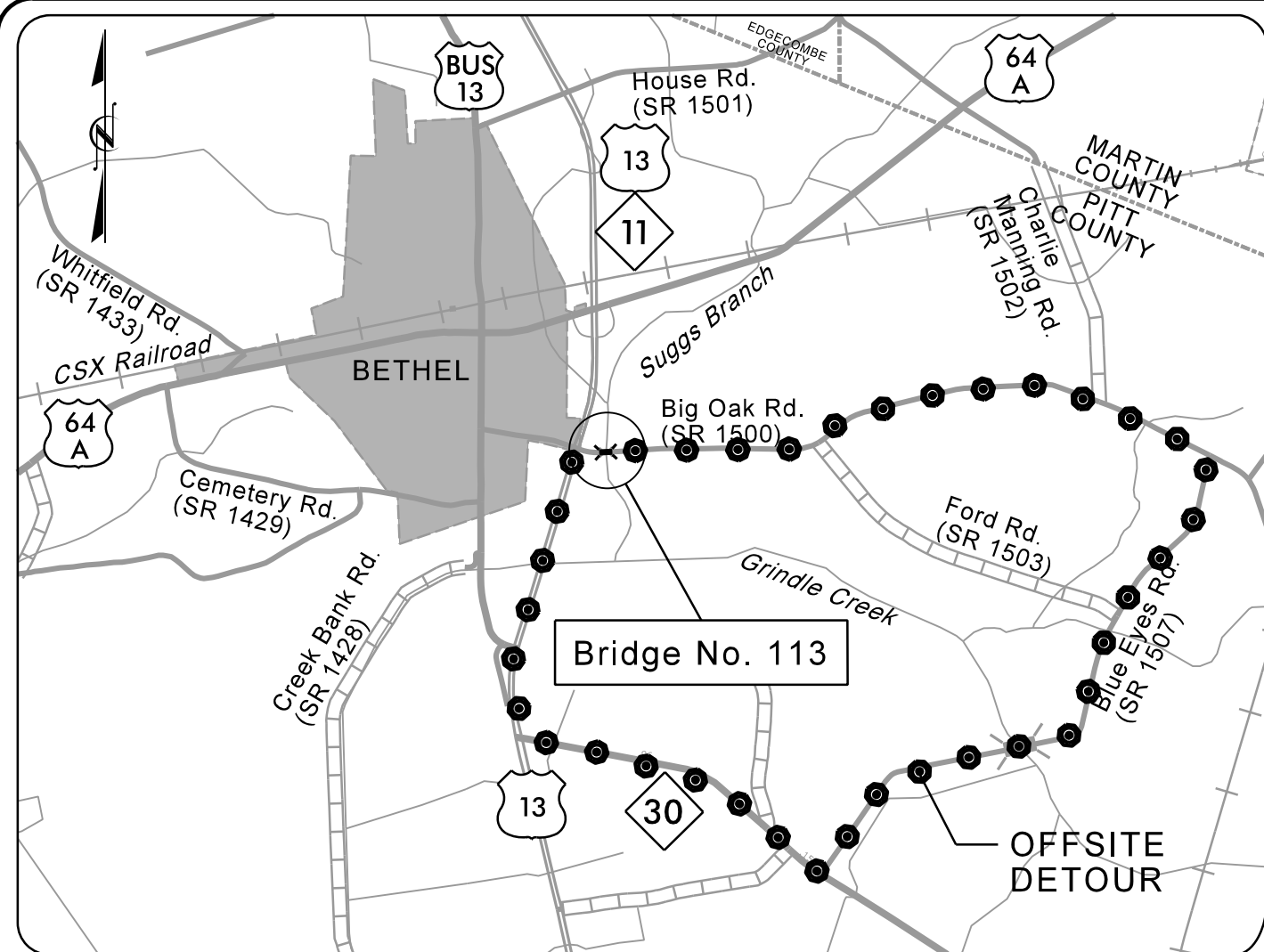


PROJECT : 17BP.2.R.81

CONTRACT:



VICINITY MAP
(NOT TO SCALE)

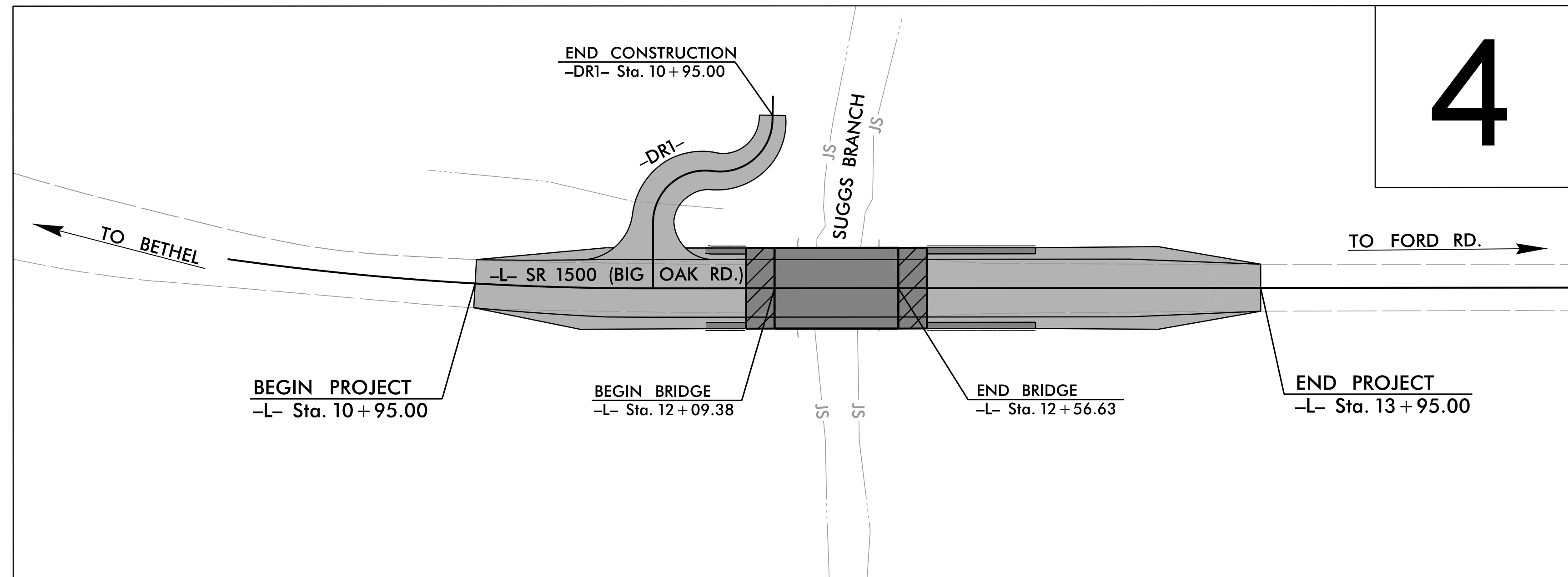
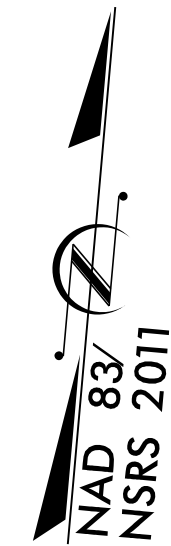
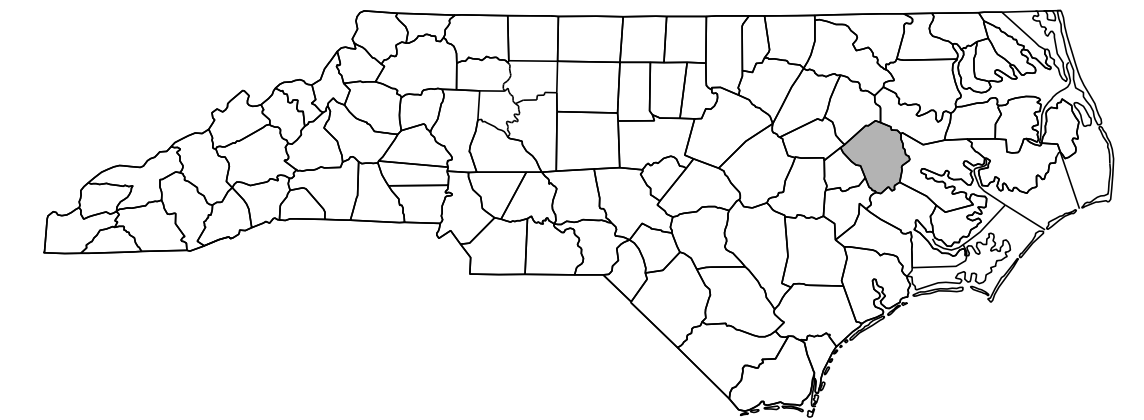
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

**LOCATION: BRIDGE NO. 730113 OVER SUGGS CREEK ON SR 1500
(BIG OAK ROAD)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES AND
RESURFACING**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.81	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17 BP 2.R.81		P.E.	
17 BP 2.R.81		ROW, UTIL.	
17 BP 2.R.81		CONSTR.	



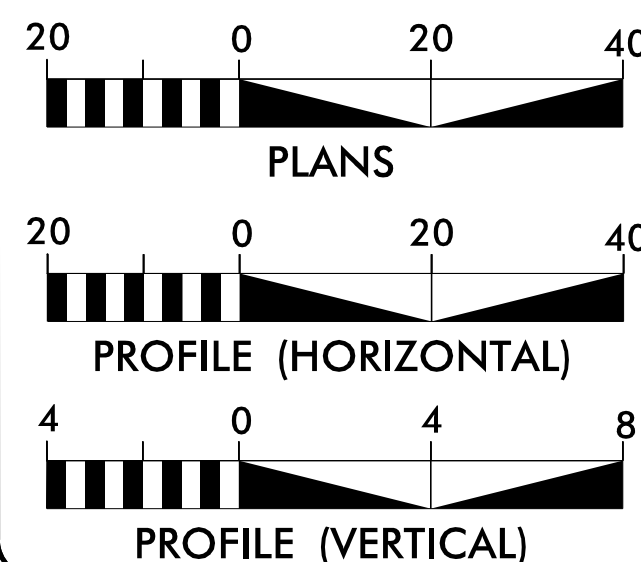
4

RFC
RELEASED FOR CONSTRUCTION

RFC ROADWAY PLANS
DATE: 11/29/2017

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT = 415
T = 6%*
V = 55 MPH
* TTST = 3% DUAL 3%
FUNC CLASS = RURAL LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.2.R.81 = 0.048 mi
LENGTH STRUCTURE TIP PROJECT 17BP.2.R.81 = 0.009 mi
TOTAL LENGTH TIP PROJECT 17BP.2.R.81 = 0.057 mi



RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

DIVISION OF HIGHWAYS

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

JULY 19, 2017

LETTING DATE:

JANUARY 24, 2018

Michael T. Merritt, P.E.

PROJECT ENGINEER

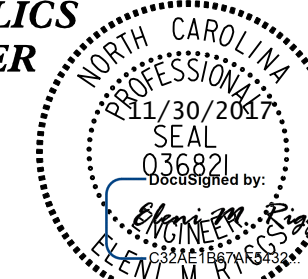
Matthew A. Lamy, P.E.

PROJECT DESIGN ENGINEER

Heather Lane, P.E.

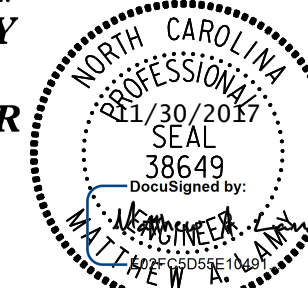
NC DOT CONTACT

HYDRAULICS ENGINEER



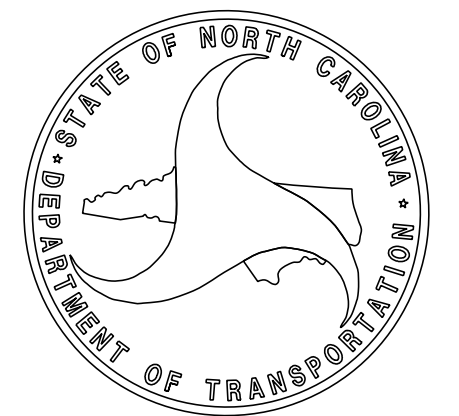
P.E.

SIGNATURE:
ROADWAY DESIGN ENGINEER




P.E.

SIGNATURE:



INDEX of SHEETS, GENERAL NOTES, and LIST of STANDARDS

PROJECT REFERENCE NO. <i>17BP.2.R.8J</i>	SHEET NO. <i>1A</i>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
1C-2	FINAL ROW / EASEMENT POINTS
1D	CENTERLINE COORDINATE LIST
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2D-1	DRAINAGE DETAILS
3B-1	GUARDRAIL, EARTHWORK, & PAVEMENT REMOVAL SUMMARIES
3D-1	DRAINAGE SUMMARY
3P-1	PARCEL INDEX SHEET
4	PLAN/PROFILE SHEET
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1 THRU RF-2	REFORESTATION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-15	STRUCTURE PLANS

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	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.01	Bridge Approach Fills - Type I Standard Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.02	Driveway Turnout - Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES

EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

Century Link (Telephone & Fiber Optics)

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 CONTRACT.

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

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

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite RW Marker	-----
Proposed Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

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	☼
Hedge	-----
Woods Line	-----

Orchard	☼
Vineyard	□ 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	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	-----

UTILITIES:

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

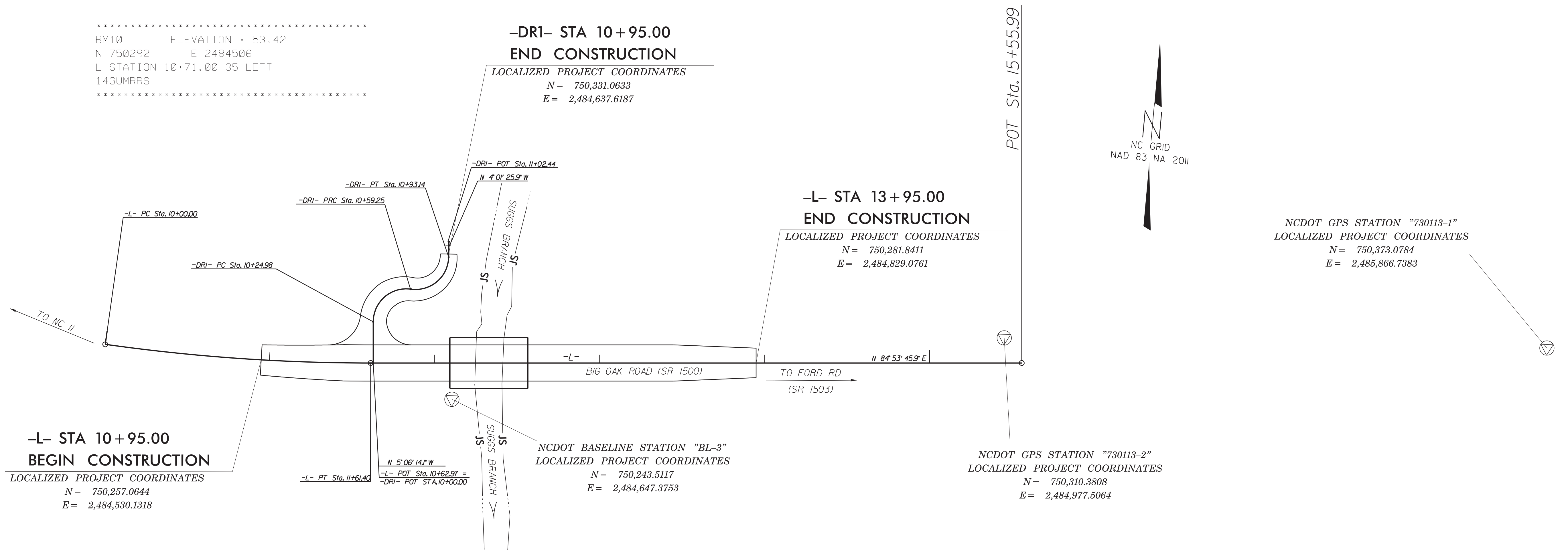
SURVEY CONTROL SHEET 17BP.2.R.81

CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL3		BL-3	750243.5117	2484647.3753	52.91	12+10.61	22.01 RT
	7301132	GPS MON	750310.3808	2484977.5064	53.06	15+45.38	15.22 LT
	7301131	GPS MON	750373.0784	2485866.7383	58.02	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

 BM10 ELEVATION = 53.42
 N 750292 E 2484506
 L STATION 10+71.00 35 LEFT
 14GUMRRS



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "730113-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 750,310.3808(ft) EASTING: 2,484,977.5064(ft) ELEVATION: 53.06(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999921396

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "730113-2" TO -L- STATION IS S 83° 12' 13.54" W 450.54 (ft)

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

NOTE: DRAWING NOT TO SCALE

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.GOV/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.gov/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 TIP 730113_LS_CONTROL.TXT

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

⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

SURVEY CONTROL SHEET 17BP.2.R.81

FINAL ROW /EASEMENT POINTS

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.81	IC-2
LOCATION AND SURVEYS	

