

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

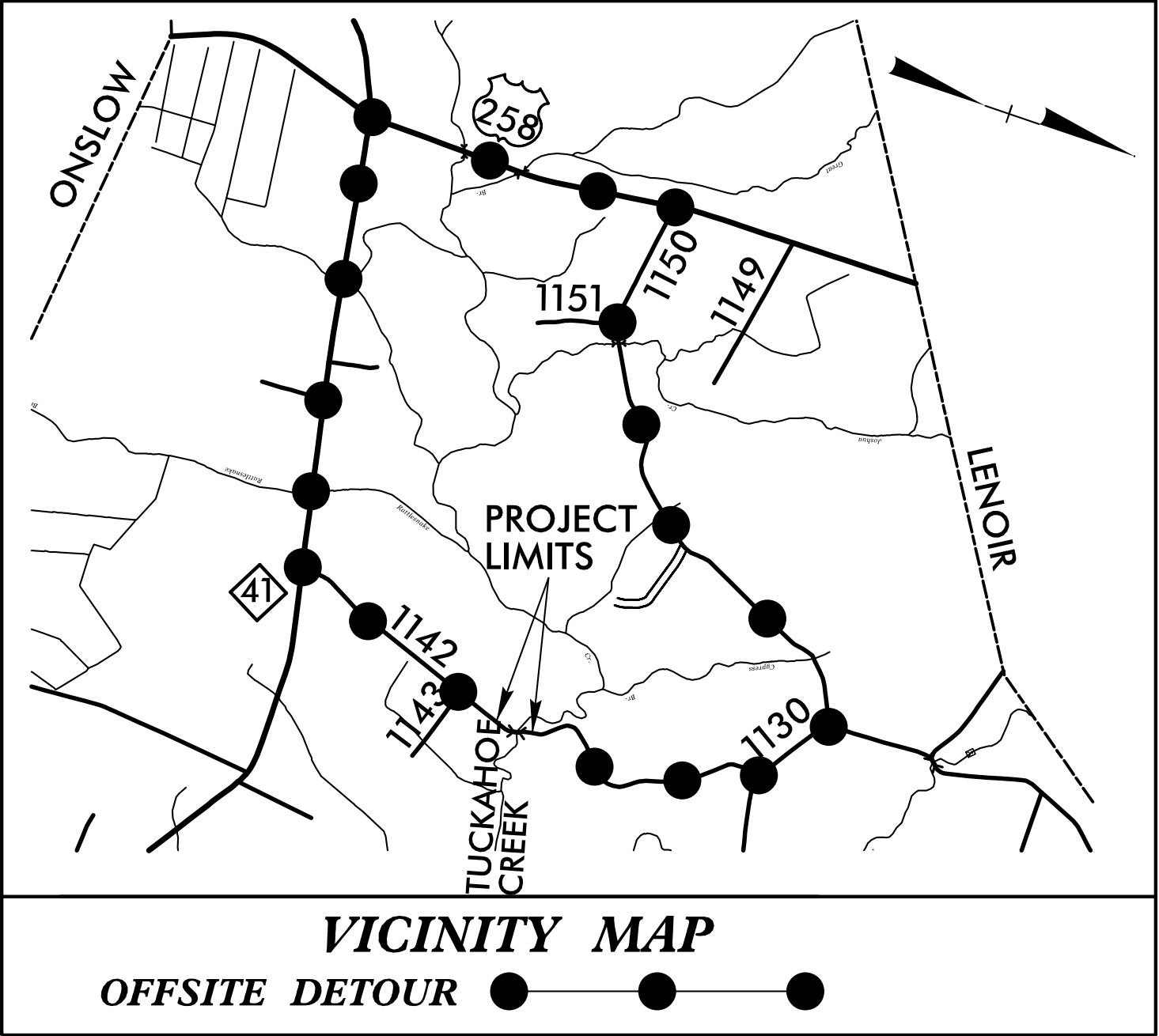
**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

TIP PROJECT: B-5994

CONTRACT: DB00455

See Sheet 1A For Index of Sheets



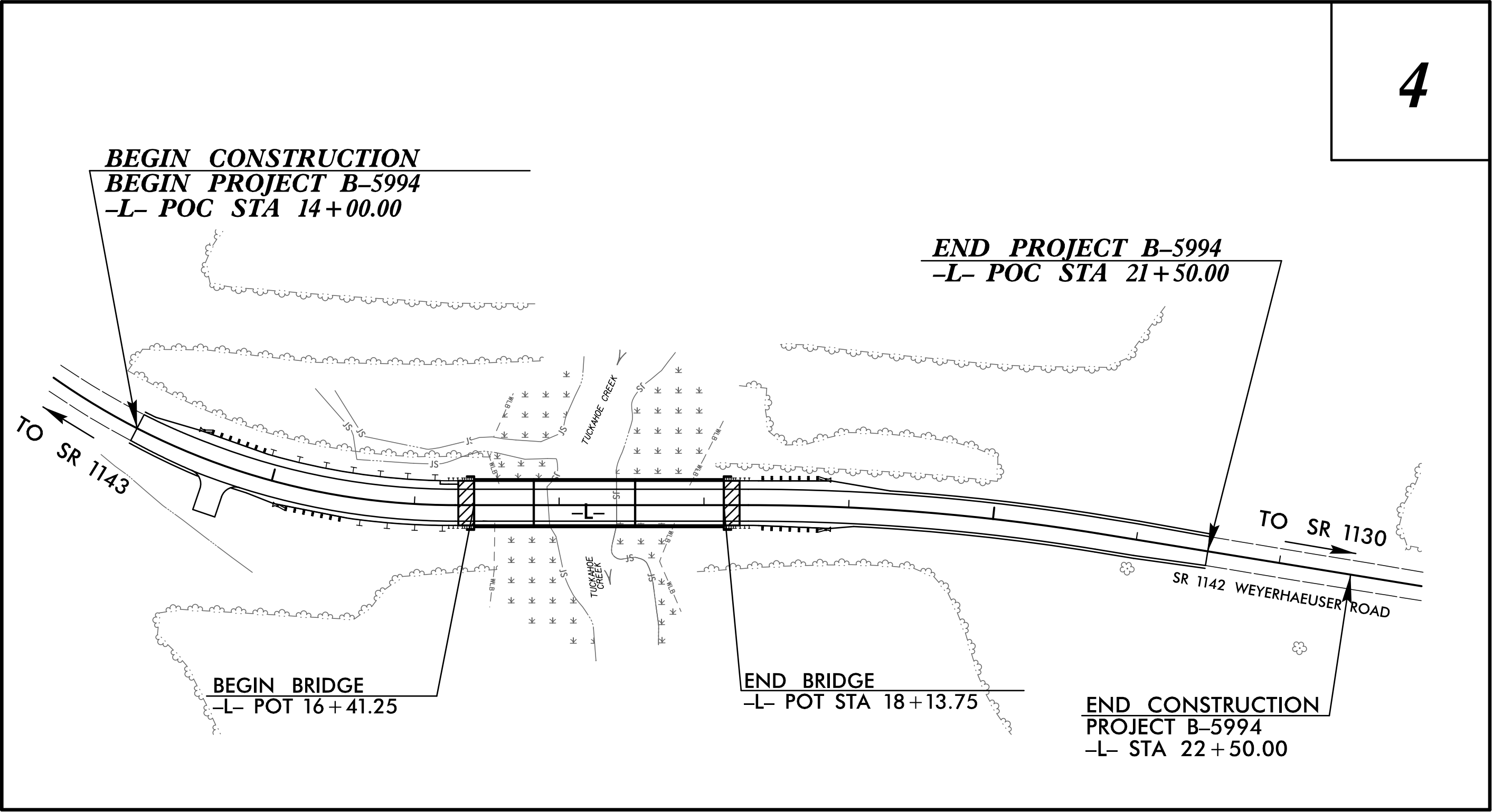
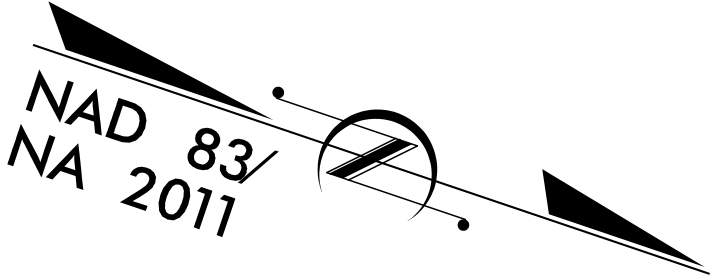
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JONES COUNTY

LOCATION: REPLACE BRIDGE NO. 32 OVER TUCKAHOE CREEK
SR 1142 (WEYERHAEUSER ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

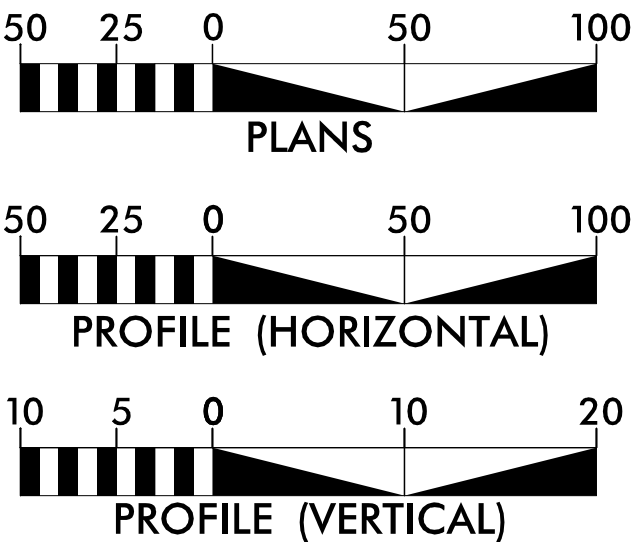
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5994	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
17BP.2.R.77		P.E.	
17BP.2.R.77		ROW/UTIL.	
48189.3.1	BRZ-1142(013)	CONST.	



** 1. DESIGN EXCEPTION APPROVED FOR HORIZONTAL CURVE (480.47') AND HORIZONTAL SSD (215') V = 35 MPH

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 410
ADT 2032 = 820
K = 10 %
D = 60 %
T = 6 % *
**V = 60 MPH
* TTST = 2% DUAL 4%
FUNC CLASS =
MINOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT B-5994 = 0.109 MILES
LENGTH OF STRUCTURE PROJECT B-5994 = 0.033 MILES
TOTAL LENGTH OF PROJECT B-5994 = 0.142 MILES



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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 8, 2017

LETTING DATE:
OCTOBER 24, 2018

DOUGLAS M. WHEATLEY, PE
PROJECT ENGINEER

MONICA J. DUVAL
PROJECT DESIGN ENGINEER

HEATHER C. LANE, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

DocuSigned by:
James A. Byrd
23592658E54F47C...

9/10/2018

SIGNATURE:

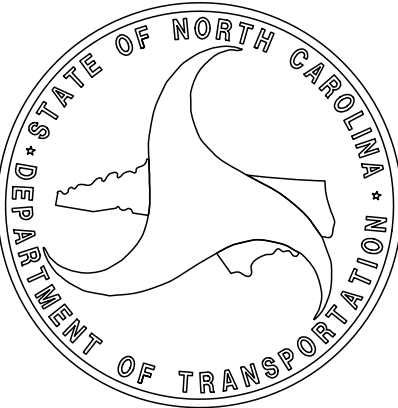


ROADWAY DESIGN
ENGINEER

DocuSigned by:
Douglas M. Wheatley
AB7693E0E0B124DA...

9/10/2018

SIGNATURE:



STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS
CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	
Computed Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 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 & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	
Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Exist Permanent Easment Pin and Cap	
New Permanent Easement Pin and Cap	
Vertical Benchmark	
Existing Right of Way Marker	
Existing Right of Way Line	
New Right of Way Line	
New Right of Way Line with Pin and Cap	
New Right of Way Line with Concrete or Granite R/W Marker	
New Control of Access Line with Concrete C/A Marker	
Existing Control of Access	
New Control of Access	
Existing Easement Line	
New Temporary Construction Easement	
New Temporary Drainage Easement	
New Permanent Drainage Easement	
New Permanent Drainage /Utility Easement	
New Permanent Utility Easement	
New Temporary Utility Easement	
New Aerial Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	

VEGETATION:

Single Tree	
Single Shrub	

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

Hedge	
Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
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	
U/G Power Line LOS B (S.U.E.*)	
U/G Power Line LOS C (S.U.E.*)	
U/G Power Line LOS D (S.U.E.*)	

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

8/17/2018

07-SEP-2018 10:33
\\roddwa3\p_roj\78p.2.R.77_r-dy-gen.dgn
JNTB

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES & LIST OF STANDARDS
1B	SYMBOLOLOGY SHEET
RW02C-1 THRU RW02C-3	SURVEY CONTROL SHEETS
2A-1	TYPICAL SECTION SHEET
2C-1 THRU 2C-2	SPECIAL DETAILS
3B-1	EARTHWORK, PAVEMENT REMOVAL, GUARDRAIL SUMMARY, SHOULDER BERM GUTTER, ROW SUMMARY, & DRAINAGE SUMMARY SHEET
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC CONTROL PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
U0-1 THRU UO-2	UTILITIES BY OTHER PLANS
X-1 THRU X-4	CROSS SECTION SHEETS
S-1 THRU S-22	STRUCTURE PLANS

GENERAL NOTES: 2018 SPECIFICATIONS EFFECTIVE: 01-16-2018 EFF. 01-16-2018
REVISED: REV.

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.02

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

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

UTILITIES:

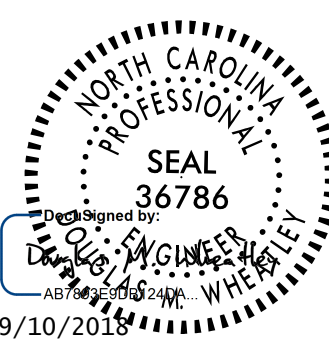
UTILITY OWNERS ON THIS PROJECT ARE

TELEPHONE - CENTURYLINK

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.

PROJECT REFERENCE NO.		SHEET NO.	
B-5994		1A	
		ROADWAY DESIGN ENGINEER	
			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO. TITLE

DIVISION 2 - EARTHWORK

225.04 Method of Obtaining Superelevation - Two Lane Pavement

DIVISION 3 - PIPE CULVERTS

300.01 Method of Pipe Installation

310.10 Driveway Pipe Construction

DIVISION 4 - MAJOR STRUCTURES

422.02 Bridge Approach Fills - Type II Modified Approach Fill

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS

560.02 Method of Shoulder Construction - High Side of Superelevated Curve - Method II

DIVISION 8 - INCIDENTALS

840.29 Frames and Narrow Slot Flat Grates

840.35 Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates

840.66 Drainage Structure Steps

846.01 Concrete Curb, Gutter and Curb & Gutter

862.01 Guardrail Placement

862.02 Guardrail Installation (Special Detail for Sheet 6 of 8)

862.03 Structure Anchor Units (Special Detail for Type III Anchor Units Sheets 1 of 7 and 2 of 7)

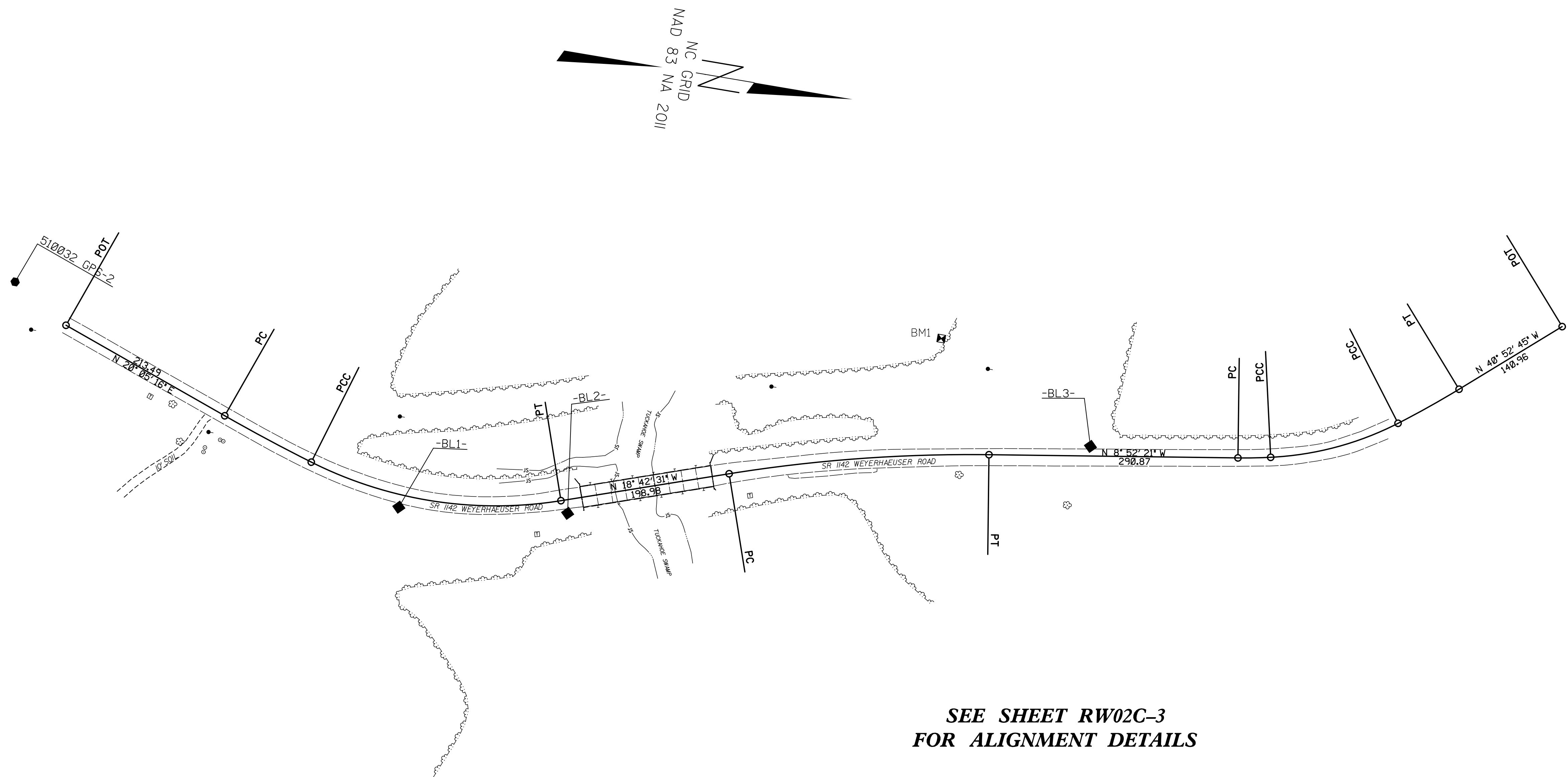
876.01 Rip Rap in Channels

876.02 Guide for Rip Rap at Pipe Outlets

PROJECT REFERENCE NO.	SHEET NO.
B-5994	RW02C-1
Location and Surveys	

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



**SEE SHEET RW02C-3
FOR ALIGNMENT DETAILS**

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

6/2/99

07-SEP-2018 19:25
\\17BP2.R.77_Jones BR032\Final Survey\51-0032-1s-rw2c-1.dgn
UNTR

SURVEY CONTROL SHEET
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BASELINE

BL	POINT	DESC.	NORTH	EAST	ELEVATION
GPS2		NCDOT GPS 51003	468907.9540	2425103.4460	54.41
1		BL-1	469393.7990	2425288.1300	51.90
2		BL-2	469589.4710	2425262.3470	51.83
3		BL-3	470178.6650	2425083.3050	49.68

BENCHMARK

BM1 ELEVATION = 51.23
N 469986 E 2424988
RR SPIKE SET IN 24" HARDWOOD

NOTES:

- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

6/2/99

07 SEP 2008 09:25
\\FB-2R77\jones BR032\Final Survey\51-0032.LS.rw2c-2.dgn

SURVEY CONTROL SHEET
W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EXISTING ALIGNMENT

EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT LINE	468975.020	2425143.481	N 20°05'16.2" E	213.49					
PC	469175.518	2425216.805	N 18°34'27.7" E	114.71	03°01'37.0"(LT)	02°38'18.4"	114.73	57.38	2171.58
CURVE	469284.255	2425253.344	N 00°49'26.0" W	295.11	35°46'10.2"(LT)	11°55'29.8"	299.96	155.05	480.47
PCC	469579.332	2425249.101	N 18°42'31.1" W	198.98					
CURVE	469767.801	2425185.276	N 13°47'26.2" W	304.42	09°50'09.8"(RT)	03°13'37.7"	304.79	152.77	1775.44
PT	470063.444	2425112.711	N 08°52'21.3" W	290.87					
PC	470350.829	2425067.848	N 10°38'38.8" W	38.26	03°32'35.1"(LT)	09°15'35.8"	38.26	19.14	618.75
CURVE	470388.427	2425060.782	N 24°33'52.9" W	154.00	24°17'53.1"(LT)	15°39'36.5"	155.16	78.76	365.87
PCC	470528.487	2424996.762	N 38°47'47.3" W	81.63	04°09'55.7"(LT)	05°06'07.3"	81.64	40.84	1123.00
CURVE	470592.104	2424945.619	N 40°52'45.1" W	140.96					
PT	470698.680	2424853.368							

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

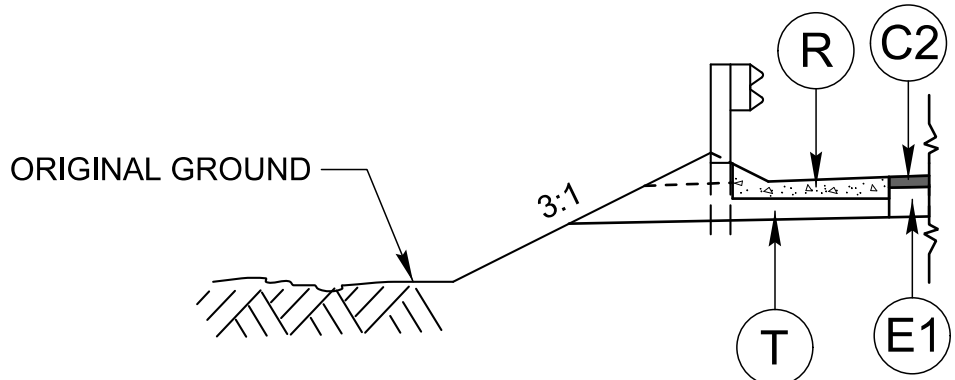
6/2/99

07-SEP-2018 19:25
\\17BP.2.R.77_Jones BR032\Final Survey\51-0032-LS-rw2c-3.dgn
HNIB

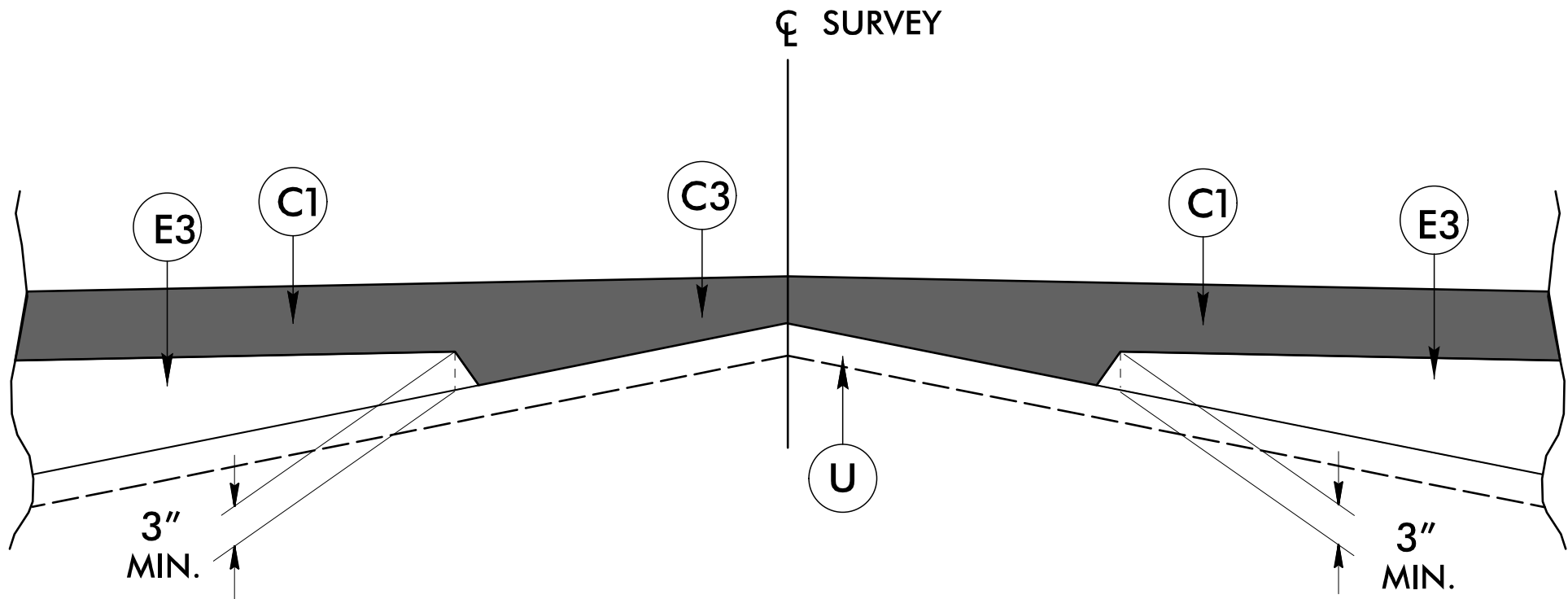
6/2/2019

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
C3	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YARD.
E2	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
E3	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

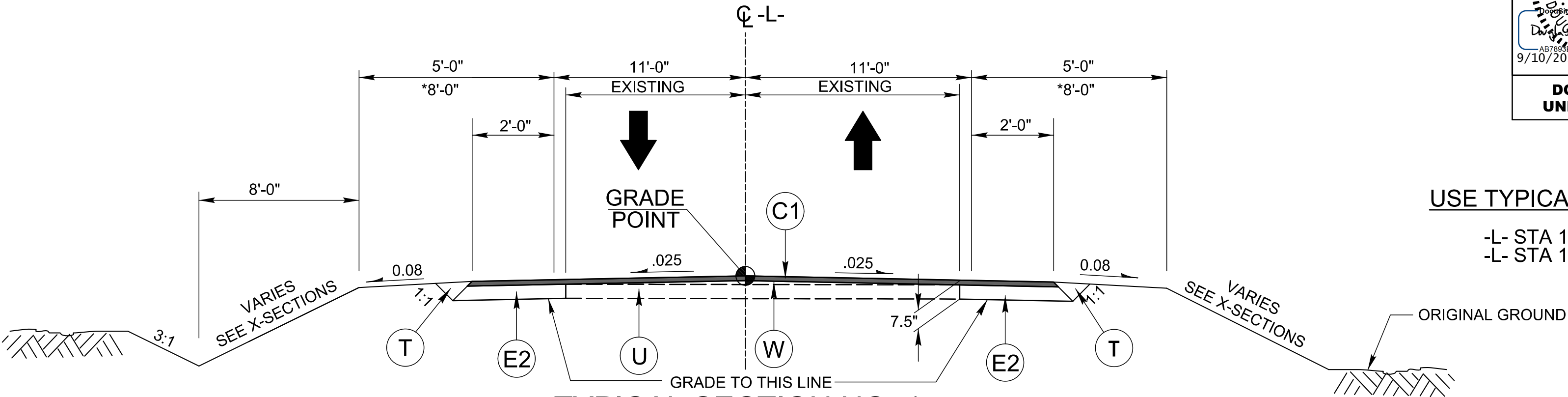
ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



DETAIL A
SHOULDER BERM GUTTER LOCATIONS
-L- STA 16+17.50 TO STA 16+30.38 (LT)



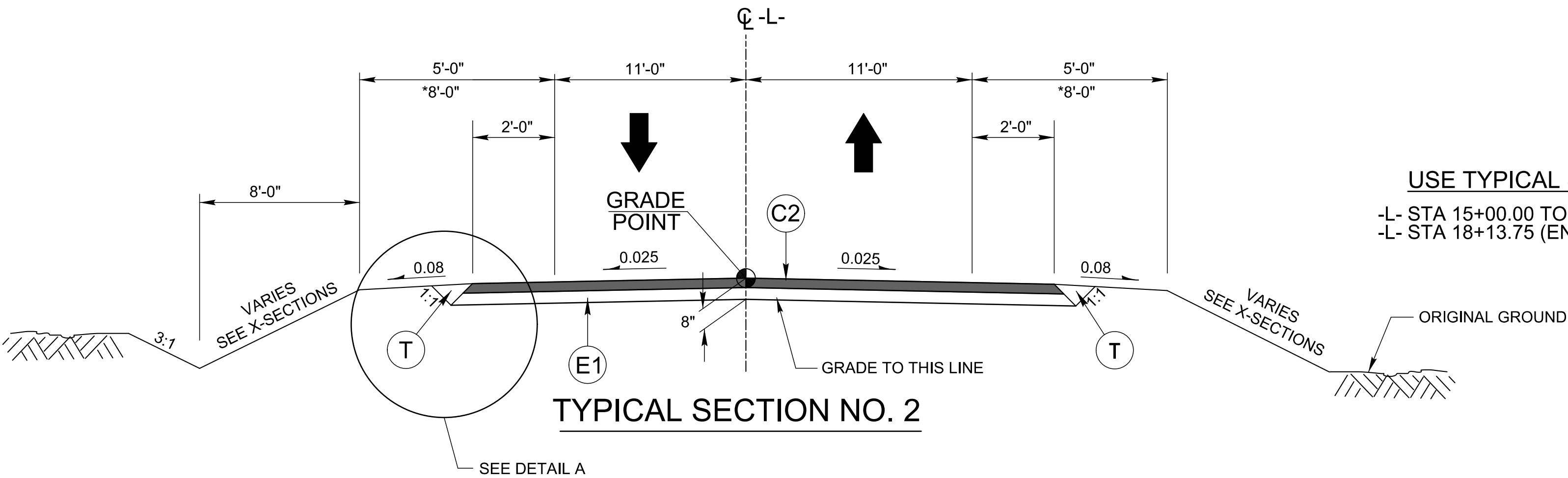
Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FROM:

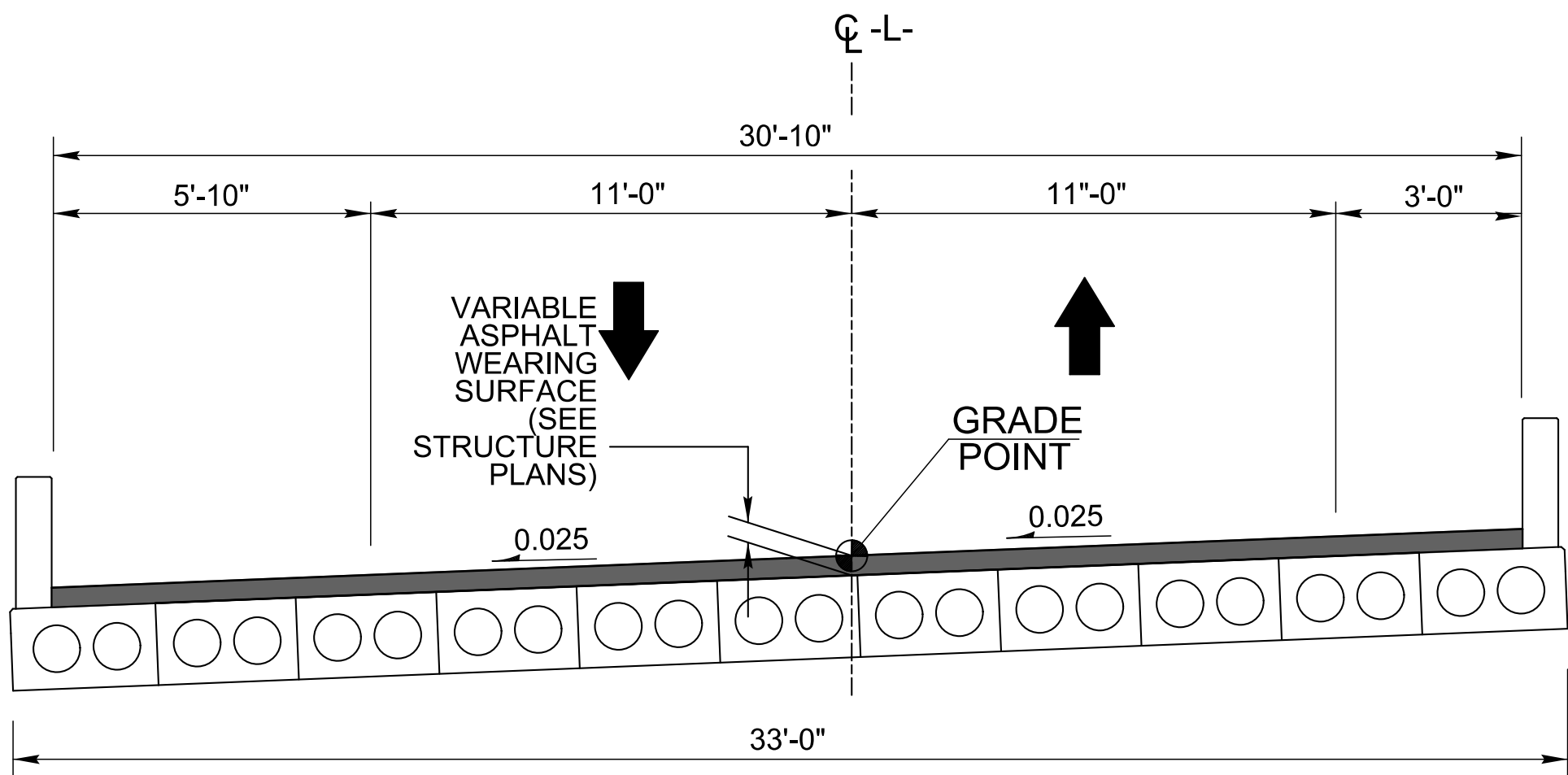
-L- STA 14+00.00 TO STA 15+00.00
-L- STA 19+50.00 TO STA 21+50.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 FROM:

-L- STA 15+00.00 TO STA 16+41.25 (BEGIN BRIDGE)
-L- STA 18+13.75 (END BRIDGE) TO STA 19+50.00



TYPICAL SECTION NO. 3
CORED SLAB BRIDGE OVERLAY

USE TYPICAL SECTION NO. 3 FROM:

-L- STA 16+41.25 TO STA 18+13.75

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

PROJECT REFERENCE NO.		SHEET NO.	
B-5994		2A-1	
ROADWAY DESIGN ENGINEER			
			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

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

07-SEP-2018 19:25
C:\Users\hntb\OneDrive\Documents\7BP-2.R.77_rdy_tup.dgn
HNTB

I4-DEC-2017 10:36 S:\Contracts\Special Details\Jhoverton\Standard Drawings\Details in Lieu of Standards\Division 8\0662d0301.dgn Jhoverton AT CSO-252595

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

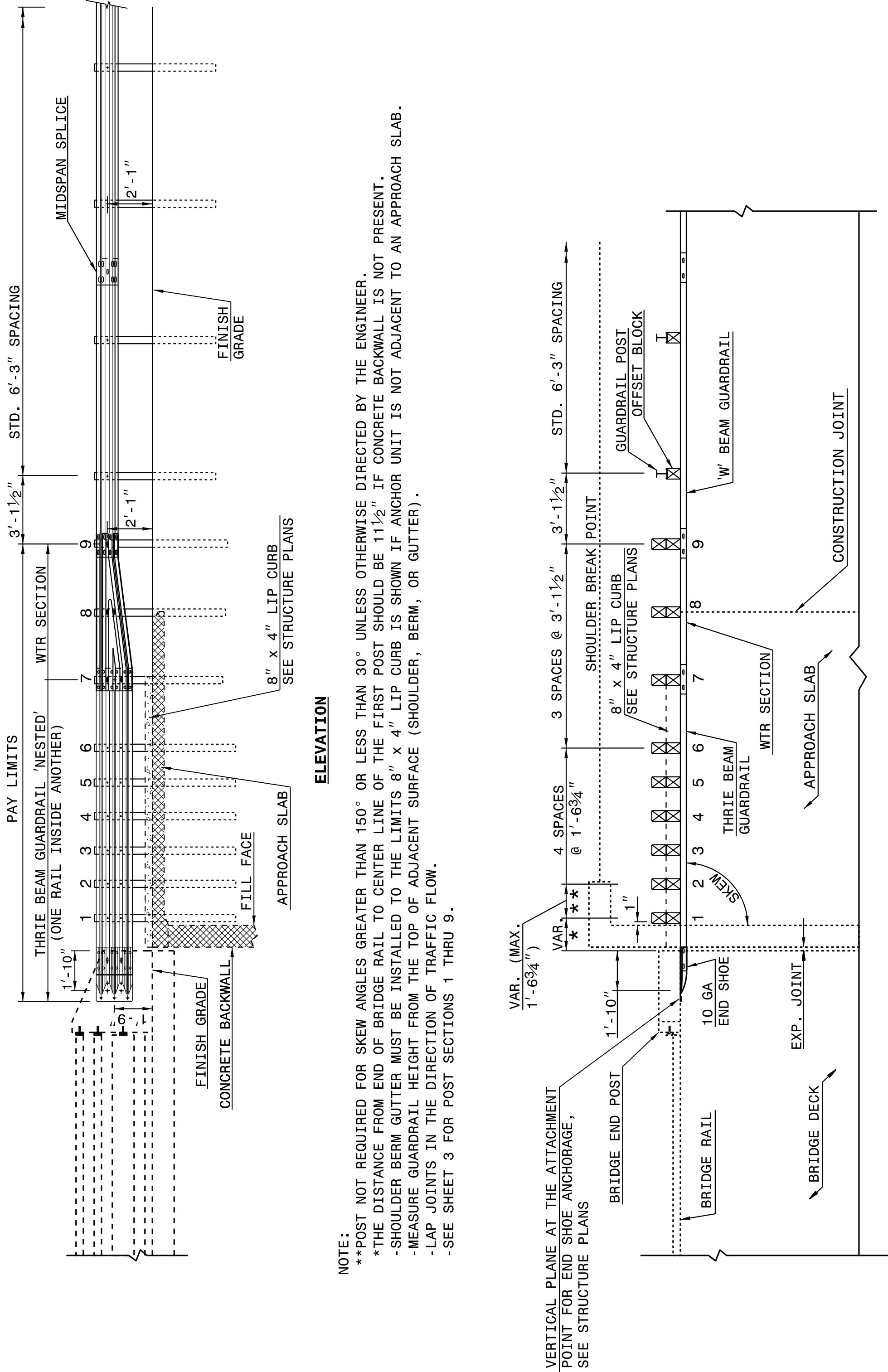
ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03

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

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

SHEET 1 OF 7
862D03



**GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE**

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

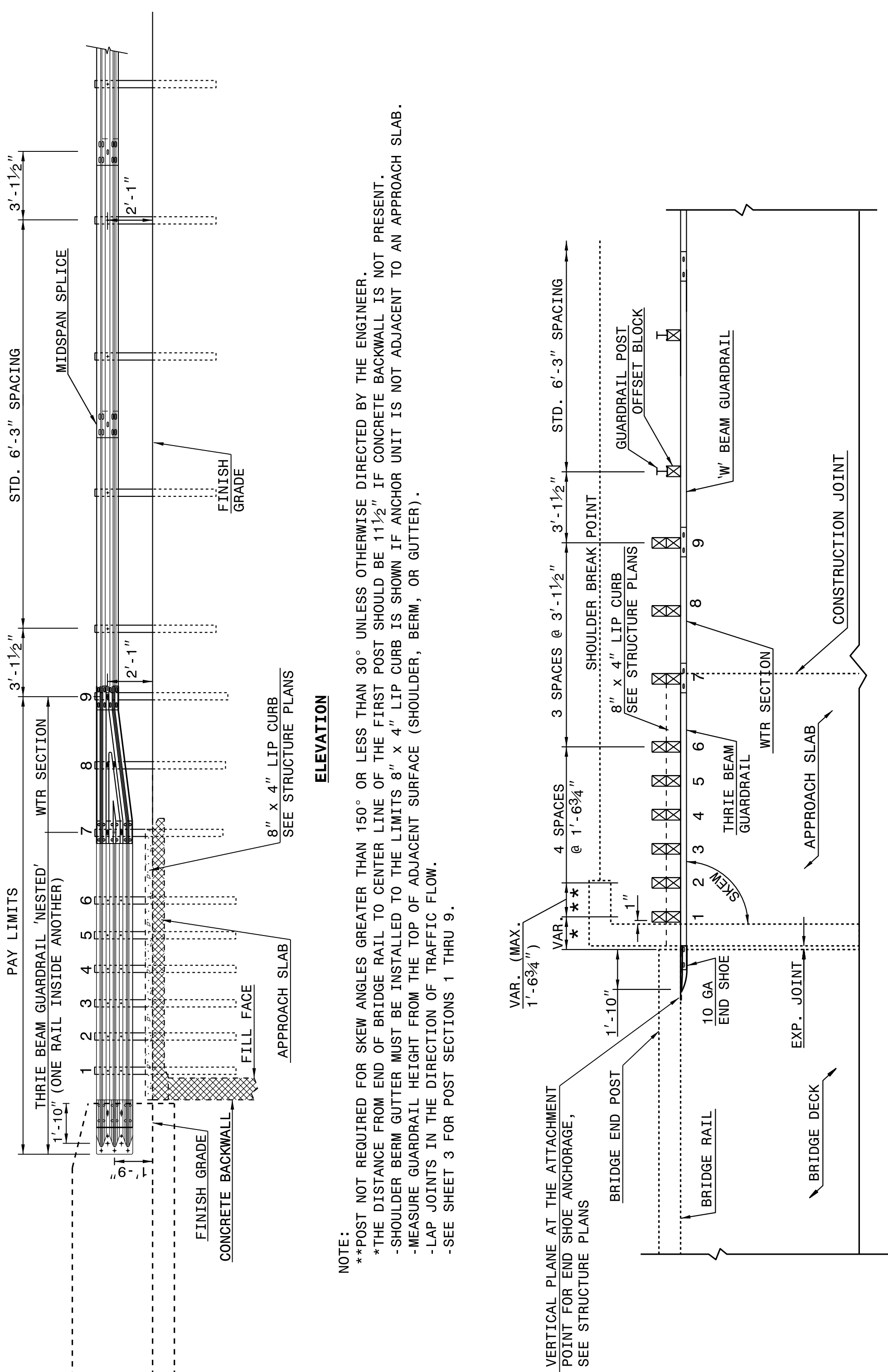
ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862D03

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

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

SHEET 2 OF 7
862D03



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

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

SEE TITLE BLOCK

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

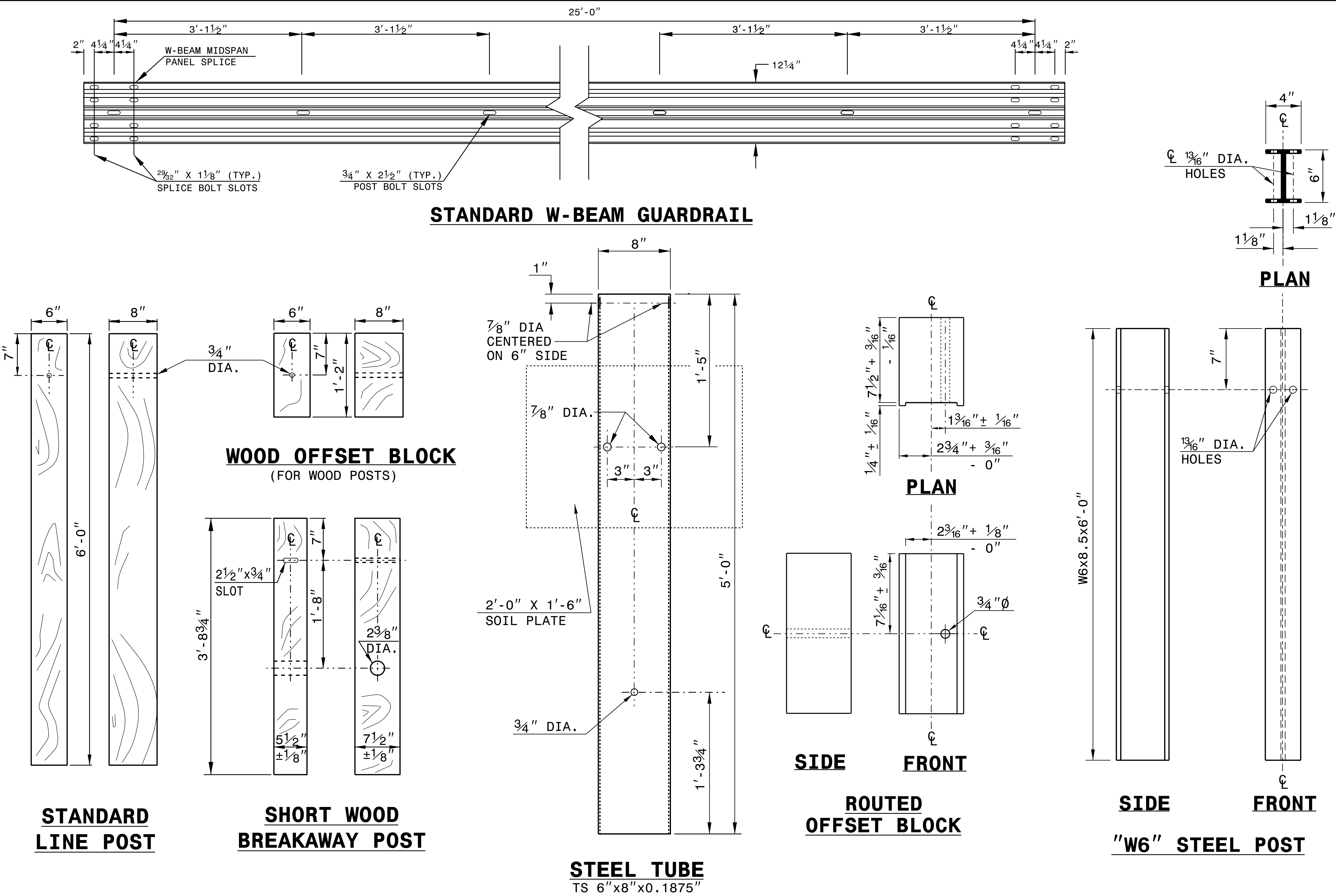
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
B-5994	2C-2
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

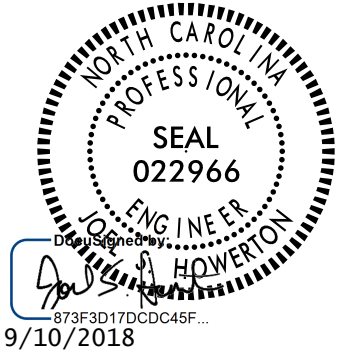
SHEET 6 OF 8
862D02



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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



CONTRACTS STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119	
SEE TITLE BLOCK	
ORIGINAL BY: J. HOWERTON	DATE: 3-7-2018
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

SUMMARY OF EARTHWORK

STATION	STATION	UNCL EXCAV.	EMBANK. +25%	BORROW	WASTE
-L- STA 14 + 00.00	-L- STA 16 + 41.25(BRIDGE)	369	580	211	
-L- STA 18 + 13.75(BRIDGE)	-L- STA 22 + 50.00	168	568	400	
TOTALS:		537	1148	611	
PROJECT TOTALS:		537	1148	611	
5% TO REPLACE TOP SOIL ON BORROW PIT				31	
GRAND TOTALS:		537	1148	642	
SAY:		560		675	

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

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LV/RT/CL	YD ²
-L-	15 + 00.00	16 + 52.44	CL	361.54
	18 + 07.58	19 + 50.00	CL	371.58
			TOTAL:	733.12
			SAY:	770

ROW AREA DATA SUMMARY

[illegible]

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH (FT)
-L-	16+17.50 (LT)	16+30.38 (LT)	13
		TOTAL:	13
		SAY:	15

GUARDRAIL SUMMARY

[illegible]

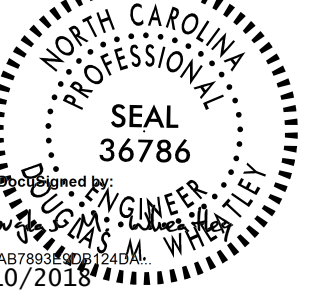
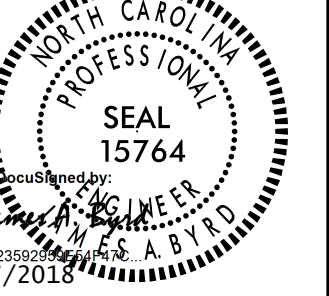
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

8/17/19

NOTES: 1: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON THE PLANS.
2: DESIGN EXCEPTION APPROVED FOR HORIZONTAL CURVE (480.47')
HORIZONTAL SSD (215') - V=35 MPH

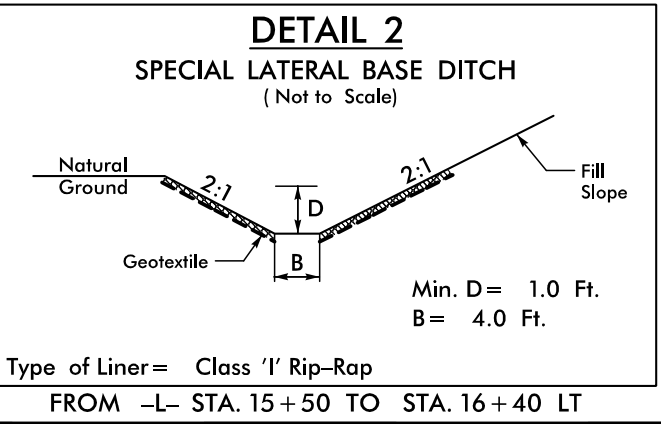
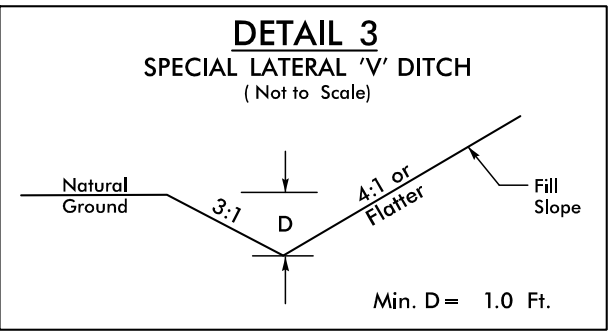
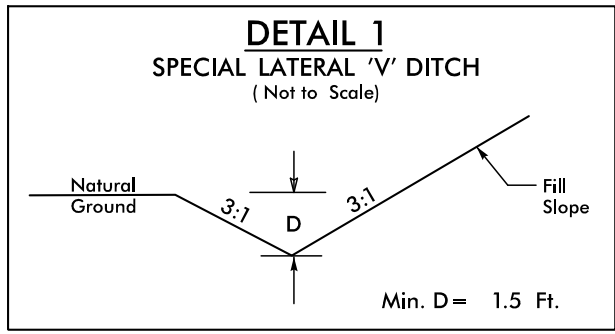
HNTB HNTB NORTH CAROLINA, P.C.
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1654

