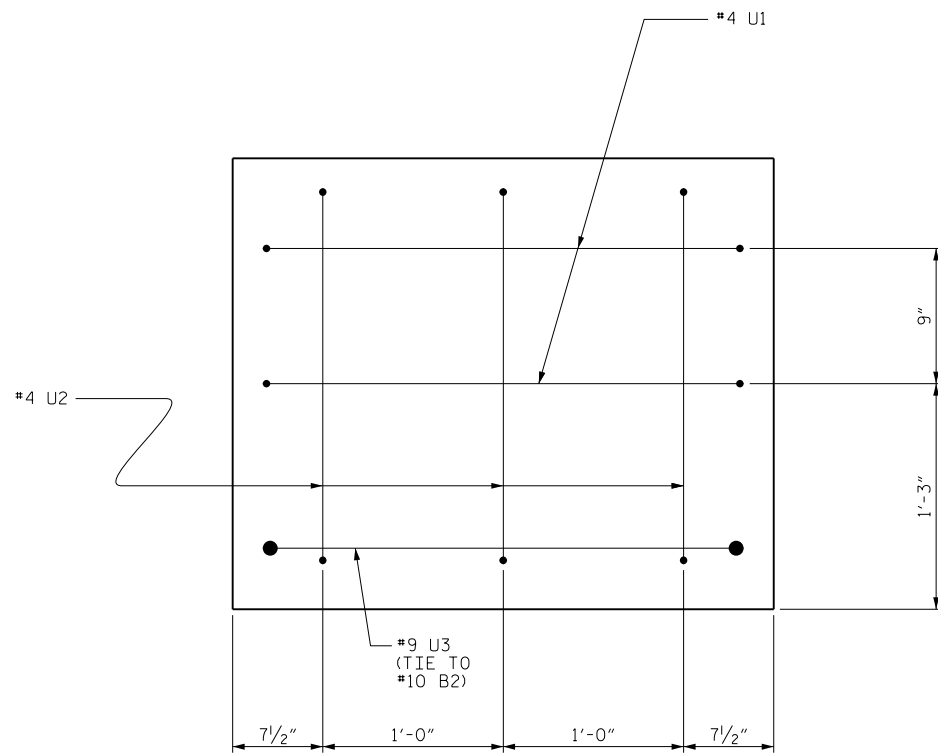


**PILE SPLICE DETAILS**  
POSITION OF PILE DURING WELDING.

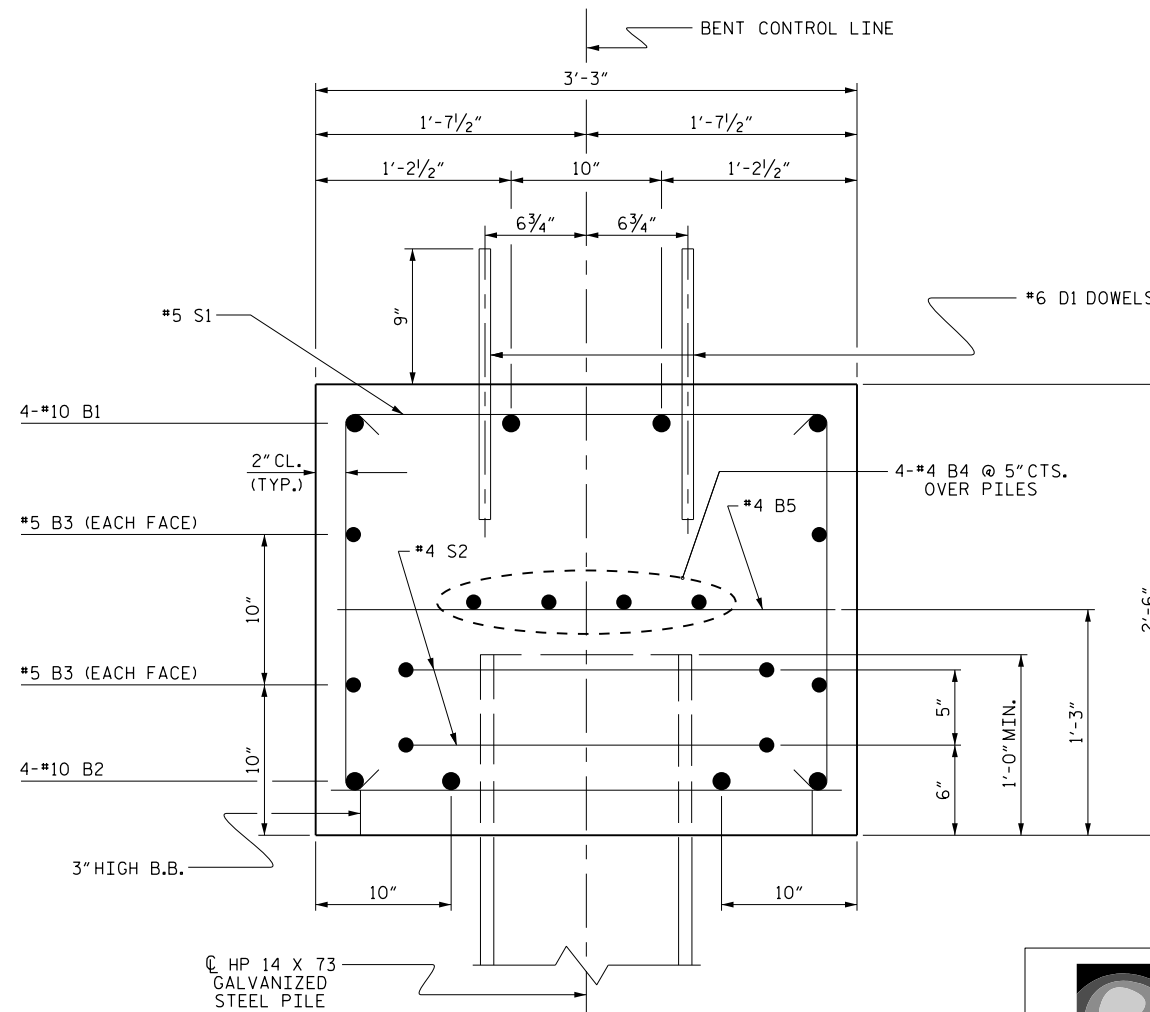


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	34'-10"	600
B2	4	#10	STR	32'-2"	554
B3	4	#5	STR	32'-2"	134
B4	8	#4	STR	17'-4"	93
B5	12	#4	STR	2'-11"	23
D1	40	#6	STR	1'-6"	90
S1	32	#5	2	8'-1"	270
S2	14	#4	3	7'-7"	71
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19
REINFORCING STEEL (FOR ONE BENT)				1959 LBS	
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #1 (CAP)				9.8 C.Y.	
POUR #2 (LATERAL GUIDES)				0.1 C.Y.	
TOTAL CLASS A CONCRETE				9.9 C.Y.	
HP 14 X 73 GALVANIZED STEEL PILES					
BENT 1					
No. 7			LIN. FT.	455	
BENT 2					
No. 7			LIN. FT.	525	
PILE REDRIVES					
BENT 1		EA.	2		
BENT 2		EA.	2		
PDA TESTING					
BENT 1		EA.	1		
BENT 2		EA.	1		