ROW MARKER PERMANENT EASEMENT - E

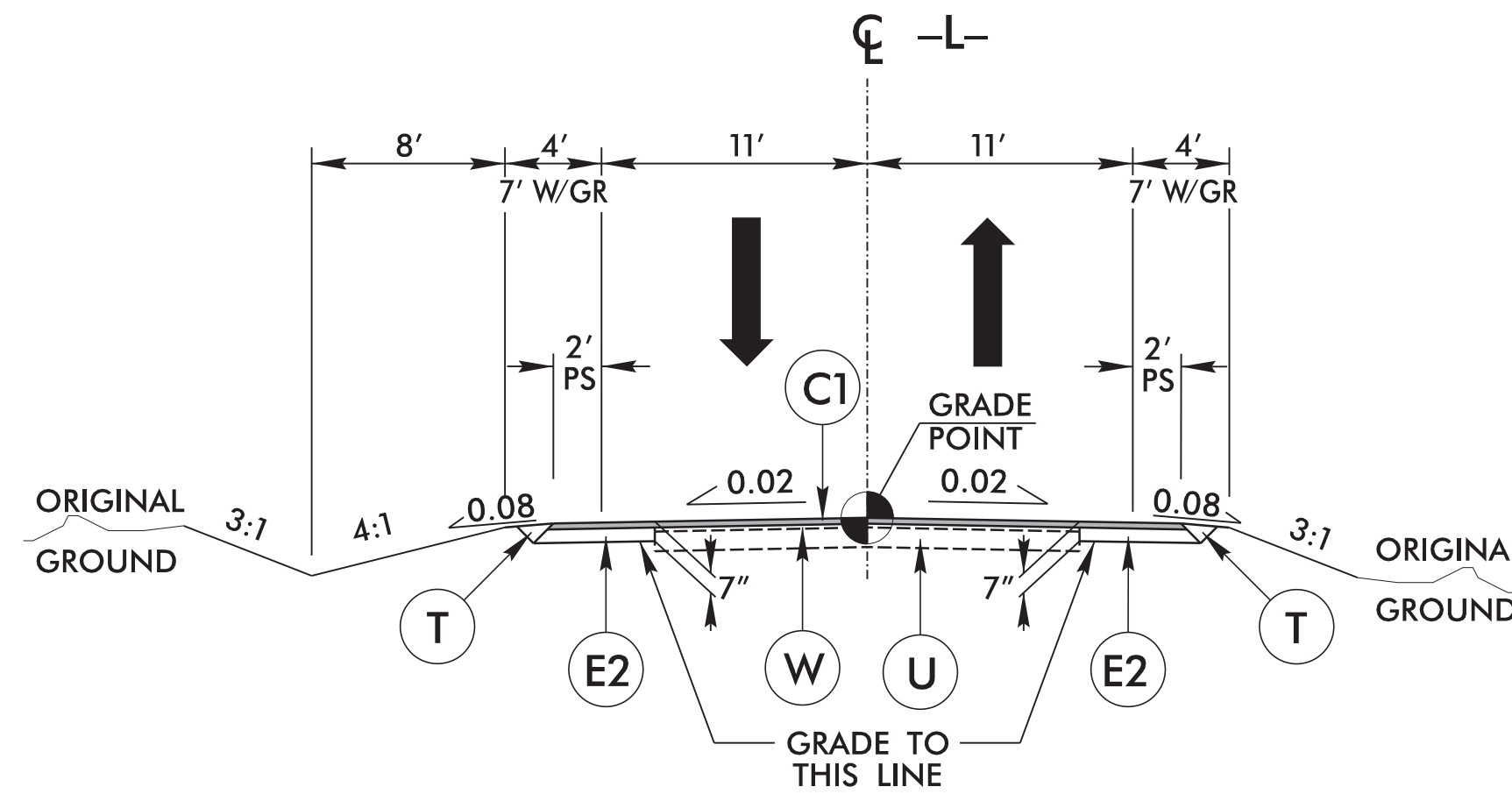
ALIGN	STATION	OFFSET	NORTH	EAST
L	12+90.00	40.00	750232.6586	2484728.0510
L	12+90.00	30.00	750242.6190	2484727.1610
L	13+10.00	30.00	750244.3982	2484747.0820
L	13+10.00	40.00	750234.4379	2484747.9720
L	13+65.00	-30.00	750309.0533	2484796.5260
L	13+50.00	-37.00	750314.6911	2484780.9630
L	12+55.00	-55.00	750324.1682	2484684.7380
L	12+37.07	-39.16	750306.7916	2484668.2880
L	11+25.00	-40.00	750298.3295	2484557.8060
L	11+25.00	-30.01	750288.3540	2484558.3790

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	6" ABC
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT

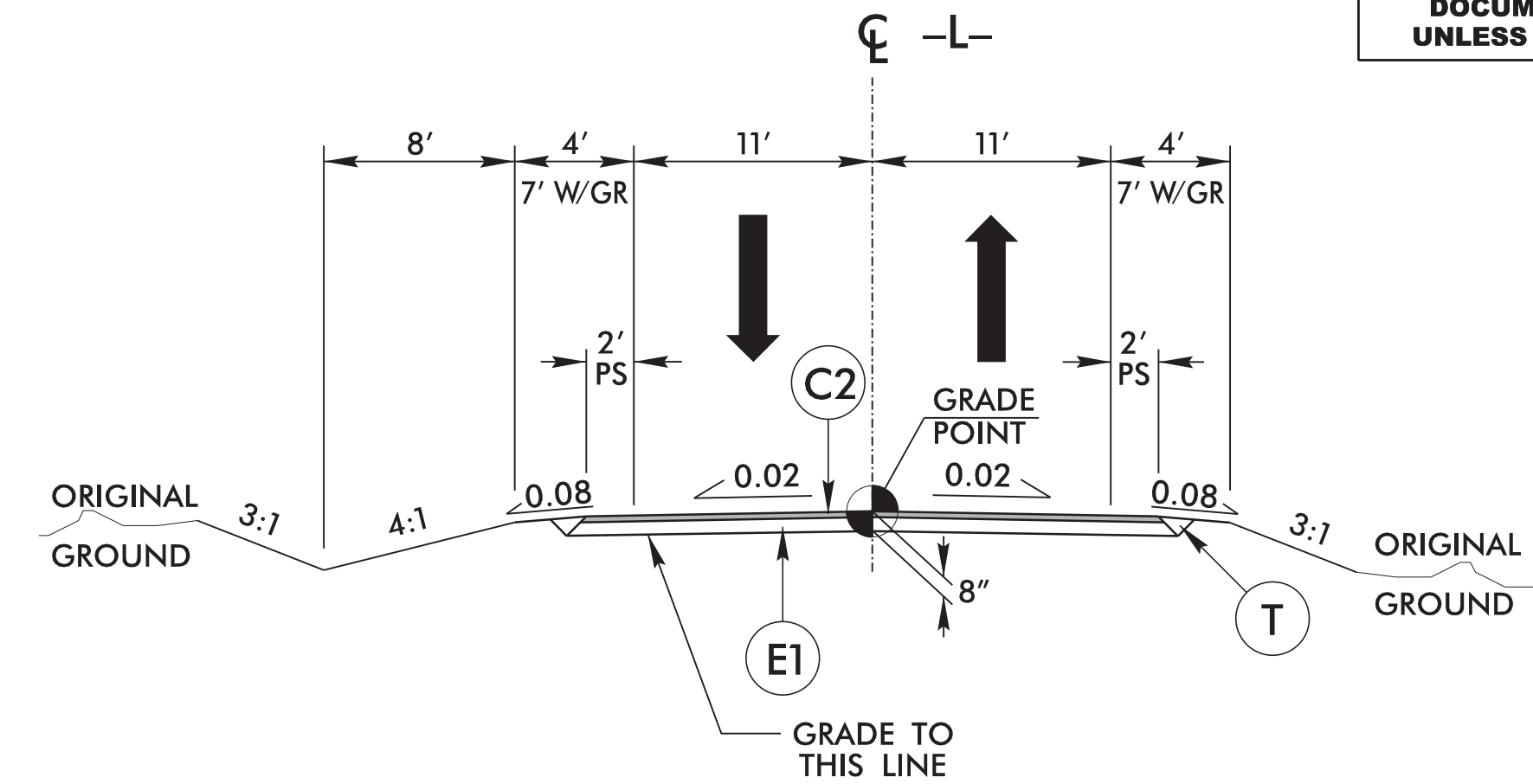
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. 17BP.2.R.81	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



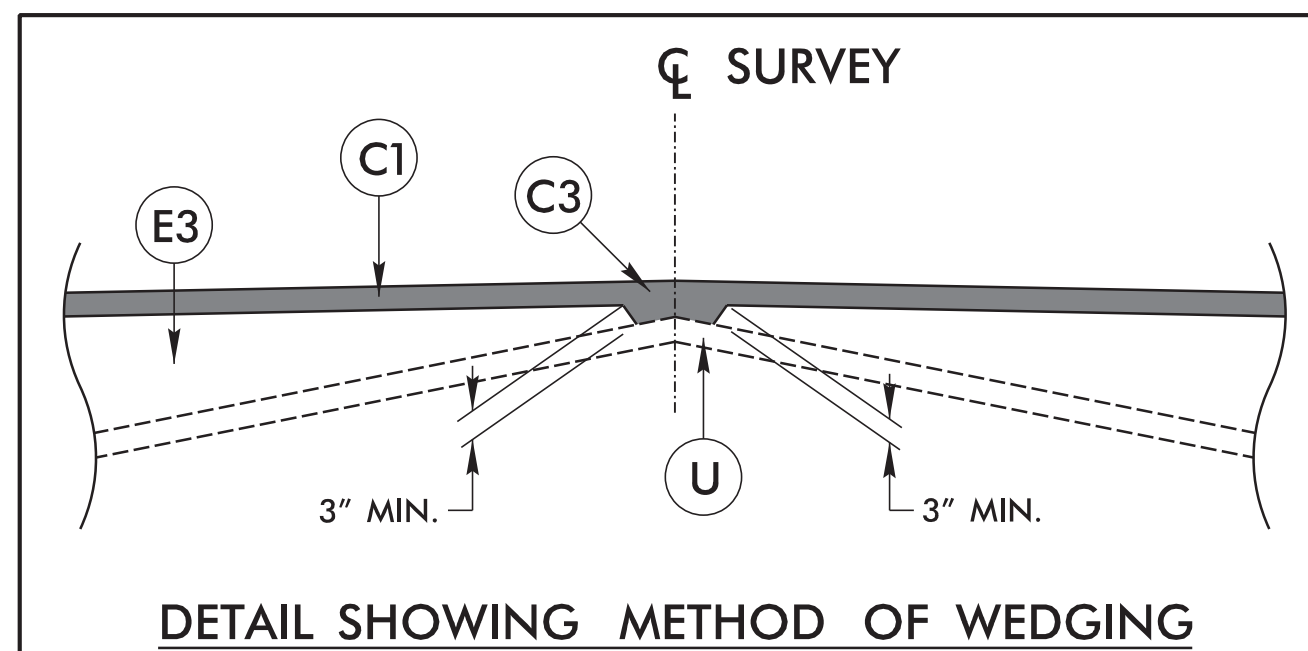
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
 -L- STA. 10+95.00 TO 11+60.00
 -L- STA. 13+10.00 TO 13+95.00

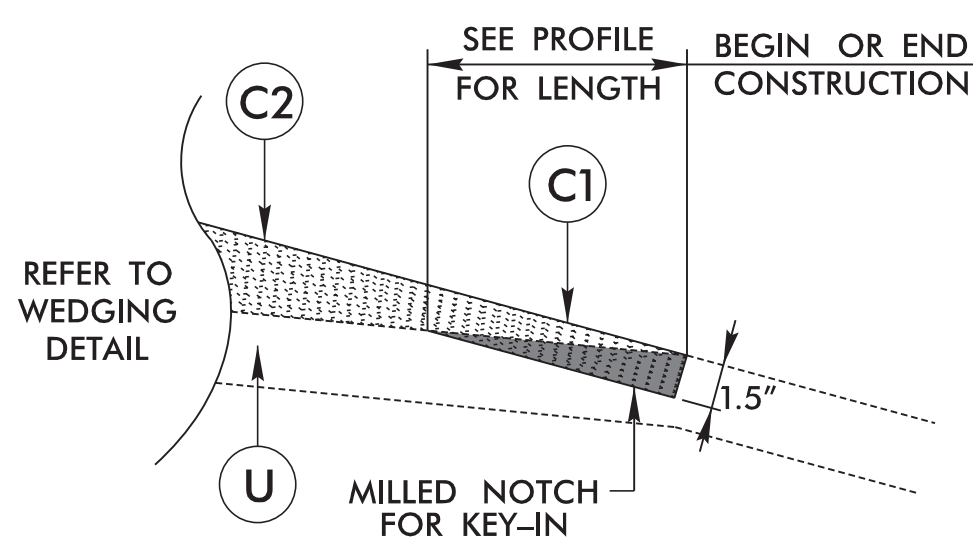


TYPICAL SECTION NO. 2

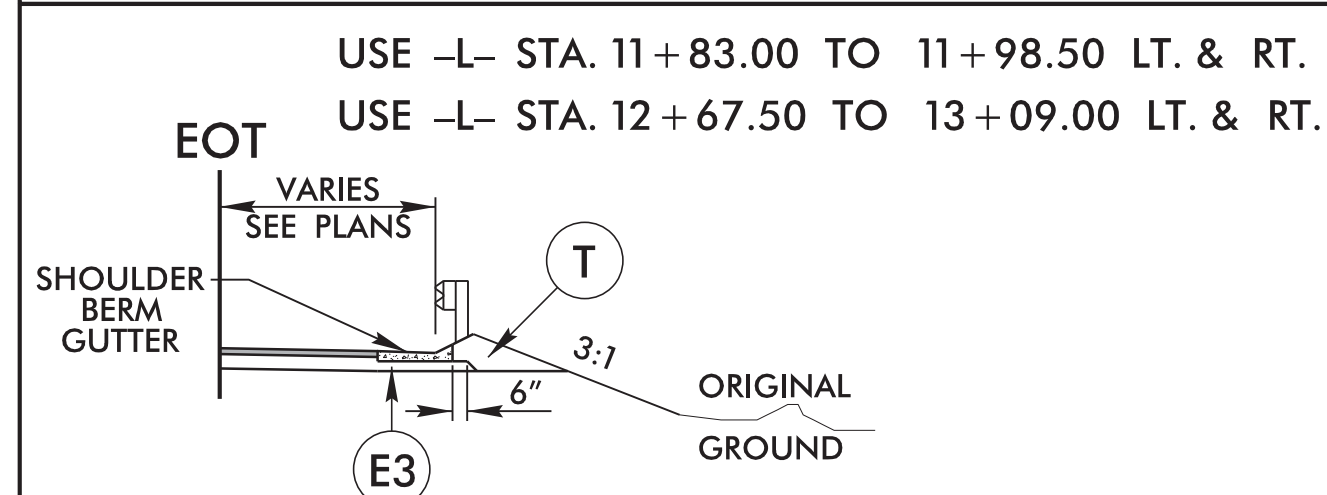
USE TYPICAL SECTION NO. 2
 -L- STA. 11+60.00 TO 12+09.38 (BEGIN BRIDGE)
 -L- STA. 12+56.63 (END BRIDGE) TO 13+10.00



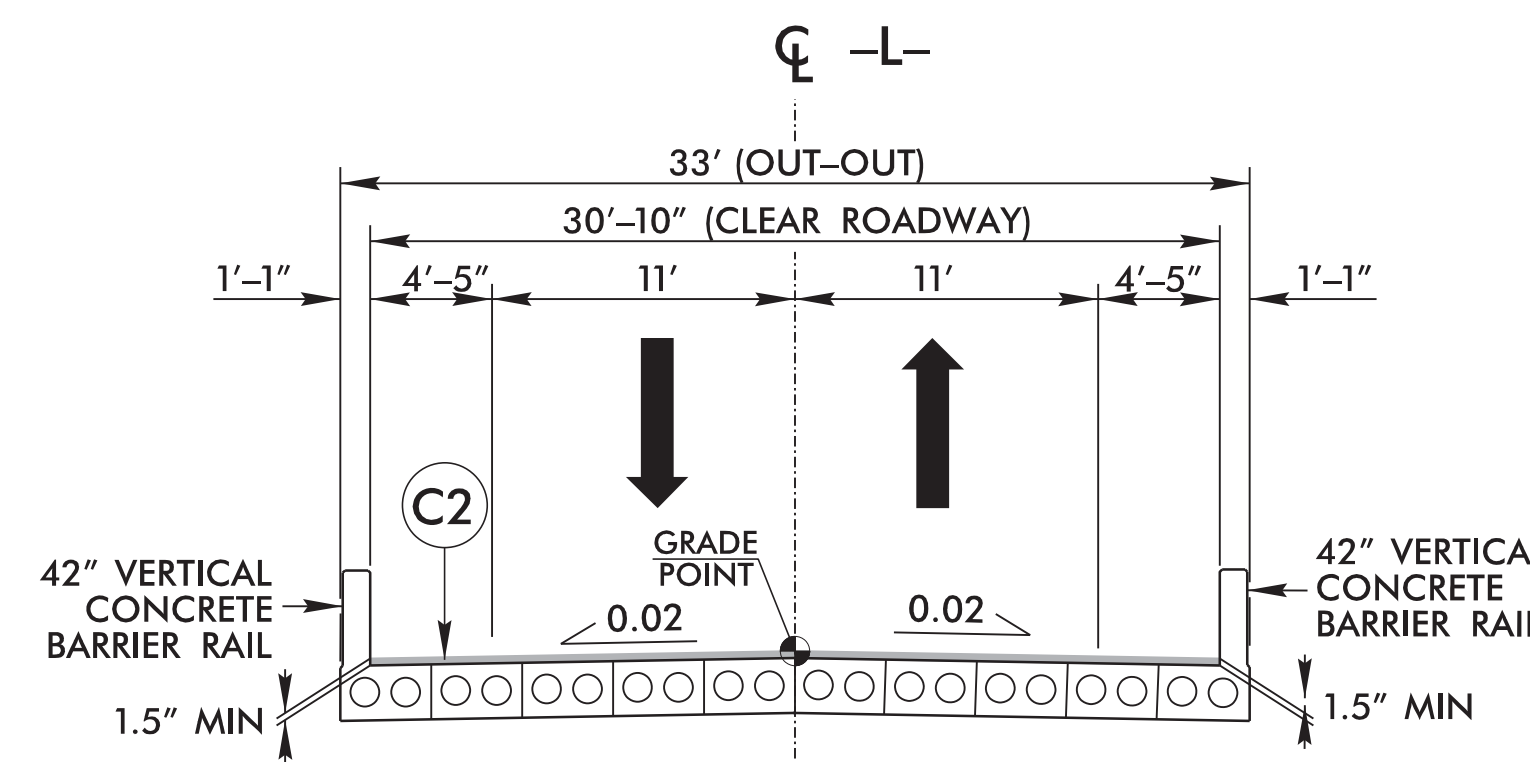
DETAIL SHOWING METHOD OF WEDGING



DETAIL SHOWING TIE-INS (MILLING)