PROJECT REFERENCE NO.		SHEET NO.
B-5994		4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

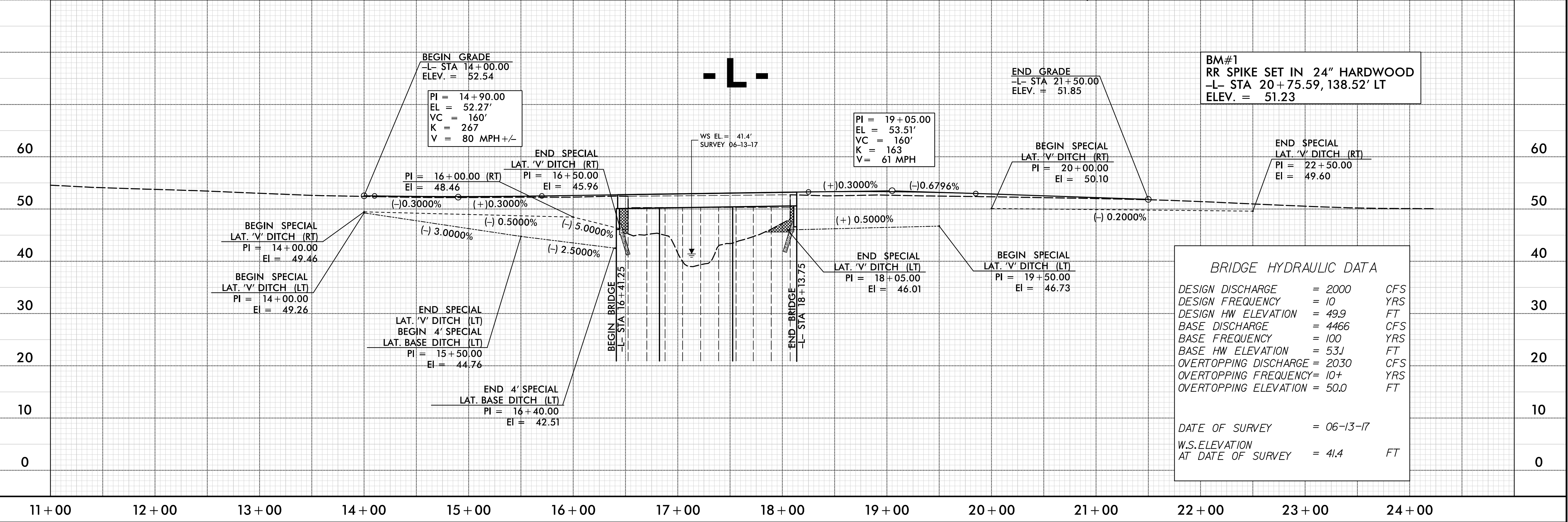
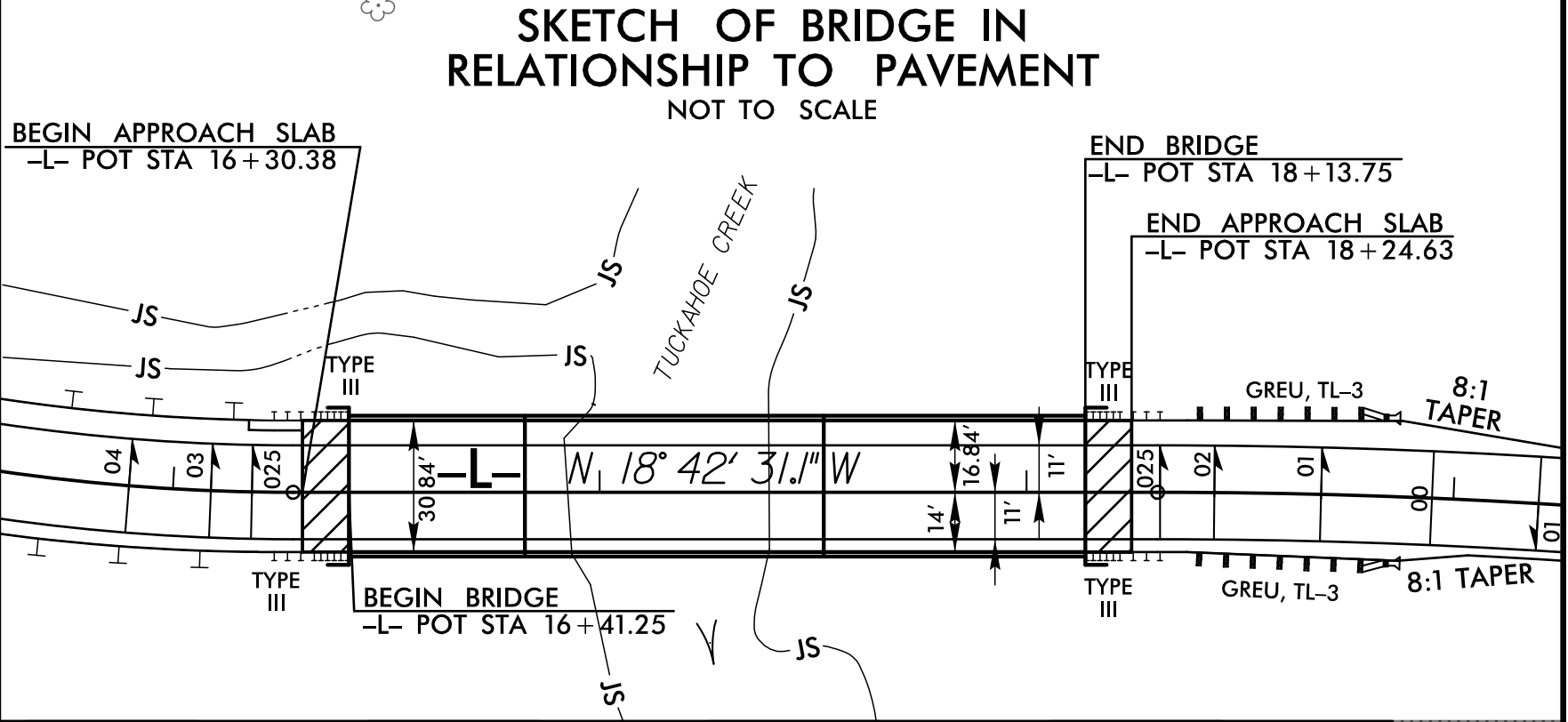
BEGIN CONSTRUCTION
BEGIN PROJECT B-5994
-L- POC STA 14+00.00

END PROJECT B-5994
-L- POT STA 21+50.00

END CONSTRUCTION
PROJECT B-5994
-L- STA 22+50.00



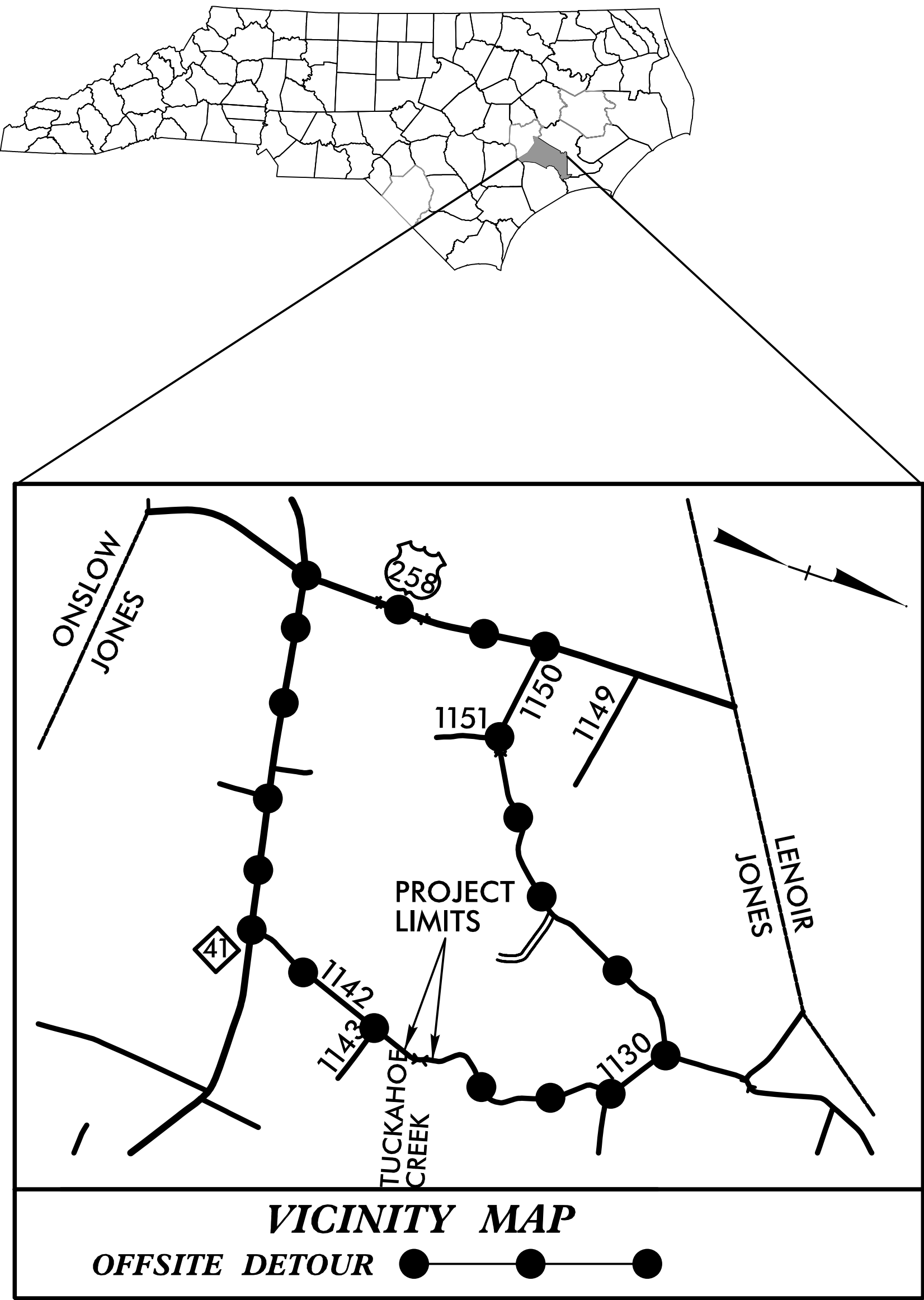
PI Sta 12+70.86 $\Delta = 3^{\circ} 01' 37.0''$ (LT) $D = 2^{\circ} 38' 18.4''$ $L = 114.73'$ $T = 57.38'$ $R = 2,171.58'$ SE = EXISTING	PI Sta 14+83.26 $\Delta = 35^{\circ} 46' 10.2''$ (LT) $D = 11^{\circ} 55' 29.8''$ $L = 299.96'$ $T = 155.05'$ $** R = 480.47'$ INC. = 19.25'	PI Sta 19+52.13 $\Delta = 9^{\circ} 15' 30.7''$ (RT) $D = 3^{\circ} 49' 11.0''$ $L = 242.39'$ $T = 121.46'$ $R = 1,500.00'$ SE = SEE PLANS INC. = 26.75'
---	---	--



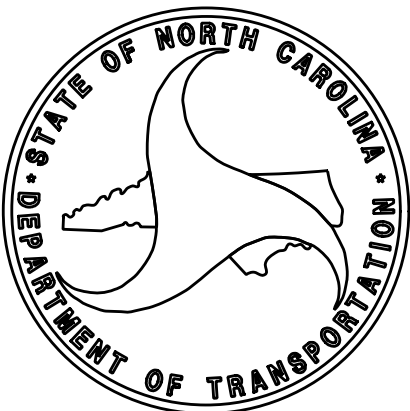
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

JONES COUNTY



LOCATION: REPLACE BRIDGE NO. 32 OVER TUCKAHOE CREEK
ON SR 1142 (WEYERHAEUSER ROAD)



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, INDEX OF SHEETS AND LIST OF APPLICABLE ROADWAY STANDARDS
TMP-2	GENERAL NOTES AND DETOUR

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. DATED JAN 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

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

L. D. STOUCHKO, P.E. TRAFFIC CONTROL PROJECT ENGINEER
J. A. PHILLIPS TRAFFIC CONTROL DESIGN ENGINEER
S. J. HAMILTON, PE, CPM NCDOT CONTACT

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: Rhonda B. Early
DATE: 03/09/2018

HNTB

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

SEAL



SHEET NO.
TMP-1

B-5994

TIP PROJECT:

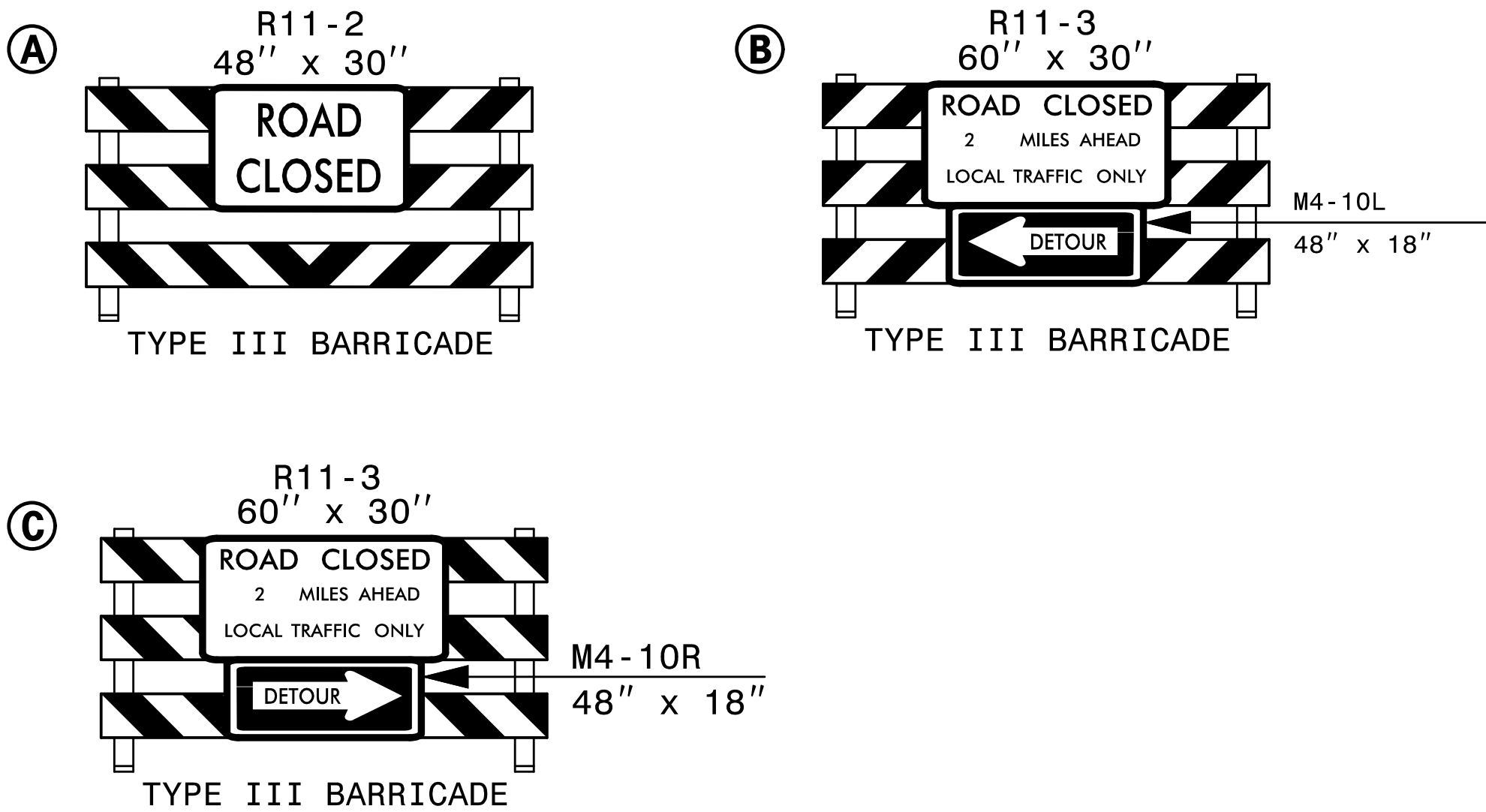
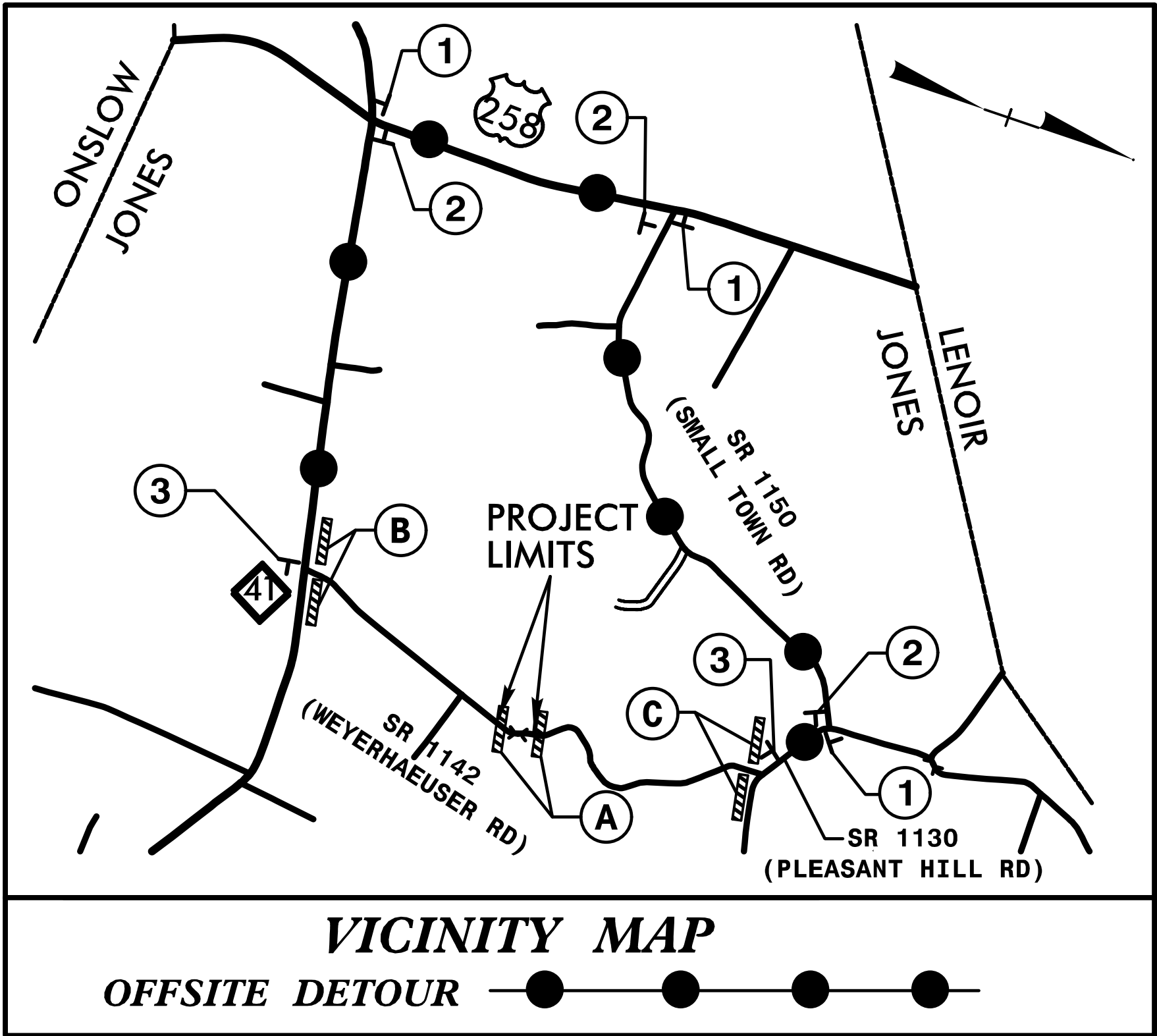
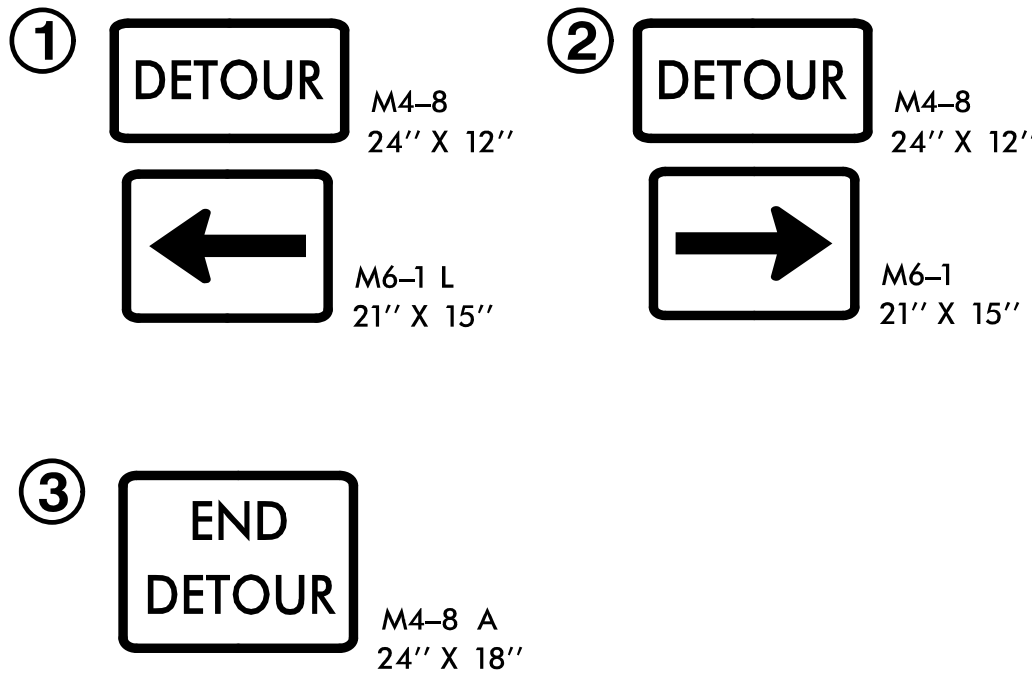
PROJ. REFERENCE NO.	SHEET NO.
B-5994	TMP-2

GENERAL NOTES

IMPLEMENT TRAFFIC CONTROL IN ACCORDANCE WITH THE ROADWAY STANDARD DRAWINGS LISTED ON TMP-1

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

STATE FORCES WILL INSTALL AND MAINTAIN THE PROJECT DETOUR AND TYPE III BARRICADES AT THE PROJECT LIMITS. STATE FORCES WILL INSTALL MARKINGS AND MARKERS ON THE FINISHED PROJECT. CONTACT JEFF DUNNING AT 252-830-3493 TWO WEEKS PRIOR TO CLOSING THE ROAD FOR DETOUR INSTALLATION.



9/5/2018
\\TMP\BRO32_tc_TMP_02_detour.dgn
HNTB

HNTB

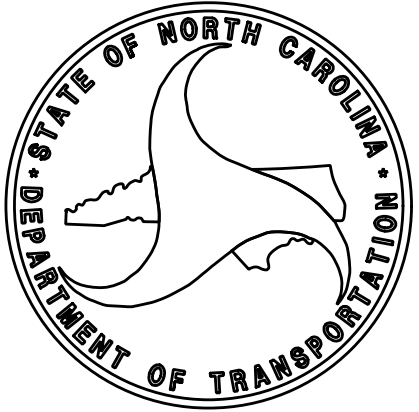
HNTB NORTH CAROLINA, P.C.
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVEDigned by:
Rhonda B. Early
F34CAF5ACBF4BA

DATE:
9/7/2018

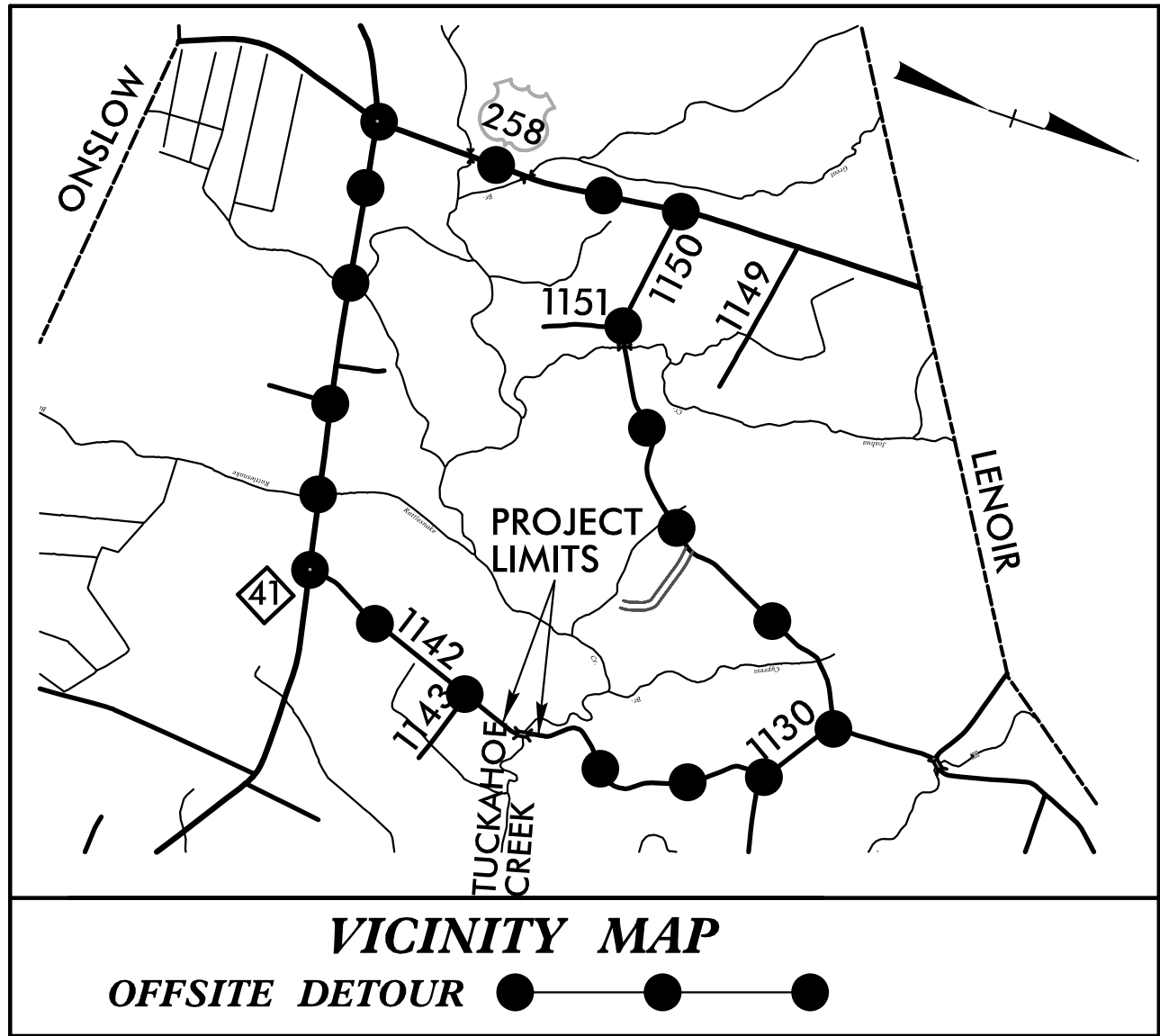
SEAL
023521
ENGINEER
RHONDA B. EARLY



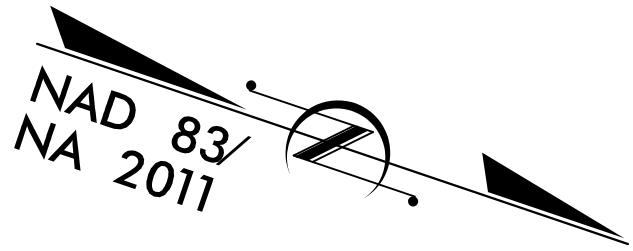
TRANSPORTATION
MANAGEMENT PLAN

GENERAL NOTES,
AND DETOUR

TIP PROJECT: B-5994



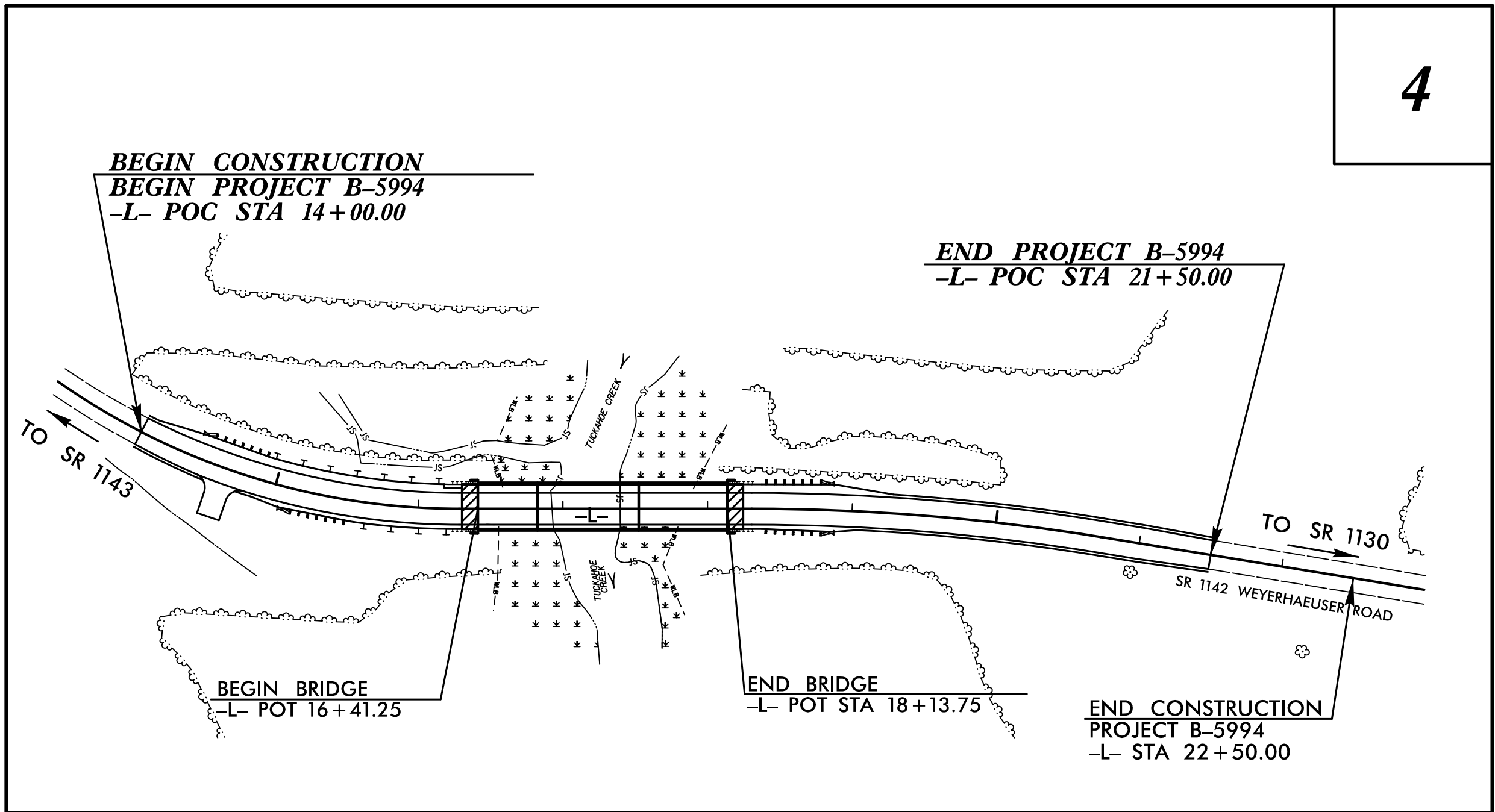
VICINITY MAP
OFFSITE DETOUR



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

LOCATION: REPLACE BRIDGE NO. 32 OVER TUCKAHOE CREEK
ON SR 1142 (WEYERHAEUSER ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



4

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5994	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.2.R.77			
17BP.2.R.77			
B-5994	BRZ-1142(013)	CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

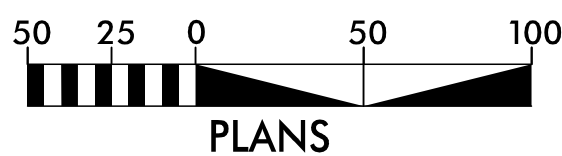
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SCF
1622.01	Temporary Berms and Slope Drains	BSD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle/Coir Fiber Wattle	WF
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	WF-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	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
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	SKB
	Tiered Skimmer Basin	TSKB
	Infiltration Basin	IB

ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

Refer To E. C. Special Provisions
for Special Considerations.

THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.

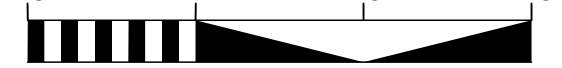
GRAPHIC SCALE



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Prepared In the Office of:

HNTB

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

2018 STANDARD SPECIFICATIONS

ALLEN HODGES, EI
EROSION CONTROL
LEVEL III
CERTIFICATION #3633

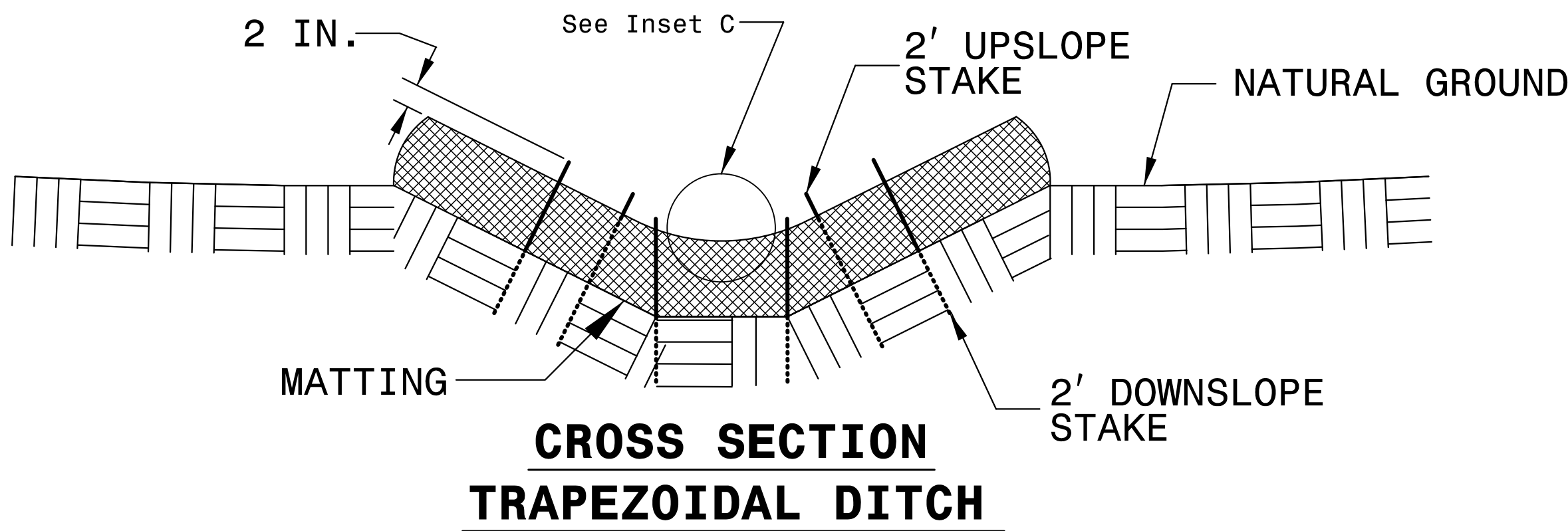
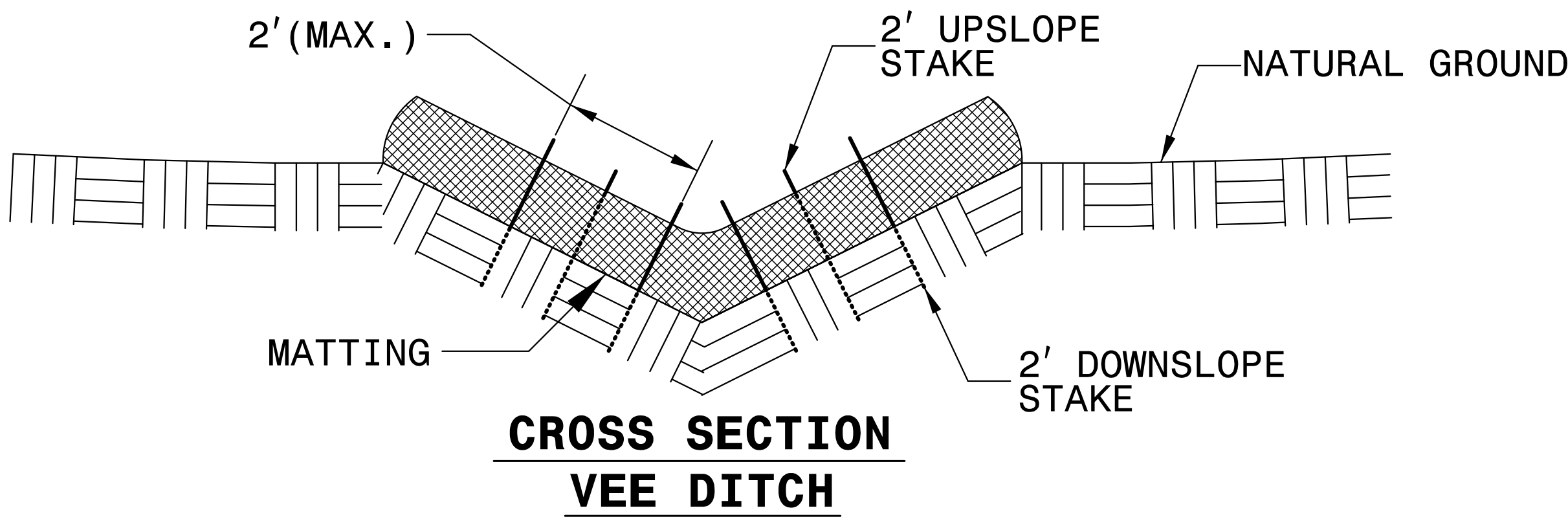
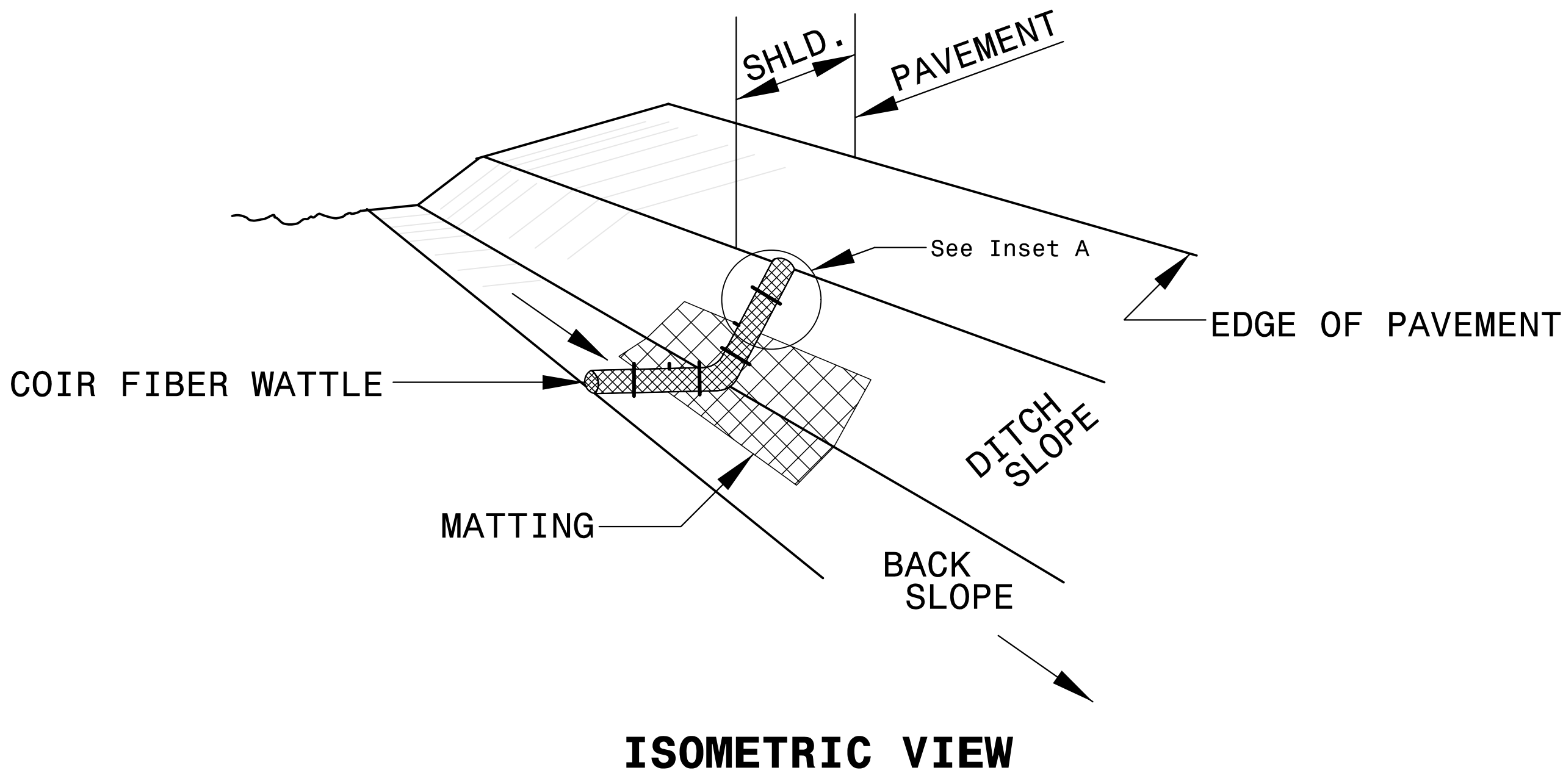
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest 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	1633.03	Temporary Rock Silt Check Type C
1630.02	Silt Basin Type A	1634.01	Temporary Rock Sediment Dam Type A
1630.03	Temporary Silt Ditch	1634.02	Temporary Rock Sediment Dam Type B
1630.04	Stilling Basin	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.05	Temporary Diversion	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.06	Special Stilling Basin	1640.01	Coir Fiber Wattle
1631.01	Matting Installation	1645.01	Temporary Stream Crossing

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

PROJECT REFERENCE NO.		SHEET NO.
B-5994		EC-2
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER



NOTES:

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

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

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

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

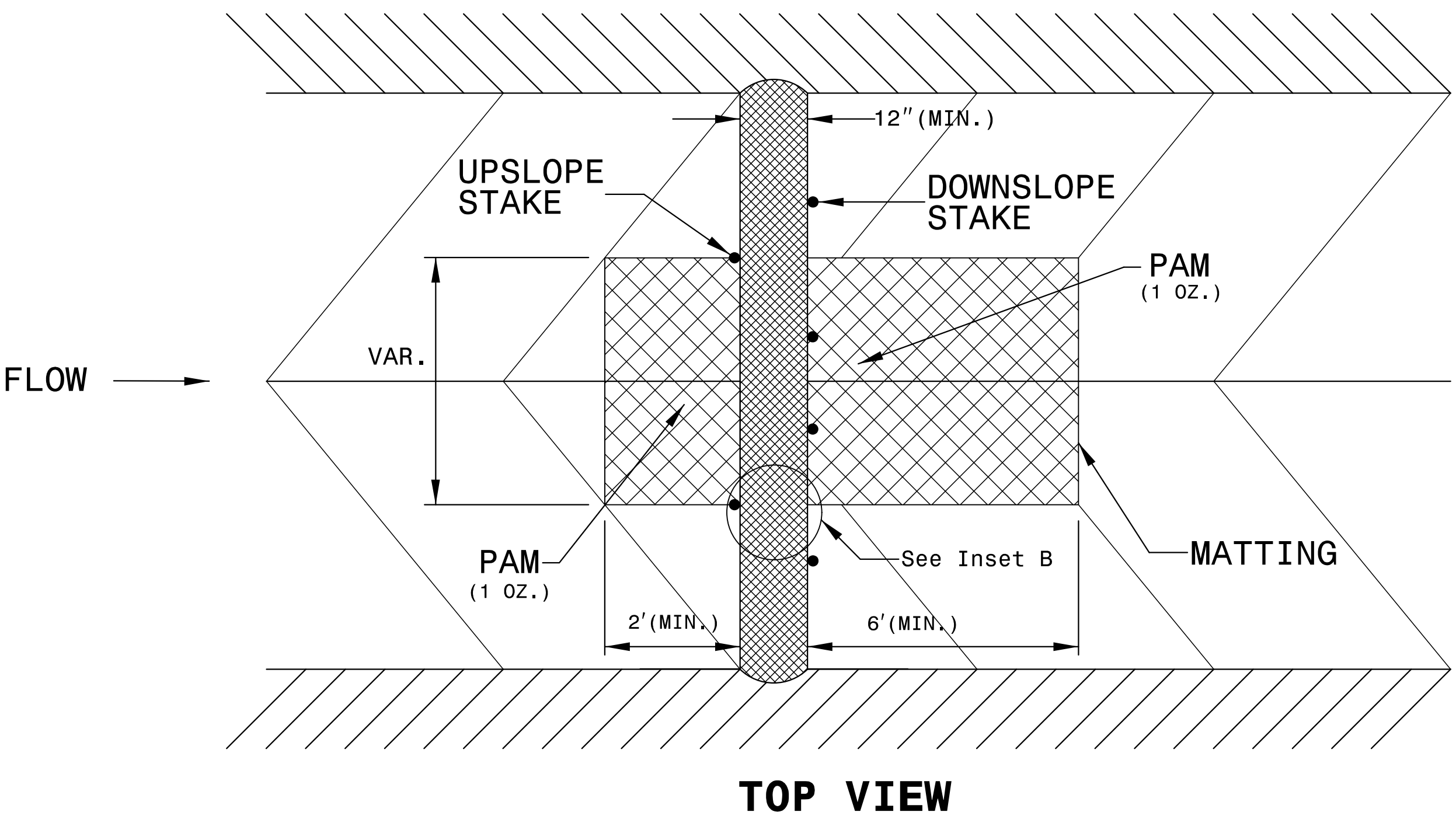
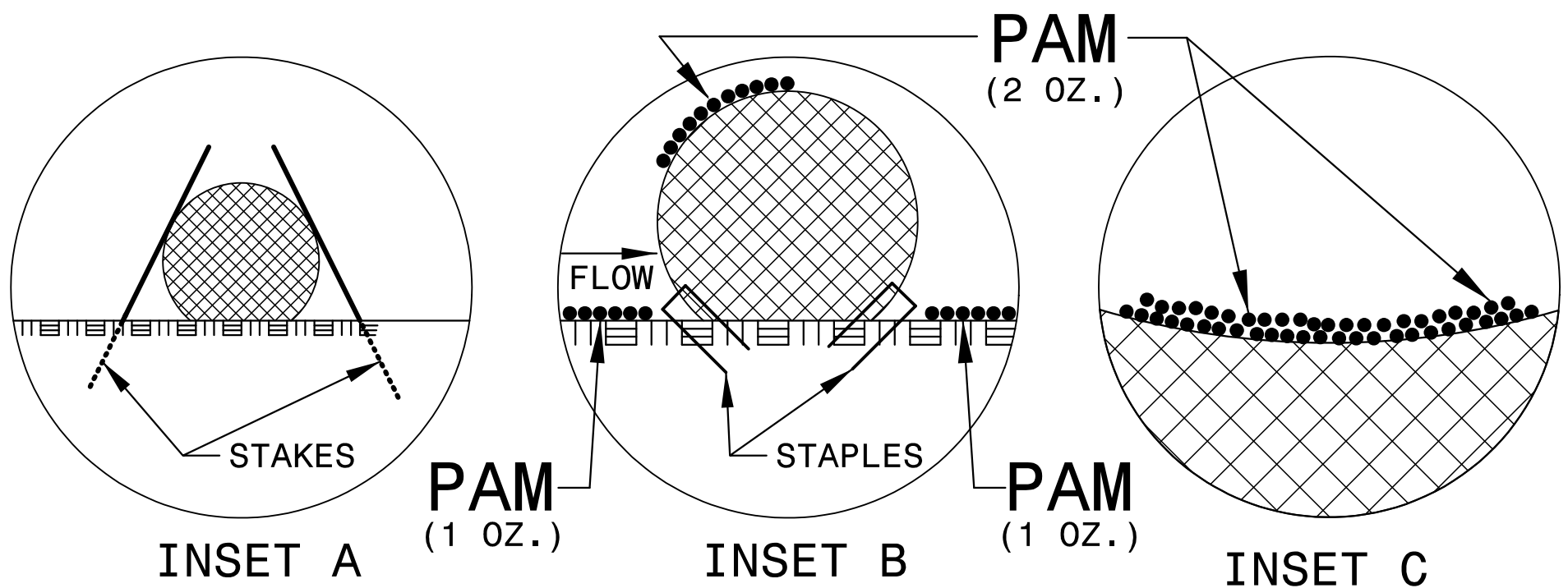
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

