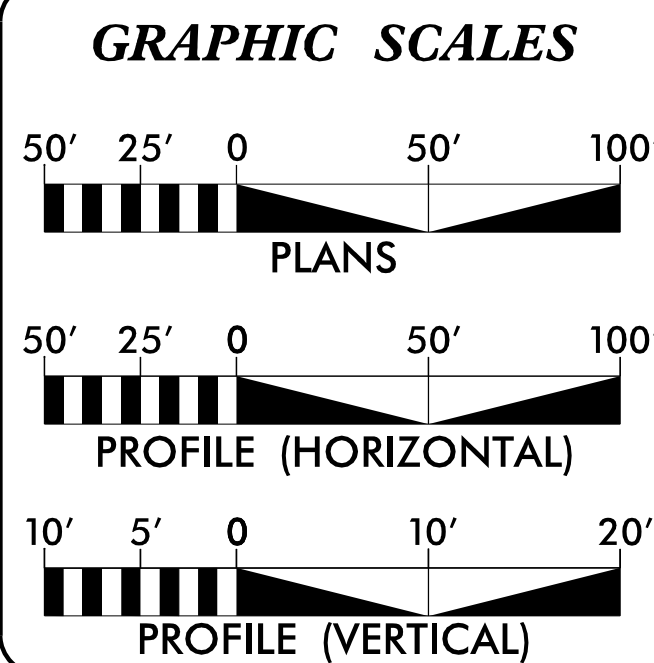


17BP.3.R.40

PROJECT:

DC00122

CONTRACT:



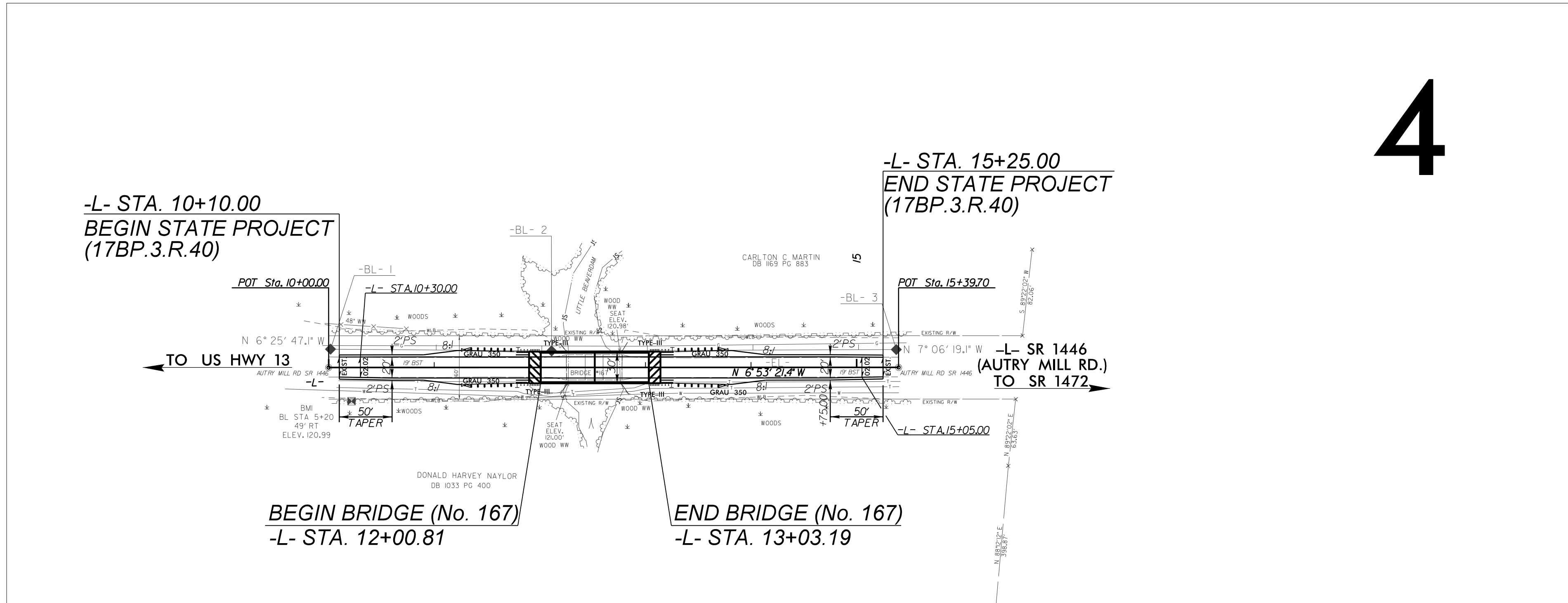
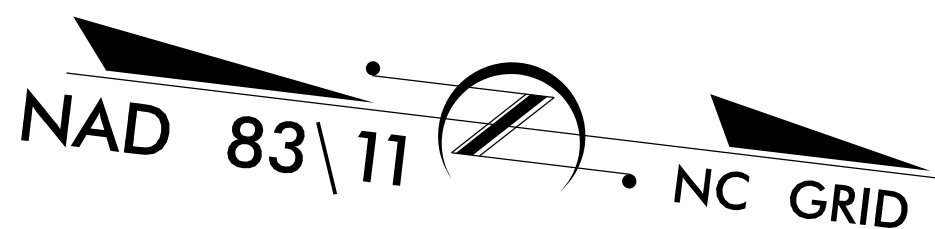
DESIGN DATA

ADT 2013 = 980
ADT 2033 = 1,200
K = N/A
D = N/A
T = N/A
V = STATUTORY
55 MPH

FUNC CLASS =
RURAL LOCAL
SUBREGIONAL TIER

SAMPSON COUNTY

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

[illegible]

4

5/14/99

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, MILLING DETAIL, AND WEDGING DETAIL
2A	GEOTEXTILE OVERLAP DETAIL, AND ROCK PLATING DETAIL
3	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, SHOULDER BERM GUTTER SUMMARY, AND RIGHT OF WAY SUMMARY, CENTERLINE COORDINATE LIST
4	PLAN / PROFILE SHEET
TMP-1 THRU TMP-2	TRANSPORTATION MANAGEMENT PLAN
SP-1	SIGN DESIGN PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS
X-A THRU X-3	CROSS-SECTIONS
S-1 THRU S-16	STRUCTURE PLANS

2012 ROADWAY ENGLISH STANDARD DRAWINGS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
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 (Details in Lieu of Standard Drawing as March 2013 Letting)
876.02	Guide for Rip Rap at Pipe Outlets

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

NC License
Number F-0159

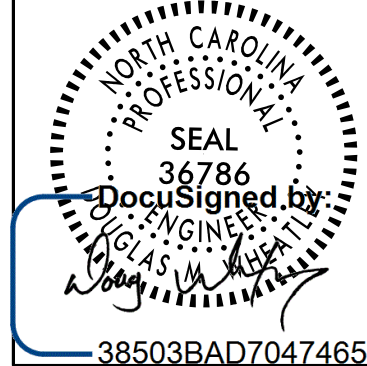
PROJECT REFERENCE NO.

17BP.3.R.40

SHEET NO.

1-A

ROADWAY DESIGN
ENGINEER



GENERAL NOTES:
2012 SPECIFICATIONS
EFFECTIVE: 01/17/12
REVISED: 10/31/14

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

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY 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 FOR THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATIONS 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 SAMPSON COUNTY UTILITIES, SOUTH RIVER EMC, AND STAR TELEPHONE. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS,

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

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.
17BP-3,R,40

SHEET NO.
1B

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

NC License
Number F-0159

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	-----✕-----✕-----✕-----
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	⊠
Proposed Lateral, Tail, Head Ditch	⊠
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 RW Marker	-----▲-----R W-----
Proposed Control of Access Line with Concrete C/A Marker	-----▲-----C A-----
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	⊠
Existing Metal Guardrail	-----T-----
Proposed Guardrail	-----T-----
Existing Cable Guiderail	-----T-----
Proposed Cable Guiderail	-----T-----
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	-----S-----

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:

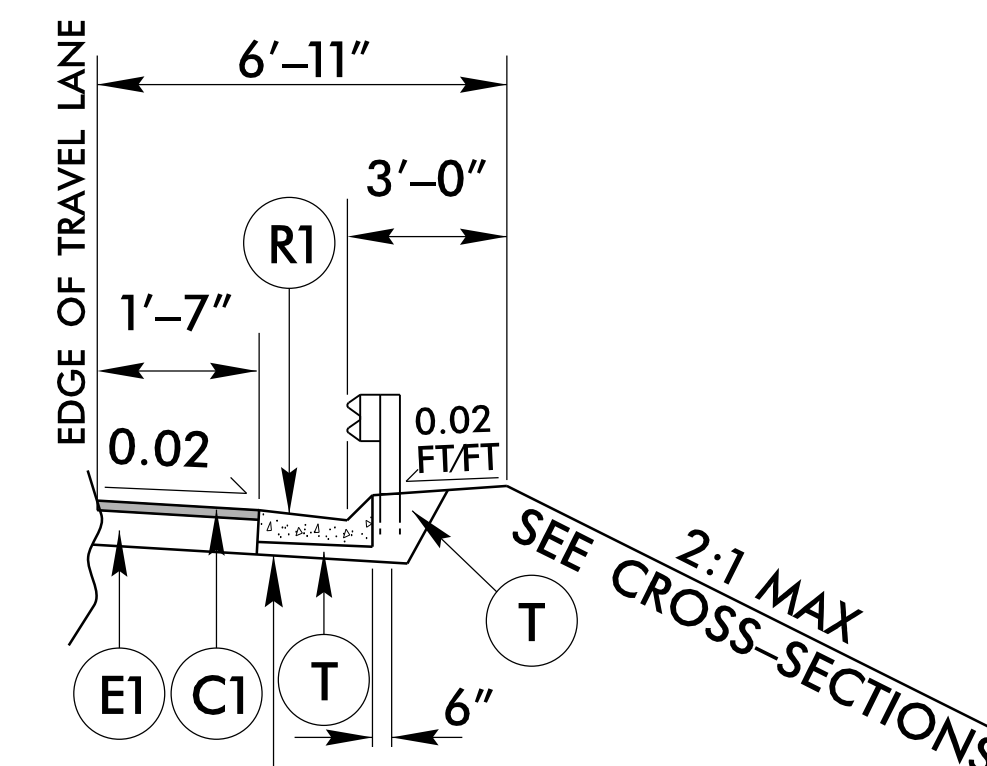
Sanitary Sewer Manhole	⊠
Sanitary Sewer Cleanout	⊠
U/G Sanitary Sewer Line	-----SS-----
Above Ground Sanitary Sewer	-----A/G Sanitary Sewer-----
Recorded SS Forced Main Line	-----FSS-----
Designated SS Forced Main Line (S.U.E.*)	-----FSS-----

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	⊠
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	-----ZUTL-----
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.

LOCHNER H. W. LOCHNER, INC. 2840 PLAZA PLACE, SUITE 202 RALEIGH, NC 27612	PROJECT REFERENCE NO.	
	17BP.3.R.40	SHEET NO. 2
NC License Number F-0159		RW SHEET NO.
SEAL ONLY FOR ROADWAY DESIGN ELEMENTS		ROADWAY DESIGN ENGINEER 
		38503BAD7047465... 8/27/2015

DETAIL OF SHOULDER BERM GUTTER

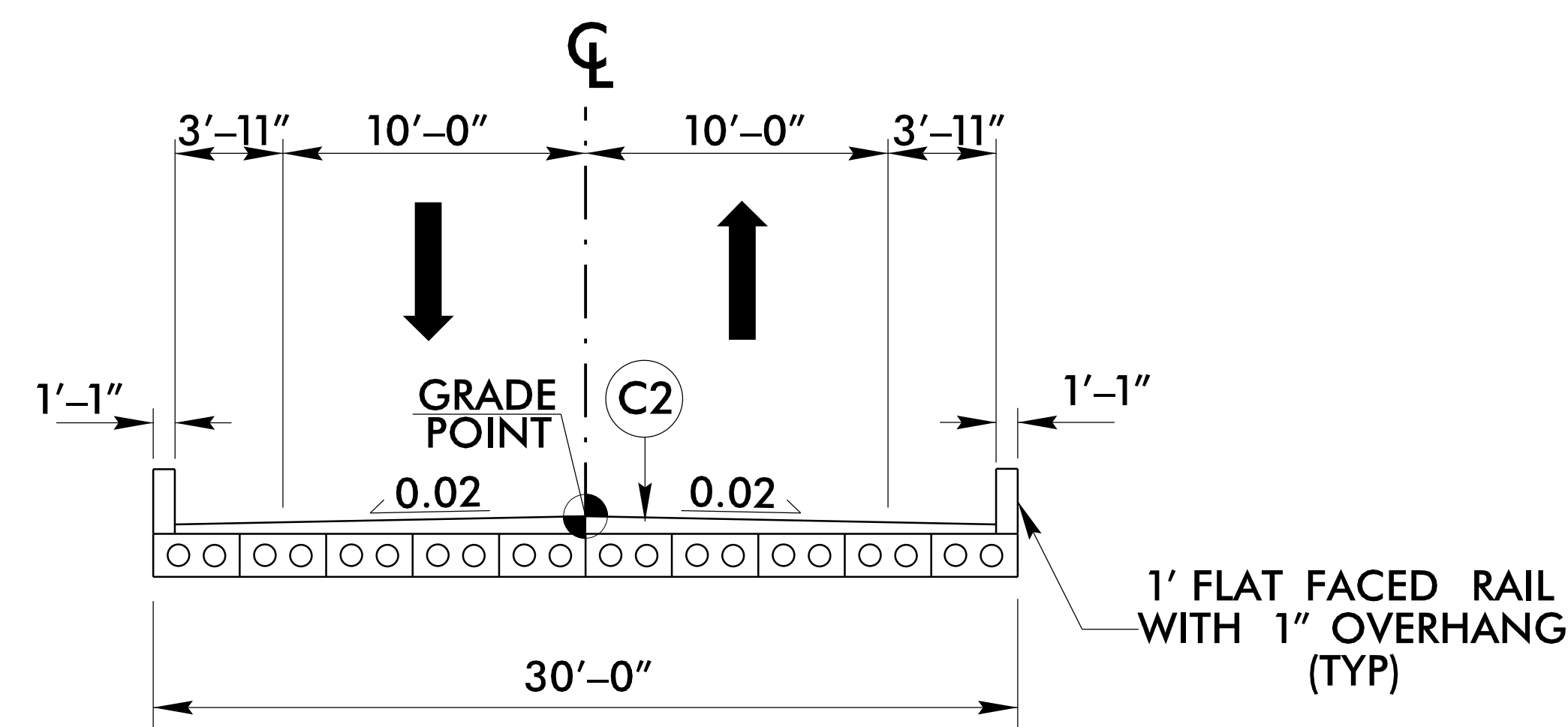


PARTIAL TYPICAL SECTION NO. 1A

-L	STA.	11+77.31	RT.	TO	11+89.81	RT.
-L	STA.	11+77.31	LT.	TO	11+89.81	LT.
-L	STA.	13+14.19	RT.	TO	13+26.69	RT.
-L	STA.	13+14.19	LT.	TO	13+26.69	LT.

TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1



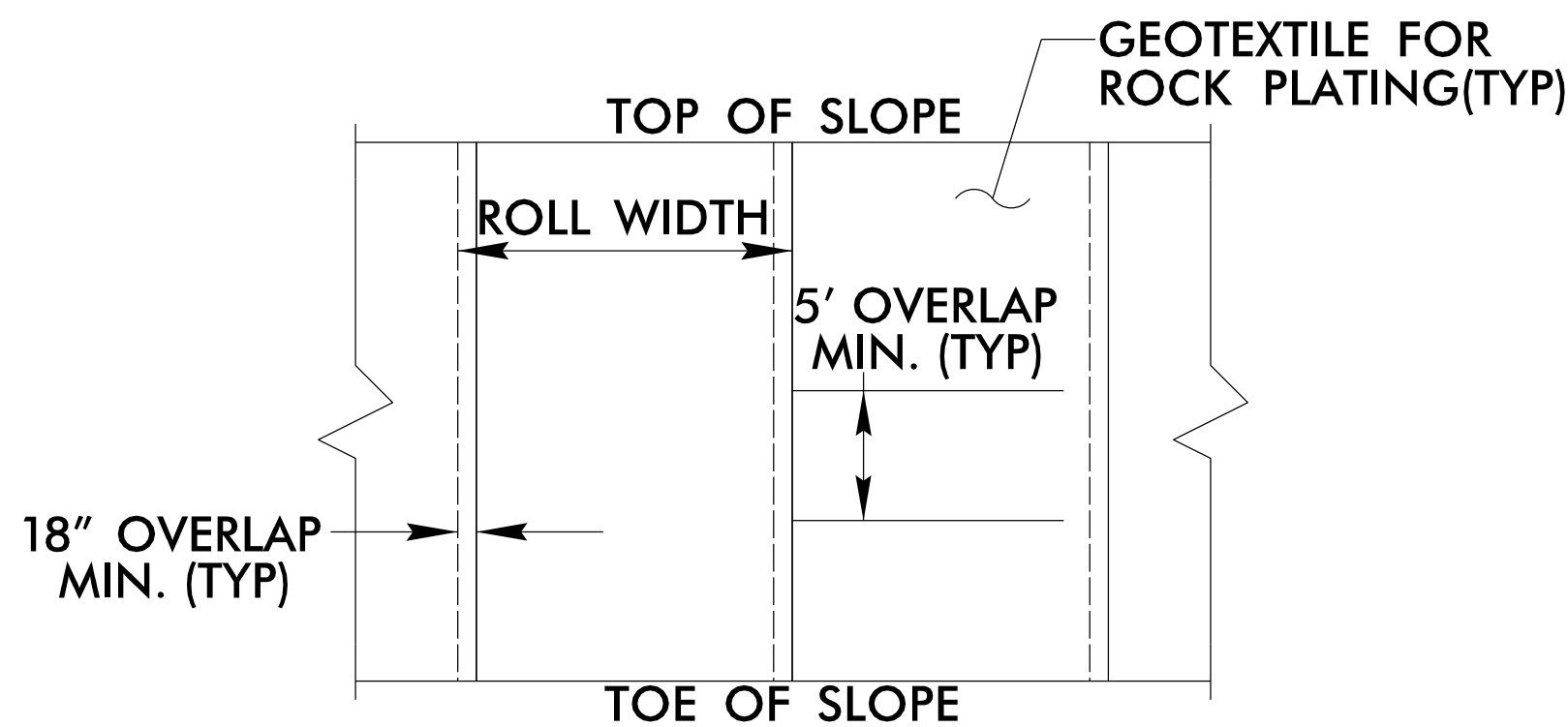
TYPICAL SECTION NO. 2

CORED SLAB BRIDGE OVERLAY

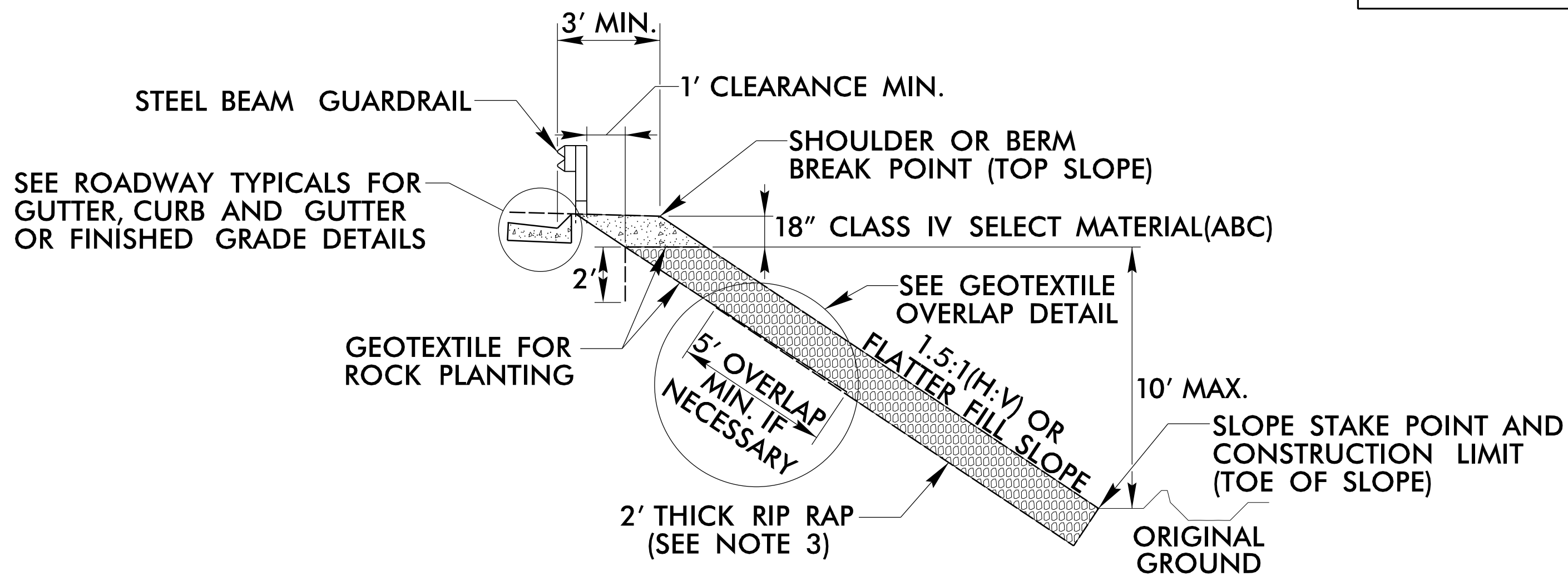
- L- 12 + 00.81 (BEGIN BRIDGE) TO STA. 13 + 03.19 (END BRIDGE)

MILLING DETAIL

Wedging Detail For Resurfacing



GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)



ROCK PLATING DETAIL- TYPICAL SECTION
-L- STA. 11+26 TO BRIDGE EMBANKMENT LT. & RT.
-L- BRIDGE EMBANKMENT TO STA. 13+78 LT. & RT.

NOTES:

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

COMPUTED BY: 75% DMW DATE: 07-11-2014
CHECKED BY: 90% DWM DATE: 07-22-2015

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

NC License
Number F-0159

NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-0929

 **ECOLOGICAL
ENGINEERING**

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.40	3

RIGHT OF WAY AREA DATA

[illegible]

SUMMARY OF EARTHWORK

STATION	STATION	UNCLASSIFIED EXCAVATION CY	EMBANK + % CY	BORROW CY	WASTE CY
10 + 10.00	12 + 00.81	8	91	83	
13 + 03.19	15 + 25.00	14	32	18	
TOTAL		22	123	101	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				6	
GRAND TOTAL		22		107	
SAY		25		110	

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

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
L (LT)	11 + 77.31	11 + 89.81	12.50
L (RT)	11 + 77.31	11 + 89.81	12.50
L (LT)	13 + 14.19	13 + 26.69	12.50
L (RT)	13 + 14.19	13 + 26.69	12.50
TOTAL			50.00

CENTERLINE COORDINATE LIST

POINT NO.	SURVEY LINE	STATION	NORTHING (Y)	EASTING (X)
1	—L—	10 + 00.00	519,954.164	2,115,344.073
2	—L—	10 + 50.00	520,003.803	2,115,338.076
3	—L—	11 + 00.00	520,053.442	2,115,332.078
4	—L—	11 + 50.00	520,103.081	2,115,326.081
5	—L—	12 + 00.00	520,152.720	2,115,320.083
6	—L—	12 + 50.00	520,202.359	2,115,314.085
7	—L—	13 + 00.00	520,251.998	2,115,308.088
8	—L—	13 + 50.00	520,301.637	2,115,302.090
9	—L—	14 + 00.00	520,351.276	2,115,296.093
10	—L—	14 + 50.00	520,400.915	2,115,290.095
11	—L—	15 + 00.00	520,450.554	2,115,284.098
12	—L—	15 + 39.70	520,489.968	2,115,279.335

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

**SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)**

[illegible]

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

GUARDRAIL SUMMARY

[illegible]

8/17/99

REVISIONS

8/31/2015
H:\Roadway\ProJ\810167_rdy-ps1_04.dgn
LOCHNER

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612



NC License
Number F-0159
NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-4929

PROJECT REFERENCE NO.

17BP.3.R.40

SHEET NO.

4

R/W SHEET NO.

ROADWAY DESIGN
ENGINEER

NORTH CAROLINA
PROFESSIONAL
SEAL
36786

Documented by
J. G. GINGERS
8/31/2015

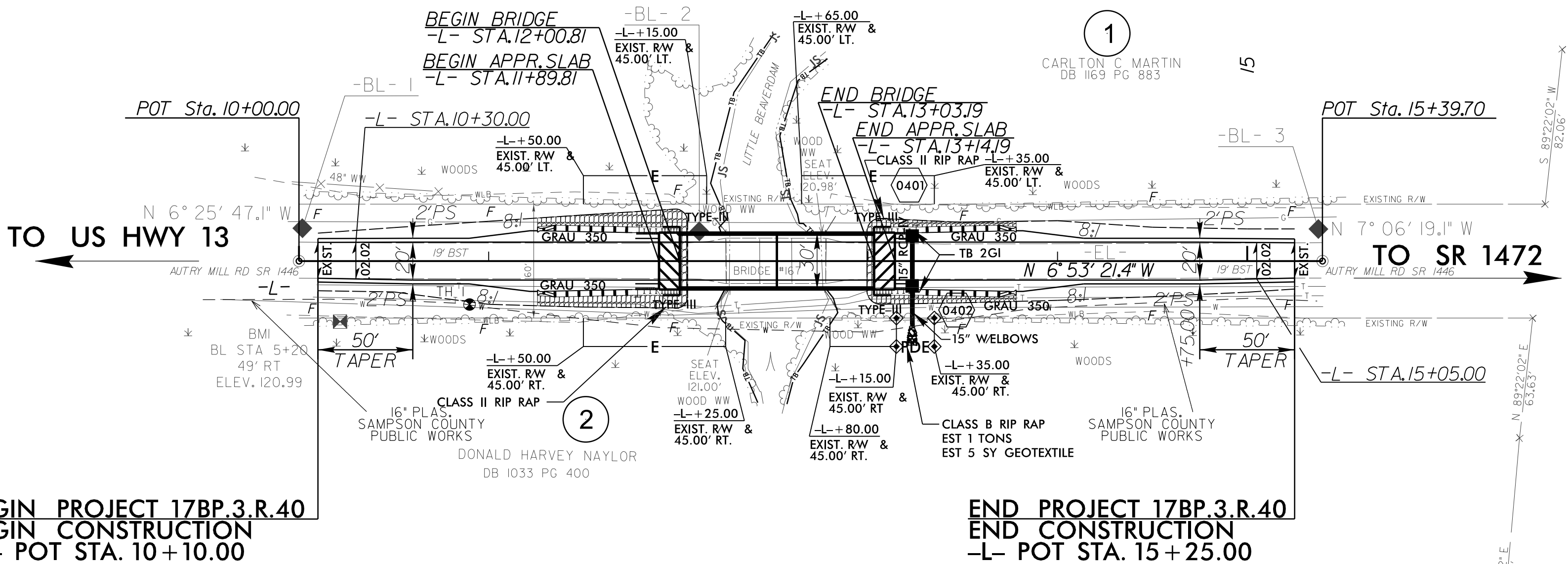
38503BAD7047465

HYDRAULICS
ENGINEER

NORTH CAROLINA
PROFESSIONAL
SEAL
20147

Documented by
Frank Fleming
8/31/2015

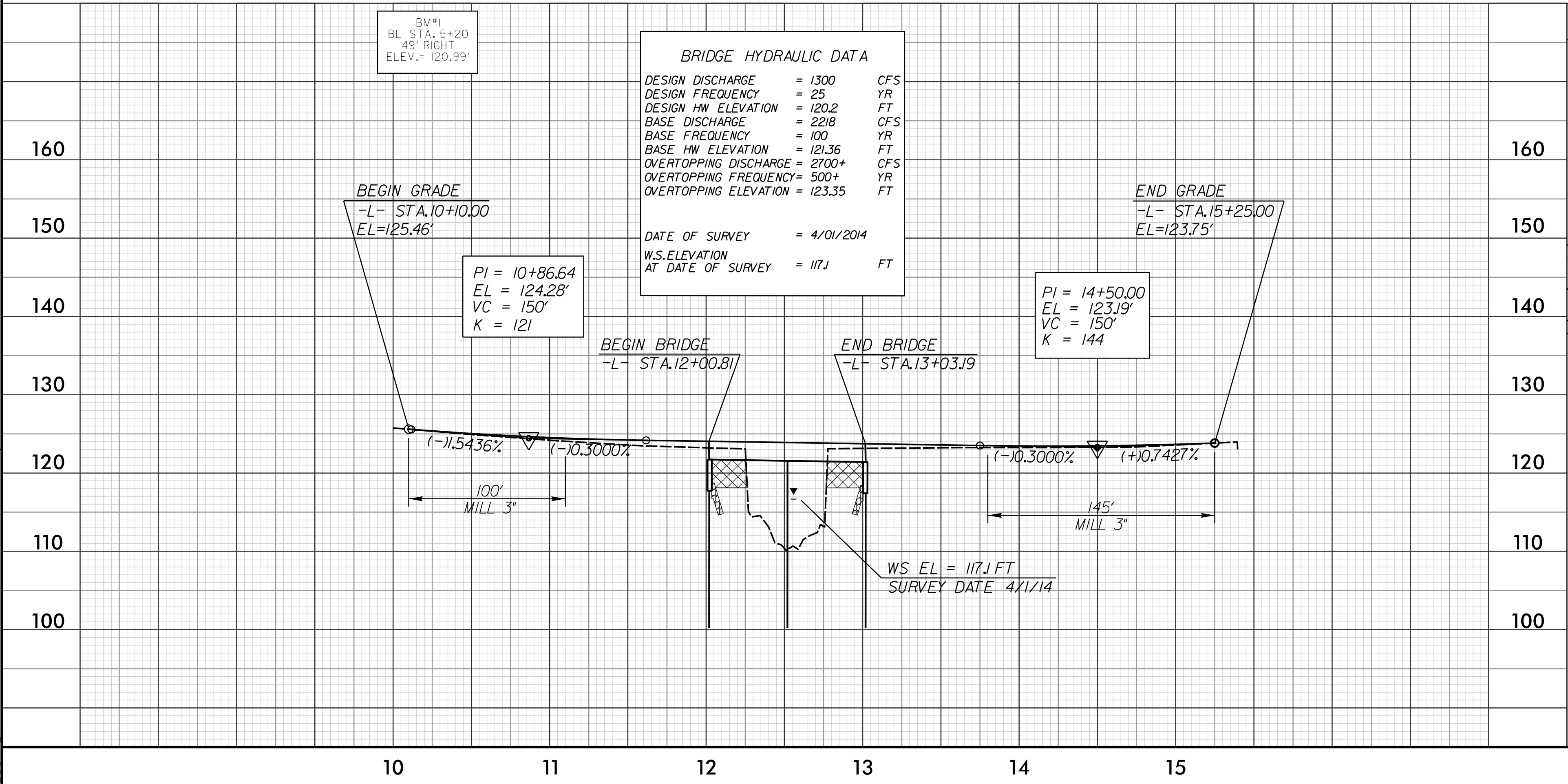
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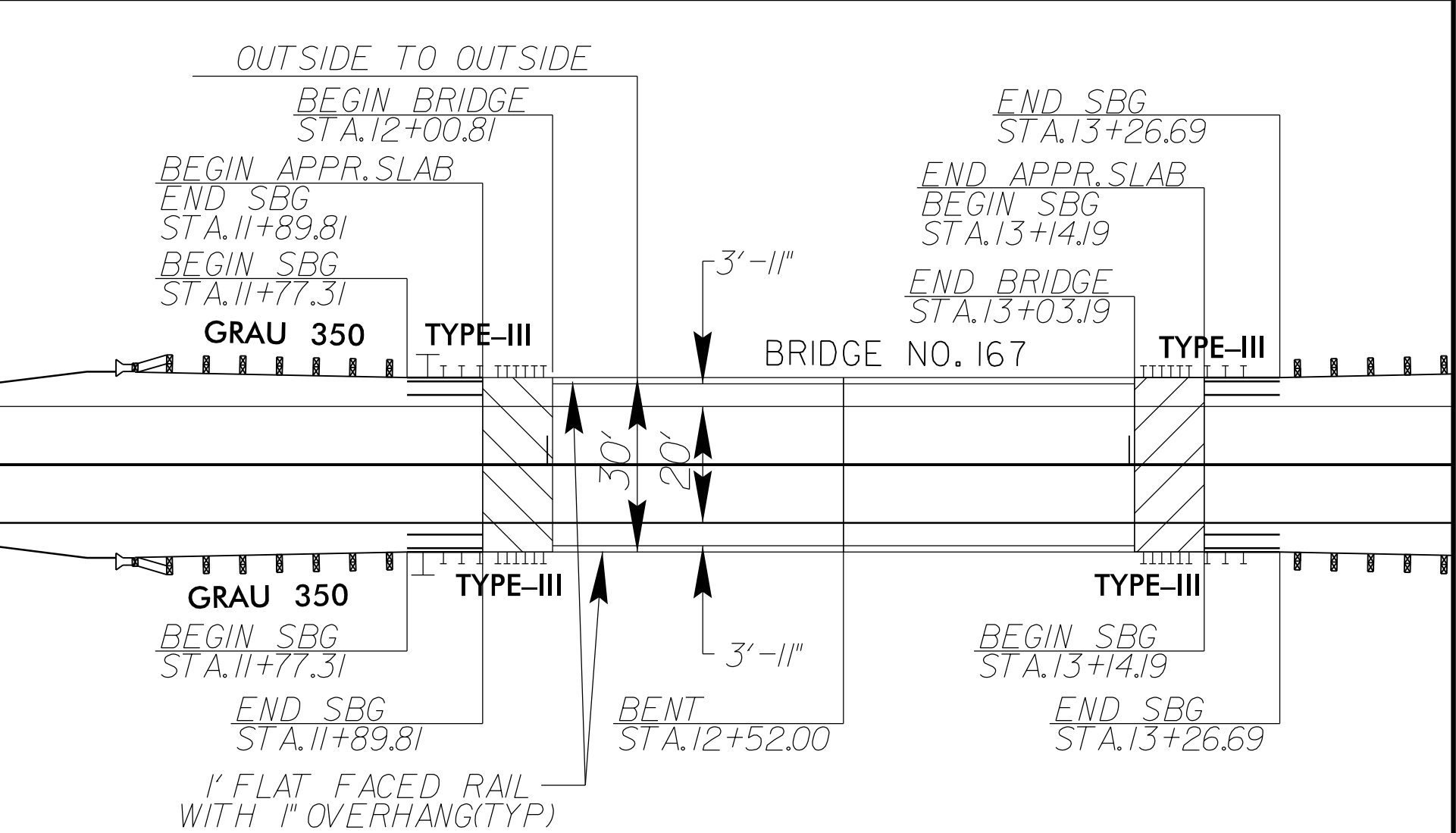
DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "810167 BL-2".
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 520161.847(±ft) EASTING: 2115303.186(±ft)
ELEVATION: 121.99(±ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998728561
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "810167 BL-2" TO -L- STATION 10+00.00 IS 211.67' S 11°08'15.33" E
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

POINT	NORTHING	EASTING	ELEV.
BL-1	519,953.885	2,115,326.622	124.450'
BL-2	520,161.847	2,115,303.186	121.990'
BL-3	520,485.820	2,115,262.803	121.620'
BM1	519,979.484	2,115,373.142	120.990'

USE ROCK PLATING (SEE SHEET 2-A):
-L- LT & RT 11+26 TO BRIDGE EMBANKMENT
-L- LT & RT BRIDGE EMBANKMENT TO 13+78

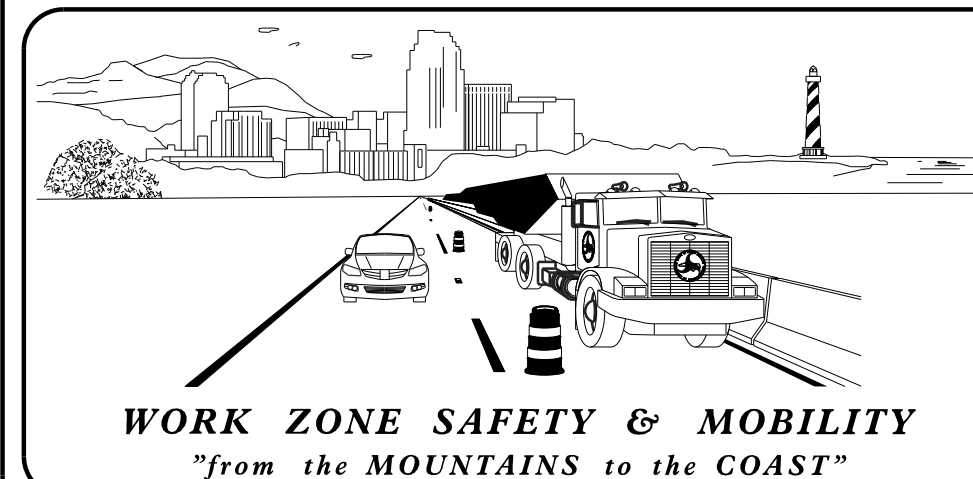


BRIDGE/ PAVEMENT RELATIONSHIP SKETCH

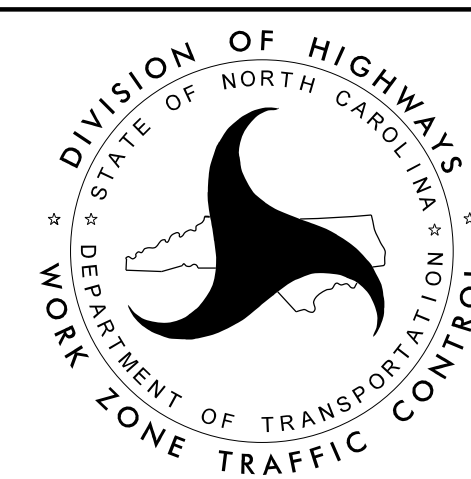


TRANSPORTATION MANAGEMENT PLAN

SAMPSON COUNTY



Katherine Hite, PE ***DIVISION TRAFFIC ENGINEER***



<u>SHEET NO.</u>	<u>TITLE</u>
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS AND LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS
TMP-1A	PHASING, GENERAL NOTES AND LOCAL NOTES
TMP-2	DETOUR SIGNING
SP-1	SPECIAL SIGN DESIGN