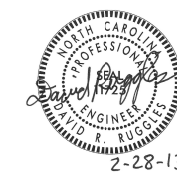


**END OF CAP VIEW**  
(TYPICAL BOTH ENDS)



**SECTION A-A**

DRAWN BY : JMA DATE : 5/24/12  
 CHECKED BY : PLJ DATE : 5/28/12  
 DRAWN BY : DGE 05/10  
 CHECKED BY : MKT 05/10



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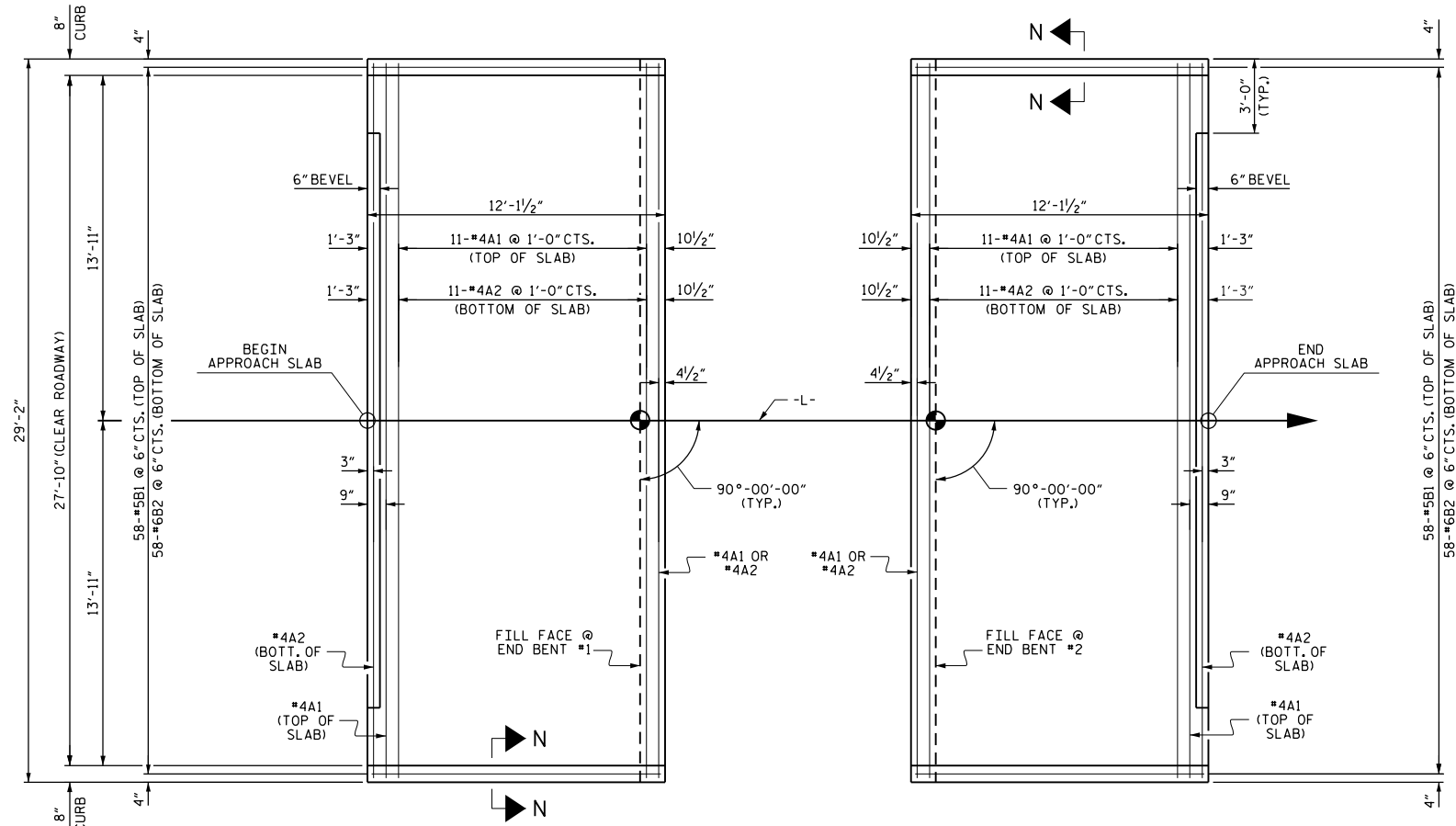


PROJECT NO. 17BP.3.R.19  
 SAMPSON COUNTY  
 STATION: 13+65.00 -L-  
 SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