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

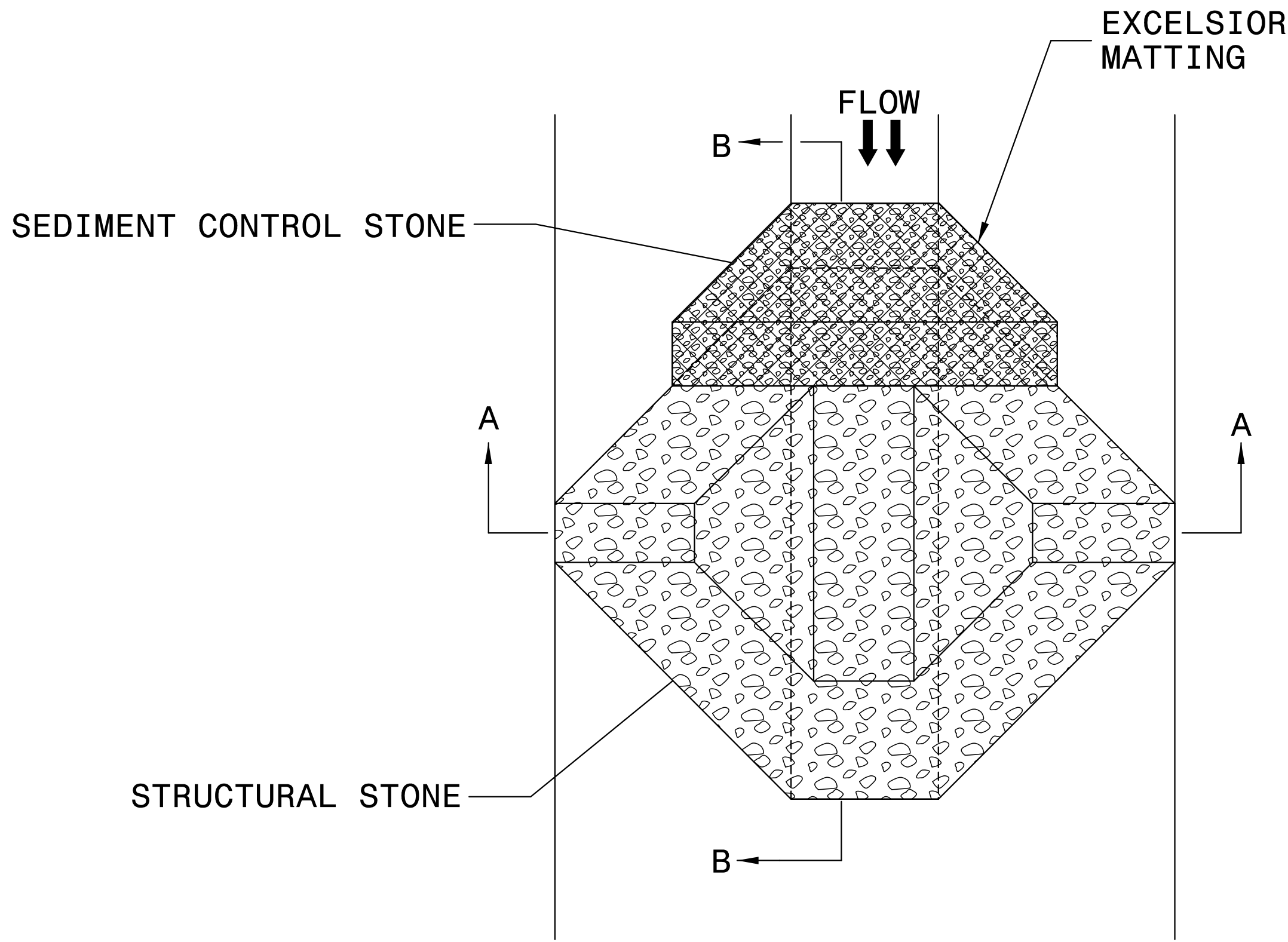
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

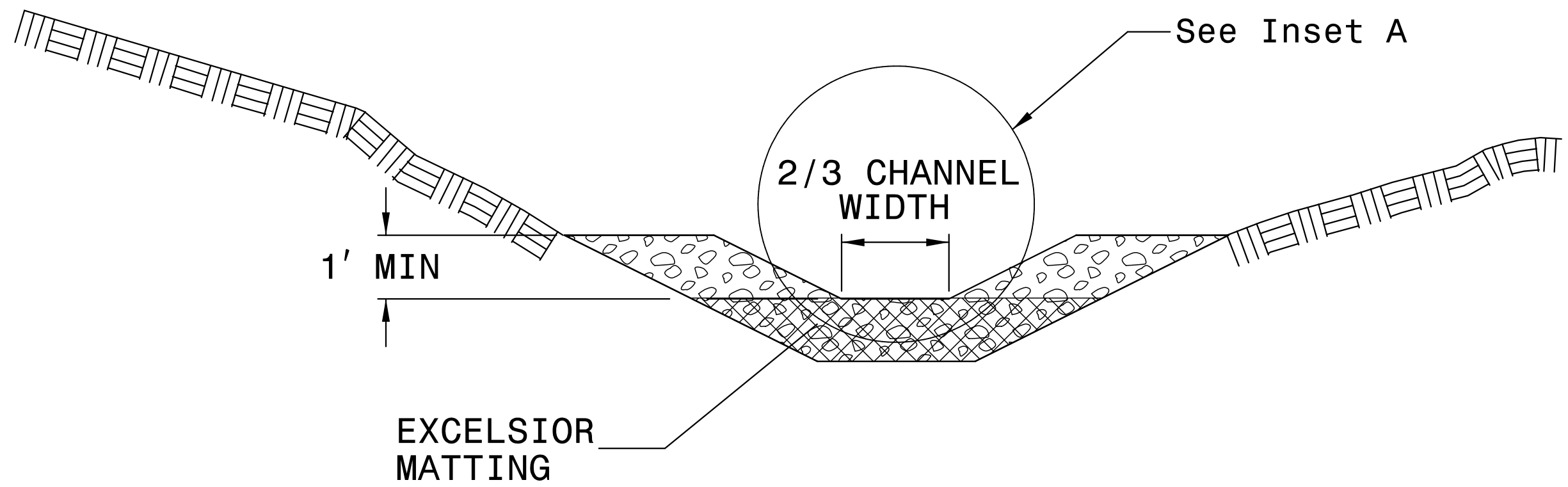


TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)

PROJECT REFERENCE NO.	SHEET NO.
B-5994	EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PLAN



SECTION A-A

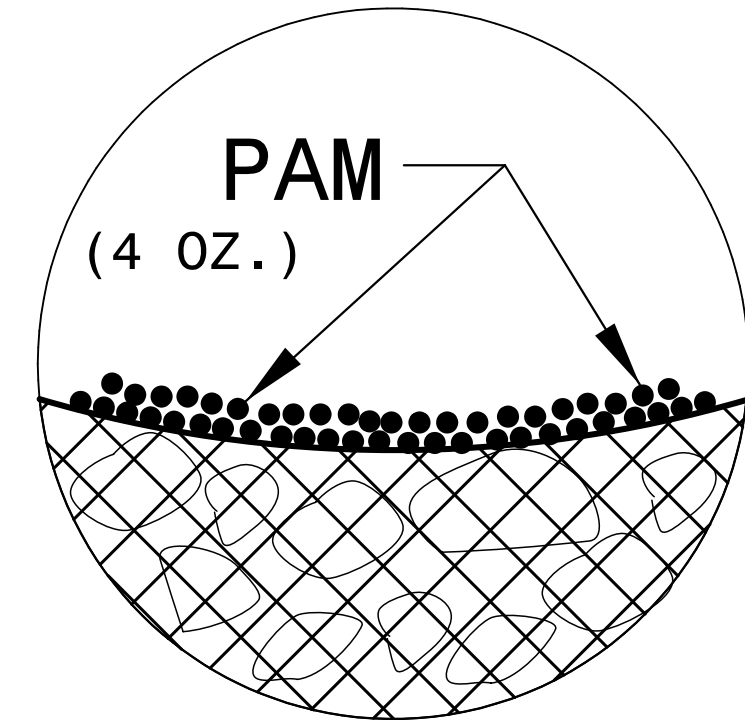
NOTES:

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

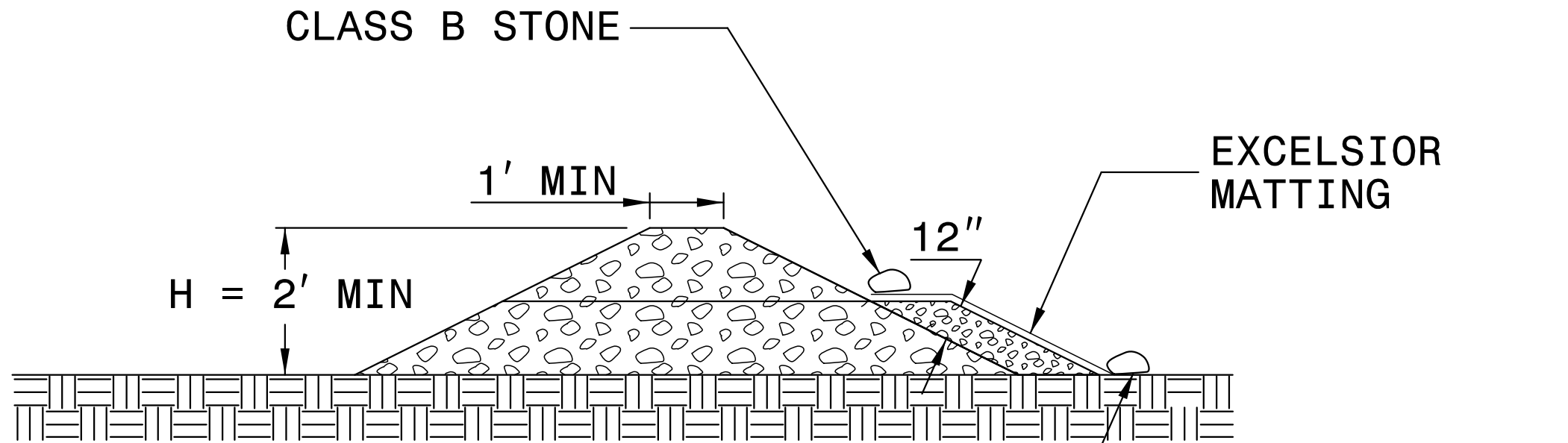
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

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



INSET A

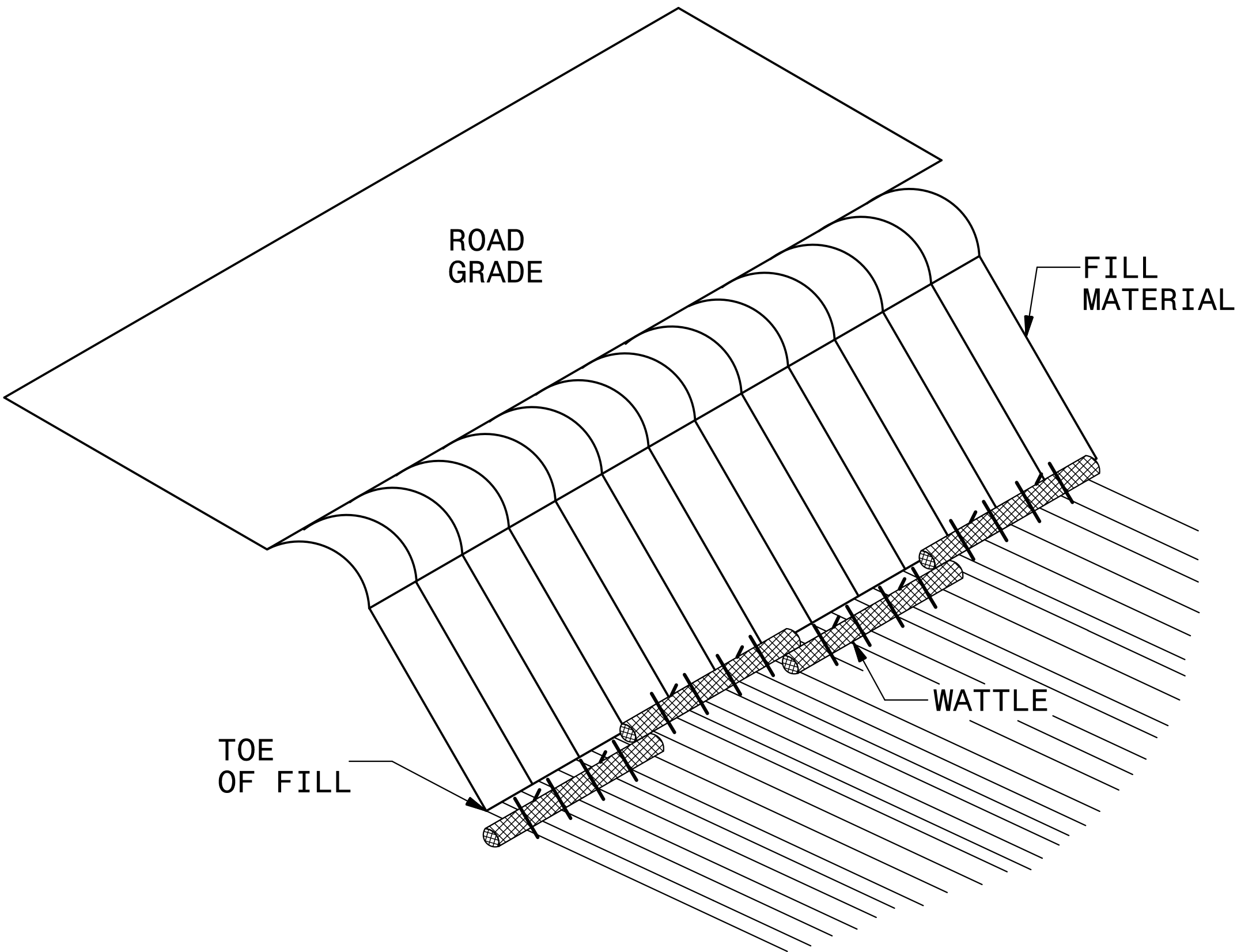


SECTION B-B

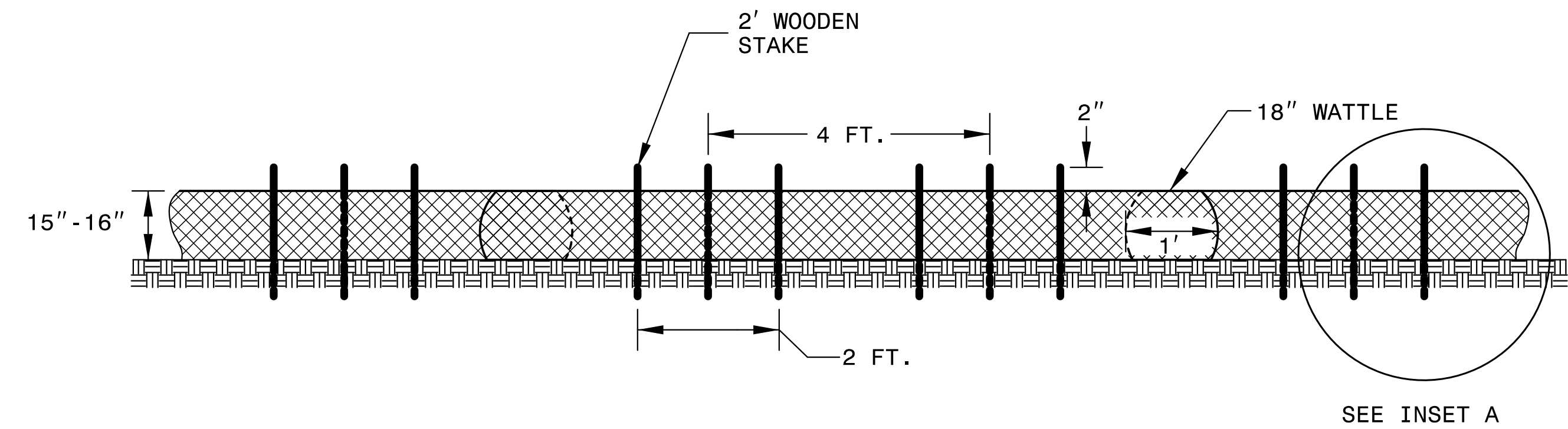
NOT TO SCALE

COIR FIBER WATTLE BARRIER DETAIL

PROJECT REFERENCE NO.	SHEET NO.
B-5994	EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

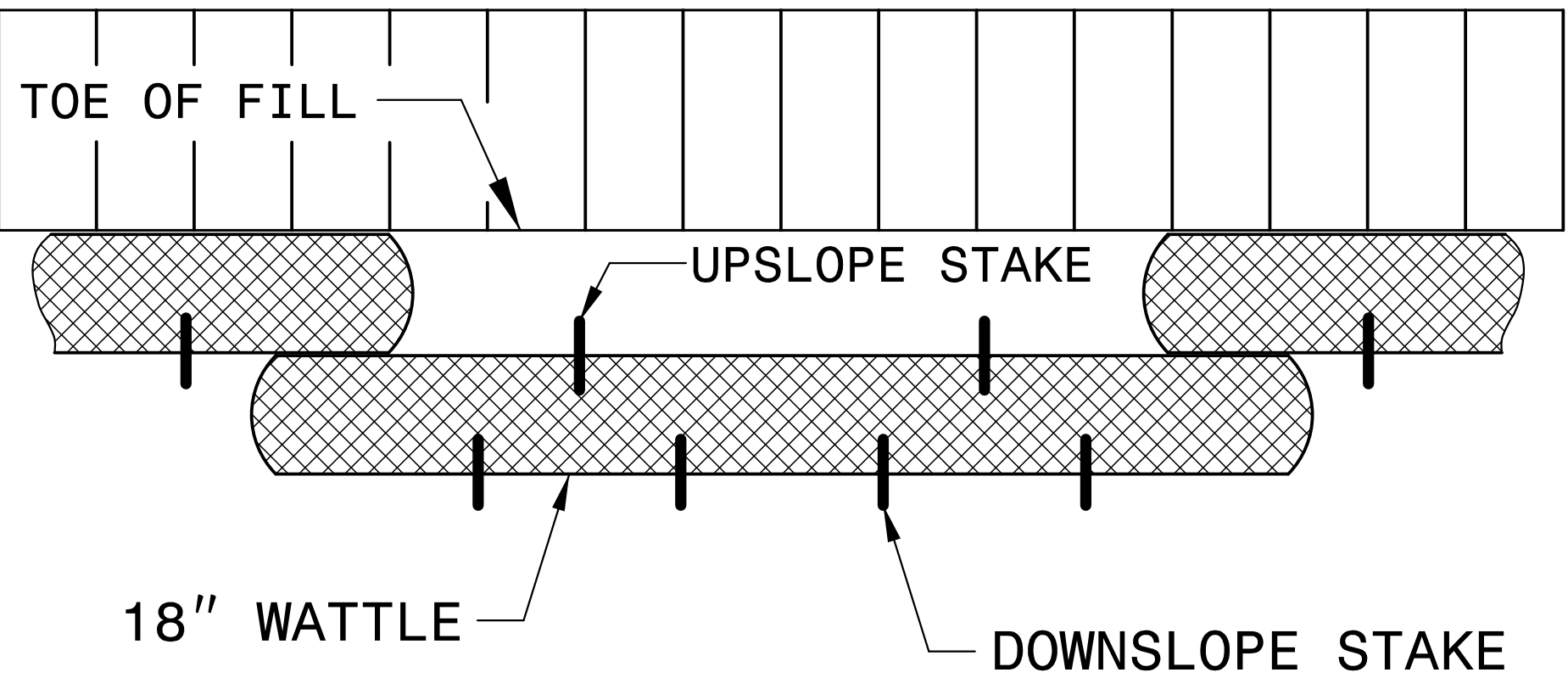
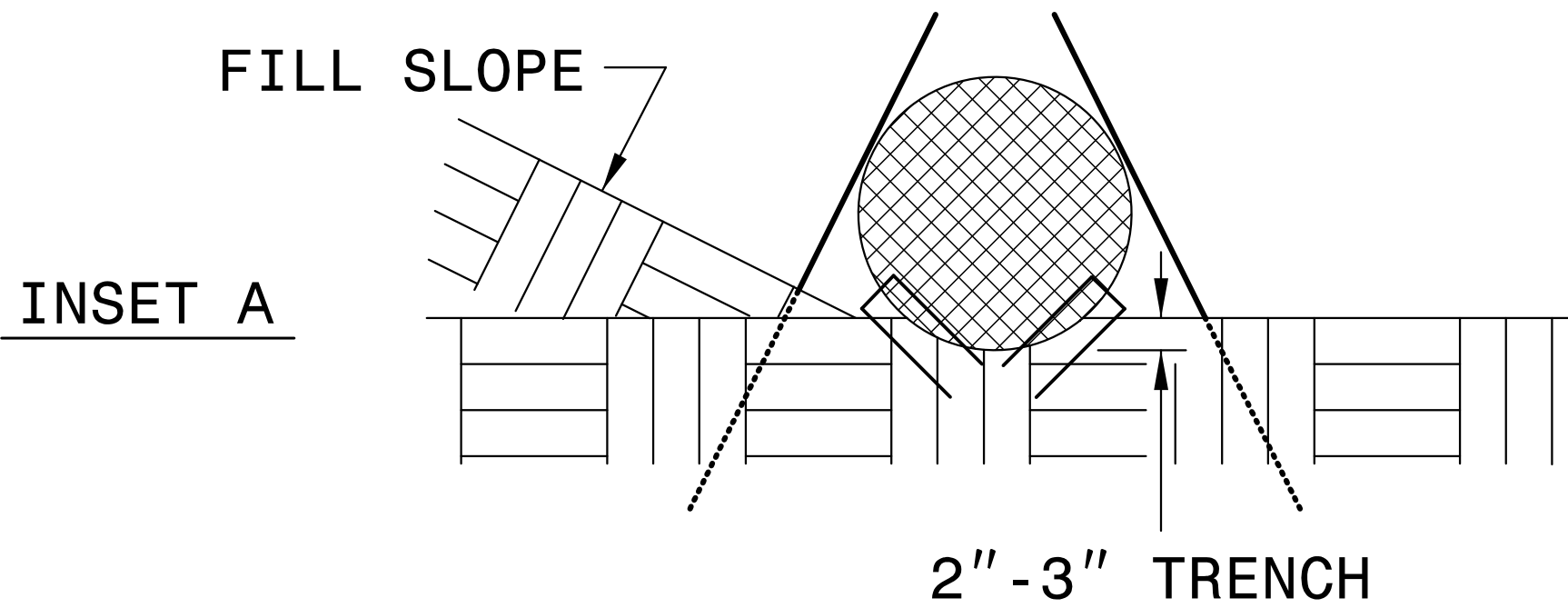


ISOMETRIC VIEW



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 25 FT.



TOP VIEW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
B-5994	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
<i>B-5994</i>	<i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

[illegible]

MATTING FOR EROSION CONTROL

[illegible]

NOTES: 1. THE CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AND UNDER THE BRIDGE, AS NEEDED OR DIRECTED BY THE ENGINEER.
2. THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING (ORANGE SAFETY FENCE).

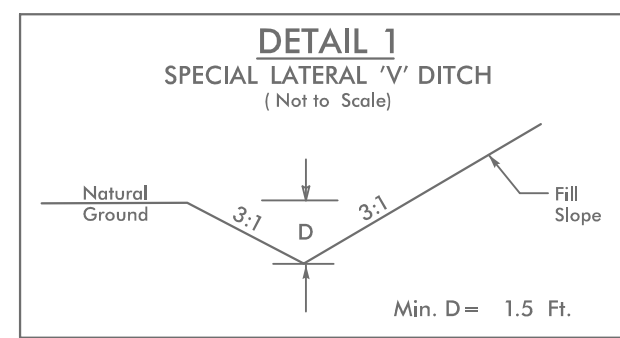
HNTB HNTB NORTH CAROLINA, P.C.
949 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1854

PROJECT REFERENCE NO.		SHEET NO.
B-5994		EC-4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

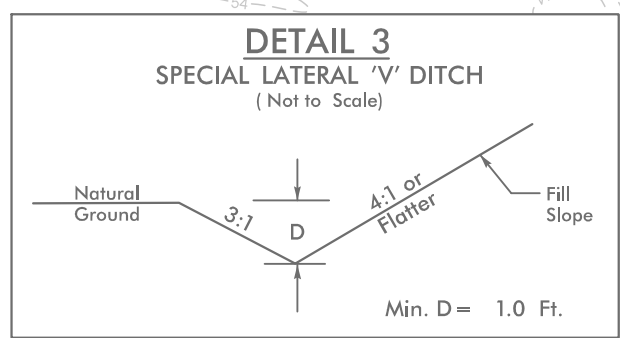
BEGIN CONSTRUCTION
BEGIN PROJECT B-5994
-L- POC STA 14+00.00

END PROJECT B-5994
-L- POT STA 21+50.00

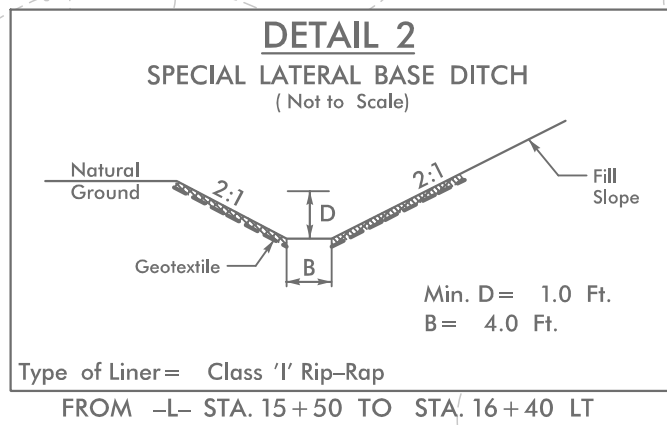
END CONSTRUCTION
PROJECT B-5994
-L- STA 22+50.00



FROM -L- STA. 14+00 TO STA. 15+50 LT
FROM -L- STA. 14+00 TO STA. 16+50 RT
FROM -L- STA. 18+05 TO STA. 19+50 LT

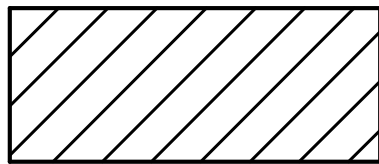


FROM -L- STA. 20+00 TO STA. 22+50 RT

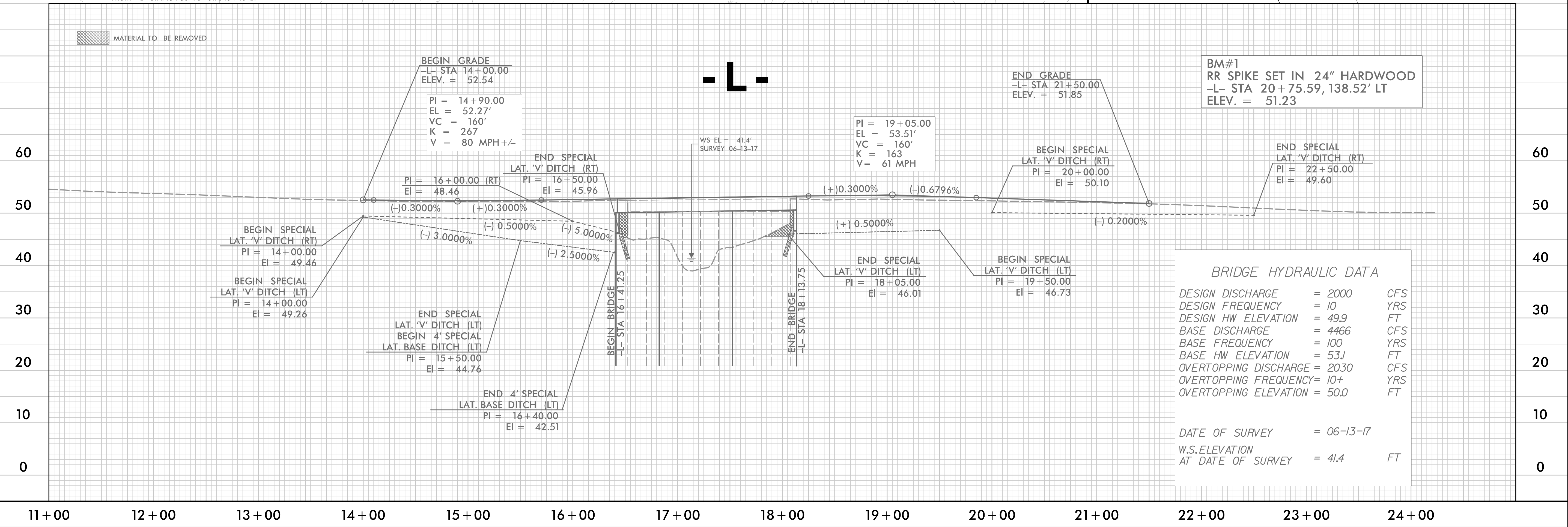
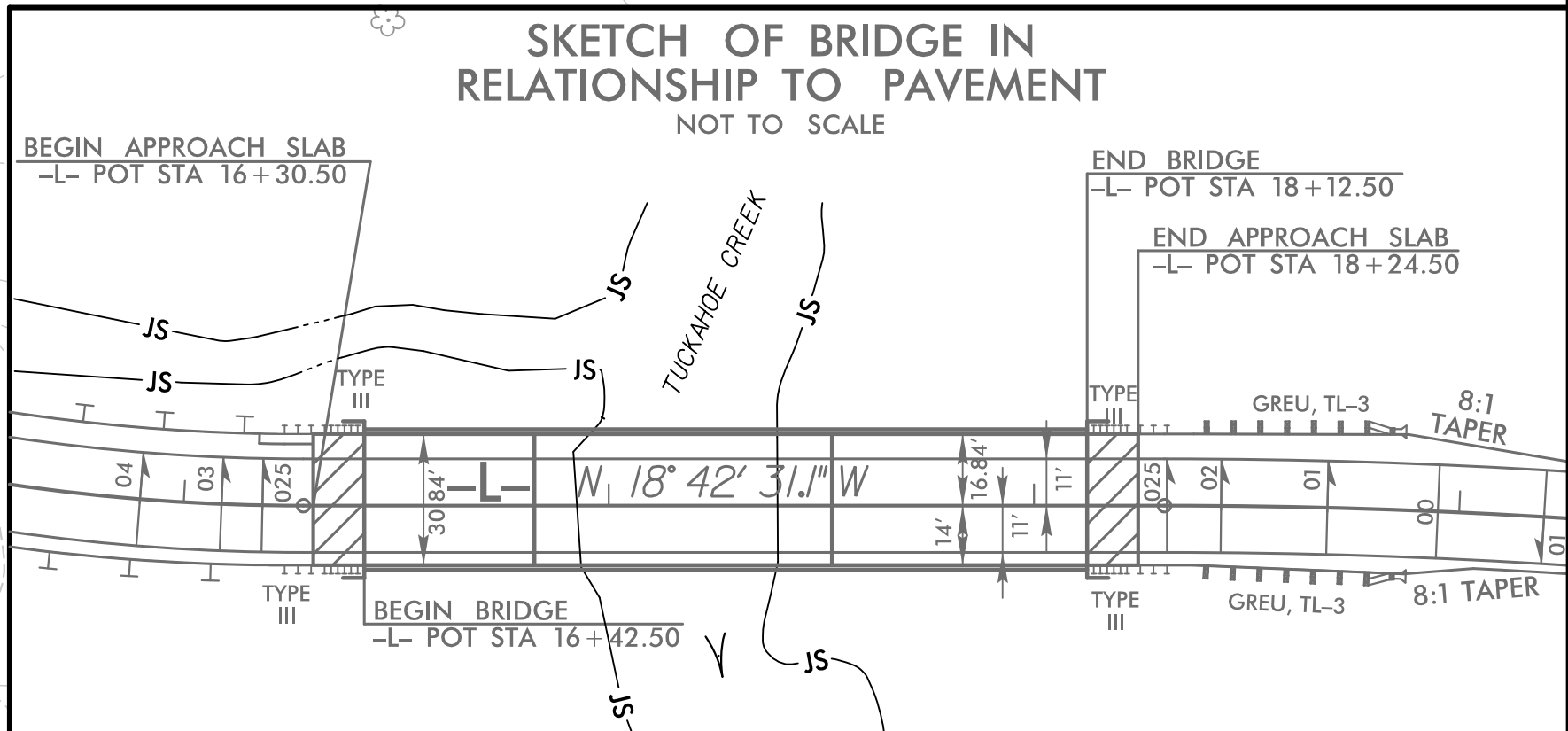


FROM -L- STA. 15+50 TO STA. 16+40 LT

Place Matting for Erosion Control
on Slope as Work Allows.
Sta. 15+00 to Sta. 16+30 LT
Sta. 18+50 to Sta. 19+50 LT



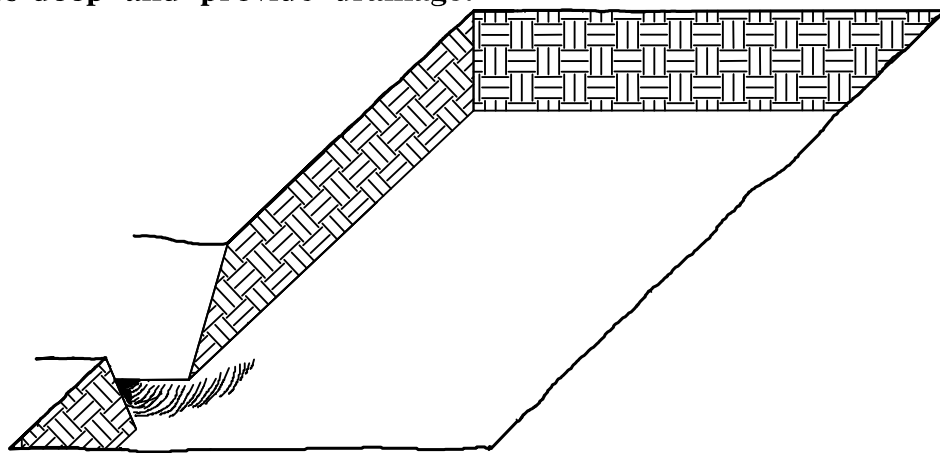
ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



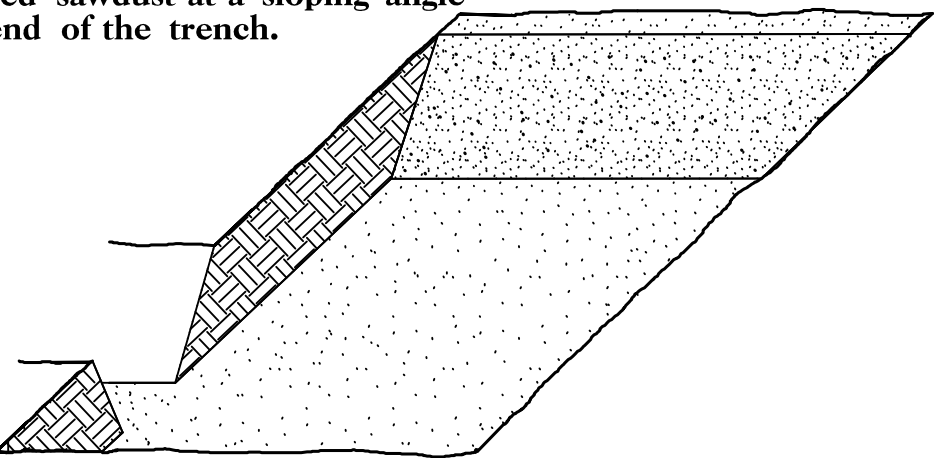
PLANTING DETAILS
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

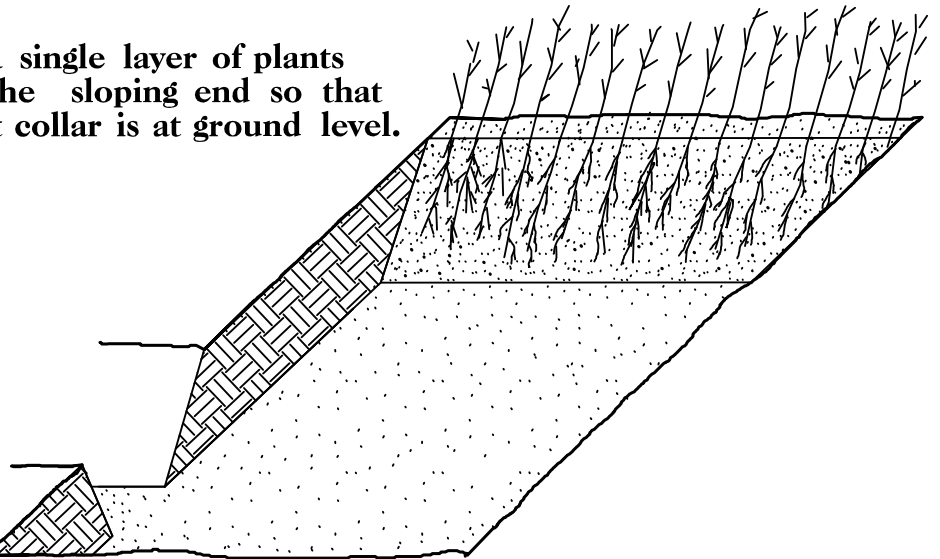
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



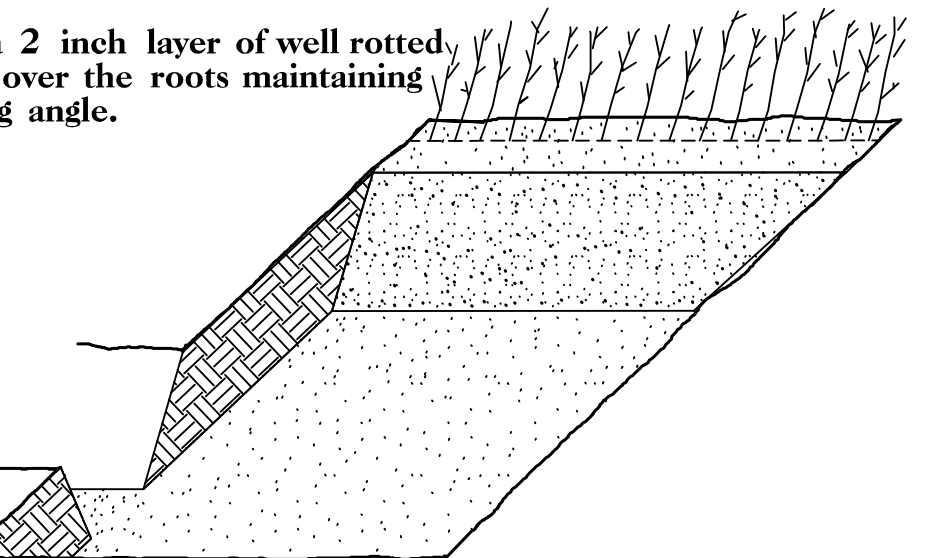
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

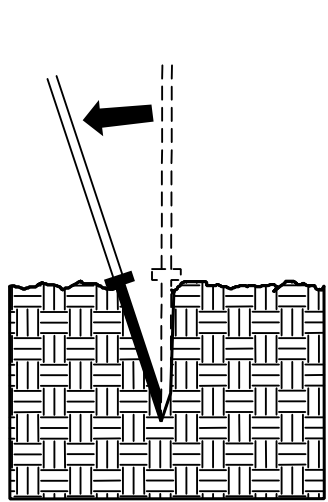


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

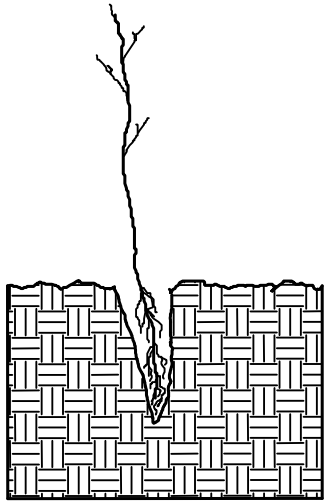


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

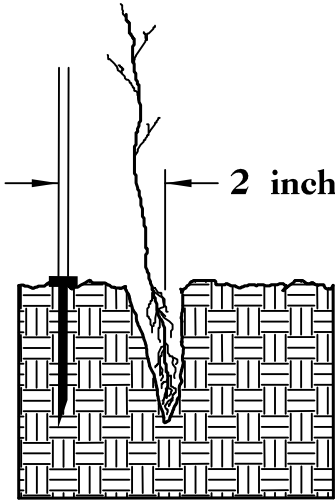
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



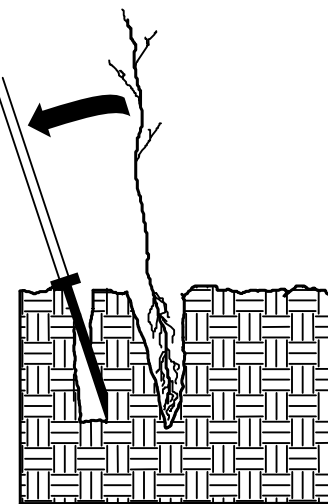
1. Insert planting bar as shown and pull handle toward planter.



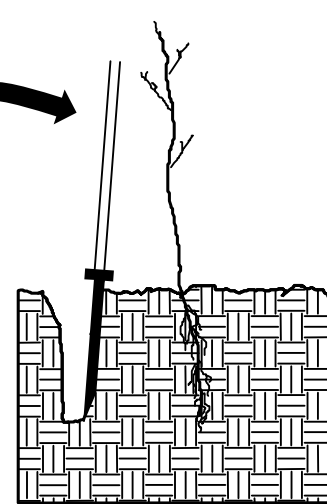
2. Remove planting bar and place seedling at correct depth.



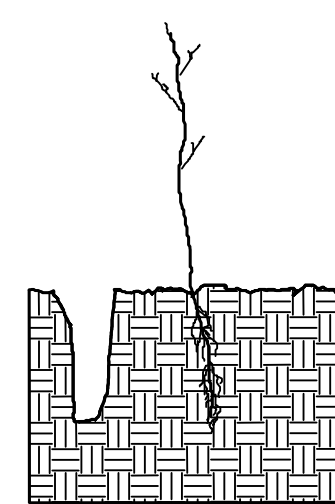
3. Insert planting bar 2 inches toward planter from seedling.



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



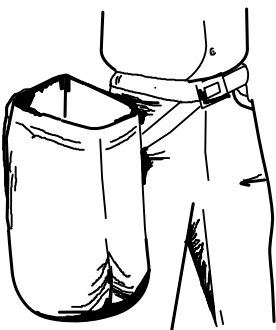
5. Push handle forward firming soil at top.



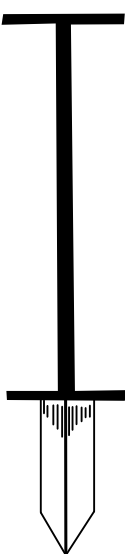
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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



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



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

REFORESTATION

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

REFORESTATION

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

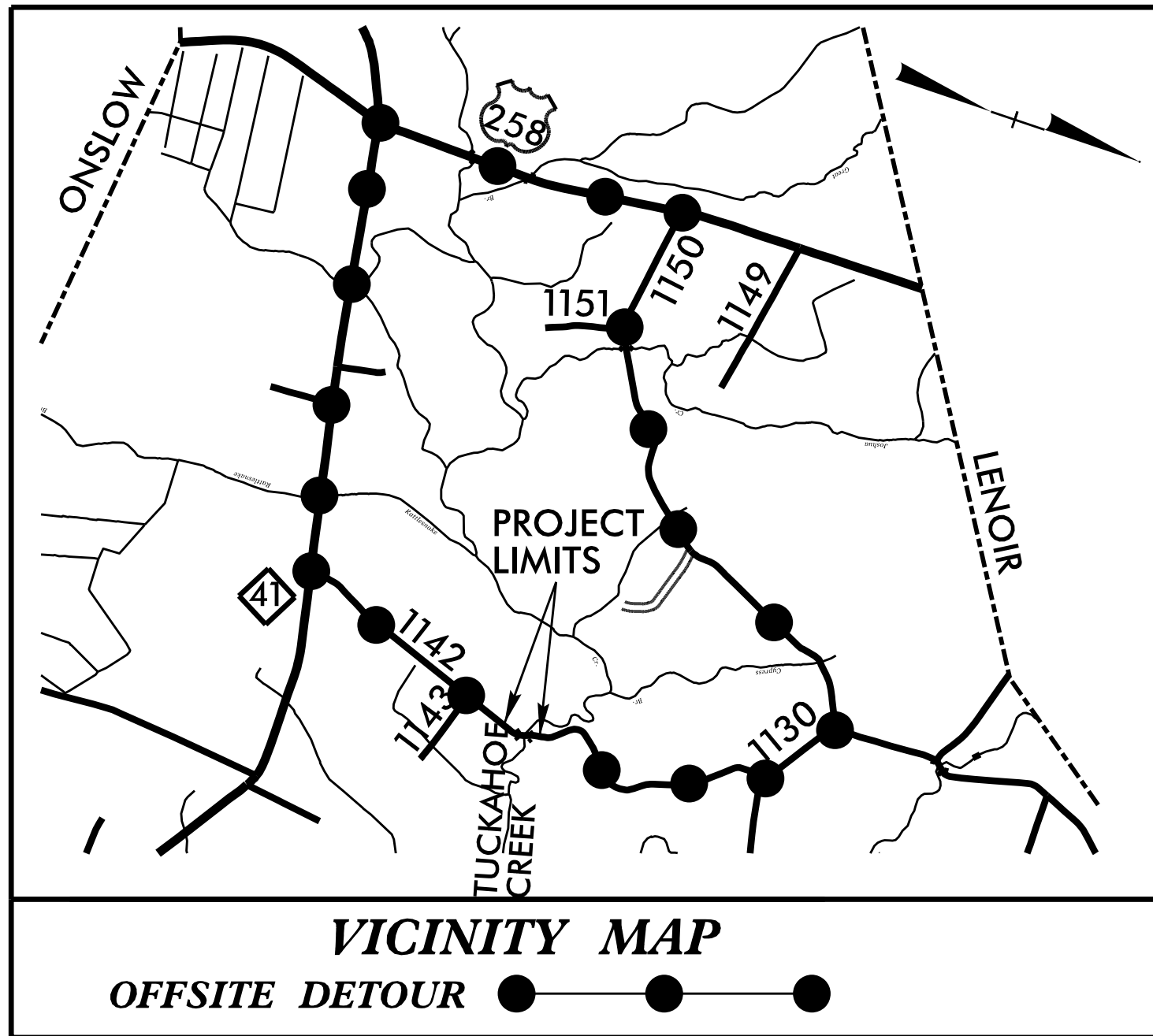
25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in 3R
25%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in 3R
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in 3R
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in 3R

REFORESTATION DETAIL SHEET

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

09/08/09

TIP PROJECT: B-5994

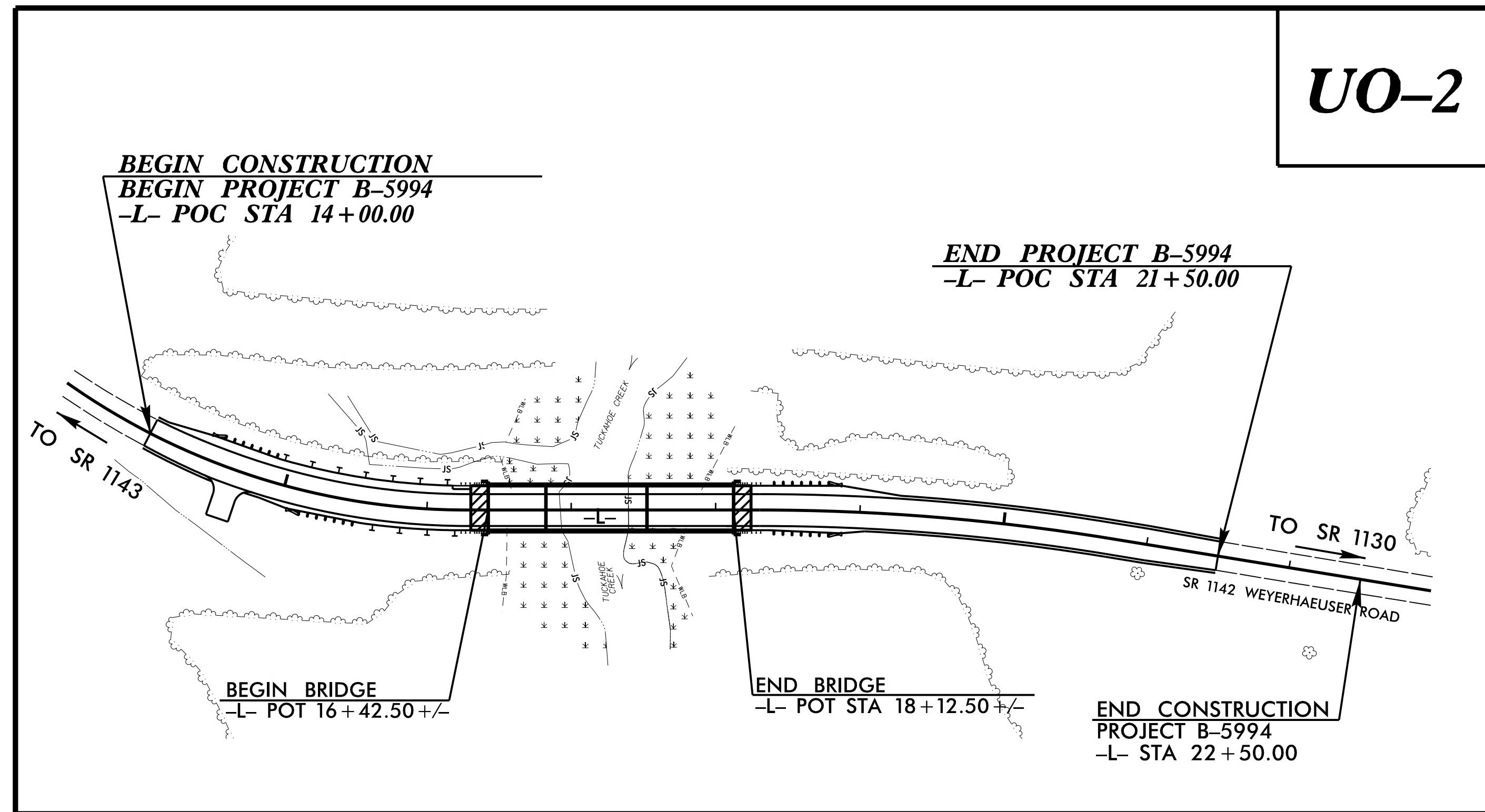


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

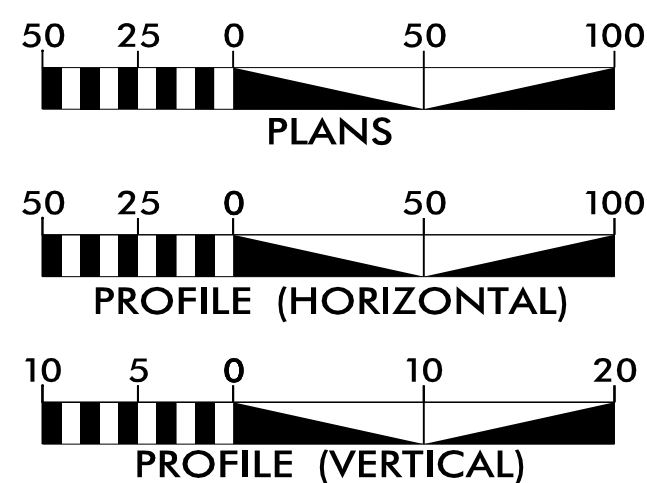
UTILITIES BY OTHERS PLANS JONES COUNTY

LOCATION: REPLACE BRIDGE NO. 32 OVER TUCKAHOE SWAMP
SR 1142 (WEYERHAEUSER ROAD)
TYPE OF WORK: RELOCATE PHONE LINE

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



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:

UO-1

UO-2

DESCRIPTION:

TITLE SHEET

UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

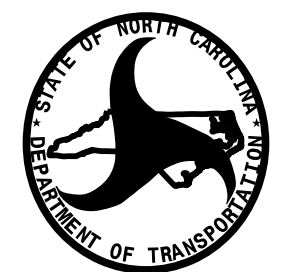
(A) PHONE - CENTURYLINK

PREPARED IN THE OFFICE OF:

M A Engineering
Consultants, Inc.