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

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
LICENSE # F-0159

D Wheatley DESIGN ENGINEER / TECHNICIAN

SEAL DocuSigned by: 6786
Professional Seal
P.E. ENGINEER
M. WHEATLEY
8/27/2020
38503BAD7047465

17BP.3.R.40

THE PROJECT:

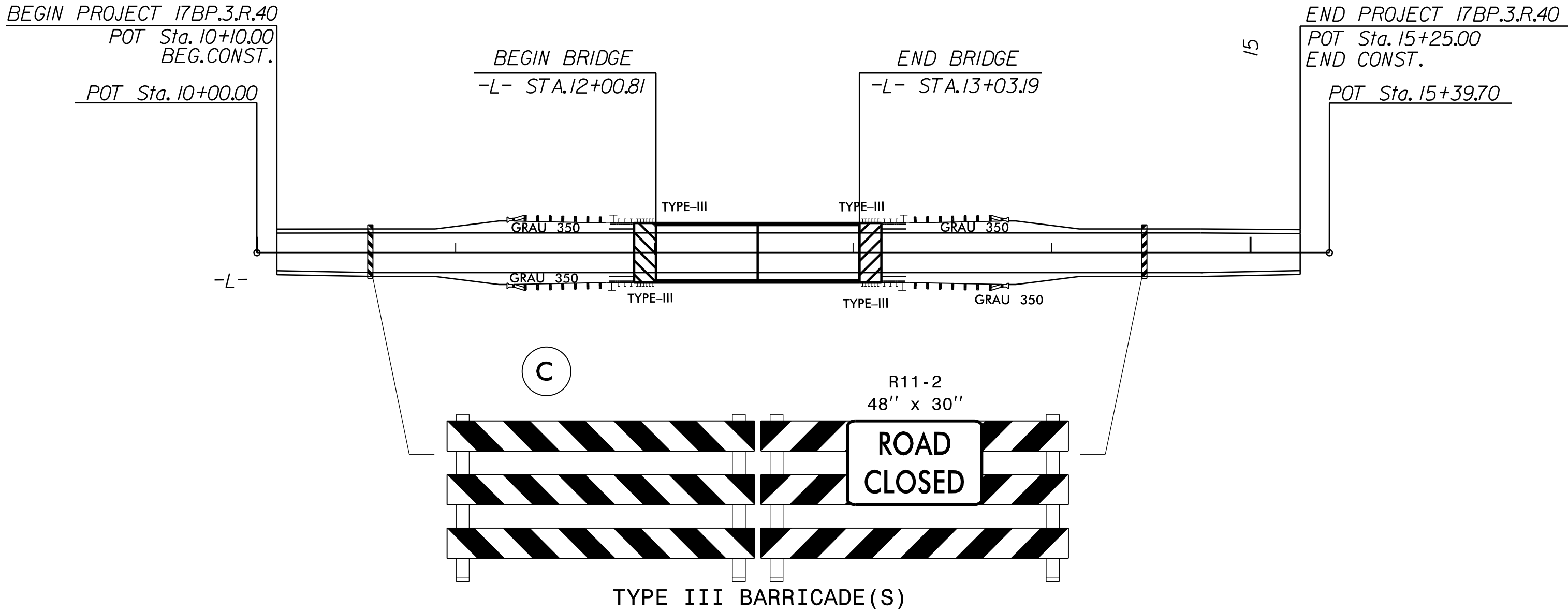
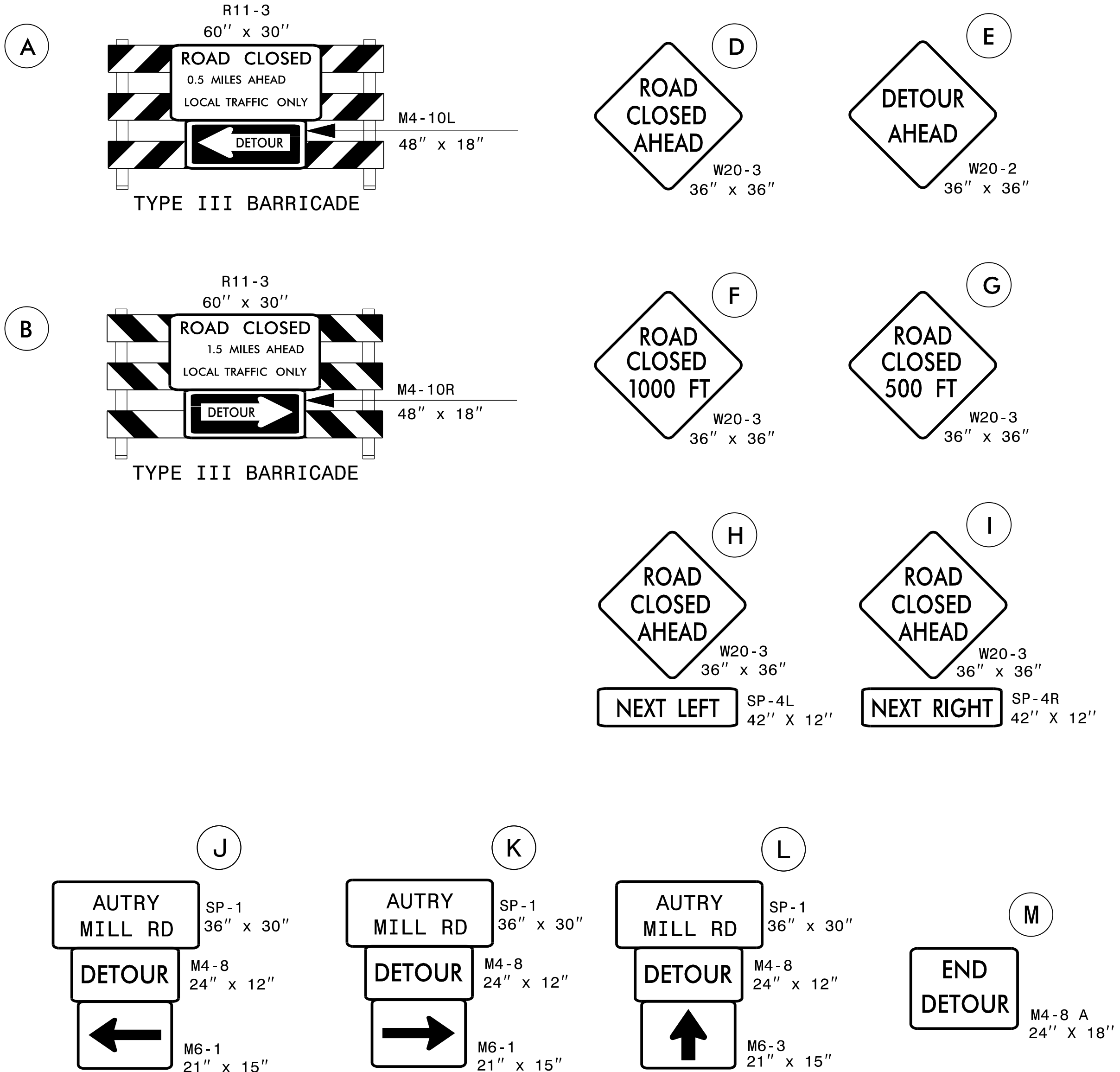
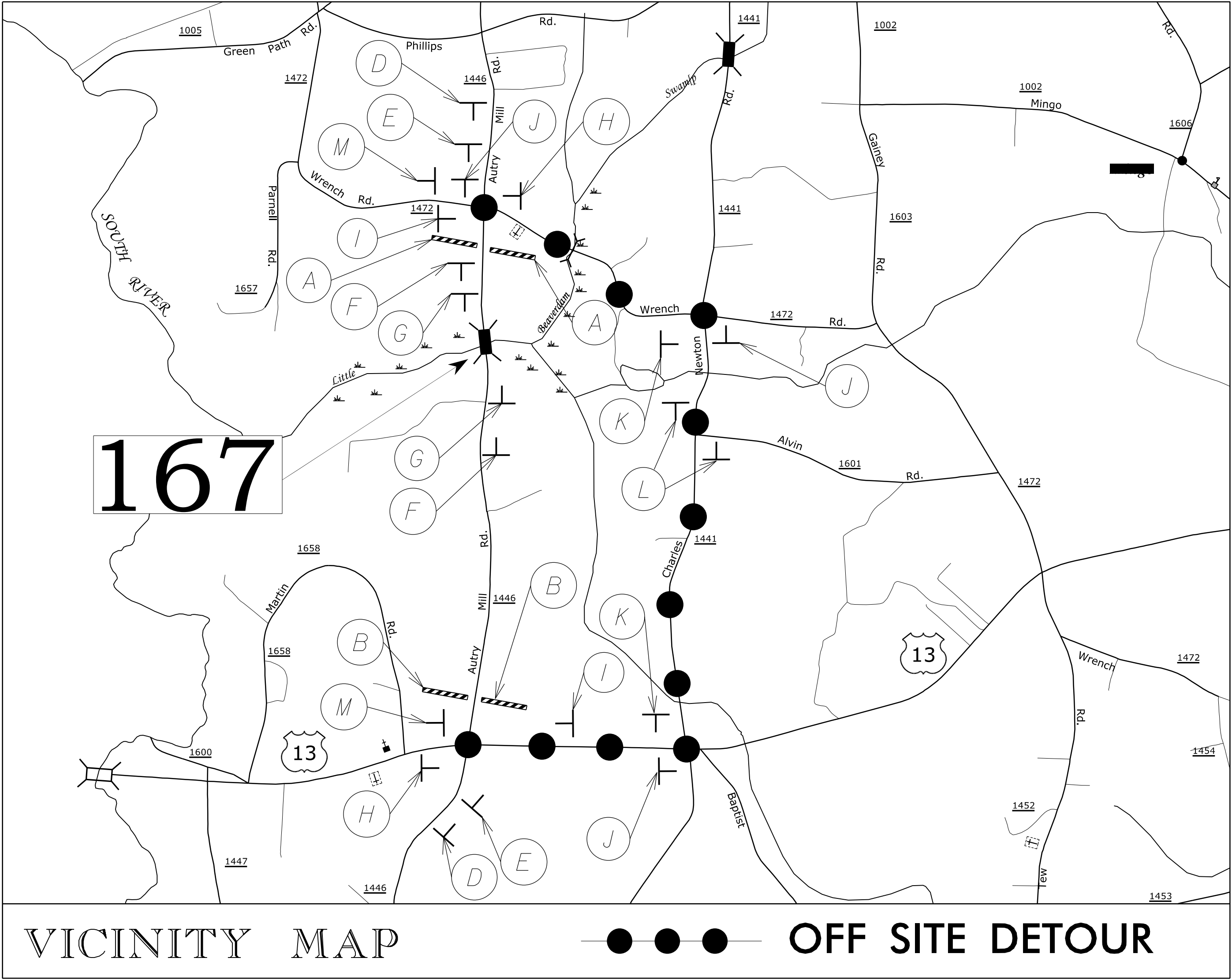
PROJ. REFERENCE NO.
17BP.3.R.40

SHEET NO.
TMP-2

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

NC License
Number F-0159



APPROVED: _____ DATE: _____

SEAL DocuSigned by
38503BAD7047465
9/3/2015

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

DETOUR SIGNING

SIGN NUMBER: SP-1

TYPE: STATIONARY

QUANTITY: SEE PLANS

SIGN WIDTH: 3'-0"

HEIGHT: 2'-6"

TOTAL AREA: 7.5 Sq.Ft.

BORDER TYPE: FLUSH

RECESS: 0.47"

WIDTH: 0.63"

RADII: 1.5"

NO. Z BARS:

LENGTH:

BACKG COLOR: Fluorescent Orange

COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.080" (2.0 mm) ALUMINUM

DESIGN BY: B. DEHLER

PROJECT ID: 17BP.3.R.27

CHECKED BY: B. EASON

DIV: 3

DATE: July 11, 2014

3'-0"

2'-6"

6.75"

6"C

4.5"

6"C

6.75"

Autry

Mill Rd

6.5"

23"

6.5"

BORDER

R=1.5"

TH=0.63"

IN=0.47"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner																									Series/Size Text Length	
A	u	t	r	y																					C 2000 16.9	
9.6	14.1	17.7	20.5	22.7																						
M	i	l	l		R	d																			C 2000 23.0	
6.5	11.7	13.6	15.5	16.4	22.4	26.4																				

FILENAME: GRAY BRIDGE RD

NORTH CAROLINA D.O.T. SIGN DETAIL

7/30/2015 1:57:53 PM
R:\InRoads\Projects\17BP.3.R.40\Sign Design\Gray Bridge RD\17BP.3.R.40.TC_PSH_SP-1.dgn
DOCKNER

APPROVED: _____ DATE: _____

SEAL

DocuSigned by
38503BAD7047465

8/27/2015

38503BAD7047465

8/27/2015

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

SPECIAL SIGN
DESIGN

\\7141_1M
R:\Engineering\167\Design\167_Rev.tah.dgn
tahd

TIP PROJECT: 17BP.3.R.40

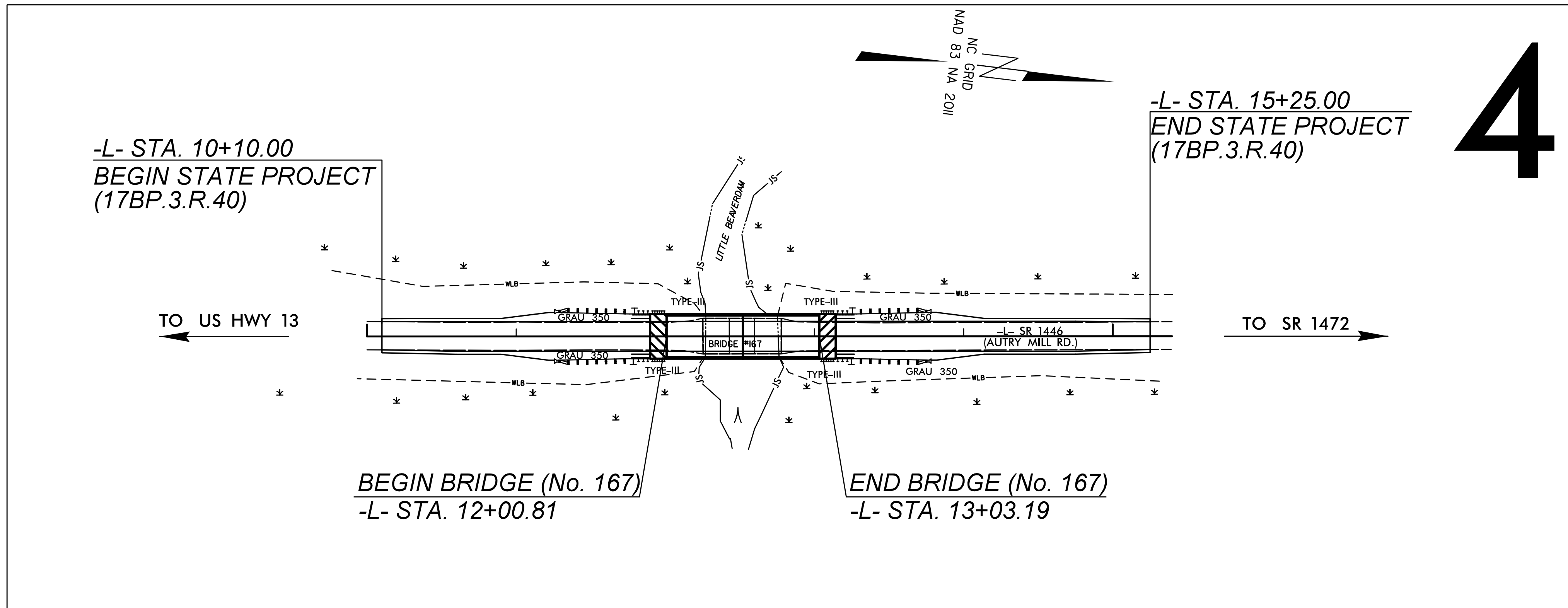
RELEASE FOR
CONSTRUCTION

DATE: 8/31/2015

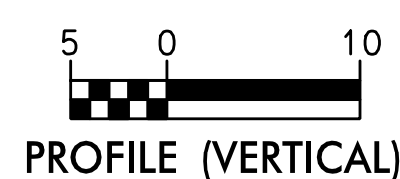
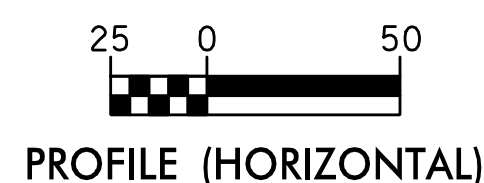
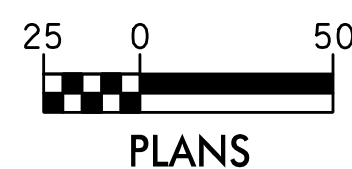
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

LOCATION: BRIDGE NO.167 OVER LITTLE BEAVERDAM SWAMP
ON (SR 1446) AUTRY MILL ROAD

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



GRAPHIC SCALE



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

Prepared In the Office of:



NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-0929

2012 STANDARD SPECIFICATIONS

Designed by:

BRANDON BARHAM, PE

3368

NAME

LEVEL III CERTIFICATION NO.

Reviewed In the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:

Roadway Standard Drawings

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

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

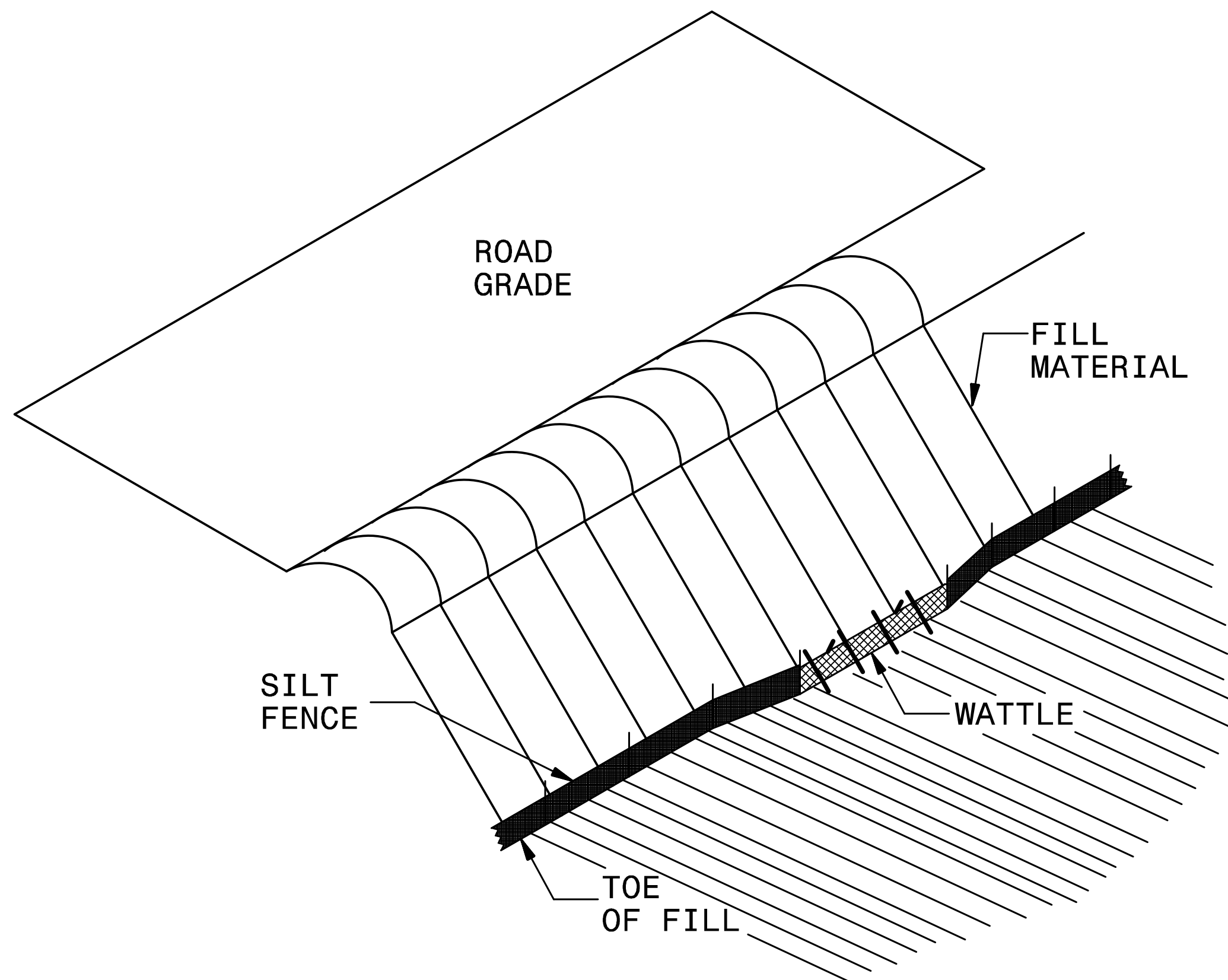
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.40	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.3.R.40		PE, RW, CONST	

EROSION AND SEDIMENT CONTROL MEASURES

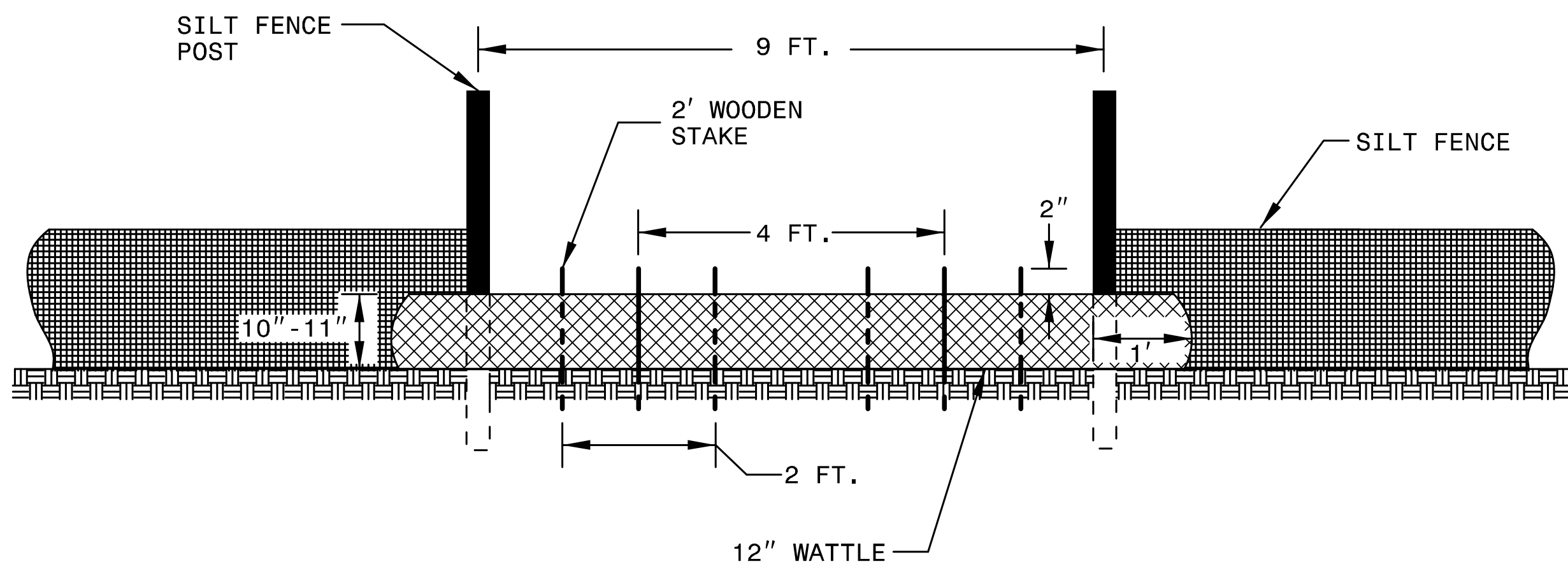
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SSCF
1622.01	Temporary Berms and Slope Drains	TB&SD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA/PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle/Coir Fiber Wattle	W/CFW
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	W/CFW/PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDB
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPIST-A
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPIST-B
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SB
	Tiered Skimmer Basin	TSB
	Infiltration Basin	IB

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.40	EC-02
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

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

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

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

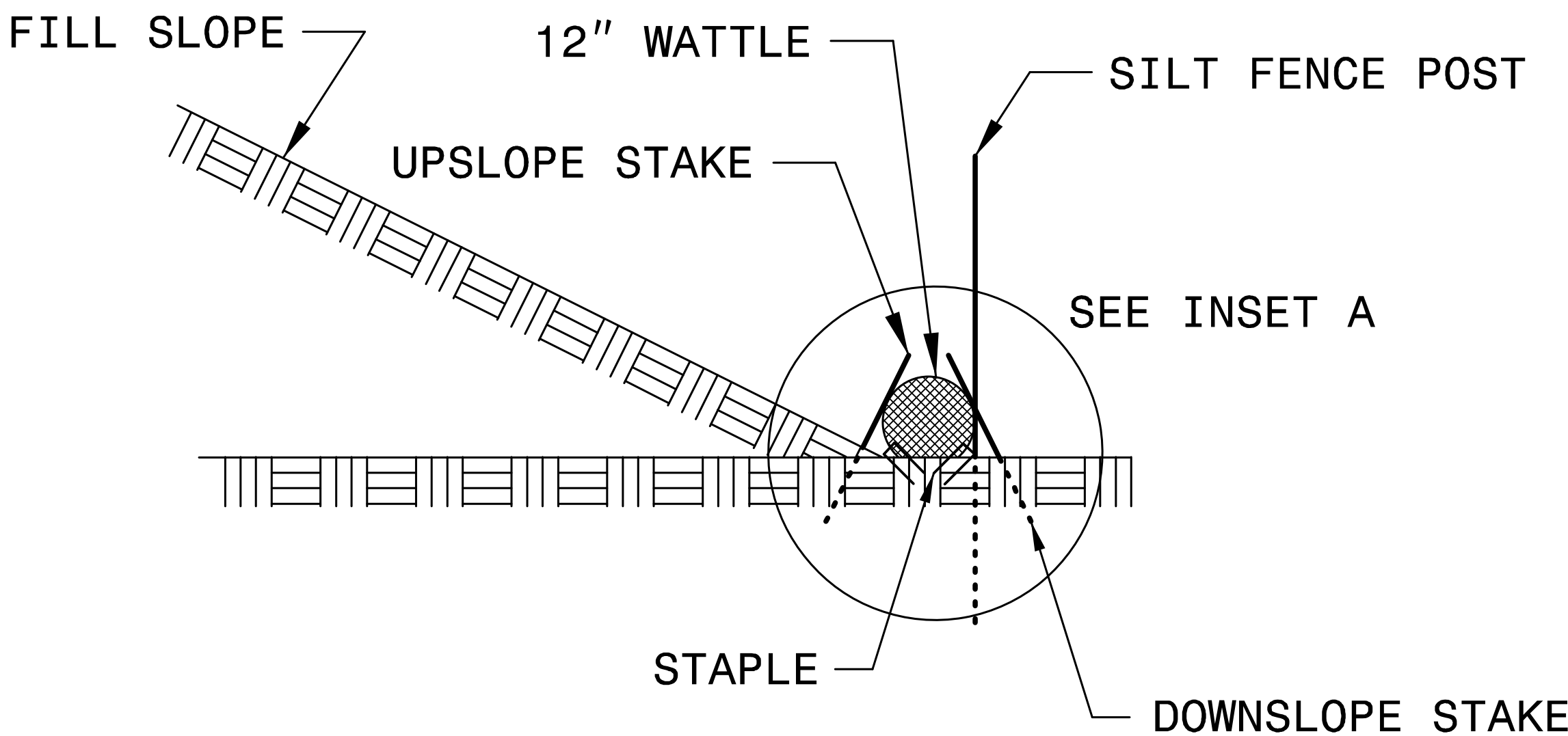
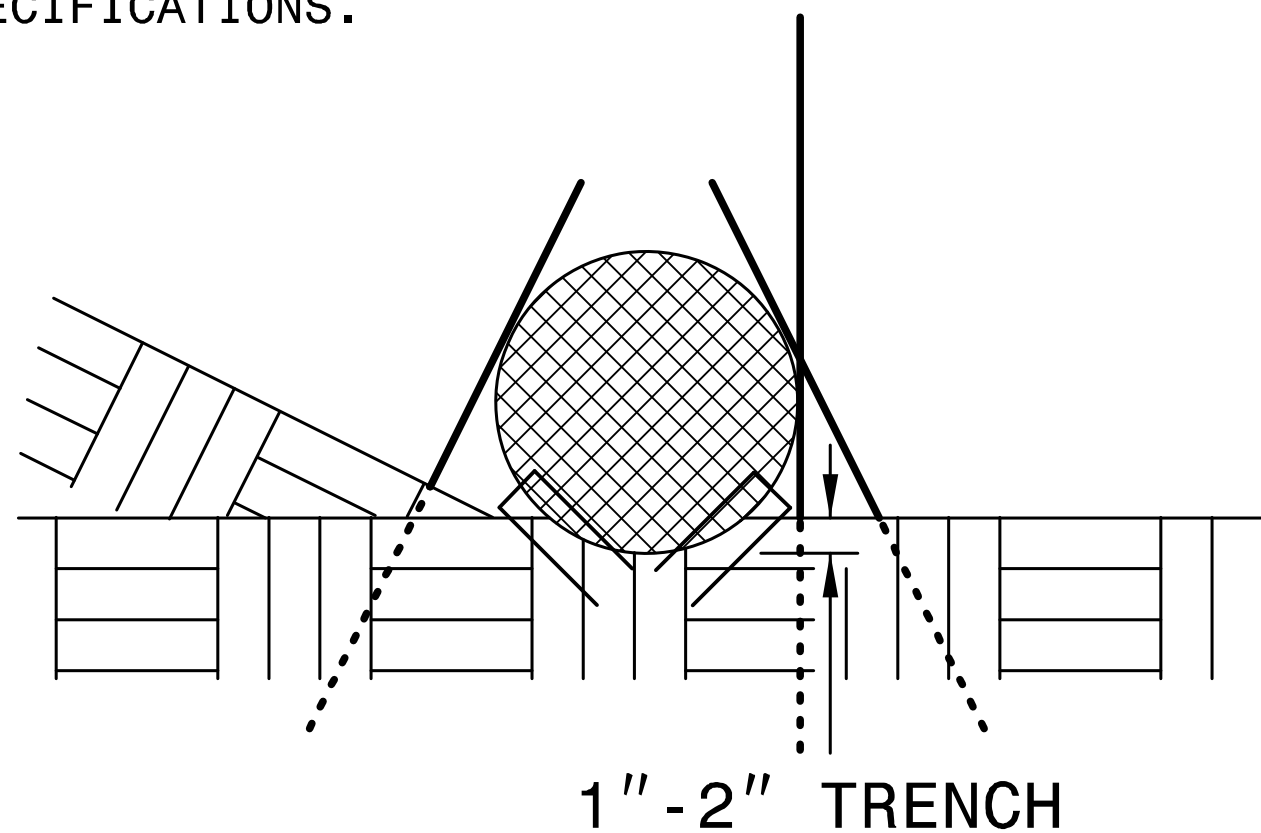
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

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

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

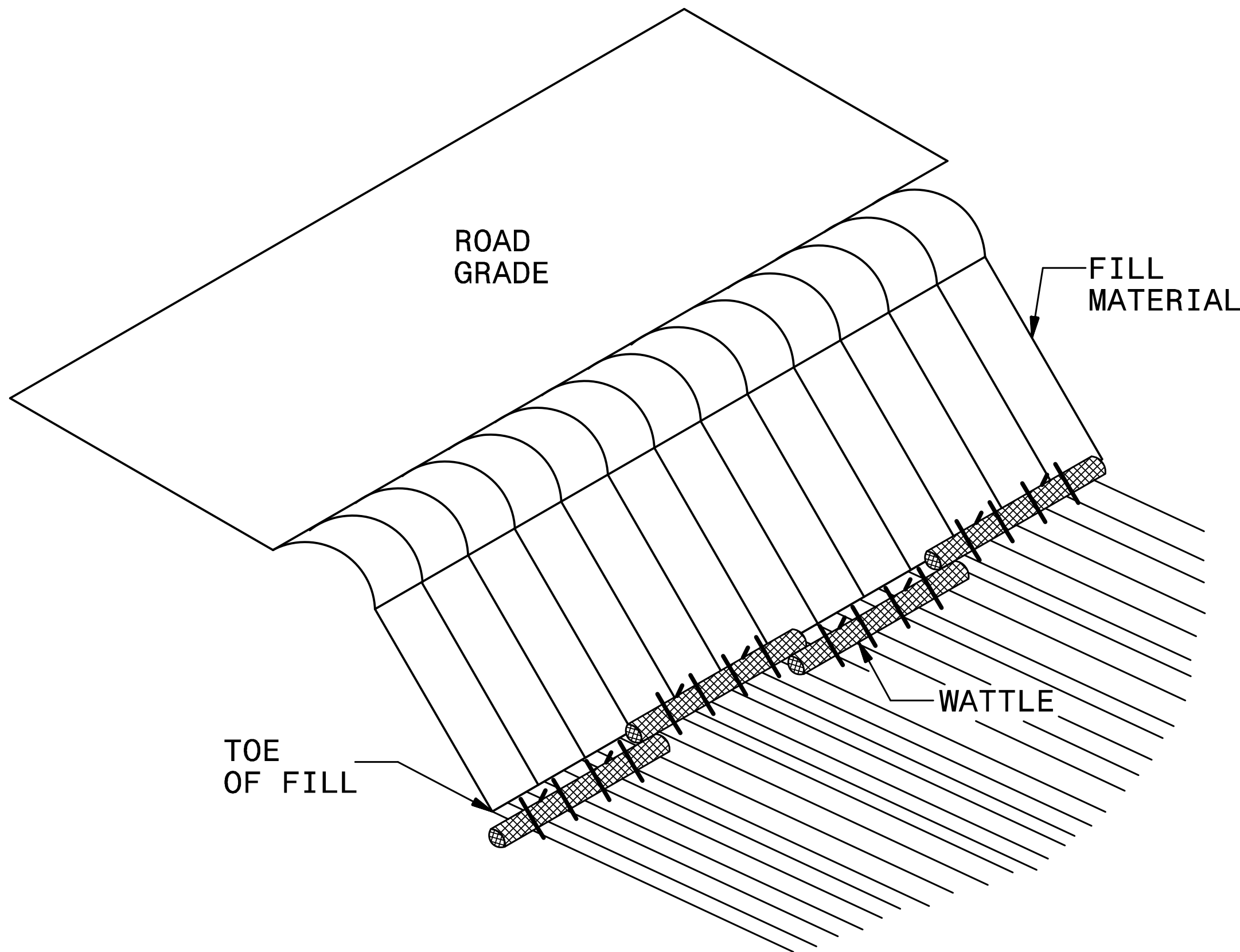
INSET A



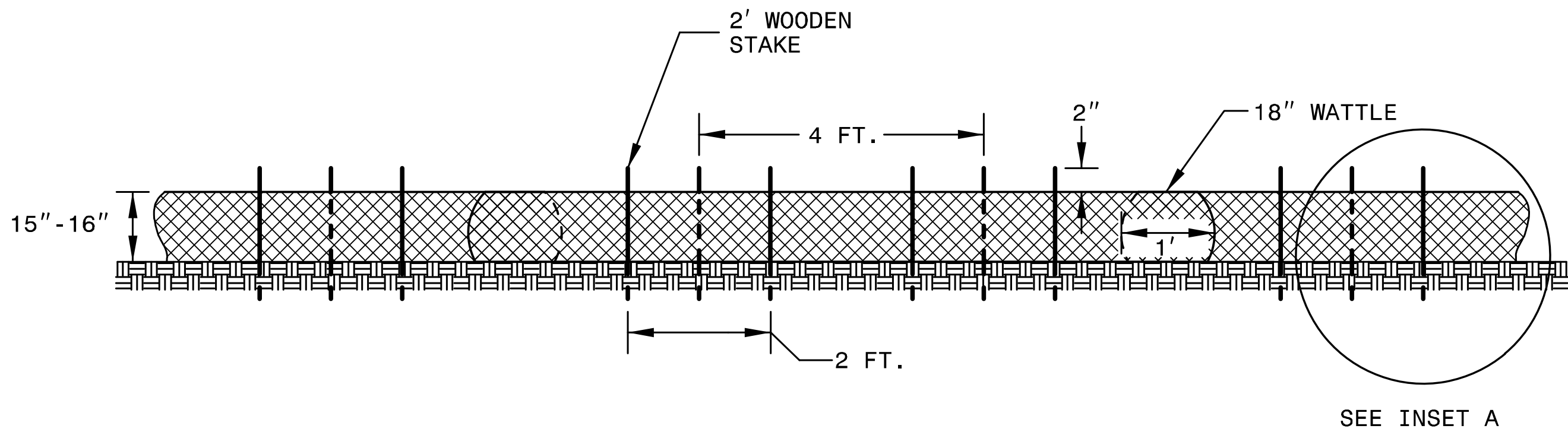
SIDE VIEW

COIR FIBER WATTLE BARRIER DETAIL

PROJECT REFERENCE NO.	SHEET NO.
17BP.3.R.40	EC-03
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW