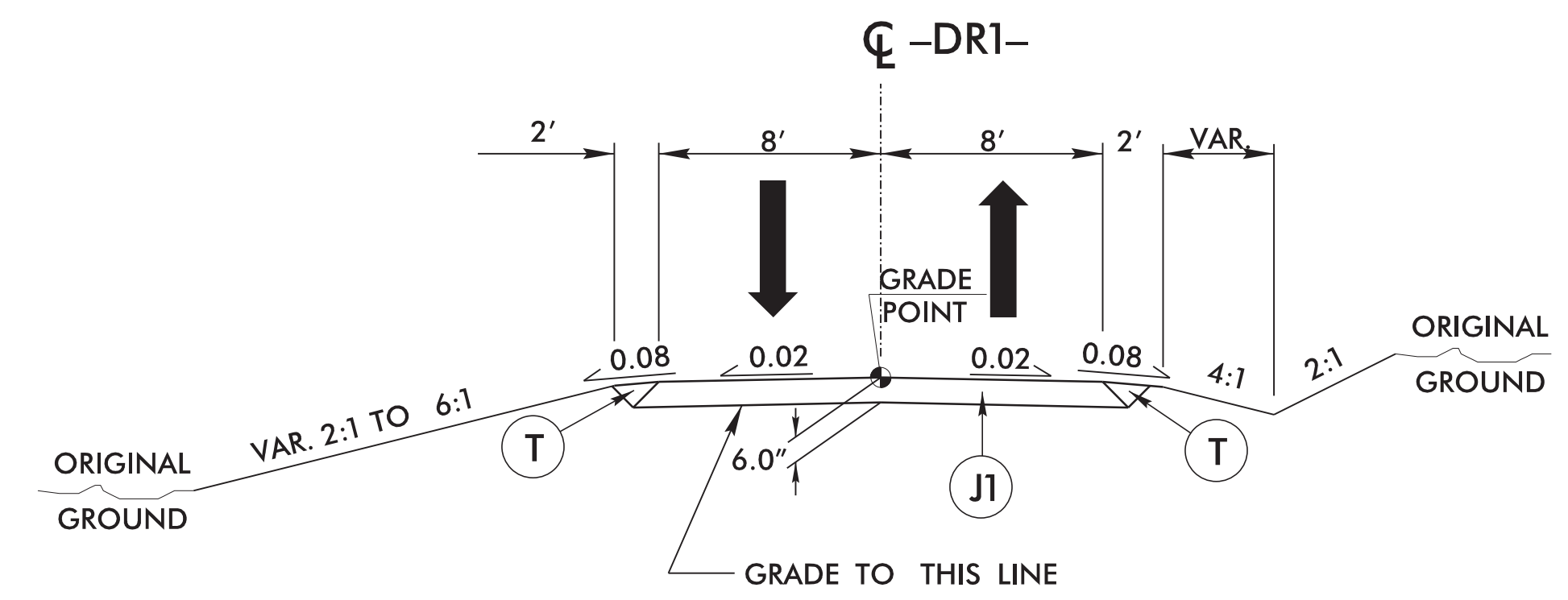


DETAIL SHOWING SHOULDER BERM GUTTER



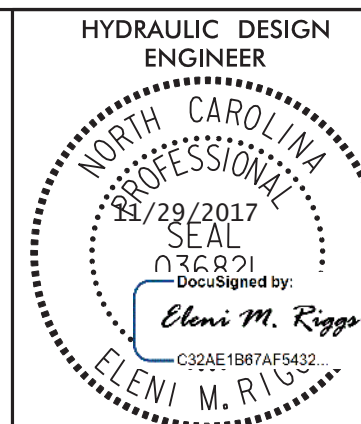
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
 -L- STA. 12+09.38 (BEGIN BRIDGE)
 TO 12+56.63 (END BRIDGE)

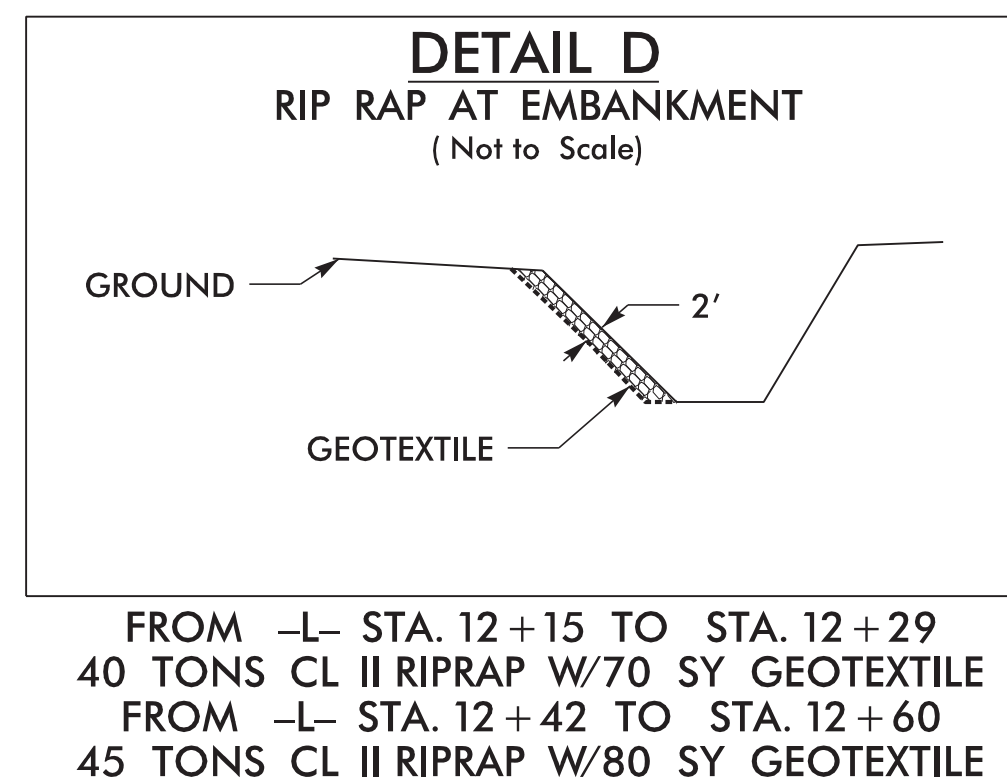
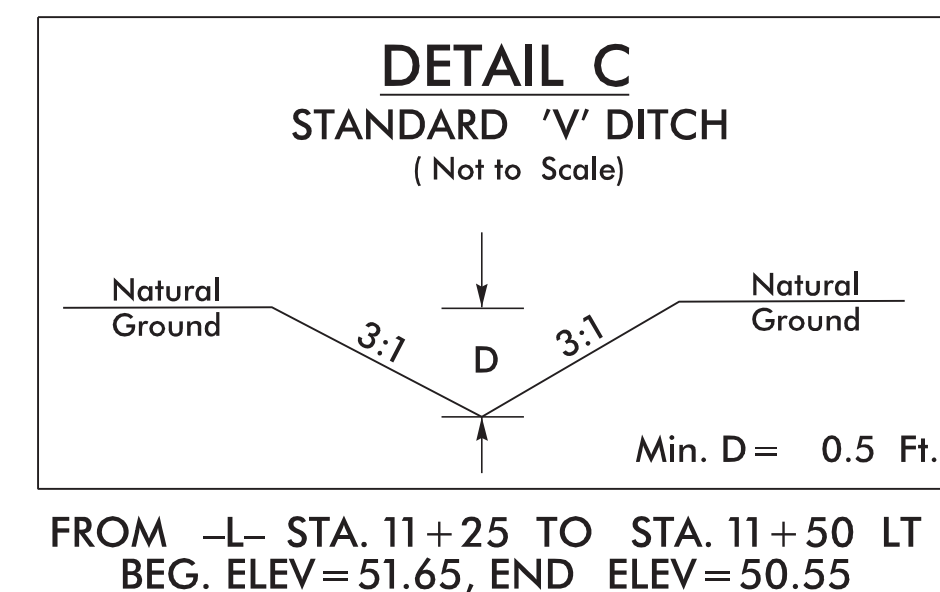
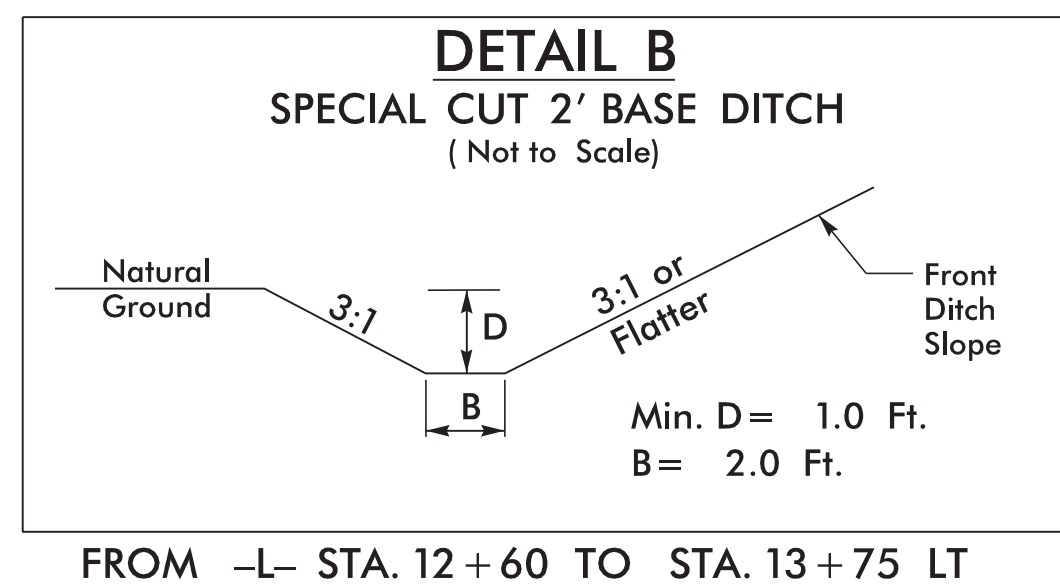
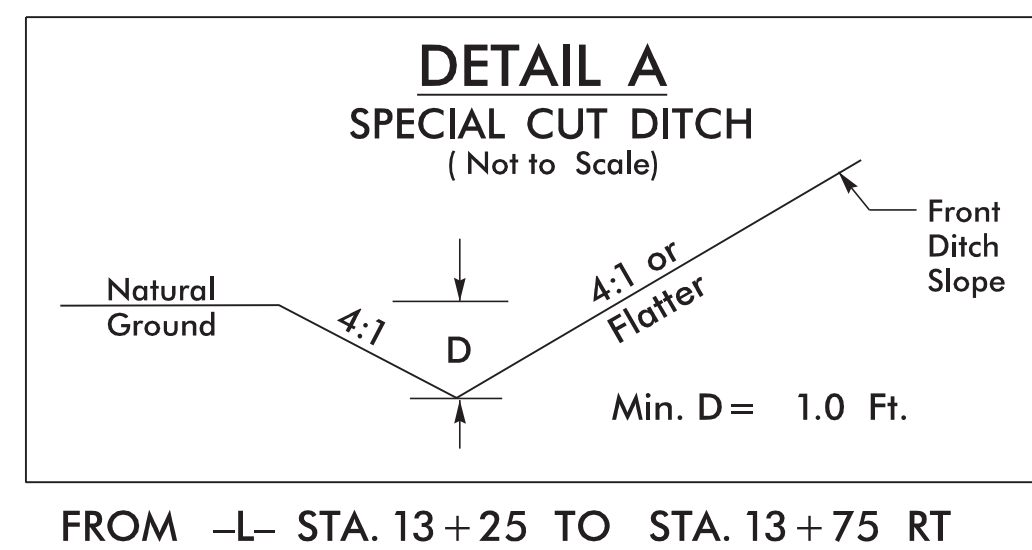


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
 -DR1- STA. 10+11.00 TO 10+95.00

PROJECT REFERENCE NO. <i>17BP.2.R.81</i>	SHEET NO. <i>2D-1</i>
R/W SHEET NO.	
HYDRAULIC DESIGN ENGINEER	
	
<p align="center">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

DRAINAGE DETAILS



PLANS PREPARED BY :

RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

5/9/17

COMPUTED BY: Carter Mull DATE: 10/25/17
 CHECKED BY: Matthew Lamy DATE: 10/25/17

PROJECT REFERENCE NO. SHEET NO.
 17BP.2.R.81 3B-1

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

GUARDRAIL SUMMARY

ALN.	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS			IMPACT ATTENUATOR TYPE 350		REMOVE EXISTING GR	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPRO ACH END	TRAILING END	APPR. END	TRAIL. END	TYPE-III	GREU 350 TL. 3	AT-1	G	NG		
-L-	11+75.25	12+09.37	LT	23.41	20.34				4.89	7.89					1		1				
-L-	11+28.12	12+09.37	RT	81.25					4.42	7.42	50		1		1	1					
-L-	12+56.62	13+59.12	LT	102.50					4.42	7.42	50		1		1	1					
-L-	12+56.62	13+59.12	RT	102.50					4.42	7.42	50		1		1	1					
SUBTOTAL:				309.66	20.34										4	3	1				
ANCHOR UNIT DEDUCTIONS:																					
Type-III @ 18.75' Each				-75.00																	
TL-3 @ 50' Each				-150.00																	
AT-1 @ 6.25' Each					-6.25																
LESS GUARDRAIL DEDUCTIONS:				84.66	14.09																
PROJECT TOTAL:				84.66	14.09																
SAY:				87.5	25.0										4	3	1				

SUMMARY OF EARTHWORK

STATION	STATION	EXCAVATION		EMBANK.	BORROW	WASTE
		TOTAL UNCLASS.	UNDERCUT			
-L- 1095	-L- 1209.37	28		16		12
-L- 1256.62	-L- 1395	67		141	85	
-DRI- 10+11	-DRI- 10+95	24		20		
SUBTOTAL		119		178	85	12
TOTAL		119		178	85	12
LOSS DUE TO CLEARING & GRUBBING		-5			5	
PROJECT TOTAL		114		178	79	-12
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					4	
GRAND TOTAL		114		178	83	
SAY		120			90	

PAVEMENT REMOVAL SUMMARY

LINE	STATION	STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
-L-	11+60	EXIST BRIDGE	CL	1,188.50		132.06
-L-	EXIST BRIDGE	13+10	CL	1,263.16		140.35
TOTAL						272.41
SAY						280

PLANS PREPARED BY :
RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

I:\2017\17BP.2.R.81\Drawings\17BP.2.R.81.dwg - psh03.dgn
 10/25/2017 10:58:00 AM
 Matthew Lamy

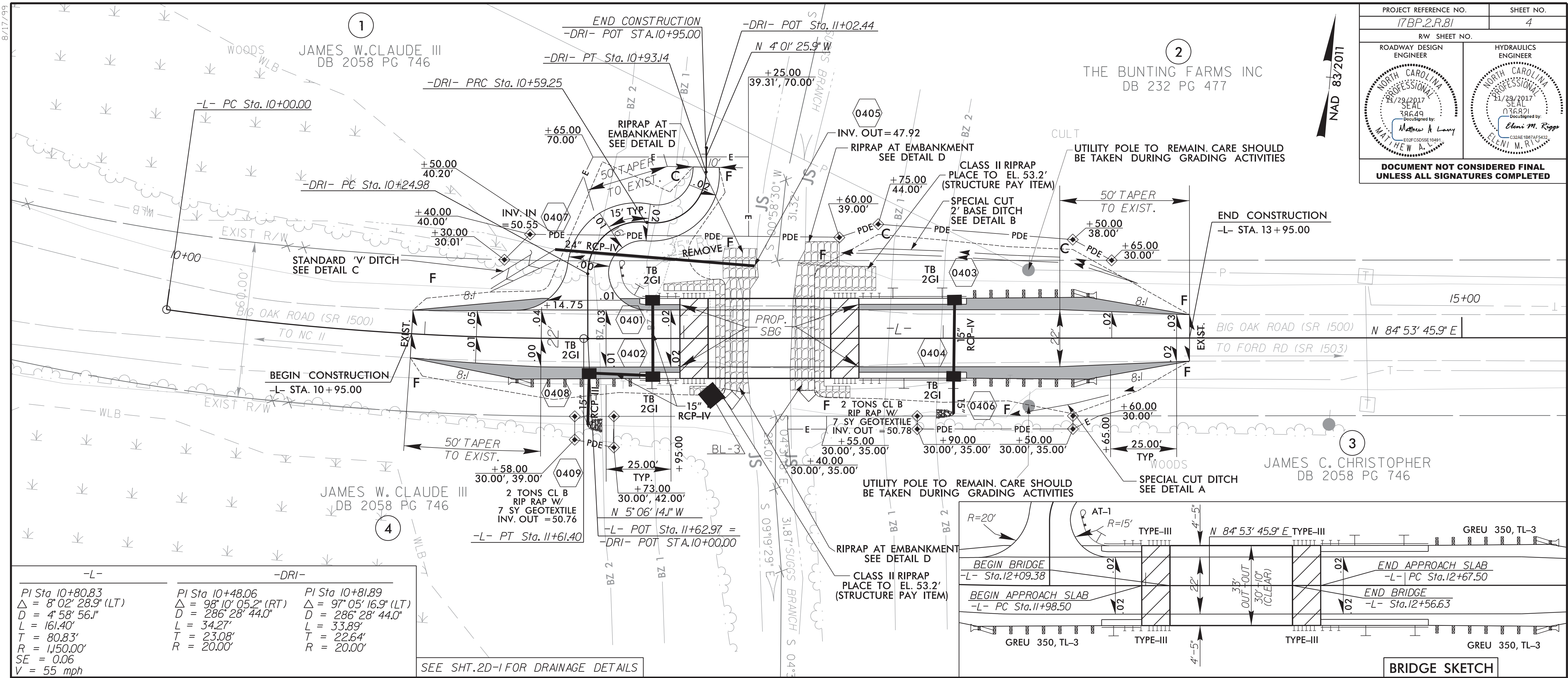
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PARCEL INDEX SHEET

PARCEL NO.	PROPERTY OWNERS NAME
1	JAMES W. CLAUDE III
2	THE BUNTING FAMRS INC.
3	JAMES C. CHRISTOPHER
4	JAMES W. CLAUDE III