598 East Chatham Street - Suite 137
Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
NC License: P-0160

WEBB WHITE UTILITY PROJECT MANAGER
DWAYNE SMITH PROJECT UTILITY COORDINATOR



DIVISION OF HIGHWAYS
DIVISION 2
DIV ADDRESS
1037 W.H. SMITH BLVD
PO BOX 1587
GREENVILLE NC 27835

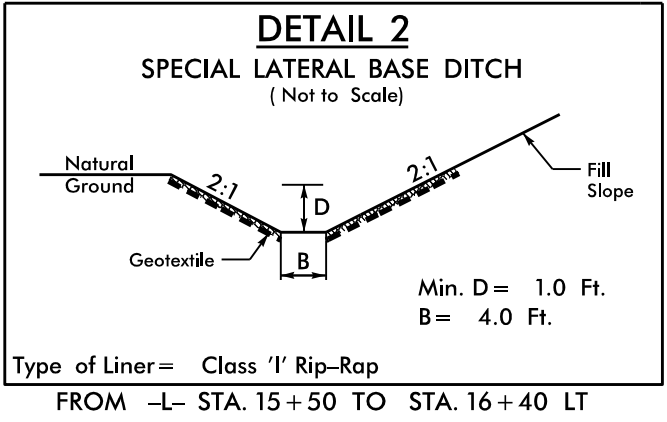
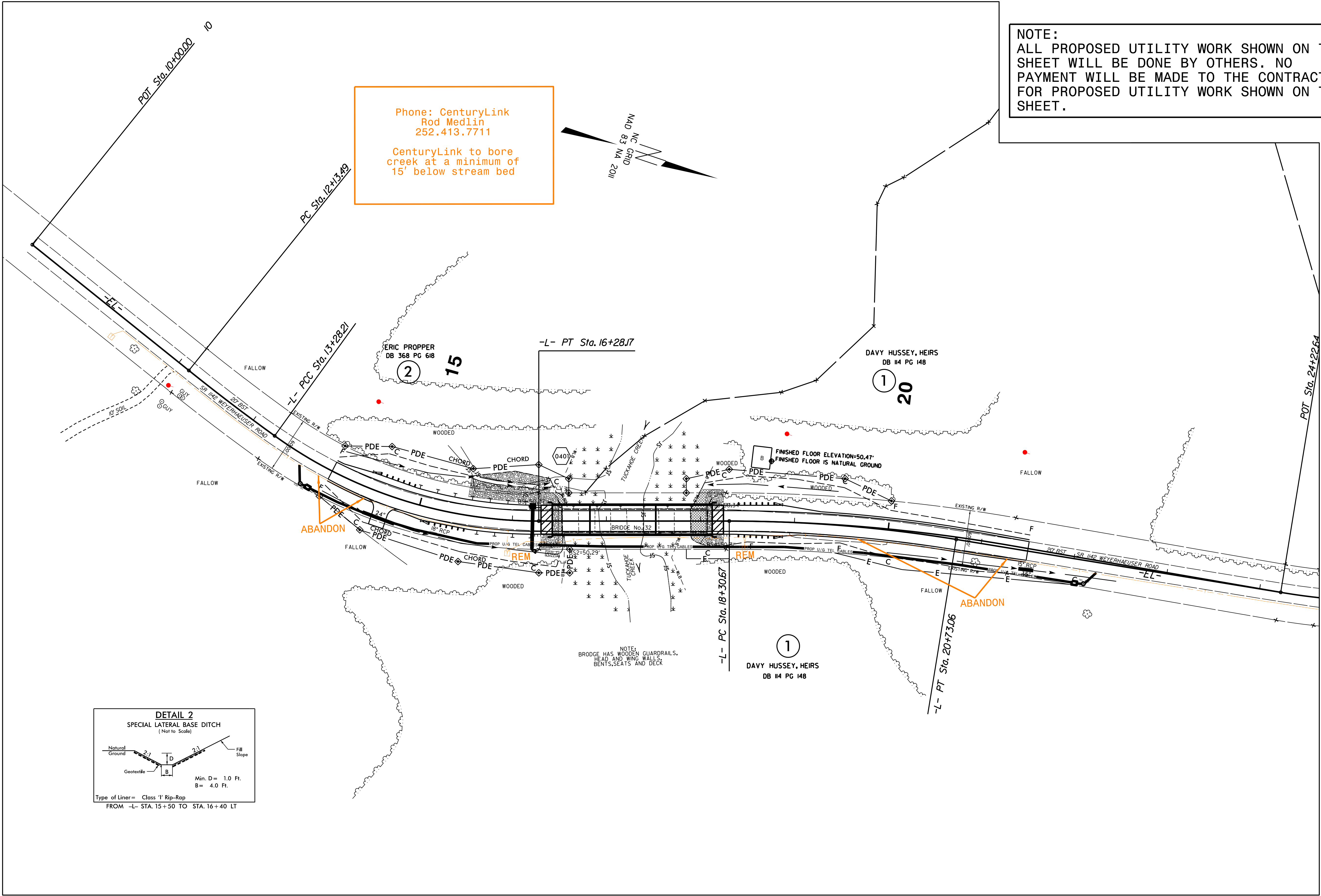
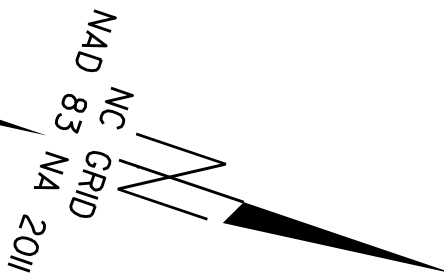
HEATHER LANE, P.E.
DIVISION 2
PROJECT DEVELOPMENT UNIT
DIVISION BRIDGE PROGRAM MANAGER

UTILITIES BY OTHERS

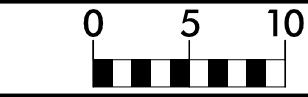
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

Phone: CenturyLink
Rod Medlin
252.413.7711

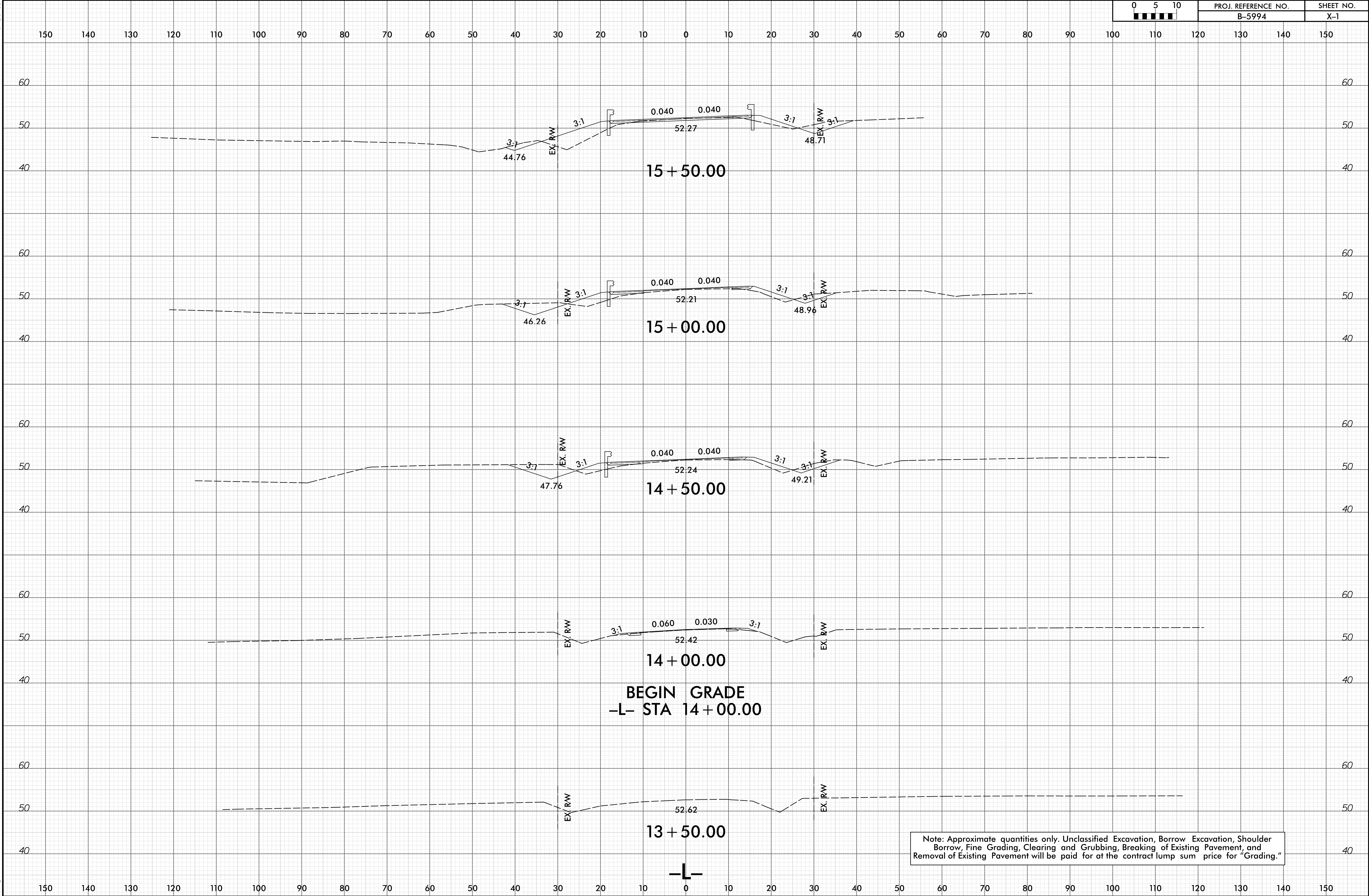
CenturyLink to bore
creek at a minimum of
15' below stream bed



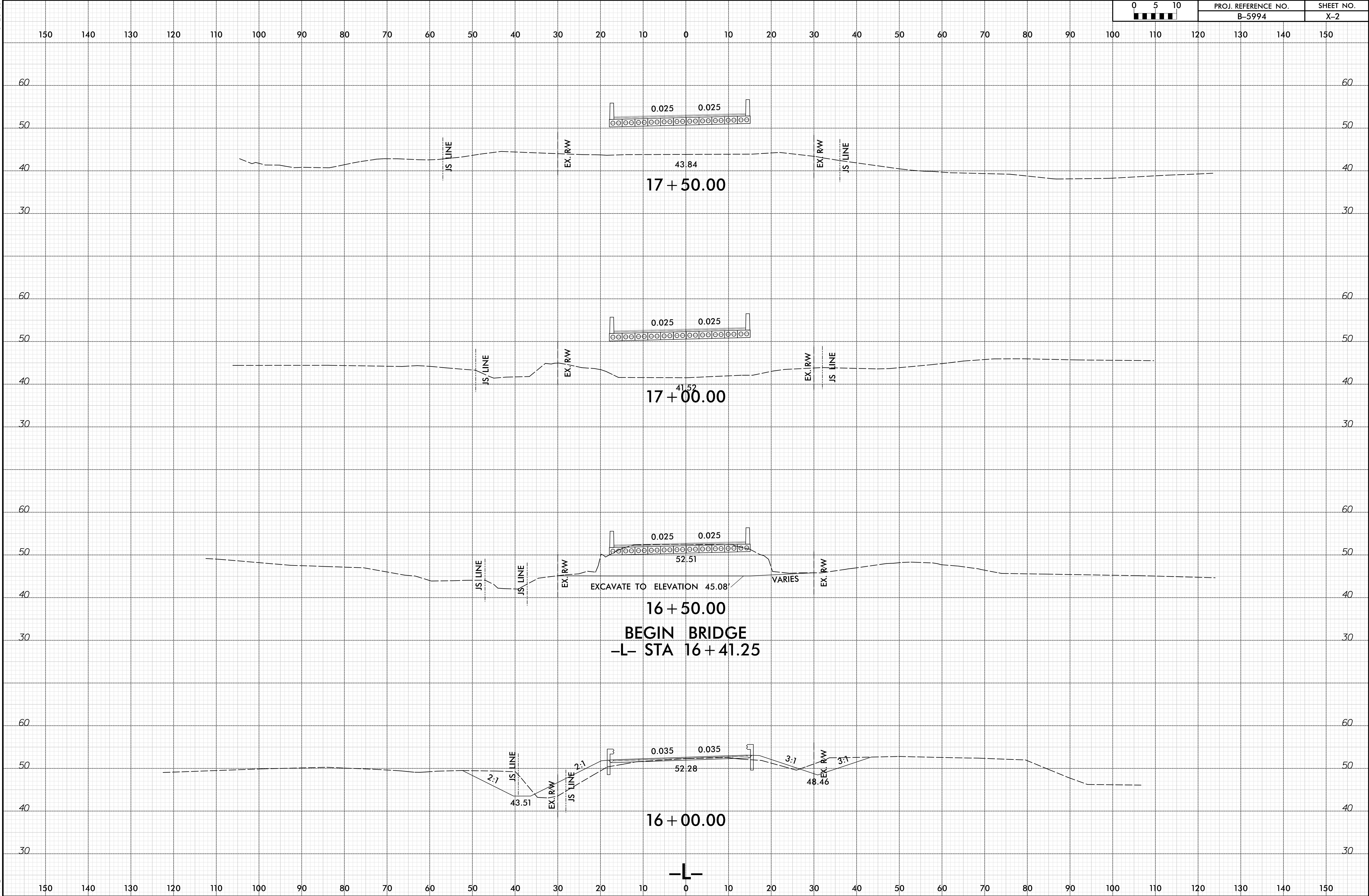
6/23/16

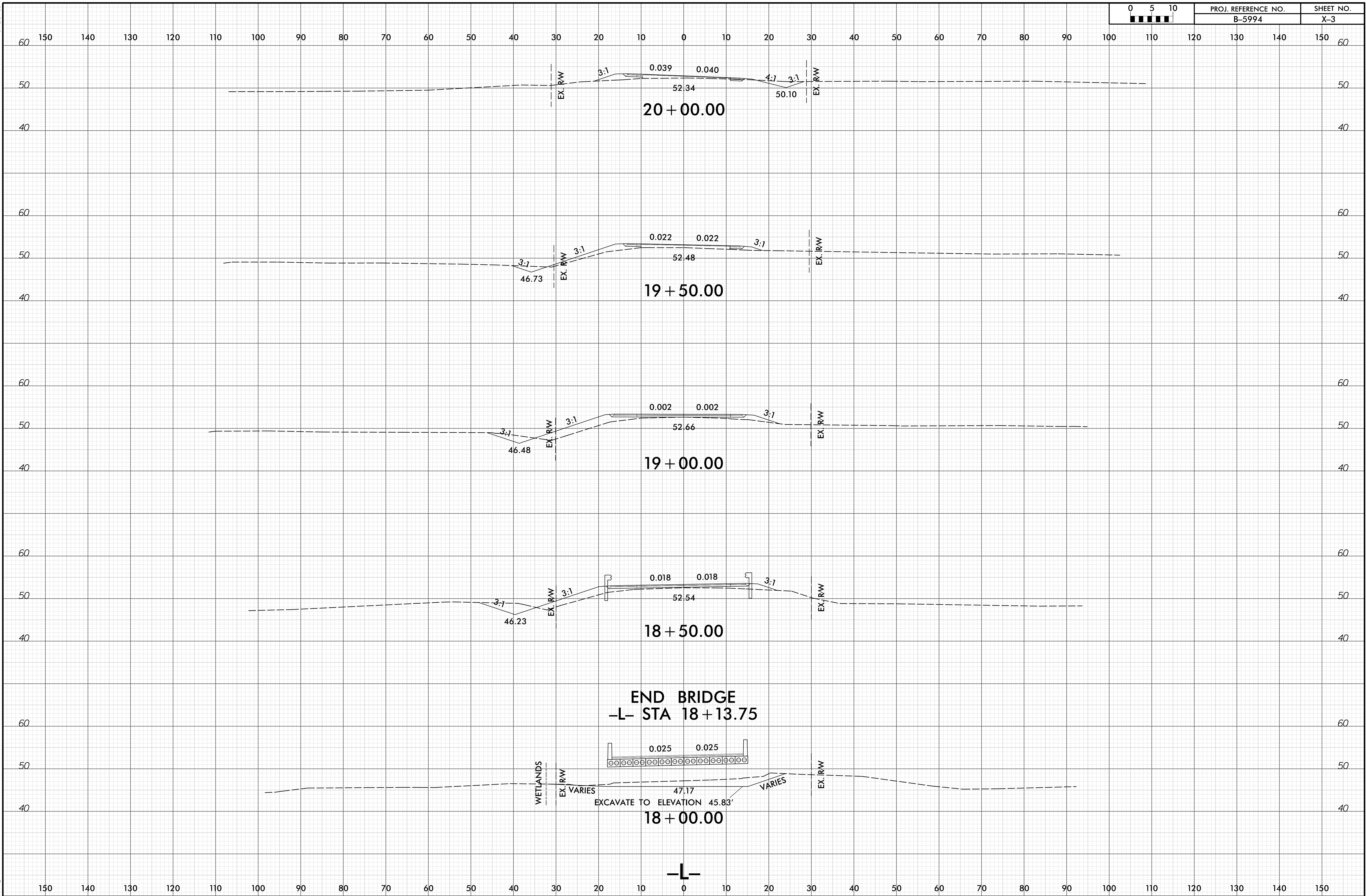


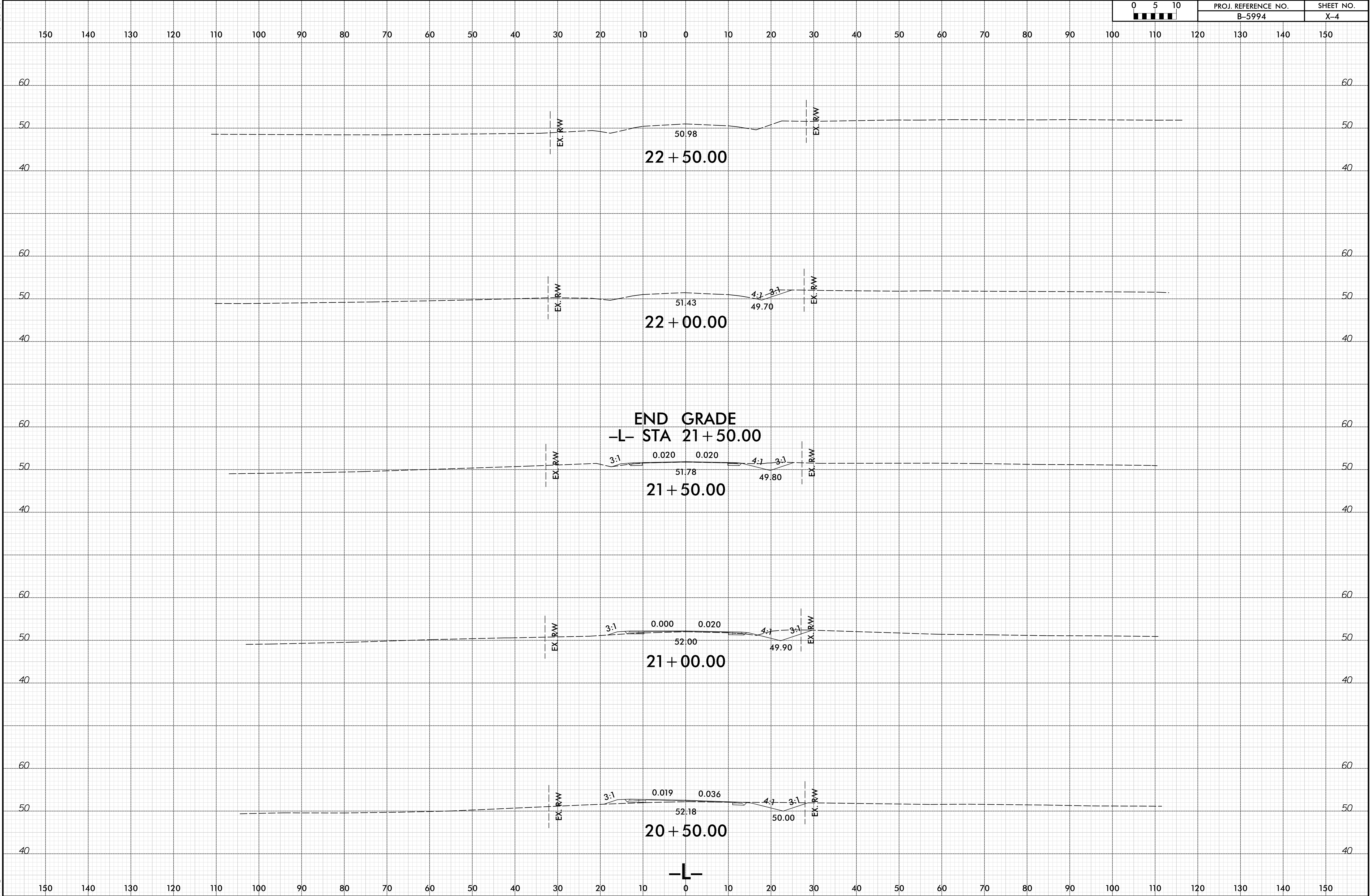
PROJ. REFERENCE NO.	SHEET NO.
B-5994	X-1



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."







LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

1.

2.

3.

4.

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	1.60	--	1.75	0.281	1.91	A	EL	19.501	0.553	1.60	A	EL	1.95	0.80	0.281	1.62	A	EL	19.501		
	HL-93(0pr)	N/A	--	2.07	--	1.35	0.281	2.48	A	EL	19.501	0.553	2.07	A	EL	1.95	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.87	67.223	1.75	0.281	2.40	A	EL	19.501	0.553	1.87	A	EL	1.95	0.80	0.281	2.01	A	EL	19.501		
	HS-20(0pr)	36.000	--	2.42	87.141	1.35	0.281	3.11	A	EL	19.501	0.553	2.42	A	EL	1.95	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.75	50.602	1.4	0.281	5.54	A	EL	19.501	0.553	5.01	A	EL	1.95	0.80	0.281	3.75	A	EL	19.501	
		SNGARBS2	20.000	--	3.08	61.684	1.4	0.281	4.55	A	EL	15.601	0.553	3.72	A	EL	1.95	0.80	0.281	3.08	A	EL	19.501	
		SNAGRIS2	22.000	--	3.04	66.869	1.4	0.281	4.44	A	EL	15.601	0.553	3.52	A	EL	1.95	0.80	0.281	3.04	A	EL	15.601	
		SNCOTTS3	27.250	--	1.87	51.056	1.4	0.281	2.77	A	EL	19.501	0.553	2.52	A	EL	1.95	0.80	0.281	1.87	A	EL	19.501	
		SNAGGRS4	34.925	--	1.69	58.894	1.4	0.281	2.49	A	EL	19.501	0.553	2.20	A	EL	1.95	0.80	0.281	1.69	A	EL	19.501	
		SNS5A	35.550	--	1.64	58.312	1.4	0.281	2.42	A	EL	19.501	0.553	2.30	A	EL	1.95	0.80	0.281	1.64	A	EL	19.501	
		SNS6A	39.950	--	1.56	62.349	1.4	0.281	2.31	A	EL	19.501	0.553	2.15	A	EL	1.95	0.80	0.281	1.56	A	EL	19.501	
		SNS7B	42.000	3	1.49	62.512	1.4	0.281	2.20	A	EL	19.501	0.553	2.19	A	EL	1.95	0.80	0.281	1.49	A	EL	19.501	
	TTST	TNAGRIT3	33.000	--	1.92	63.372	1.4	0.281	2.84	A	EL	19.501	0.553	2.52	A	EL	1.95	0.80	0.281	1.92	A	EL	19.501	
		TNT4A	33.075	--	1.95	64.333	1.4	0.281	2.87	A	EL	19.501	0.553	2.40	A	EL	1.95	0.80	0.281	1.95	A	EL	19.501	
		TNT6A	41.600	--	1.65	68.626	1.4	0.281	2.44	A	EL	19.501	0.553	2.35	A	EL	1.95	0.80	0.281	1.65	A	EL	19.501	
		TNT7A	42.000	--	1.69	71.039	1.4	0.281	2.50	A	EL	19.501	0.553	2.16	A	EL	1.95	0.80	0.281	1.69	A	EL	19.501	
		TNT7B	42.000	--	1.73	72.634	1.4	0.281	2.56	A	EL	19.501	0.553	2.08	A	EL	1.95	0.80	0.281	1.73	A	EL	19.501	
		TNAGRIT4	43.000	--	1.68	72.344	1.4	0.281	2.48	A	EL	15.601	0.553	2.00	A	EL	1.95	0.80	0.281	1.68	A	EL	19.501	
		TNAGT5A	45.000	--	1.56	70.060	1.4	0.281	2.30	A	EL	19.501	0.553	2.07	A	EL	1.95	0.80	0.281	1.56	A	EL	19.501	
		TNAGT5B	45.000	--	1.51	68.078	1.4	0.281	2.24	A	EL	19.501	0.553	1.89	A	EL	1.95	0.80	0.281	1.51	A	EL	19.501	

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

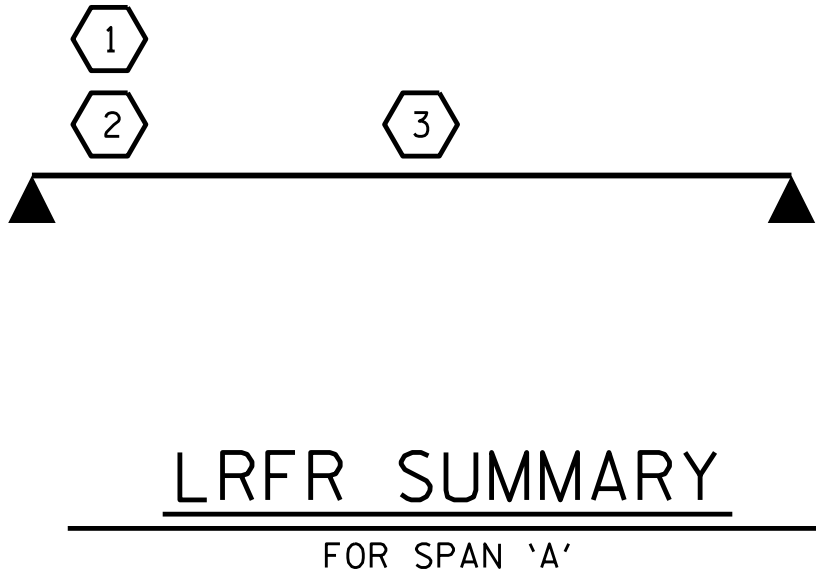
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. B-5994

JONES COUNTY

STATION: 17+27.50 -L-

ASSEMBLED BY : W.D.REAMS	DATE : 01/03/18
CHECKED BY : Z.MALIK	DATE : 01/08/18
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-3
2			4			TOTAL SHEETS 22

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

NO.	BY:	DATE:	NO.	BY:	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	1.006	--	1.75	0.273	1.03	70'	EL	34.5	0.507	1.32	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5	
		HL-93(0pr)	N/A	--	1.341	--	1.35	0.273	1.34	70'	EL	34.5	0.507	1.72	70'	EL	6.9	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.306	47.02	1.75	0.273	1.34	70'	EL	34.5	0.507	1.65	70'	EL	6.9	0.80	0.273	1.31	70'	EL	34.5	
		HS-20(0pr)	36.000	--	1.74	62.64	1.35	0.273	1.74	70'	EL	34.5	0.507	2.14	70'	EL	6.9	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.917	39.379	1.4	0.273	3.75	70'	EL	34.5	0.507	4.87	70'	EL	6.9	0.80	0.273	2.92	70'	EL	34.5	
		SNGARBS2	20.000	--	2.187	43.741	1.4	0.273	2.81	70'	EL	34.5	0.507	3.47	70'	EL	6.9	0.80	0.273	2.19	70'	EL	34.5	
		SNAGRIS2	22.000	--	2.077	45.69	1.4	0.273	2.67	70'	EL	34.5	0.507	3.23	70'	EL	6.9	0.80	0.273	2.08	70'	EL	34.5	
		SNCOTTS3	27.250	--	1.452	39.565	1.4	0.273	1.87	70'	EL	34.5	0.507	2.43	70'	EL	6.9	0.80	0.273	1.45	70'	EL	34.5	
		SNAGGRS4	34.925	--	1.218	42.554	1.4	0.273	1.57	70'	EL	34.5	0.507	2.03	70'	EL	6.9	0.80	0.273	1.22	70'	EL	34.5	
		SNS5A	35.550	--	1.191	42.346	1.4	0.273	1.53	70'	EL	34.5	0.507	2.06	70'	EL	6.9	0.80	0.273	1.19	70'	EL	34.5	
		SNS6A	39.950	--	1.095	43.747	1.4	0.273	1.41	70'	EL	34.5	0.507	1.88	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
		SNS7B	42.000	--	1.043	43.801	1.4	0.273	1.34	70'	EL	34.5	0.507	1.85	70'	EL	6.9	0.80	0.273	1.04	70'	EL	34.5	
	TTST	TNAGRIT3	33.000	--	1.336	44.087	1.4	0.273	1.72	70'	EL	34.5	0.507	2.23	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT4A	33.075	--	1.342	44.401	1.4	0.273	1.72	70'	EL	34.5	0.507	2.17	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT6A	41.600	--	1.1	45.746	1.4	0.273	1.41	70'	EL	34.5	0.507	1.98	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
		TNT7A	42.000	--	1.106	46.462	1.4	0.273	1.42	70'	EL	34.5	0.507	1.94	70'	EL	6.9	0.80	0.273	1.11	70'	EL	34.5	
		TNT7B	42.000	--	1.147	48.18	1.4	0.273	1.47	70'	EL	34.5	0.507	1.8	70'	EL	6.9	0.80	0.273	1.15	70'	EL	34.5	
		TNAGRIT4	43.000	--	1.089	46.838	1.4	0.273	1.4	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.09	70'	EL	34.5	
		TNAGT5A	45.000	--	1.026	46.175	1.4	0.273	1.32	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.03	70'	EL	34.5	
		TNAGT5B	45.000	3	1.013	45.579	1.4	0.273	1.3	70'	EL	34.5	0.507	1.66	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5	

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

-
-
-
-

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

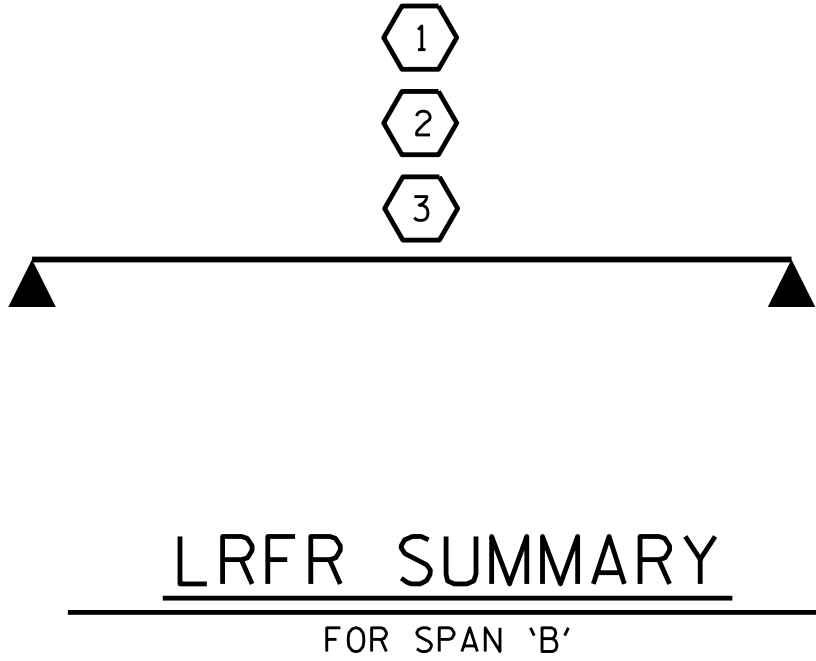
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

ASSEMBLED BY : W.D REAMS	DATE : 01/05/18
CHECKED BY : Z. MALIK	DATE : 01/08/18
DRAWN BY : CVC 6/10	
CHECKED BY : DNS 6/10	



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD LRFR SUMMARY FOR 70' CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)						REVISIONS			SHEET NO. S-4
NO.	BY:	DATE:	NO.	BY:	DATE:	1	2	3	TOTAL SHEETS 22
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	2.073	--	1.75	0.28	3.04	60'	EL	24.5	0.534	2.07	60'	EL	2.45	0.80	0.28	2.85	60'	EL	24.5	
		HL-93(Opr)	N/A	--	2.687	--	1.35	0.28	3.93	60'	EL	24.5	0.534	2.69	60'	EL	2.45	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	2.479	89.25	1.75	0.28	3.76	60'	EL	24.5	0.534	2.48	60'	EL	2.45	0.80	0.28	3.52	60'	EL	24.5	
		HS-20(Opr)	36.000	--	3.214	115.694	1.35	0.28	4.88	60'	EL	24.5	0.534	3.21	60'	EL	2.45	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	6.997	94.455	1.4	0.28	9.57	60'	EL	24.5	0.534	7	60'	EL	2.45	0.80	0.28	7.20	60'	EL	24.5	
		SNGARBS2	20.000	--	5.091	101.826	1.4	0.28	7.56	60'	EL	24.5	0.534	5.09	60'	EL	2.45	0.80	0.28	5.65	60'	EL	24.5	
		SNAGRIS2	22.000	--	4.772	104.98	1.4	0.28	7.26	60'	EL	19.6	0.534	4.77	60'	EL	2.45	0.80	0.28	5.45	60'	EL	19.6	
		SNCOTTS3	27.250	--	3.505	95.499	1.4	0.28	4.78	60'	EL	24.5	0.534	3.5	60'	EL	2.45	0.80	0.28	3.59	60'	EL	24.5	
		SNAGGRS4	34.925	--	2.991	104.445	1.4	0.28	4.15	60'	EL	24.5	0.534	2.99	60'	EL	2.45	0.80	0.28	3.12	60'	EL	24.5	
		SNS5A	35.550	--	3.044	108.209	1.4	0.28	4.05	60'	EL	24.5	0.534	3.07	60'	EL	2.45	0.80	0.28	3.04	60'	EL	24.5	
		SNS6A	39.950	--	2.84	113.453	1.4	0.28	3.79	60'	EL	24.5	0.534	2.84	60'	EL	2.45	0.80	0.28	2.85	60'	EL	24.5	
		SNS7B	42.000	--	2.712	113.918	1.4	0.28	3.61	60'	EL	24.5	0.534	2.84	60'	EL	2.45	0.80	0.28	2.71	60'	EL	24.5	
	TTST	TNAGRIT3	33.000	--	3.351	110.572	1.4	0.28	4.64	60'	EL	24.5	0.534	3.35	60'	EL	2.45	0.80	0.28	3.49	60'	EL	24.5	
		TNT4A	33.075	--	3.228	106.768	1.4	0.28	4.68	60'	EL	24.5	0.534	3.23	60'	EL	2.45	0.80	0.28	3.52	60'	EL	24.5	
		TNT6A	41.600	--	2.93	121.871	1.4	0.28	3.9	60'	EL	24.5	0.534	3.1	60'	EL	2.45	0.80	0.28	2.93	60'	EL	24.5	
		TNT7A	42.000	--	2.892	121.477	1.4	0.28	3.96	60'	EL	24.5	0.534	2.89	60'	EL	2.45	0.80	0.28	2.97	60'	EL	24.5	
		TNT7B	42.000	--	2.736	114.922	1.4	0.28	4.12	60'	EL	24.5	0.534	2.74	60'	EL	2.45	0.80	0.28	3.08	60'	EL	24.5	
		TNAGRIT4	43.000	--	2.637	113.381	1.4	0.28	3.91	60'	EL	24.5	0.534	2.64	60'	EL	2.45	0.80	0.28	2.94	60'	EL	24.5	
		TNAGT5A	45.000	--	2.676	120.405	1.4	0.28	3.66	60'	EL	24.5	0.534	2.68	60'	EL	2.45	0.80	0.28	2.75	60'	EL	24.5	
		TNAGT5B	45.000	3	2.502	112.57	1.4	0.28	3.58	60'	EL	24.5	0.534	2.5	60'	EL	2.45	0.80	0.28	2.69	60'	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

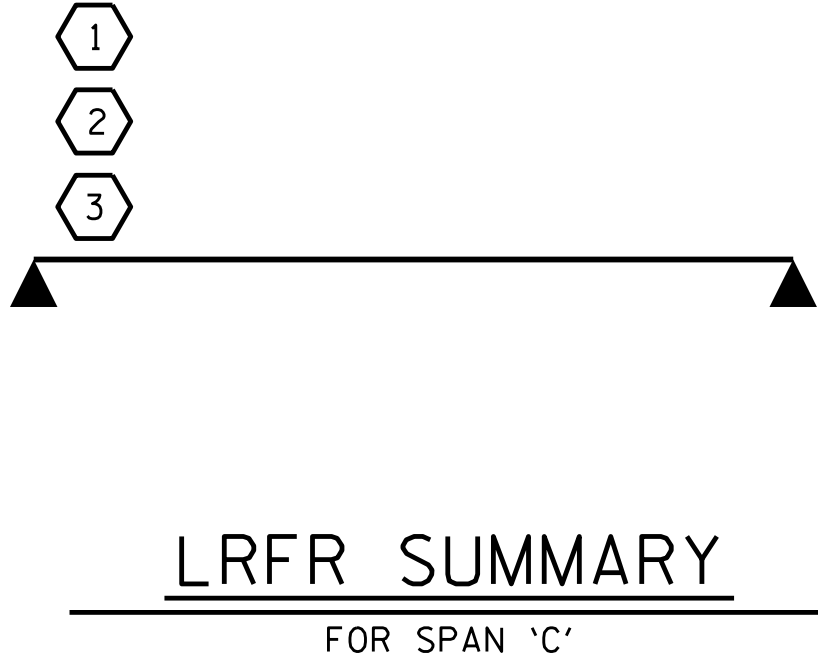
DESIGN LOAD RATING (HS-20)

3

LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

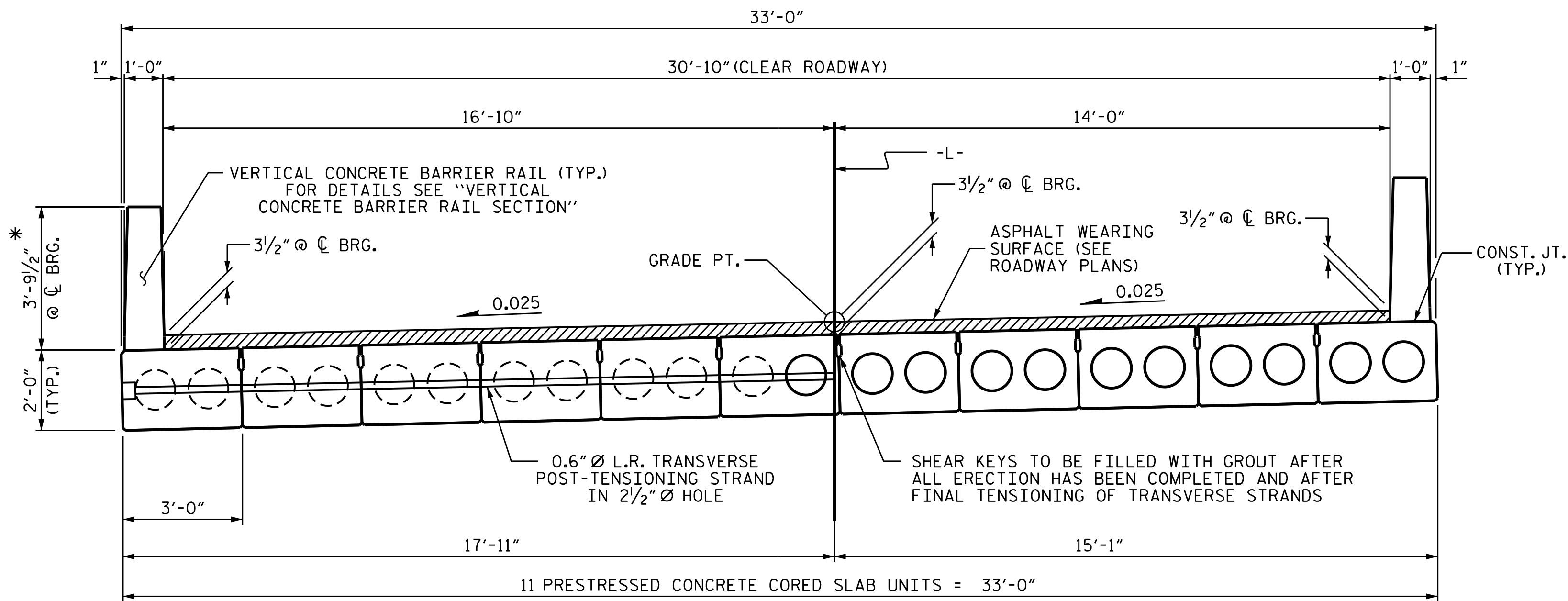
PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

ASSEMBLED BY : W.D REAMS	DATE : 01/05/18
CHECKED BY : Z. MALIK	DATE : 01/08/18
DRAWN BY : CVC	6/10
CHECKED BY : DNS	6/10



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-5	
STANDARD LRFR SUMMARY FOR 60' CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)						TOTAL SHEETS 22	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				



HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

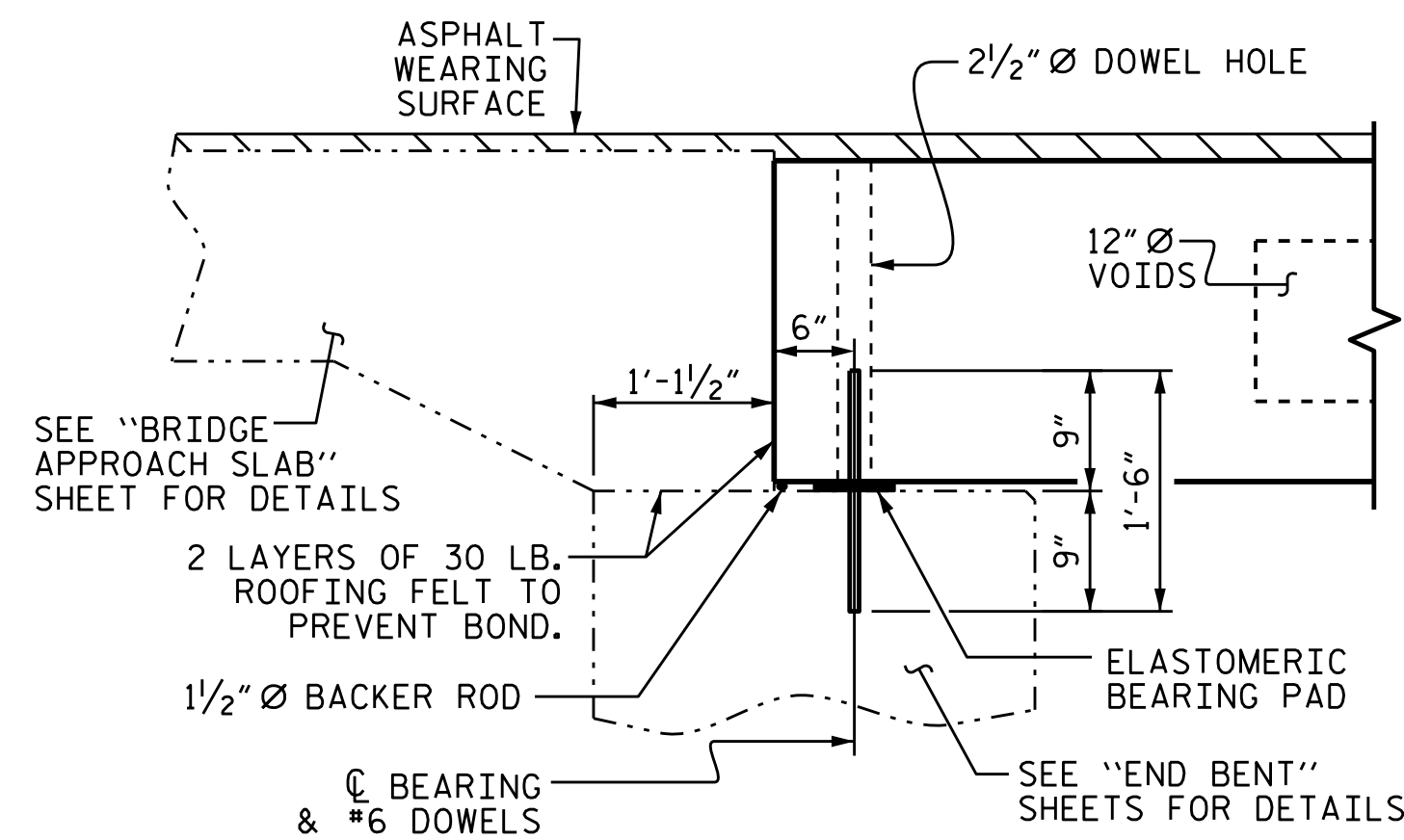
HALF SECTION
THROUGH VOIDS

* - 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.

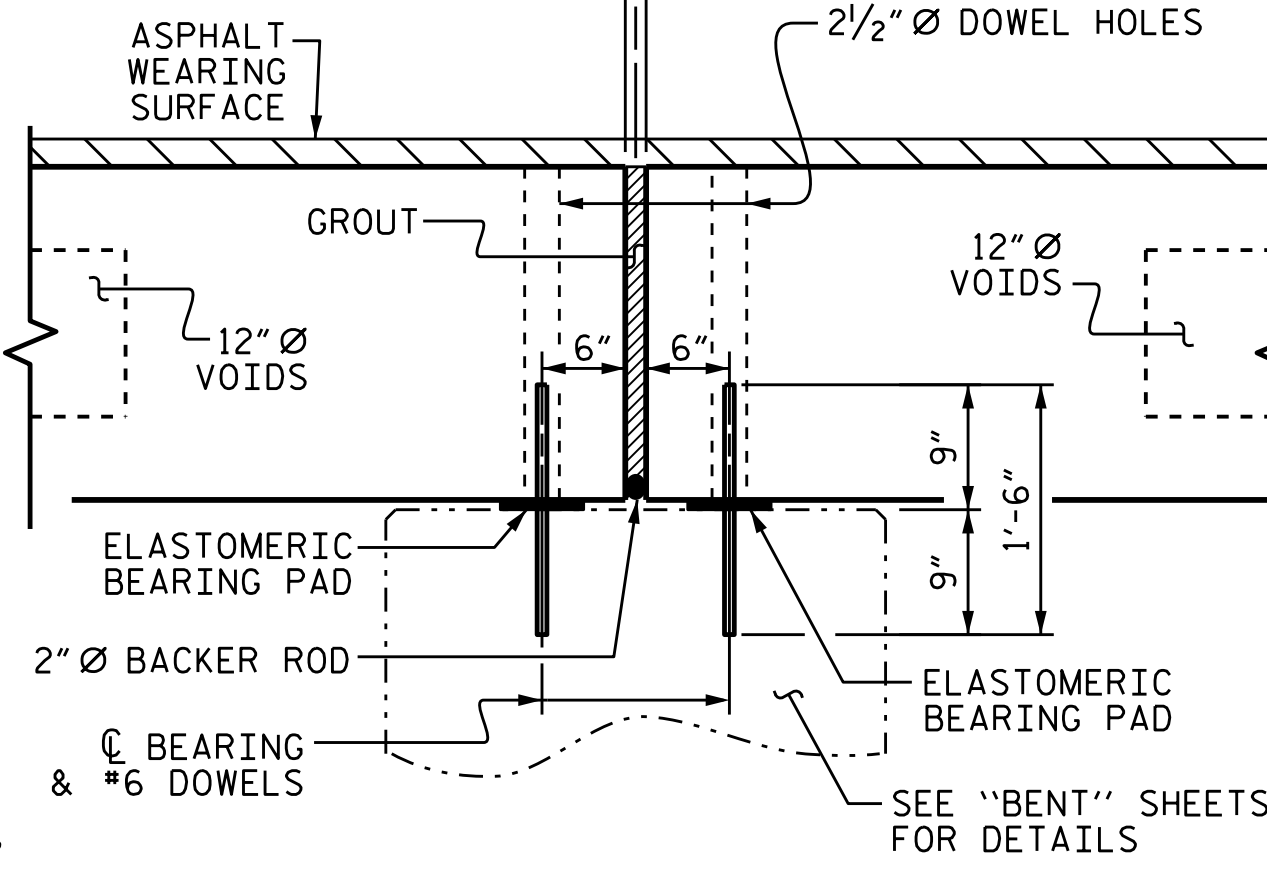
FIXED END

FIXED END

FIXED END

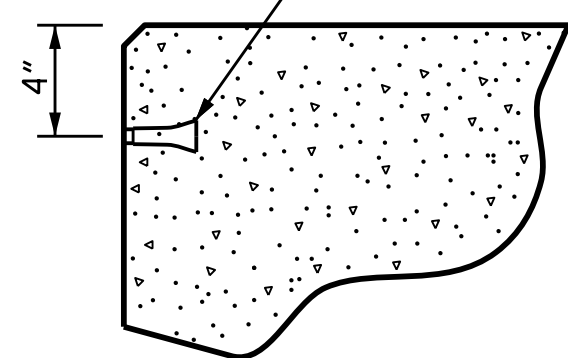


SECTION AT END BENT

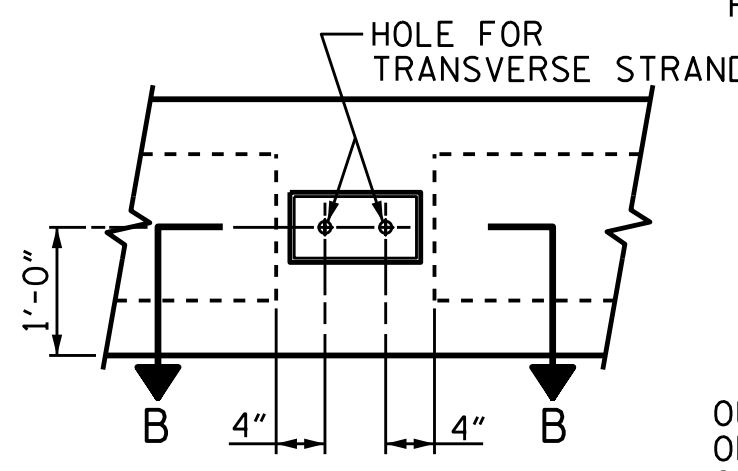


SECTION AT BENT

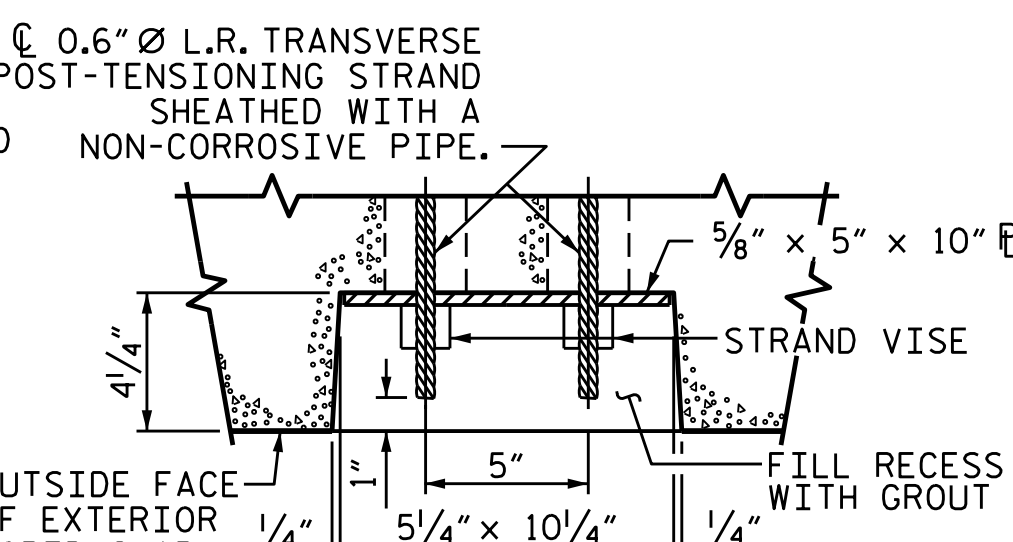
PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/8" SIZE TO BE DETERMINED BY CONTRACTOR.