FRONT VIEW

NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

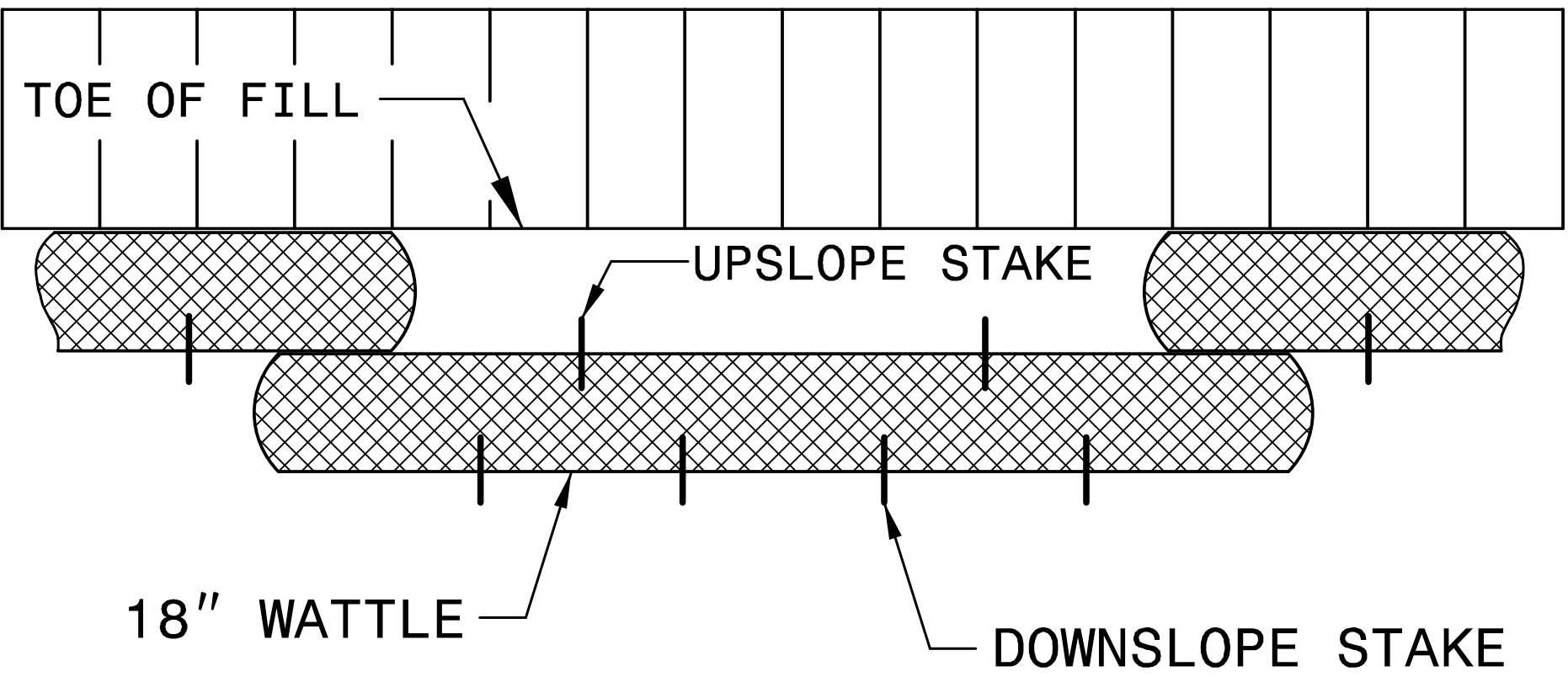
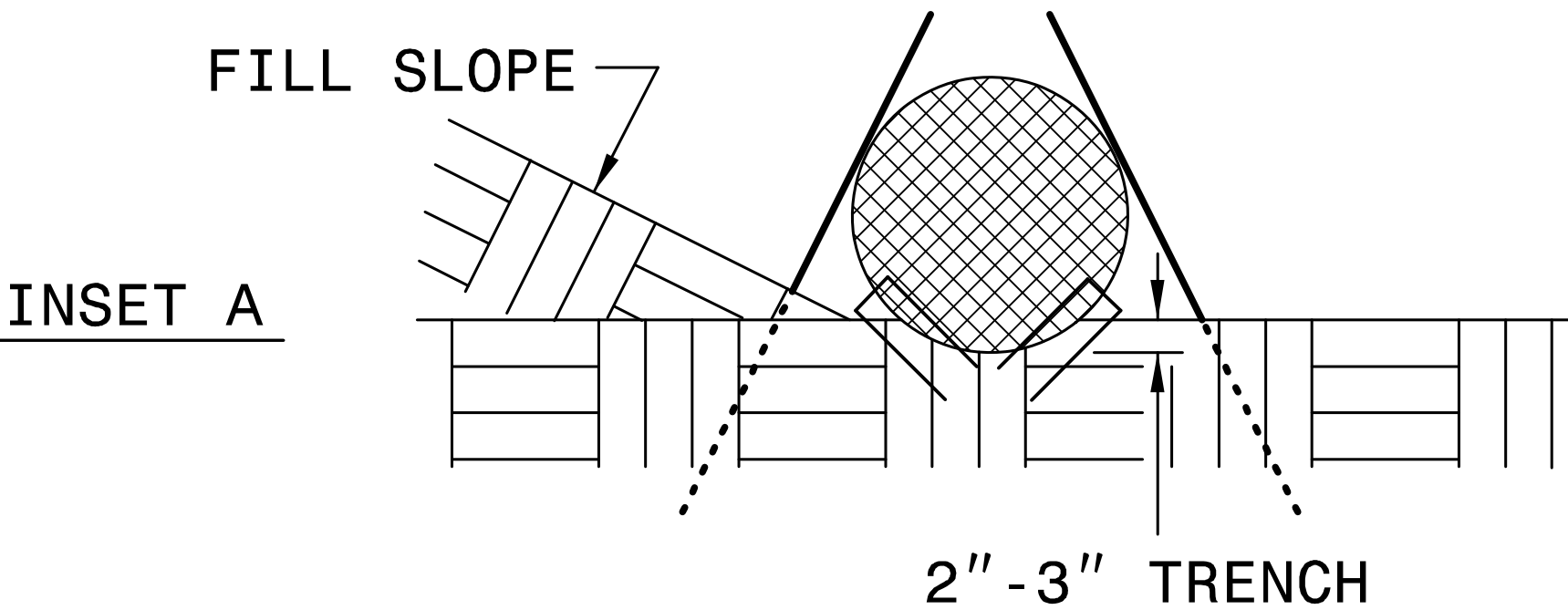
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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.



TOP VIEW

SOIL STABILIZATION TIMEFRAMES

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

8/17/99

REVISIONS

I:\0849 AM
R:\Environmental\Design\167_Reu.psh04.dgn
arldgarcia

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612



NC License
Number F-0159

NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-0929

PROJECT REFERENCE NO. 17BP.3.R.40 SHEET NO. EC-05/CONST.04

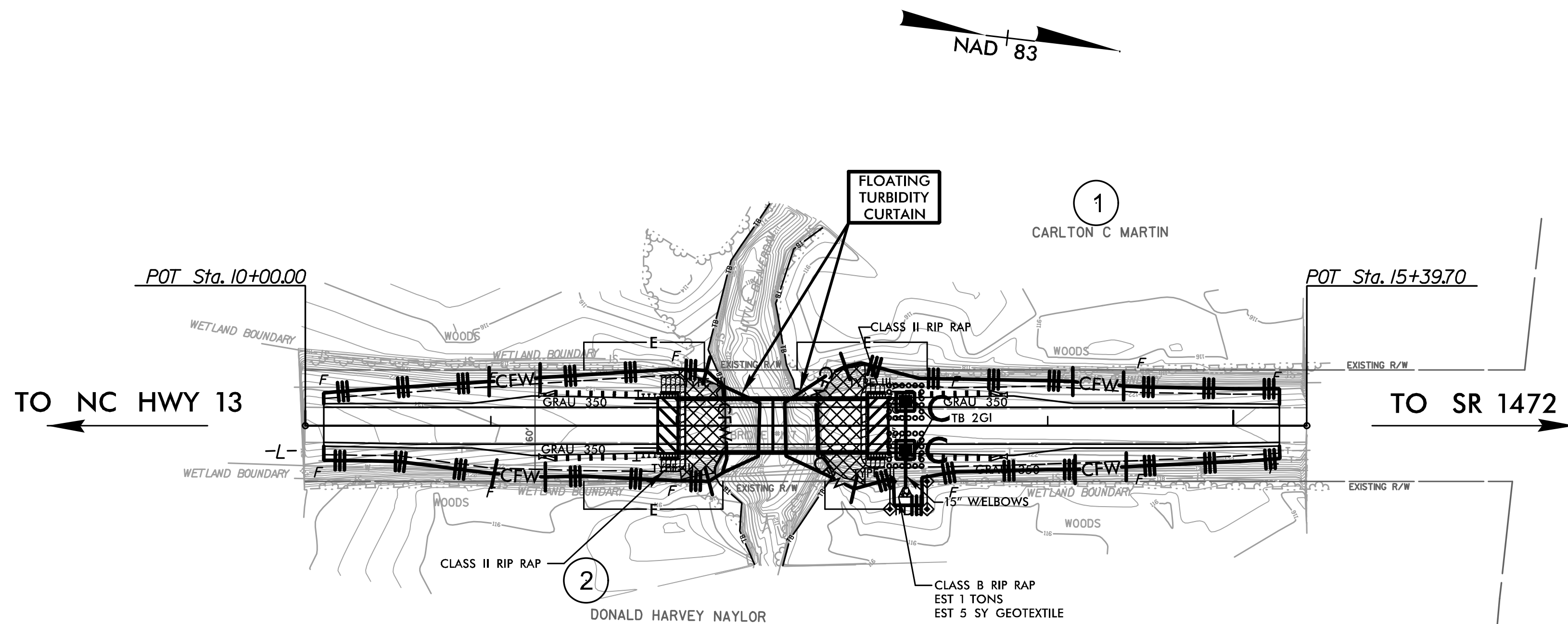
R/W SHEET NO.

ROADWAY DESIGN
ENGINEER

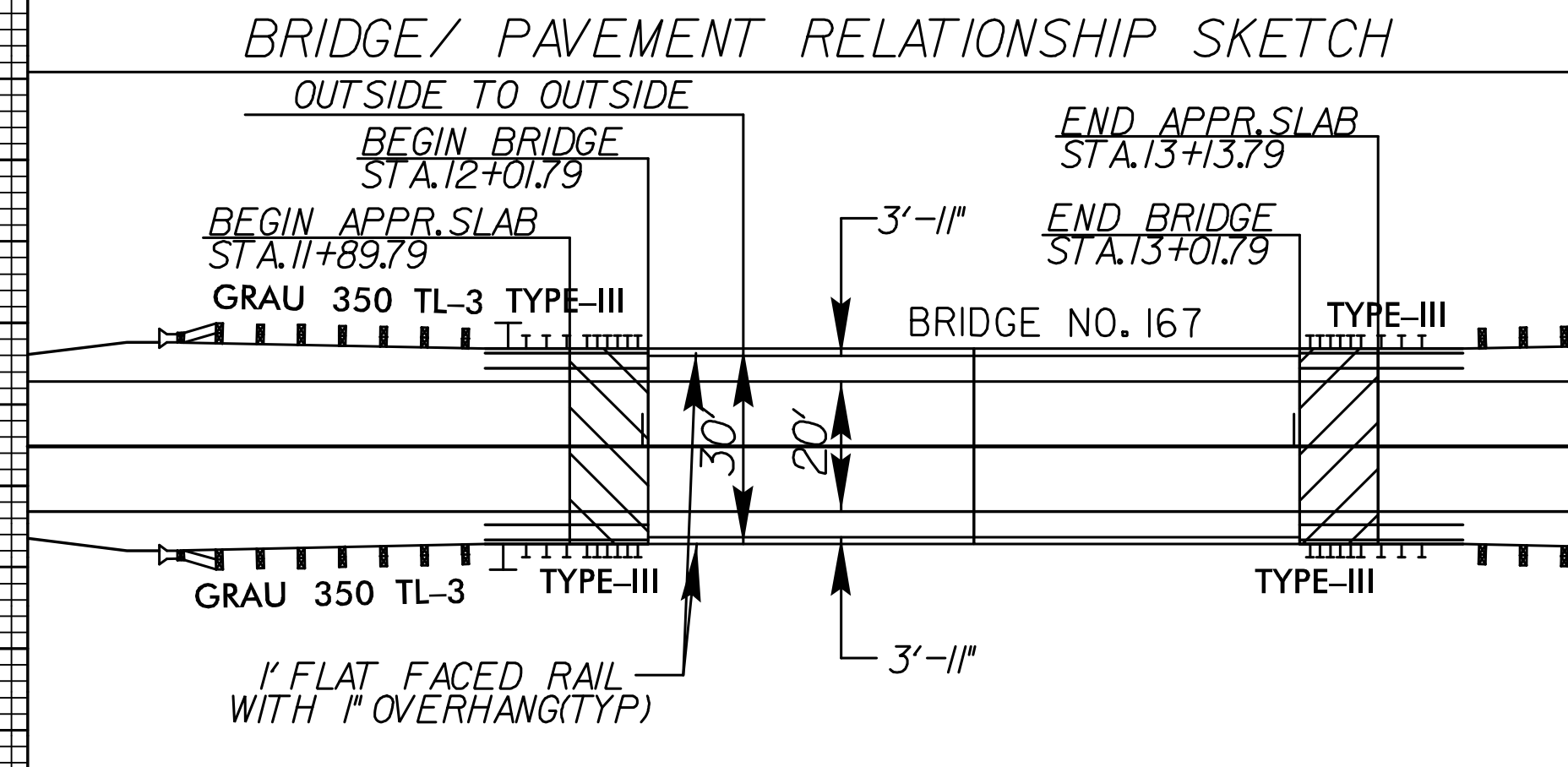
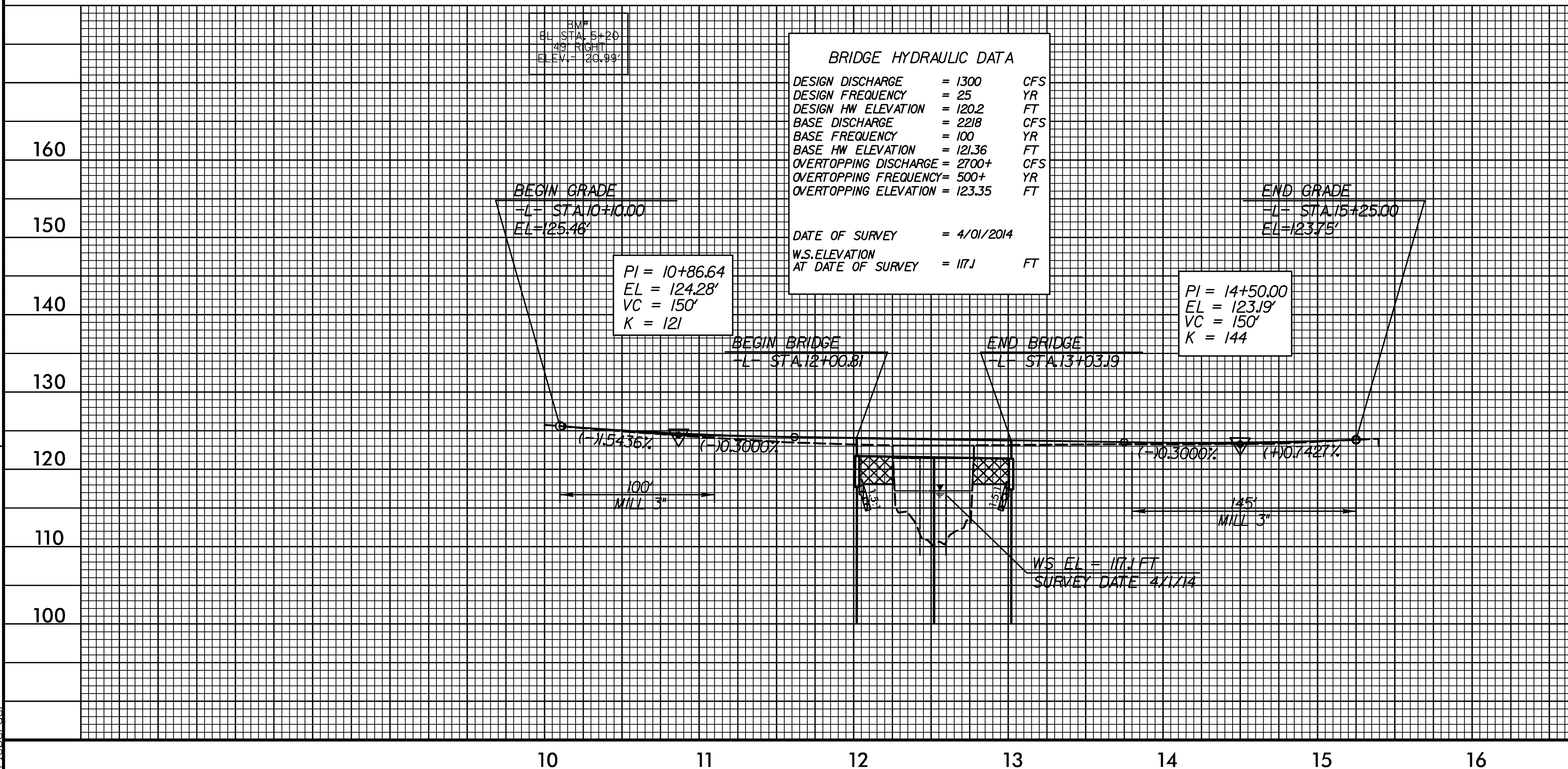
HYDRAULICS
ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



INSTALL +/- 260 SY 500g
COIR FIBER MATTING ON
EXCAVATED BENCH UNDER BRIDGE

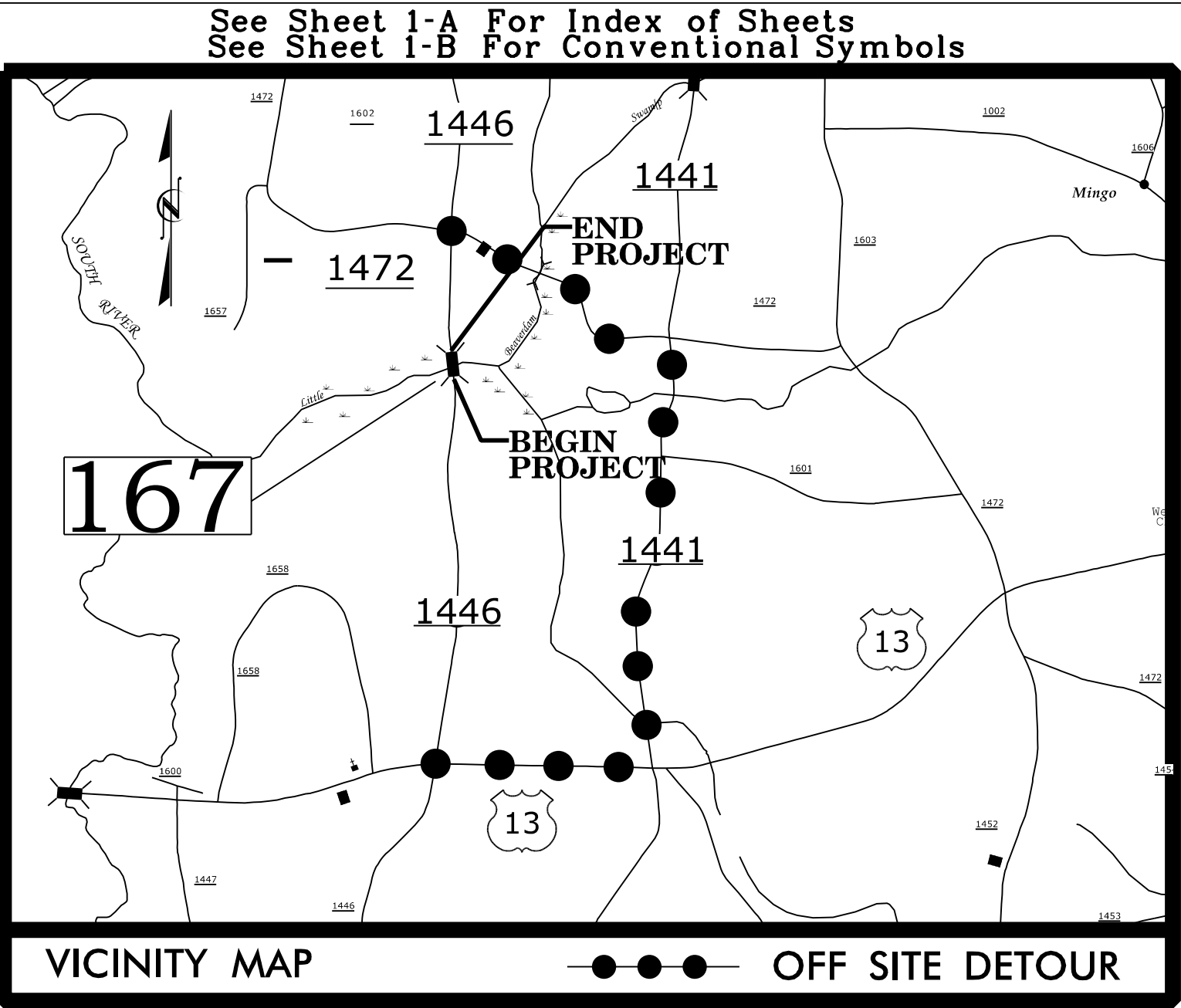


09/08/99

PROJECT: 17BP.3.R.40

CONTRACT:

\$\$\$\$\$SYTIME\$\$\$\$\$DGN\$\$\$\$\$USERNAME\$\$\$\$\$



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

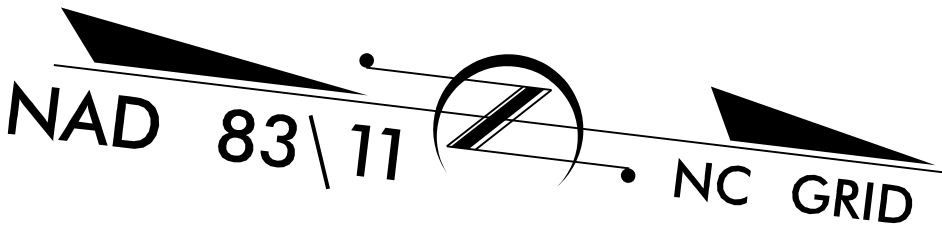
SAMPSON COUNTY

LOCATION: BRIDGE NO.167 OVER LITTLE BEAVERDAM
ON (SR 1446) AUTRY MILL ROAD

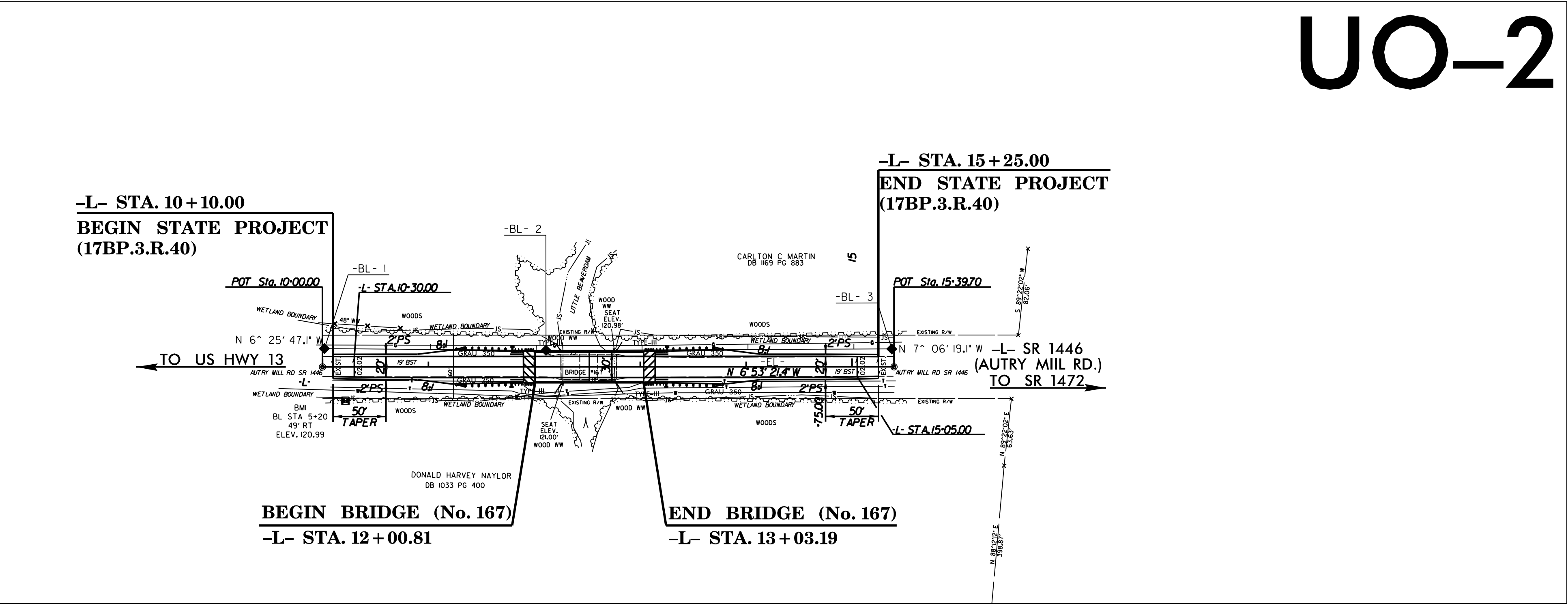
TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE

UTILITIES BY OTHERS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.3.R.40	UO-1	
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	
17BP.3.R.40		PE,RW,UTIL,CONST	



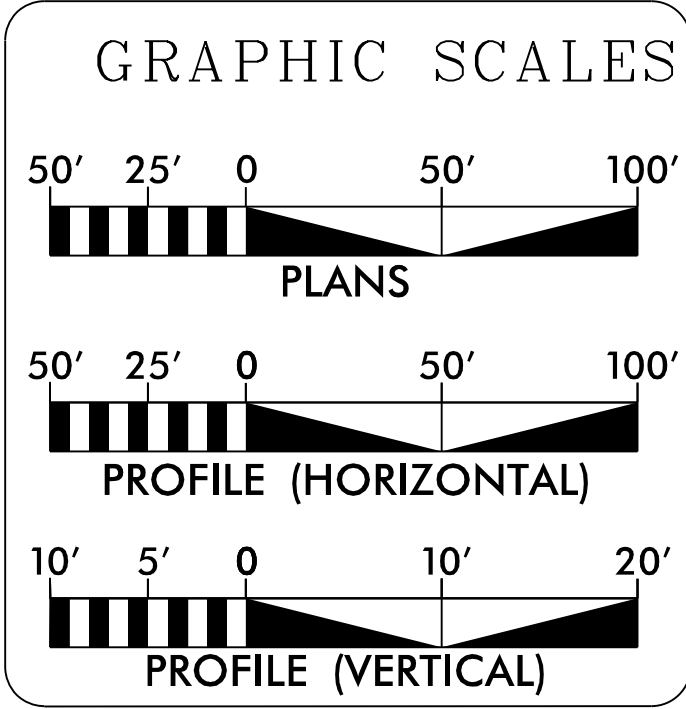
UO-2





The Subsurface
Utility Engineering
Company

4650 Paragon Park Road, Raleigh, NC 27616 (919) 878-7466



SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEET

UTILITY OWNERS ON PROJECT
(A) STAR TELEPHONE MEMBERSHIP CORP. – COMMUNICATIONS
(B) PIEDMONT NATURAL GAS – DISTRIBUTION

Prepared in the Office of:
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-01529



NC FIRM LICENSE No. F-1148
1151 SE Cary Parkway
Suite 101
CARY, NC 27518
(919) 557-9929

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 8, 2015

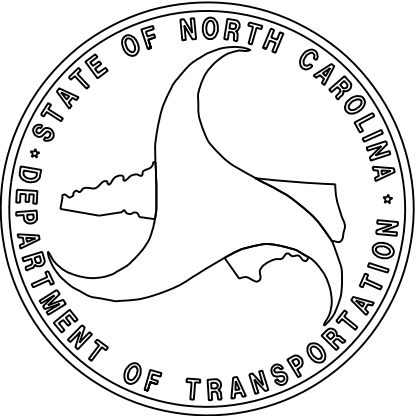
LETTING DATE:
NOV 5, 2015

BRIAN K. EASON, PE
PROJECT ENGINEER

DOUG WHEATLEY, PE
PROJECT DESIGNER

AMANDA GLYNN, PE
NCDOT CONTACT

HYDRAULICS ENGINEER
SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER
SIGNATURE: _____ P.E.



8/17/99

REVISIONS

*****SYTIME*****
*****USRVTIME*****

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

NC License
Number F-0159



NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-4929

PROJECT REFERENCE NO.

17BP.3.R.40

SHEET NO.

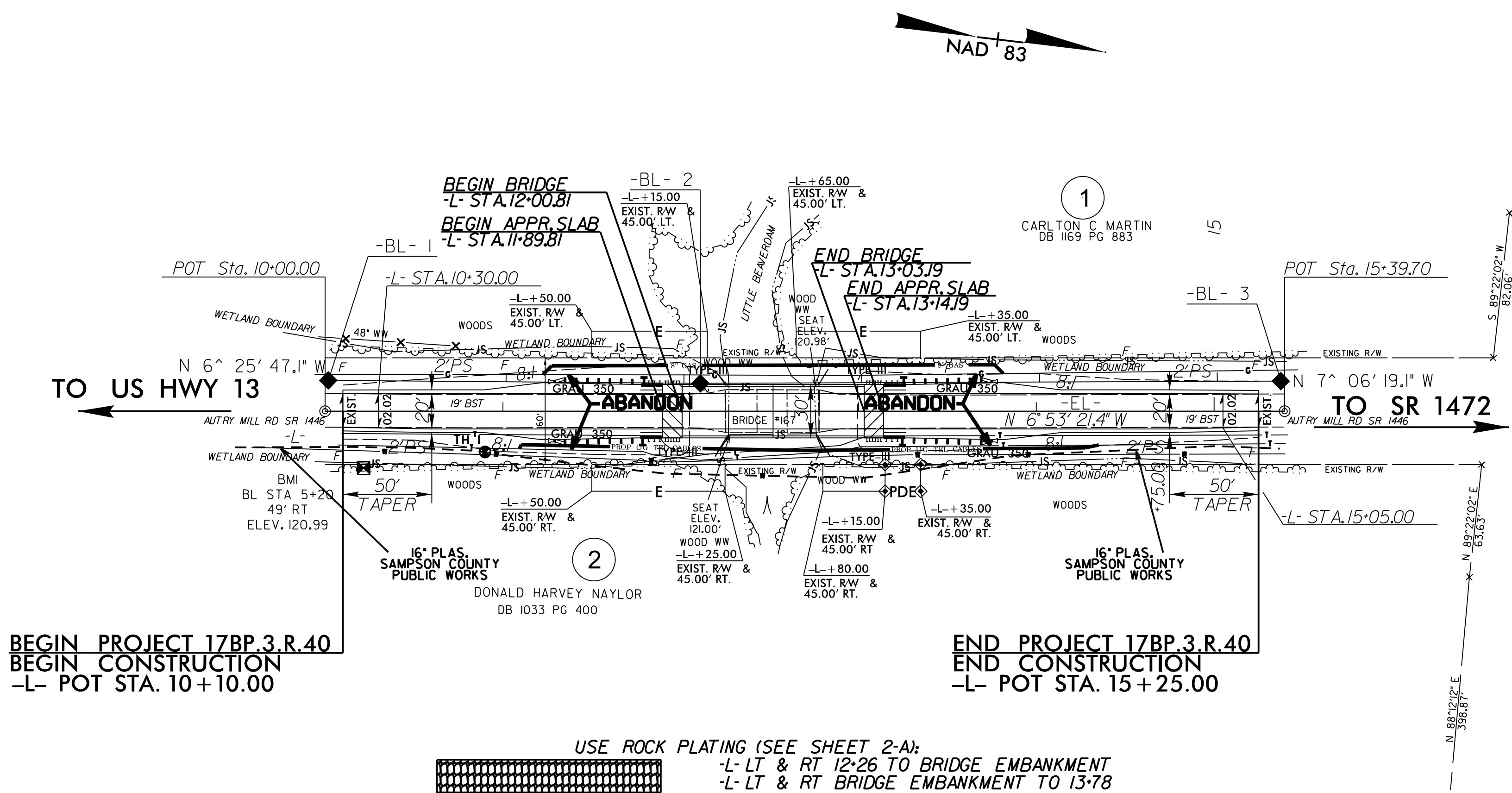
UO-2

R/W SHEET NO.