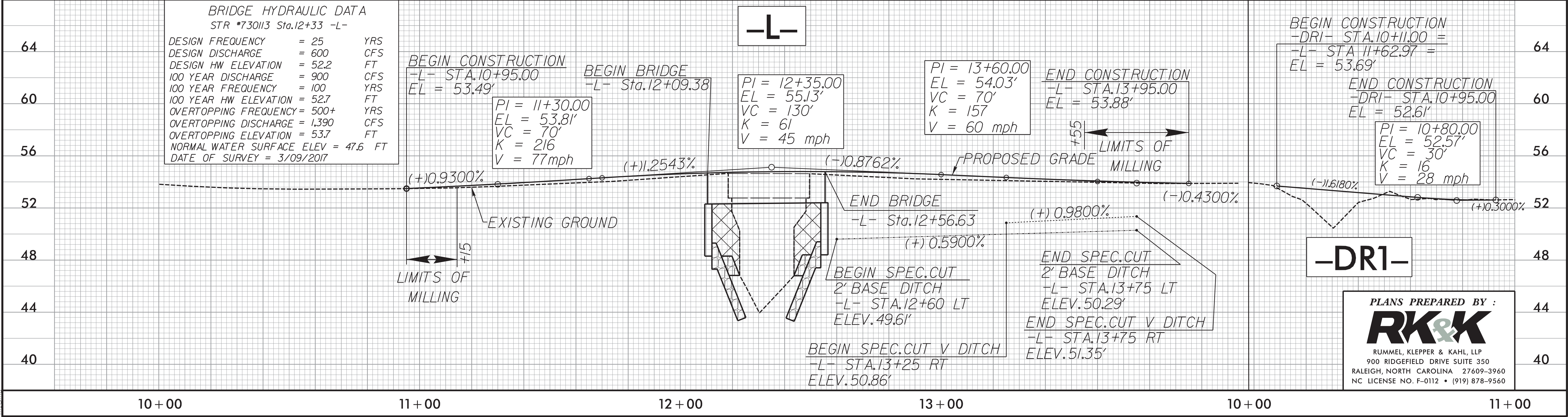
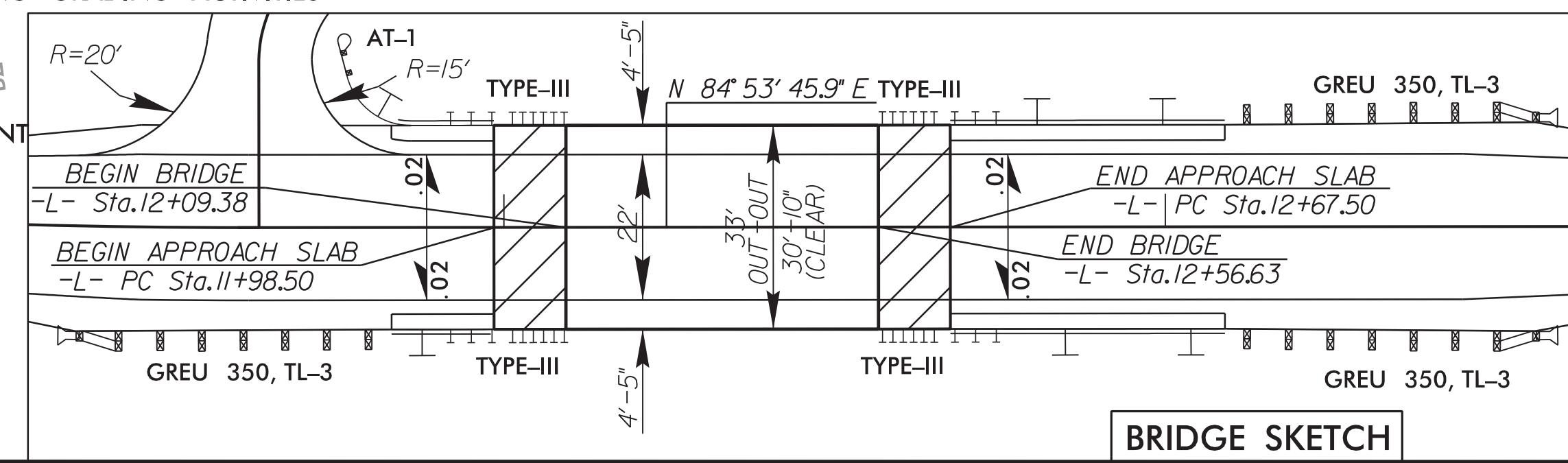
PROJECT REFERENCE NO. 17BP.2.R.81	SHEET NO. 4
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/2011



-L-	-DRI-
PI Sta 10+80.83 Δ = 8° 02' 28.9" (LT) D = 4' 58" 56.1" L = 161.40' T = 80.83' R = 1,150.00' SE = 0.06 V = 55 mph	PI Sta 10+48.06 Δ = 98° 10' 05.2" (RT) D = 286' 28" 44.0" L = 34.27' T = 23.08' R = 20.00'
	PI Sta 10+81.89 Δ = 97° 05' 16.9" (LT) D = 286' 28" 44.0" L = 33.89' T = 22.64' R = 20.00'

SEE SHT. 2D-1 FOR DRAINAGE DETAILS



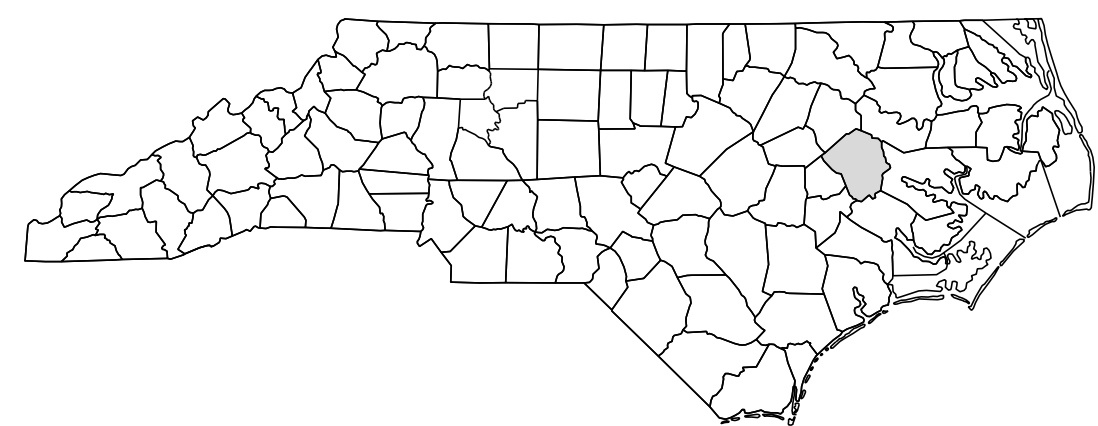
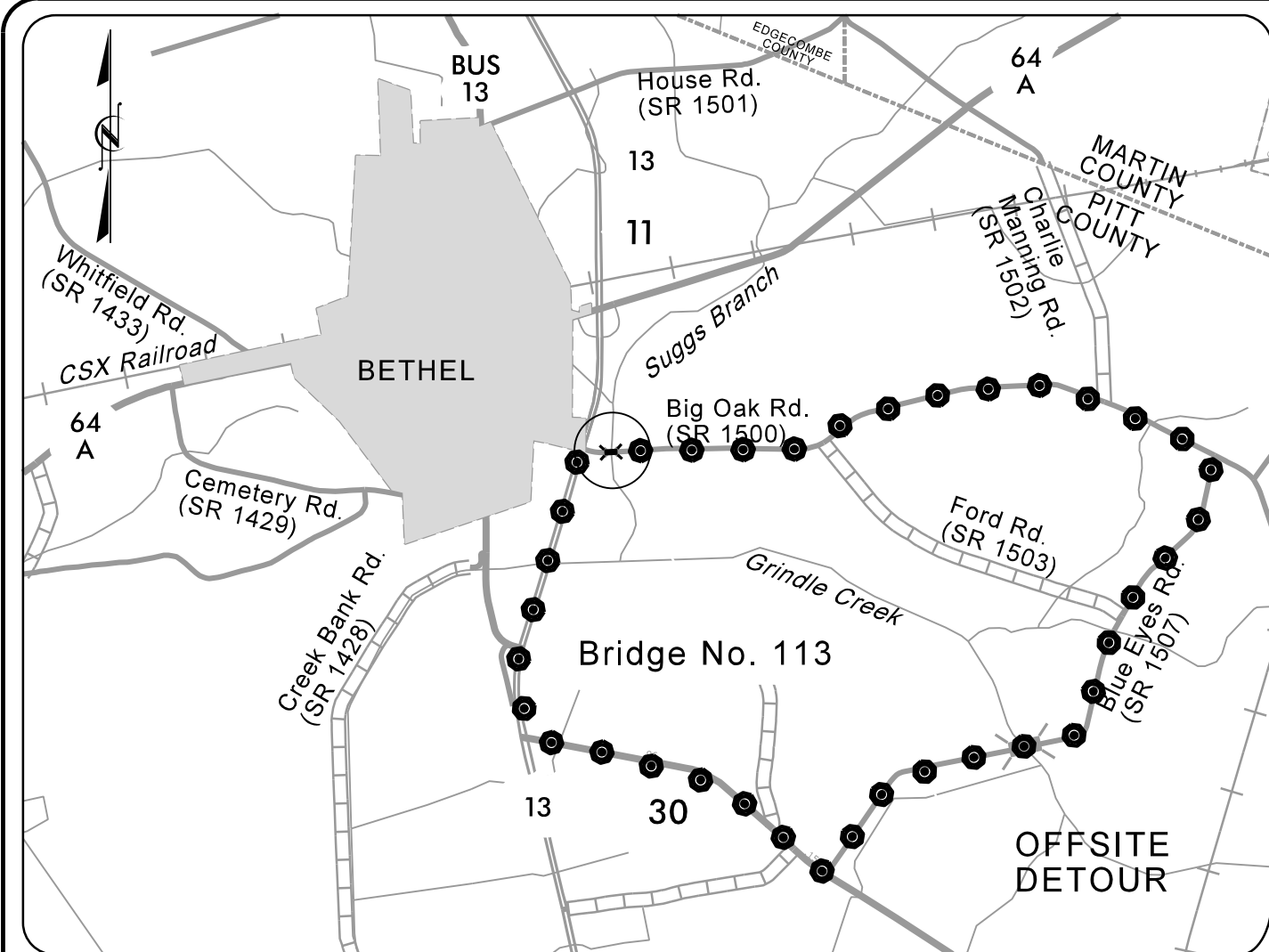
-DRI-

PLANS PREPARED BY:

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

11/29/2017
R:\Roadway\Pro\1730113_Rdy_pah04.dgn

PROJECT : 17BP.2.R.81



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

RFC EROSION & SEDIMENTATION CONTROL PLANS
DATE: 11-22-2017



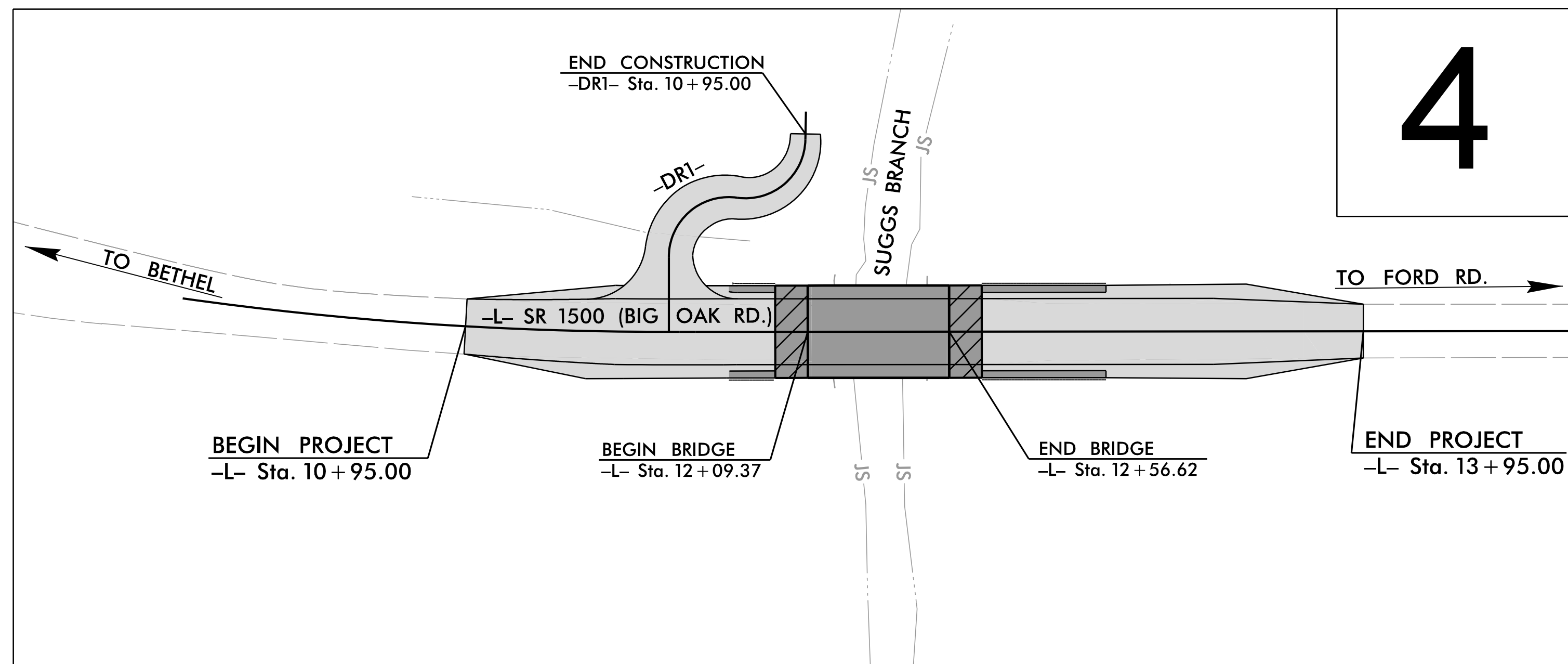
STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

PLAN FOR PROPOSED PITT COUNTY HIGHWAY EROSION CONTROL

**LOCATION: BRIDGE NO. 113 OVER SUGGS CREEK ON SR 1500
(BIG OAK ROAD)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES AND
RESURFACING**



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.81	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17 BP 2.R.81		P.E.	
17 BP 2.R.81		ROW, UTIL.	
17 BP 2.R.81		CONSTR.	

EROSION AND SEDIMENT CONTROL MEASURES

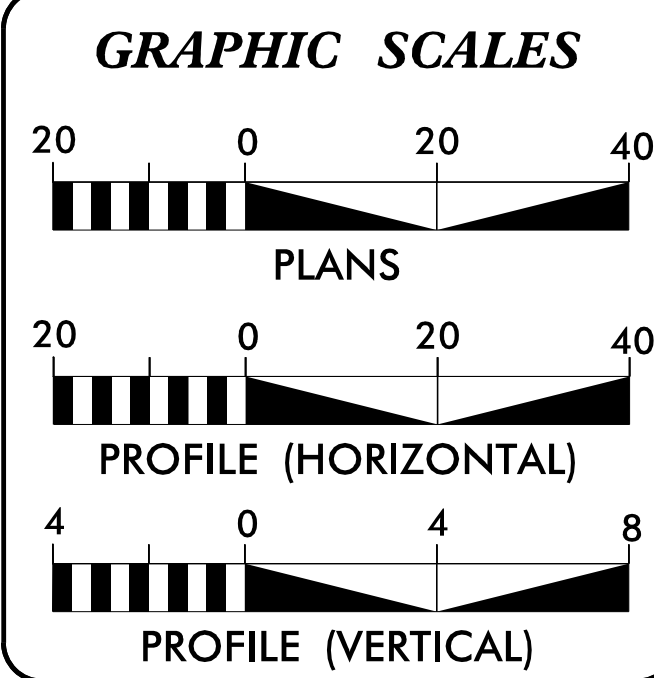
Std. #	Description	Symbol
1630.05	Temporary Silt Ditch	TS
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	ZZZZZZ
1622.01	Temporary Berms and Slope Drains	TSD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	RC
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	RC-PAM
1633.02	Temporary Rock Silt Check Type-B	RC-B
	Wattle/Coir Fiber Wattle	W
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	W-PAM
1634.01	Temporary Rock Sediment Dam Type-A	RD-A
1634.02	Temporary Rock Sediment Dam Type-B	RD-B
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPIA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPIB
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
1632.05	Type C	C
	Skimmer Basin	SK
	Tiered Skimmer Basin	TSK
	Infiltration Basin	IB

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

**THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.**

**ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT**

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



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

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

**FOR
DIVISION OF HIGHWAYS**

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 19, 2017

LETTING DATE:
JANUARY 24, 2018

Michael T. Merritt, P.E.
PROJECT ENGINEER

Matthew A. Lamy, P.E.
PROJECT DESIGN ENGINEER

Eleni M. Riggs, P.E.
EROSION CONTROL DESIGN ENGINEER
LEVEL III CERTIFICATION NO. 3056

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.2.R.81 = 0.048 mi
LENGTH STRUCTURE TIP PROJECT 17BP.2.R.81 = 0.009 mi
TOTAL LENGTH TIP PROJECT 17BP.2.R.81 = 0.057 mi

Reviewed in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611
Reviewed by:
Wes Chandler

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	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

PROJECT REFERENCE NO. 17BP.2.R.81	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

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.