THREADED INSERT DETAIL

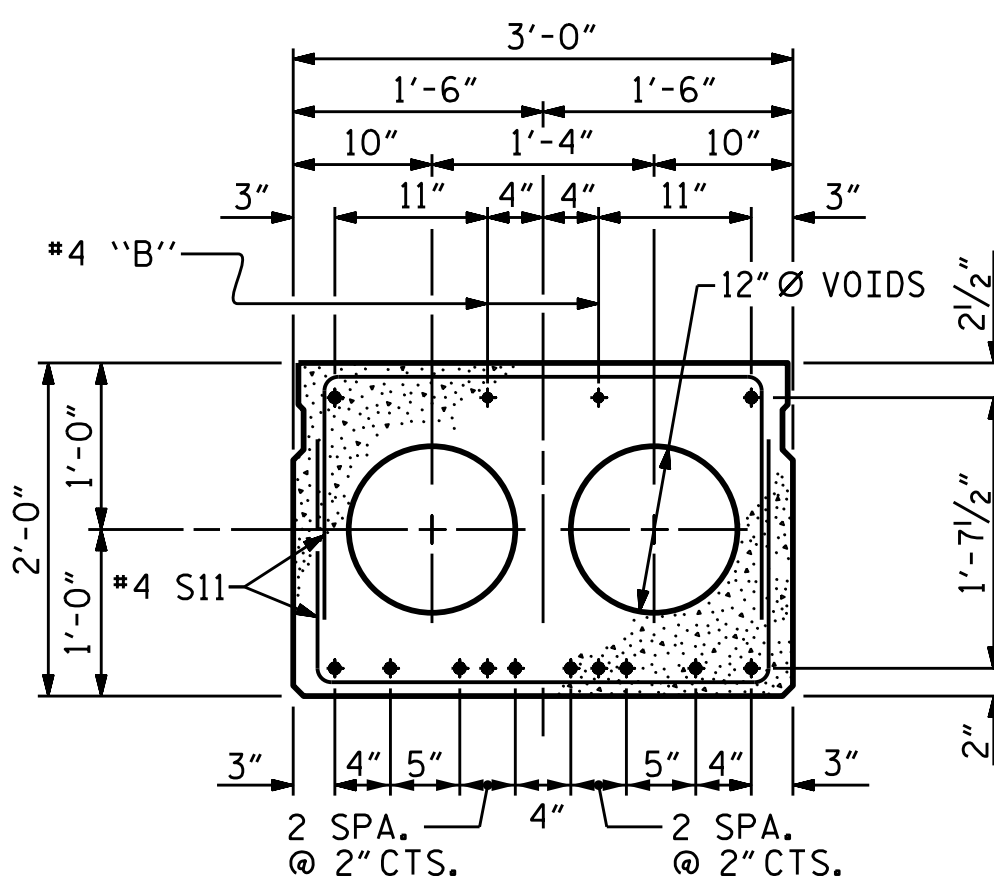


ELEVATION VIEW

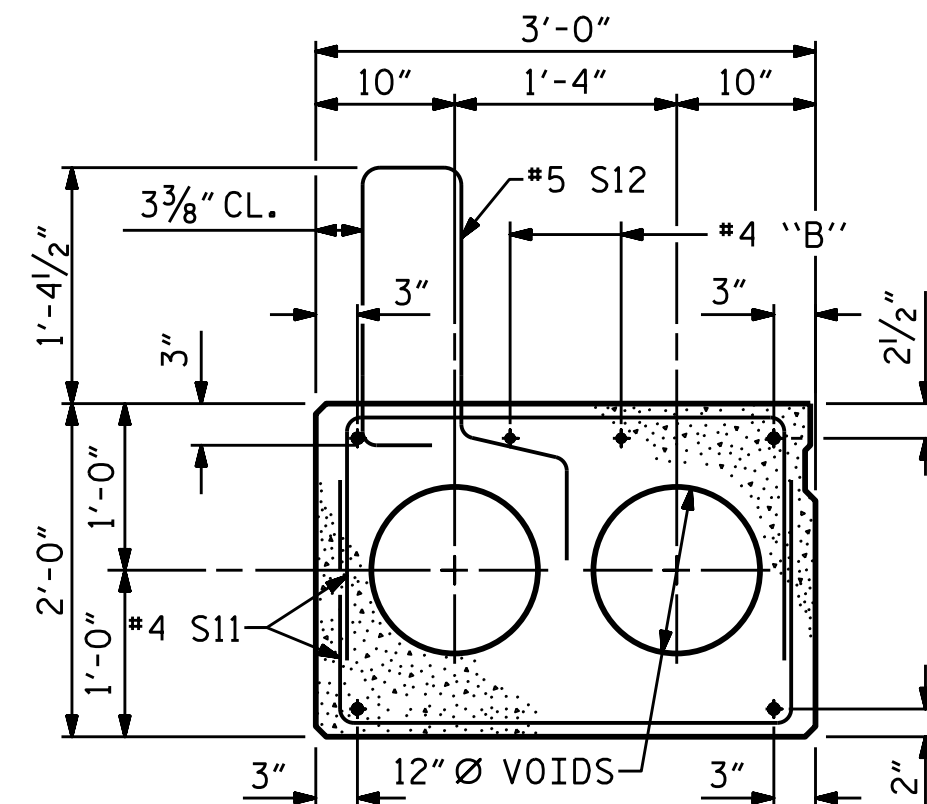


SECTION B-B

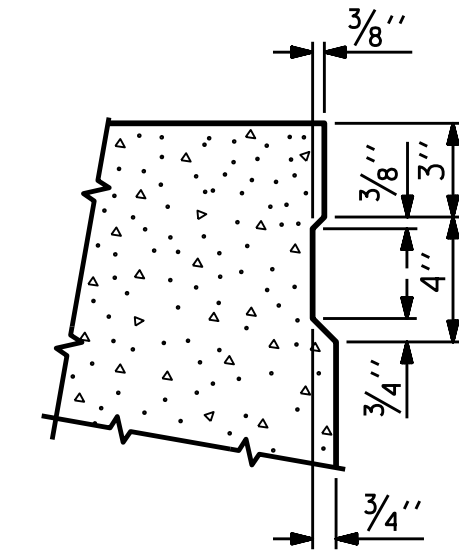
GROUTED RECESS AT END OF
POST-TENSIONED STRAND-CORED SLABS



INTERIOR SLAB SECTION (40' UNIT)
(12 STRANDS REQUIRED)

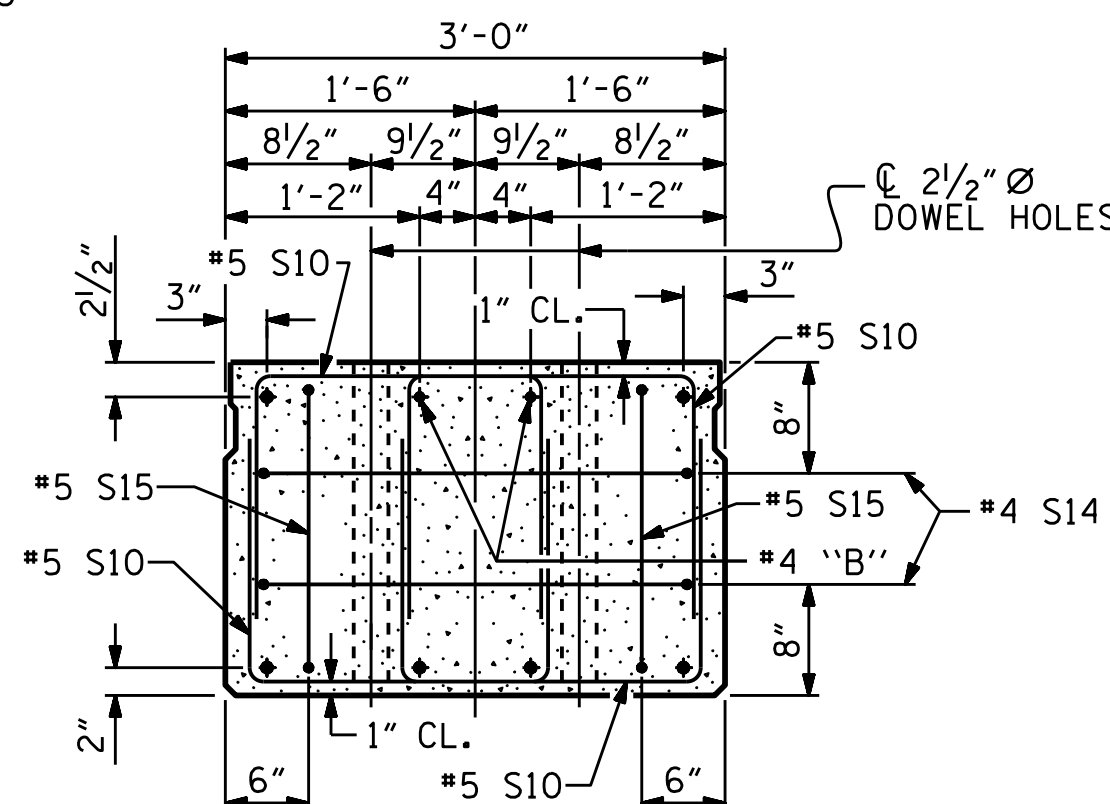


EXTERIOR SLAB SECTION
(FOR PRESTRESSED STRAND LAYOUT, SEE
INTERIOR SLAB SECTION.)



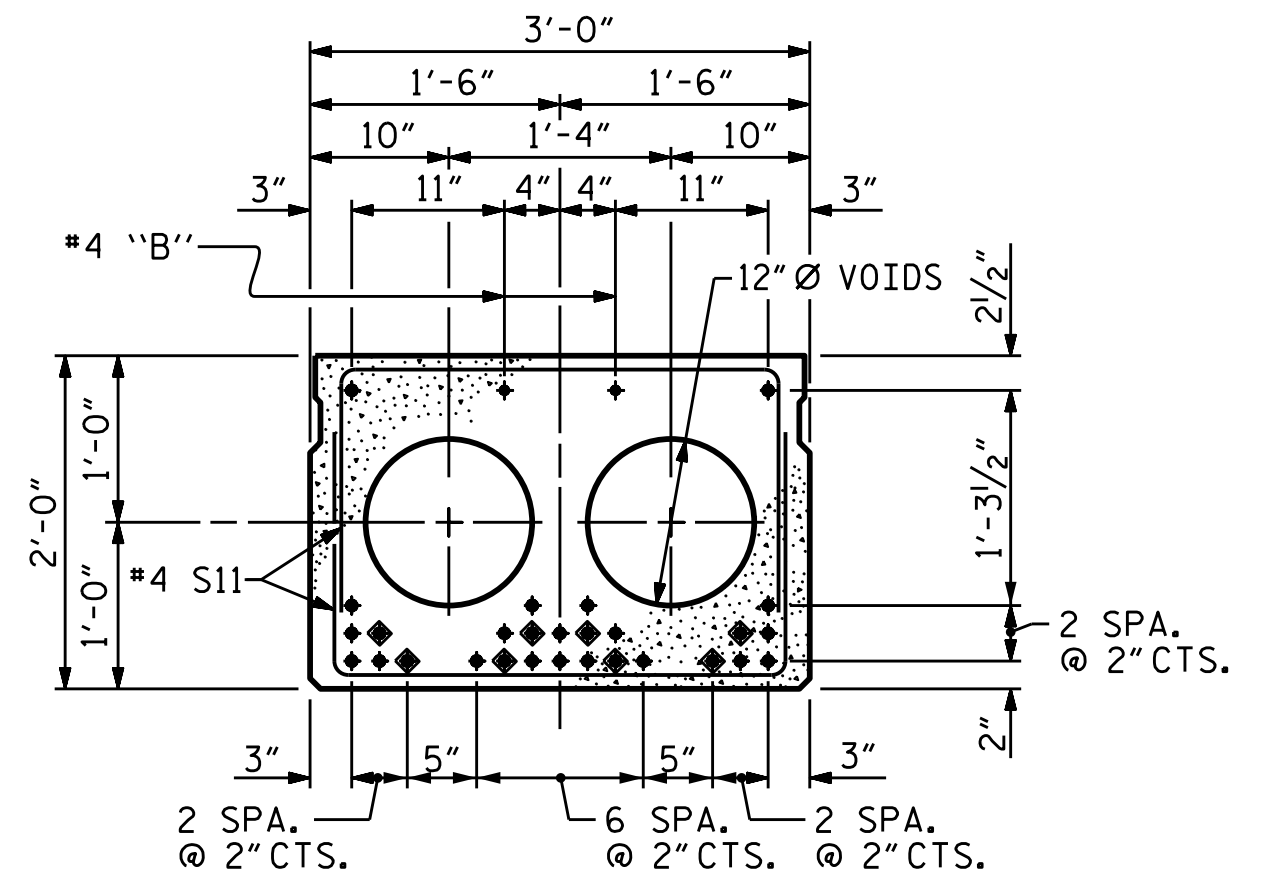
SHEAR KEY DETAIL

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

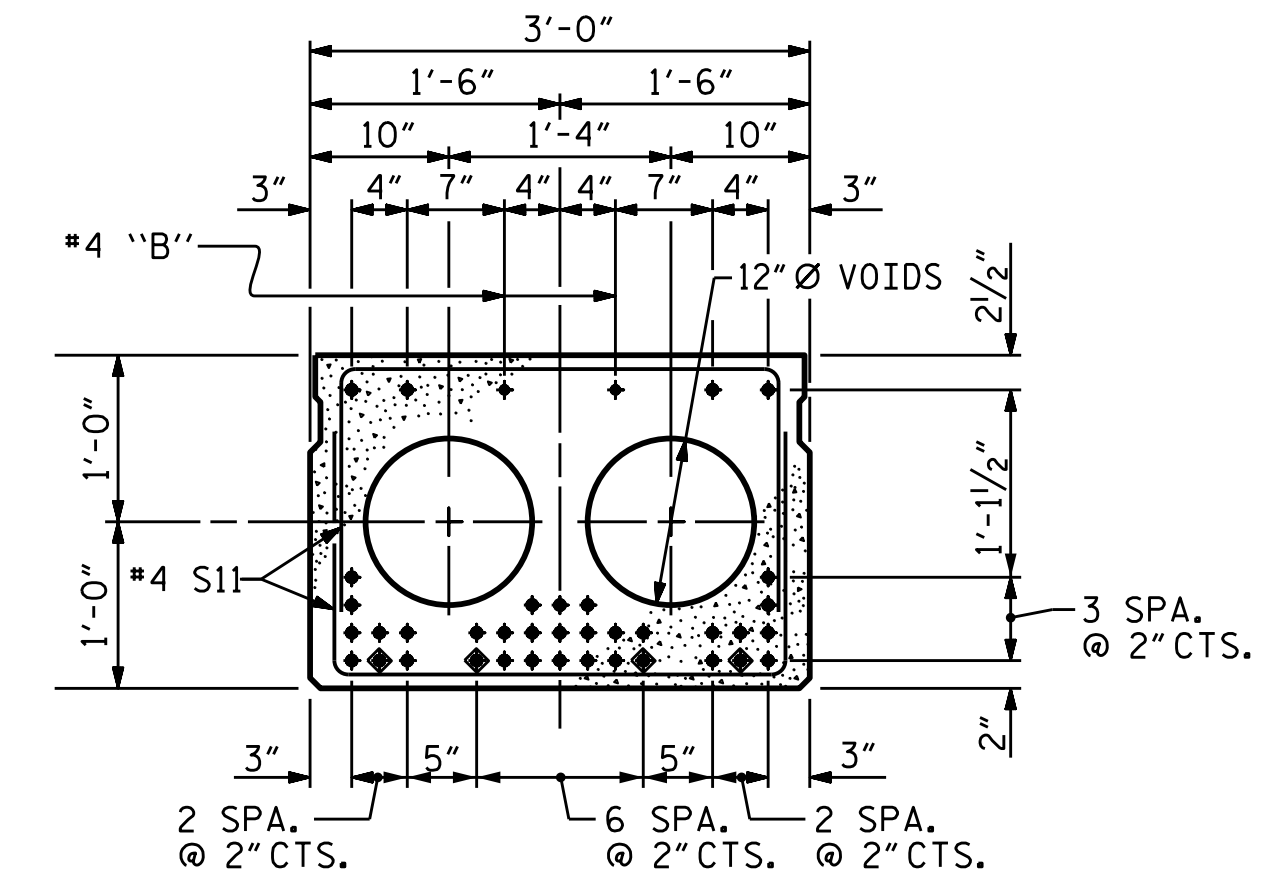


END ELEVATION

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.



INTERIOR SLAB SECTION (70' UNIT)
(28 STRANDS REQUIRED)



INTERIOR SLAB SECTION (60' UNIT)
(37 STRANDS REQUIRED)

0.6" Ø LOW
RELAXATION STRAND LAYOUT

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

DEBONDING LEGEND

PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

SHEET 1 OF 6

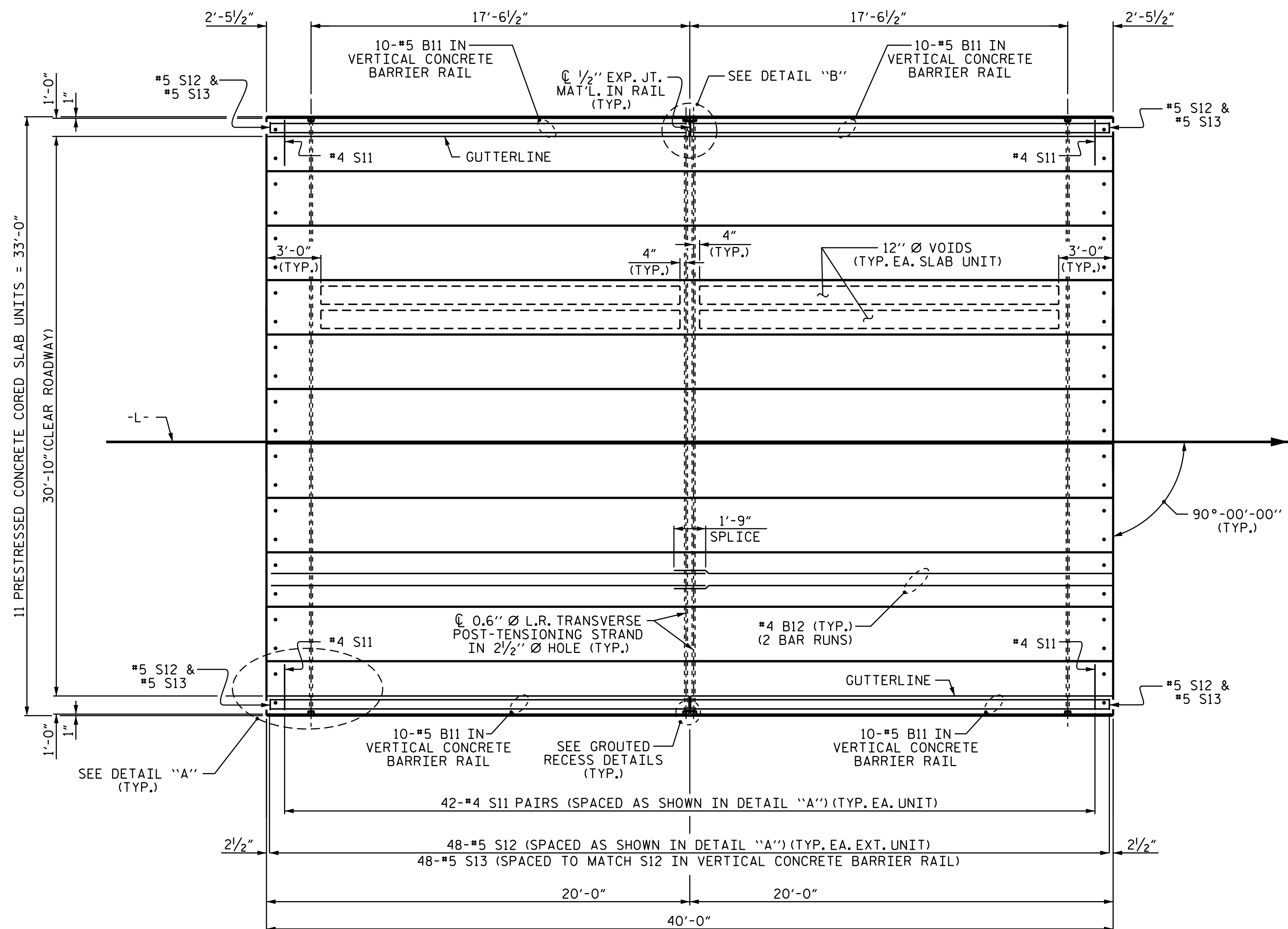


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT

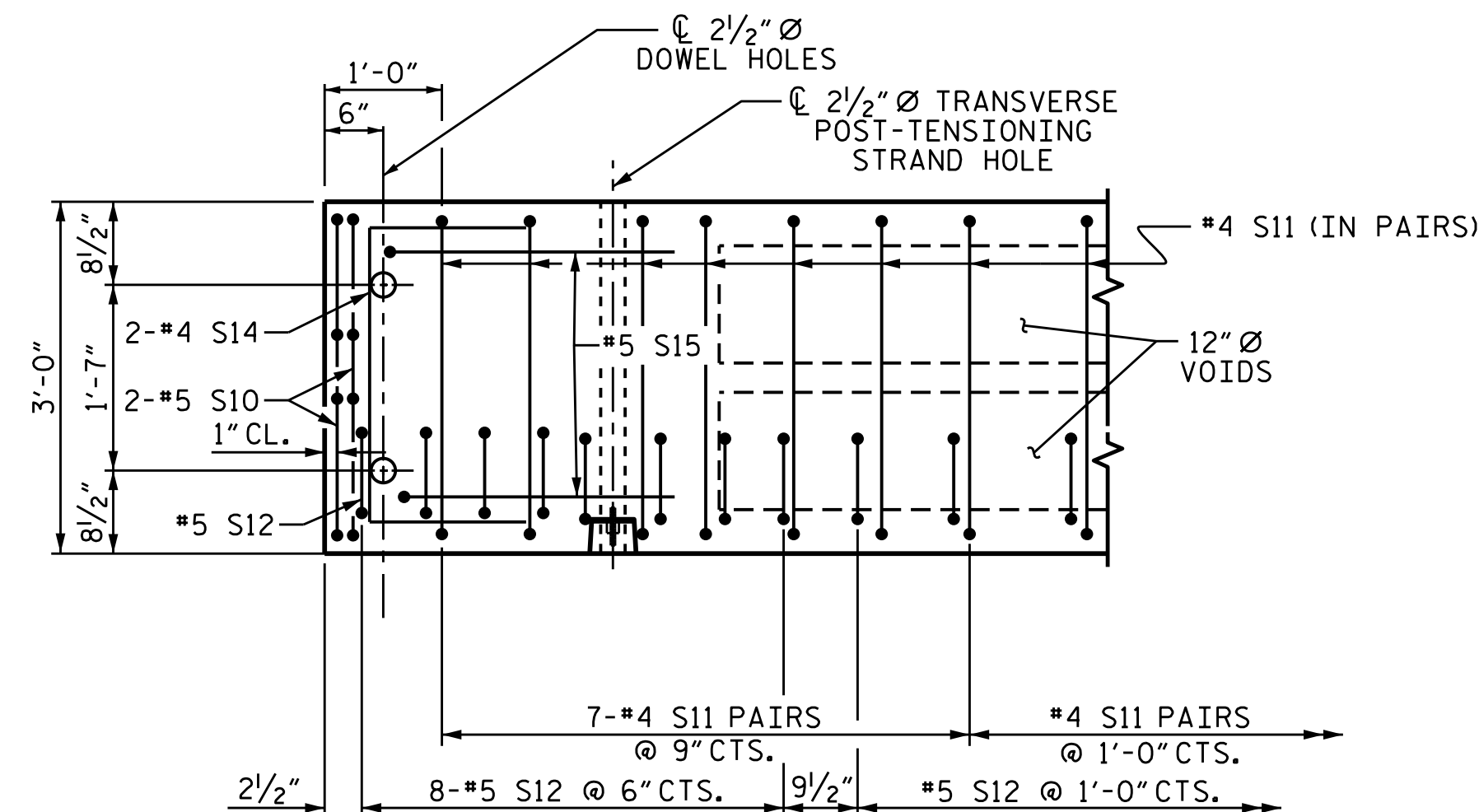
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-6
2			4			
TOTAL SHEETS 22						

ASSEMBLED BY : W. D. REAMS	DATE : 01/05/18
CHECKED BY : Z. MALIK	DATE : 01/08/18
DRAWN BY : MAA	6/10
CHECKED BY : MKT	7/10
REV. 9/14	MAA/TMG

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

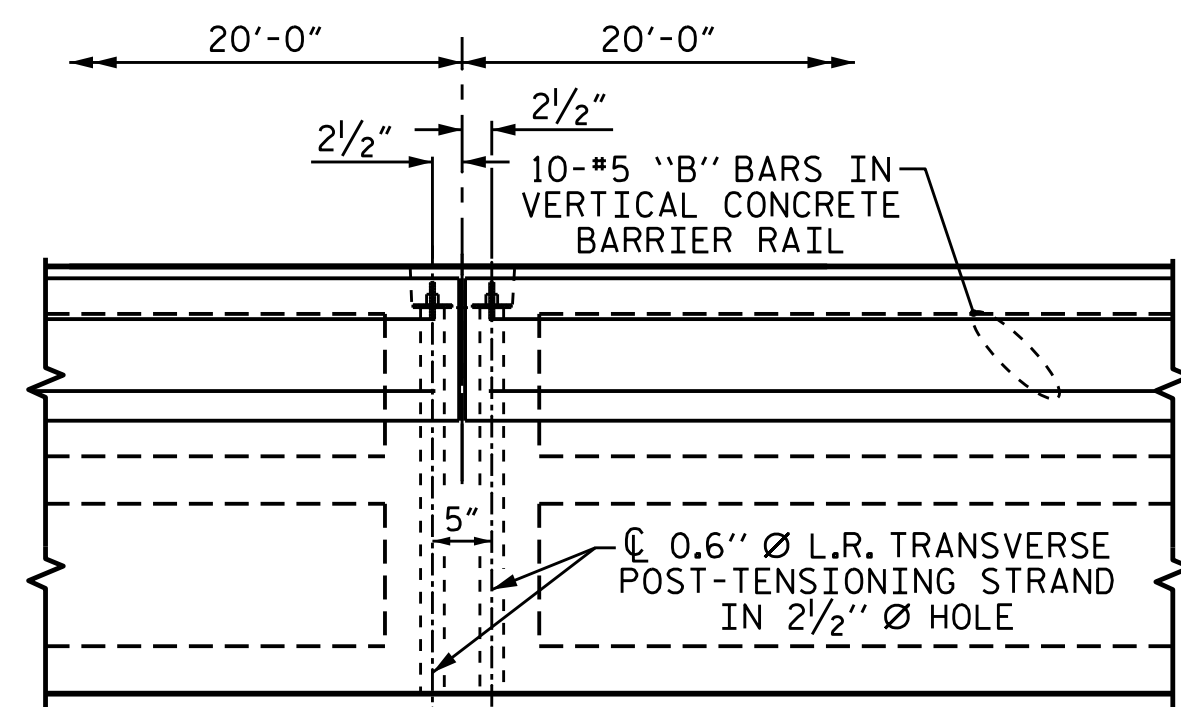


PLAN OF UNIT



DETAIL "A"

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

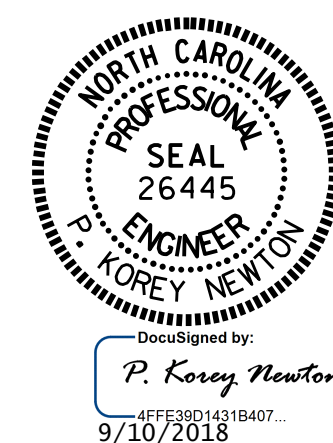


DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY
TO MAINTAIN 1" CLEAR TO GROUTED RECESS AND
2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

SHEET 2 OF 6



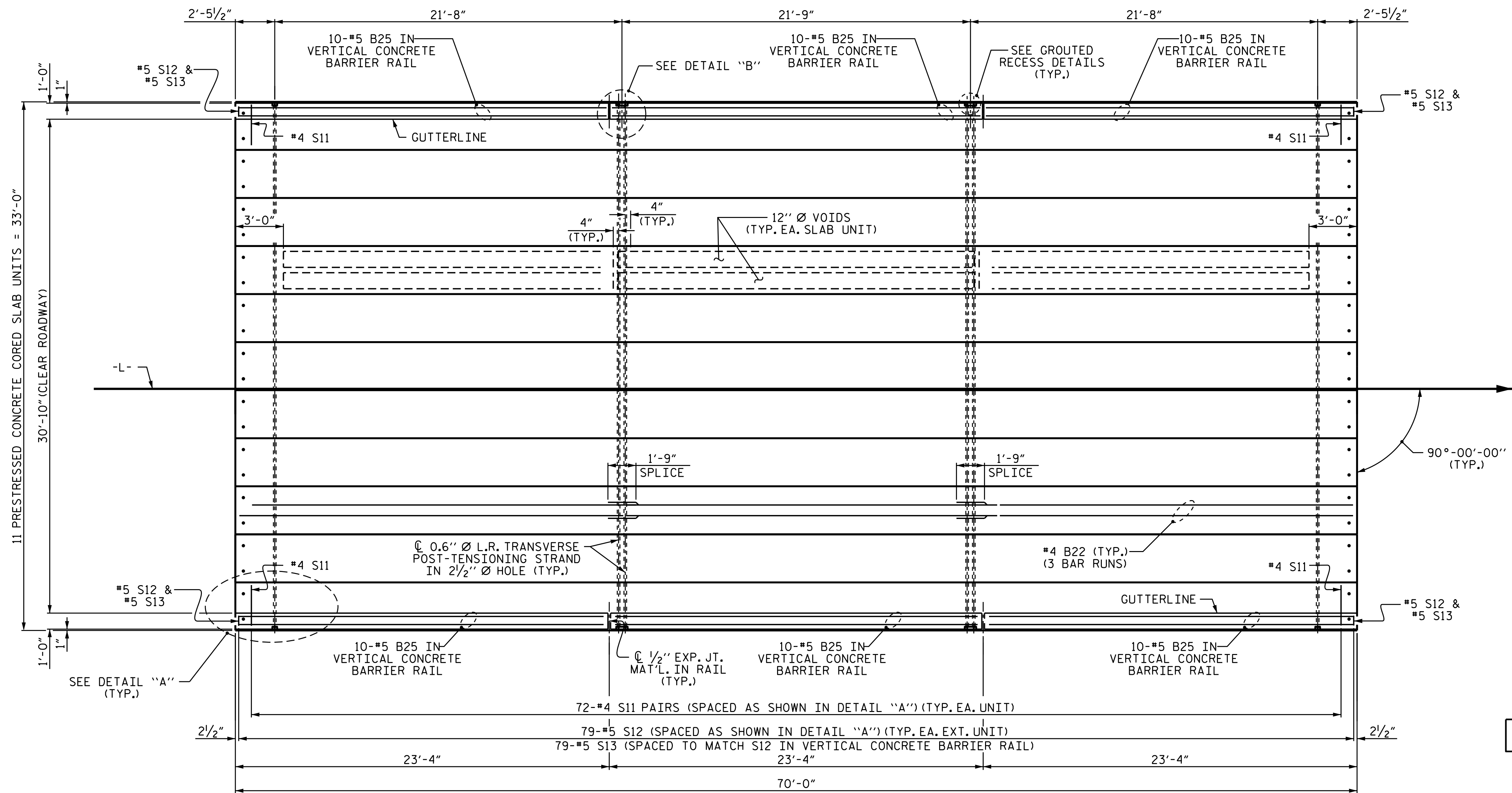
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PLAN OF 40' UNIT
30'-10" CLEAR ROADWAY
90° SKEW

ASSEMBLED BY : W.D. REAMS	DATE : 01/08/18
CHECKED BY : Z. MALIK	DATE : 01/10/18
DRAWN BY : MAA	REV. 12/5/11
CHECKED BY : MKT	REV. 8/14

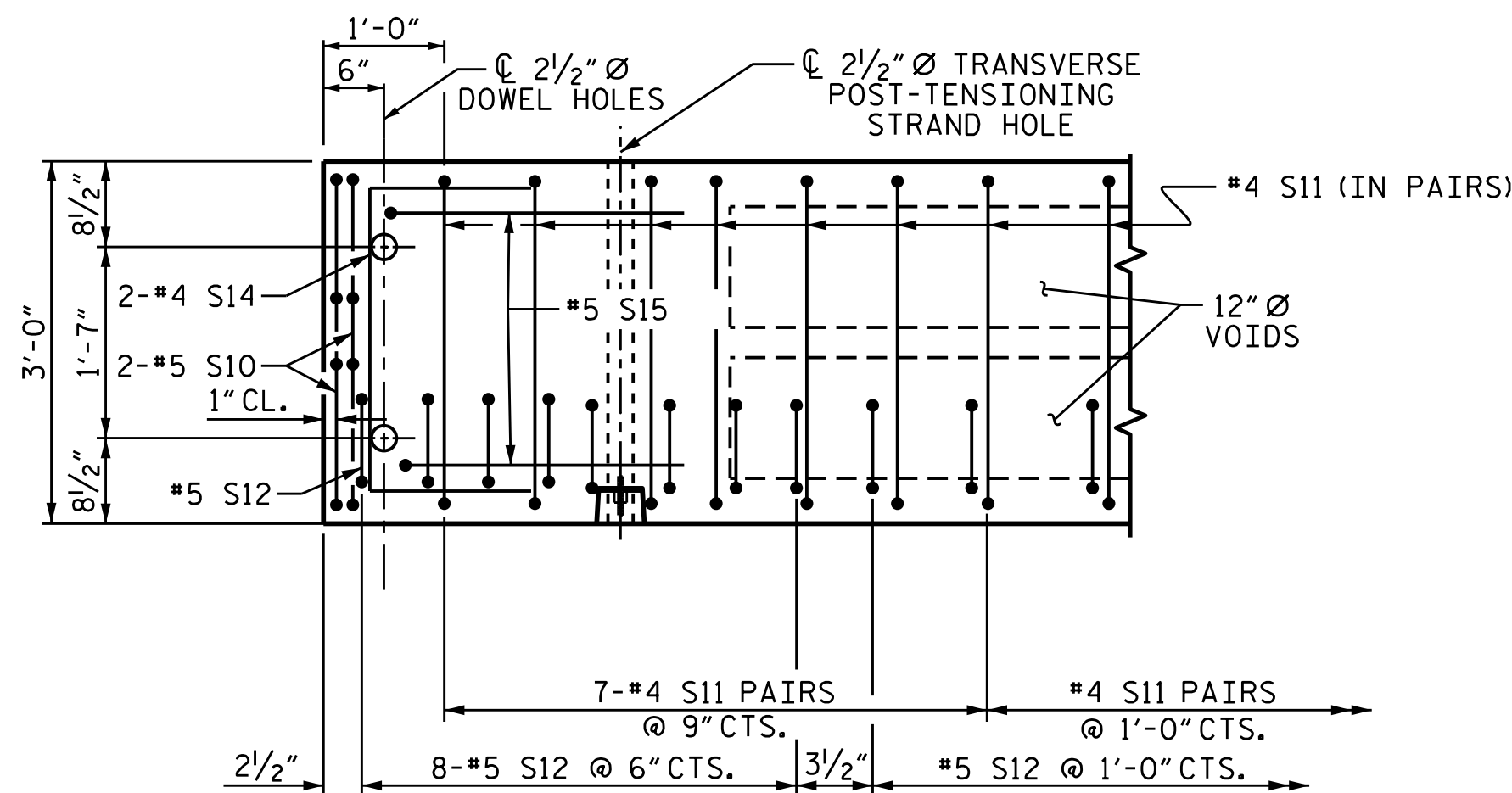
10-SEP-2018 10:01
S:\DPG\Division2\17BP2R77.Jones32\Structures\Plans\B-5994.SMU. CS.510032.dgn
pknewton

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

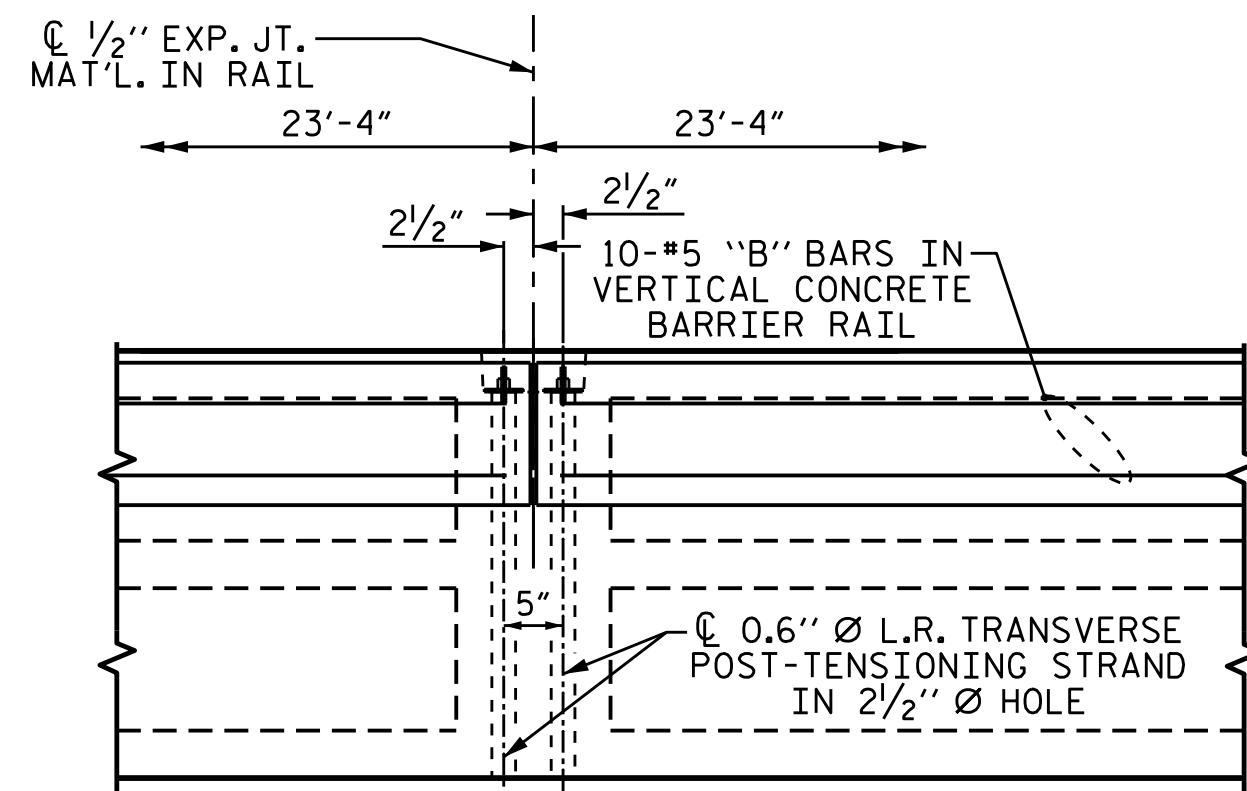
REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			



PLAN OF UNIT



DETAIL "A"

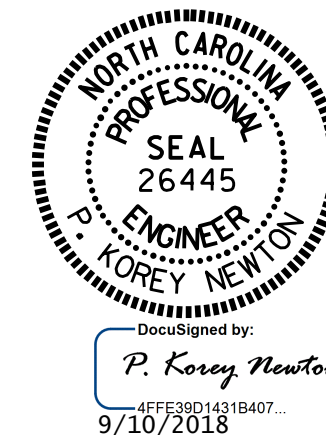


DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

ASSEMBLED BY :	W.D. REAMS	DATE :	01/05/18
CHECKED BY :	Z. MALIK	DATE :	01/08/18
DRAWN BY :	MAA	REV. 12/5/11	MAA/AAC
CHECKED BY :	MKT	REV. 8/14	MAA/TMG

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



PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

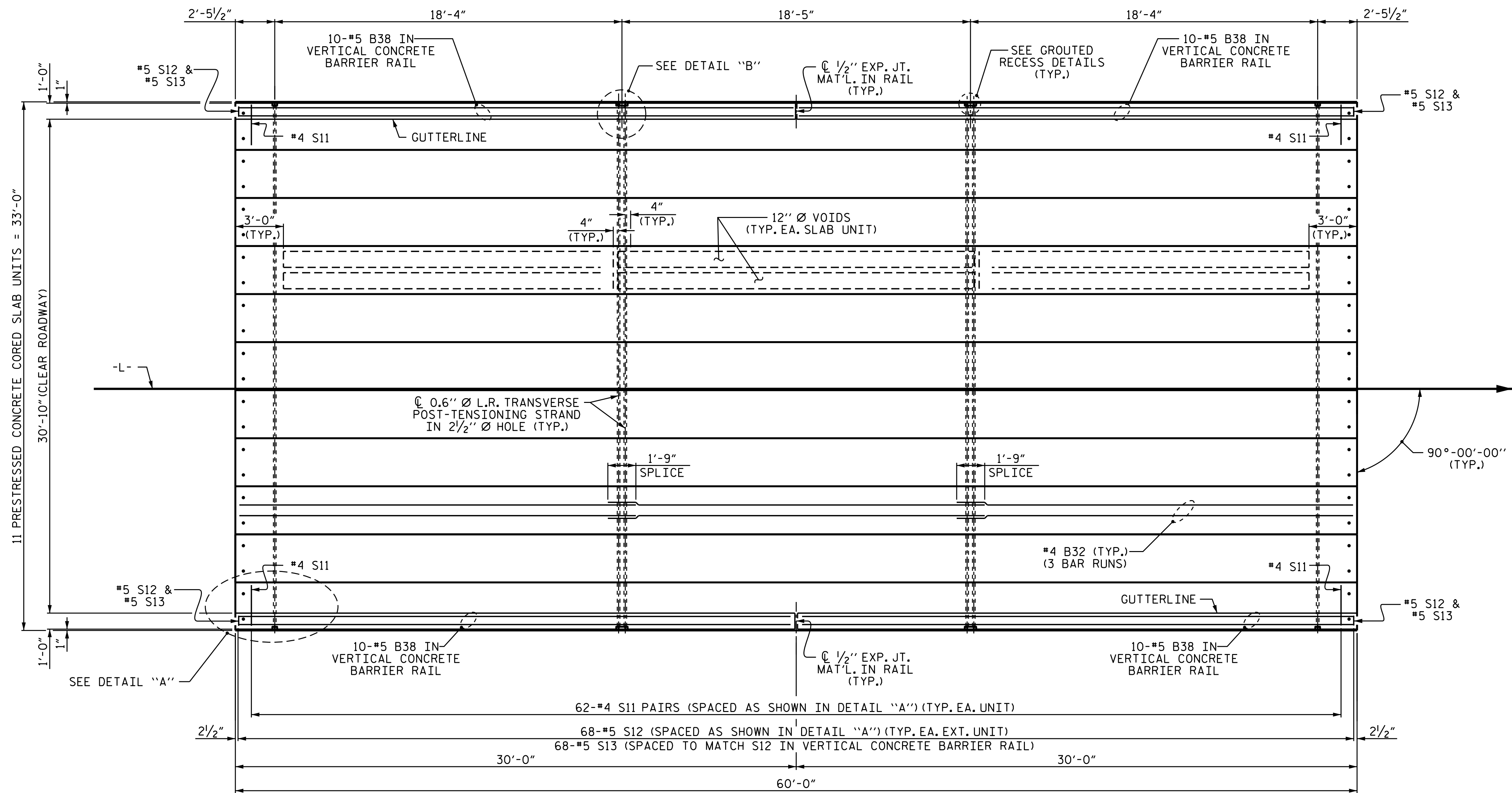
SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PLAN OF 70' UNIT
30'-10" CLEAR ROADWAY
90° SKEW

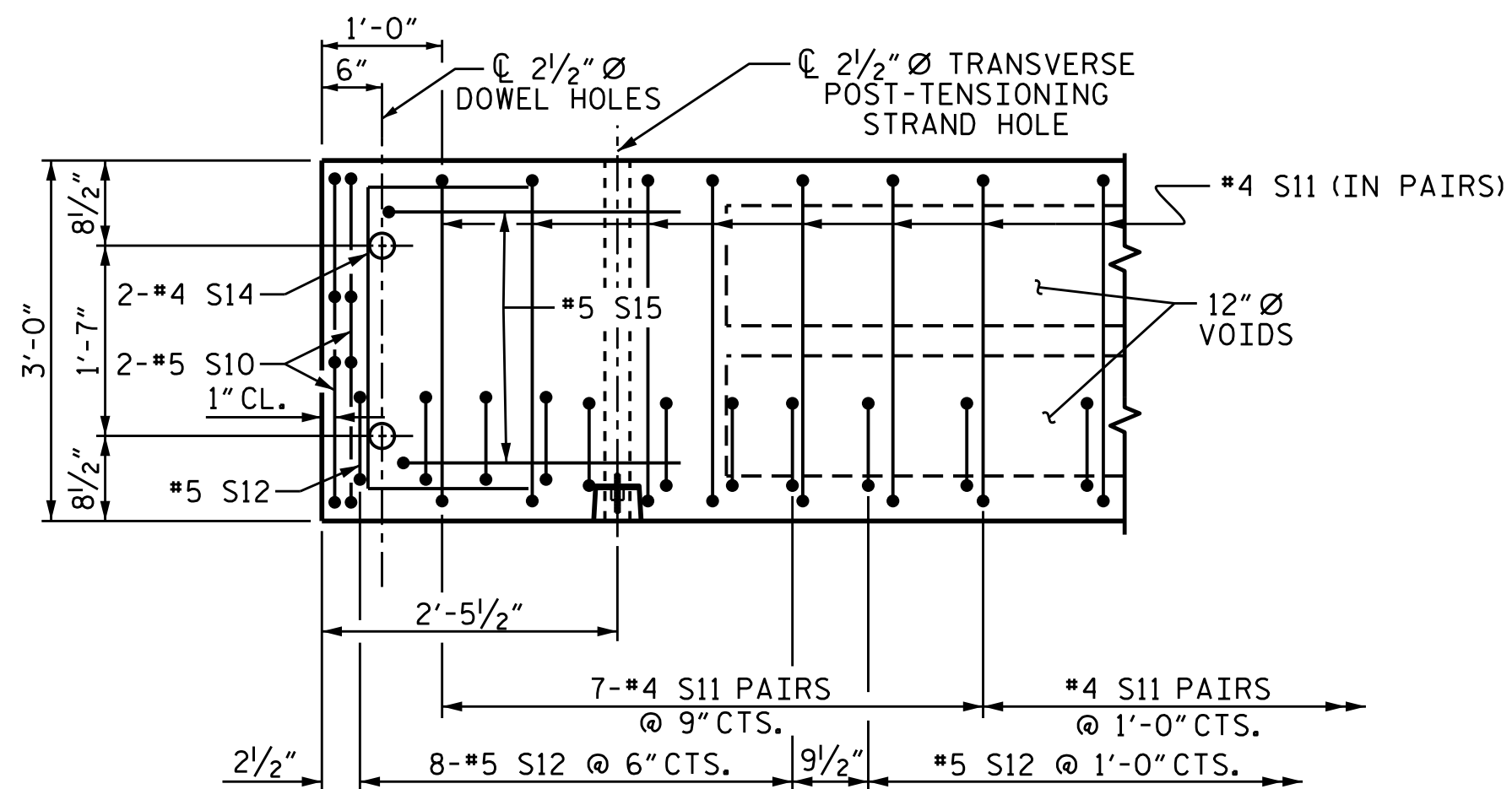
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8
2			4			TOTAL SHEETS 22

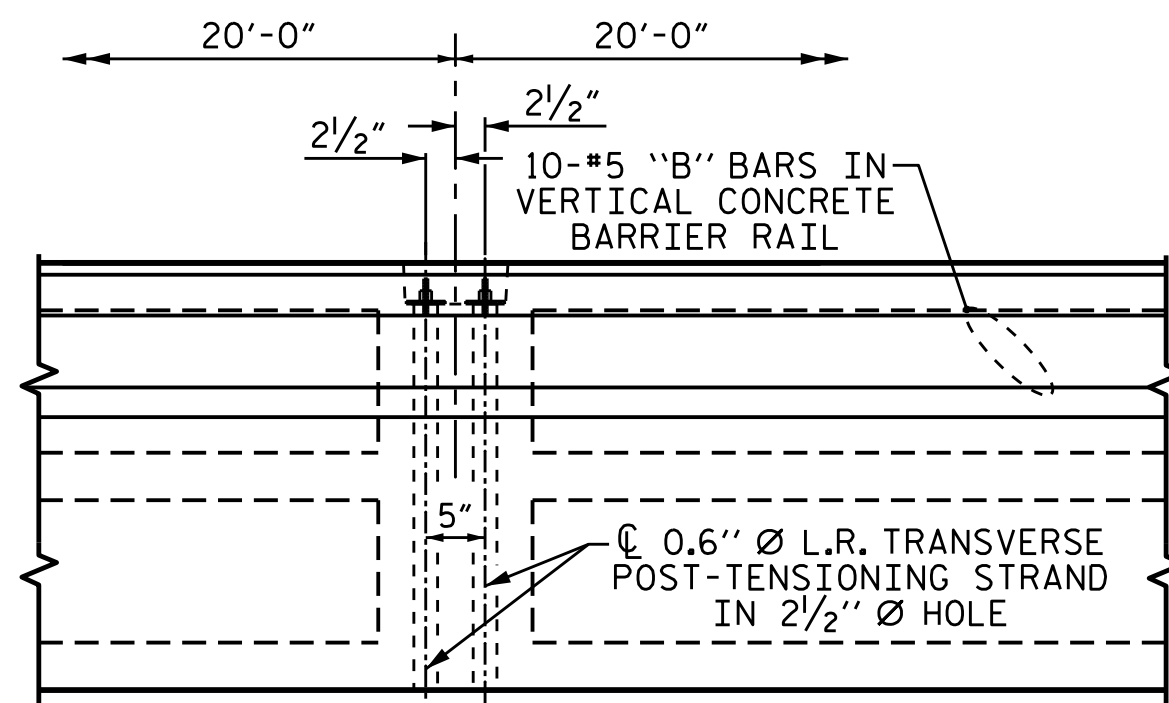
STD. NO. 24PCS-33.90S-70L



PLAN OF UNIT



DETAIL "A"

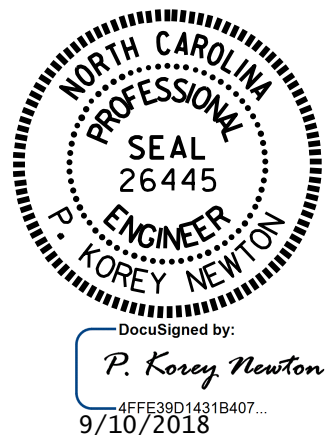


DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUTED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

ASSEMBLED BY :	W.D. REAMS	DATE :	01/05/18
CHECKED BY :	Z. MALIK	DATE :	01/08/18
DRAWN BY :	MAA	REV. 7/10	MAA/AAC
CHECKED BY :	MKT	REV. 8/10	MAA/TMG

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



PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 60' UNIT
30'-10" CLEAR ROADWAY
90° SKEW

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO. S-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

STD. NO. 24PCS_33_90S_60L (TOP DOWN)

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.