ROADWAY DESIGN
ENGINEER



HYDRAULICS
ENGINEER



DATUM DESCRIPTION

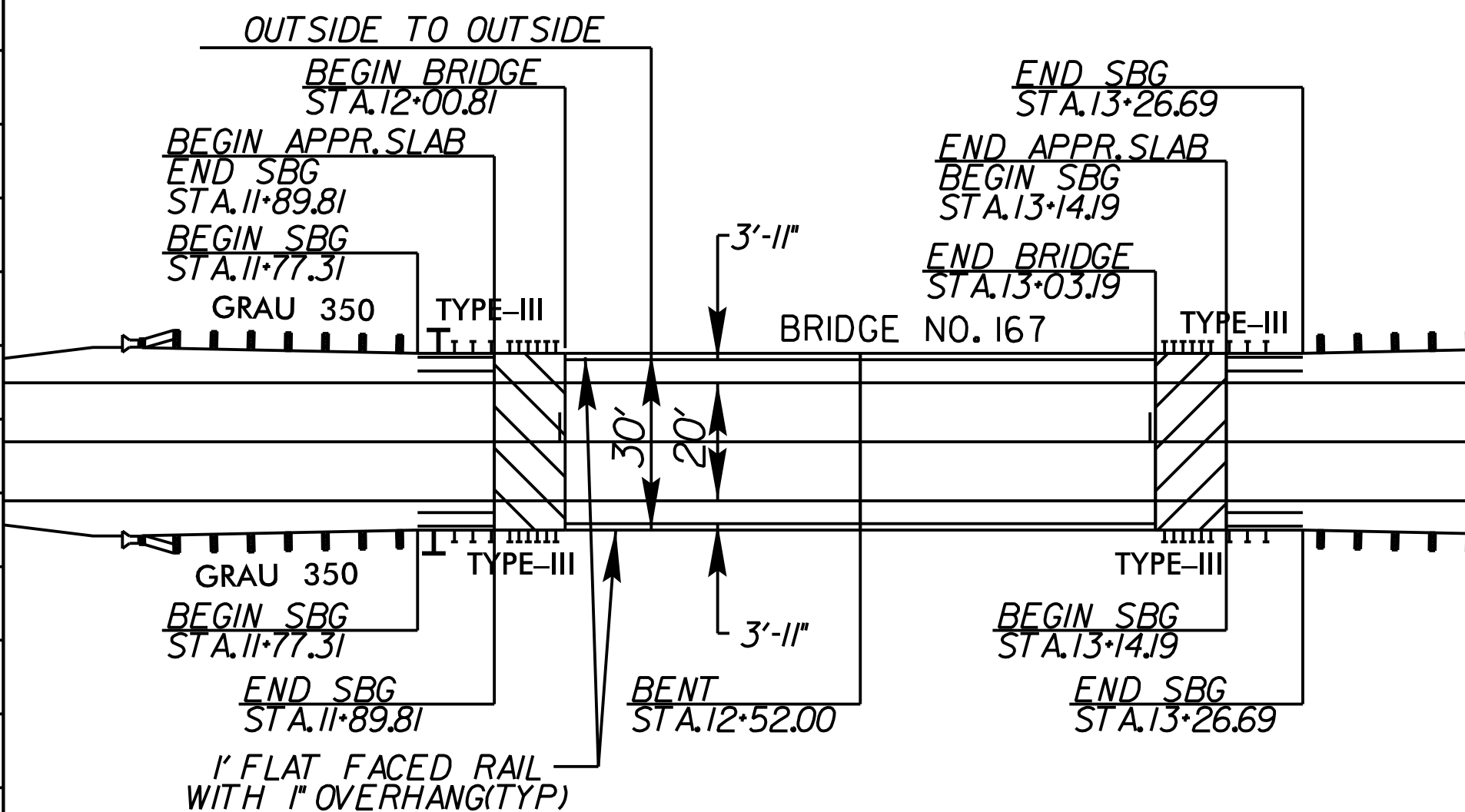
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT *810167 BL-2* WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 520161.847(//) EASTING: 211503.186(//) ELEVATION: 121.99(//) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998728561 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM *810167 BL-2* TO -L- STATION 10+00.00 IS 211.67' S 11°08'15.33" E ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

POINT	NORTHING	EASTING	ELEV.
BL-1	519,953.885	2,115,326.622	124.450'
BL-2	520,161.847	2,115,303.186	121.990'
BL-3	520,485.820	2,115,262.803	121.620'
BMI	519,979.484	2,115,373.142	120.990'

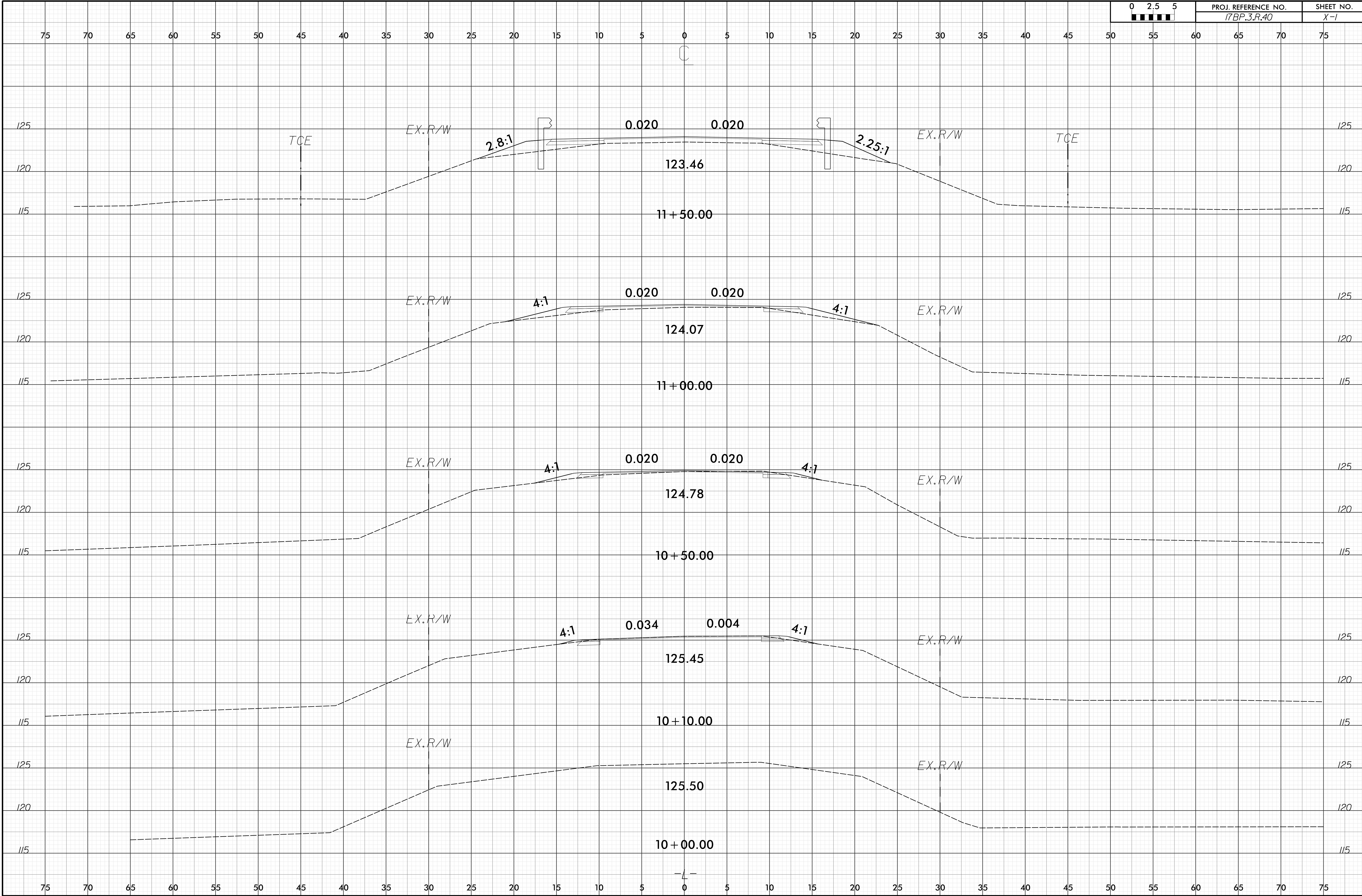
USE ROCK PLATING (SEE SHEET 2-A):

-L- LT & RT 12+26 TO BRIDGE EMBANKMENT
-L- LT & RT BRIDGE EMBANKMENT TO 13+78

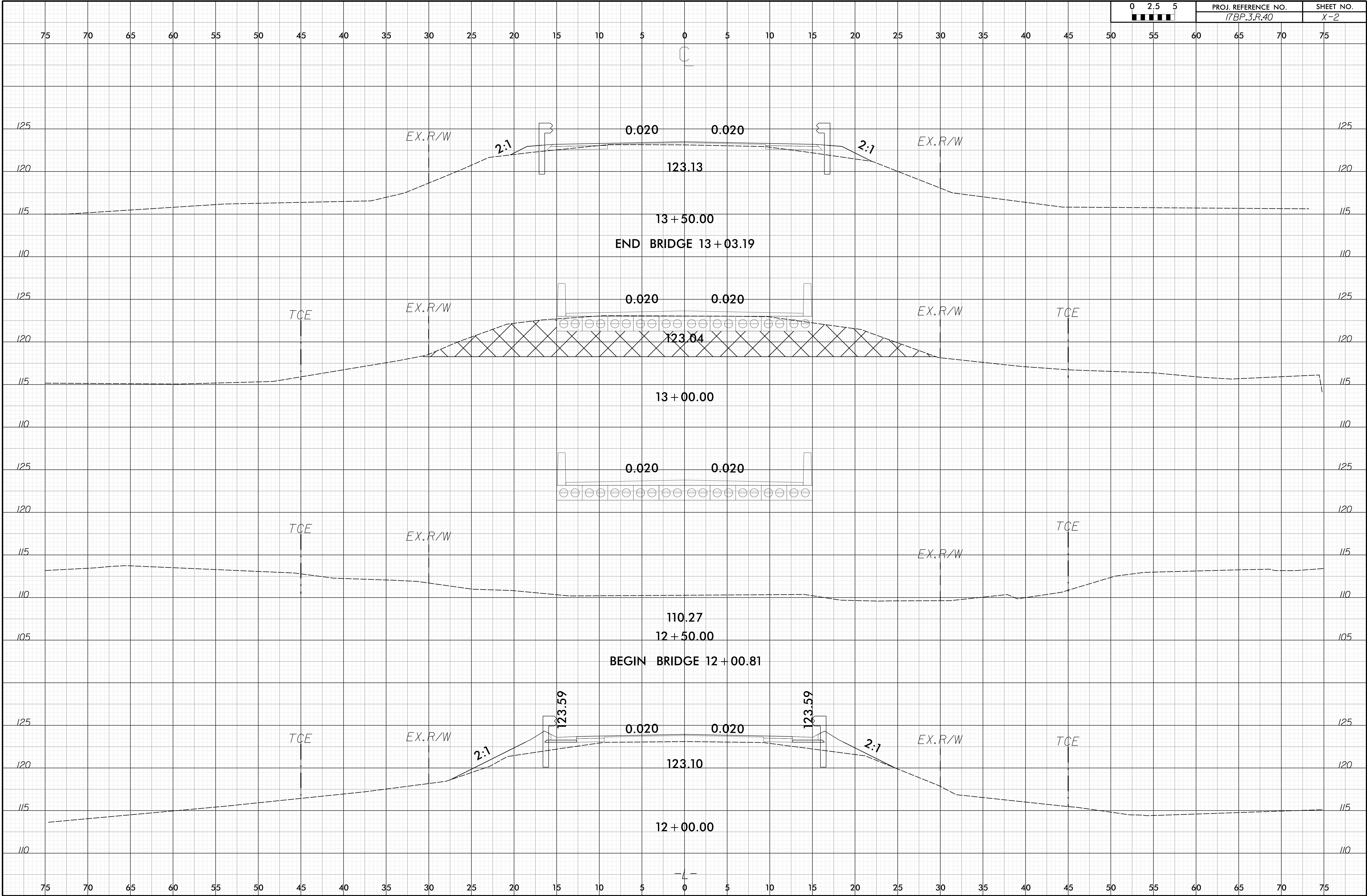
BRIDGE/ PAVEMENT RELATIONSHIP SKETCH



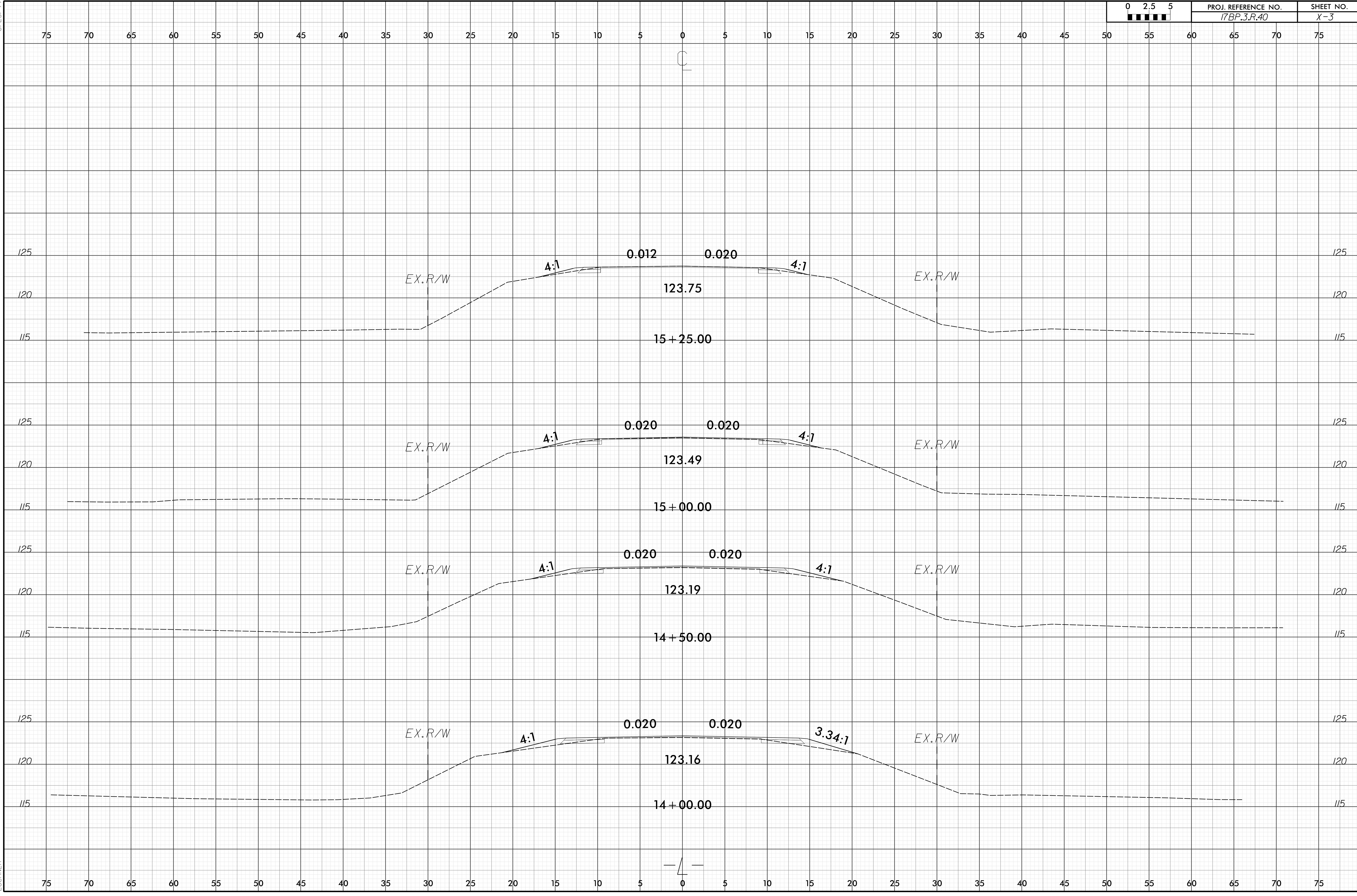
8/23/99

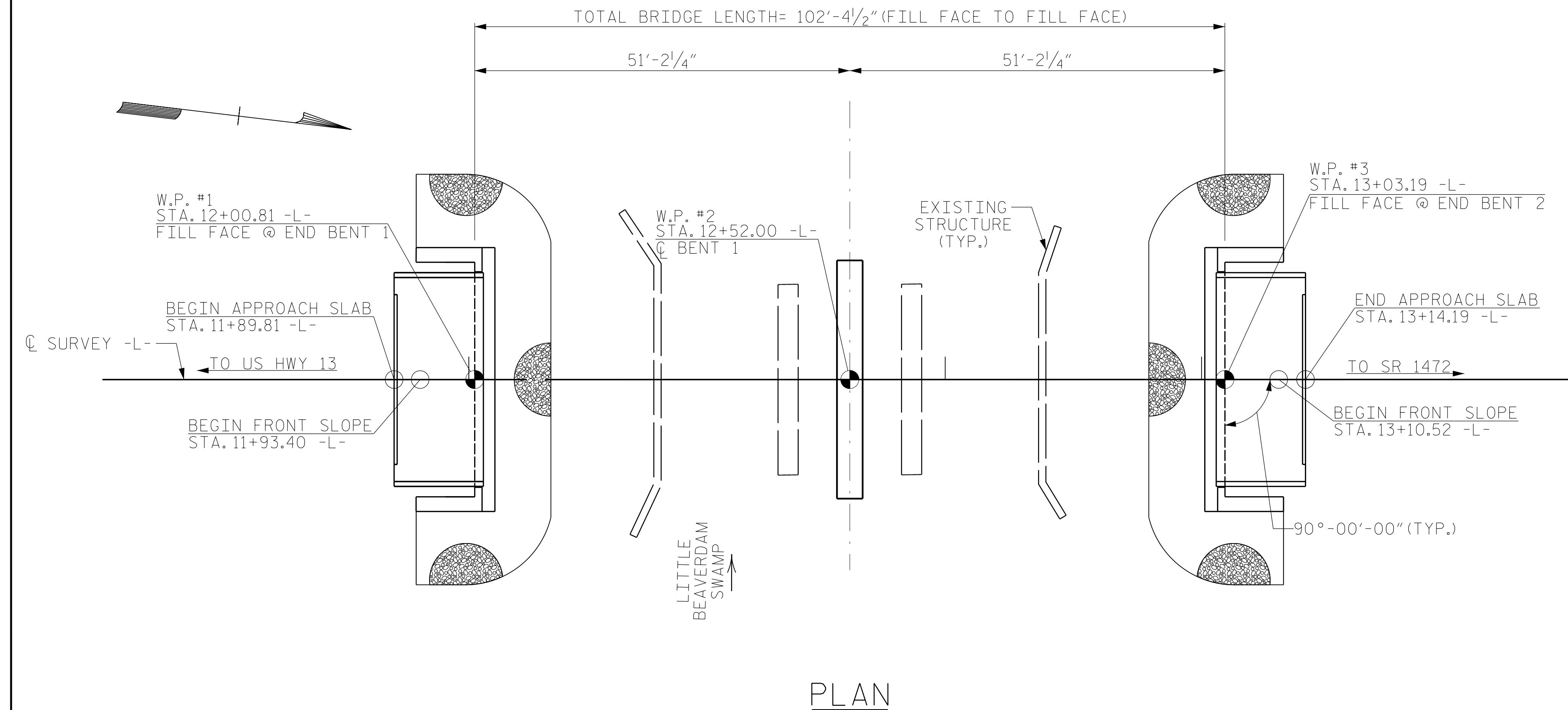
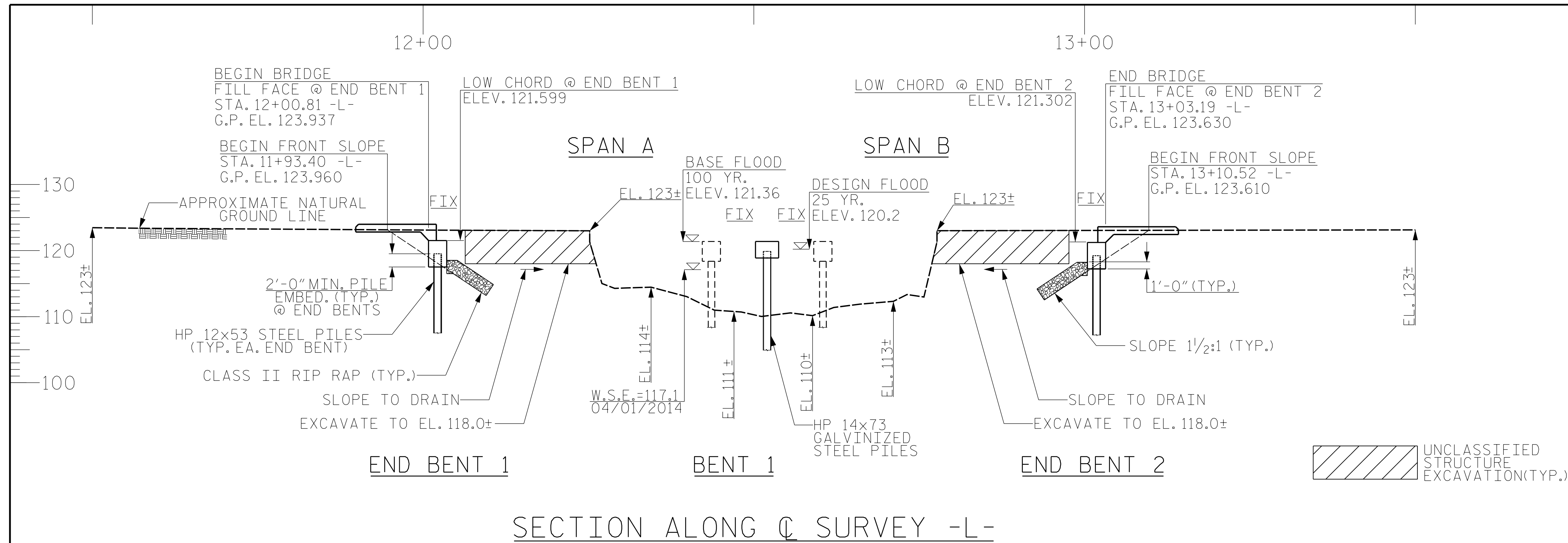


8/23/99



8/23/99





DRAWN BY: B. BOLLMAN
CHECKED BY: K. SMITH
DESIGN ENGINEER OF RECORD: G. W. DICKEY

DATE: 4-15
DATE: 8-15
DATE: 7-14

(PILES NOT SHOWN IN PLAN VIEW)

GENERAL DRAWING
PREPARED BY:
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

DocuSigned by:
Sumith H. Smith
9/1/2015
D52980D700A049A...

GRADE DATA
PVI STA. 10+86.64 -L-
EL = 124.28'
VC = 150'
(-)1.5436% (+)0.3000%

GRADE DATA
PVI STA. 14+50.00 -L-
EL = 123.19'
VC = 150'
(-)0.3000% (+)0.7427%

HYDRAULIC DATA:
DESIGN DISCHARGE = 1300 CFS
DESIGN FREQUENCY = 25 YR
DESIGN HW ELEVATION = 120.2 FT
DRAINAGE AREA = 15.0 SQ MI
BASE DISCHARGE(Q100) = 2218 CFS
BASE HW ELEVATION = 121.36 FT
OVERTOPPING FLOOD DATA:
OVERTOPPING DISCHARGE = 2700+ CFS
OVERTOPPING FREQUENCY = 500+ YR
OVERTOPPING ELEVATION = 123.35 FT

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS

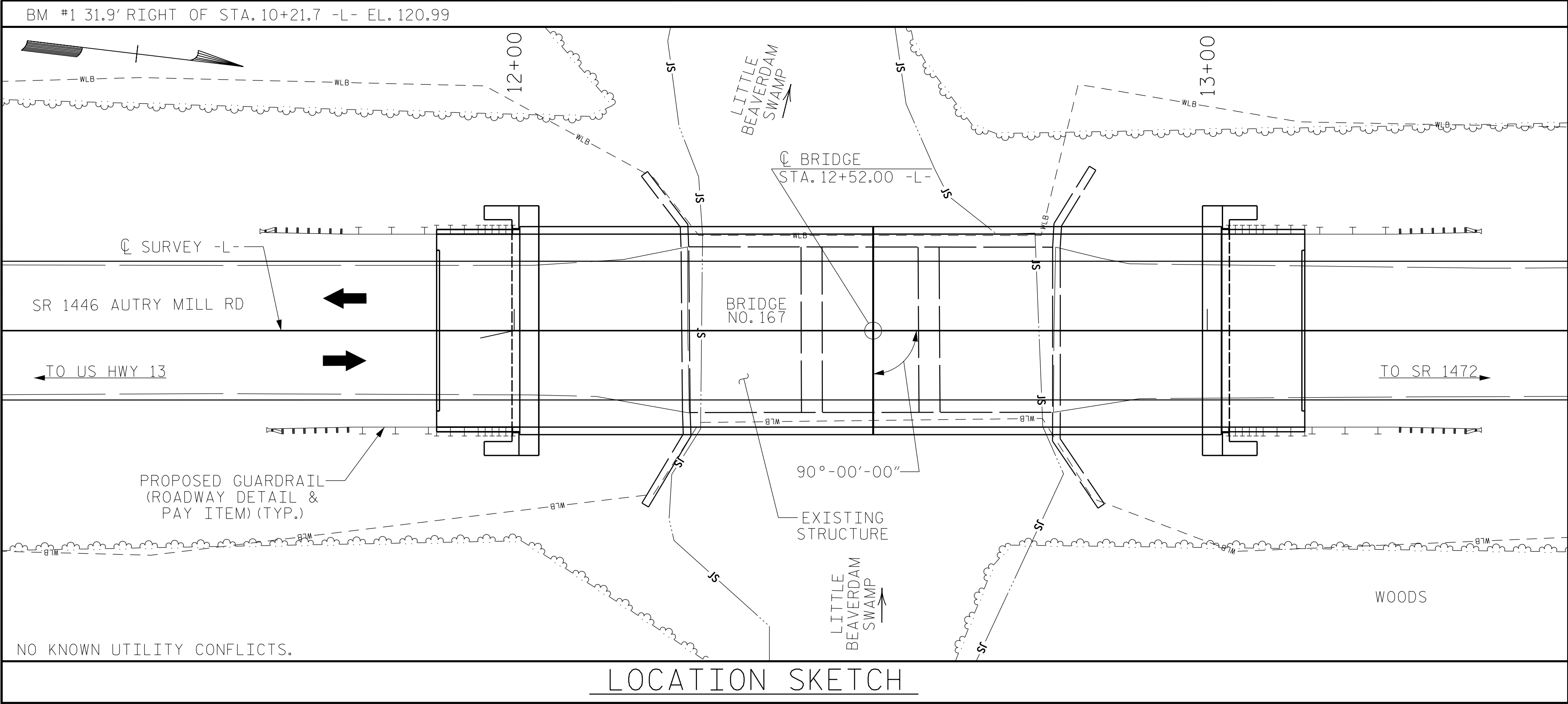
PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 167

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE ON SR 1446
(AUTRY MILL RD.) OVER
LITTLE BEAVERDAM SWAMP
BETWEEN US 13 AND SR 1472
27'-10" CLEAR ROADWAY - 90° SKEW

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

SHEET NO. S-01
TOTAL SHEETS



LOCATION SKETCH

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.

PILES AT BENT NO. 1 ARE DESIGNED FOR A FACTOR RESISTANCE OF 120 TONS PER PILE.

DRIVE PILES AT BENT NO. 1 TO A REQUIRED DRIVING RESISTANCE OF 215 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

INSTALL PILES AT BENT NO. 1 TO A TIP ELEVATION NO HIGHER THAN 82 FT.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 IS ELEVATION 101.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 35 to 45 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40 to 60 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO. 1. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS AND FOR PILE DRIVING CRITERIA, SEE PILE DRIVING CRITERIA PROVISION.

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. LEFT AND 30 FT. RIGHT OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTS OF 1 SPAN @ 17.83', 1 SPAN @ 17.00', AND 1 SPAN @ 17.75' WITH A CLEAR ROADWAY WIDTH OF 24 FT. THE SUPERSTRUCTURE CONSISTS OF A REINFORCED CONCRETE DECK ON CREOSOTE TIMBER JOISTS. THE END BENTS AND BENTS ARE CONCRETE CAPS ON TIMBER PILES. THE EXISTING STRUCTURE, WHICH IS LOCATED AT THE SITE OF THE PROPOSED STRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. 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 SHOW ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12X53 STEEL PIPES		HP 14X73 GALVINIZED STEEL PIPES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	ELASTOMERIC BEARINGS	3'-0"x1'-9" PRESTRESSED CONCRETE CORED SLABS		GEOTEXTILE FOR DRAINAGE
	LS	EA	LS	CY	LS	LB	NO.	LF	NO.	LF	EA	LF	TONS	LS	NO.	LF	SY
SUPERSTRUCTURE					LS							200.5		LS	20	1,000.00	
END BENT 1			LS	20.0		2,449	5	300			4		85				95
BENT 1				9.9		1,959			7	525	7						
END BENT 2			LS	20.0		2,449	5	300			4		75				85
TOTAL	LS	2	LS	49.9	LS	6,857	10	600	7	525	15	200.5	160	LS	20	1,000.00	180

DRAWN BY: B. BOLLMAN
CHECKED BY: K. SMITH
DESIGN ENGINEER OF RECORD: G. W. DICKEY

DATE: 4-15
DATE: 8-15
DATE: 7-14

GENERAL DRAWING
PREPARED BY:
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159



DocuSigned by:
Kenneth W. Smith
9/1/2015

PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1446 (AUTRY MILL RD.) OVER
LITTLE BEAVERDAM SWAMP
BETWEEN US 13 AND SR 1472
27'-10" CLEAR ROADWAY - 90° SKEW

REVISIONS					SHEET NO. S-02 TOTAL SHEETS
NO.	BY:	DATE:	NO.	DATE:	
1			3		
2			4		

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	1.394	--	1.75	0.276	1.57	50'	EL	24.5	0.531	1.39	50'	EL	2.45	0.80	0.276	1.44	50'	EL	24.5		
		HL-93(0pr)	N/A	--	1.807	--	1.35	0.276	2.03	50'	EL	24.5	0.531	1.81	50'	EL	2.45	N/A	--	--	--	--	--		
		HS-20(Inv)	36.000	2	1.667	60.007	1.75	0.276	1.95	50'	EL	24.5	0.531	1.67	50'	EL	2.45	0.80	0.276	1.79	50'	EL	24.5		
		HS-20(0pr)	36.000	--	2.161	77.787	1.35	0.276	2.52	50'	EL	24.5	0.531	2.16	50'	EL	2.45	N/A	--	--	--	--	--		
LEGAL LOAD RATING		SV	SNSH	13.500	--	3.635	49.079	1.4	0.276	4.95	50'	EL	24.5	0.531	4.7	50'	EL	2.45	0.80	0.276	3.64	50'	EL	24.5	
			SNGARBS2	20.000	--	2.871	57.42	1.4	0.276	3.91	50'	EL	24.5	0.531	3.42	50'	EL	2.45	0.80	0.276	2.87	50'	EL	24.5	
			SNAGRIS2	22.000	--	2.778	61.109	1.4	0.276	3.78	50'	EL	19.6	0.531	3.21	50'	EL	2.45	0.80	0.276	2.78	50'	EL	24.5	
			SNCOTTS3	27.250	--	1.814	49.418	1.4	0.276	2.47	50'	EL	24.5	0.531	2.36	50'	EL	2.45	0.80	0.276	1.81	50'	EL	24.5	
			SNAGGRS4	34.925	--	1.577	55.063	1.4	0.276	2.15	50'	EL	24.5	0.531	2.01	50'	EL	2.45	0.80	0.276	1.58	50'	EL	24.5	
			SNS5A	35.550	--	1.537	54.657	1.4	0.276	2.09	50'	EL	24.5	0.531	2.07	50'	EL	2.45	0.80	0.276	1.54	50'	EL	24.5	
			SNS6A	39.950	--	1.438	57.43	1.4	0.276	1.96	50'	EL	24.5	0.531	1.91	50'	EL	2.45	0.80	0.276	1.44	50'	EL	24.5	
			SNS7B	42.000	--	1.370	57.54	1.4	0.276	1.87	50'	EL	24.5	0.531	1.91	50'	EL	2.45	0.80	0.276	1.37	50'	EL	24.5	
		TTST	TNAGRIT3	33.000	--	1.761	58.118	1.4	0.276	2.4	50'	EL	24.5	0.531	2.25	50'	EL	2.45	0.80	0.276	1.76	50'	EL	24.5	
			TNT4A	33.075	--	1.777	58.759	1.4	0.276	2.42	50'	EL	24.5	0.531	2.17	50'	EL	2.45	0.80	0.276	1.78	50'	EL	24.5	
			TNT6A	41.600	--	1.480	61.558	1.4	0.276	2.01	50'	EL	24.5	0.531	2.08	50'	EL	2.45	0.80	0.276	1.48	50'	EL	24.5	
			TNT7A	42.000	--	1.502	63.087	1.4	0.276	2.05	50'	EL	24.5	0.531	1.94	50'	EL	2.45	0.80	0.276	1.50	50'	EL	24.5	
			TNT7B	42.000	--	1.566	65.773	1.4	0.276	2.13	50'	EL	24.5	0.531	1.84	50'	EL	2.45	0.80	0.276	1.57	50'	EL	24.5	
			TNAGRIT4	43.000	--	1.486	63.902	1.4	0.276	2.02	50'	EL	24.5	0.531	1.77	50'	EL	2.45	0.80	0.276	1.49	50'	EL	24.5	
TNAGT5A	45.000		--	1.388	62.47	1.4	0.276	1.89	50'	EL	24.5	0.531	1.8	50'	EL	2.45	0.80	0.276	1.39	50'	EL	24.5			
TNAGT5B	45.000		3	1.360	61.206	1.4	0.276	1.85	50'	EL	24.5	0.531	1.68	50'	EL	2.45	0.80	0.276	1.36	50'	EL	24.5			

LOAD FACTORS:

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

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

-
-
-
-

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

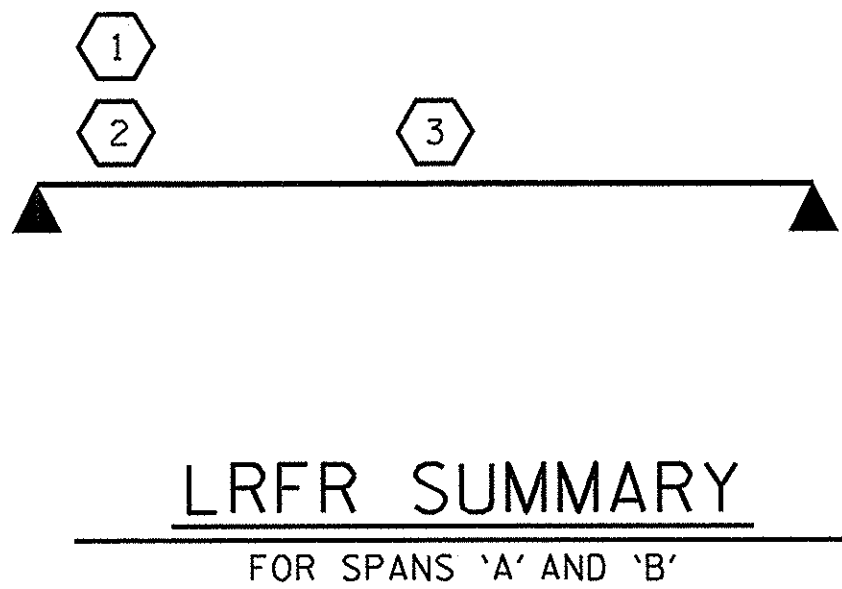
3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-



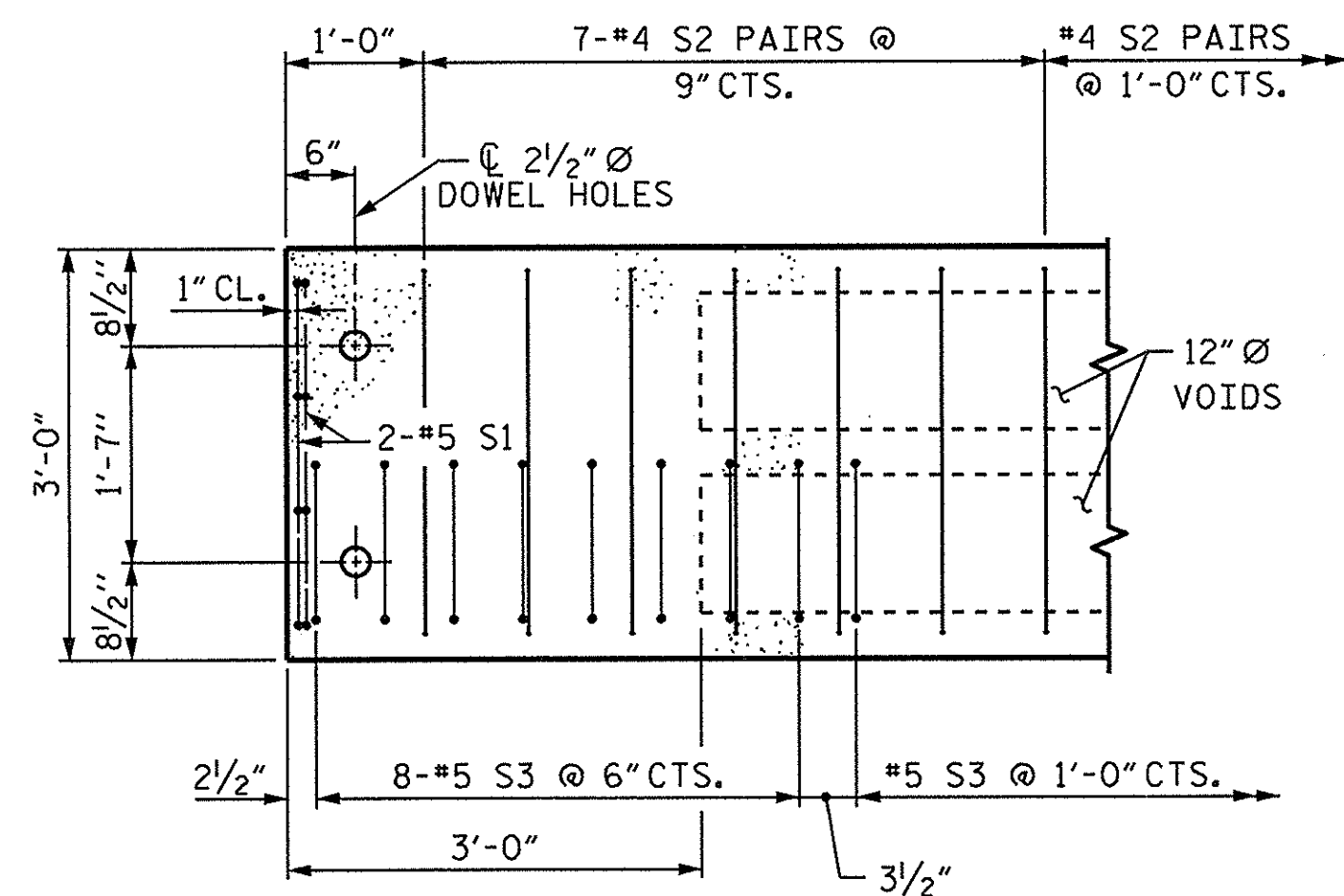
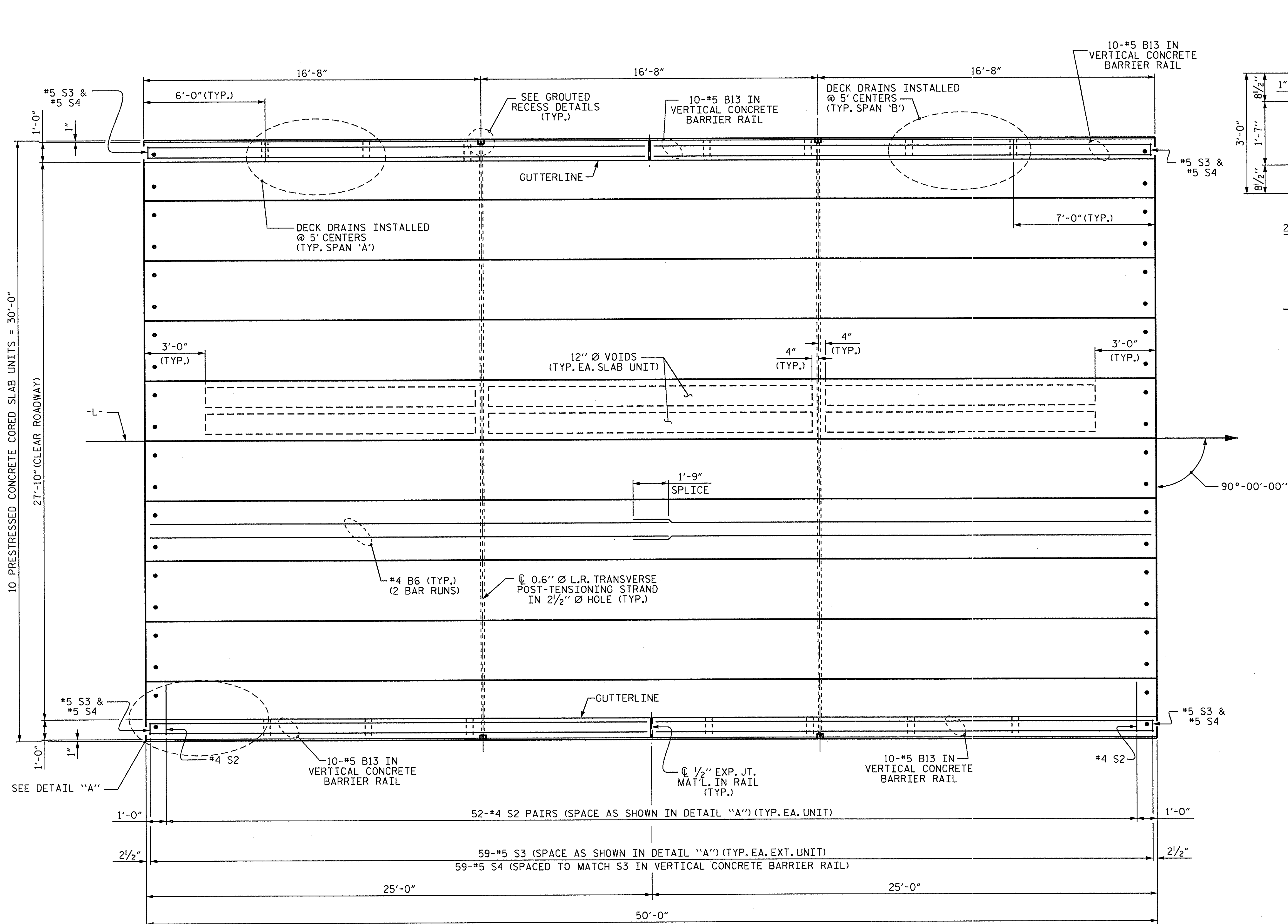
LRFR SUMMARY
FOR SPANS 'A' AND 'B'