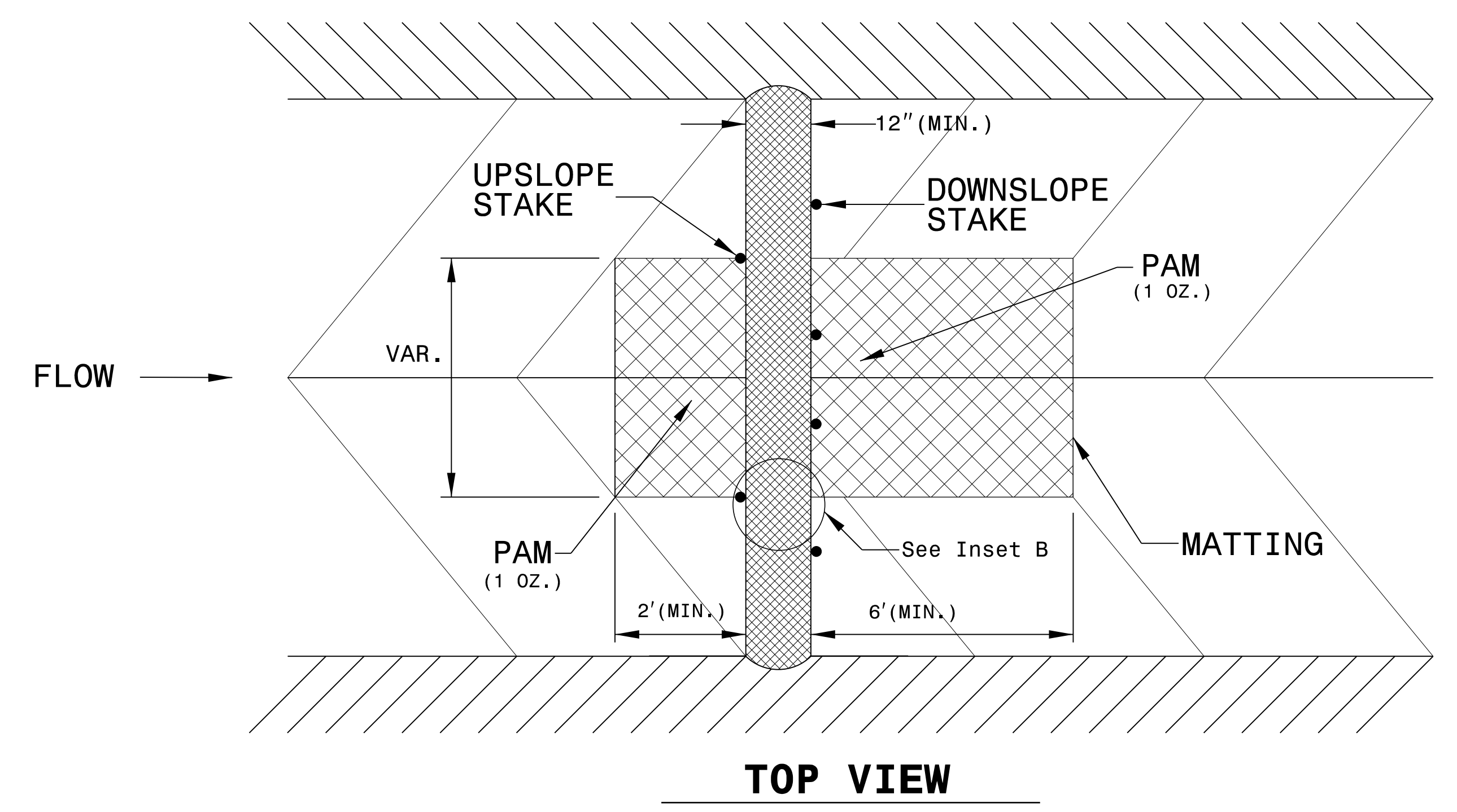
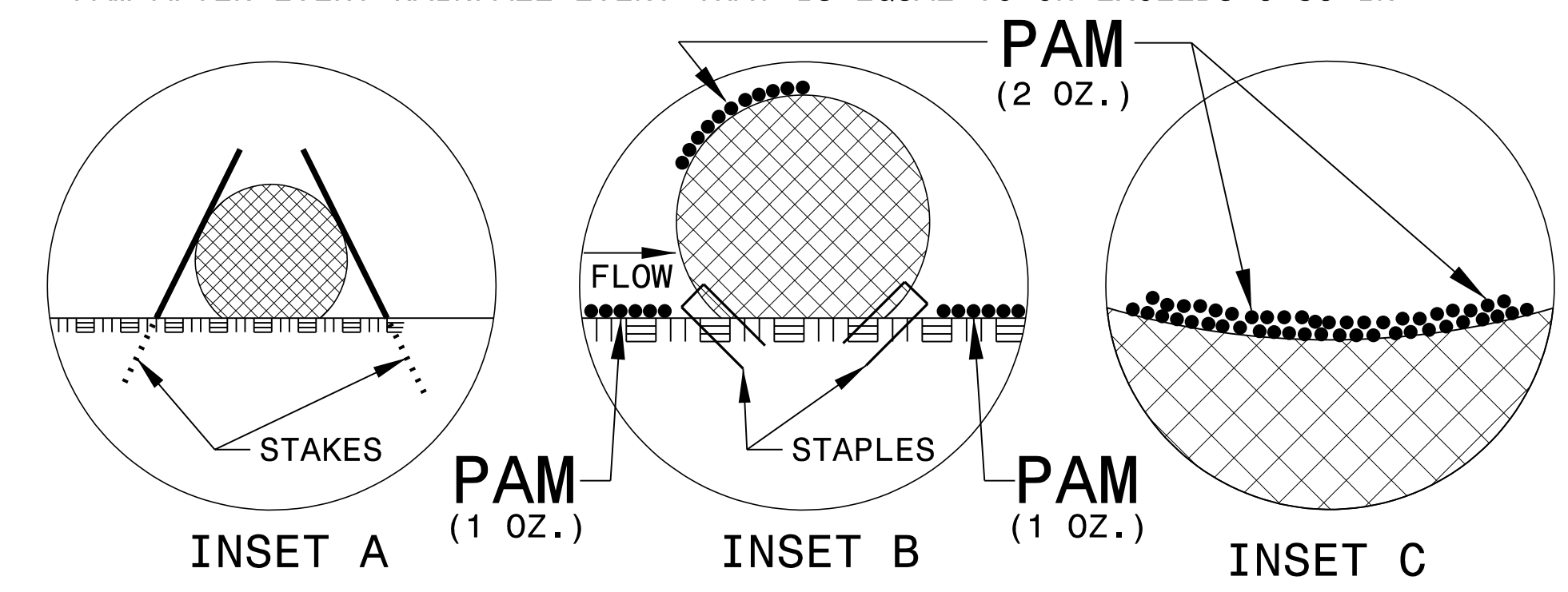
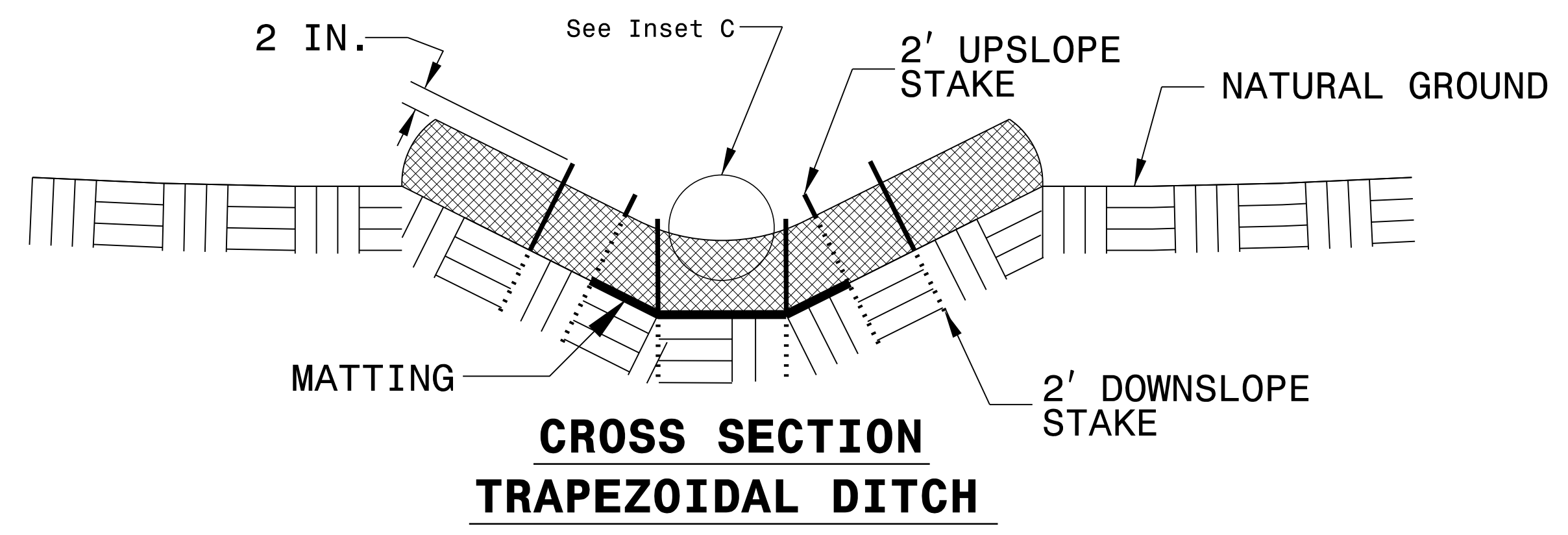
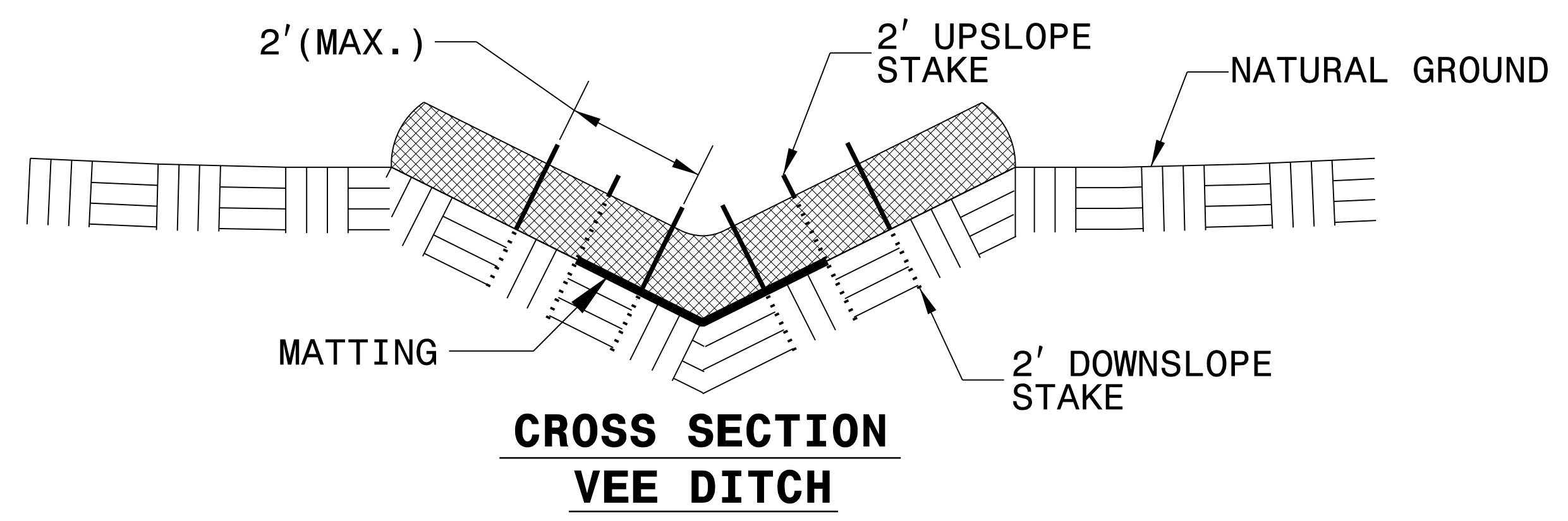
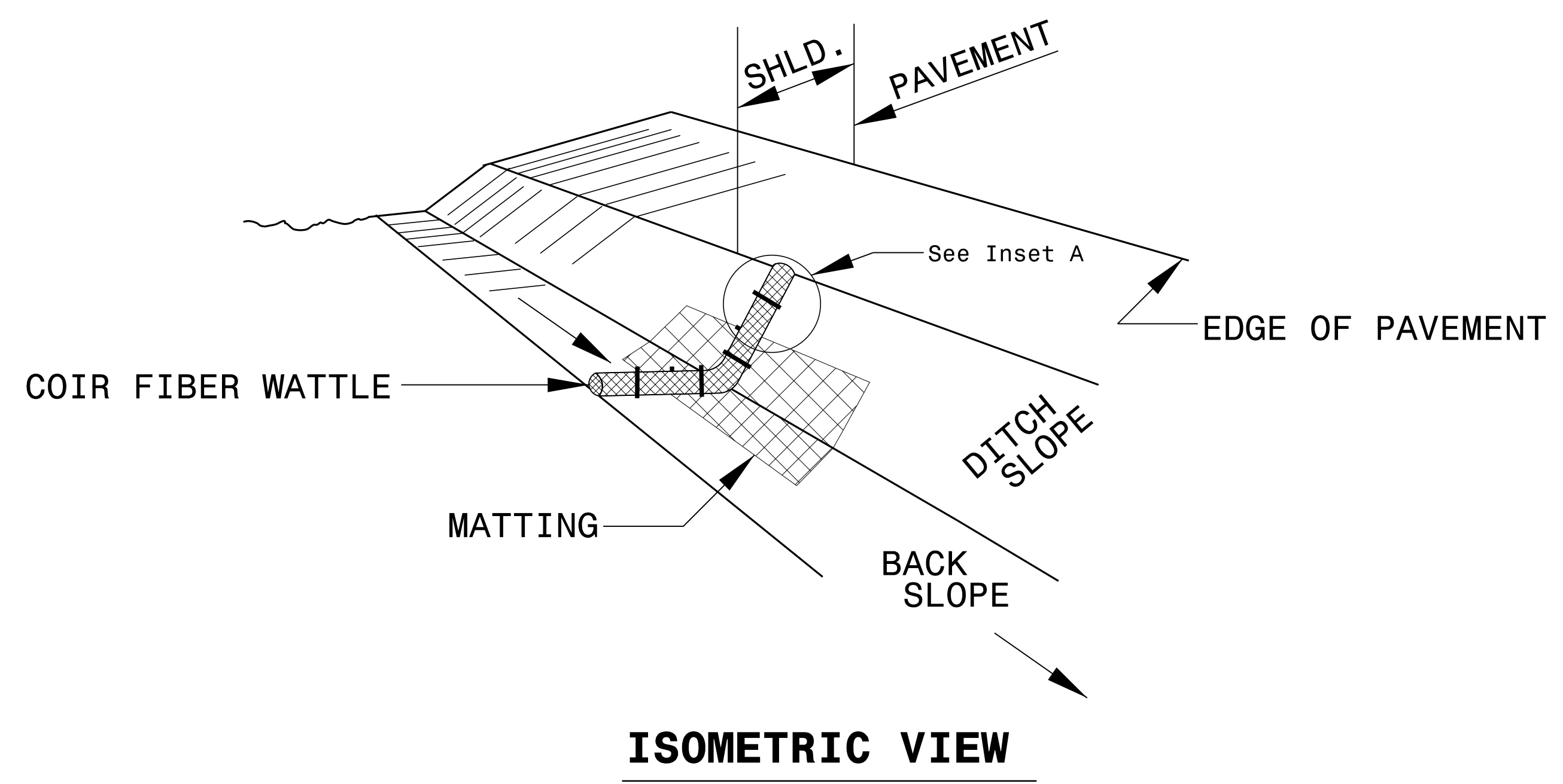
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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 EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

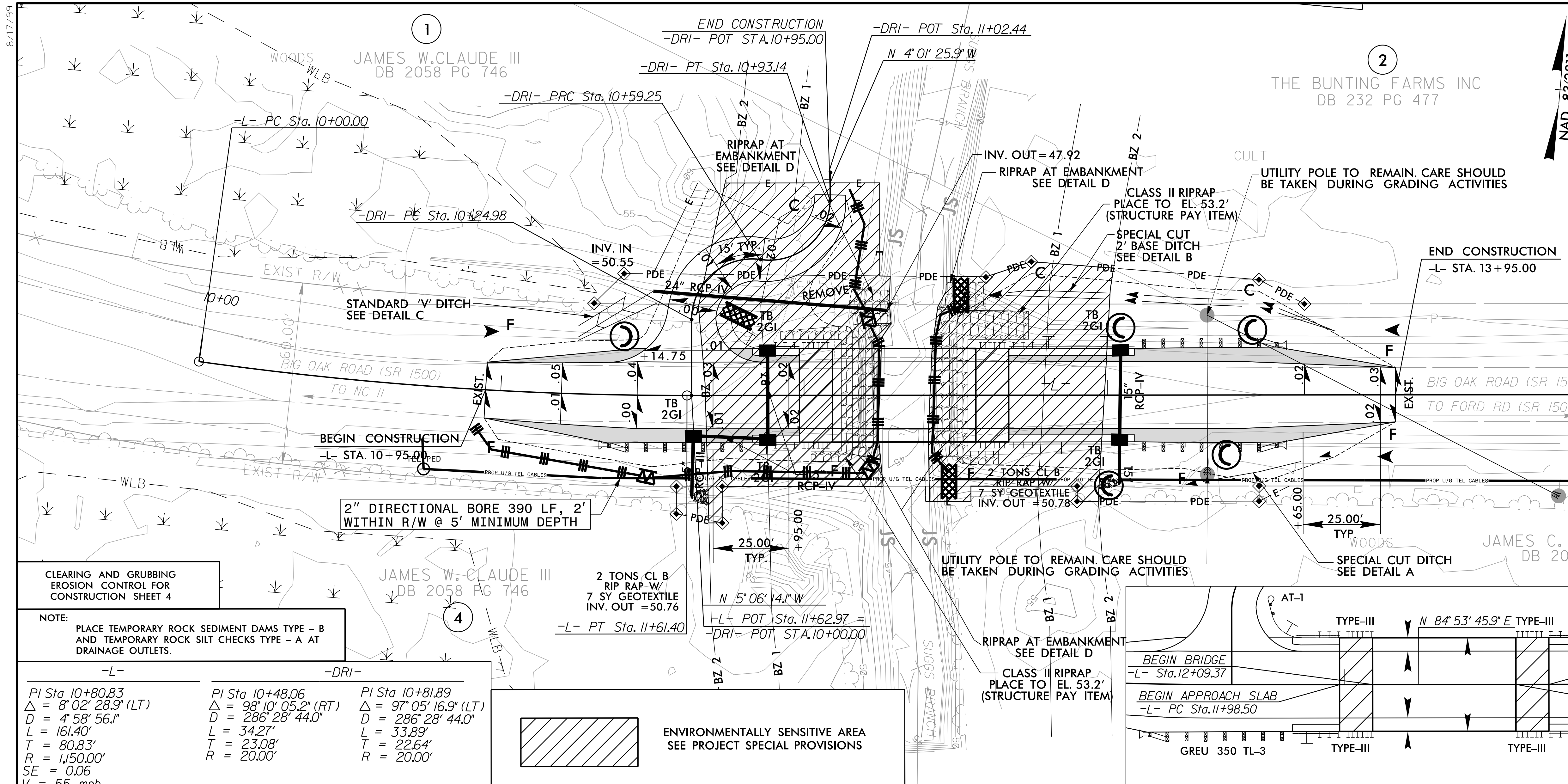


DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>17BP.2.R.81</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