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 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.

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

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

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

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

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

PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

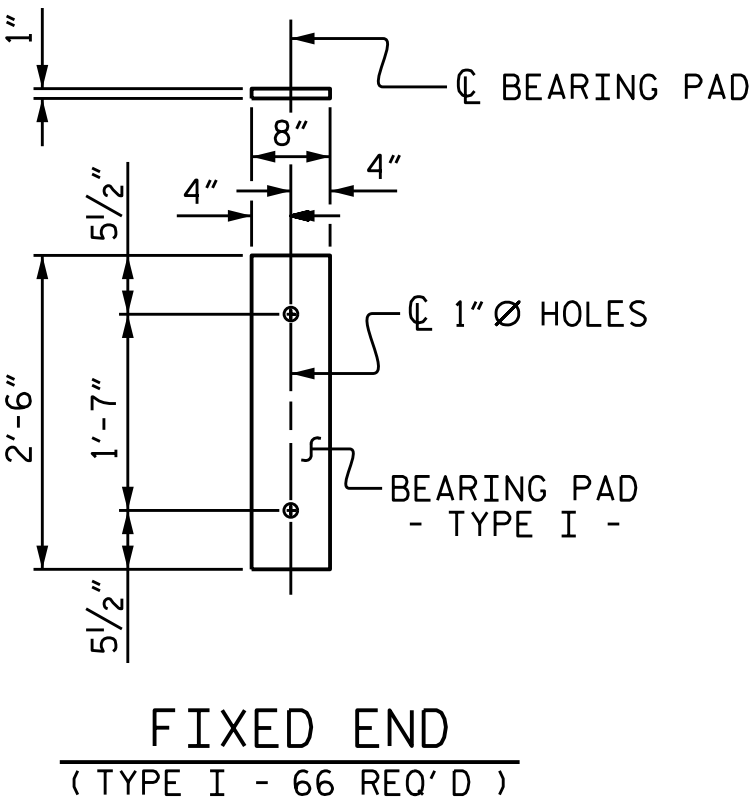
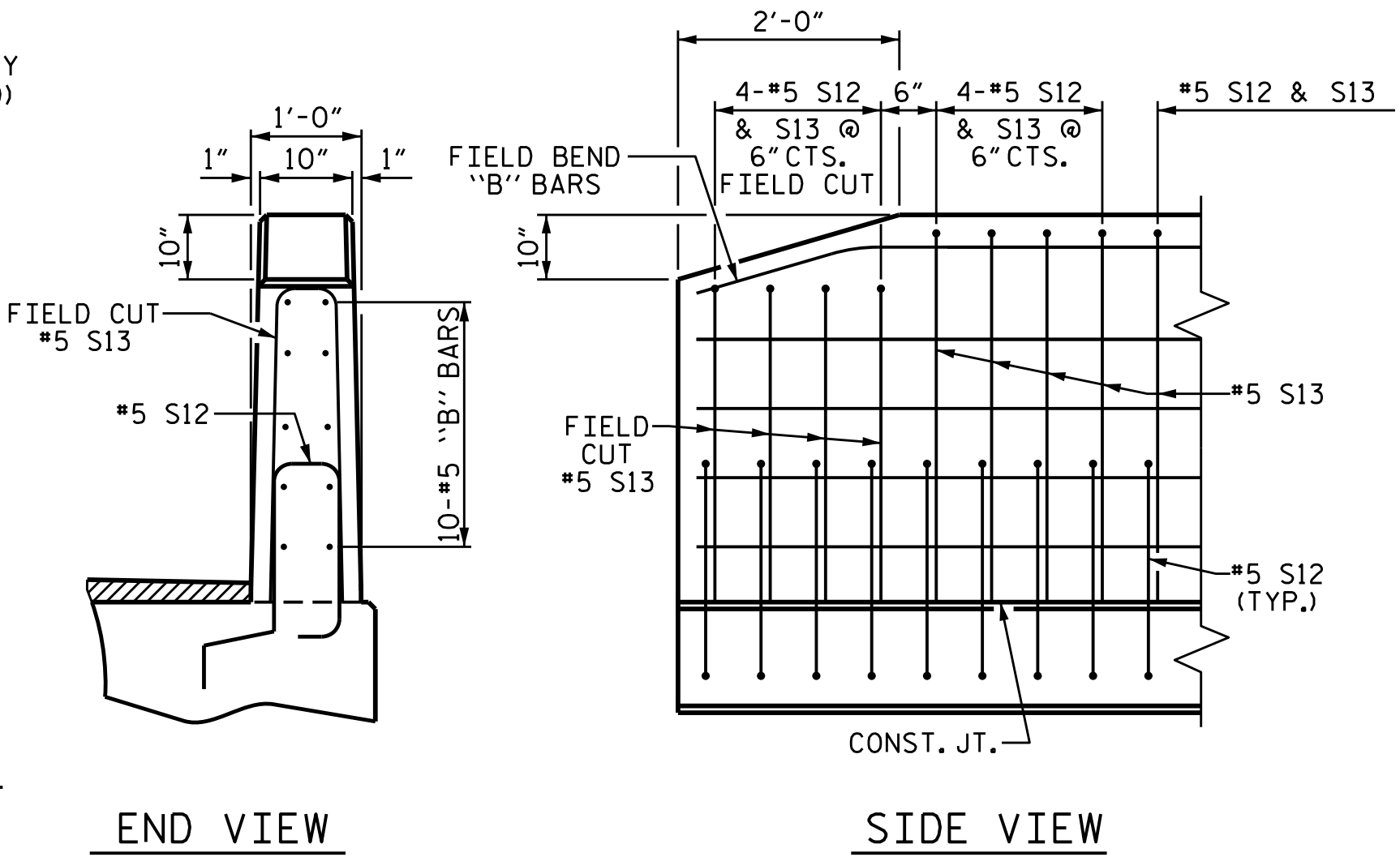
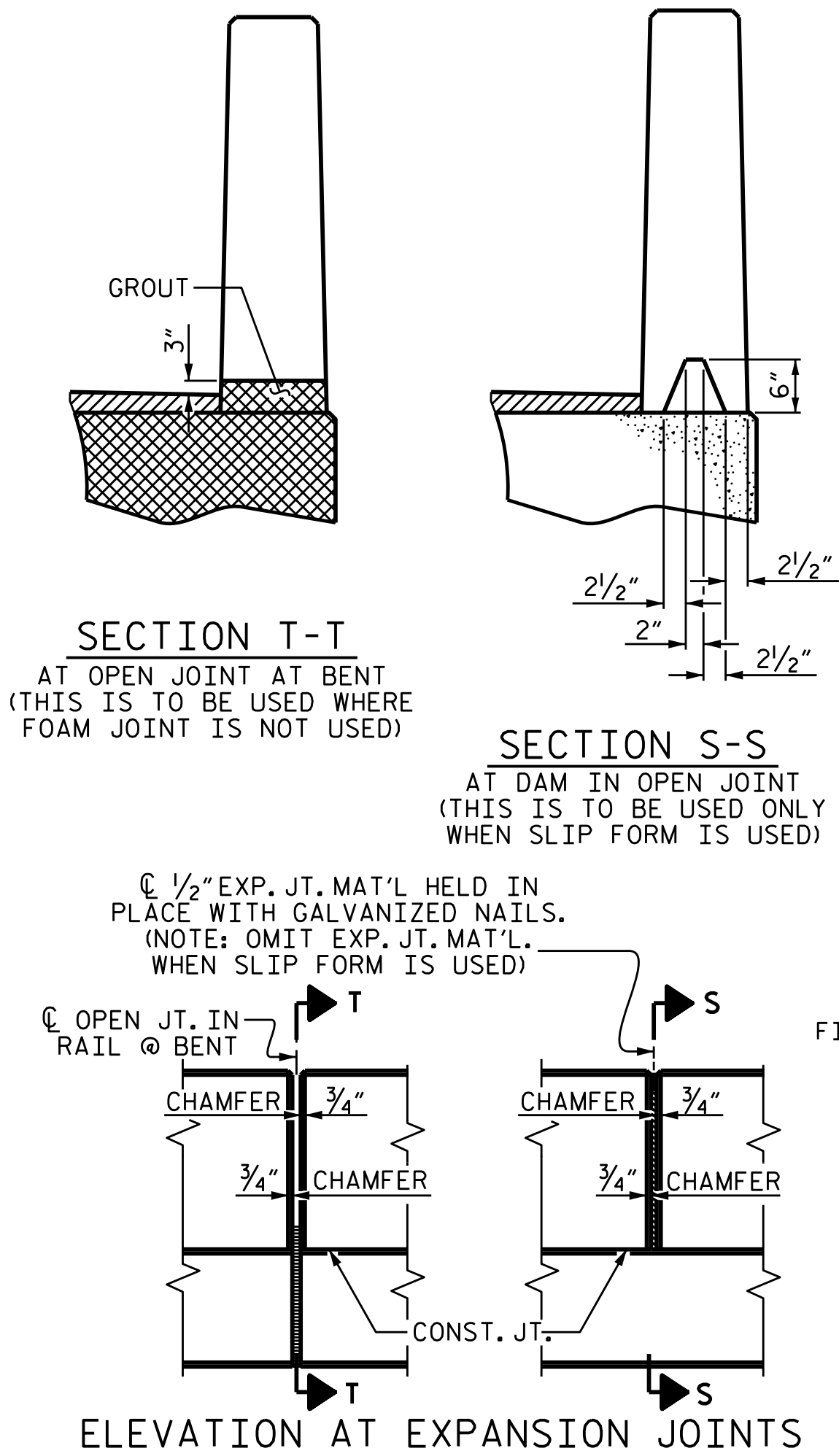
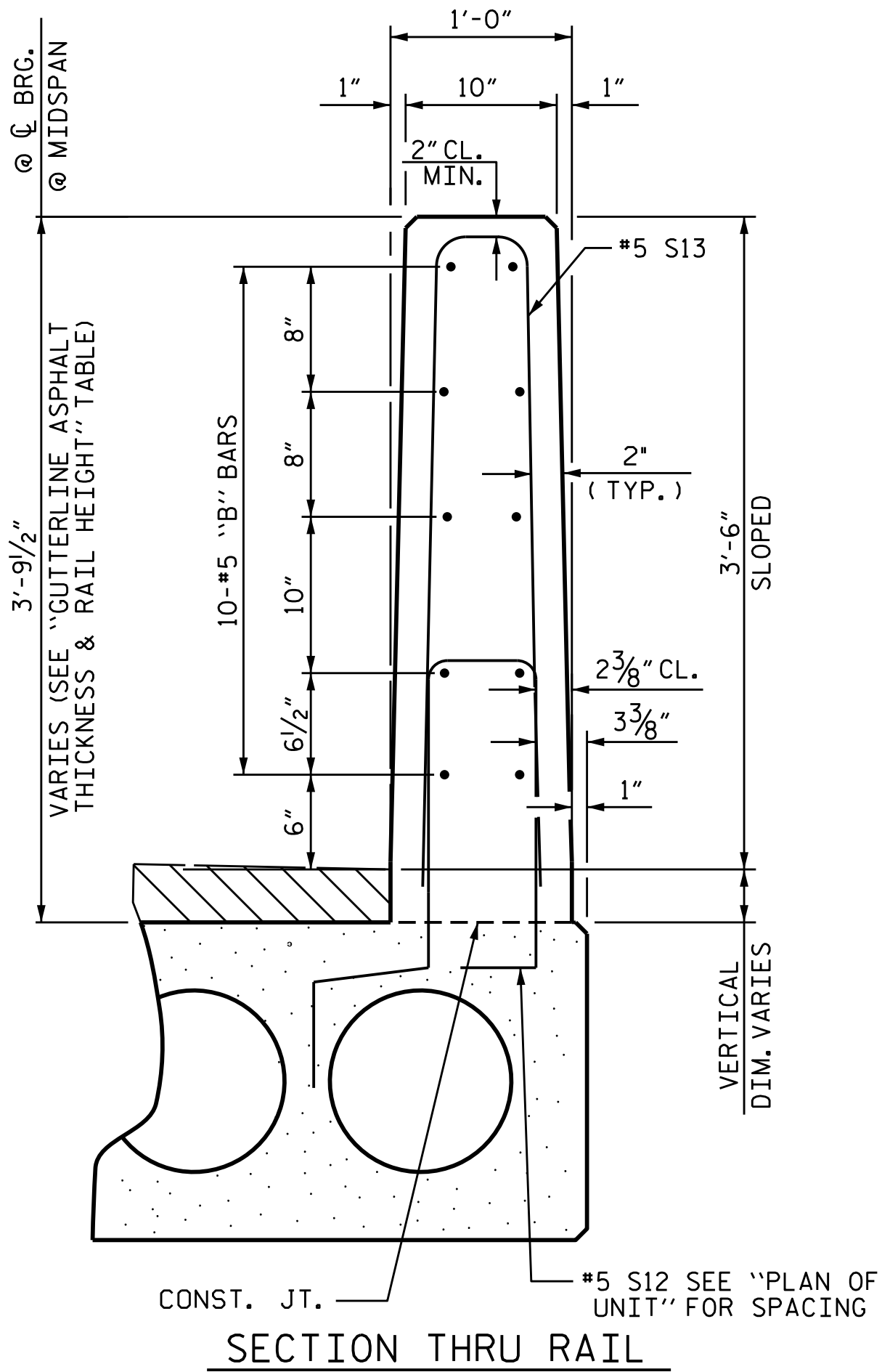
SHEET NO.
S-11
TOTAL
SHEETS
22

STD. NO. 24PCS3_33_90S

DEAD LOAD DEFLECTION AND CAMBER			
	40' UNIT	70' UNIT	60' UNIT
3'-0" x 2'-0" CORED SLAB UNIT	0.6" Ø L.R. STRAND	0.6" Ø L.R. STRAND	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	5/8" ↑	2 1/4" ↑	2 1/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓	3/4" ↓	3/8" ↓
FINAL CAMBER	1/2" ↑	1 1/2" ↑	1 7/8" ↑

** INCLUDES FUTURE WEARING SURFACE

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
40' UNITS	3"	3'-9"
70' UNITS	2"	3'-8"
60' UNITS	1 5/8"	3'-7 5/8"



ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

VERTICAL CONCRETE
BARRIER RAIL DETAILS

ASSEMBLED BY :	W.D. REAMS	DATE :	01/05/18
CHECKED BY :	Z. MALIK	DATE :	01/08/18
DRAWN BY :	MAA	6/10	
CHECKED BY :	MKT	7/10	

REV. 11/14 MAA/TMG

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.)

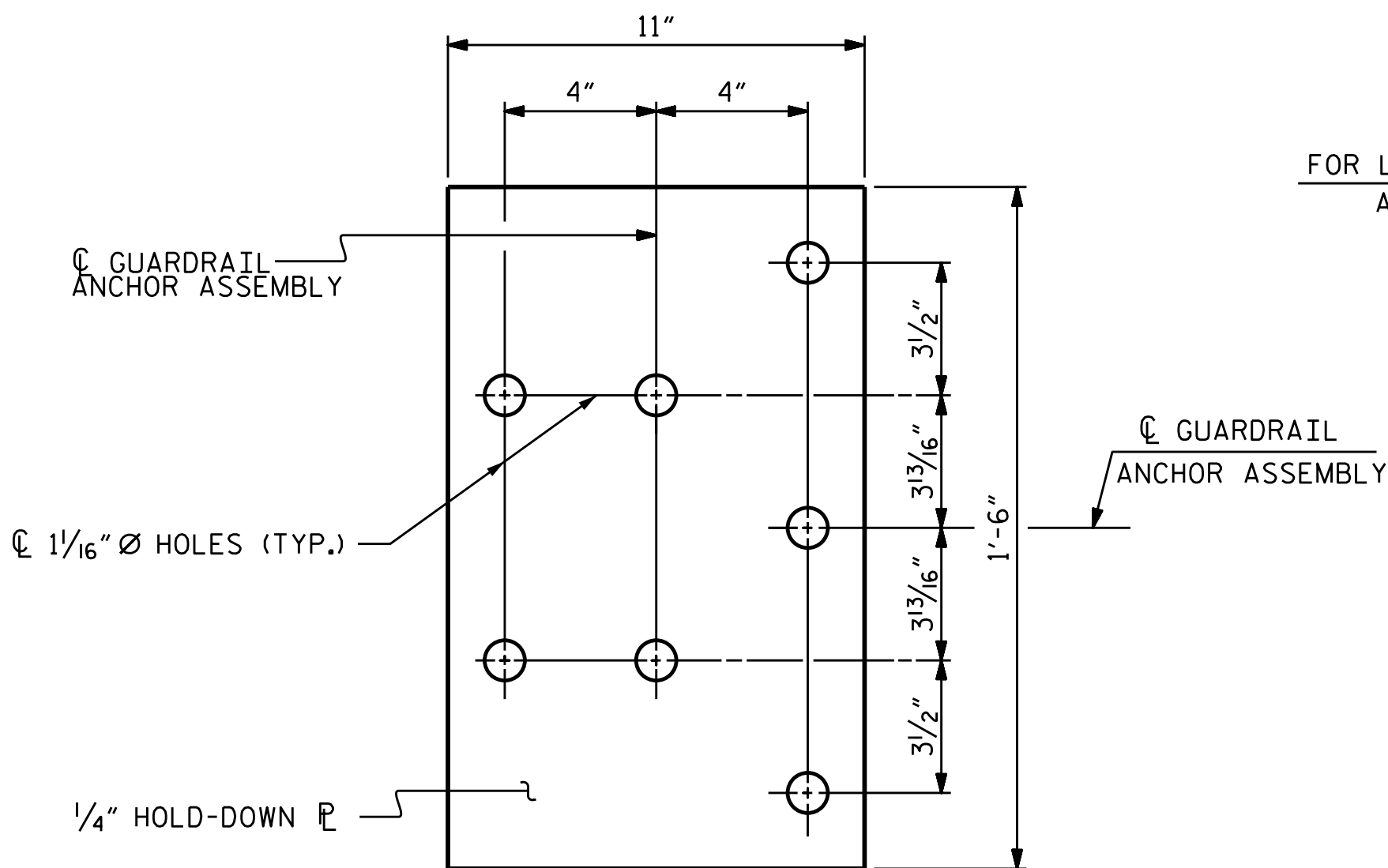
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

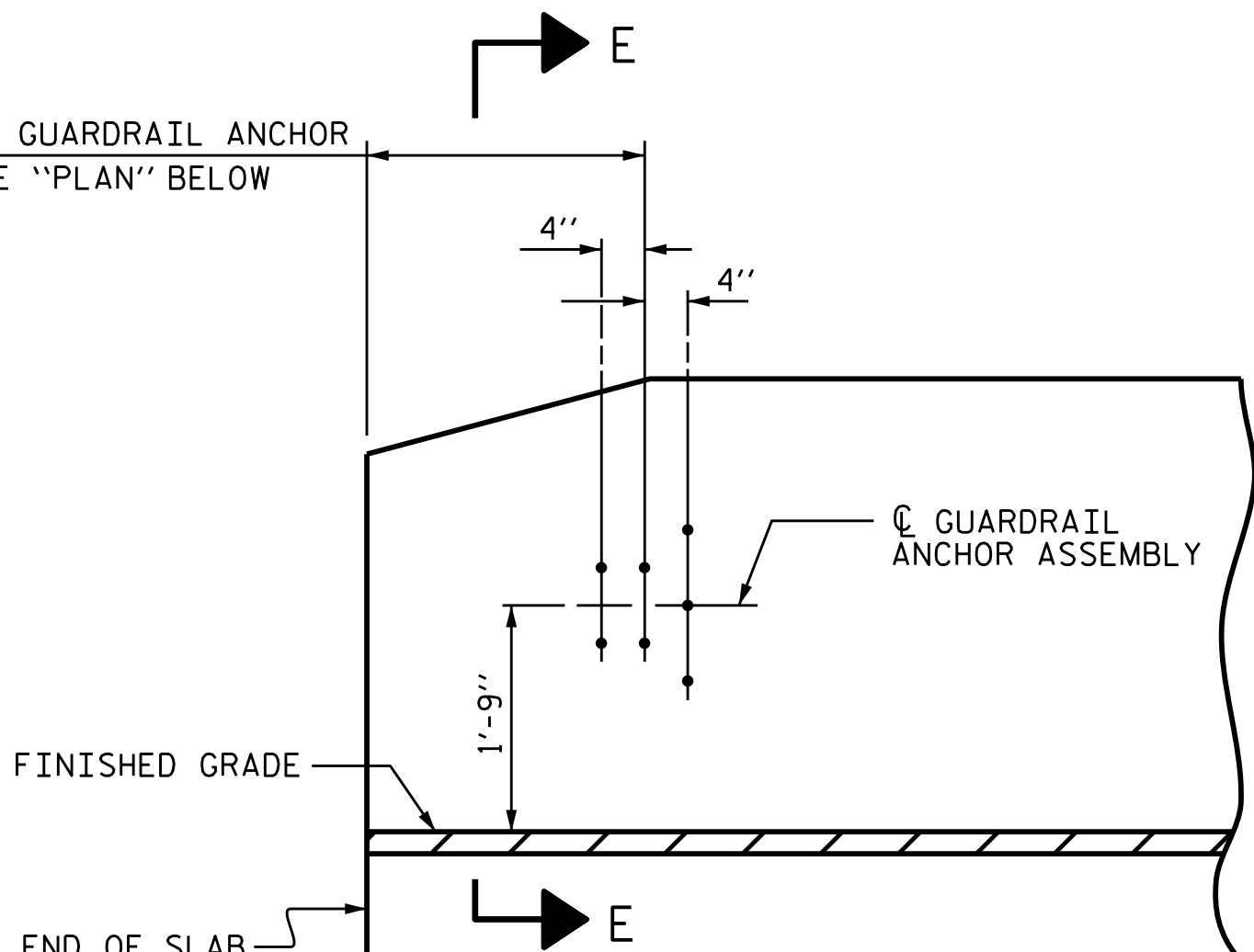
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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.

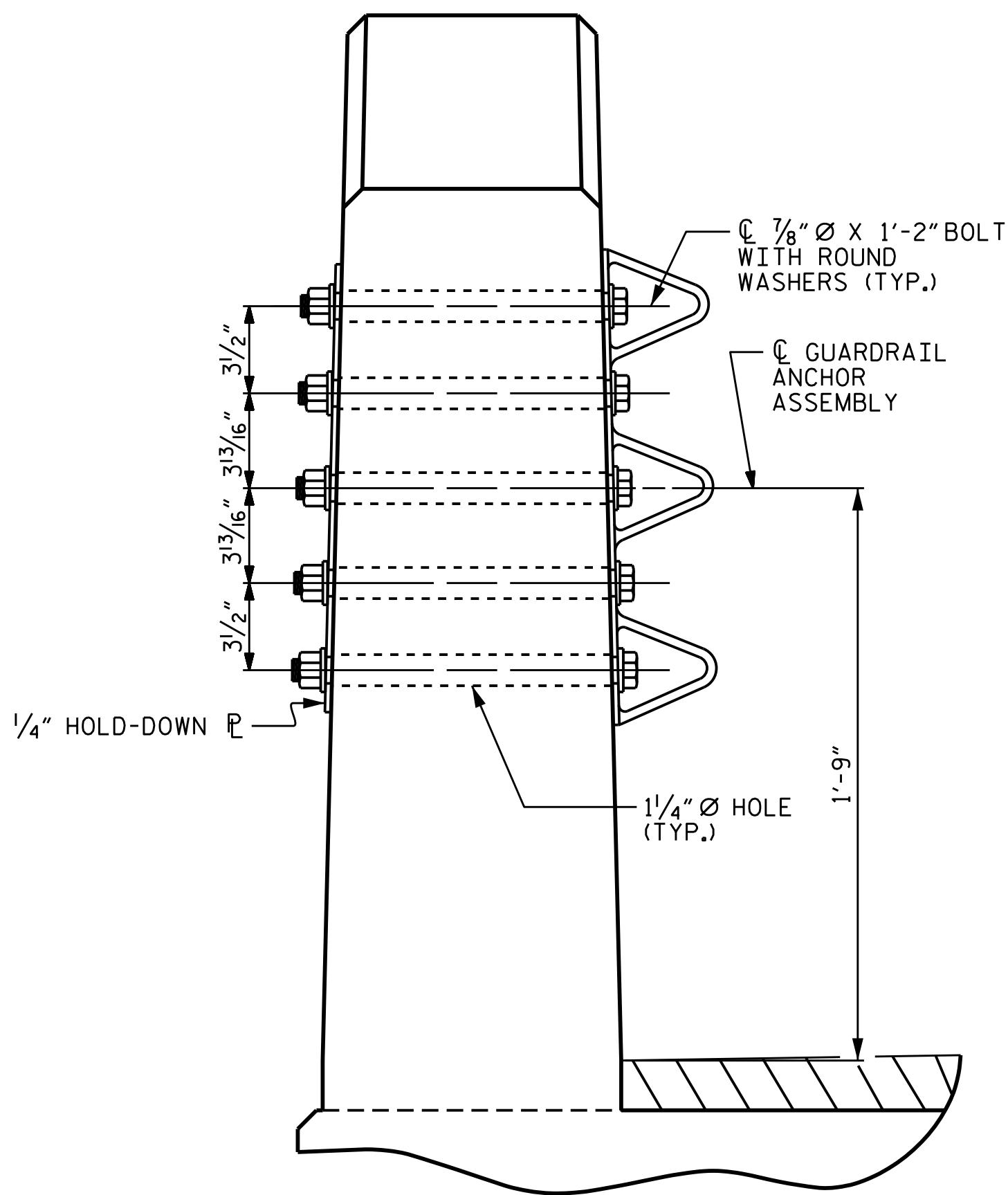


PLAN

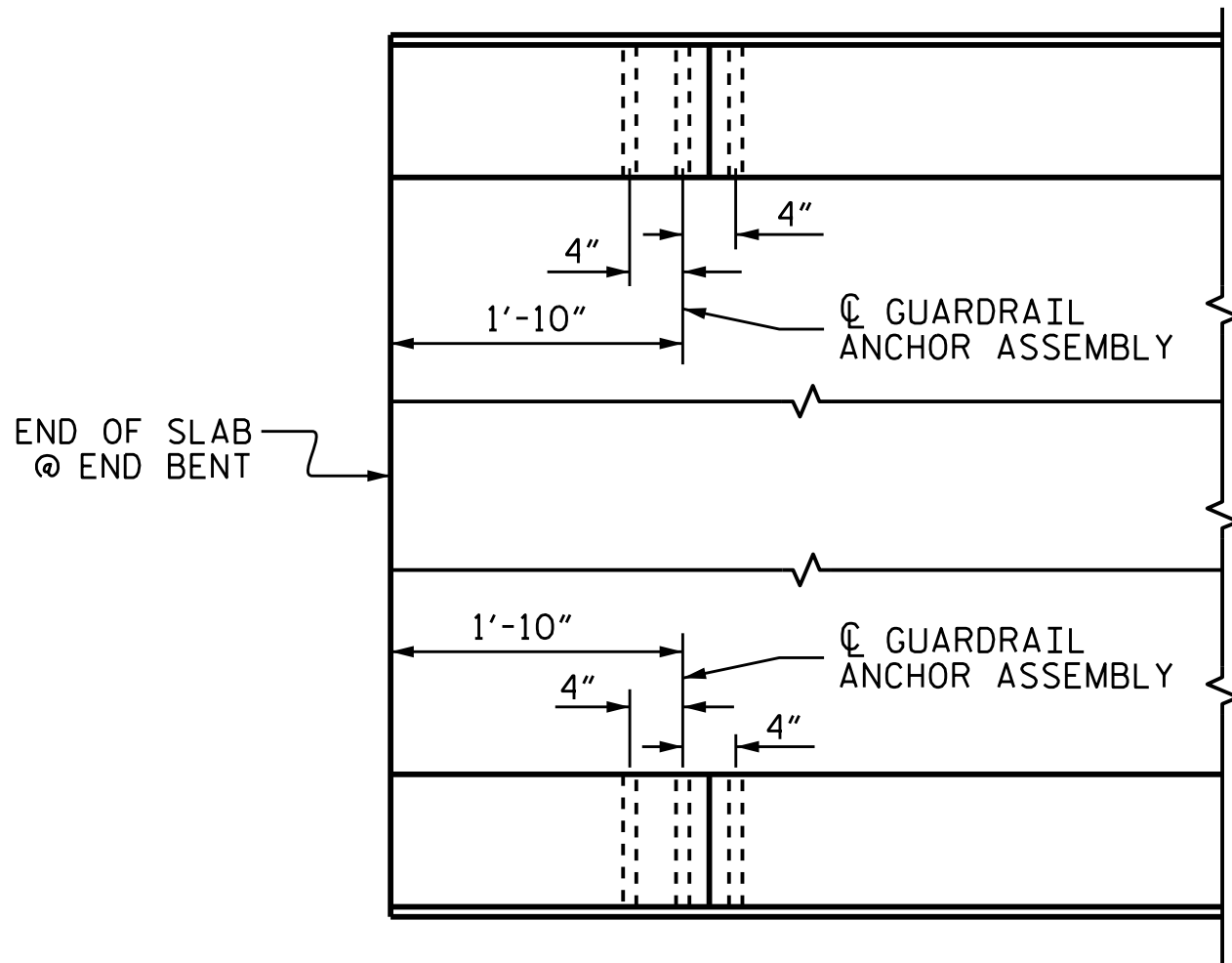
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF
ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING
POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-



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

ASSEMBLED BY :	W. D. REAMS	DATE :	1/3/18
CHECKED BY :	Z. MALIK	DATE :	1/8/18
DRAWN BY :	MAA 5/10	REV. 12/5/11	MAA/GM
CHECKED BY :	GM 5/10	REV. 6/13	MAA/GM
		REV. 1/15	MAA/TMG

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

(SHT 1) STD. NO. GRA3

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.

TOP OF PILE ELEVATIONS

①	47.86
②	48.01
③	48.16
④	48.31
⑤	48.46
⑥	48.61
⑦	48.76

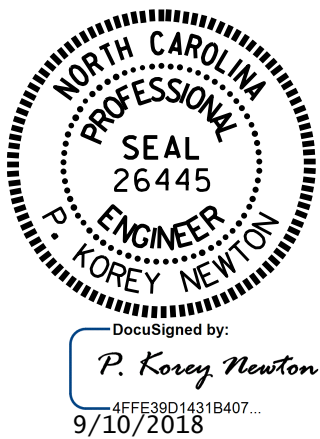
0.025 SLOPE

PROJECT NO. B-5994
JONES COUNTY
 STATION: 17+27.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1



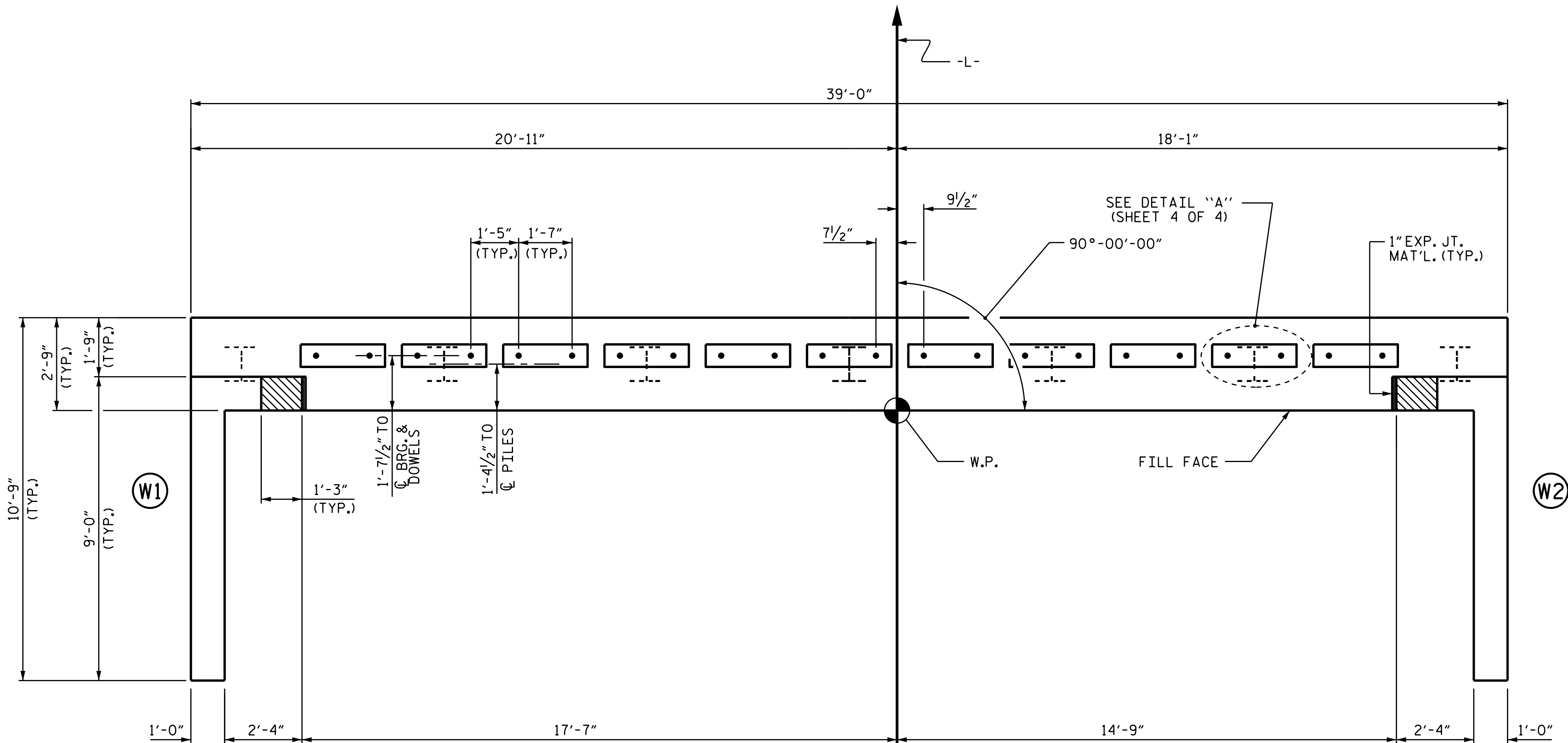
REVISIONS

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

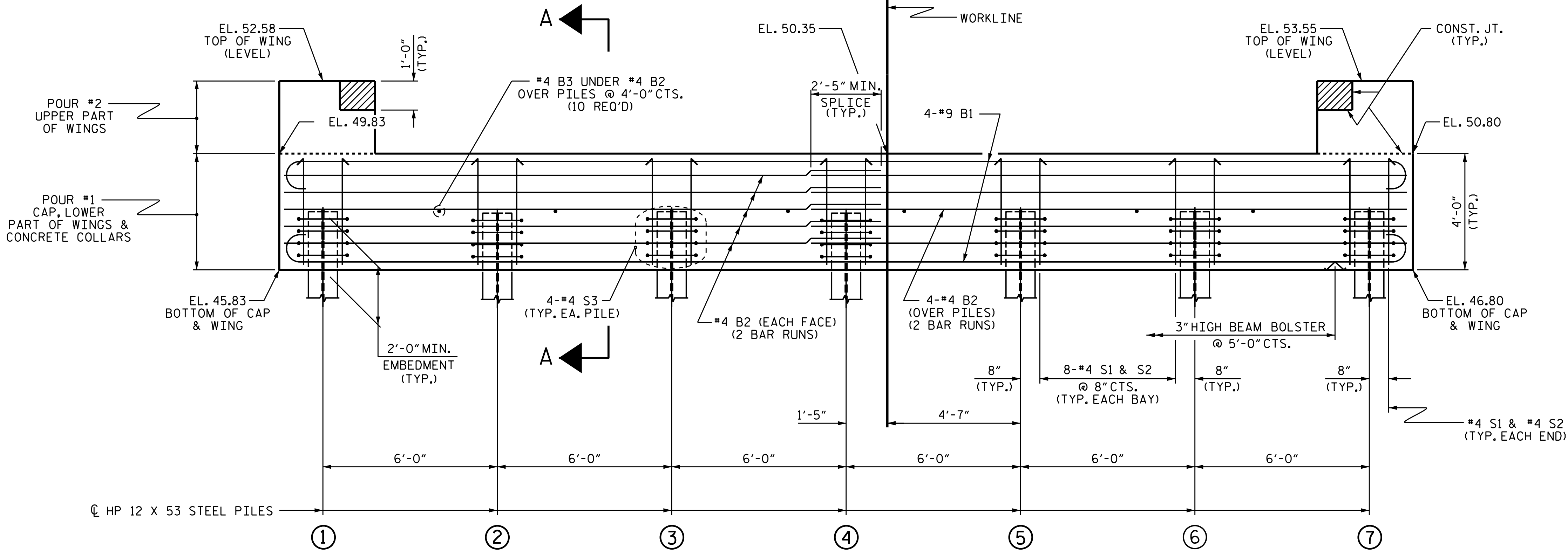
SHEET NO.
S-13

TOTAL SHEETS
22

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED



PLAN

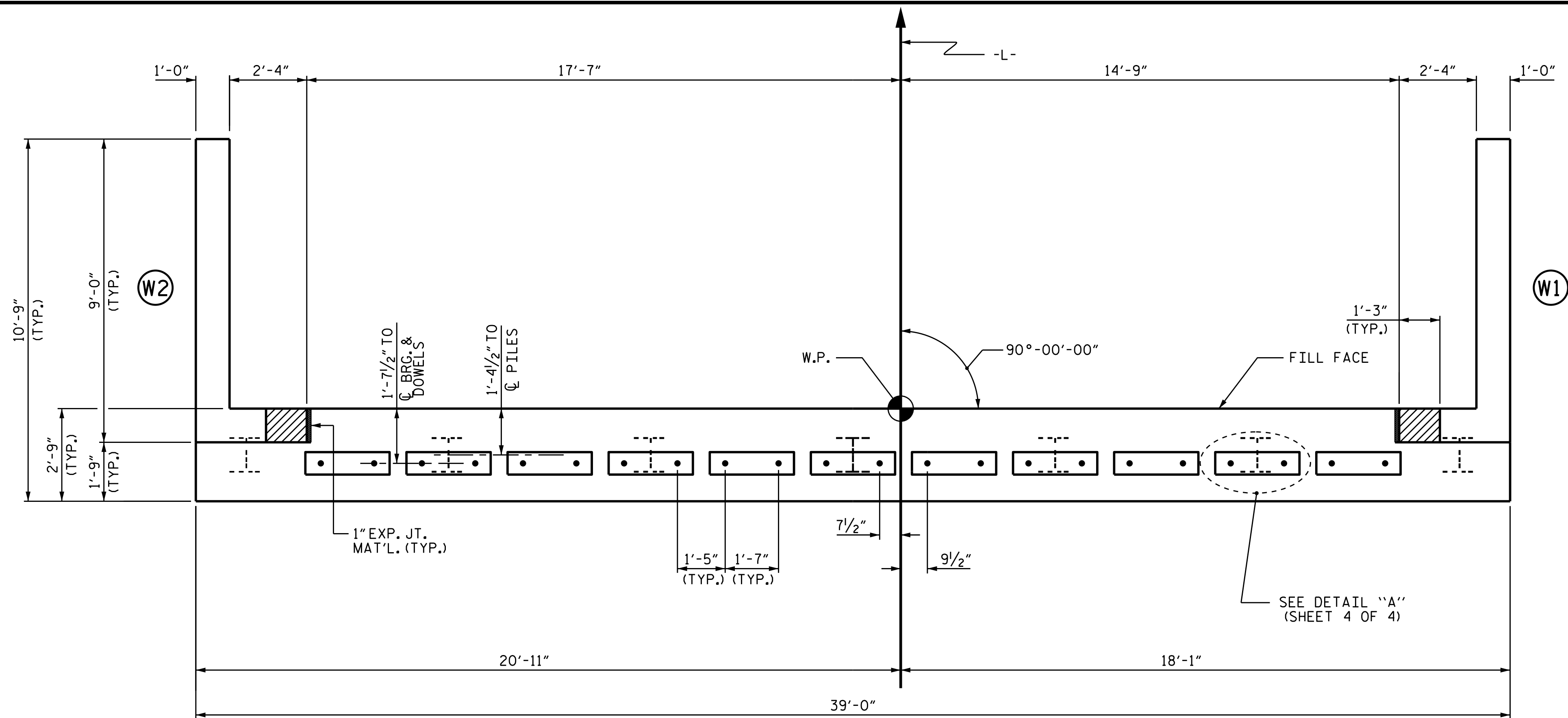


ELEVATION

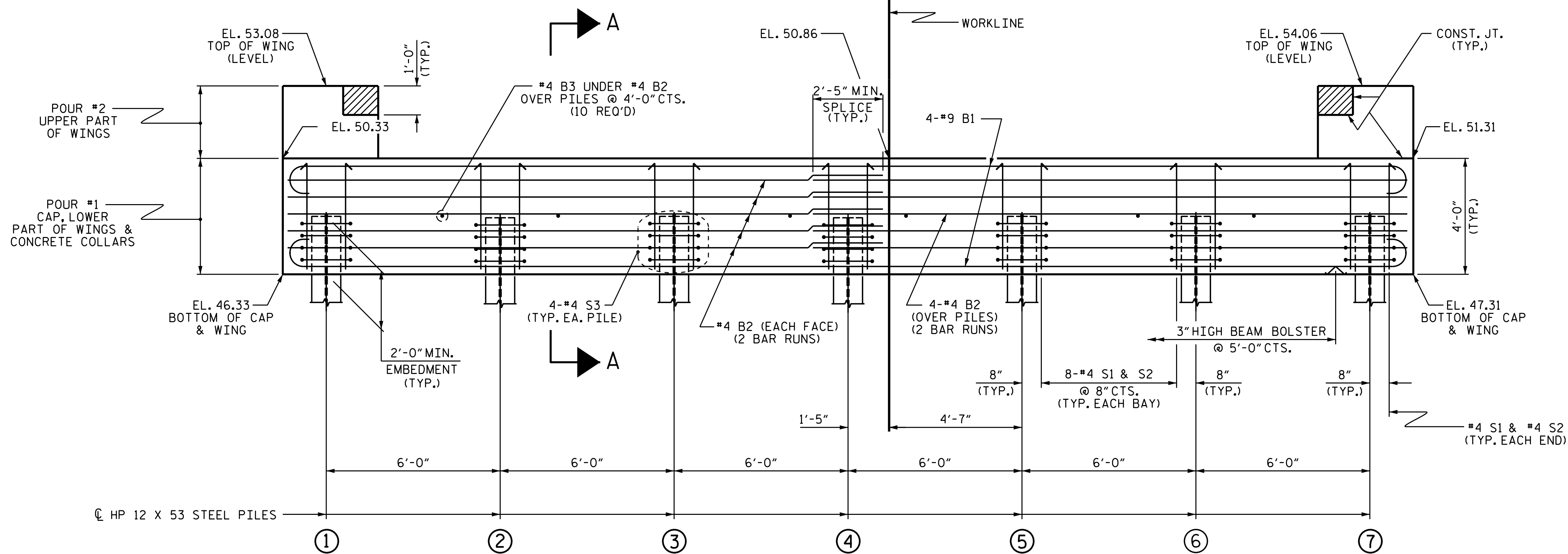
WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.

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 : W.D REAMS	DATE : 01/09/18
CHECKED BY : Z. MALIK	DATE : 01/10/18
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG



PLAN



ELEVATION

NOTES

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

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

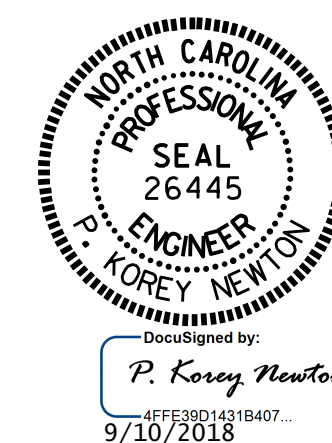
TOP OF PILE ELEVATIONS

①	48.37
②	48.52
③	48.67
④	48.82
⑤	48.97
⑥	49.12
⑦	49.27

0.025 SLOPE

PROJECT NO. B-5994
JONES COUNTY
 STATION: 17+27.50 -L-

SHEET 2 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

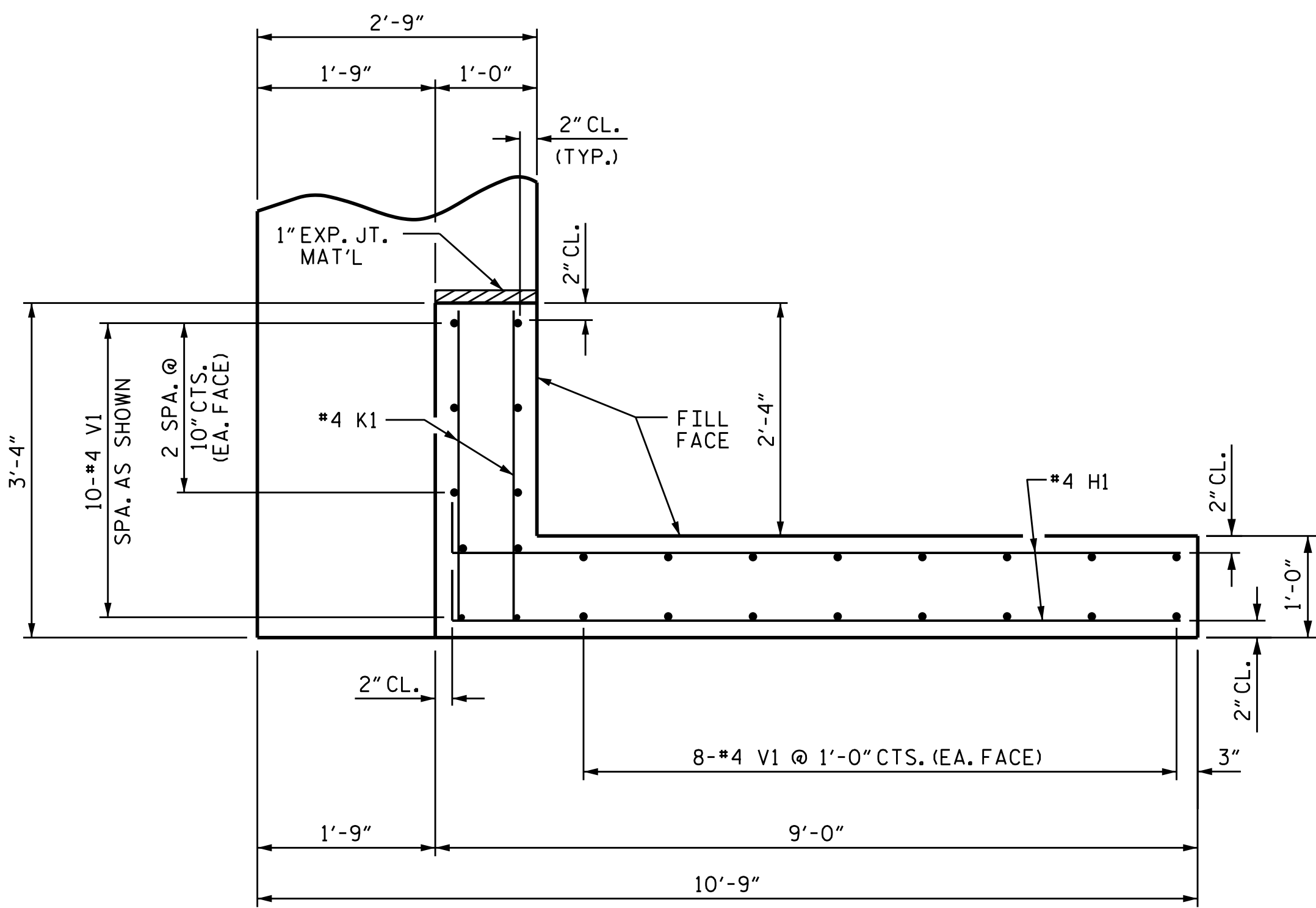
SUBSTRUCTURE
 END BENT No. 2

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

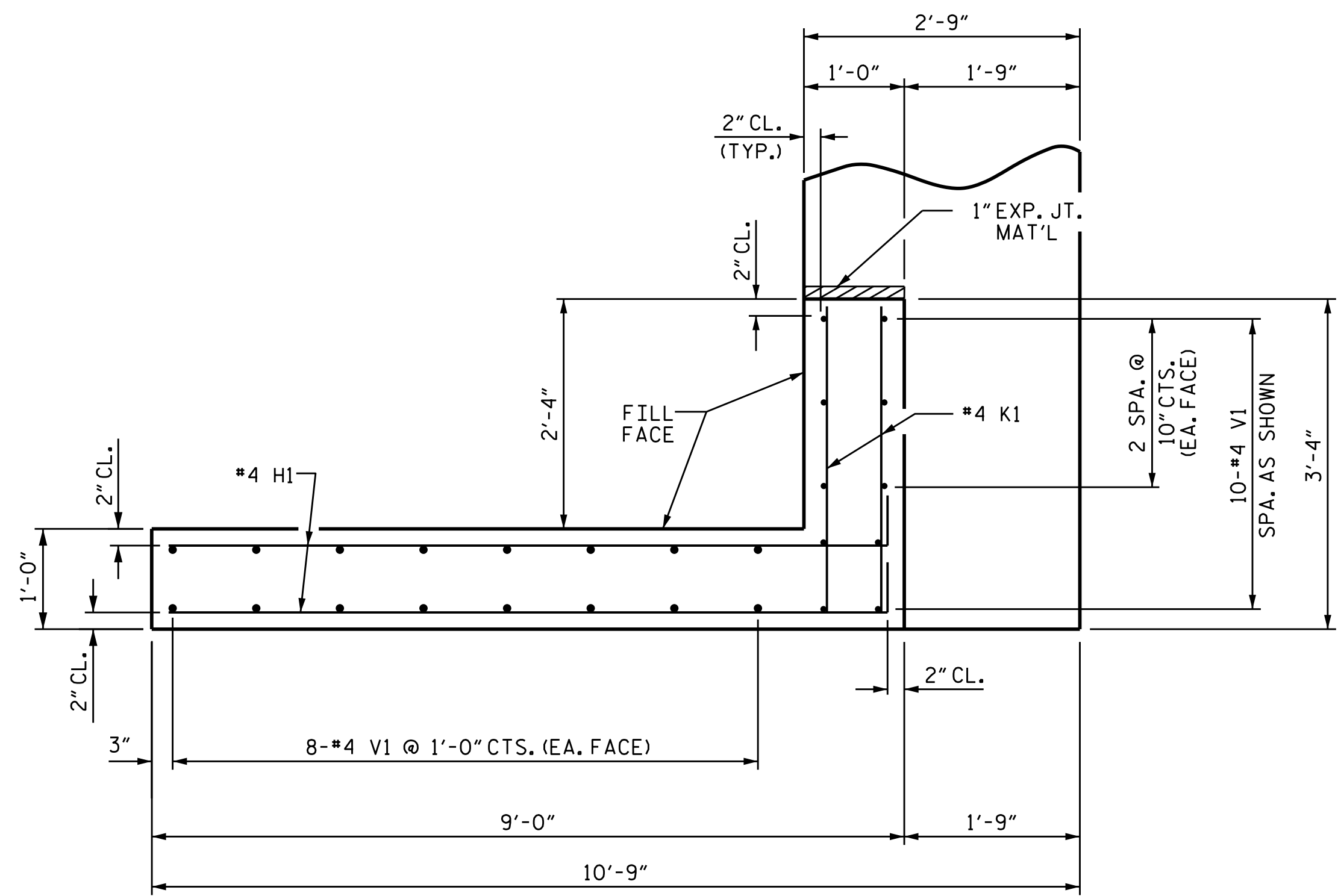
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

ASSEMBLED BY : W.D. REAMS	DATE : 01/09/18
CHECKED BY : Z. MALIK	DATE : 01/10/18
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

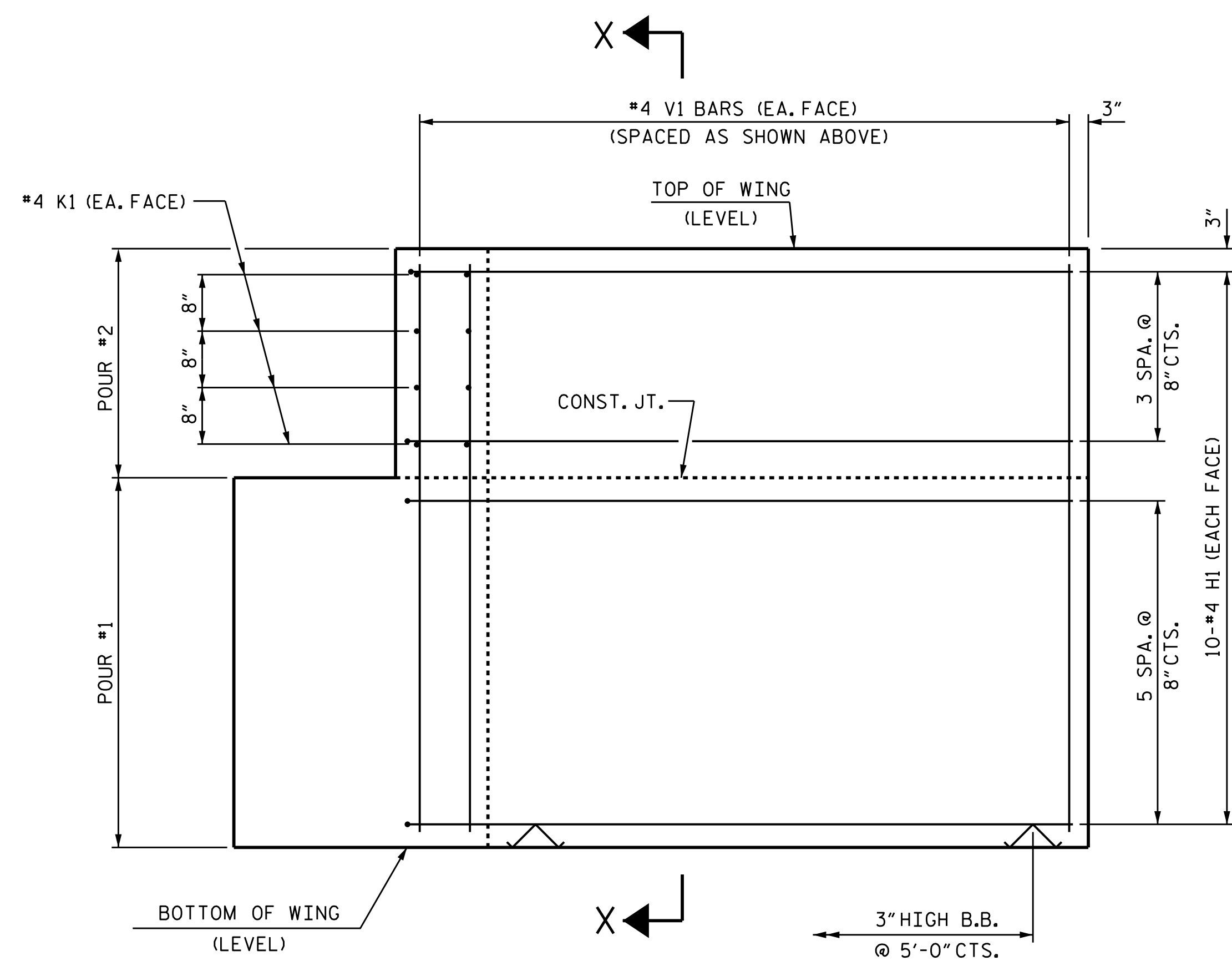
WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.