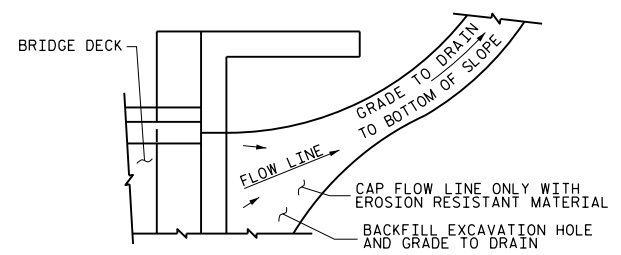
**SUBSTRUCTURE**  
**BENTS No. 1 & 2**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			18



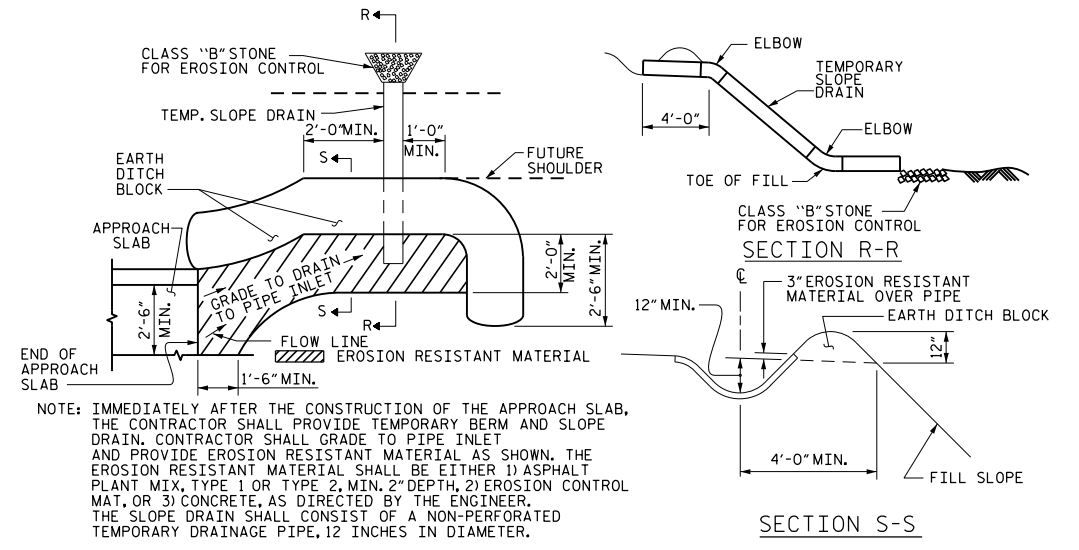
PLAN @ END BENT #1  
 PLAN @ END BENT #2  
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

**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.



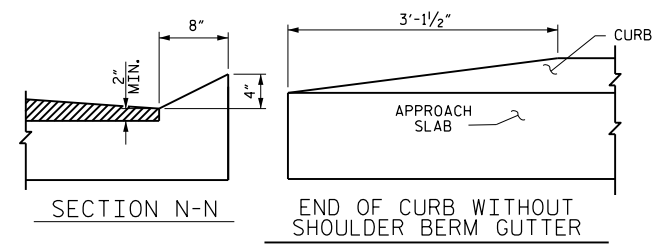
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT 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  
 TEMPORARY BERM AND SLOPE DRAIN DETAILS  
 (TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