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

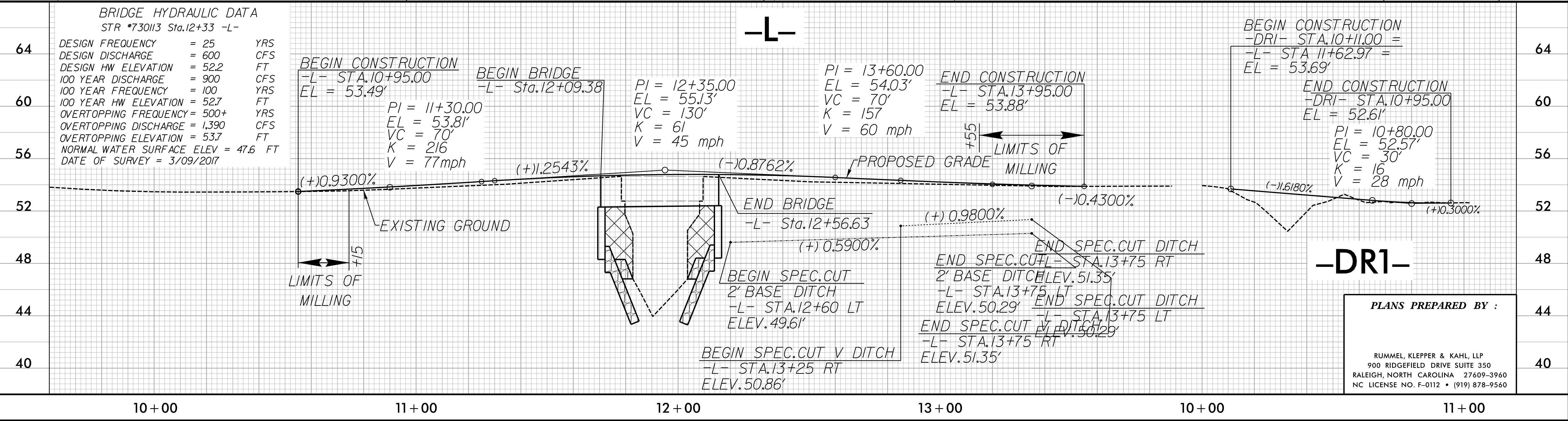
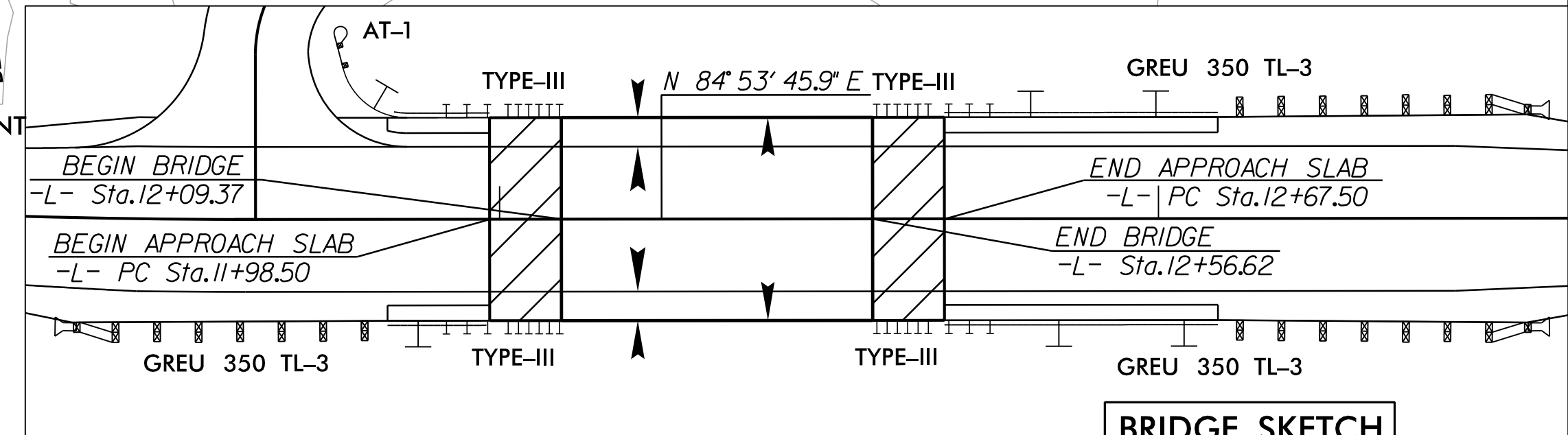


CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

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

-L-	-DRI-
PI Sta 10+80.83 $\Delta = 8^{\circ} 02' 28.9''$ (LT) $D = 4' 58.56''$ $L = 161.40'$ $T = 80.83'$ $R = 1,150.00'$ $SE = 0.06$ $V = 55$ mph	PI Sta 10+48.06 $\Delta = 98^{\circ} 10' 05.2''$ (RT) $D = 286' 28.44.0''$ $L = 34.27'$ $T = 23.08'$ $R = 20.00'$
	PI Sta 10+81.89 $\Delta = 97^{\circ} 05' 16.9''$ (LT) $D = 286' 28.44.0''$ $L = 33.89'$ $T = 22.64'$ $R = 20.00'$

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



PLANS PREPARED BY :

RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

8/17/2017 11:22:20 AM C:\Users\jca\Documents\CADD\PSHV\730113_EC_psh04.dgn

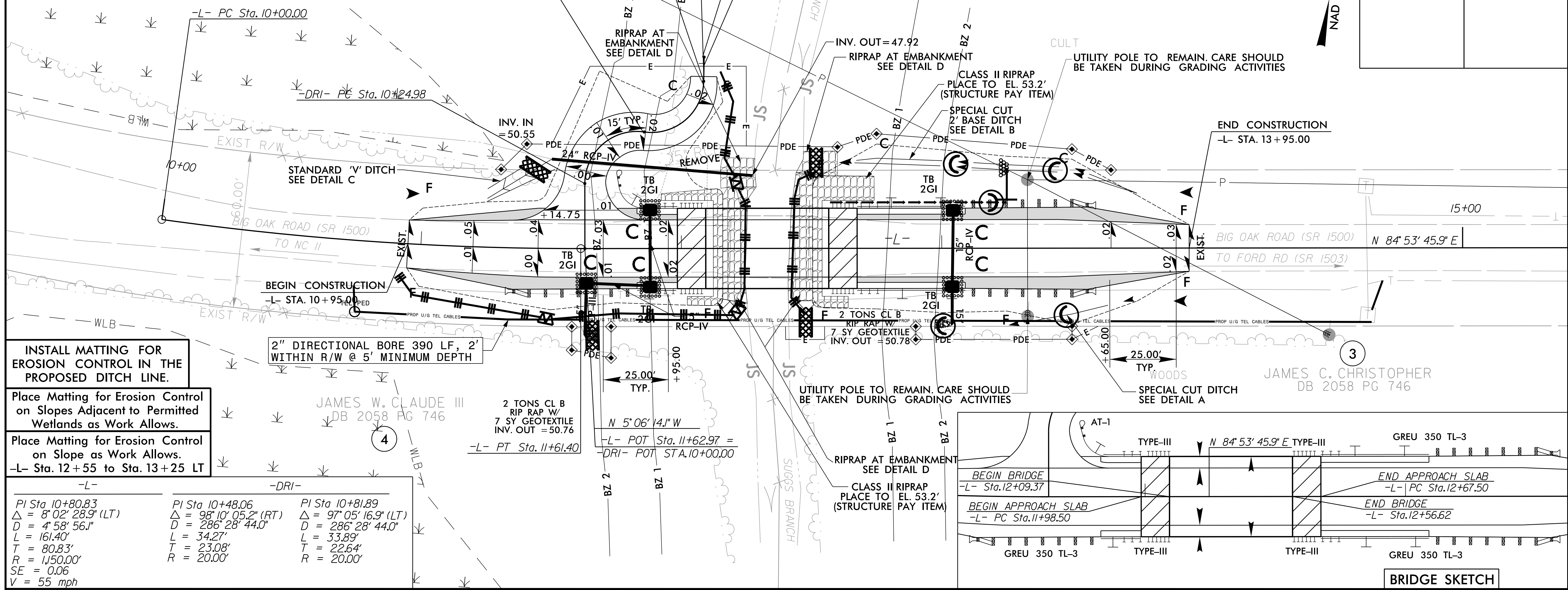
MATTING FOR EROSION CONTROL - DITCHES

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	11+25	1150	LT	20
4	-L-	12+60	13+75	LT	110
4	-L-	13+25	13+75	RT	35

PROJECT REFERENCE NO. 17BP.2.R.81	SHEET NO. EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

THE BUNTING FARMS INC
DB 232 PG 477

NAD 83/2011



INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

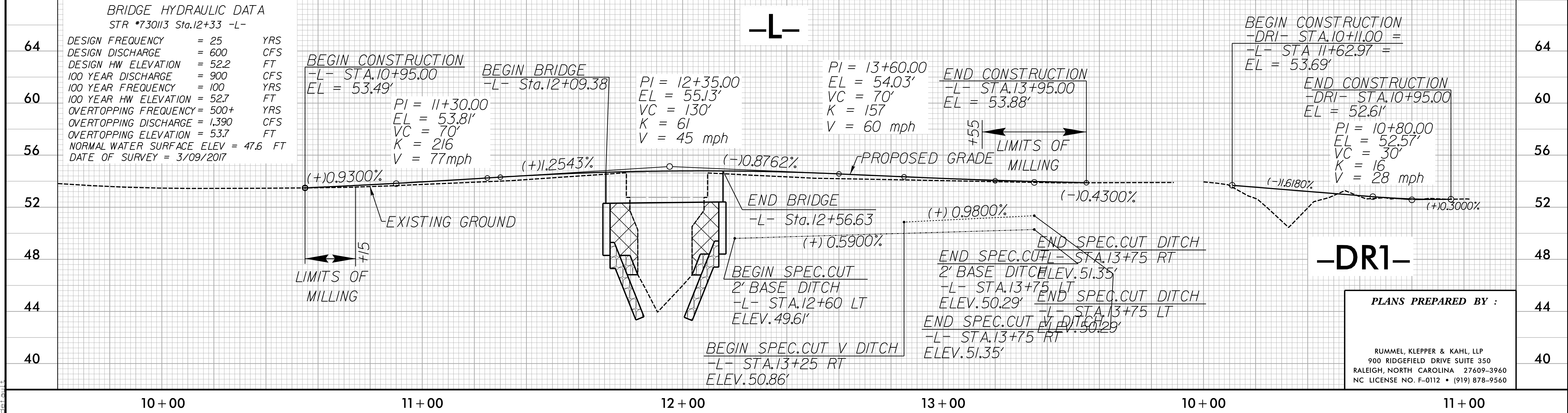
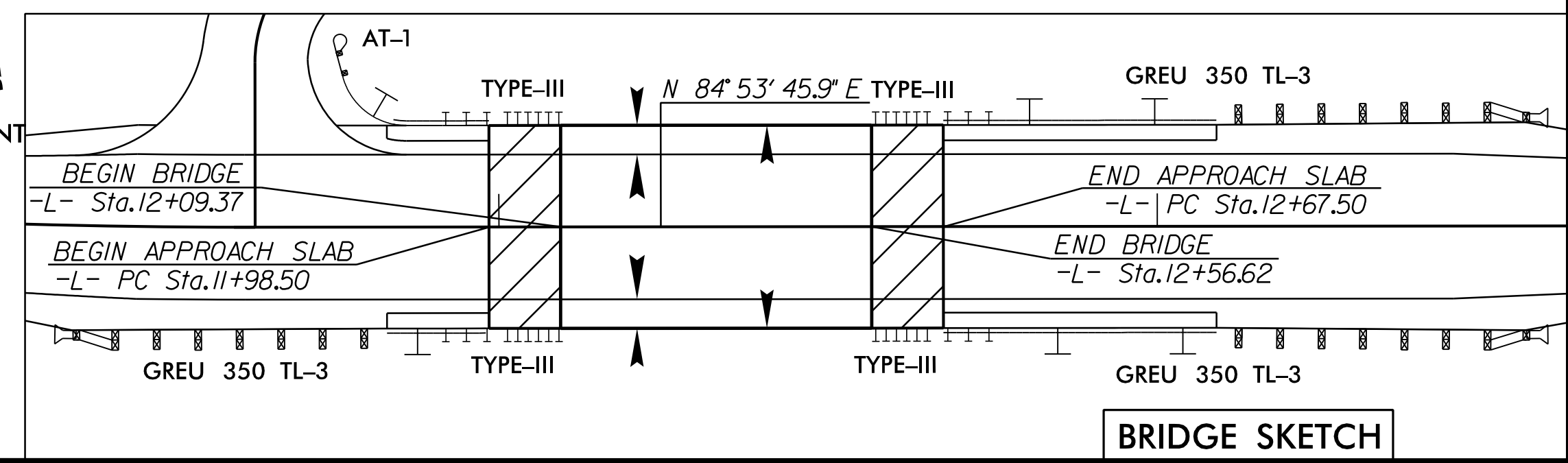
Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

Place Matting for Erosion Control on Slope as Work Allows.

-L- Sta. 12 + 55 to Sta. 13 + 25 LT

2" DIRECTIONAL BORE 390 LF, 2' WITHIN R/W @ 5' MINIMUM DEPTH

PI Sta	PI Sta	PI Sta
10+80.83	10+48.06	10+81.89
$\Delta = 8^{\circ} 02' 28.9" (LT)$	$\Delta = 98^{\circ} 10' 05.2" (RT)$	$\Delta = 97^{\circ} 05' 16.9" (LT)$
$D = 4^{\circ} 58' 56.1"$	$D = 286^{\circ} 28' 44.0"$	$D = 286^{\circ} 28' 44.0"$
$L = 161.40'$	$L = 34.27'$	$L = 33.89'$
$T = 80.83'$	$T = 23.08'$	$T = 22.64'$
$R = 1,150.00'$	$R = 20.00'$	$R = 20.00'$
$SE = 0.06$		
$V = 55 \text{ mph}$		



PLANS PREPARED BY :

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

11/22/2017 14:41:00 c:\pds\17bp\2.r\81\ec\5\const\4.dgn

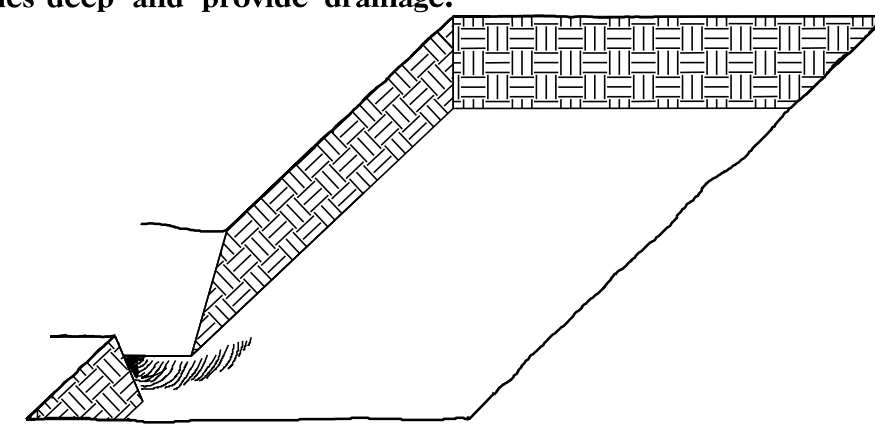
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.81	RF-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

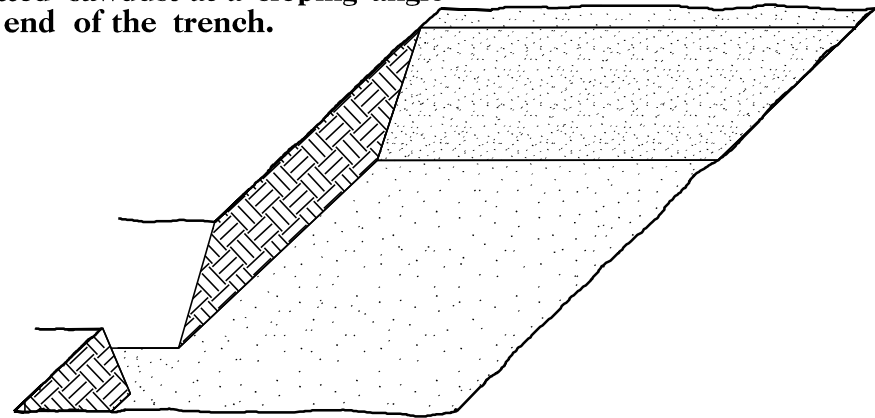
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

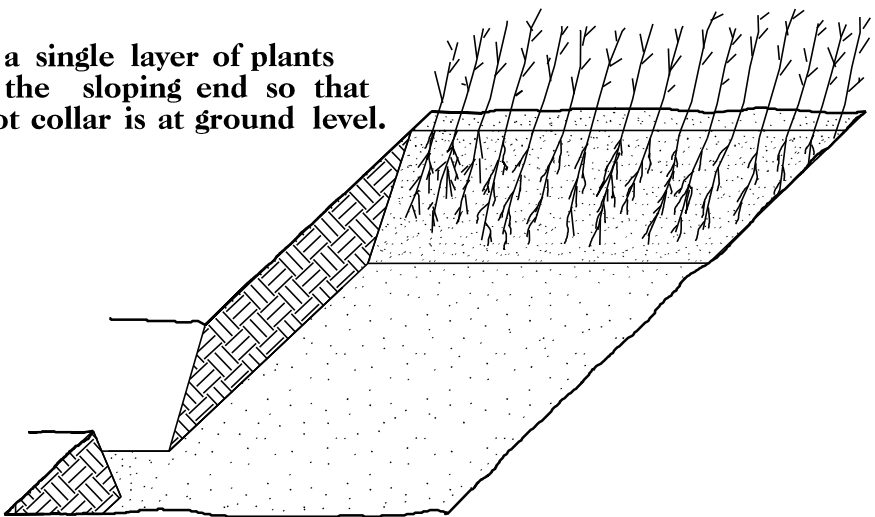
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



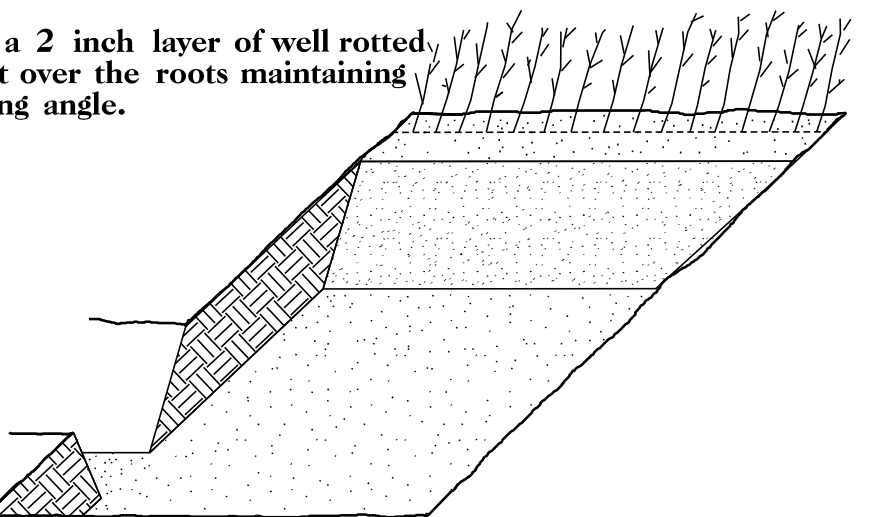
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

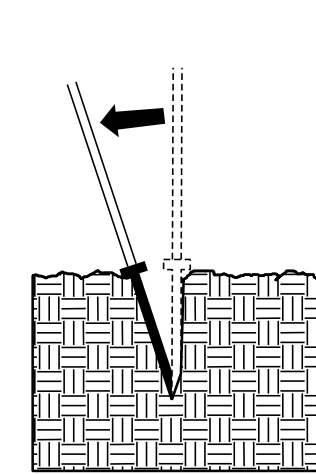


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

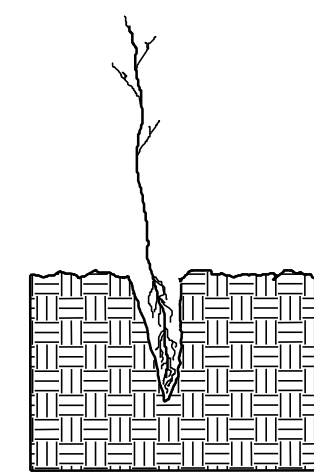


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

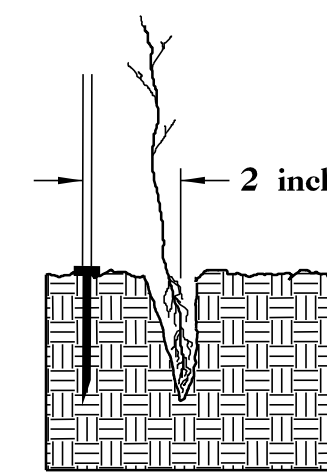
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



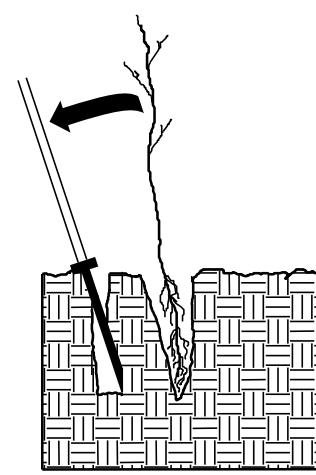
1. Insert planting bar as shown and pull handle toward planter.