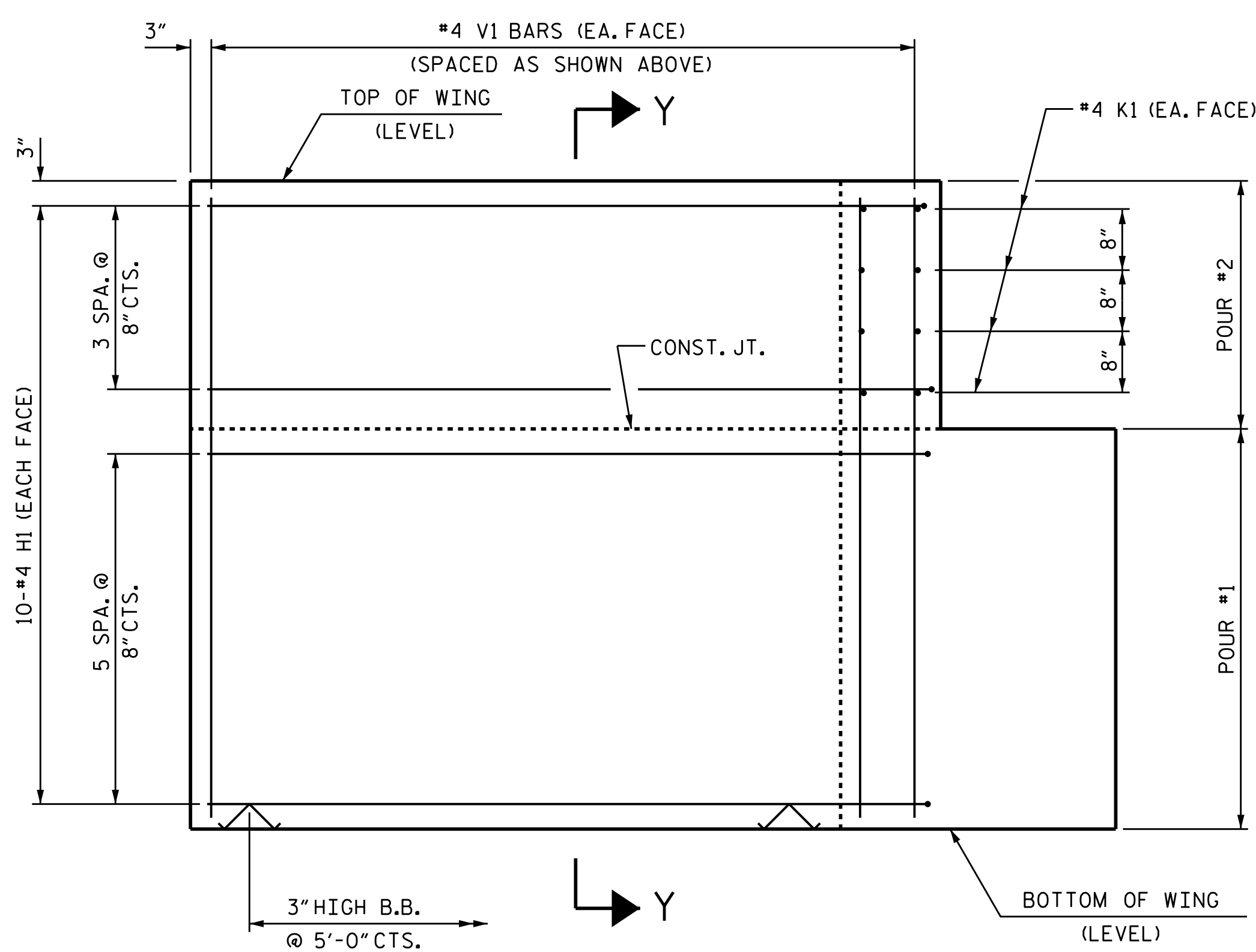
PLAN OF WING (W1)



PLAN OF WING (W2)

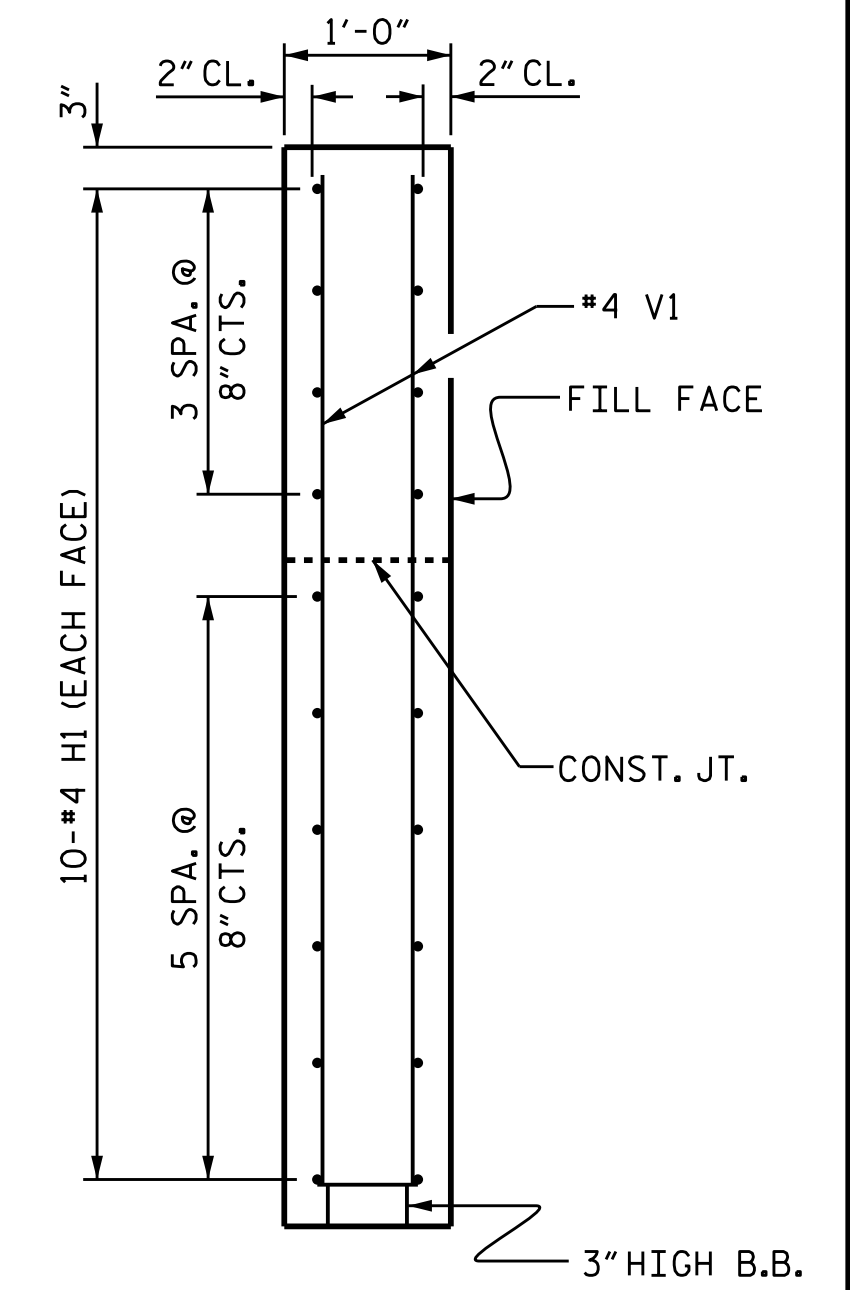


ELEVATION OF WING (W1)

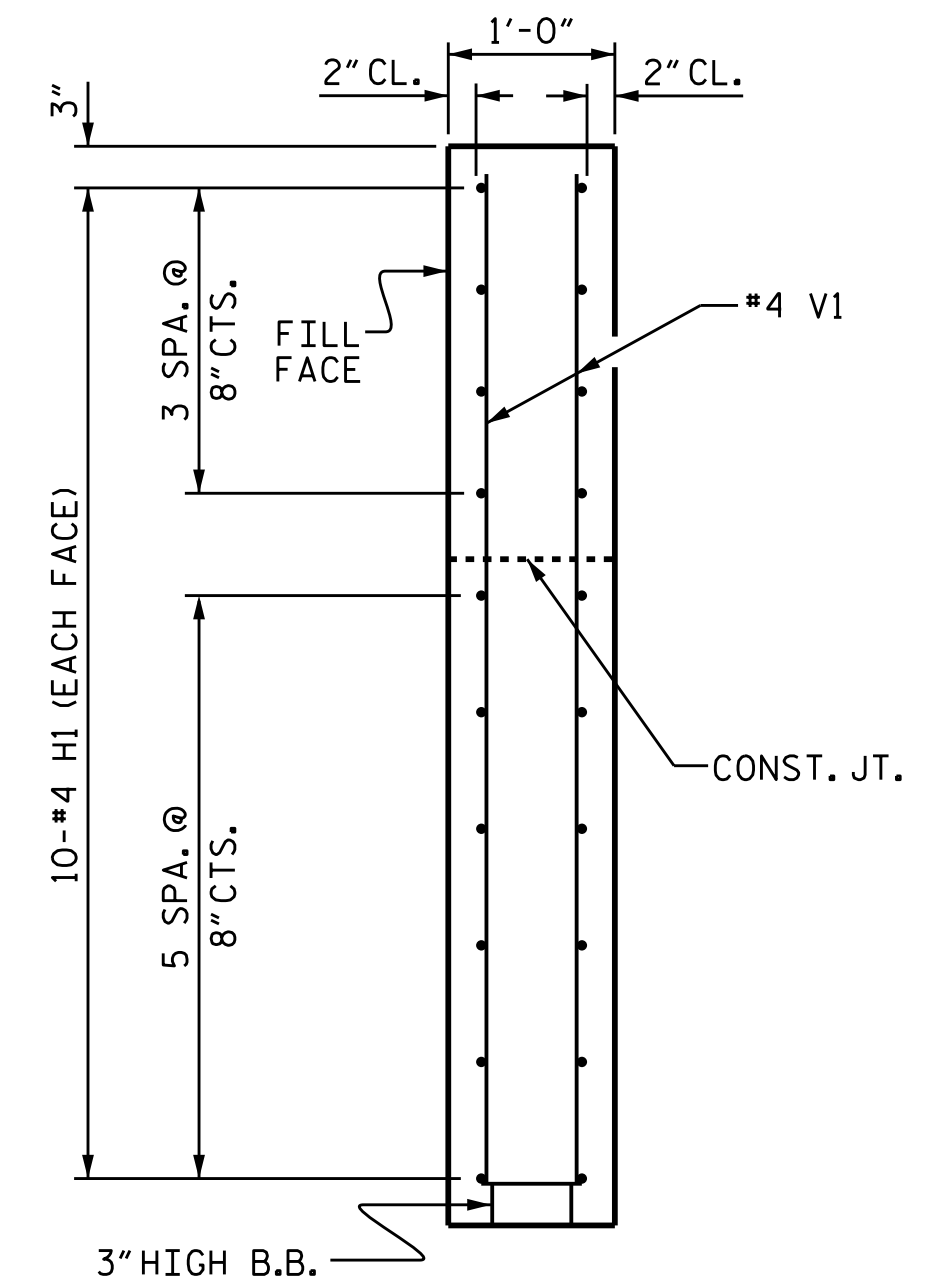


ELEVATION OF WING (W2)

WING DETAILS



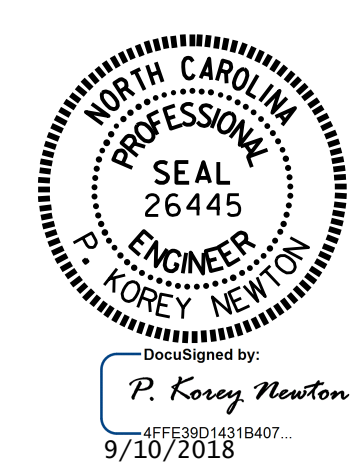
SECTION X-X



SECTION Y-Y

PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

SHEET 3 OF 4

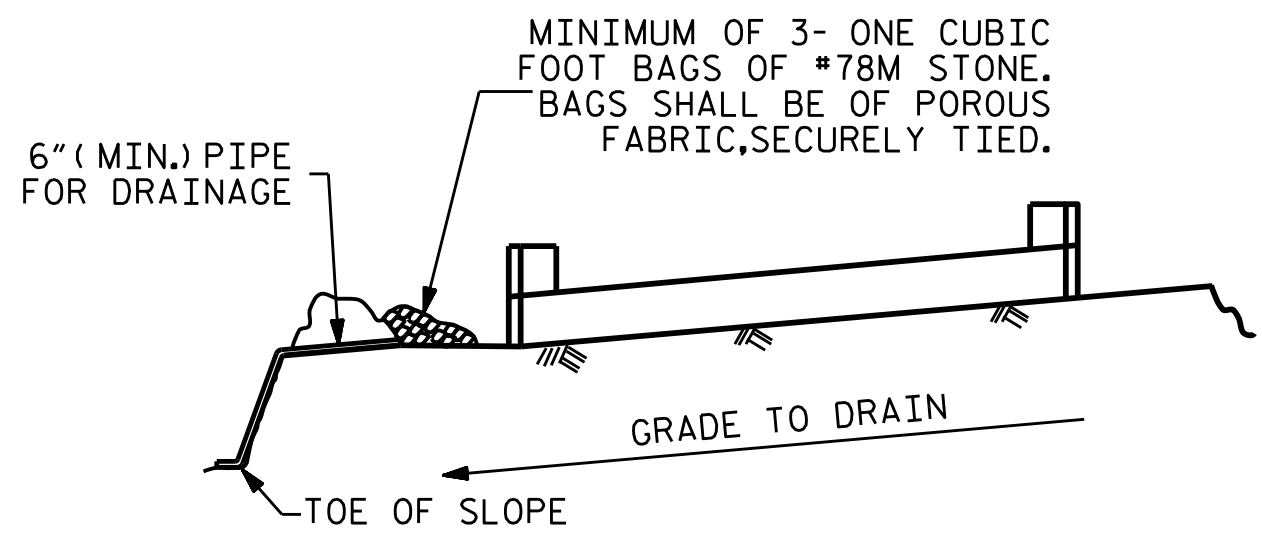


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT
WING DETAILS

ASSEMBLED BY : W.D. REAMS	DATE : 01/09/18
CHECKED BY : Z. MALIK	DATE : 01/10/18
DRAWN BY : WJH 12/II	REV. 4/15
CHECKED BY : AAC 12/II	MAA/TMG

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

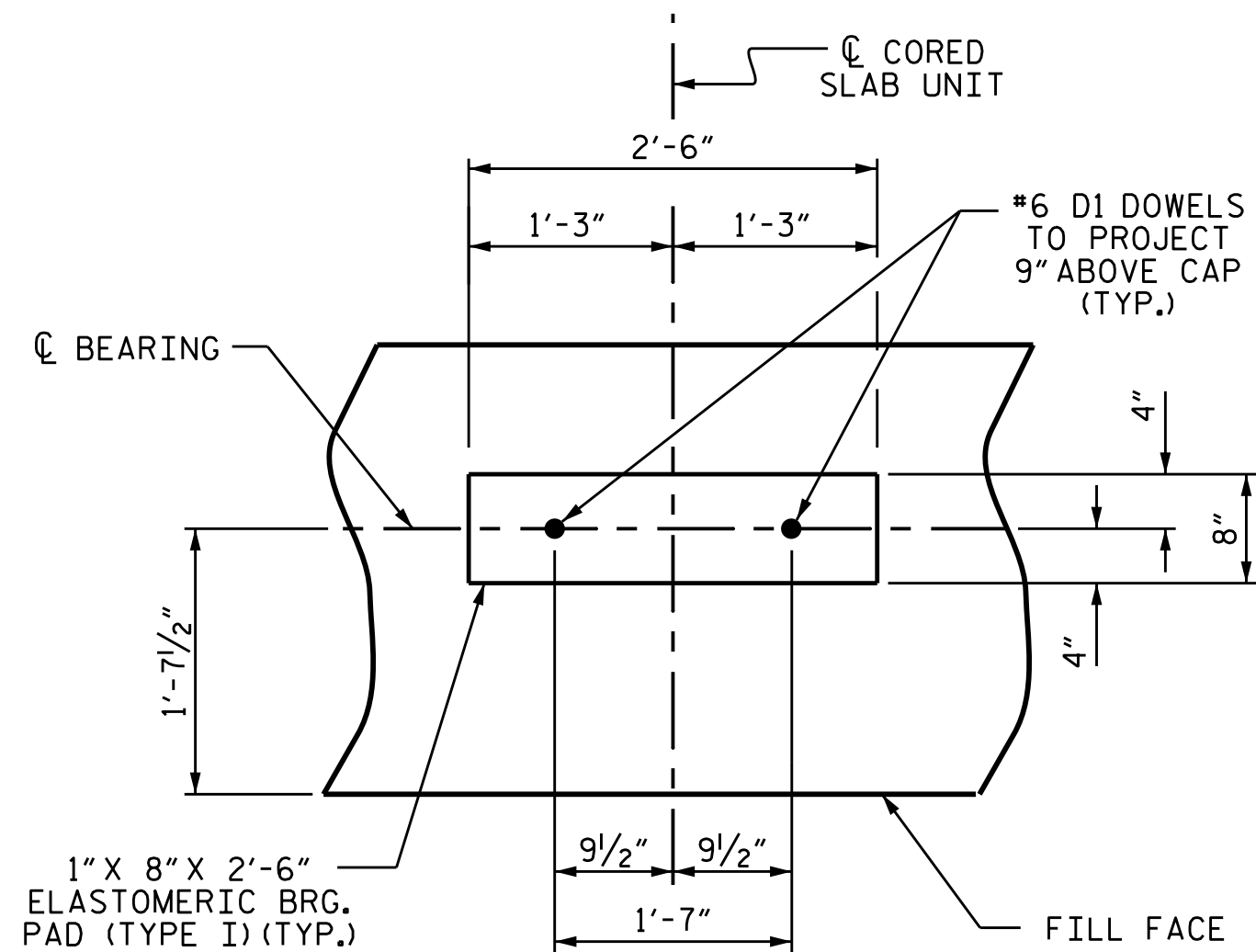


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

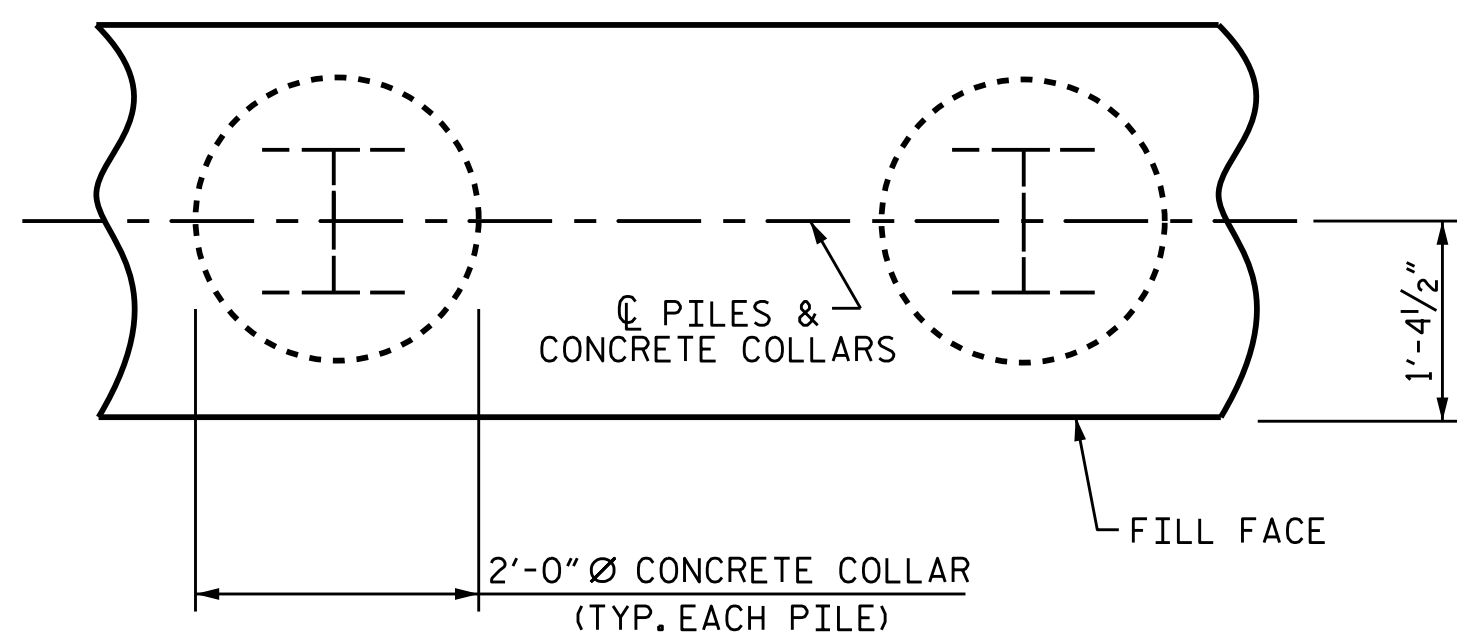
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

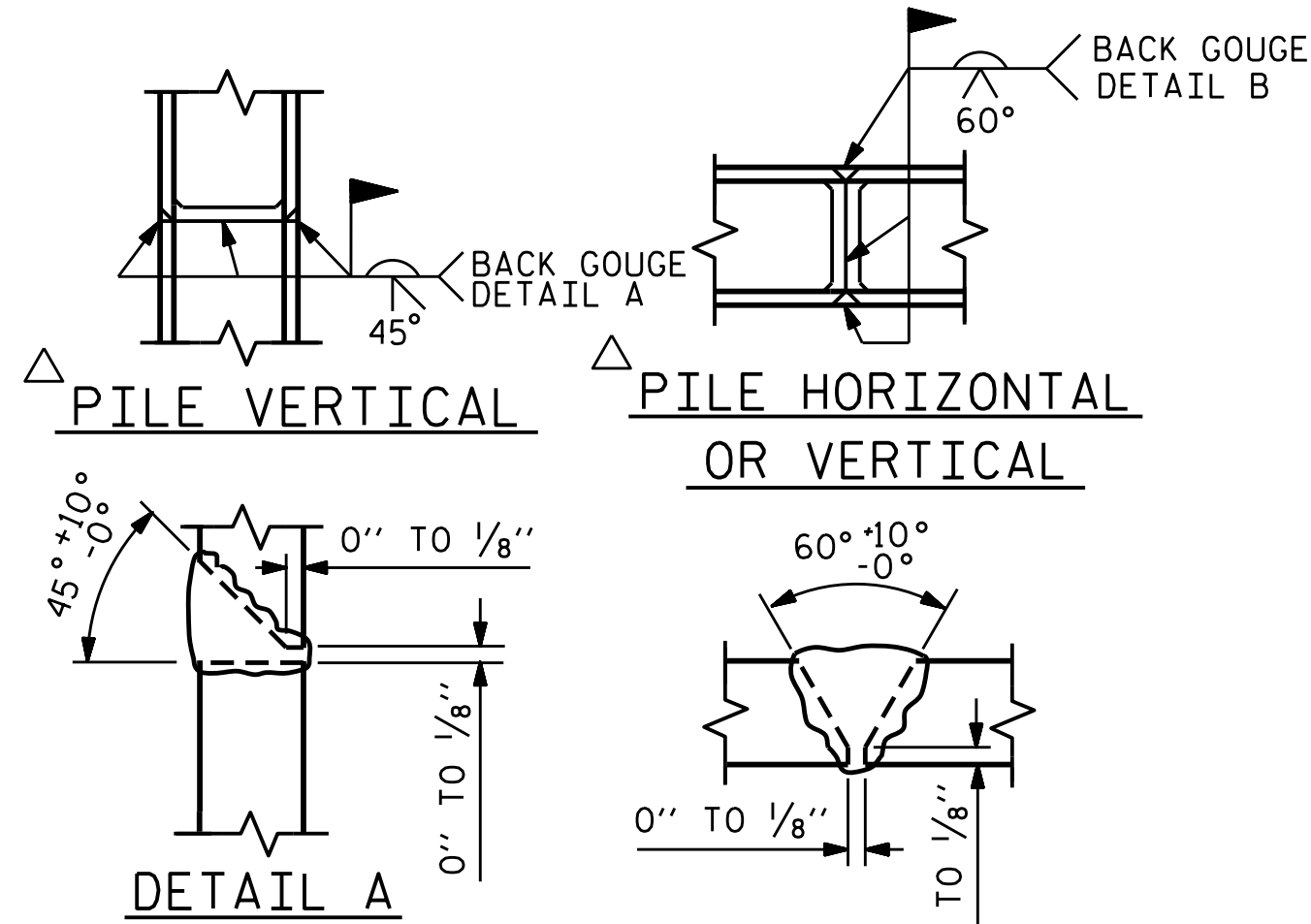
(END BENT No.1 SHOWN, END BENT No.2 SIMILAR BY ROTATION)



PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

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

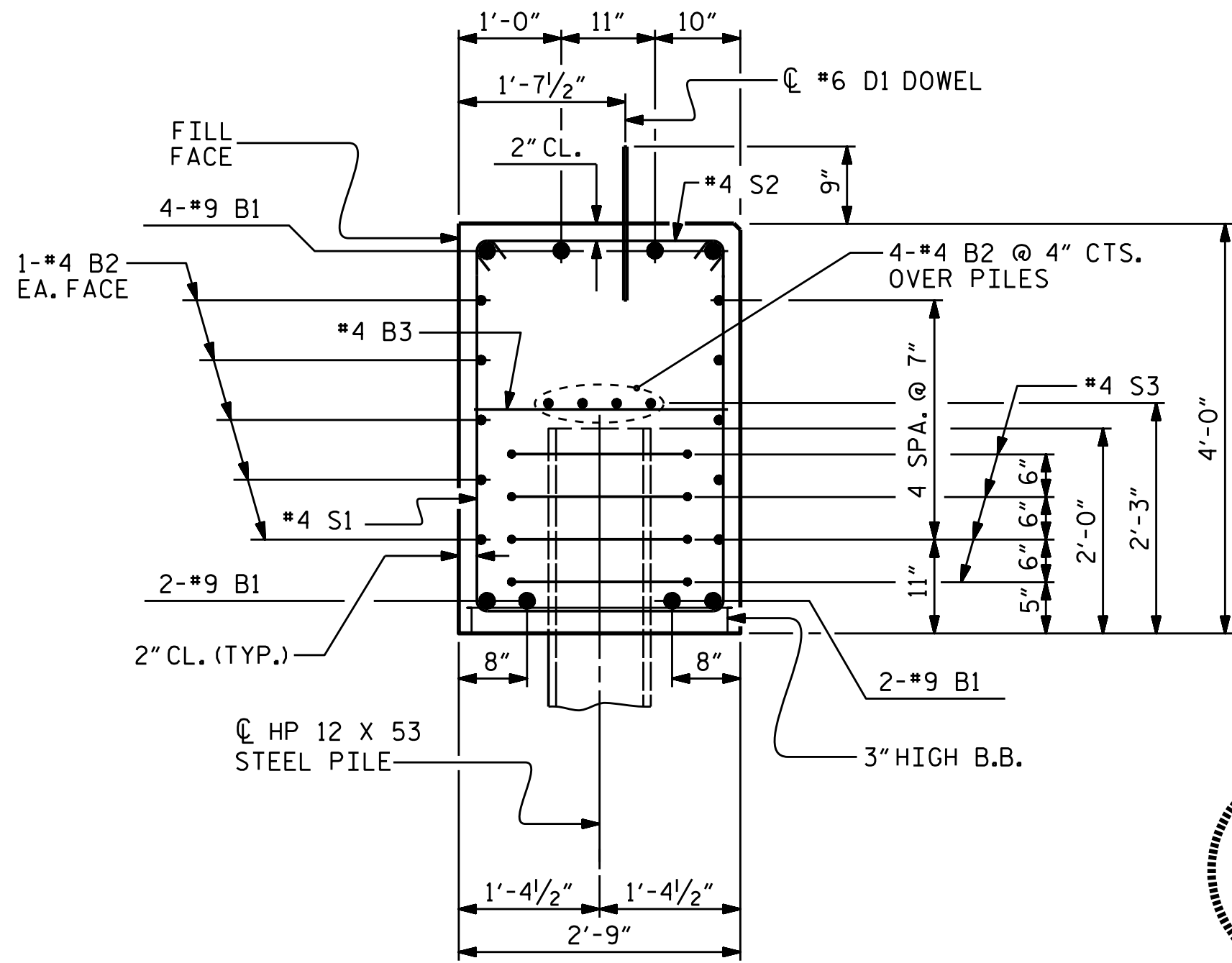


POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

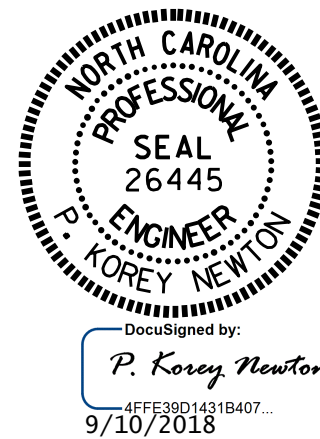
BAR TYPES	
ALL BAR DIMENSIONS ARE OUT TO OUT.	
END BENT No.1	END BENT No.2
HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 315	HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 315
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7
PILE REDRIVES NO: 4	PILE REDRIVES NO: 4
STEEL PILE POINTS NO: 7	STEEL PILE POINTS NO: 7

BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-2"	214
REINFORCING STEEL (FOR ONE END BENT)					2636 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1	CAP, LOWER PART OF WINGS & COLLARS				19.5 C.Y.
POUR #2	UPPER PART OF WINGS				2.3 C.Y.
TOTAL CLASS A CONCRETE					21.8 C.Y.



SECTION A-A

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



PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

SHEET 4 OF 4

DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No.1 & 2
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			22

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

ASSEMBLED BY : W.D. REAMS	DATE : 01/09/18
CHECKED BY : Z. MALIK	DATE : 01/10/18
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11
REV. 4/17	MAA/THC

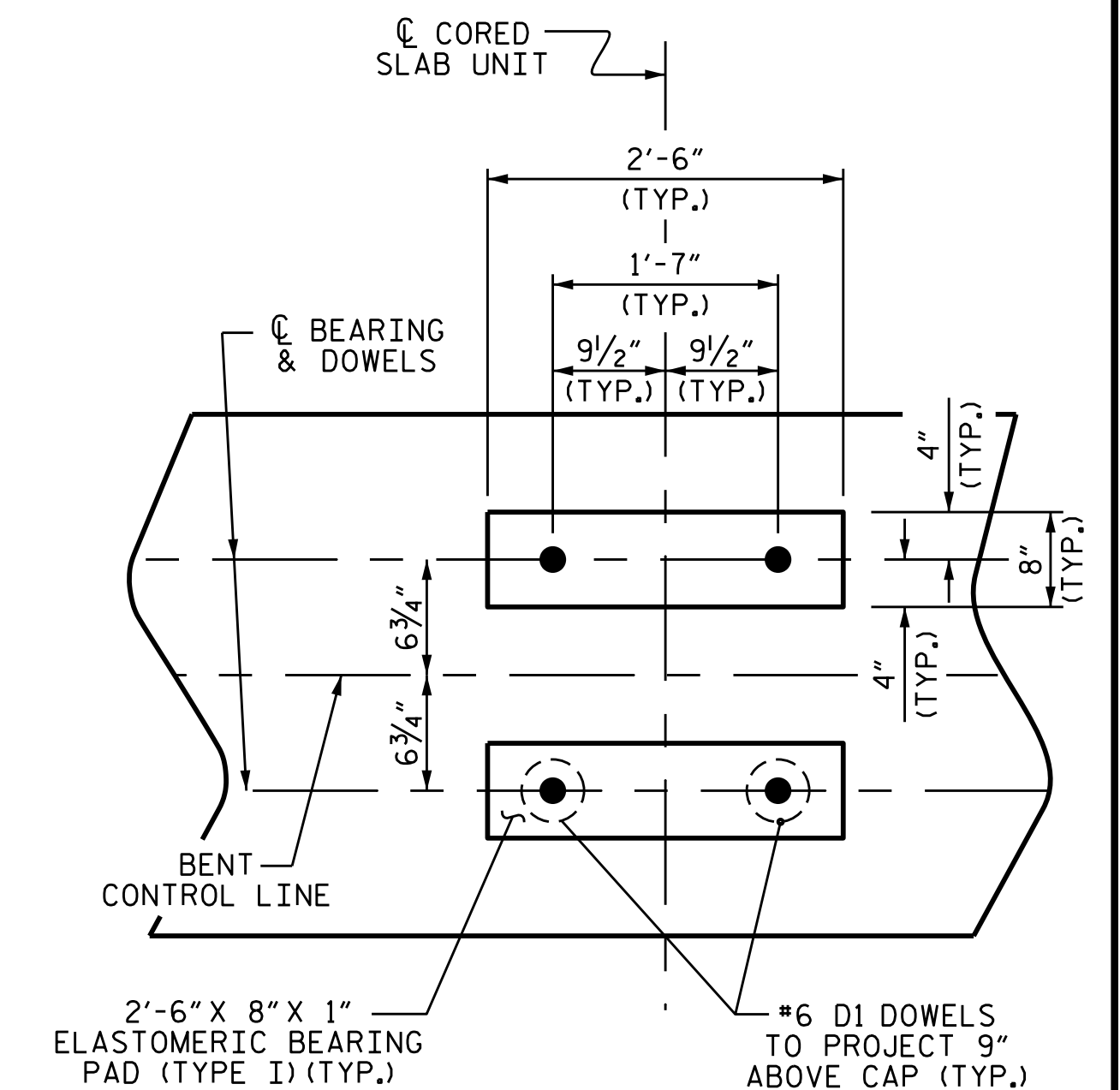
NOTES

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

★ INVERT ALTERNATE STIRRUPS.

FOR ADDITIONAL REINFORCING STEEL IN PP 18 x 0.50 GALVANIZED STEEL PILES, SEE SHEET 3 OF 3.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 33 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

TOP OF PILE ELEVATIONS	
①	48.54
②	48.67
③	48.80
④	48.93
⑤	49.06
⑥	49.19
⑦	49.33

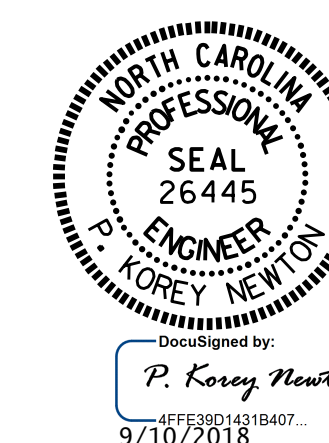
0.025 SLOPE
TOP & BOTTOM OF CAP

PROJECT NO. B-5994

JONES COUNTY

STATION: 17+27.50 -L-

SHEET 1 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1

REVISIONS

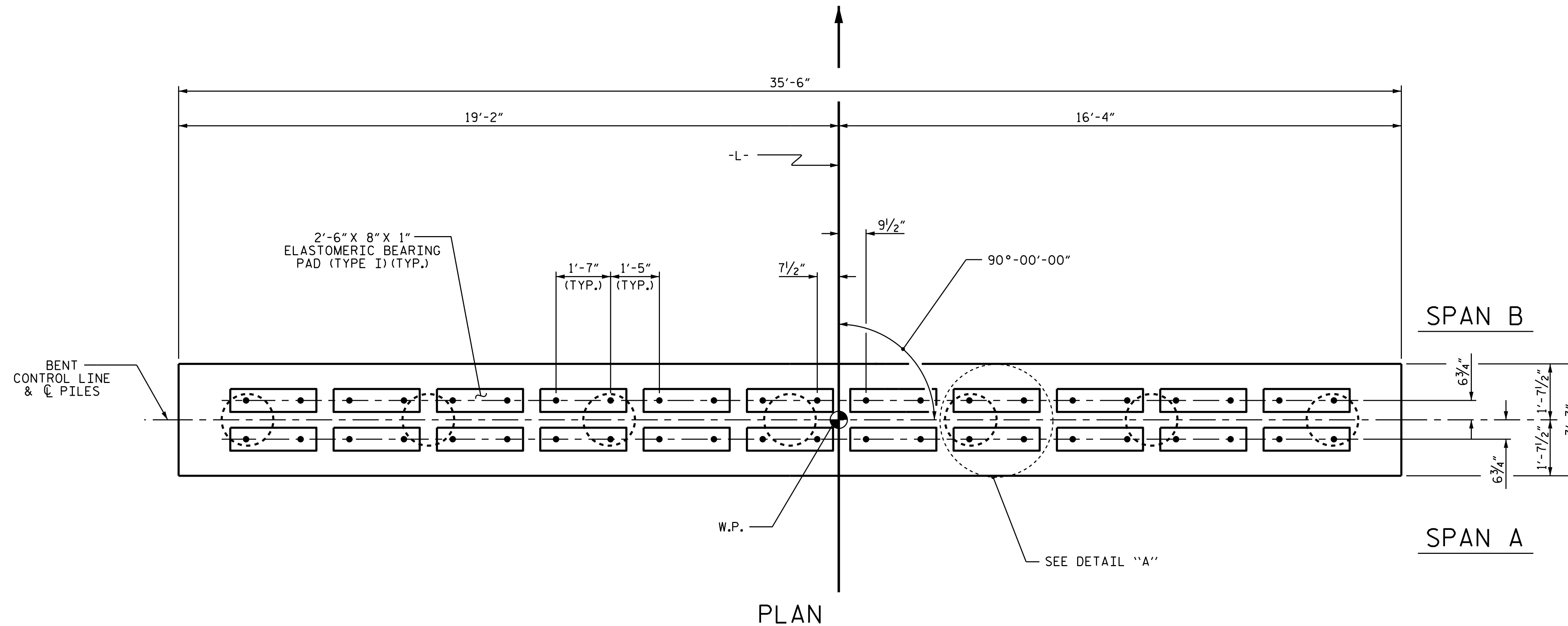
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S-17

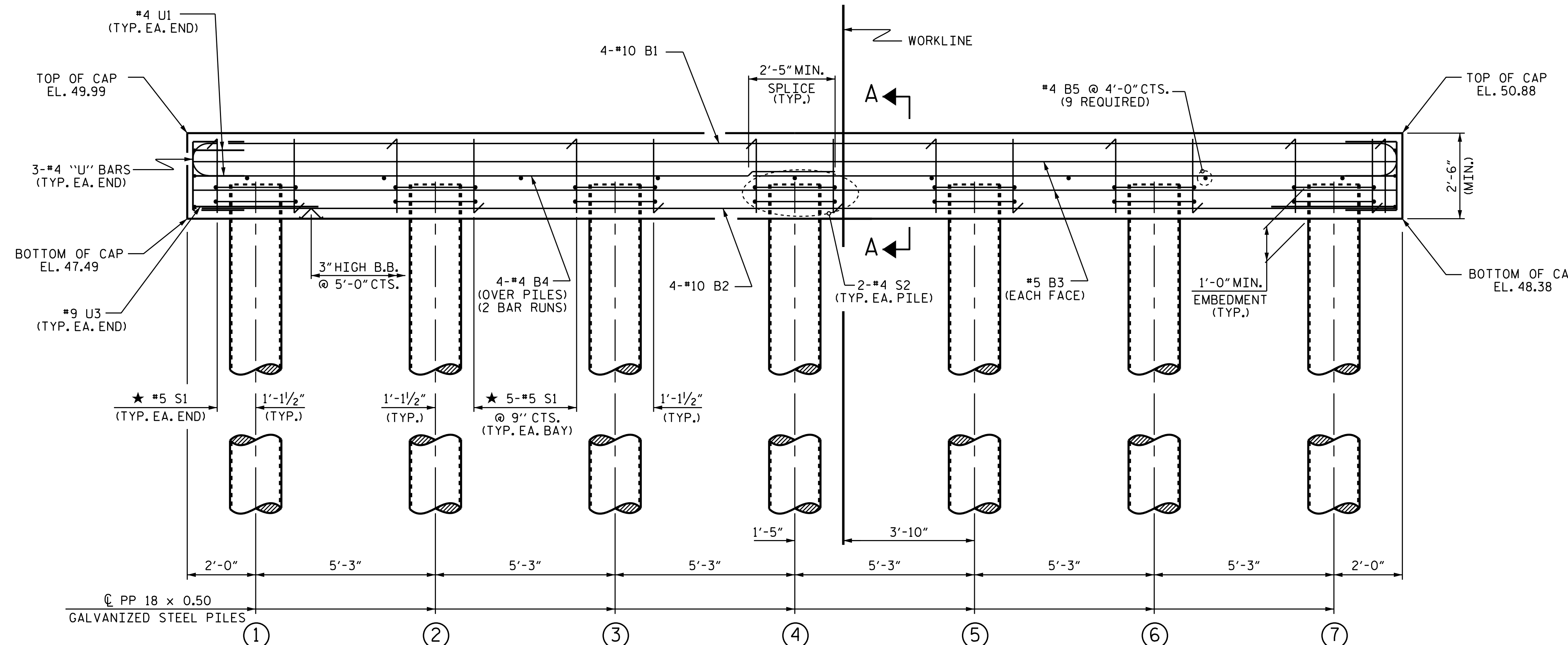
TOTAL SHEETS
22

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STD.NO. 18" PP_BT_33_90S_<60'



PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 3 OF 4

ASSEMBLED BY : W.D. REAMS	DATE : 01/09/18
CHECKED BY : Z. MALIK	DATE : 01/10/18
DRAWN BY : DGE 06/10	REV. 6/17
CHECKED BY : MKT 06/10	MAA/THC

10-SEP-2018 10:01
S:\DPG\Division2\17BP2R77.Jones32\Structures\Plans\B-5994_SMU. B*.510032.dgn
pknewton

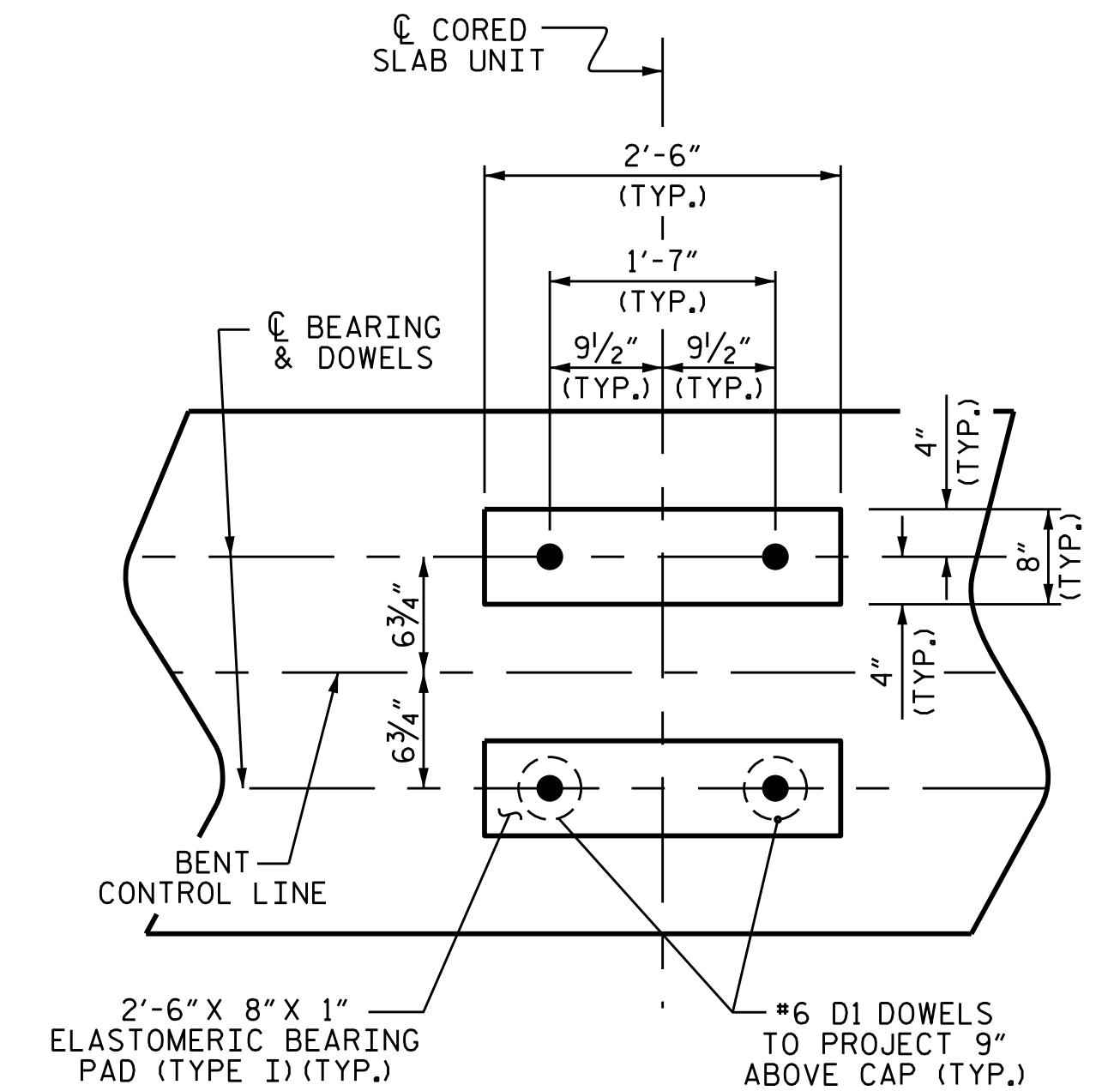
NOTES

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

★ INVERT ALTERNATE STIRRUPS.