ASSEMBLED BY : C.C.WILLIAMS DATE : 06-06-14
CHECKED BY : A.K.PATEL DATE : 06-25-14
DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

31-JUL-2014 11:53
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gdckey



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-03 TOTAL SHEETS
STANDARD LRFR SUMMARY FOR 50' CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



DETAIL "A"

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

PLAN OF UNIT

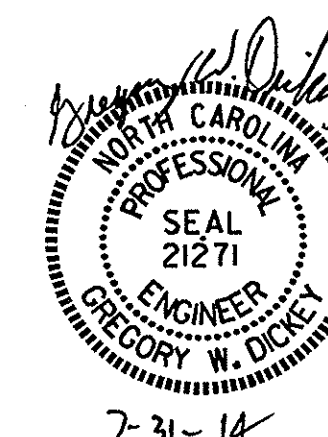
DECK DRAINS ARE TO BE INSTALLED @ 5' CENTERS AT THE FOLLOWING LOCATIONS:
LT & RT: STA. 12+08, 12+13, 12+18, 12+80, 12+85, 12+90, 12+95

PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 50' UNIT
27'-10" CLEAR ROADWAY
90° SKEW



REVISIONS						SHEET NO. S-05
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

ASSEMBLED BY: C.C. WILLIAMS DATE: 06-06-14
CHECKED BY: A.K. PATEL DATE: 06-25-14
DRAWN BY: DGE 3/09 REV. 12/5/11 MAA/AAC
CHECKED BY: BCH 3/09

31-JUL-2014 11:53
S:\DPG\Division3\17BP3R40\CCW\17BP3R40_SD_CS.dgn
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STD. NO. 21" PCS_30_90S_50L



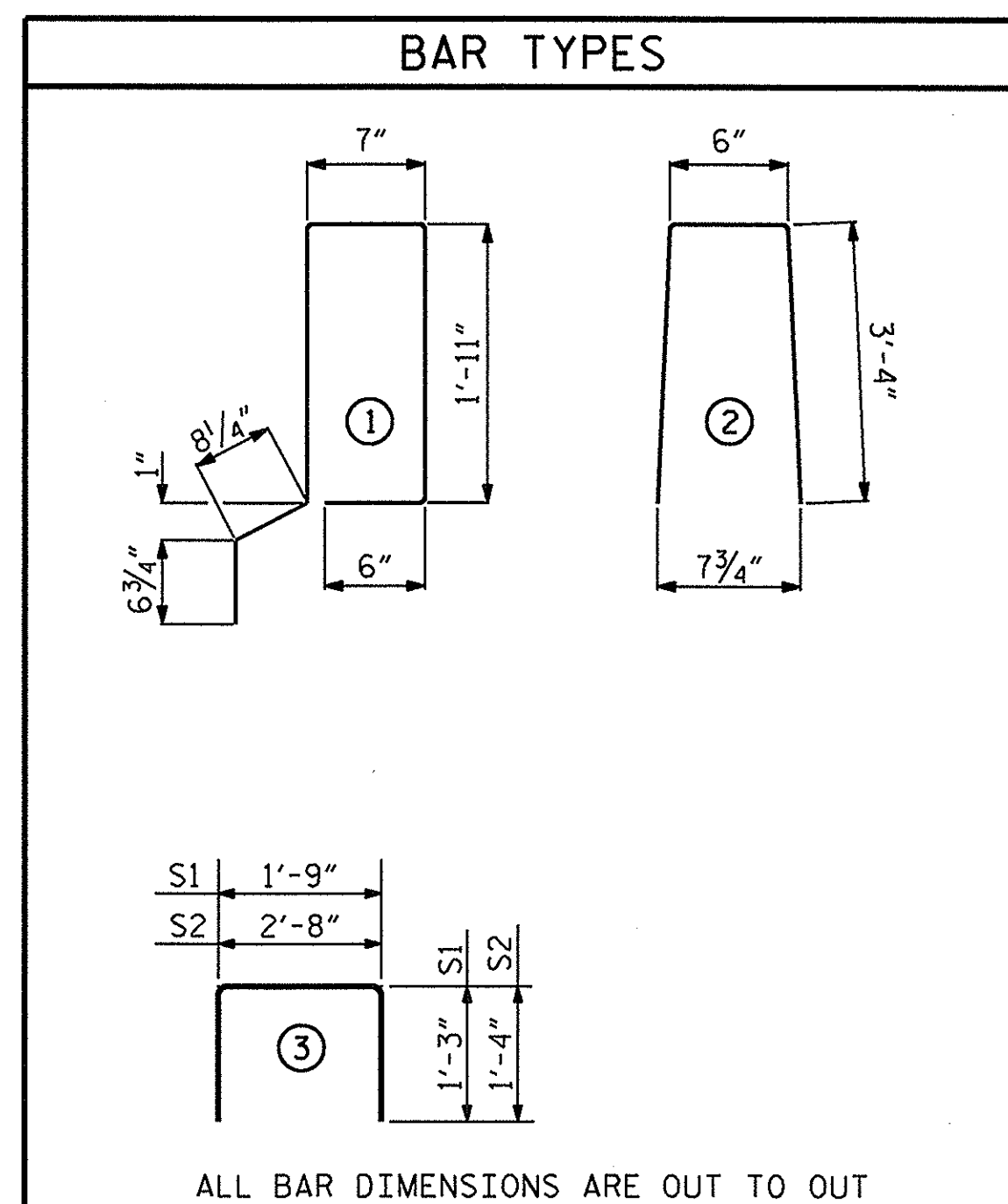
ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

CONCRETE RELEASE STRENGTH	
UNIT	PSI
50' UNITS	4900

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	50' UNIT					
*B13	40	80	#5	STR	24'-7"	2052
* S4	118	236	#5	2	7'-2"	1764
* EPOXY COATED REINFORCING STEEL				LBS.		3816
CLASS AA CONCRETE				CU.YDS.		26.2
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		200.5

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
27'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
50' UNITS	1 1/2"	3'-7 3/4"

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
50' UNIT			
EXTERIOR C.S.	4	50'-0"	200'-0"
INTERIOR C.S.	16	50'-0"	800'-0"
TOTAL	20		1000'-0"



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.

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 1/2" 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.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE DRAIN OPENING AT THE GUTTERLINE SHALL BE 4"X 8". THE HEIGHT OF THE BLOCKOUT IN THE VERTICAL CONCRETE BARRIER RAIL SHALL EXTEND FROM THE TOP OF THE CORED SLAB UNIT TO THE TOP OF THE DRAIN OPENING.

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

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
50' 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"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
 STATION: 12+52.00 -L-

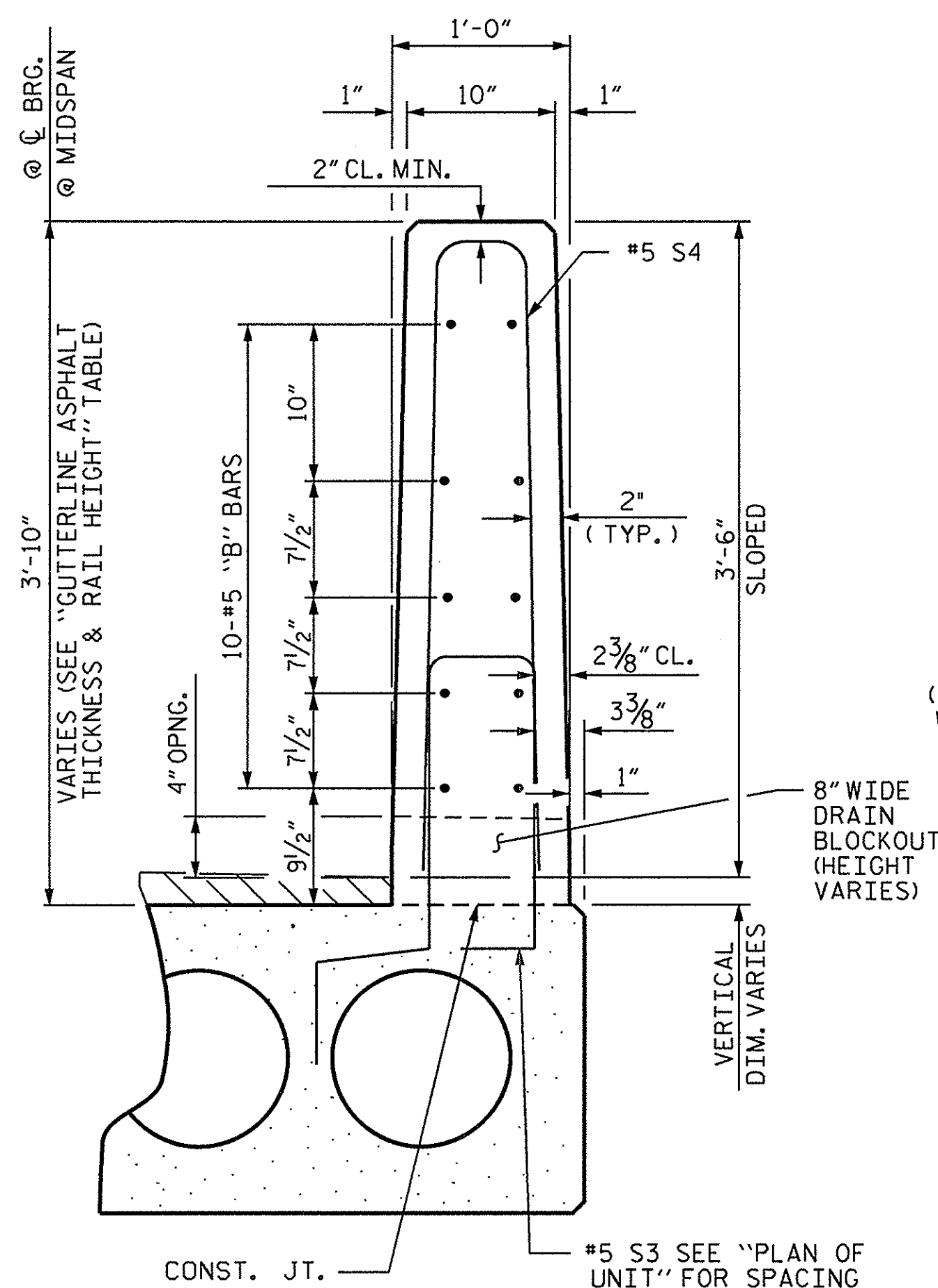
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

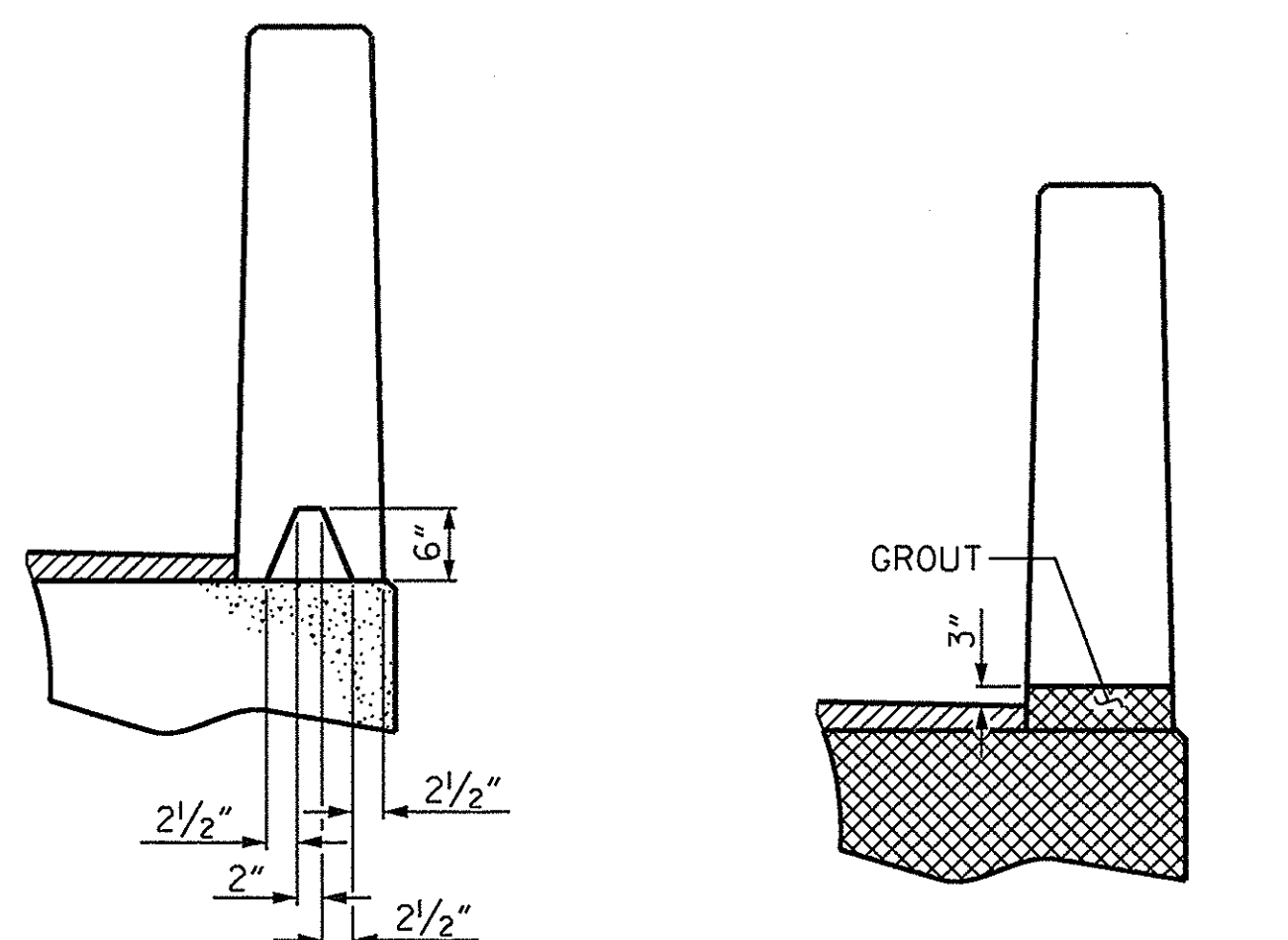
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS						SHEET NO. S-06
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

STD. NO. 21PCS3_30_90S



SECTION THRU RAIL

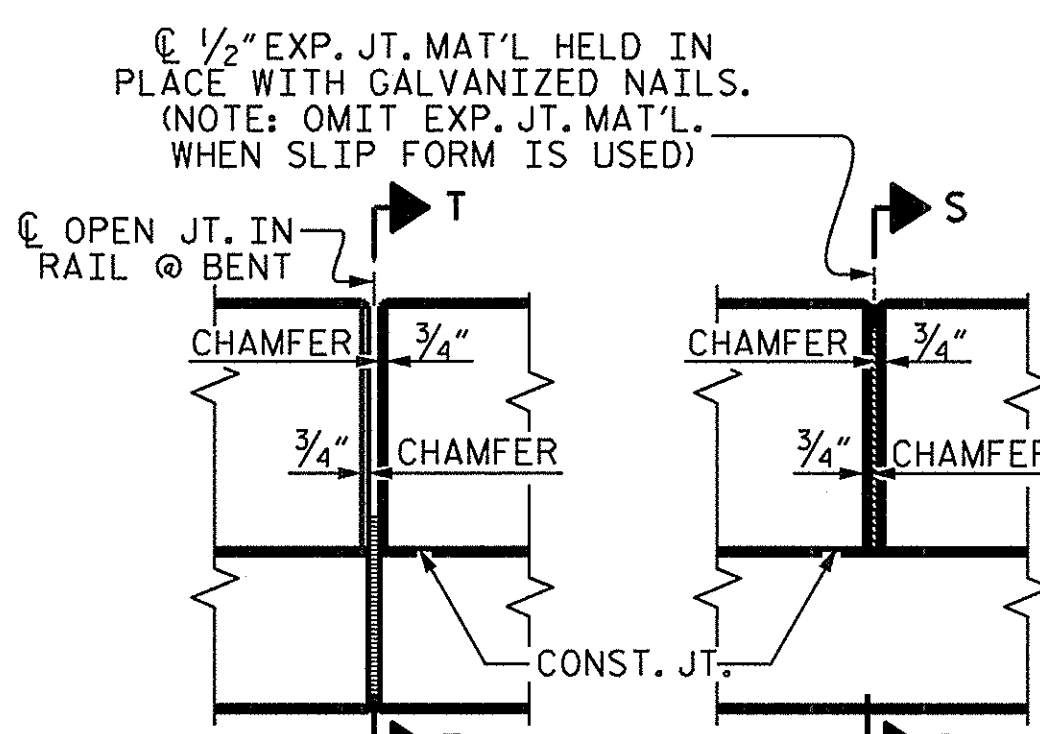


SECTION S-S

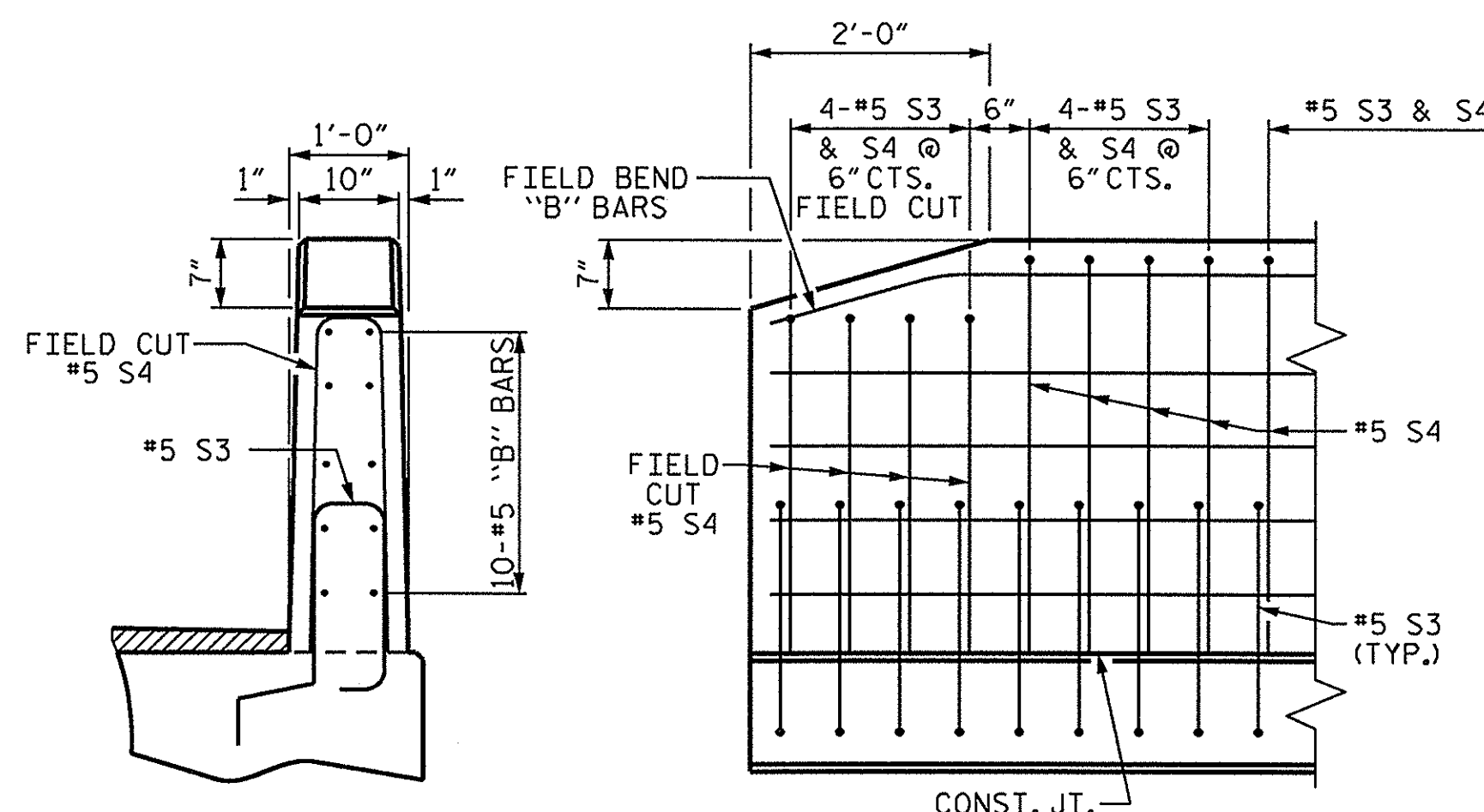
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)

SECTION T-T

AT OPEN JOINT AT BENT
(THIS IS TO BE USED WHERE
FOAM JOINT IS NOT USED)



ELEVATION AT EXPANSION JOINTS



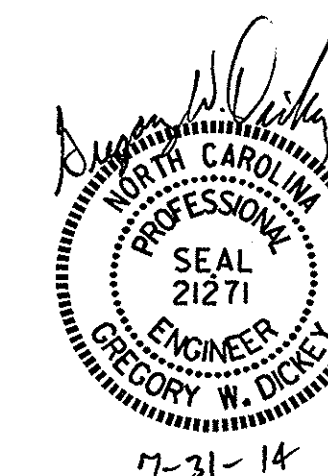
END VIEW

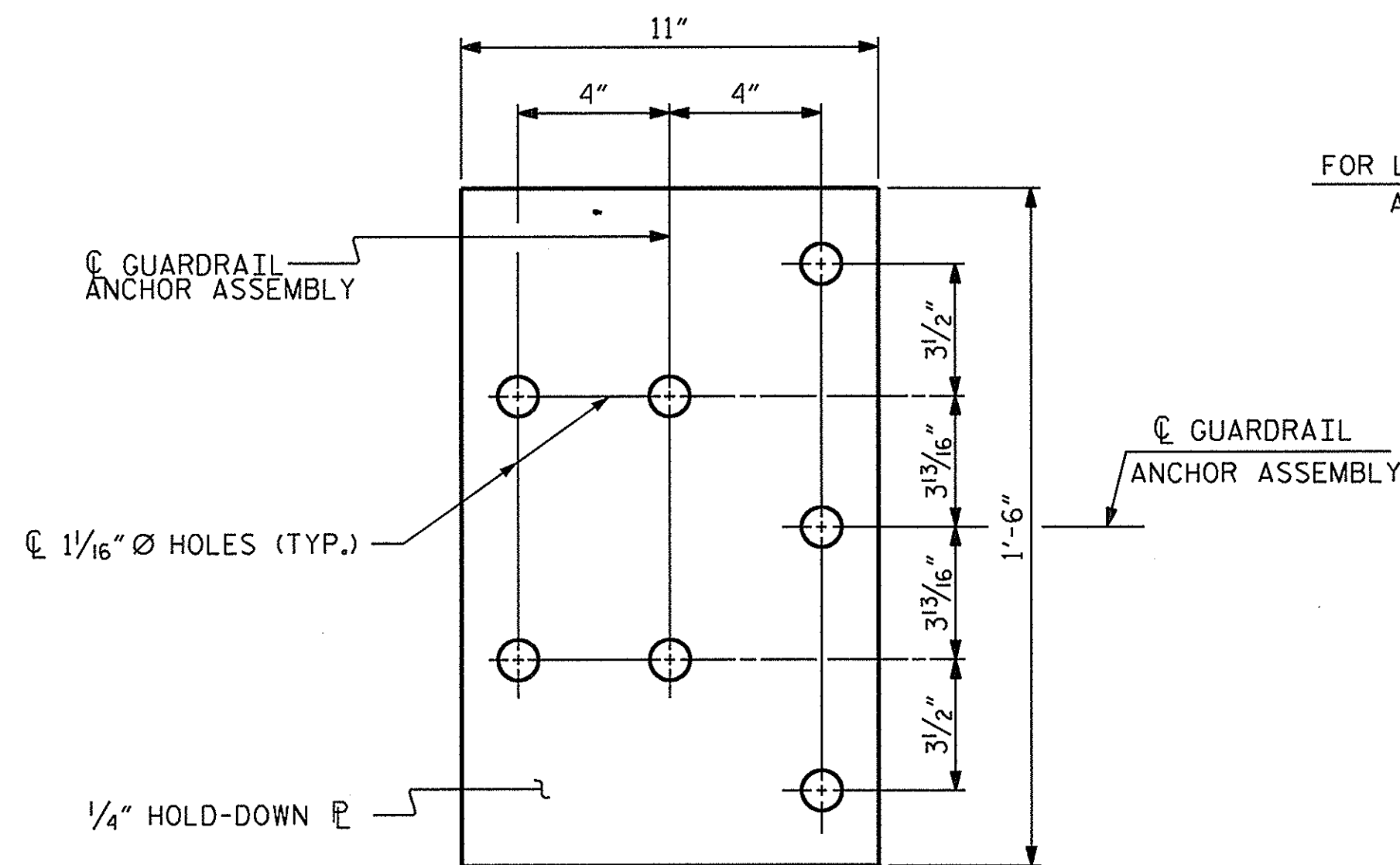
SIDE VIEW

END OF RAIL DETAILS

ASSEMBLED BY : C.C.WILLIAMS		DATE : 06-06-14
CHECKED BY : A.K.PATEL		DATE : 06-25-14
DRAWN BY : MAA	6/10	REV. 12/11 MAA/AAC
CHECKED BY : MKT	7/10	

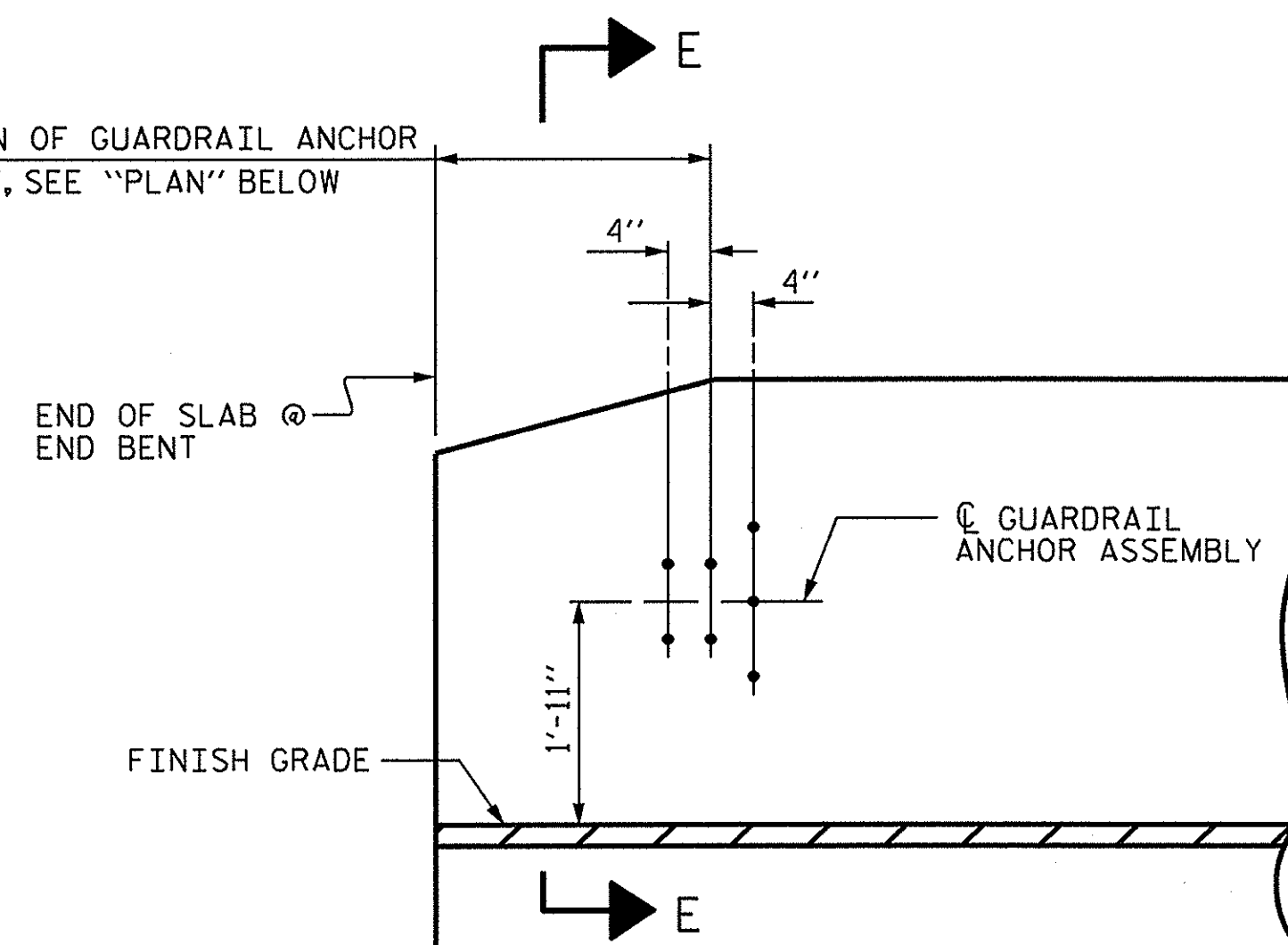
31-JUL-2014 11:53
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adlckey



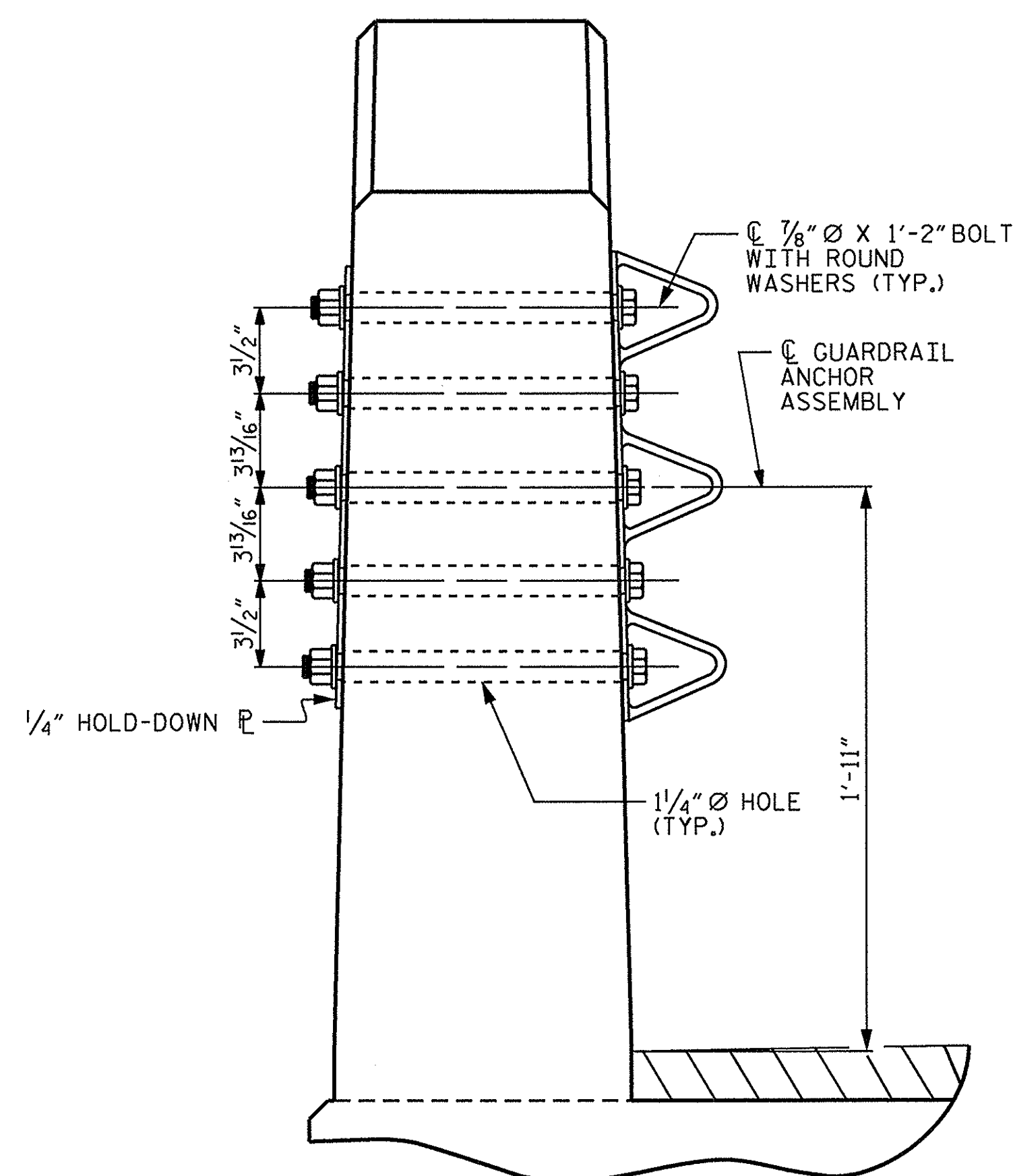


PLAN

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

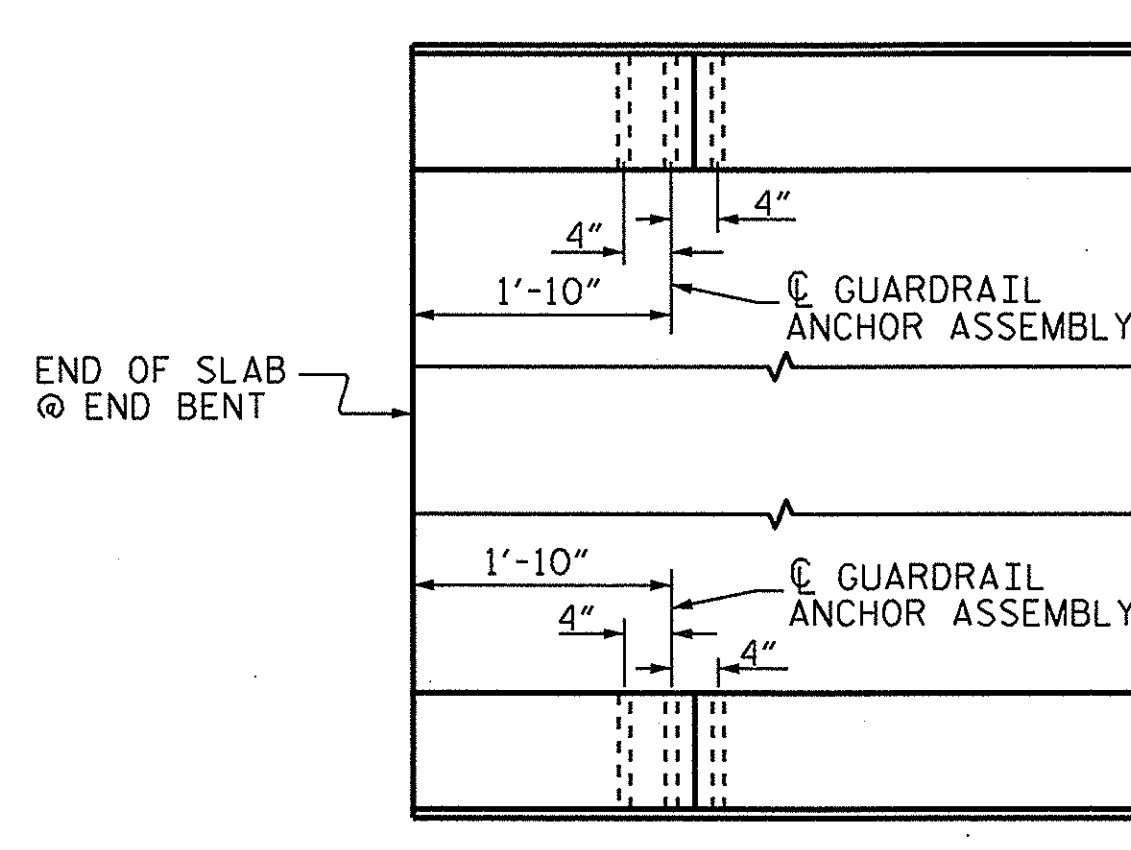


ELEVATION



SECTION E-E

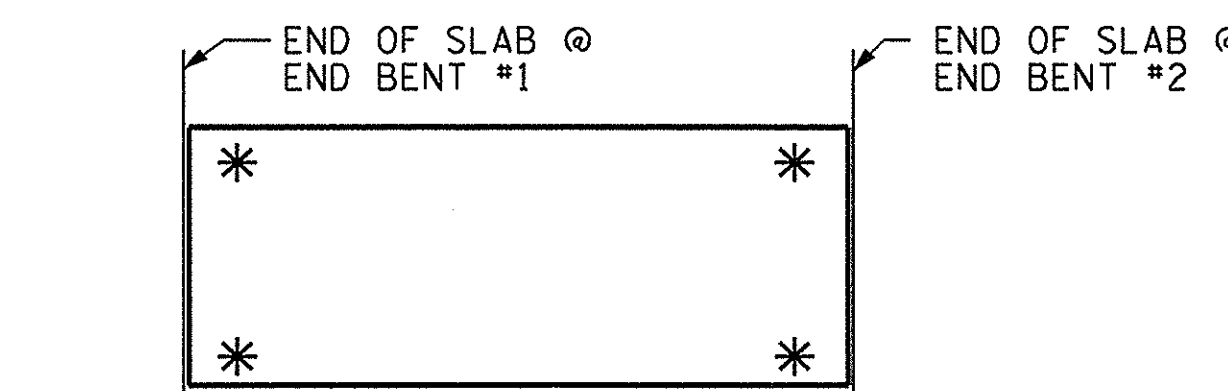
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

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.

PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+50.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

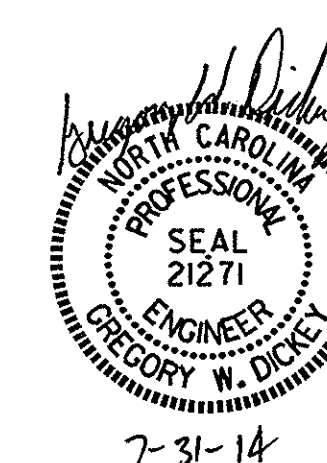
STANDARD
GUARDRAIL ANCHORAGE
FOR VERTICAL CONCRETE
BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-07
2			4			
TOTAL SHEETS						

(SHT 1) STD. NO. GRA3

ASSEMBLED BY : C.C.WILLIAMS	DATE : 06-06-14
CHECKED BY : A.K.PATEL	DATE : 06-25-14
DRAWN BY : MAA	5/10
CHECKED BY : GM	5/10
REV. 10/1/11	MAA/GM
REV. 12/5/11	MAA/GM
REV. 6/13	MAA/GM

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gdickey



NOTES

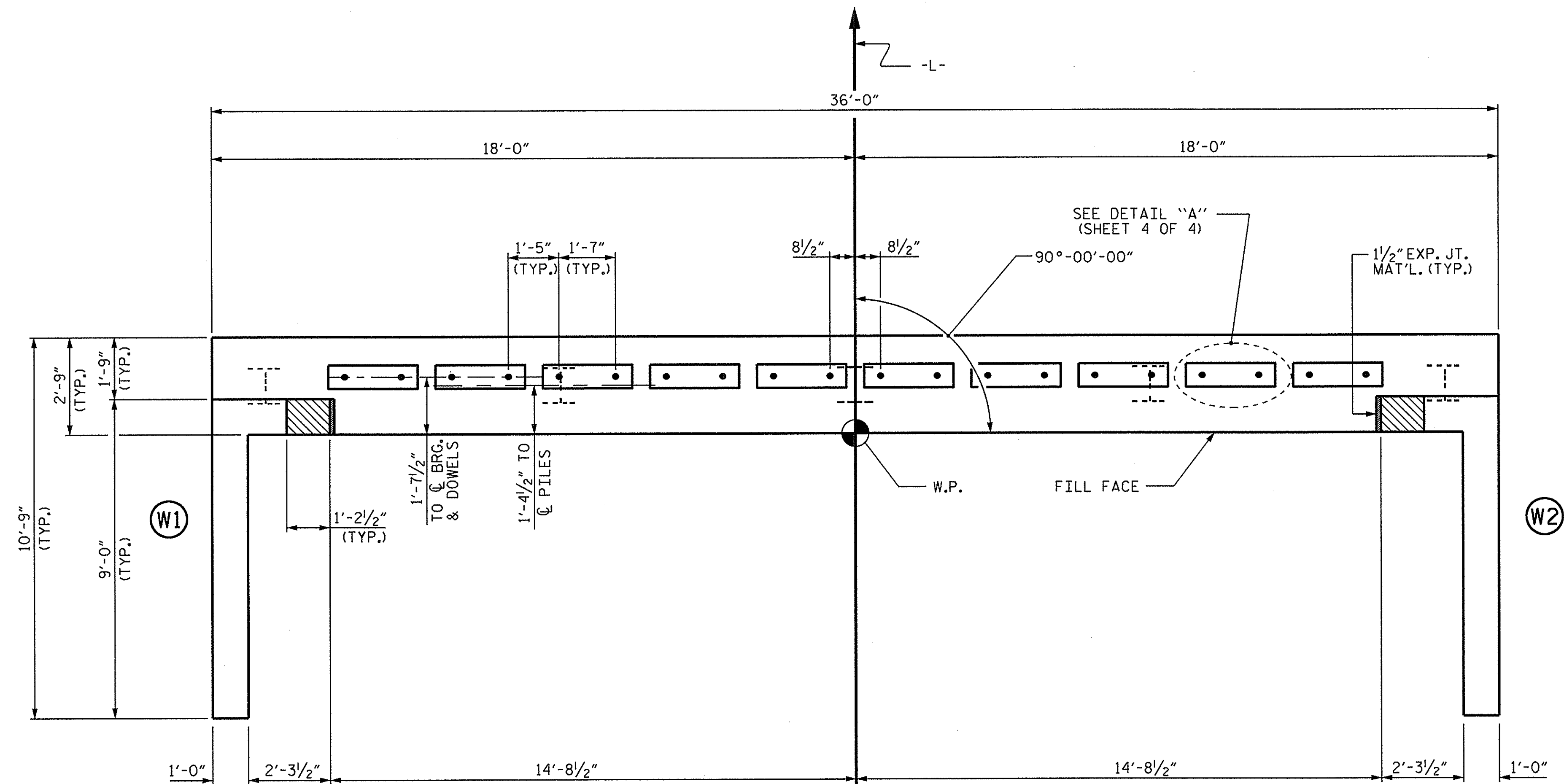
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

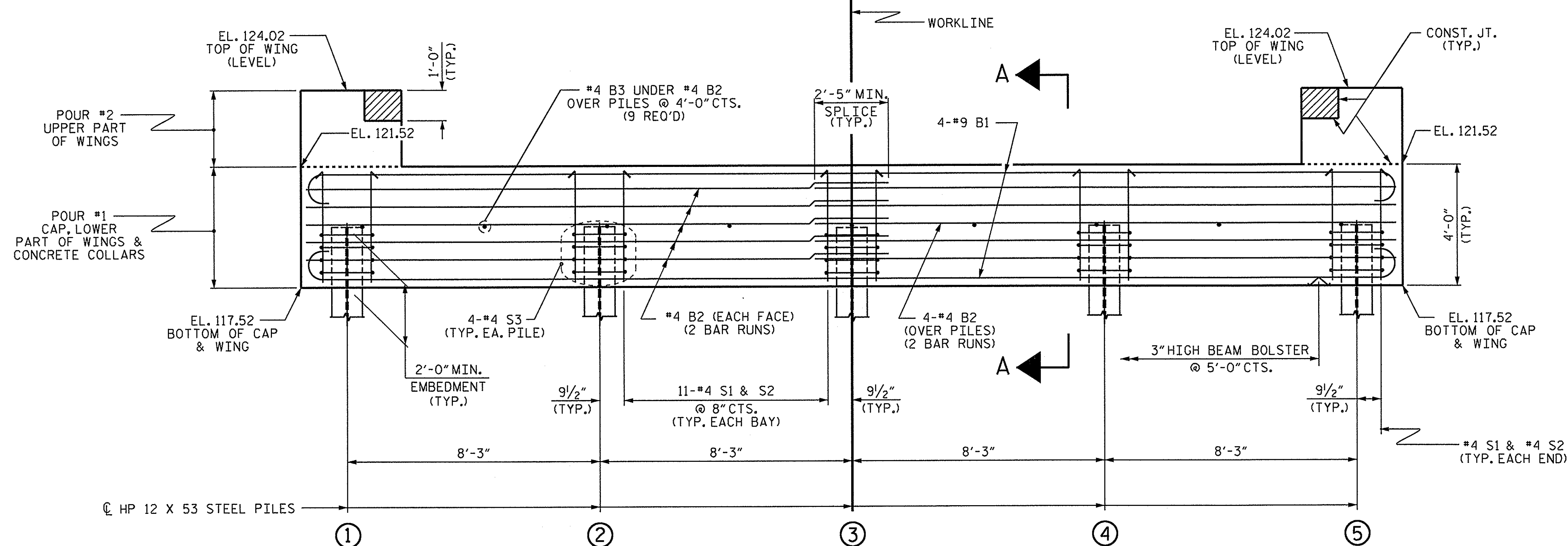
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

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



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.

ASSEMBLED BY : C.C.WILLIAMS DATE : 06-06-14
CHECKED BY : A.K.PATEL DATE : 06-26-14

DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11

31-JUL-2014 11:53
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gdckey

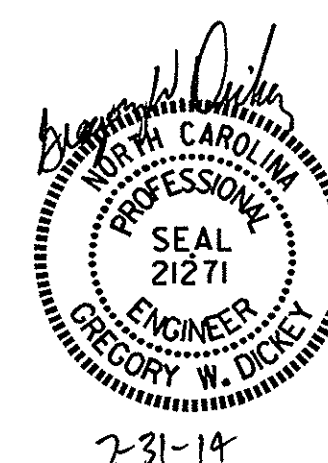
PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-08
2			4			
TOTAL SHEETS						

STD. NO. EB_30_90S4

NOTES

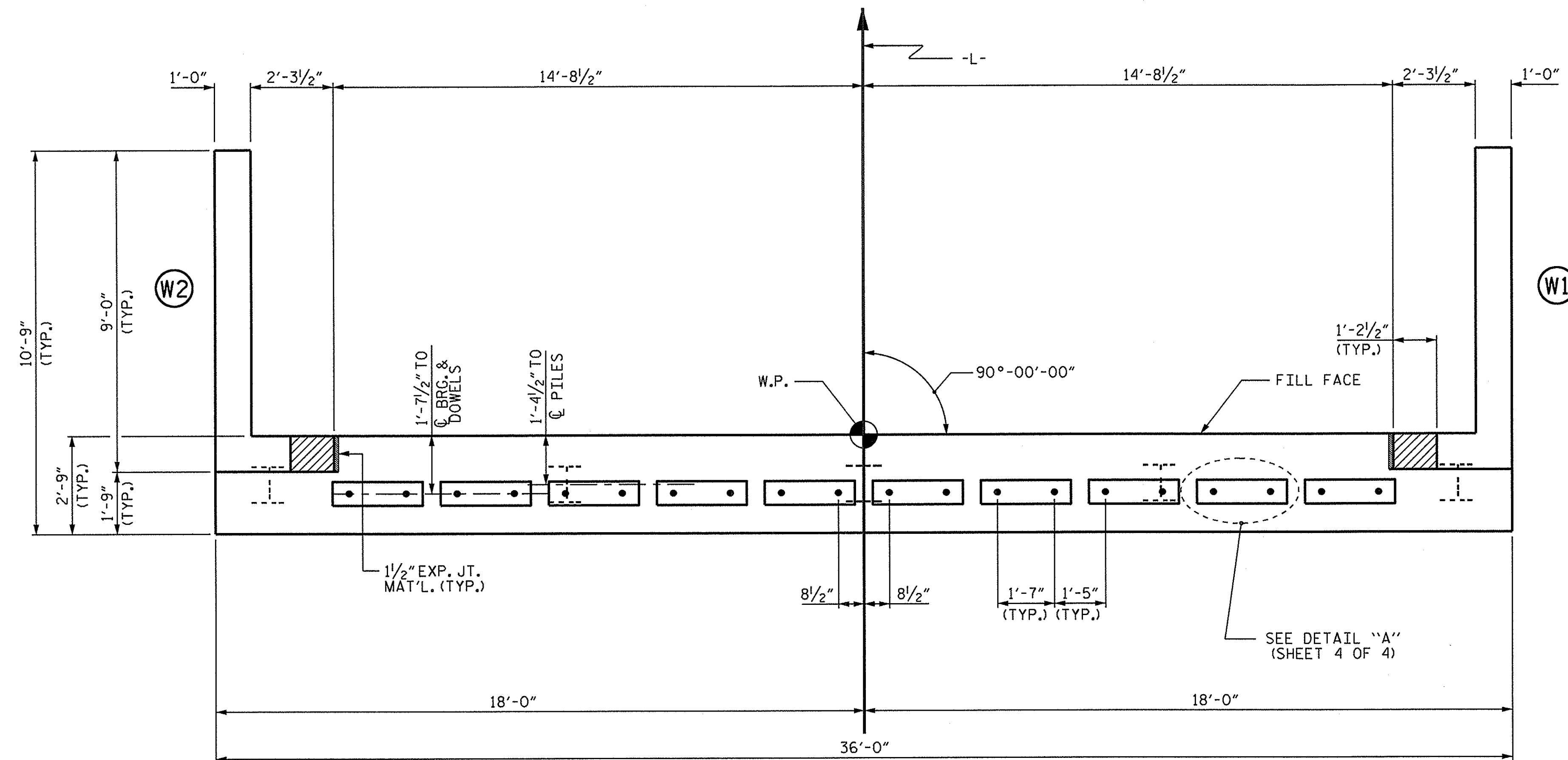
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

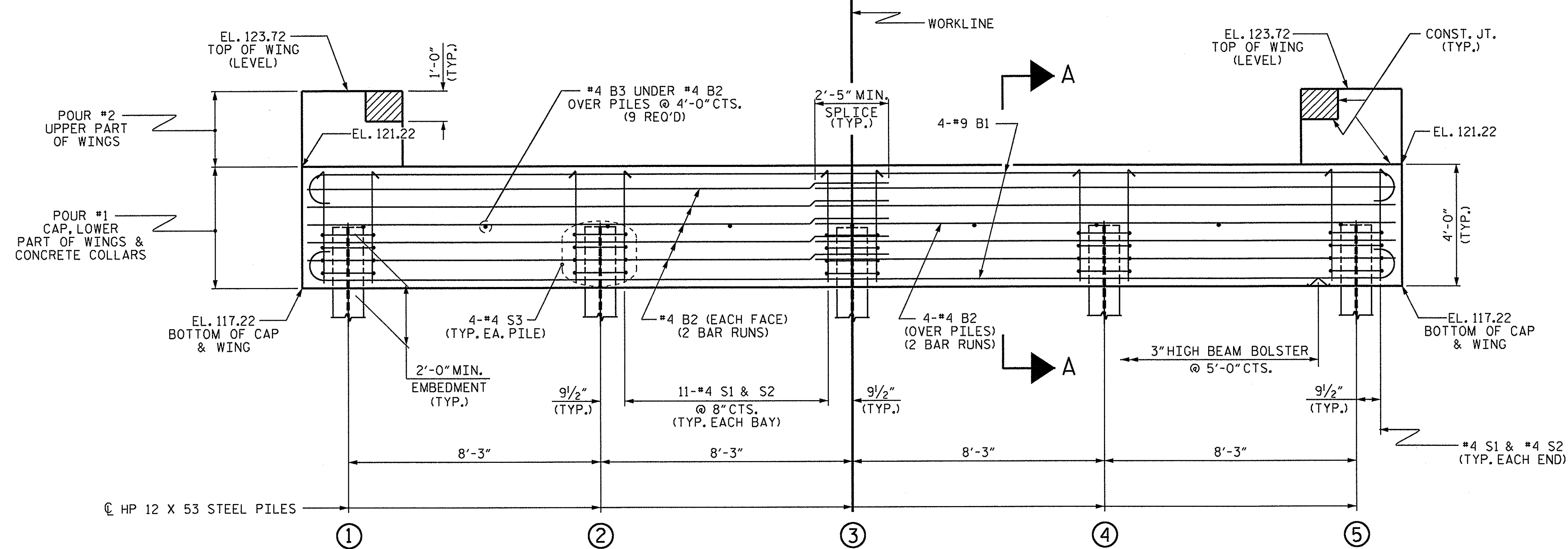
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

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



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.

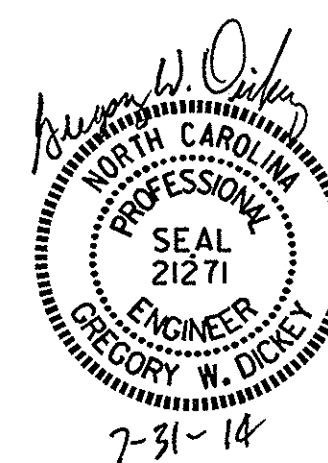
PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2



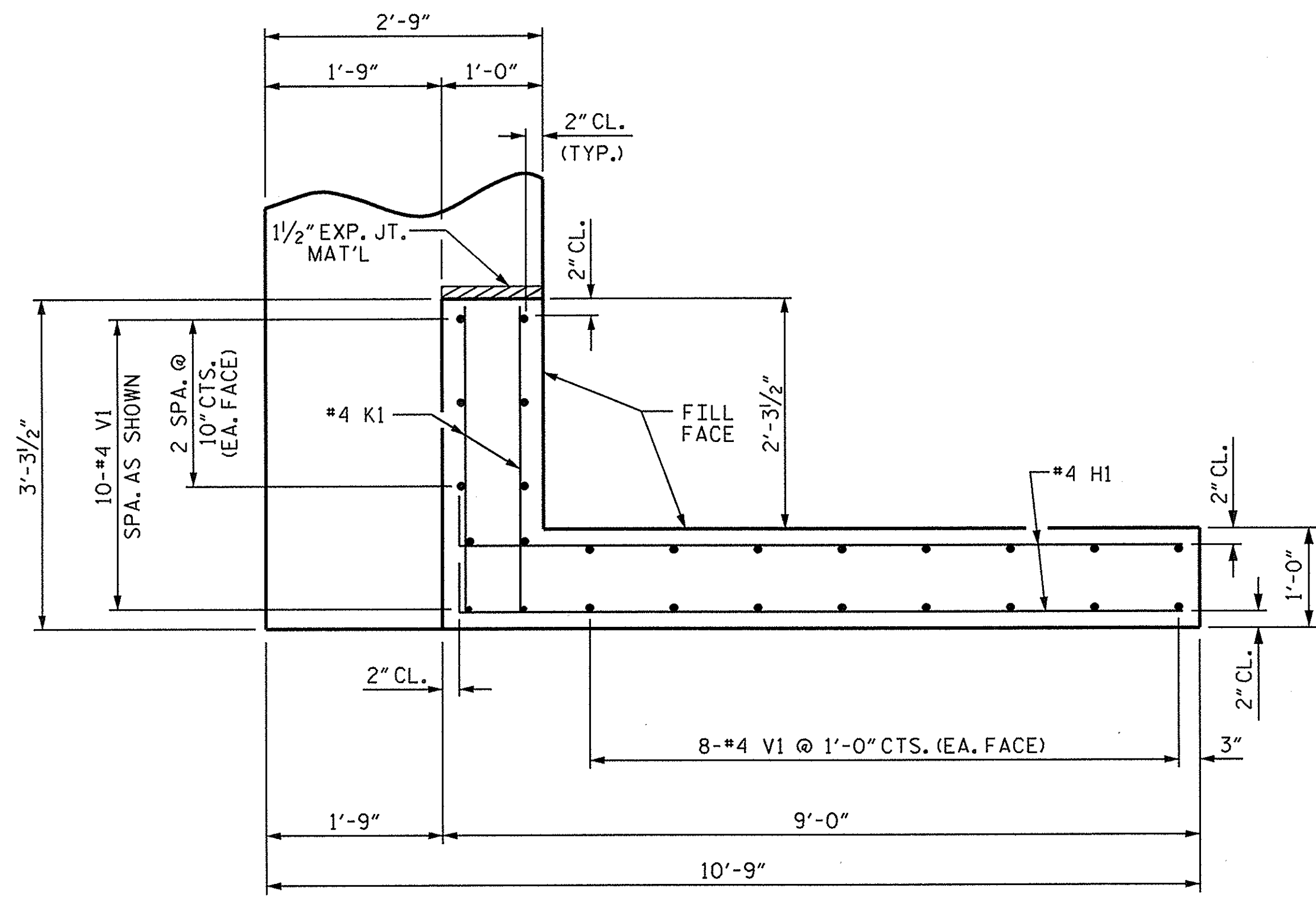
ASSEMBLED BY: C.C.WILLIAMS DATE: 06-06-14
CHECKED BY: A.K.PATEL DATE: 06-26-14

DRAWN BY: WJH 12/11
CHECKED BY: AAC 12/11

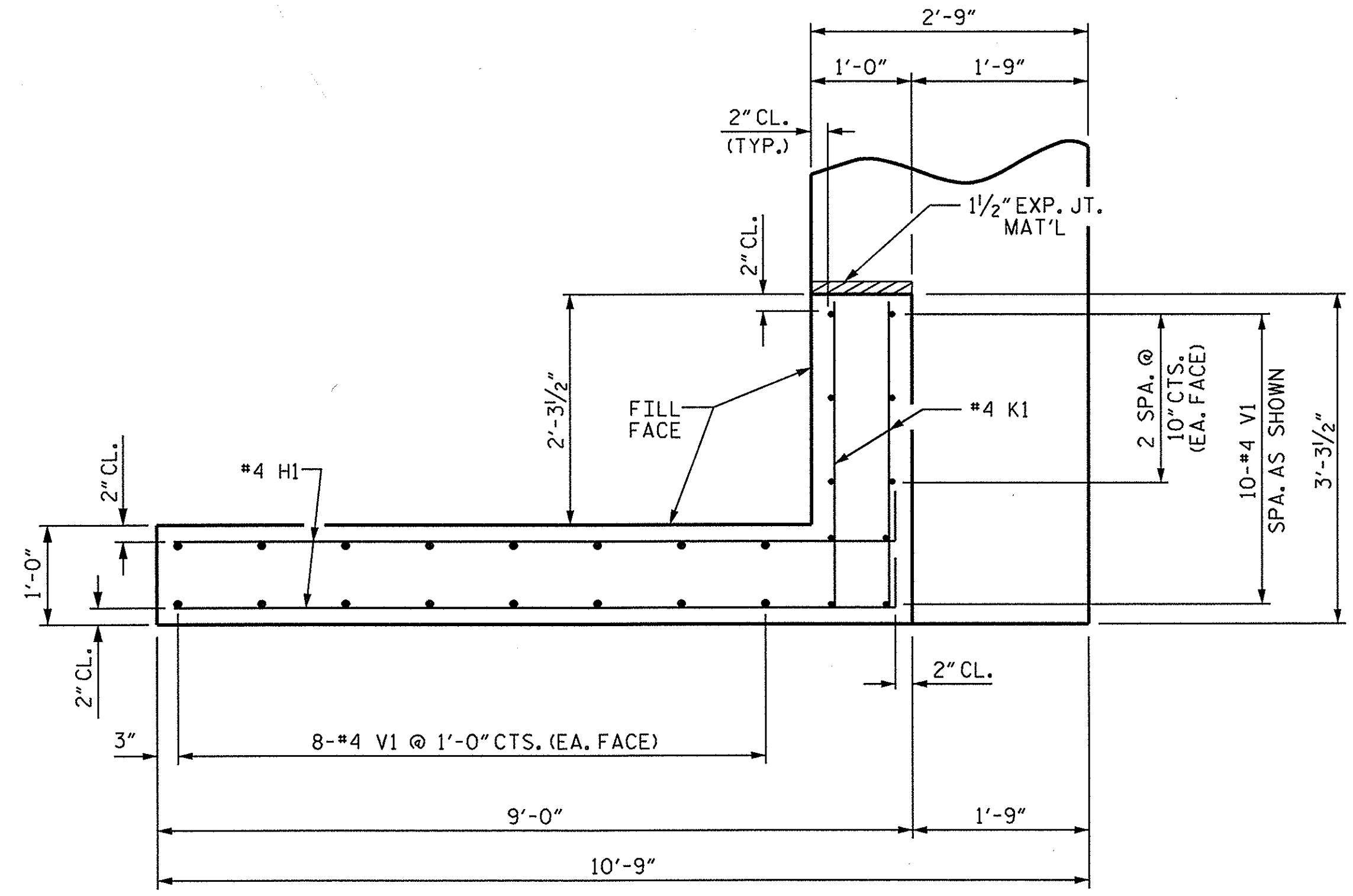
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-09
2			4			

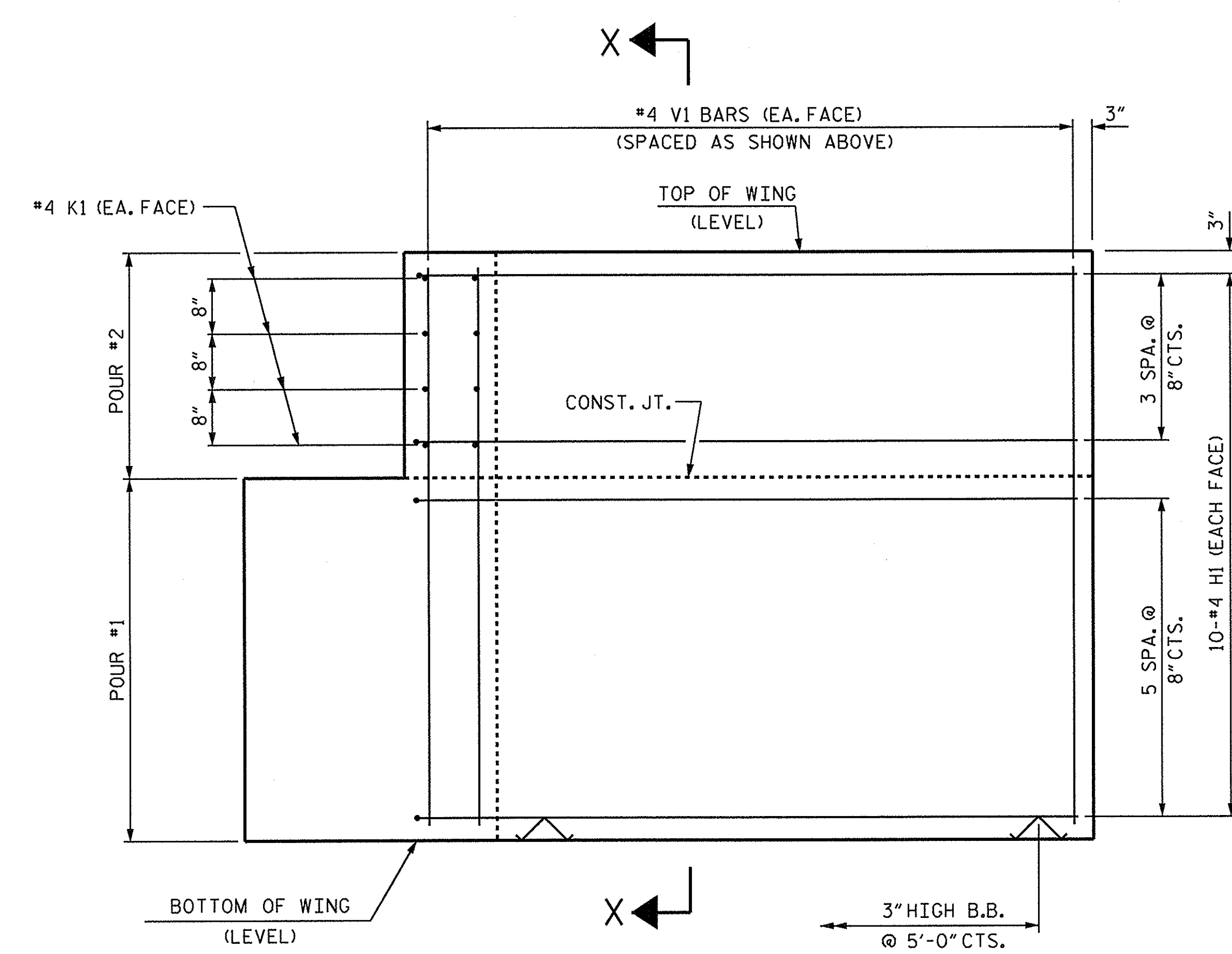
STD. NO. EB-30-90S4



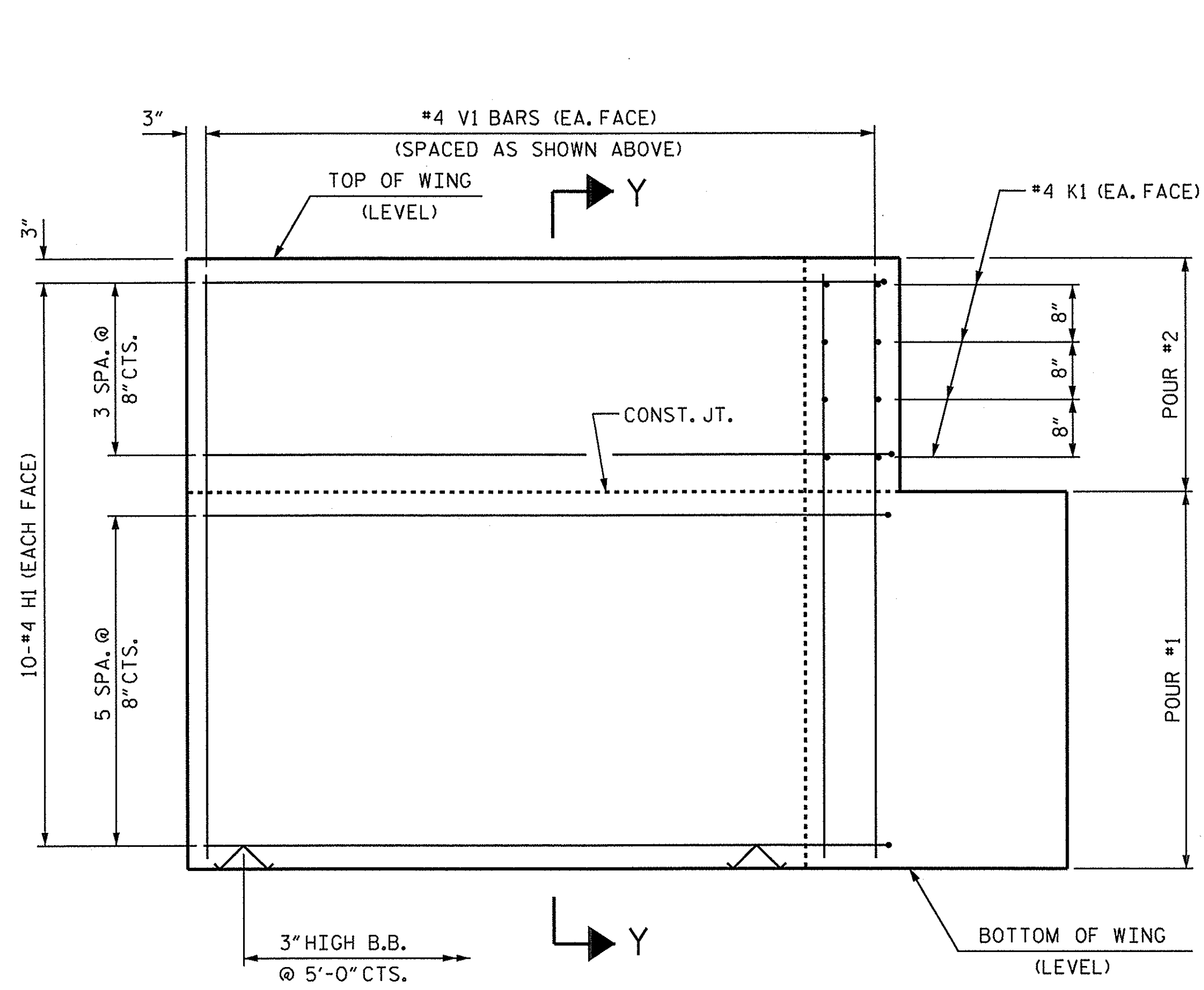
PLAN OF WING (W1)



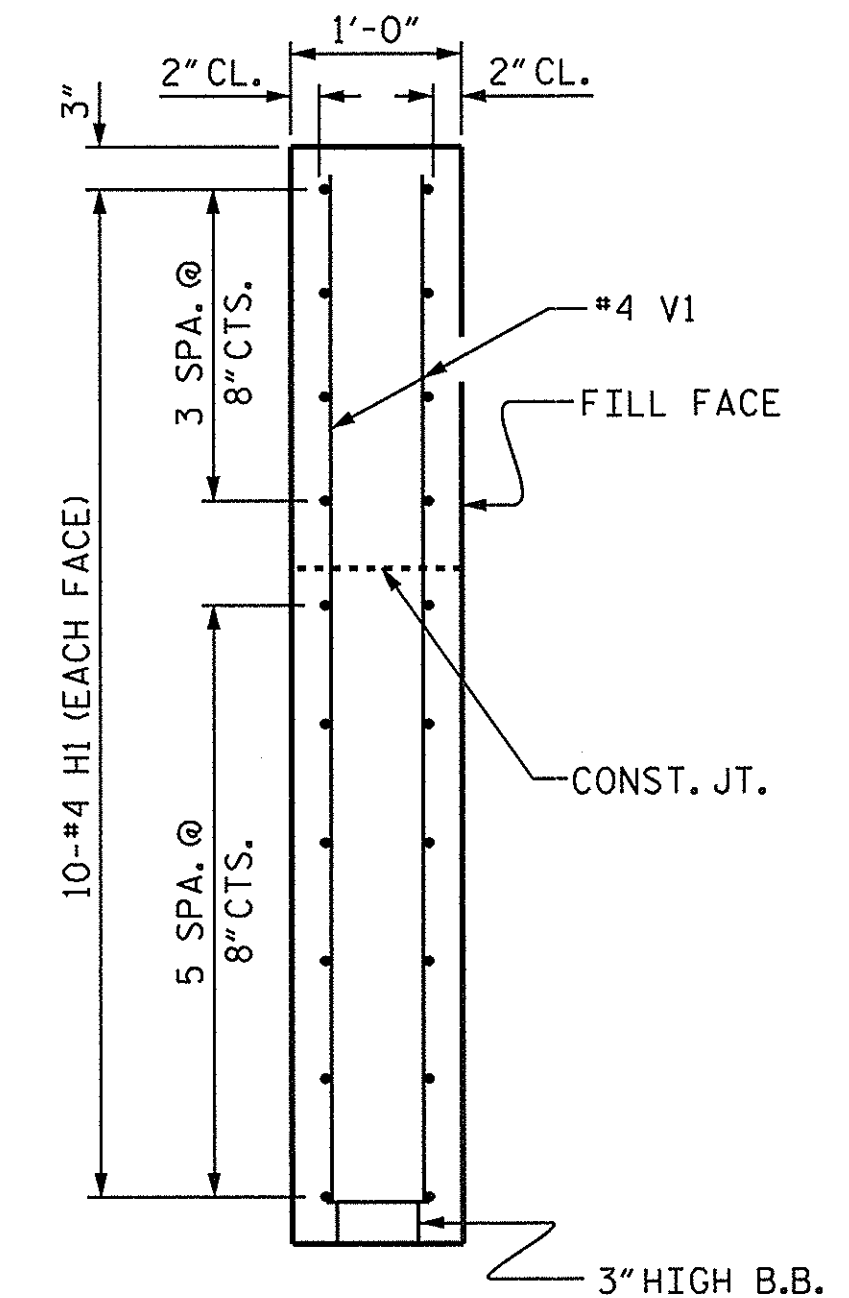
PLAN OF WING (W2)