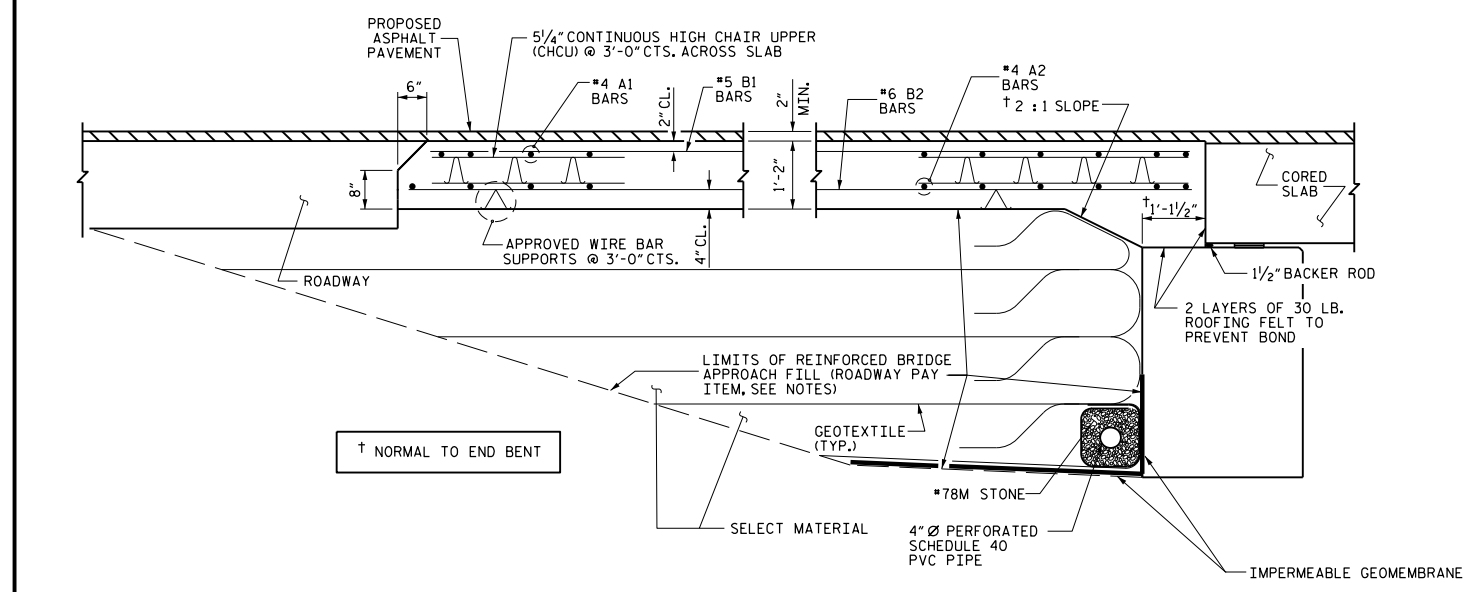


SECTION N-N  
 END OF CURB WITHOUT SHOULDER BERM GUTTER  
 CURB DETAILS

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

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BILL OF MATERIAL						
APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	28'-10"	250	
A2	13	#4	STR	28'-10"	250	
*B1	58	#5	STR	11'-2"	676	
B2	58	#6	STR	11'-8"	1016	
REINFORCING STEEL					LBS.	1266
* EPOXY COATED REINFORCING STEEL					LBS.	926
CLASS AA CONCRETE					C. Y.	16.9
APPROACH SLAB AT EB #2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	28'-10"	250	
A2	13	#4	STR	28'-10"	250	
*B1	58	#5	STR	11'-2"	676	
B2	58	#6	STR	11'-8"	1016	
REINFORCING STEEL					LBS.	1266
* EPOXY COATED REINFORCING STEEL					LBS.	926
CLASS AA CONCRETE					C. Y.	16.9



SECTION THRU SLAB

PROJECT NO. 17BP.3.R.19  
 SAMPSON COUNTY  
 STATION: 13+65.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT

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

SHEET NO. S-17  
 TOTAL SHEETS 18

ASSEMBLED BY : PLJ  
 CHECKED BY : DRR  
 DATE : 2/26/13  
 DATE : 2/27/13  
 DRAWN BY : SHS/MAA 5-09  
 CHECKED BY : BCH 5-09  
 REV. 12-11  
 MAA/AAC