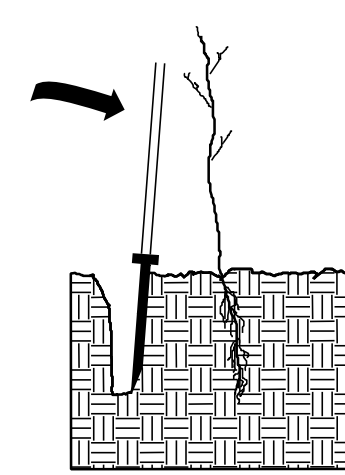
2. Remove planting bar and place seedling at correct depth.



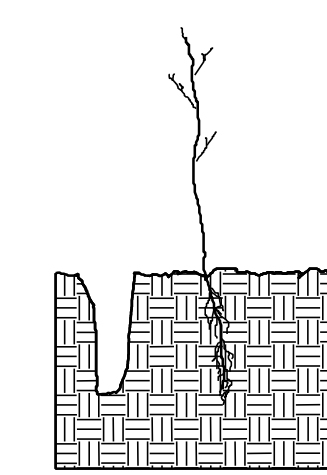
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



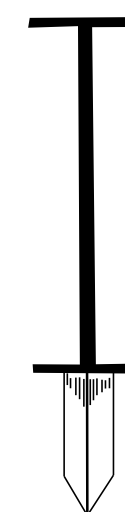
6. Leave compaction hole open. Water thoroughly.

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:

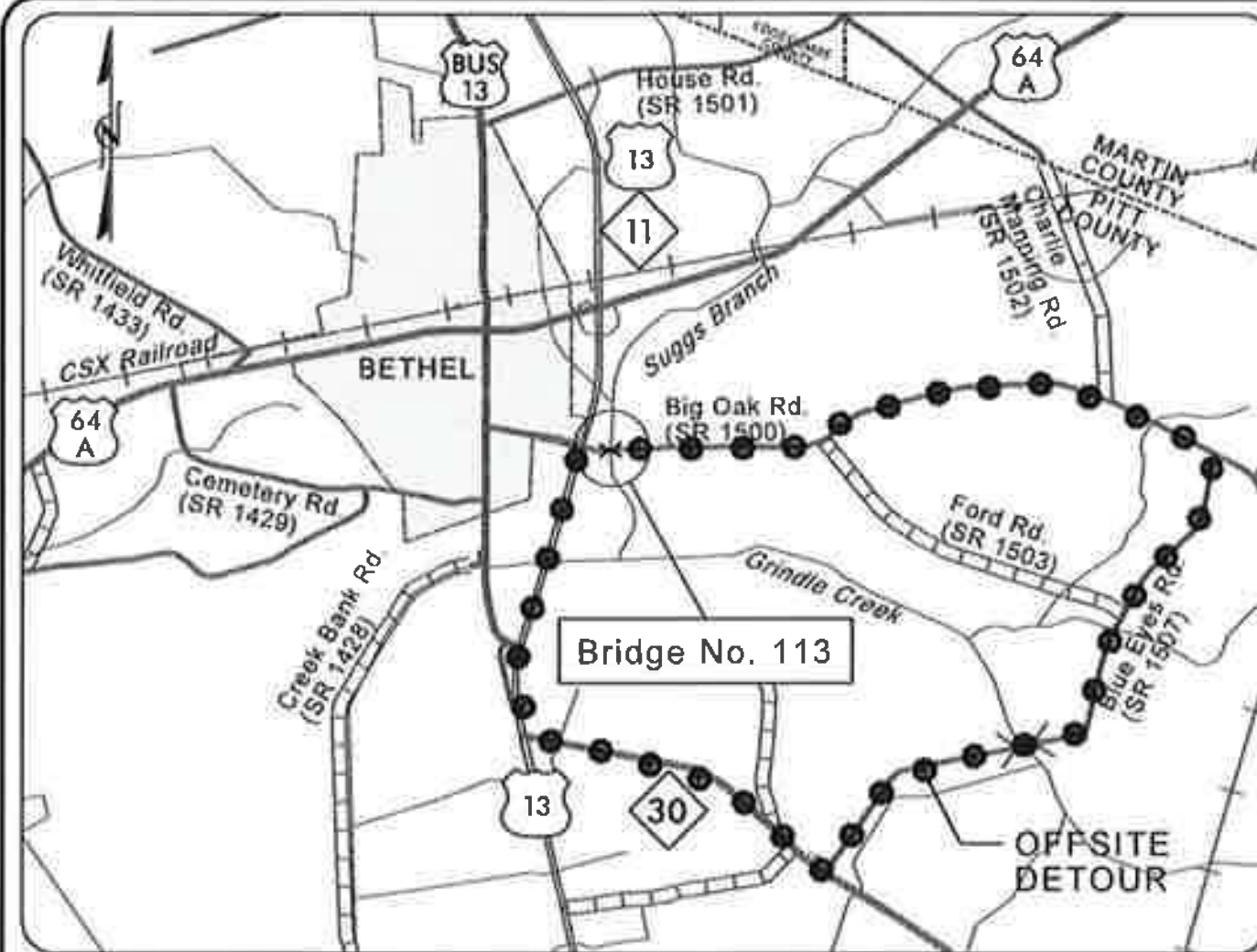
25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

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

09/08/09

PROJECT: 17BP.2.R.81



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS PITT COUNTY

LOCATION: BRIDGE NO. 730113 OVER SUGGS CREEK ON SR 1500
(BIG OAK ROAD)

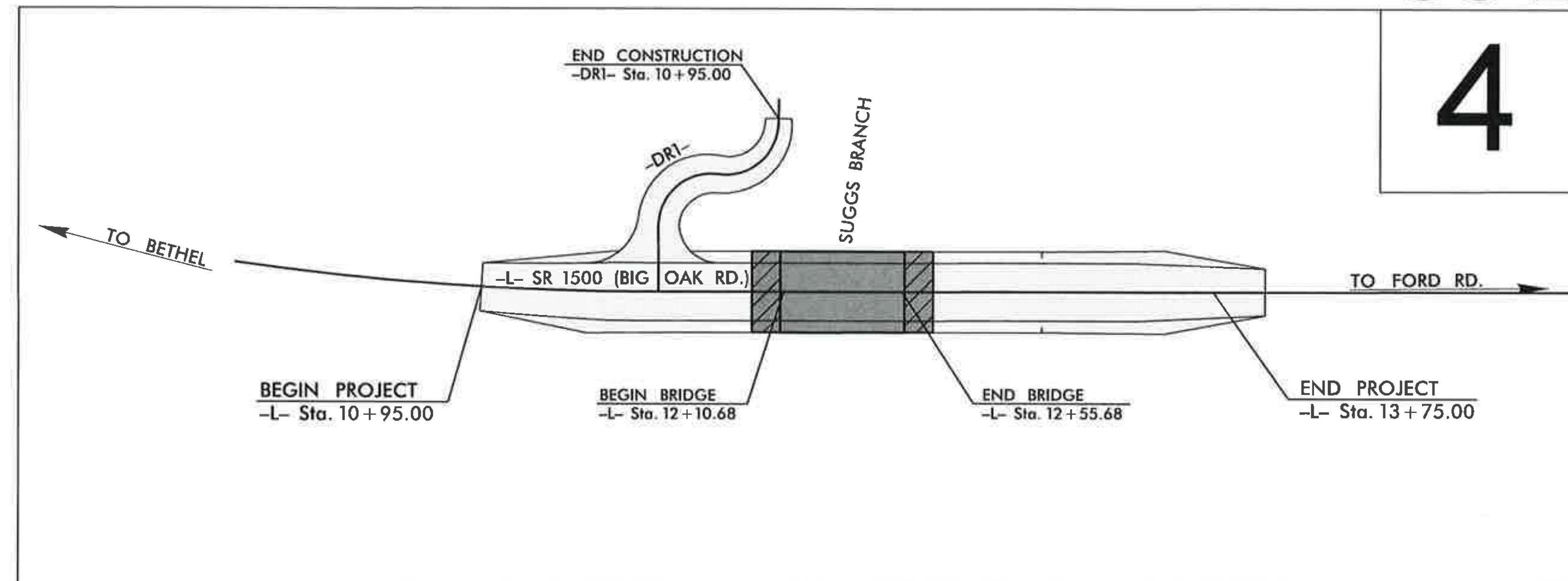
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES AND
RESURFACING



PROJECT NO.	SHEET NO.
730113	UO-1

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.

UO-2
4



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-02	UBO PLAN SHEET

UTILITY OWNER WITH CONFLICTS

(A) CENTURYLINK - TELEPHONE AND FIBER OPTIC

PREPARED IN THE OFFICE OF:



RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

FOR
DIVISION OF HIGHWAYS

HOWARD WOODALL, PE UTILITY PROJECT MANAGER
NATE HARRIS PROJECT UTILITY COORDINATOR
NATE HARRIS PROJECT UTILITY CADD



DIVISION OF HIGHWAYS
DIVISION 2

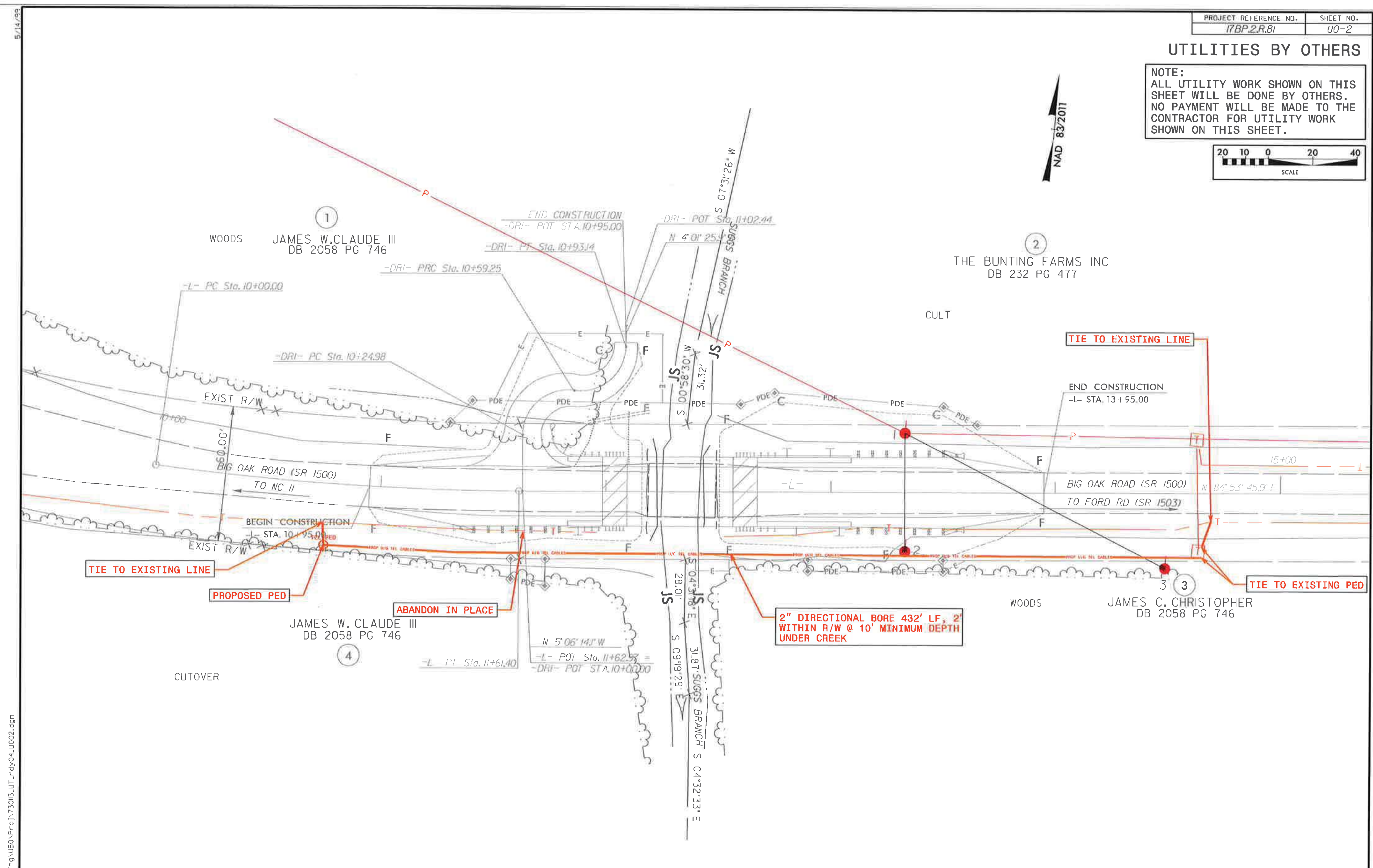
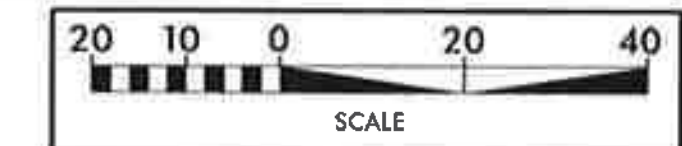
105 FACTOLUS HWY.
P.O. BOX 1597
GREENVILLE, NC 27835-1587

HEATHER LANE, PE DIVISION BRIDGE PROGRAM MANAGER
DWAYNE SMITH DIVISION UTILITY COORDINATOR

11/16/2017
R:\Utilities\Engineering\UBO\Proj\730113_UT_1_tsh.dgn
nharris

UTILITIES BY OTHERS

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



1
WOODS
JAMES W. CLAUDE III
DB 2058 PG 746

2
THE BUNTING FARMS INC
DB 232 PG 477

4
JAMES W. CLAUDE III
DB 2058 PG 746

3
JAMES C. CHRISTOPHER
DB 2058 PG 746

TIE TO EXISTING LINE

PROPOSED PED

ABANDON IN PLACE

2" DIRECTIONAL BORE 432' LF, 2'
WITHIN R/W @ 10' MINIMUM DEPTH
UNDER CREEK

TIE TO EXISTING LINE

END CONSTRUCTION
-L- STA. 13+95.00

TIE TO EXISTING PED

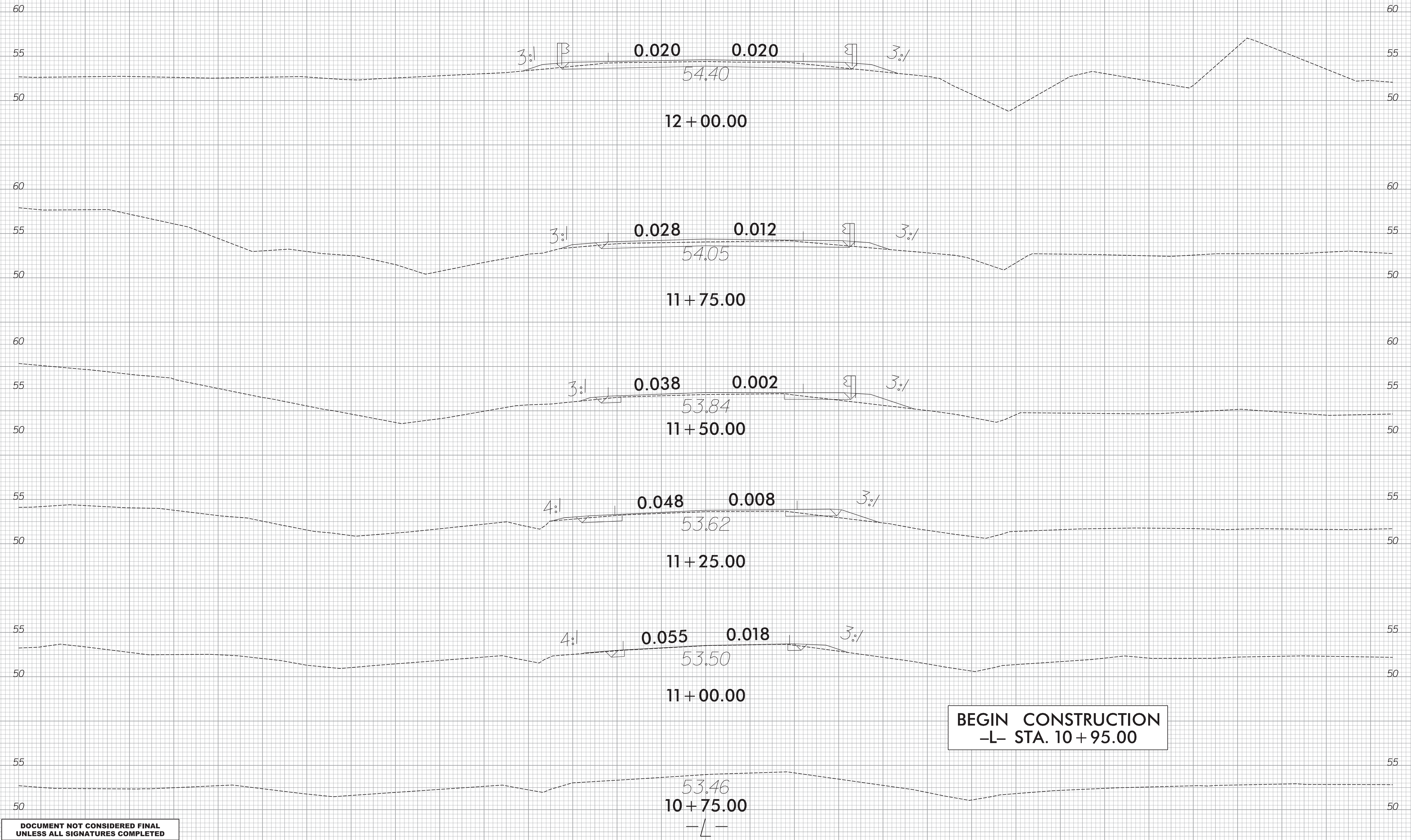
UTILITY OWNERS ON THIS SHEET

EDGEcombe-MARTIN EMC - POWER
CENTURYLINK - TELECOMMUNICATIONS/FIBER OPTIC

PLANS PREPARED BY :