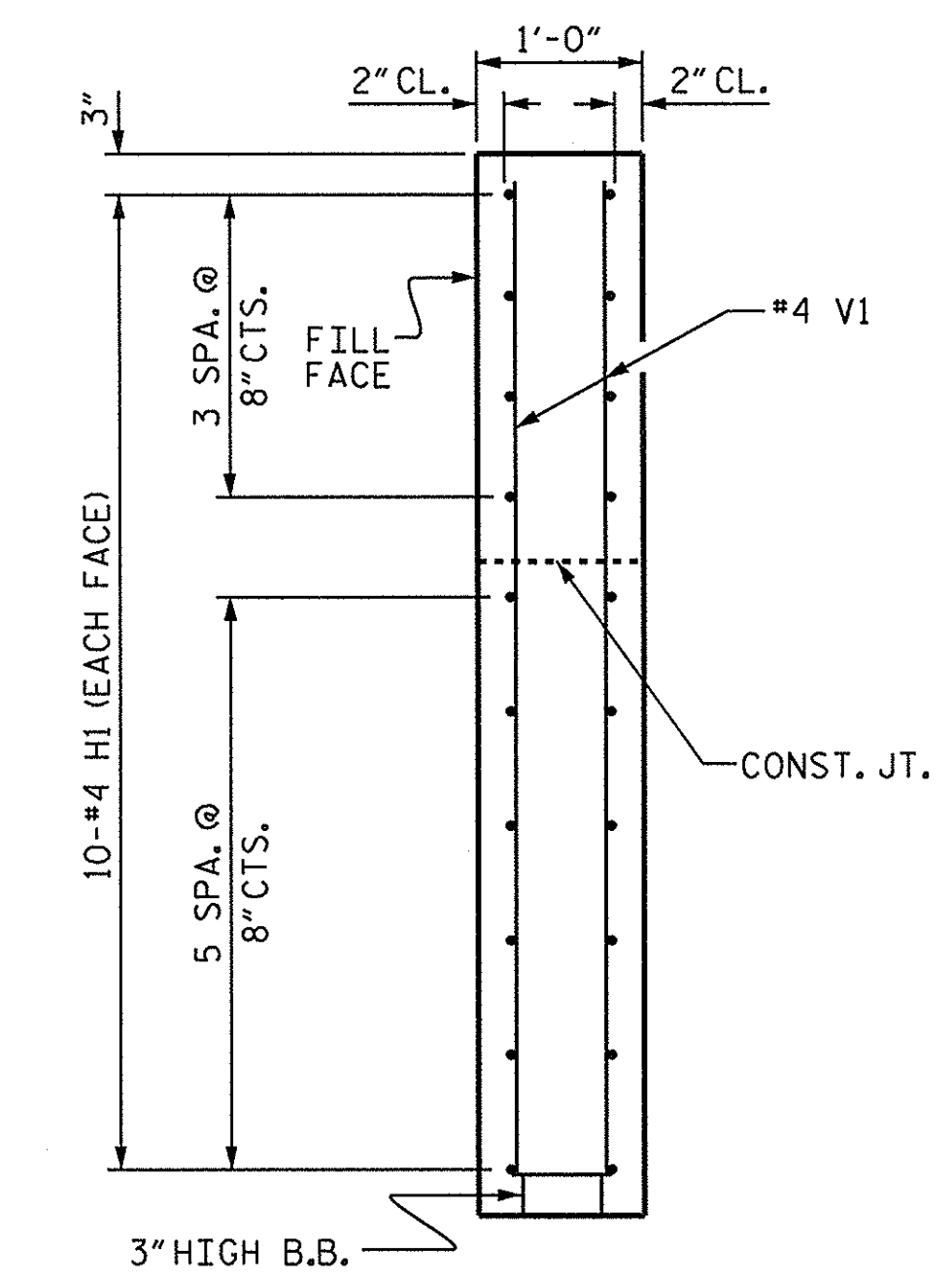
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



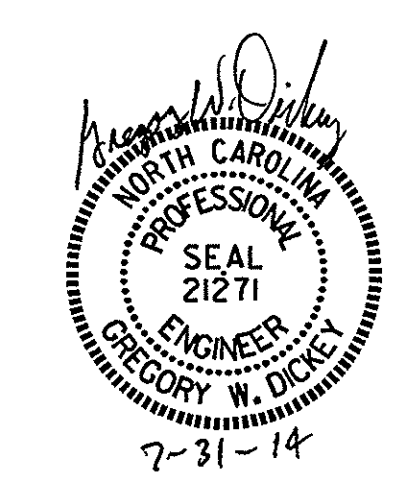
SECTION X-X



SECTION Y-Y

PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

SHEET 3 OF 4



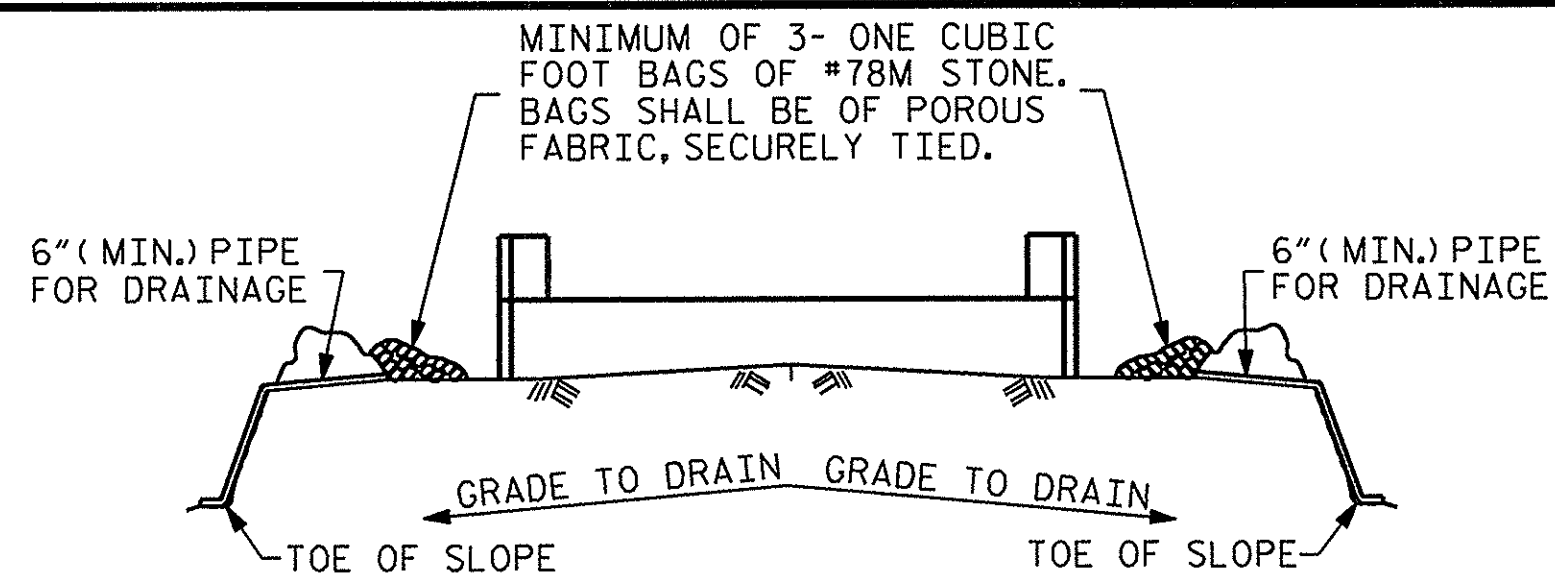
ASSEMBLED BY : C.C.WILLIAMS DATE :06-06-14
CHECKED BY : A.K.PATEL DATE :06-26-14
DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11

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WING DETAILS

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

STD. NO. EB_30_90S4

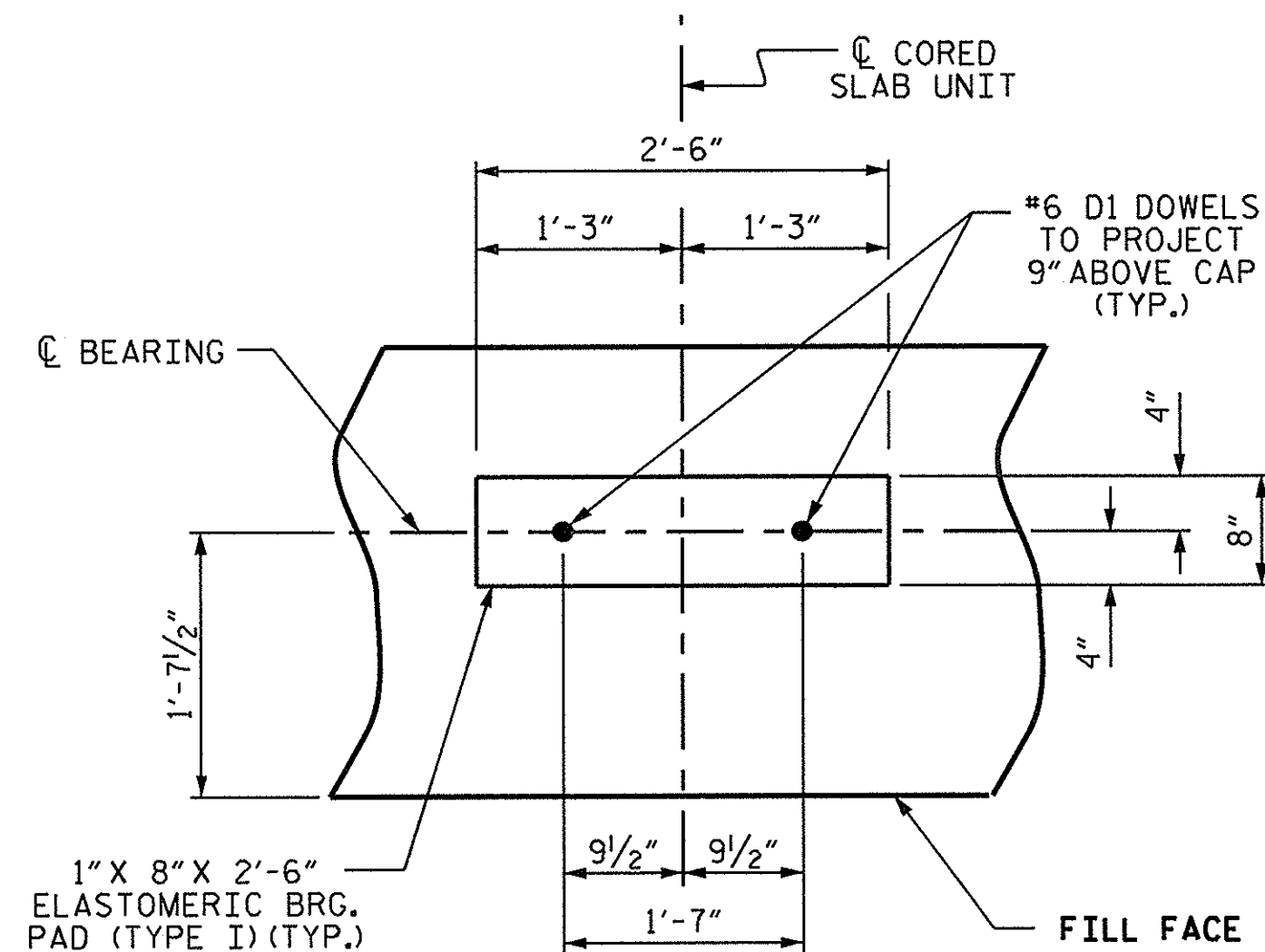


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

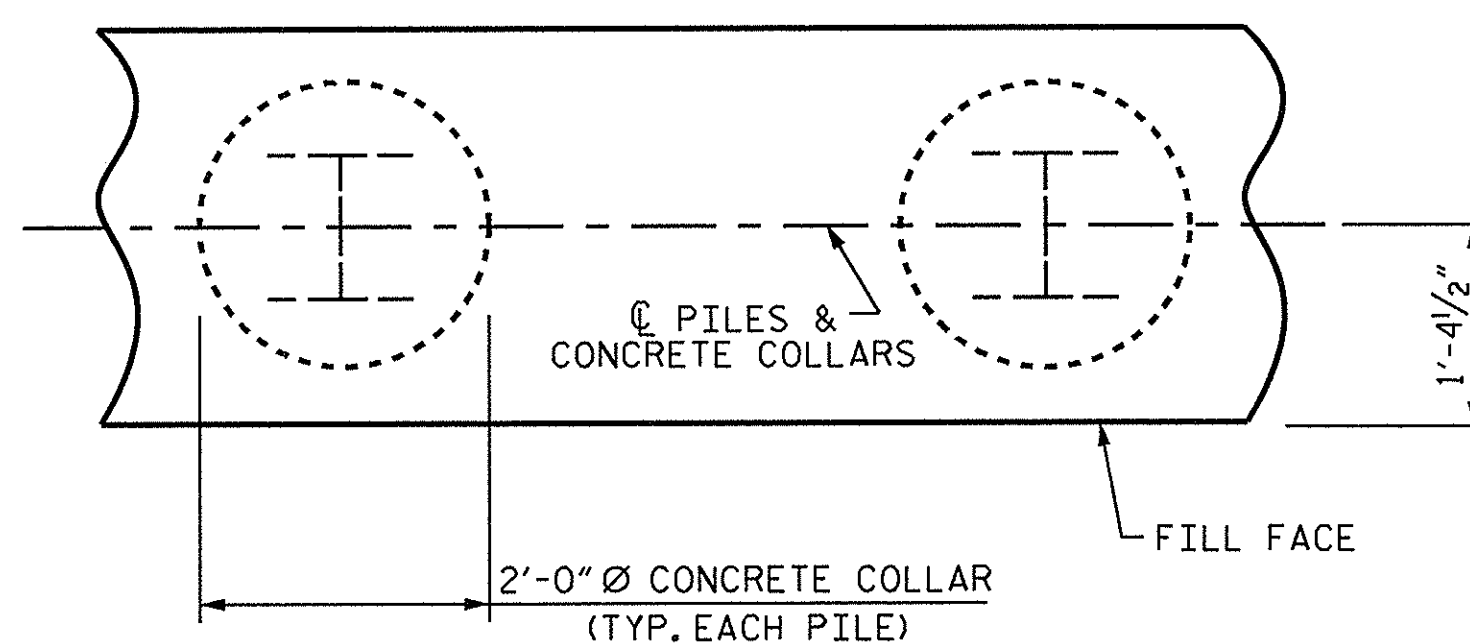
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

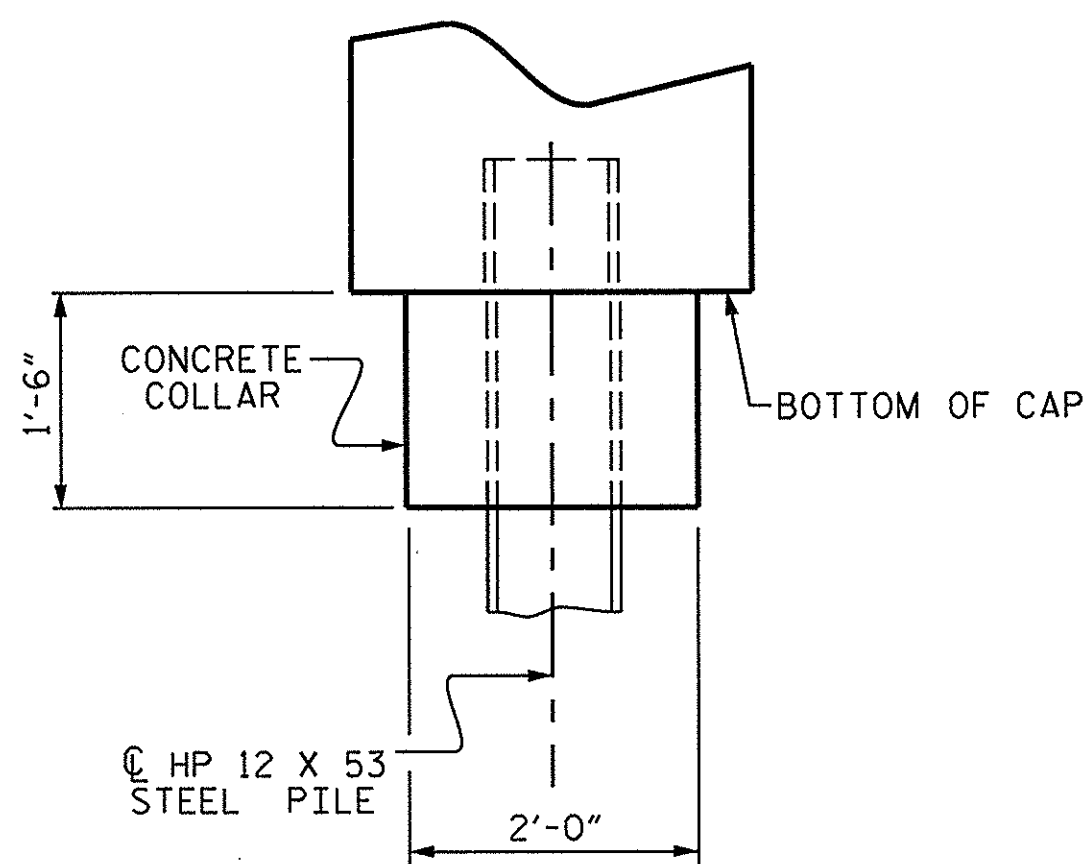
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



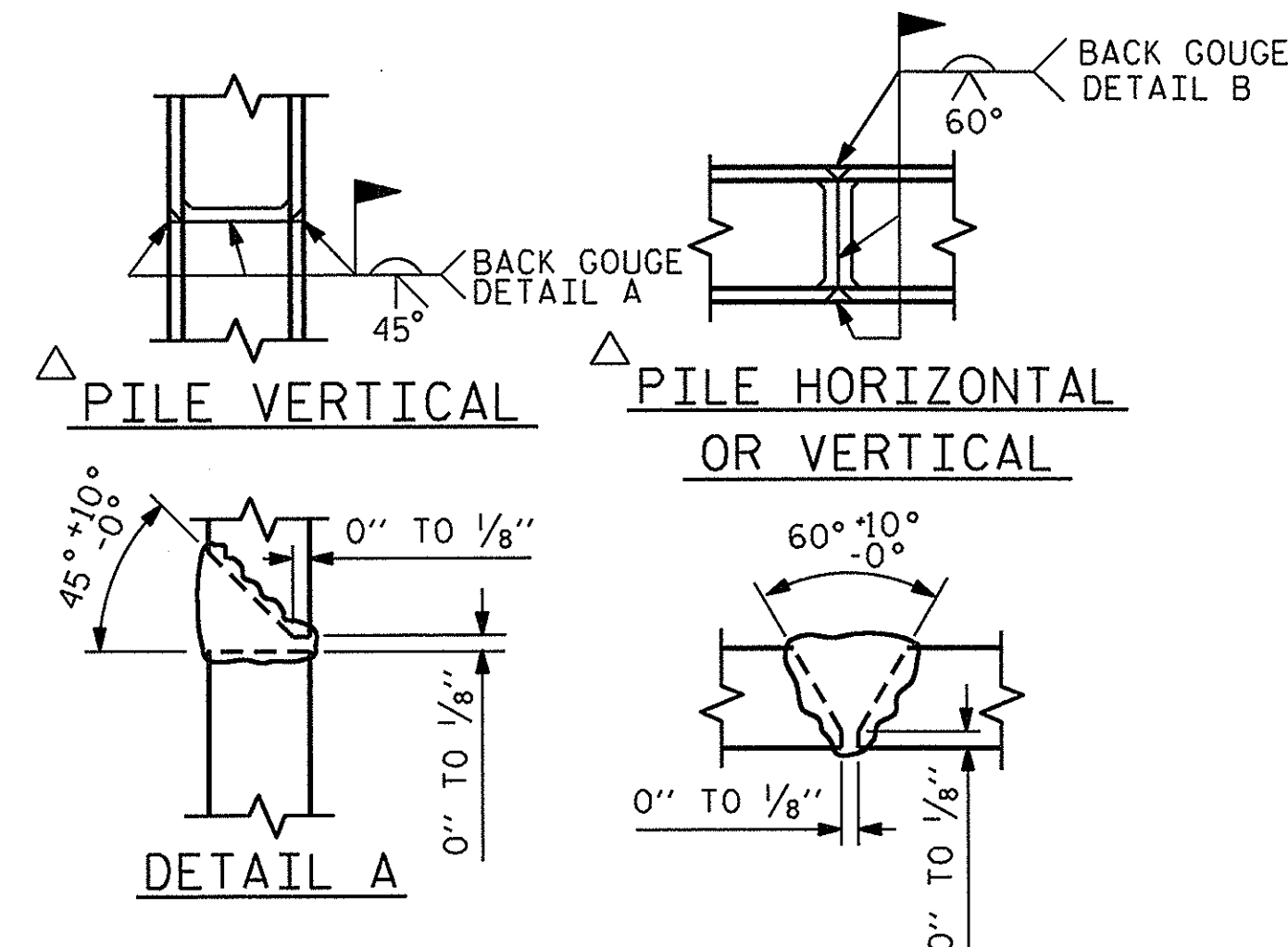
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

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

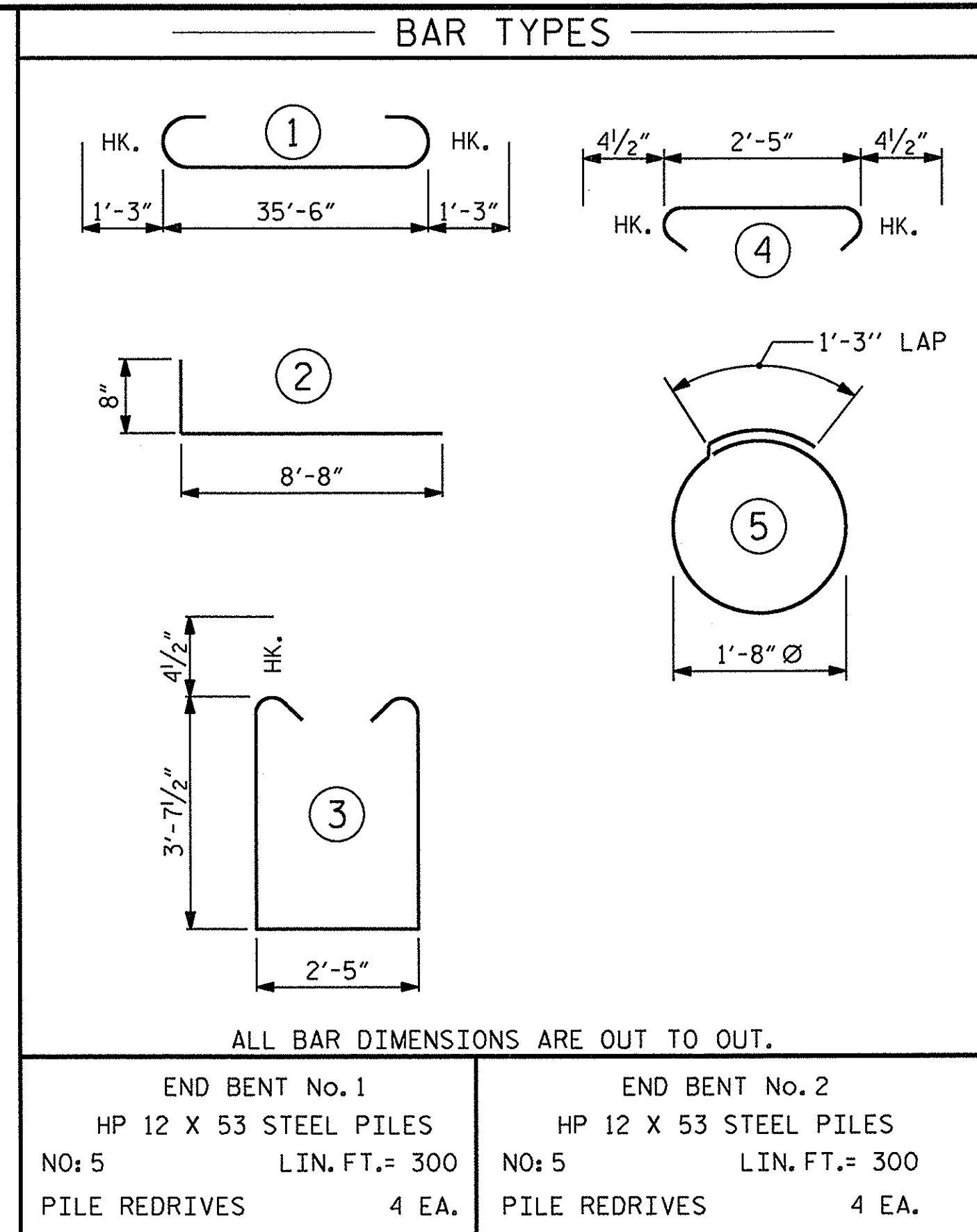


ELEVATION

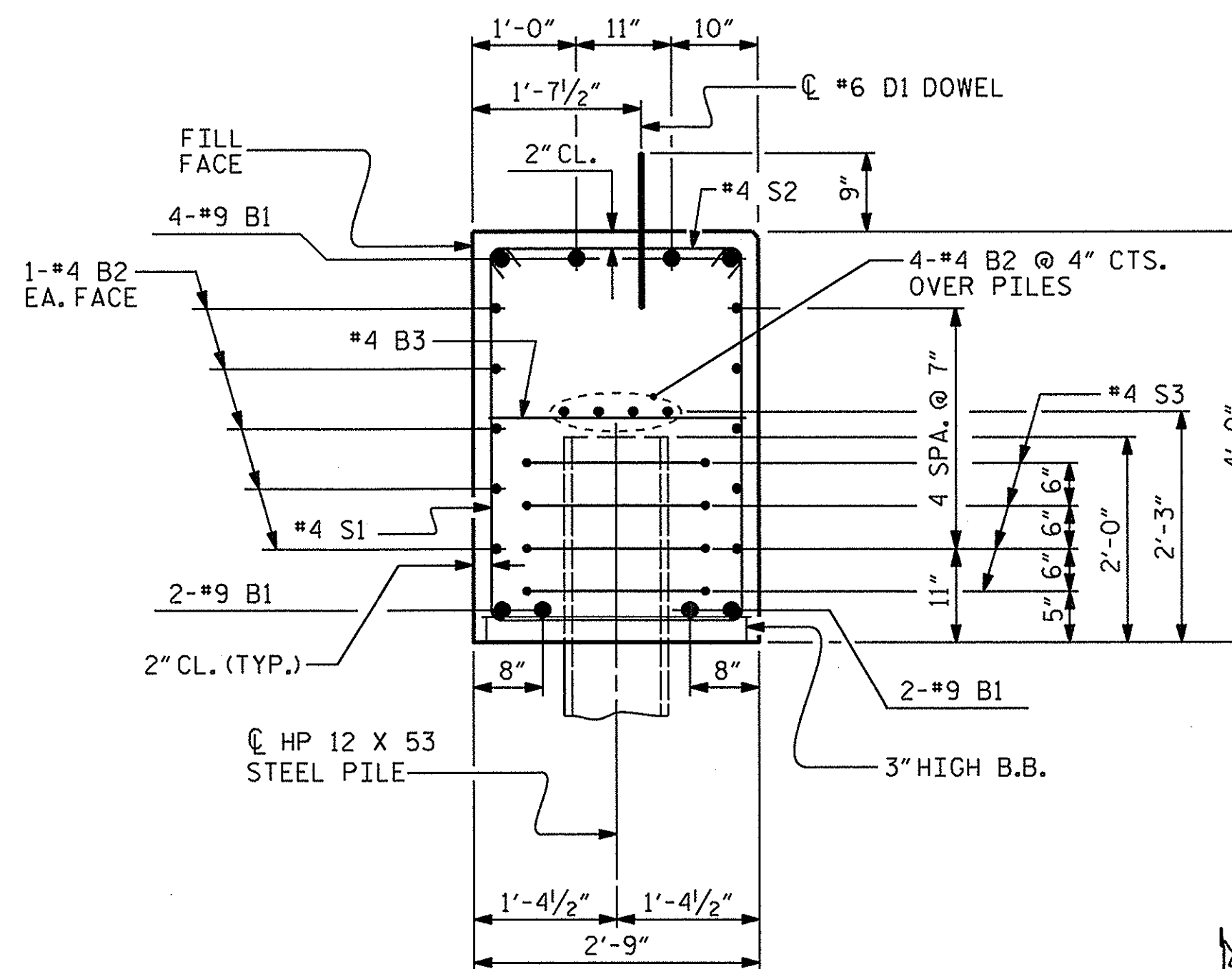


POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	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.



SECTION A-A

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



PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
DETAILS

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

STD. NO. EB_30_90S4

ASSEMBLED BY: C.C.WILLIAMS DATE: 06-06-14
CHECKED BY: A.K.PATEL DATE: 06-26-14

DRAWN BY: WJH 12/11
CHECKED BY: AAC 12/11

31-JUL-2014 11:53
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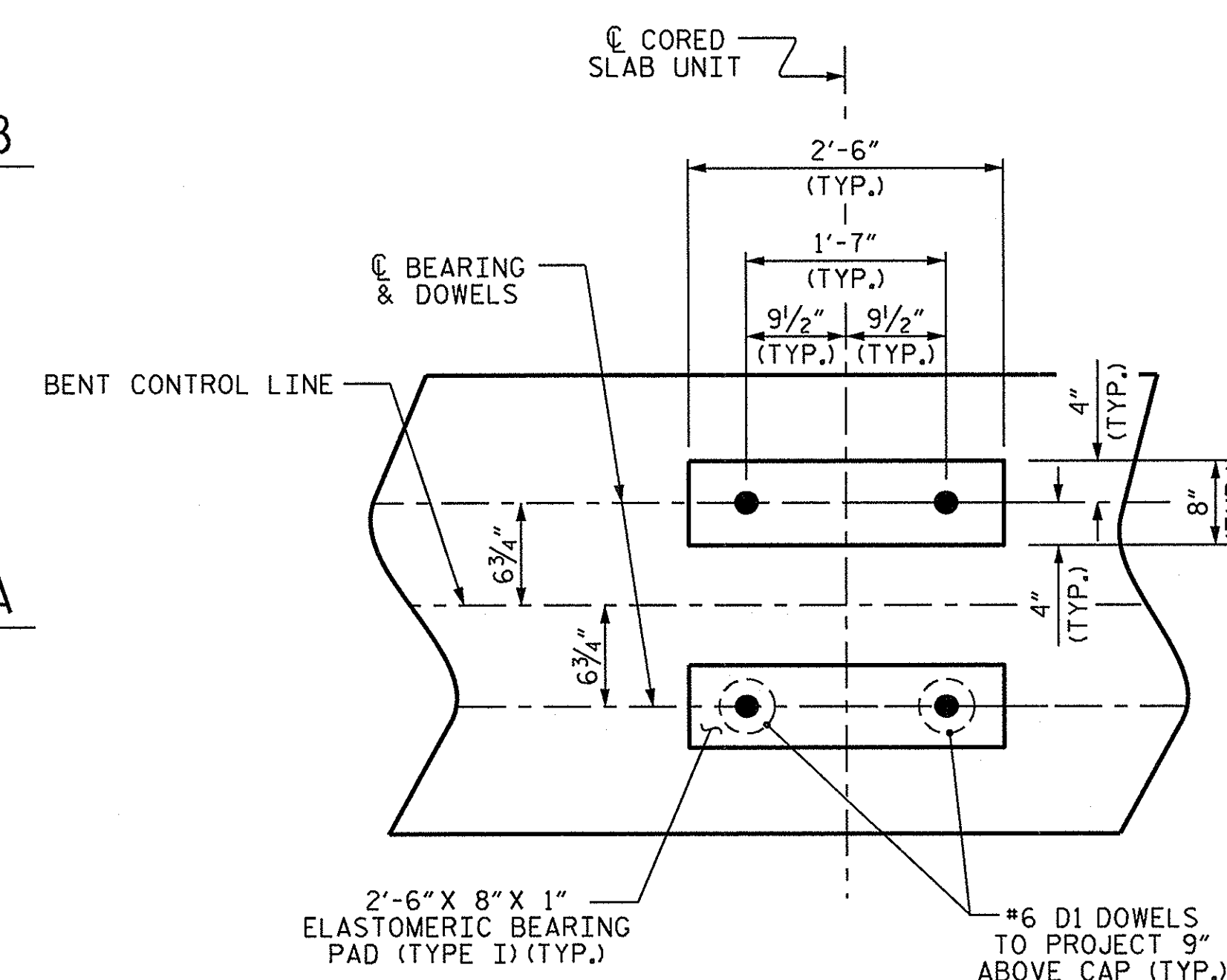
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY
TO CLEAR DOWELS.

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.



#4 U1 (TYP. EA. END)
 TOP OF CAP EL. 121.37
 LATERAL GUIDE (TYP.)
 3-#4 U2 (TYP. EA. END)
 BOTTOM OF CAP EL. 118.87
 #9 U3 (TYP. EA. END)
 2'-5" MIN. SPLICE (TYP.)
 #4 B5 @ 4'-0" CTS. (8 REQUIRED)
 4-#10 B1
 CONST. JT. (TYP.)
 TOP OF CAP EL. 121.37
 6" (TYP.)
 2'-6" (MIN.)
 3" HIGH B.B. @ 5'-0" CTS.
 4-#4 B4 (OVER PILES) (2 BAR RUNS)
 4-#10 B2
 2-#4 S2 (TYP. EA. PILE)
 #5 B3 (EACH FACE)
 1'-0" MIN. EMBEDMENT (TYP.)
 BOTTOM OF CAP EL. 118.87
 ★ #5 S1 (TYP. EA. END)
 11" (TYP.)
 11" (TYP.)
 ★ 5-#5 S1 @ 9" CTS. (TYP. EA. BAY)
 11" (TYP.)
 1'-9"
 4'-10"
 4'-10"
 4'-10"
 4'-10"
 4'-10"
 4'-10"
 1'-9"
 @ HP 14 x 73 GALVANIZED STEEL PILES
 ① ② ③ ④ ⑤ ⑥ ⑦

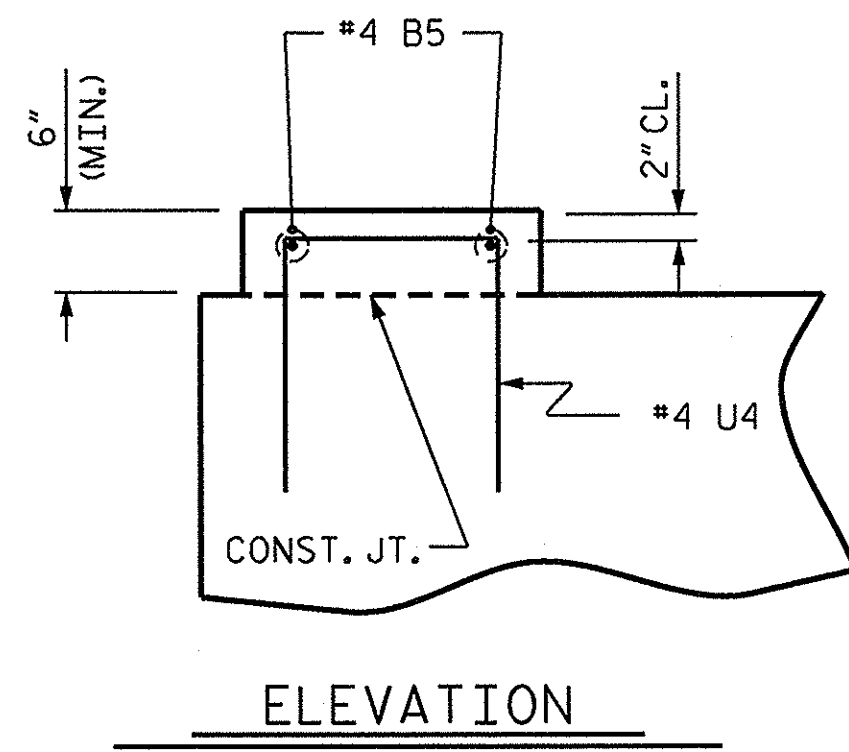
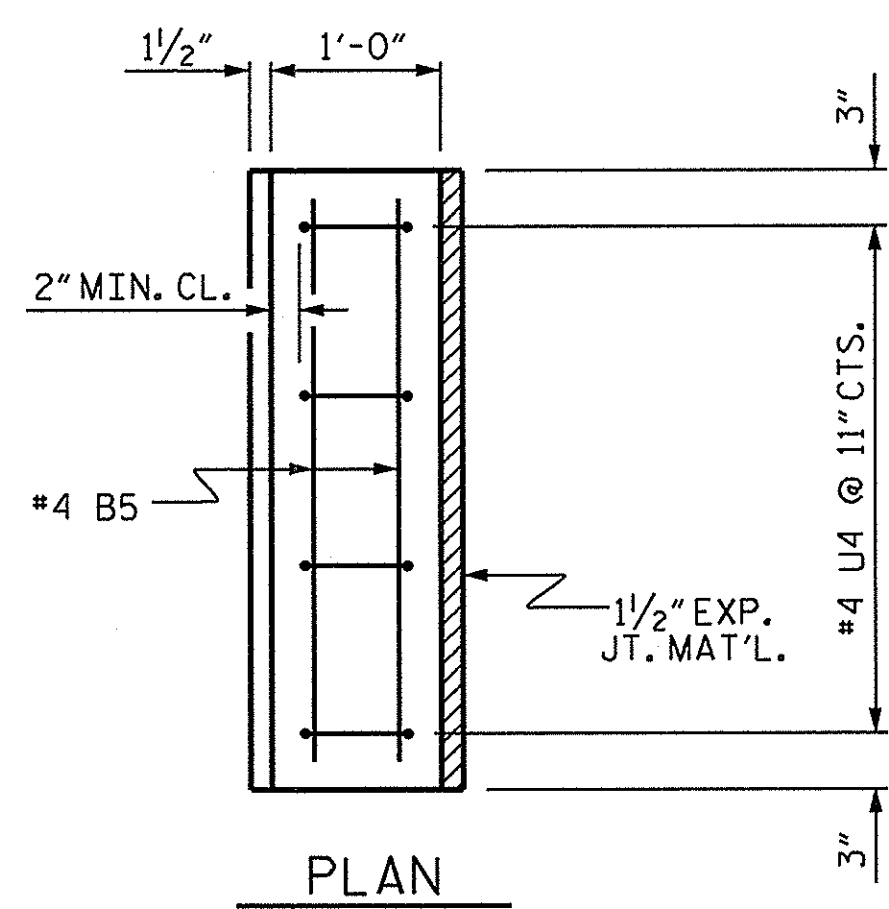
FOR SECTION A-A, SEE SHEET 2 OF 2

31-JUL-2014 11:53
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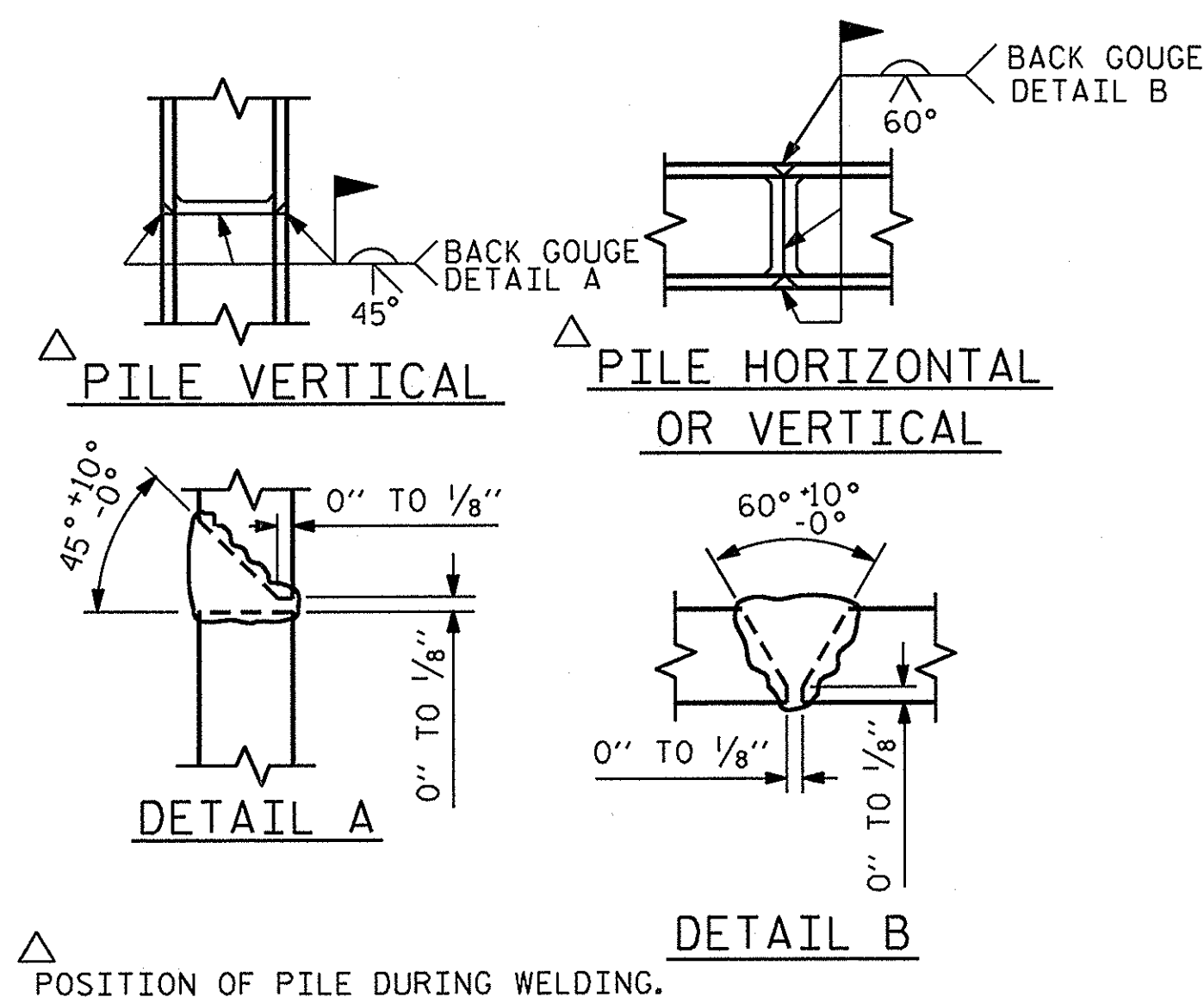
Professional Engineer Seal for Gregory W. Dickey, North Carolina, Seal Number 21271, License Number 7-31-14.