FOR ADDITIONAL REINFORCING STEEL IN PP 18 x 0.50 GALVANIZED STEEL PILES, SEE SHEET 3 OF 3.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 33 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

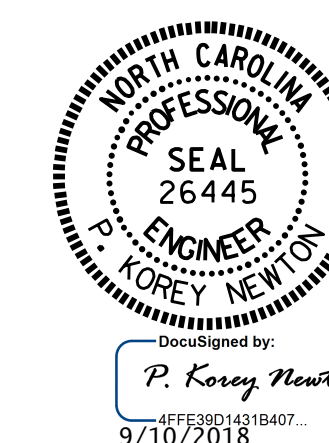


TOP OF PILE ELEVATIONS	
①	48.75
②	48.88
③	49.01
④	49.14
⑤	49.27
⑥	49.41
⑦	49.54

0.025 SLOPE
TOP & BOTTOM OF CAP

PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

SHEET 2 OF 4

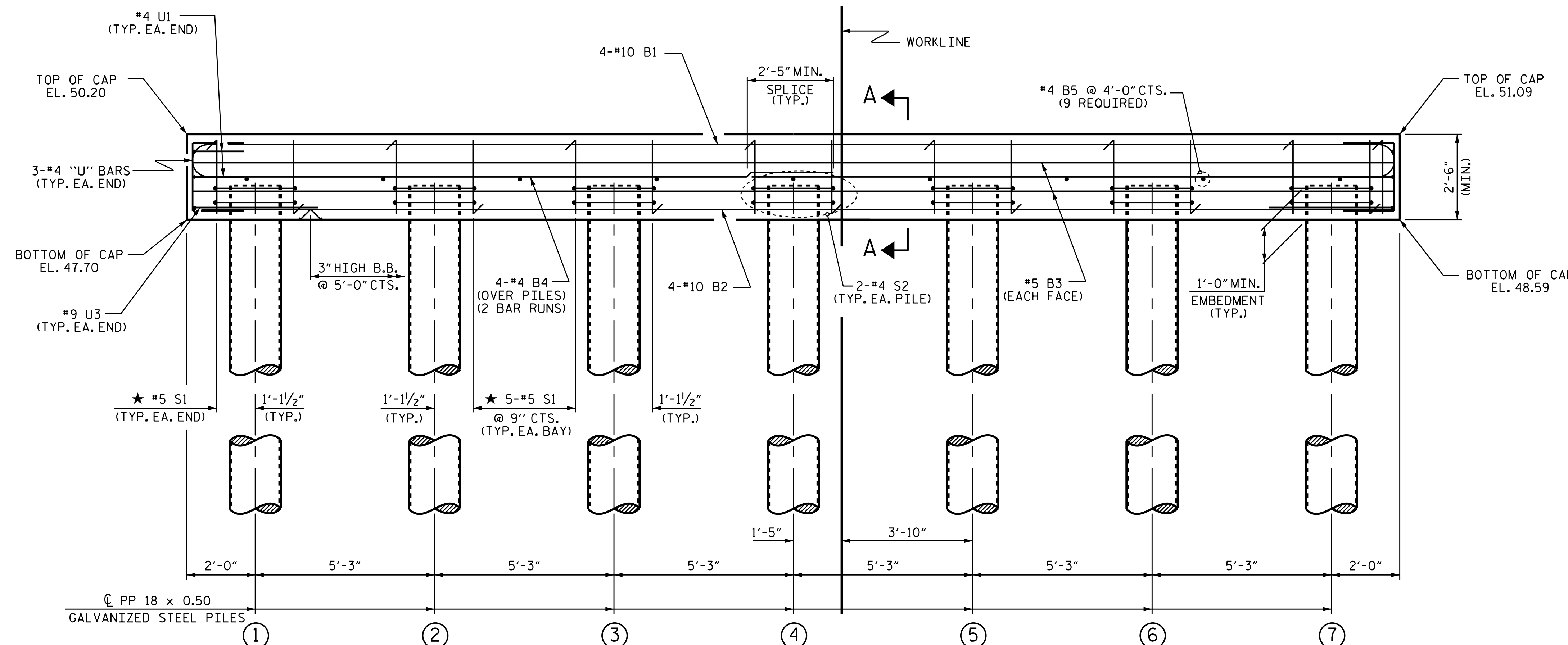
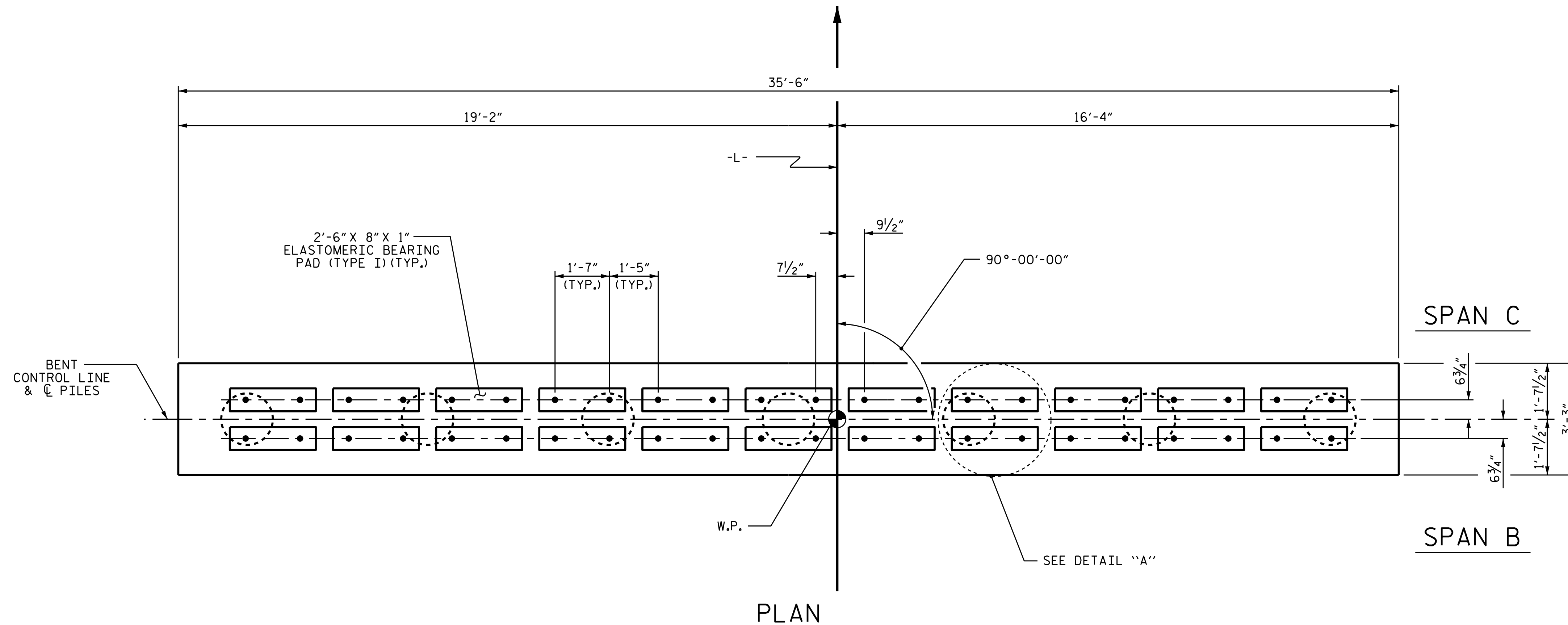


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-18
2			4			TOTAL SHEETS 22

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STD.NO. 18" PP_BT_33_90S_<60'



ASSEMBLED BY : W.D. REAMS DATE : 01/09/18
CHECKED BY : Z. MALIK DATE : 01/10/18
DRAWN BY : DGE 06/10
CHECKED BY : MKT 06/10 REV. 6/17 MAA/THC

10-SEP-2018 10:01
S:\DPG\Division2\17BP2R77.Jones32\Structures\Plans\B-5994_SMU. B*.510032.dgn
pknewton



BENT No.1 PILE EXCAVATION IN SOIL	LIN. FT.	70
BENT No.1 PILE EXCAVATION NOT IN SOIL	LIN. FT.	63
BENT No.2 PILE EXCAVATION IN SOIL	LIN. FT.	63
BENT No.2 PILE EXCAVATION NOT IN SOIL	LIN. FT.	70

BILL OF MATERIAL						
FOR ONE BENT						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	4	#10	1	37'-10"	651	
B2	4	#10	STR	35'-2"	605	
B3	4	#5	STR	35'-2"	147	
B4	8	#4	STR	18'-10"	101	
B5	9	#4	STR	2'-11"	18	
D1	44	#6	STR	1'-6"	99	
S1	32	#5	2	8'-1"	270	
S2	14	#4	3	8'-7"	80	
U1	4	#4	4	5'-10"	16	
U2	4	#4	4	5'-0"	13	
U3	2	#9	4	10'-1"	69	
U4	2	#4	4	4'-2"	6	
REINFORCING STEEL (FOR ONE BENT)					2075 LBS	
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)						
TOTAL CLASS A CONCRETE					▲ 10.2 C.Y.	
PP 18 x 0.50 GALVANIZED STEEL PILES (FOR ONE BENT)						
No. 7				LIN. FT. 385		
PIPE PILE PLATES					NO. 7	
PILE DRIVING EQUIPMENT SETUP FOR PP 18 x 0.50 GALVANIZED STEEL PILES (FOR ONE BENT)						
						NO. 7
PILE REDRIVES						NO. 4

▲ CONCRETE DISPLACED BY THE PP 18 x 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

PROJECT NO. B-5994
JONES COUNTY
 STATION: 17+27.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1 & 2



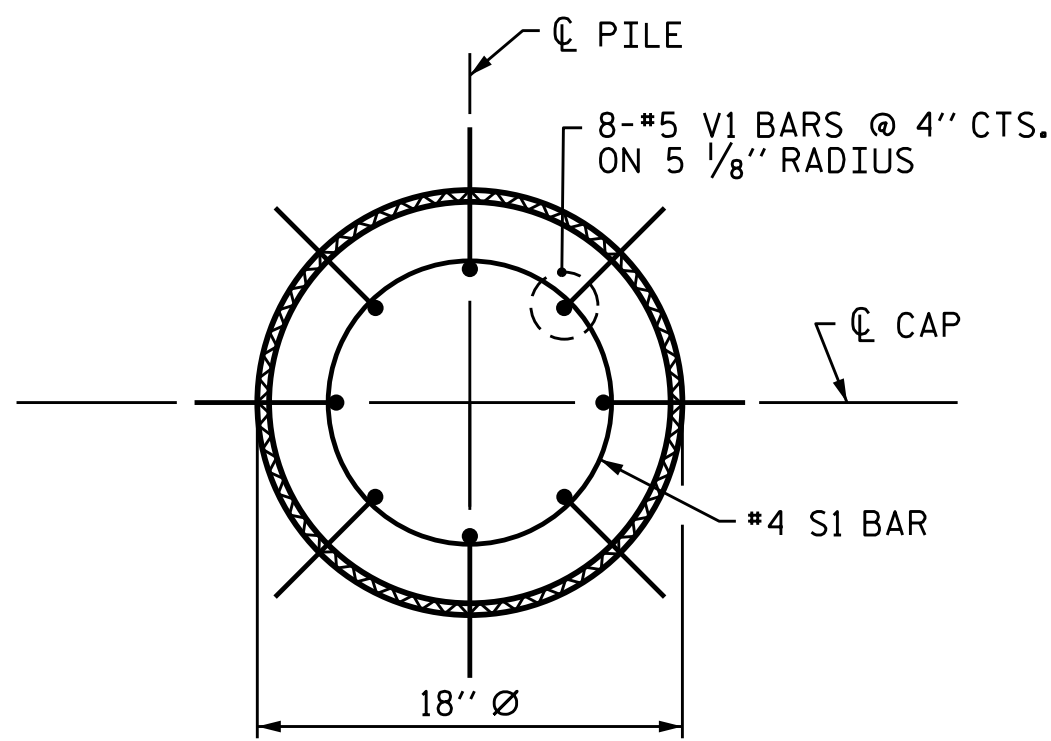
DocuSigned by:
P. Corey Newton
 4FFE39D14318407...
 9/10/2018

ASSEMBLED BY : W.D. REAMS		DATE : 01/09/18
CHECKED BY : Z. MALIK		DATE : 01/10/18
DRAWN BY : DGE 05/10	REV. 6/17	MAA/THC
CHECKED BY : MKT 05/10		

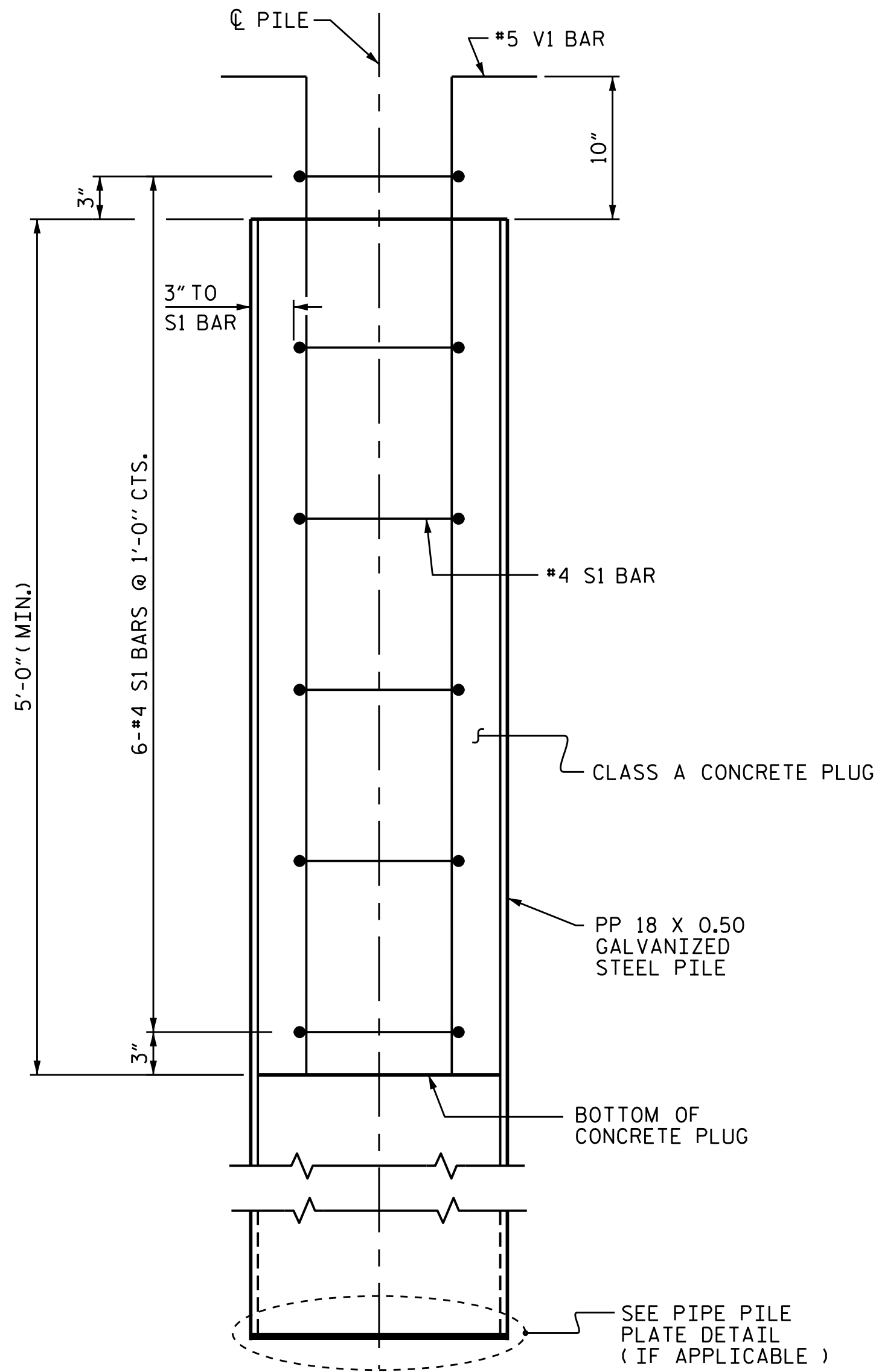
REVISIONS						SHEET NO. S-19
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STD. NO. 18" PP_BT_33_90S_<60'

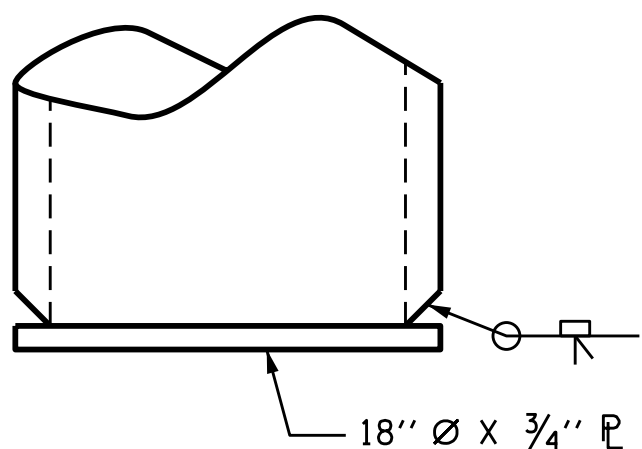


PLAN

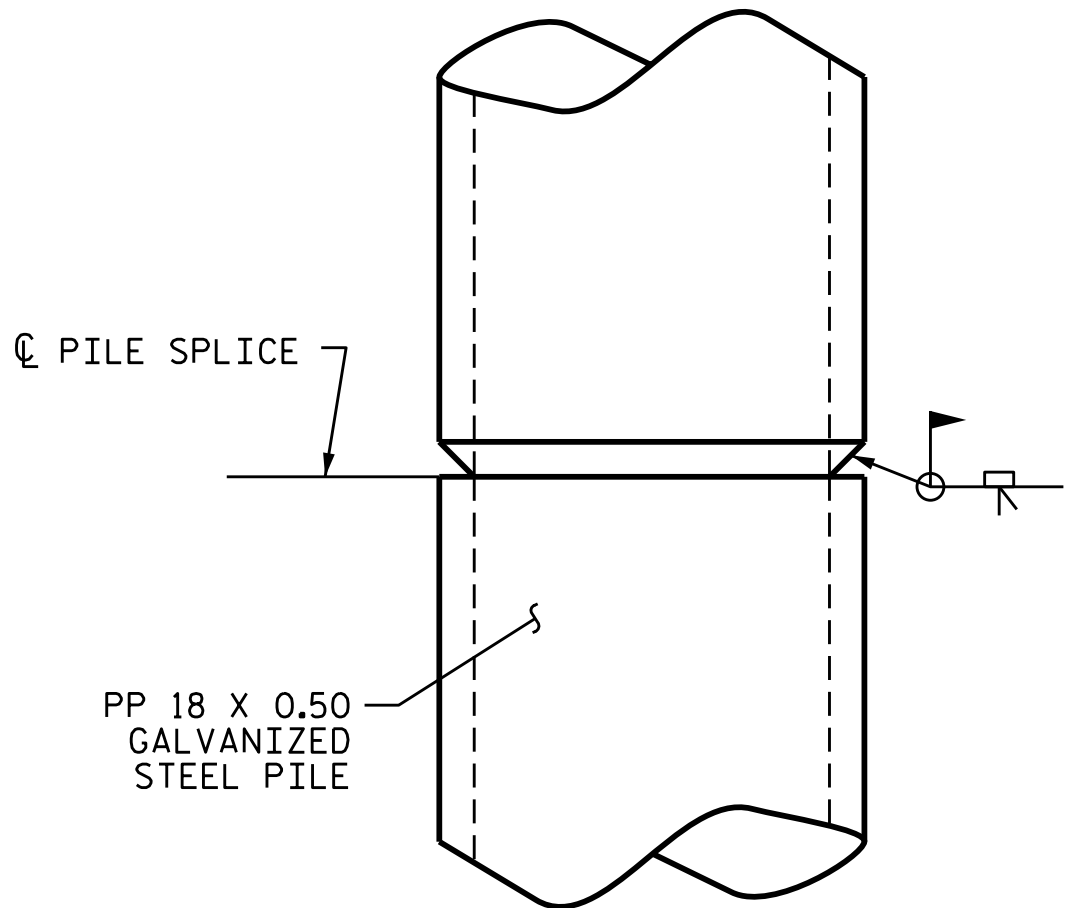


ELEVATION

PP 18 X 0.50 GALVANIZED STEEL PILE
(OPEN OR CLOSED END)



PIPE PILE PLATE DETAIL
(IF APPLICABLE)



PIPE PILE SPLICE DETAIL

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR CLOSED END PIPE PILES, REMOVE ALL SOIL AND WATER FROM INSIDE THE PILES JUST PRIOR TO PLACING REINFORCING STEEL AND CONCRETE FOR THE CONCRETE PLUG.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 18 X 0.50 GALVANIZED STEEL PILES.

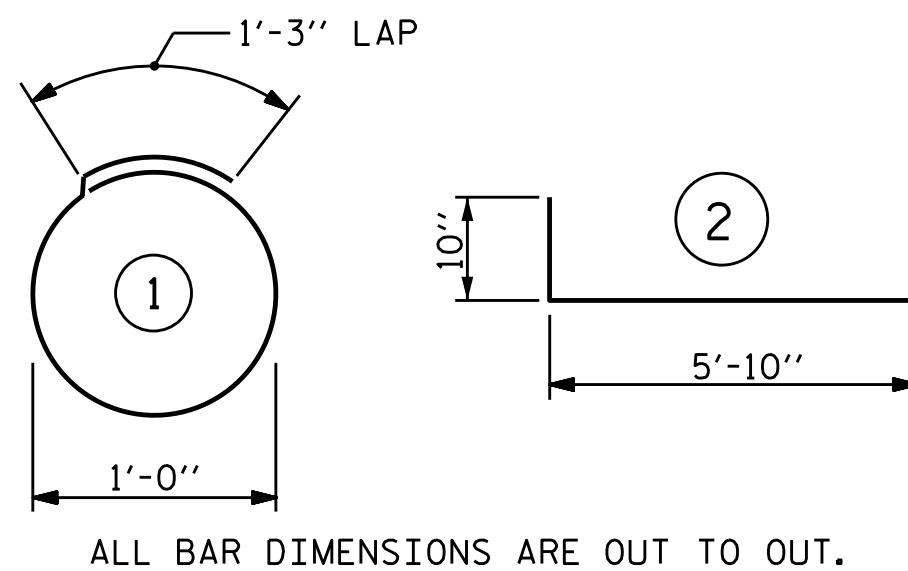
BILL OF MATERIAL FOR ONE
PP 18 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	4'-5"	18
V1	8	#5	2	6'-8"	56
REINFORCING STEEL =				74	lbs

CLASS A CONCRETE

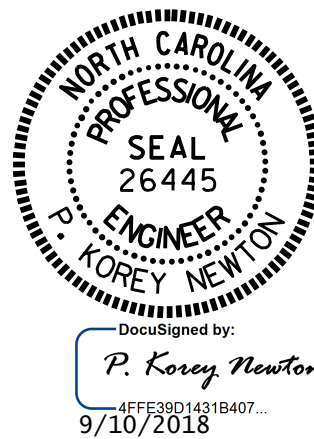
5'-0" MINIMUM PLUG 0.3 CY

BAR TYPES



PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-

SHEET 4 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
18" STEEL PIPE PILE

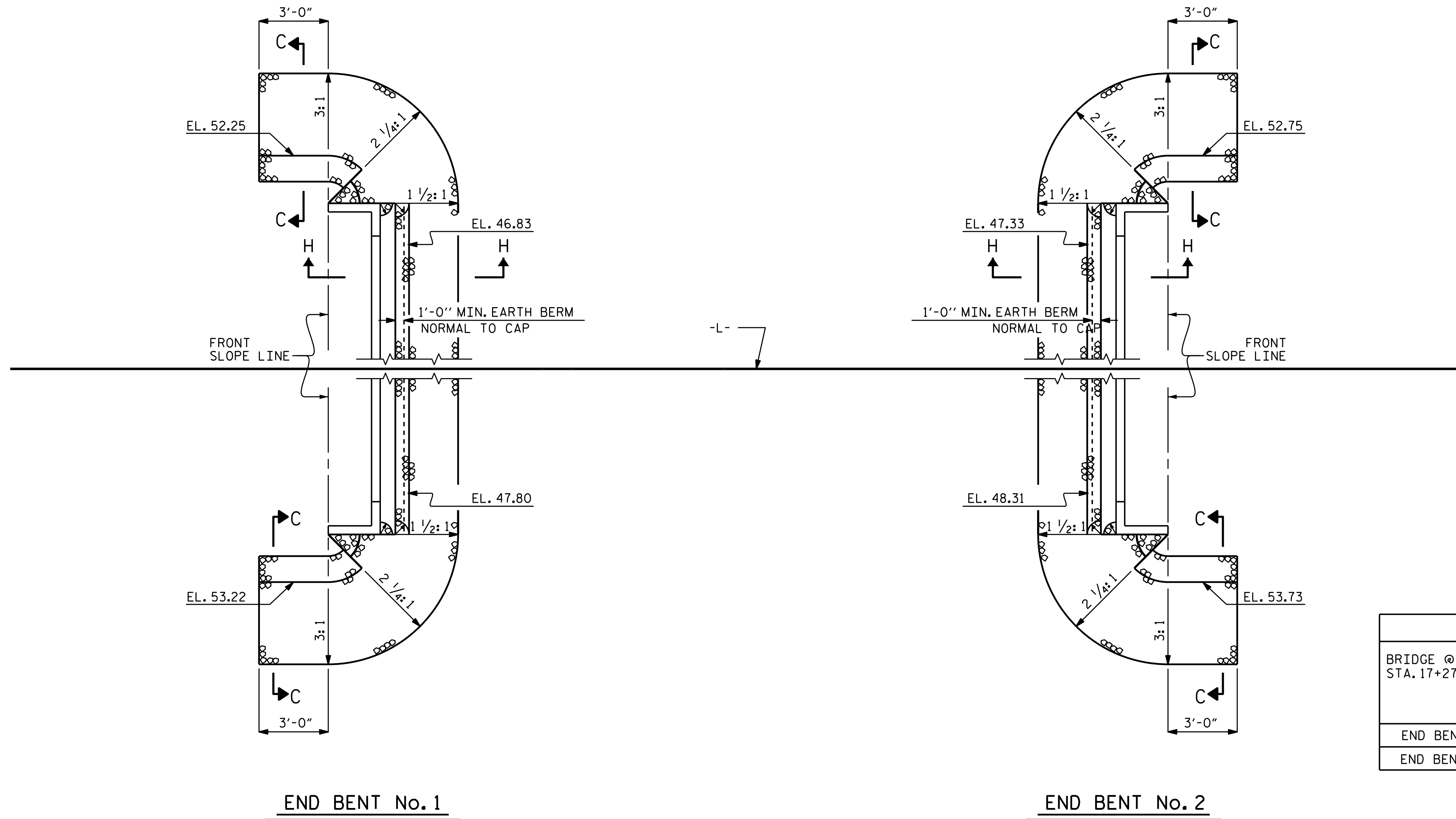
REVISIONS

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

SHEET NO.
S-20
TOTAL SHEETS
22

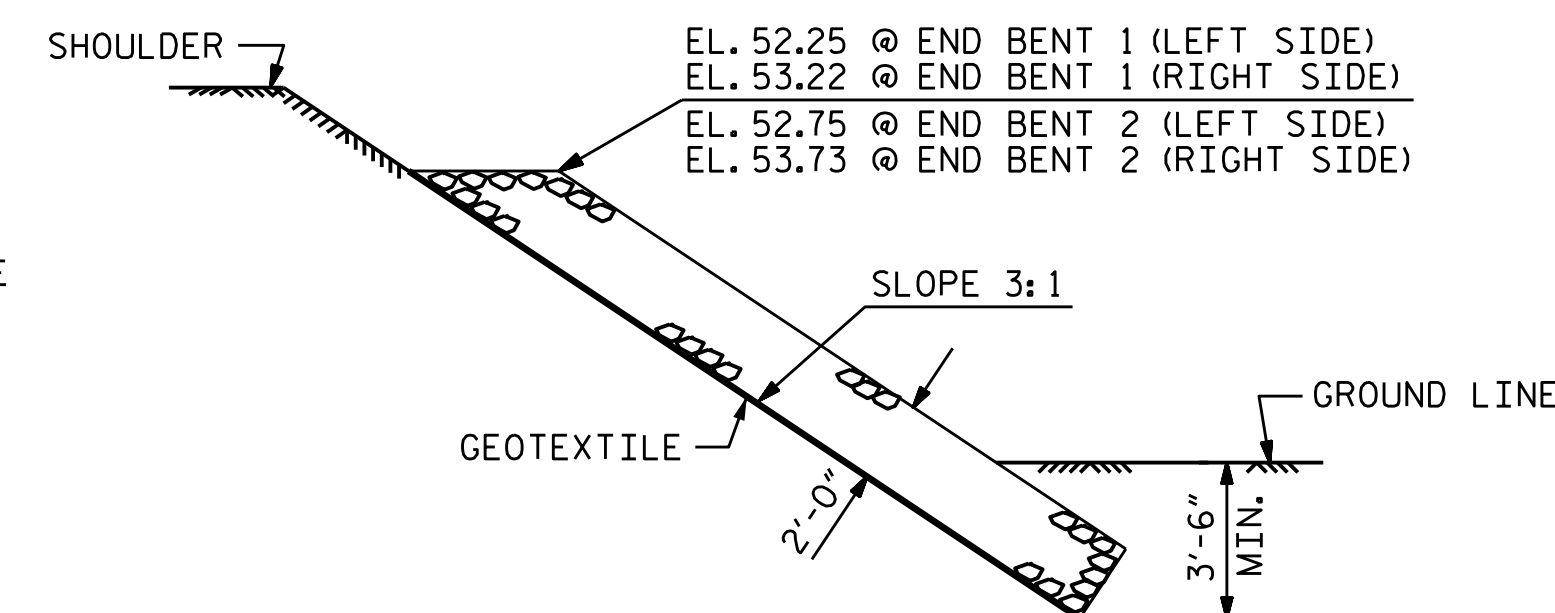
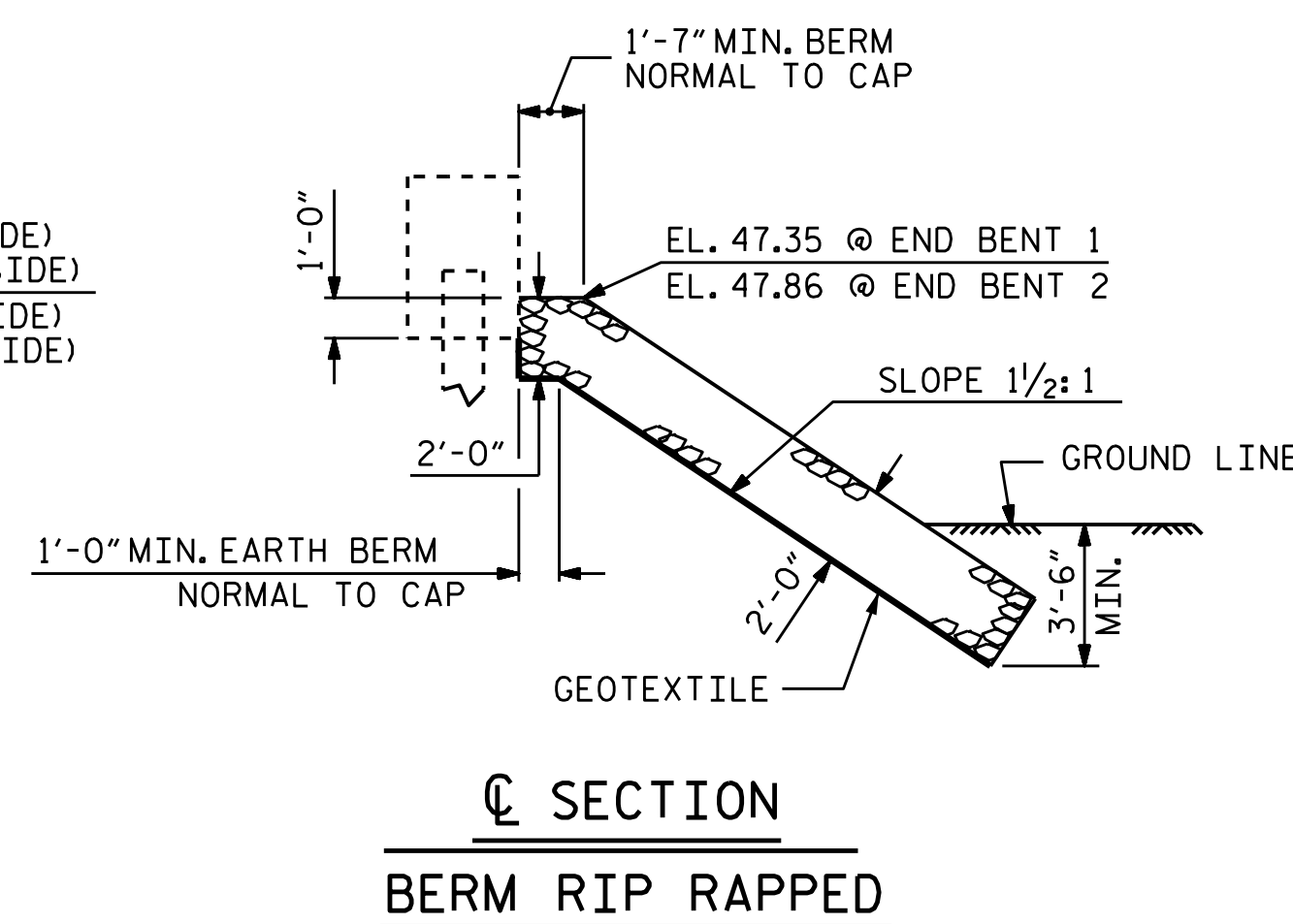
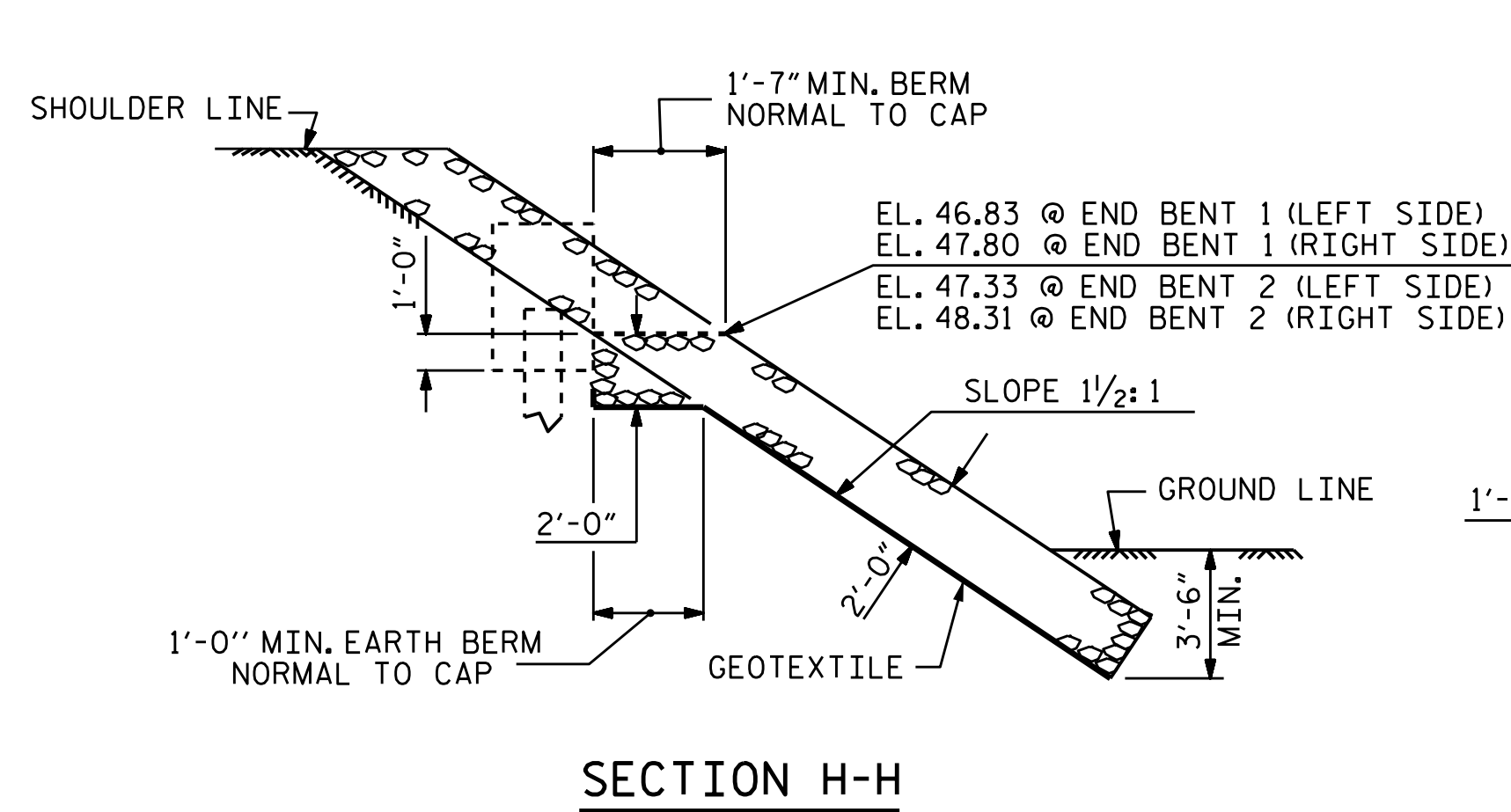
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

ASSEMBLED BY :	W.D. REAMS	DATE :	01/09/18
CHECKED BY :	Z. MALIK	DATE :	01/10/18
DRAWN BY :	RWW	I/OI	REV. 5/1/06R
CHECKED BY :	LES	I/OI	REV. 10/1/11
			REV. 12/17
			MAA/KMM
			MAA/GM
			MAA/THC



NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+27.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	150	165
END BENT 2	145	160



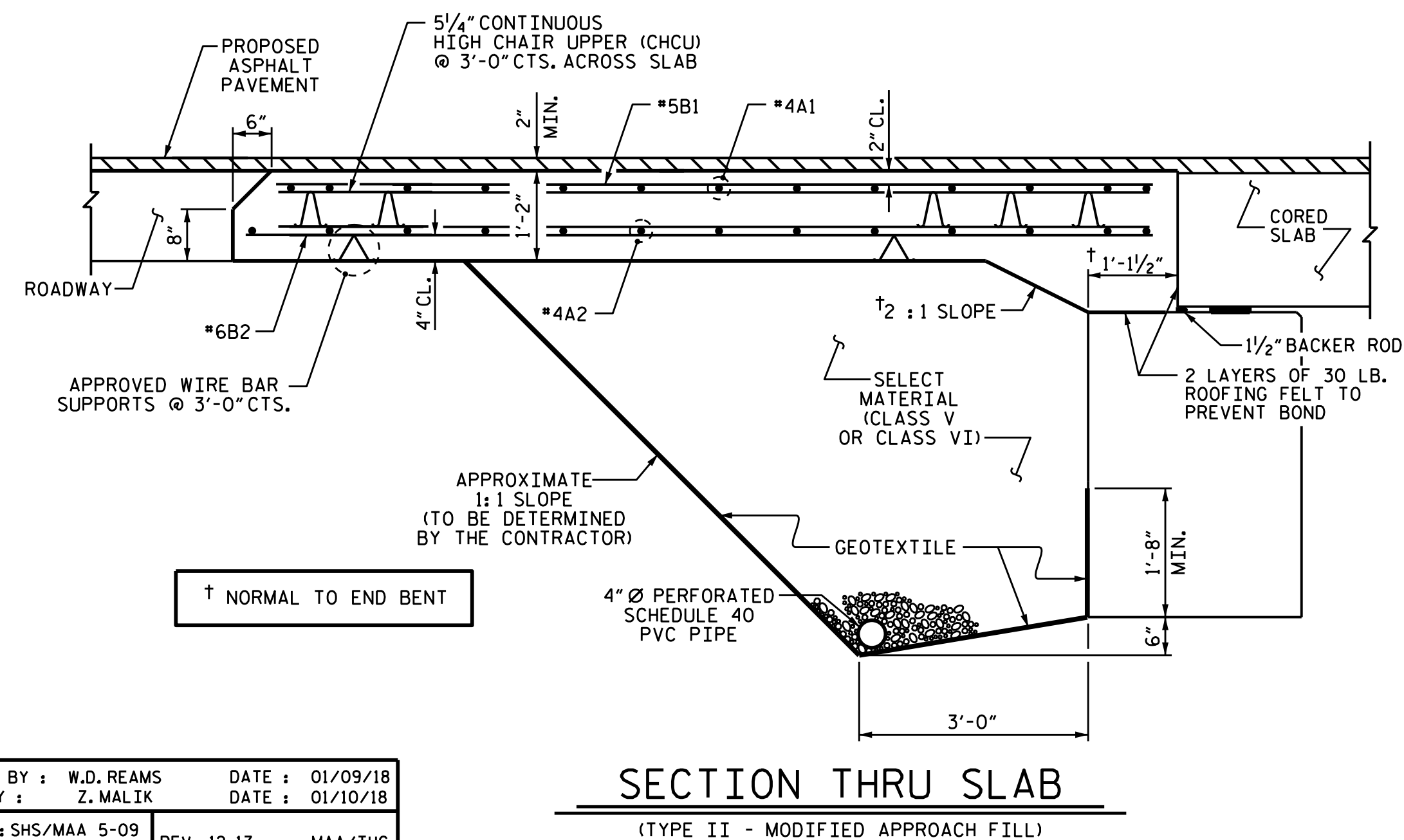
PROJECT NO. B-5994
JONES COUNTY
STATION: 17+27.50 -L-



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-21
2			4			TOTAL SHEETS 22

ASSEMBLED BY : W.D. REAMS	DATE : 01/10/18
CHECKED BY : Z. MALIK	DATE : 01/11/18
DRAWN BY : REK 1/84	REV. 10/1/11 MAA/GM
CHECKED BY : RDU 1/84	REV. 12/21/11 MAA/GM
	REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



ASSEMBLED BY : W.D. REAMS	DATE : 01/09/18
CHECKED BY : Z. MALIK	DATE : 01/10/18
DRAWN BY : SHS/MAA 5-09	REV. 12-17 MAA/THC
CHECKED BY : BCH 5-09	

NOTES

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

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

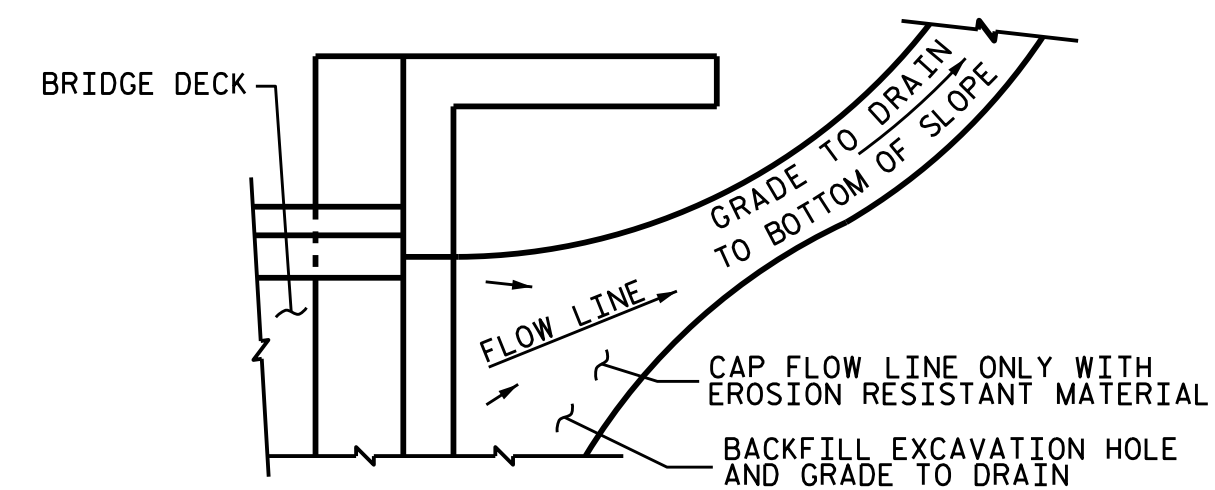
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

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

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

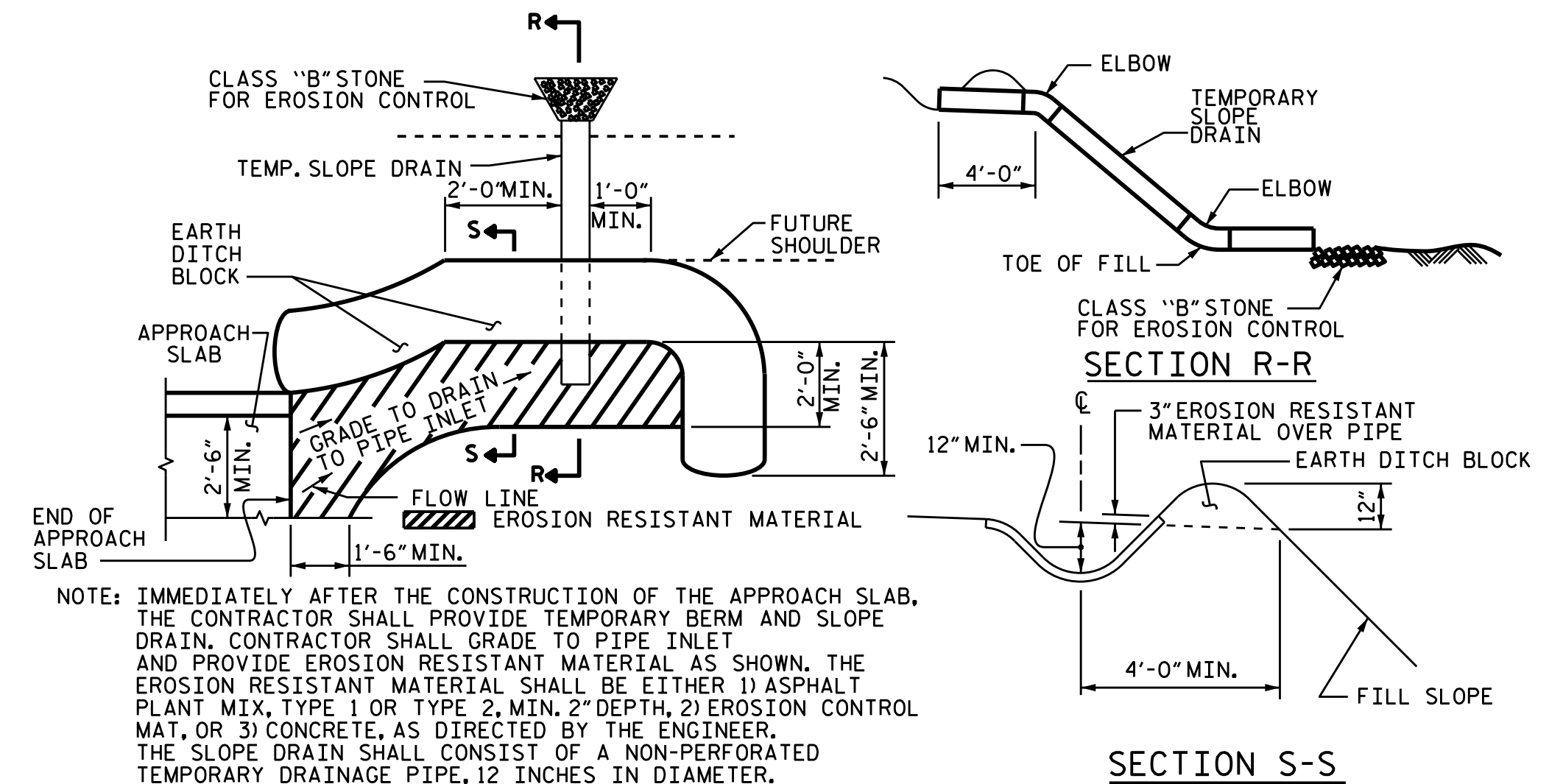
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



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

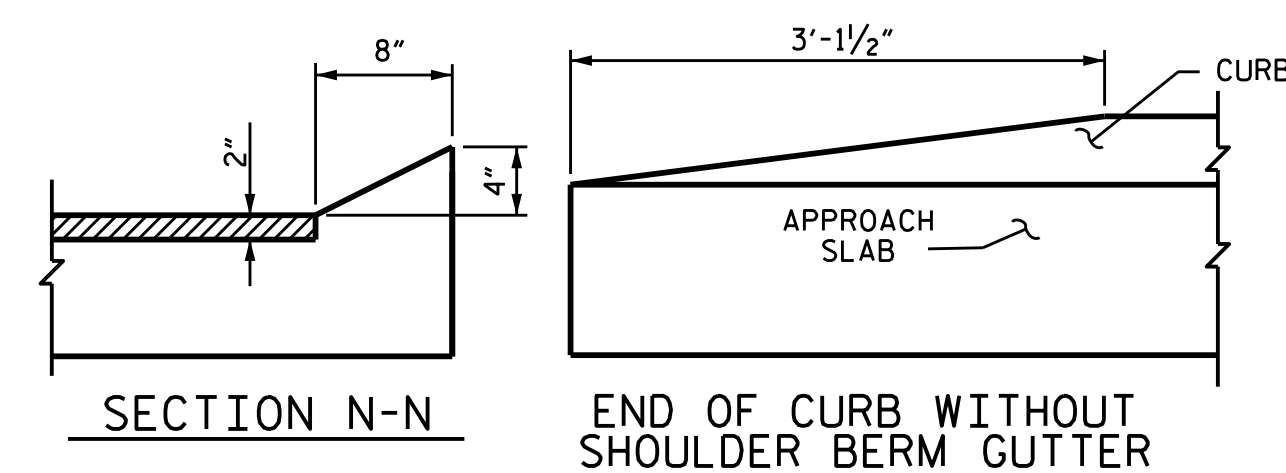


SECTION S-S

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"



DocuSigned by:
P. Corey Newton
4FFE39D1431B407...
9/10/2018

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	*4	STR	16'-11"	294
A2	26	*4	STR	16'-9"	291
* B1	64	*5	STR	11'-2"	745
B2	64	*6	STR	11'-8"	1121
REINFORCING STEEL					LBS. 1412
* EPOXY COATED REINFORCING STEEL					LBS. 1039
CLASS AA CONCRETE					C. Y. 19.5
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	*4	STR	16'-11"	294
A2	26	*4	STR	16'-9"	291
* B1	64	*5	STR	11'-2"	745
B2	64	*6	STR	11'-8"	1121
REINFORCING STEEL					LBS. 1412
* EPOXY COATED REINFORCING STEEL					LBS. 1039
CLASS AA CONCRETE					C. Y. 19.5

PROJECT NO. B-5994
JONES COUNTY
 STATION: 17+27.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			22

STD. NO. BAS_33_90S

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 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. 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.

ENGLISH

JANUARY, 1990

STD. NO. SN