## 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.

PROJECT NO. 17BP.3.R.19  
SAMPSON COUNTY  
STATION: 13+65.00 -L-



2-28-13

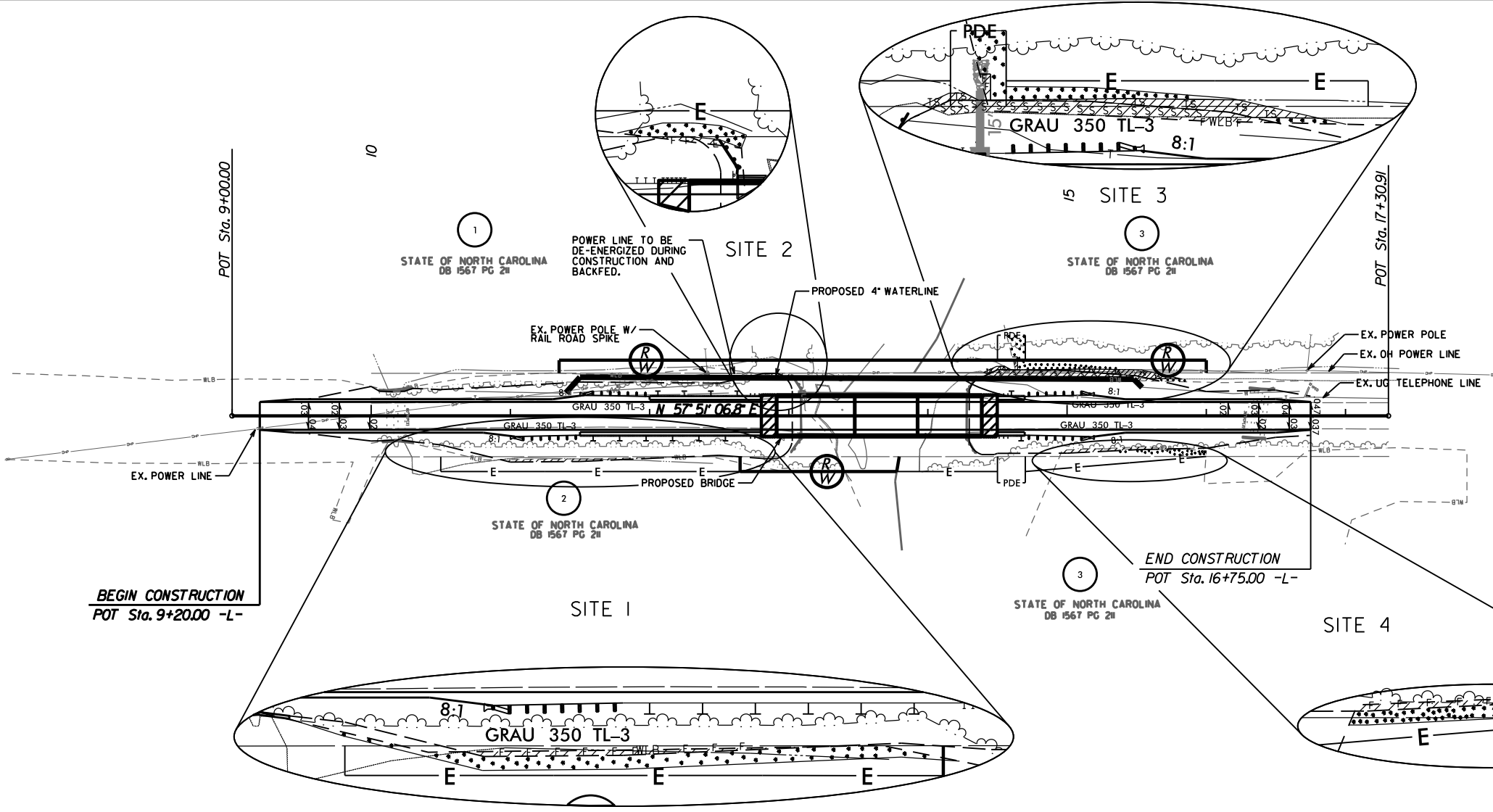
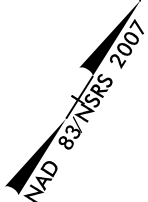
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH