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

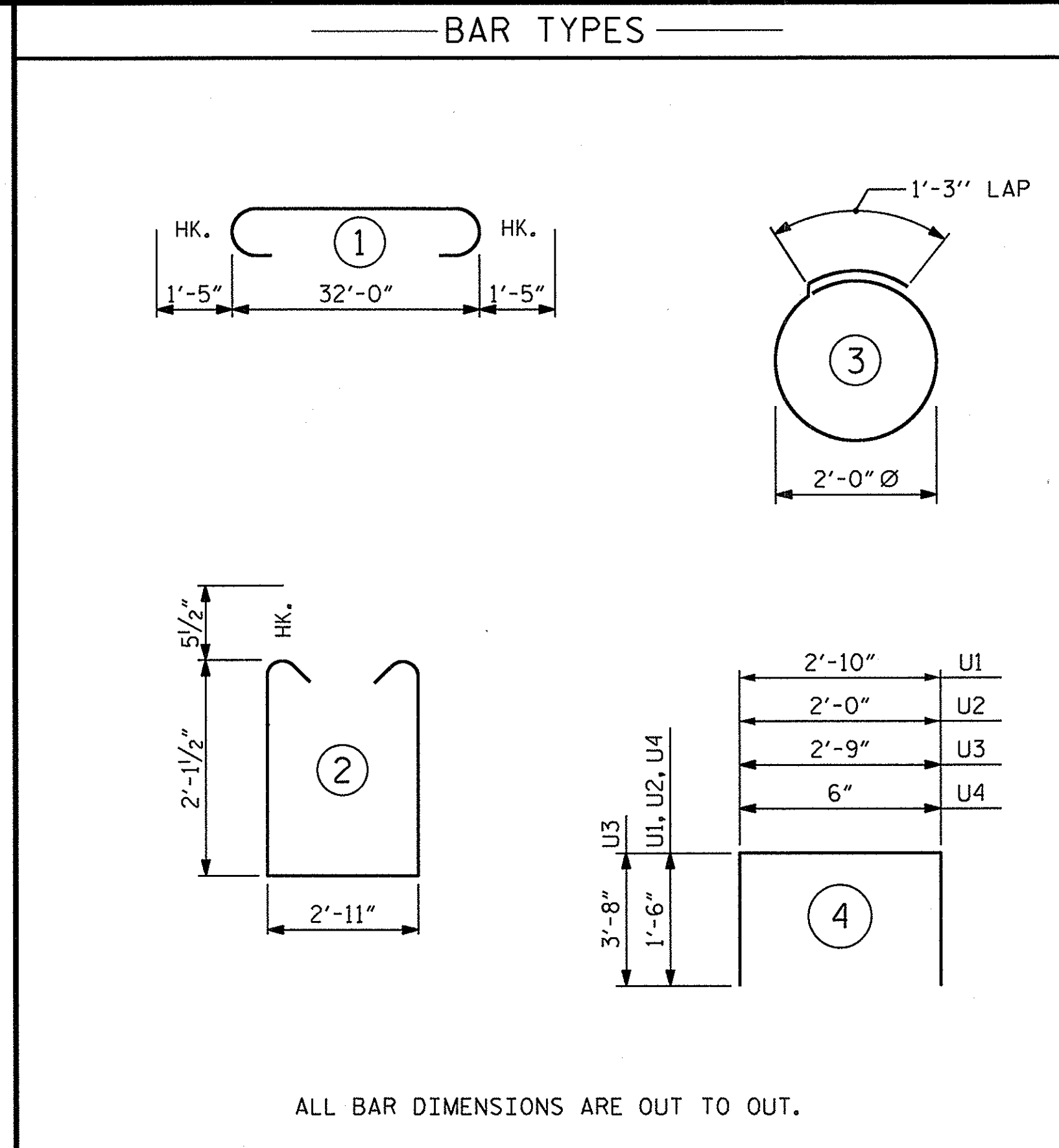
STD. NO. 14" HP_BT_30_90S_<60'



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

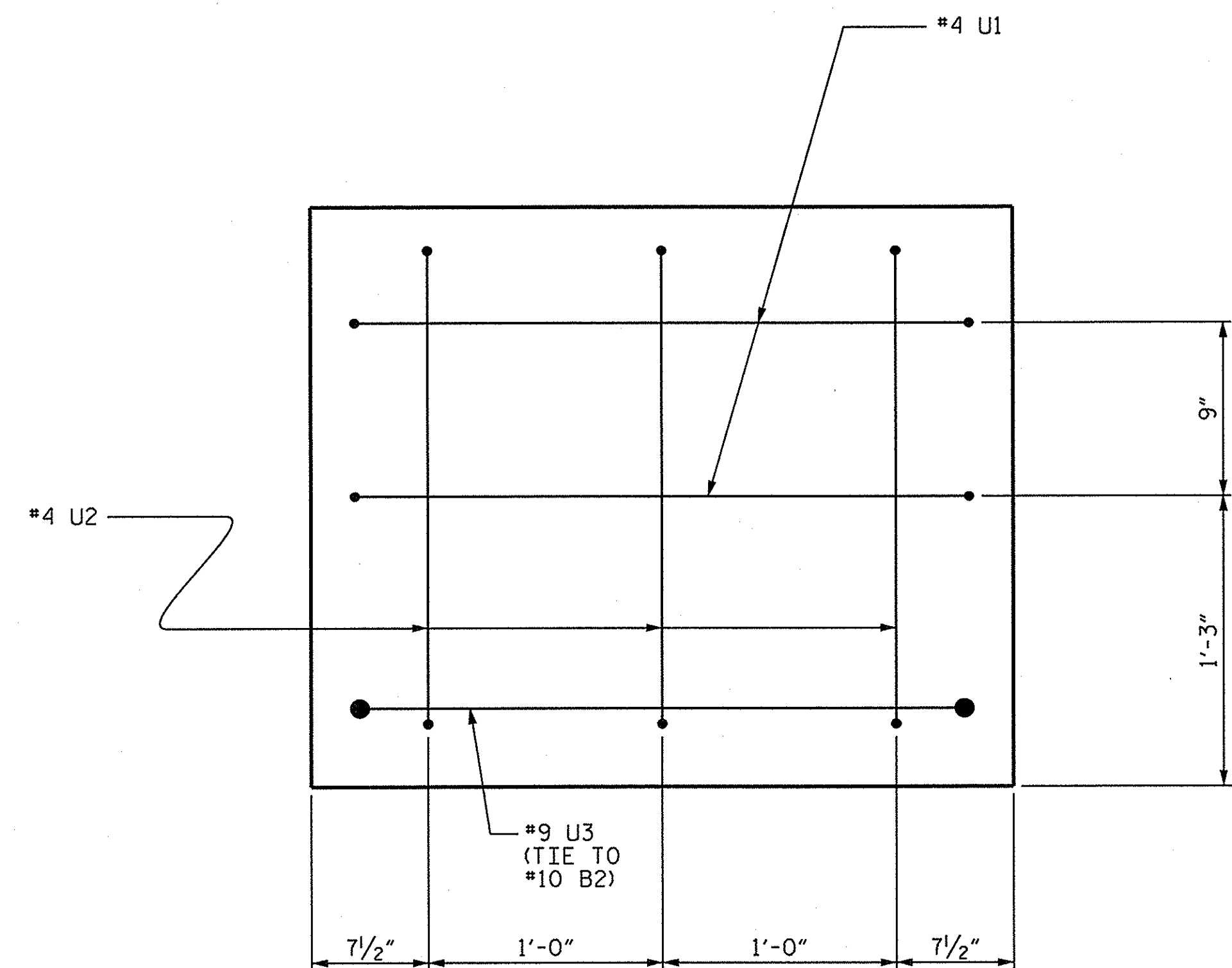


PILE SPLICE DETAILS

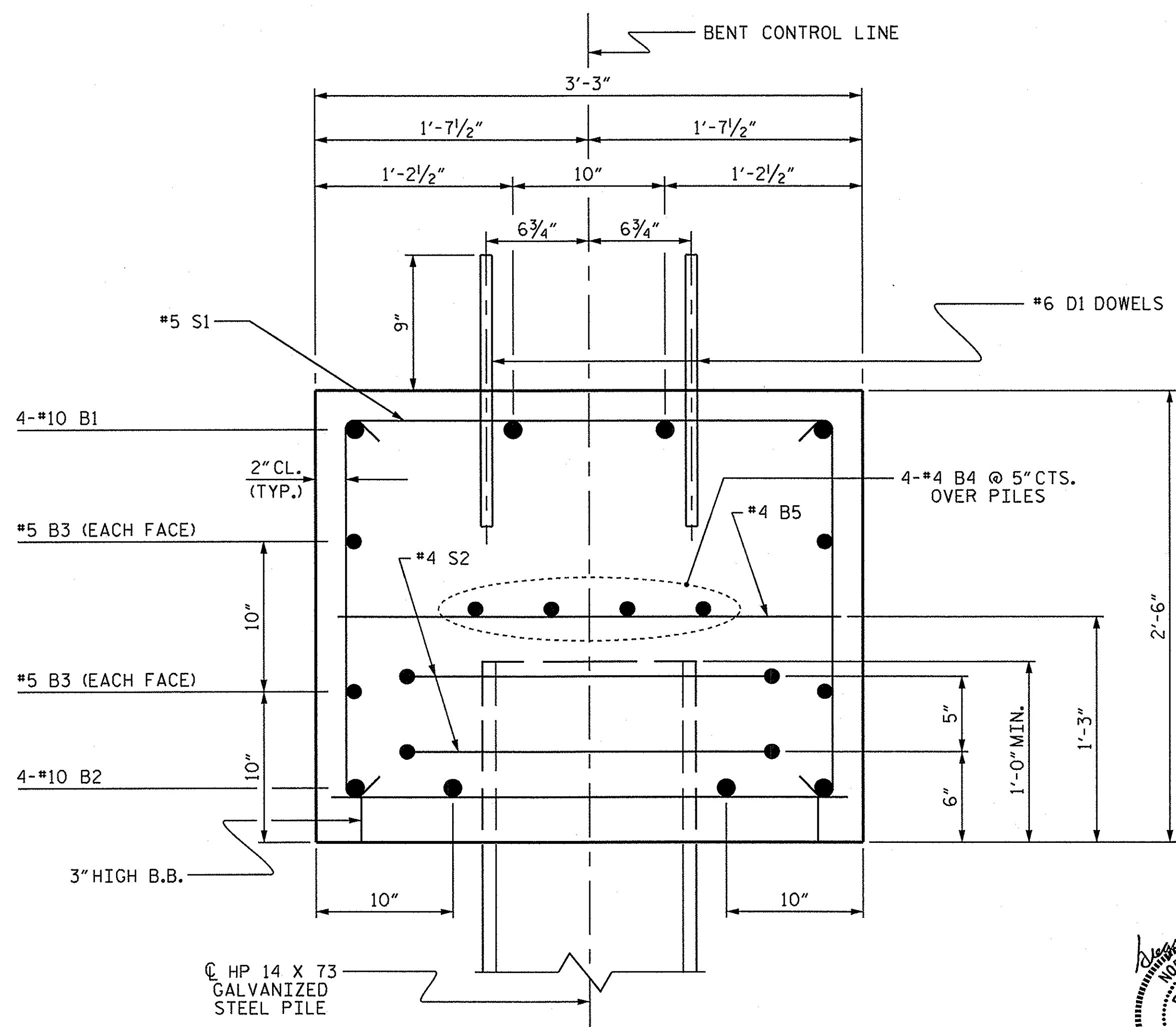


ALL BAR DIMENSIONS ARE OUT TO OUT.

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 (FOR ONE BENT)					
No. 7					LIN. FT. 525
PILE REDRIVES					7 EA.



END OF CAP VIEW
(TYPICAL BOTH ENDS)



SECTION A-A

PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-13					TOTAL SHEETS

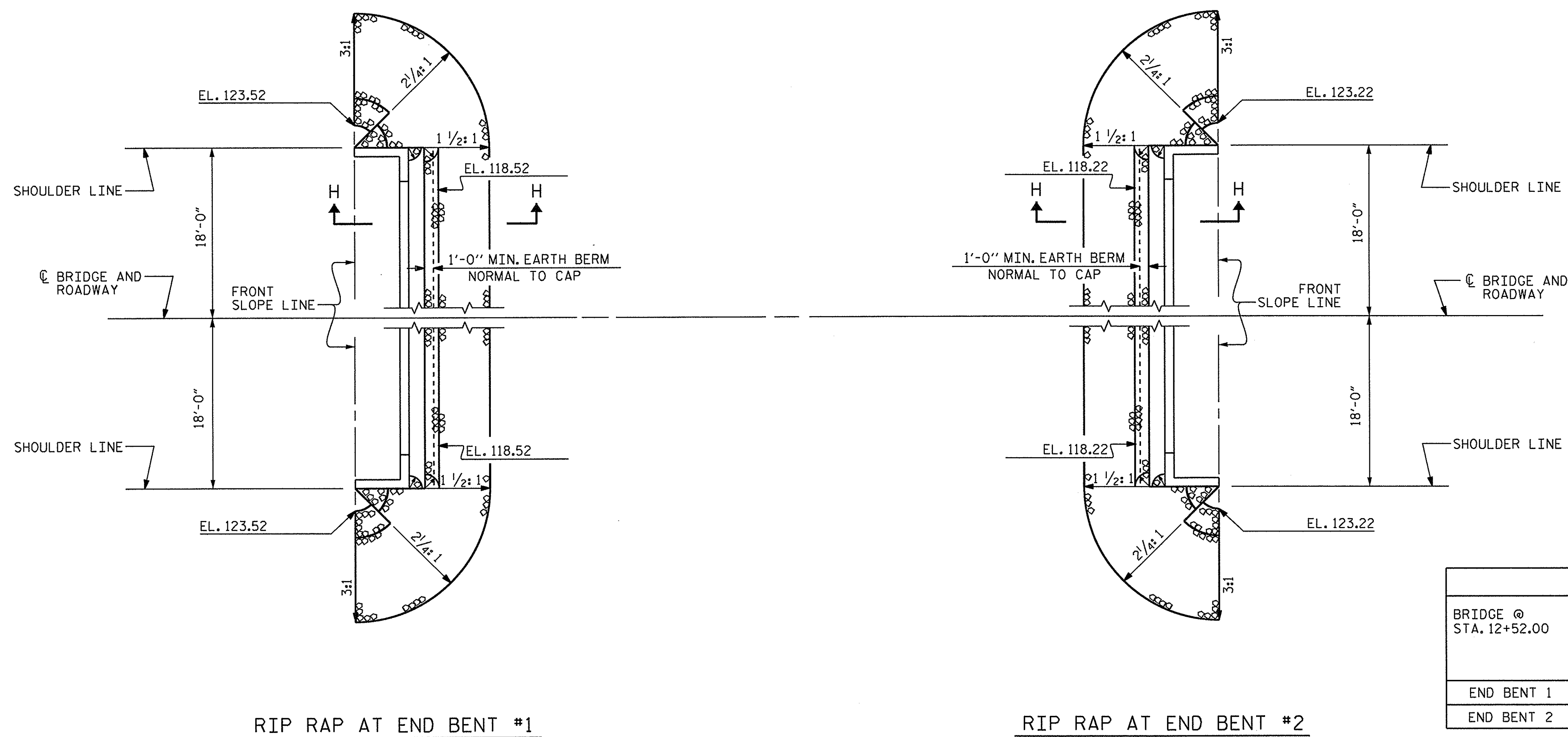


DRAWN BY : C.C.WILLIAMS DATE : 06-06-14
CHECKED BY : A.K.PATEL DATE : 06-26-14
DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10

31-JUL-2014 11:53
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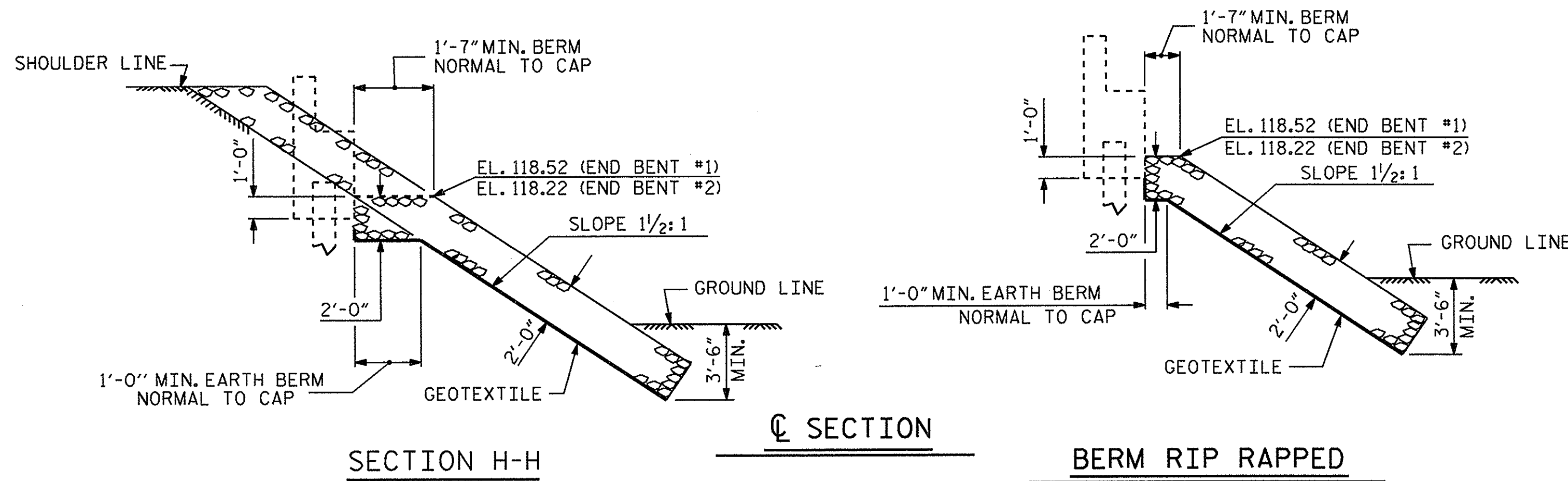
STD. NO. 14" HP_BT_30_90S<60'

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



ESTIMATED QUANTITIES		
BRIDGE @ STA. 12+52.00	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	85	95
END BENT 2	75	85

PLAN



PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

STANDARD

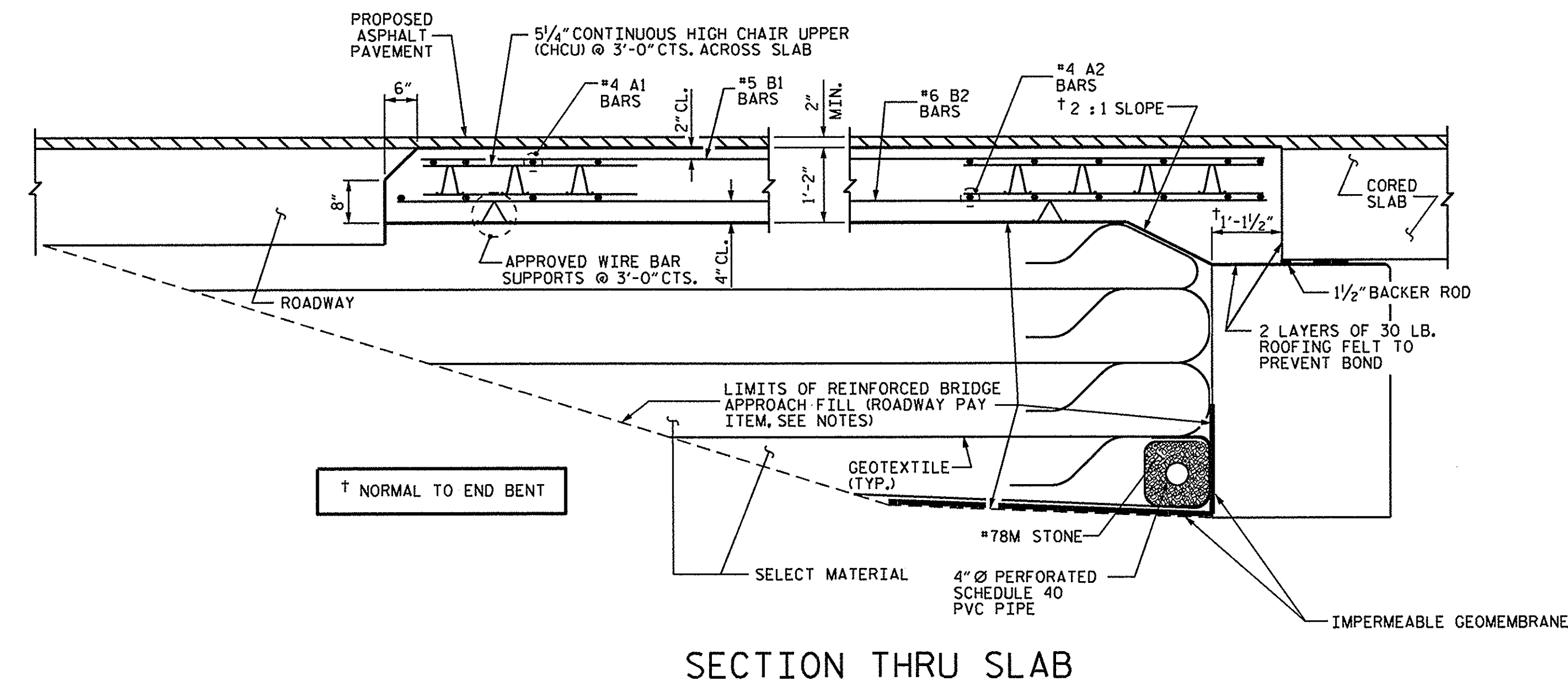
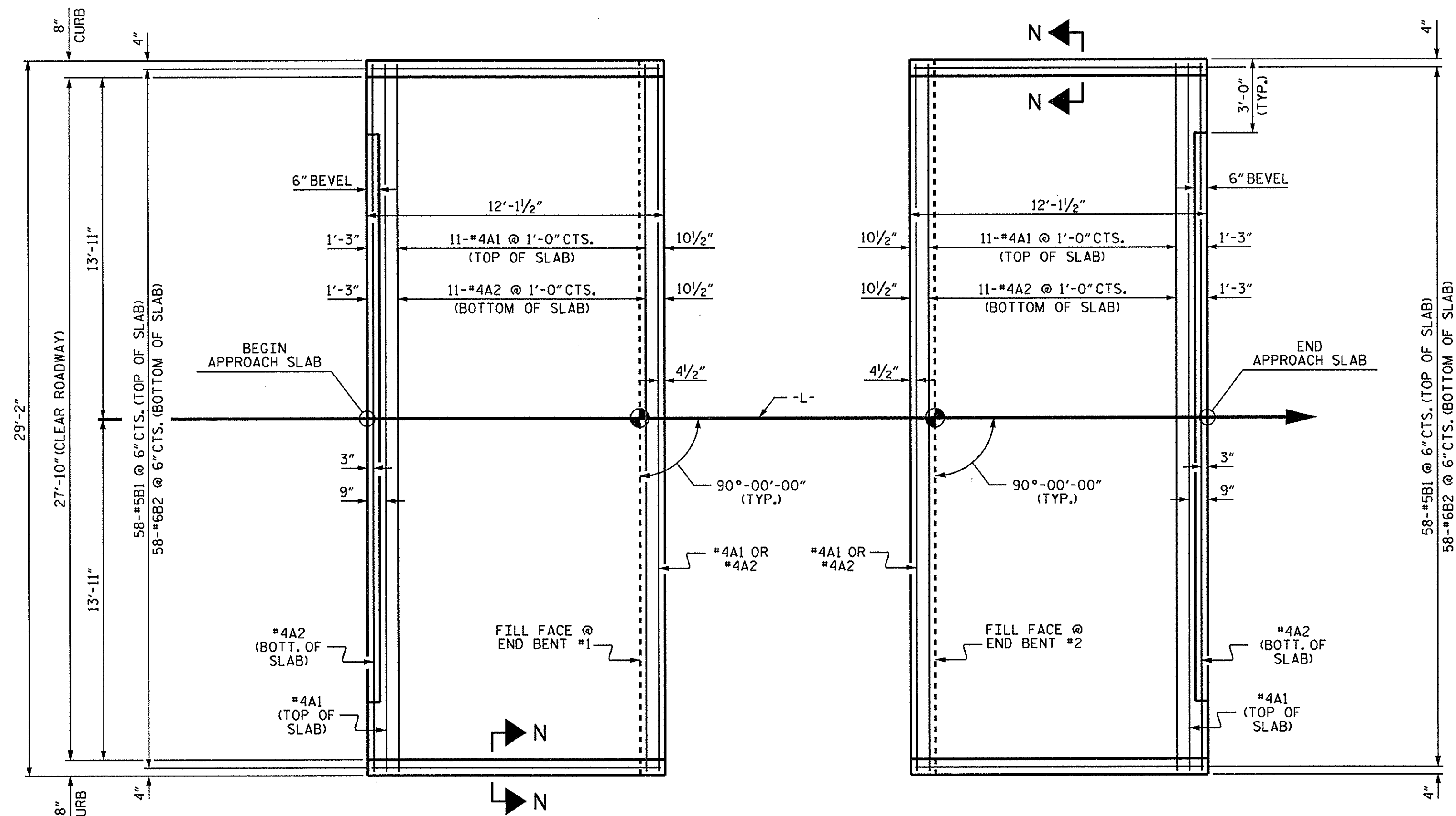
—RIP RAP DETAILS—

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

ASSEMBLED BY : C.C.WILLIAMS DATE :06-06-14
CHECKED BY : A.K.PATEL DATE :06-26-14
DRAWN BY : REK 1/84
CHECKED BY : RDU 1/84
REV. 5/1/06R TLA/GM
REV. 10/1/11 MAA/GM
REV. 12/21/11 MAA/GM

31-JUL-2014 11:53
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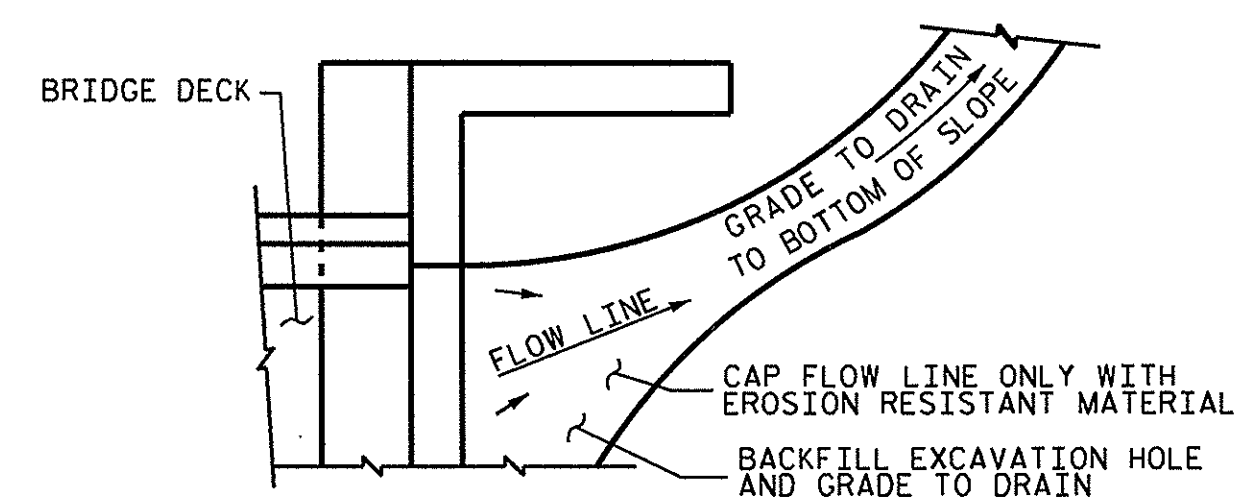


NOTES

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

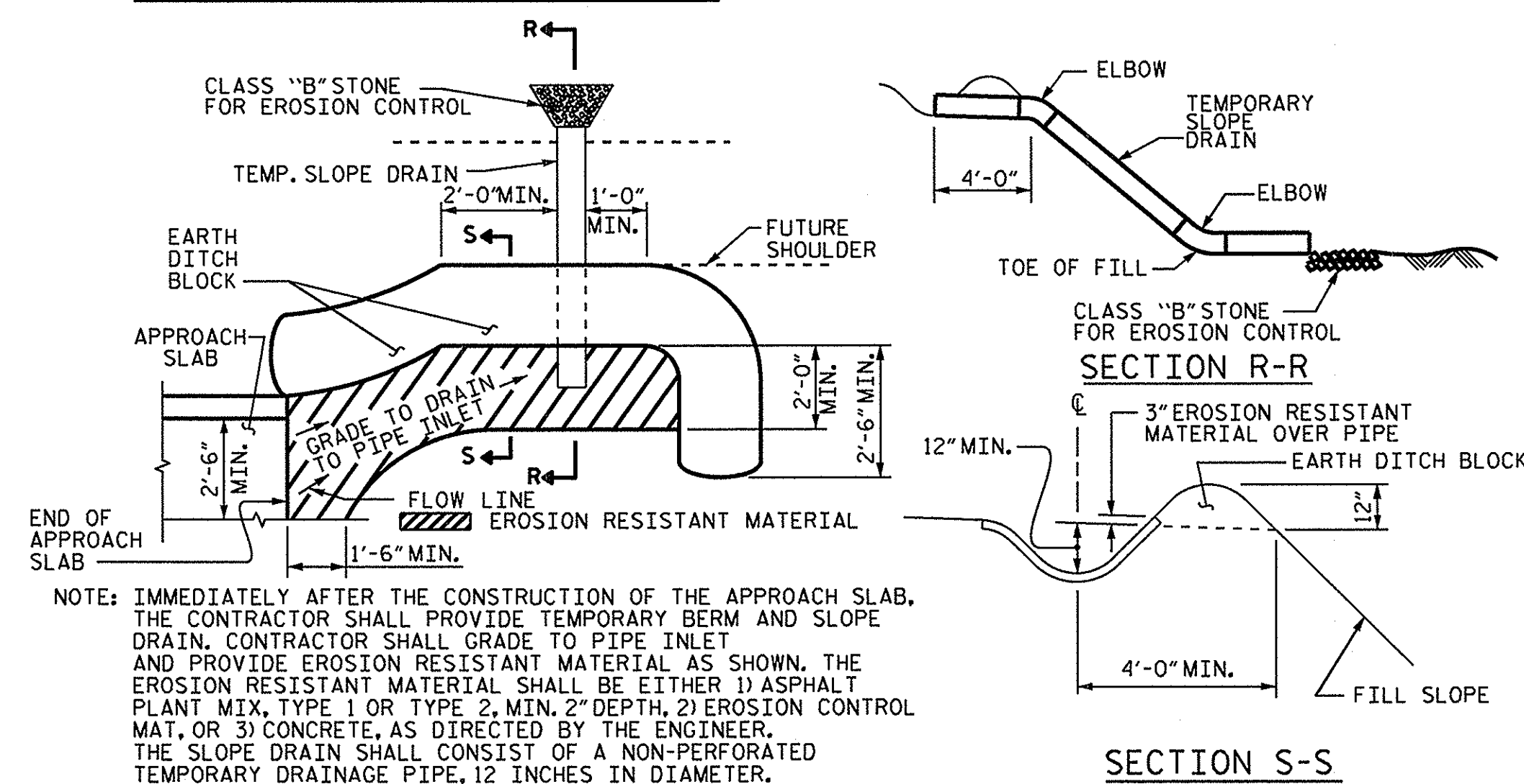
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

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

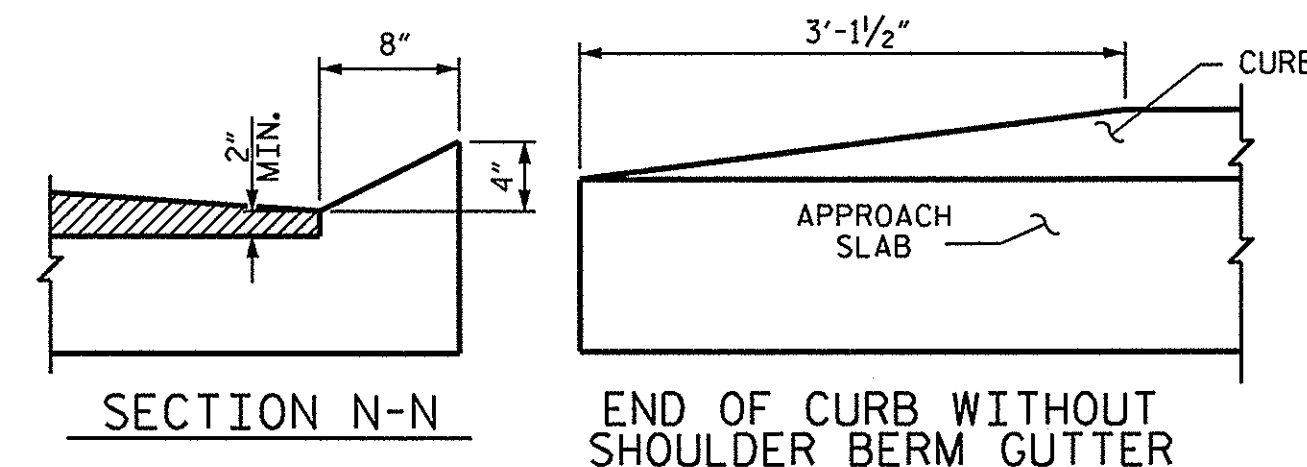


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

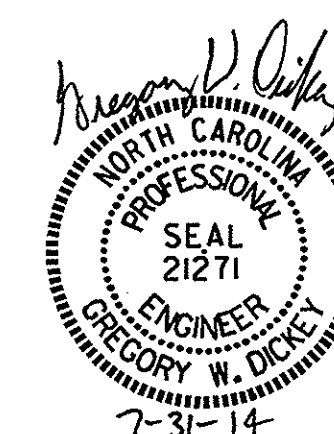
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



CURB DETAILS

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



BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	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

PROJECT NO. 17BP.3.R.40
SAMPSON COUNTY
STATION: 12+52.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

ASSEMBLED BY: C.C.WILLIAMS DATE: 06-06-14
CHECKED BY: A.K.PATEL DATE: 06-26-14
DRAWN BY: SHS/MAA 5-09 REV. 12-11 MAA/AAC
CHECKED BY: BCH 5-09

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STD. NO. BAS-30_90S

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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