## STANDARD NOTES

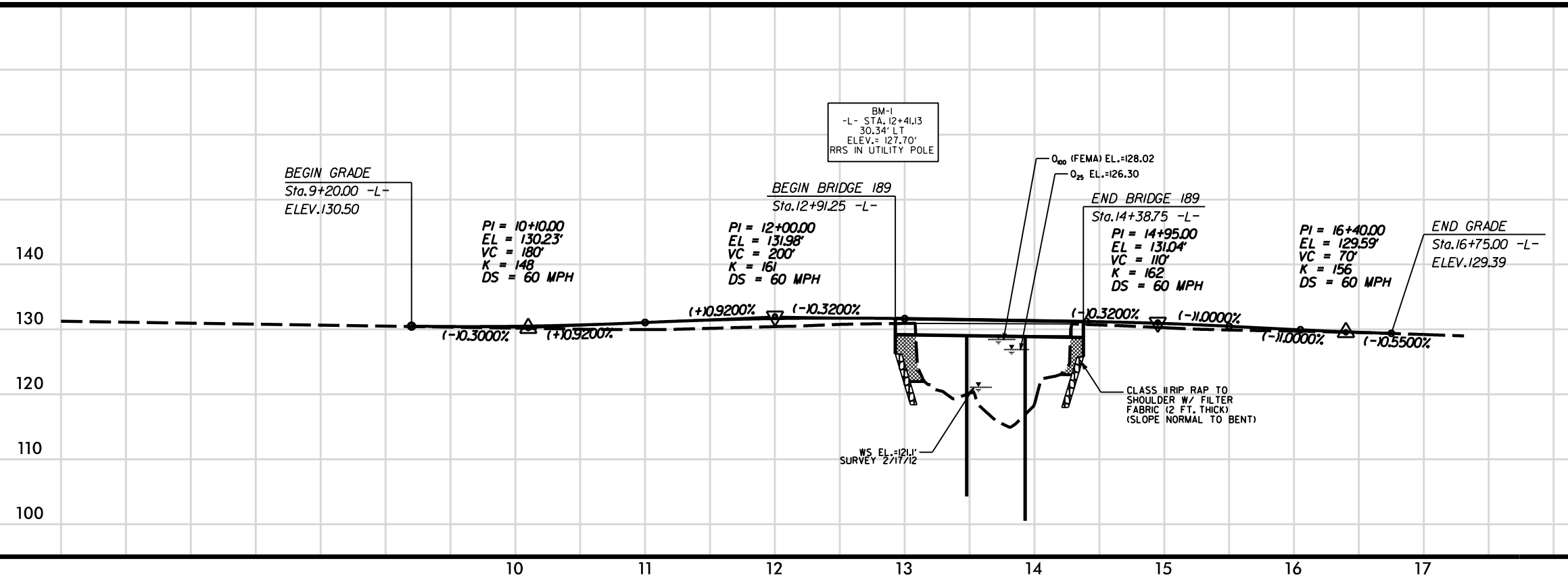
ASSEMBLED BY : JMA	DATE : 5/24/12
CHECKED BY : PLJ	DATE : 5/28/12
DRAWN BY : SHS/MAA 5-09	REV. 12-11
CHECKED BY : BCH 5-09	MAA/AAC

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			18
2			4			



-  DENOTES EXCAVATION IN WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 2700 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 126.30 FT
BASE DISCHARGE	= 4590 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 128.02 FT
OVERTOPPING DISCHARGE	= 5600 CFS
OVERTOPPING FREQUENCY	= +500 YRS
OVERTOPPING ELEVATION	= 129.00 FT
DATE OF SURVEY	= 2/17/2012
W.S. ELEVATION AT DATE OF SURVEY	= 121.1 FT

REVISIONS

9/24/2013 ENV\_PSH\_01.dgn