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

5/14/09
11/16/2017
F:\Utilities\Engineering\UB0\Pro\1730103.U0-2.Ry04.U002.dgn

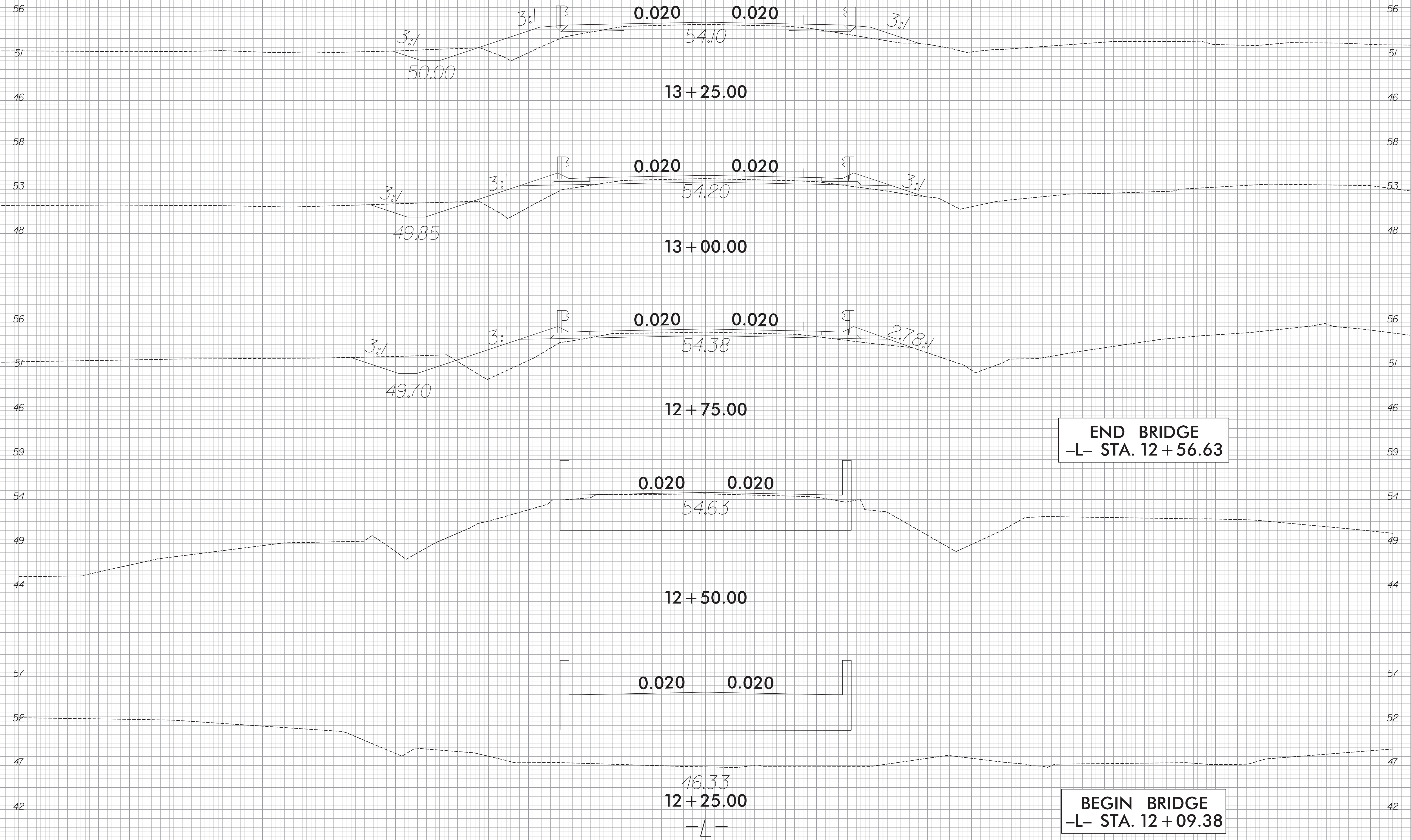


BEGIN CONSTRUCTION
 -L- STA. 10 + 95.00

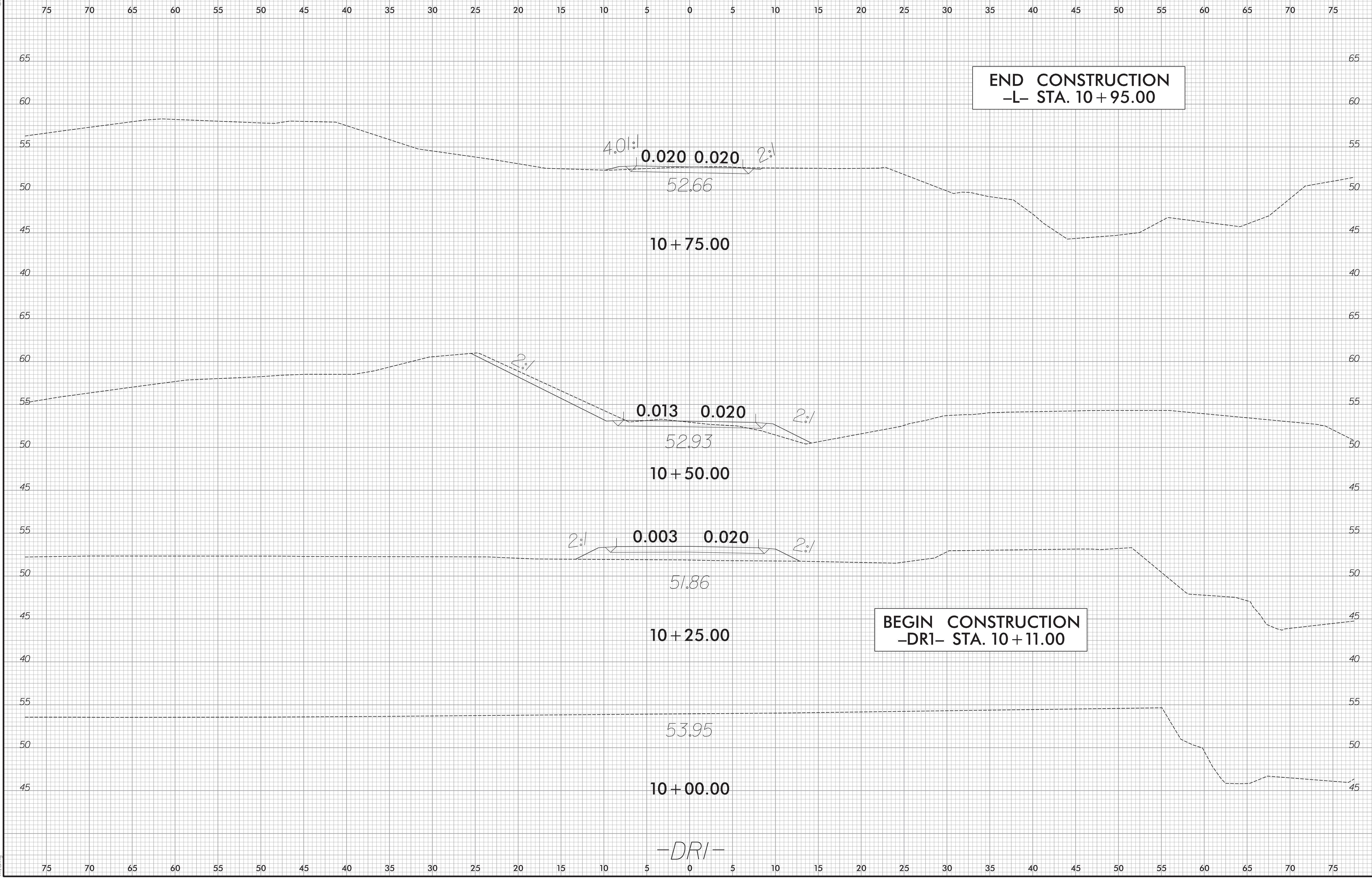
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
■■■■■	17BP.2.R.81	X-2



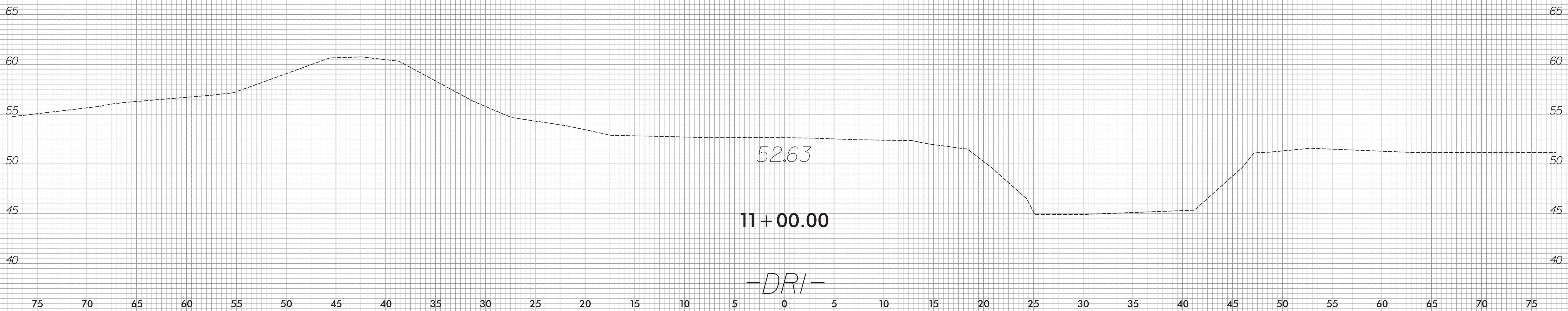
11/29/2017
R:\Projects\17BP.2.R.81\13_Pdu_Xp.dgn
m1.dgn



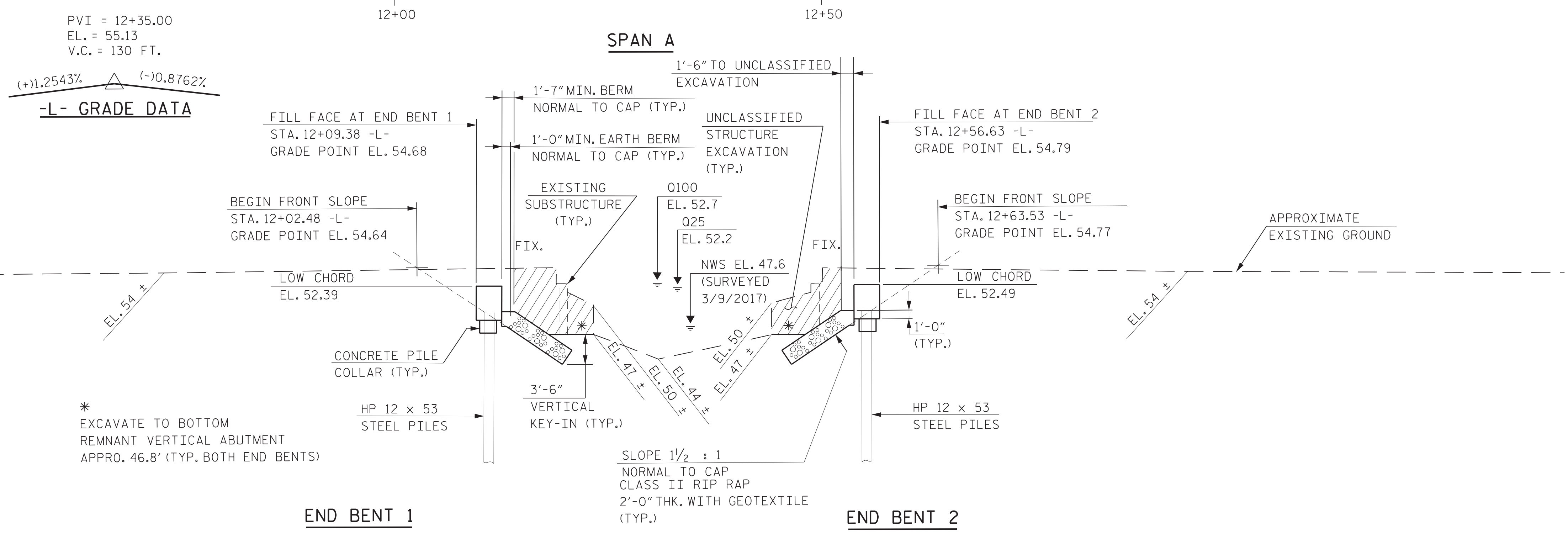
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	730113	X-5

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



11/29/2017
R:\Roadway\XSC\730113_Rdy_XPL_dr1.dgn
mlm

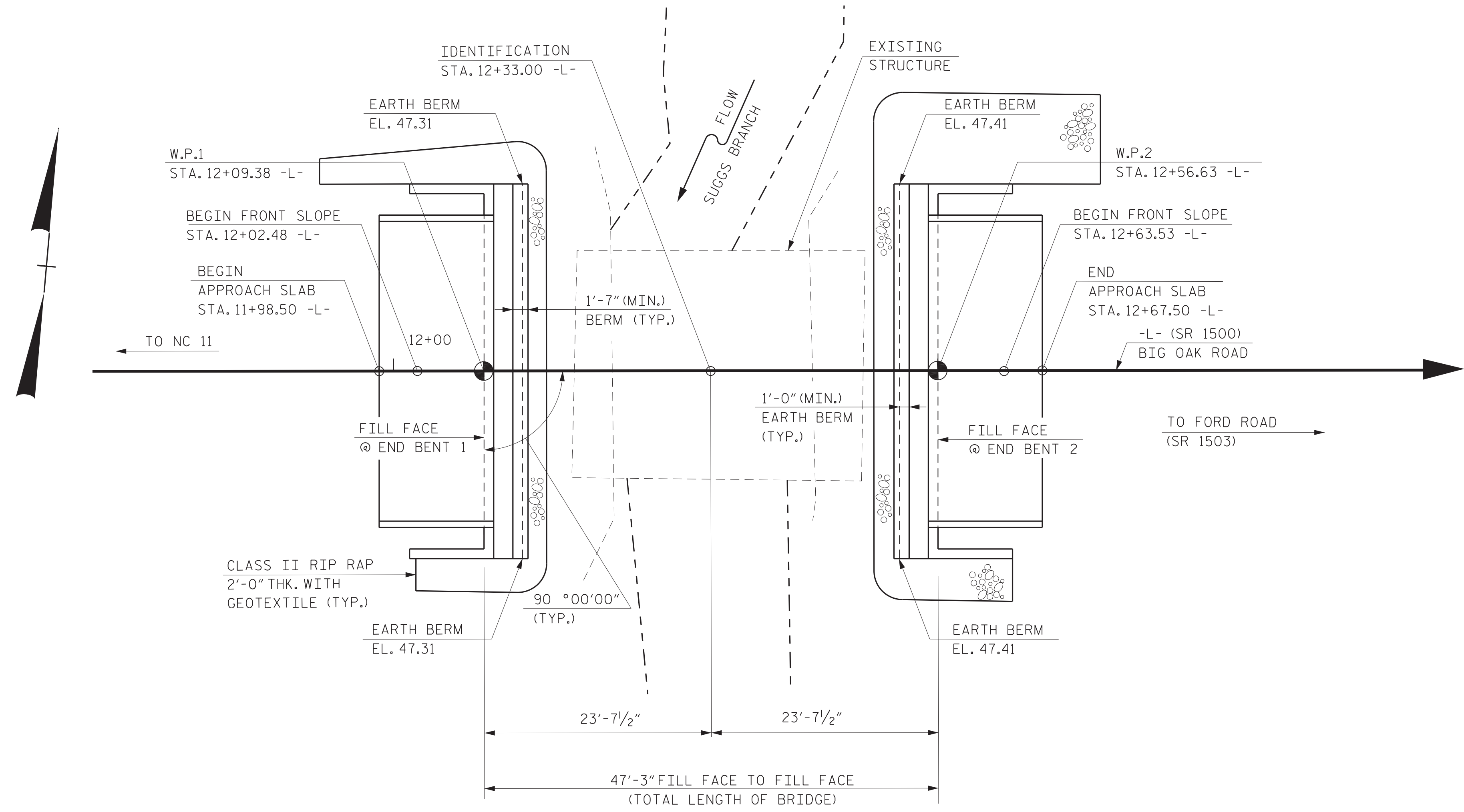


* EXCAVATE TO BOTTOM
REMNANT VERTICAL ABUTMENT
APPROX. 46.8' (TYP. BOTH END BENTS)

SECTION ALONG C SURVEY -L-

HYDRAULIC DATA
 DESIGN DISCHARGE-----600 C.F.S.
 FREQUENCY OF DESIGN DISCHARGE-----25 YR.
 DESIGN HIGH WATER ELEVATION-----52.2
 DRAINAGE AREA-----4.4 SQ. MI.
 BASE DISCHARGE (Q100)-----900 C.F.S.
 BASE HIGH WATER ELEVATION-----52.7

OVERTOPPING FLOOD DATA
 OVERTOPPING DISCHARGE-----1390 C.F.S.
 FREQUENCY OF OVERTOPPING-----500+ YR.
 OVERTOPPING ELEVATION-----53.7
 OVERTOPPING LOW POINT ----- -L- STA. 10+51.70



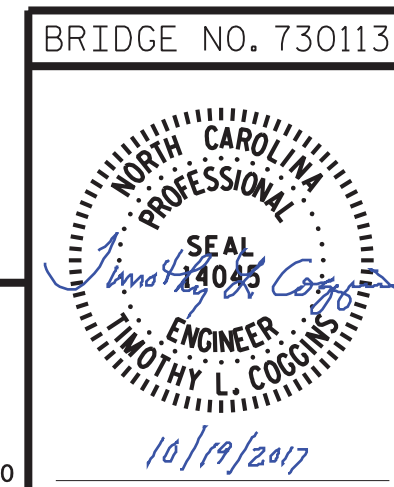
PLAN

PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

PROJECT NO. 17BP.2.R.81
PITT COUNTY
 STATION: 12+33.00 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 730113

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER SUGGS BRANCH
 ON SR 1500 (BIG OAK ROAD)
 BETWEEN NC 11 AND
 SR 1503 (FORD ROAD)



RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

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

TOTAL SHEETS: 15

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

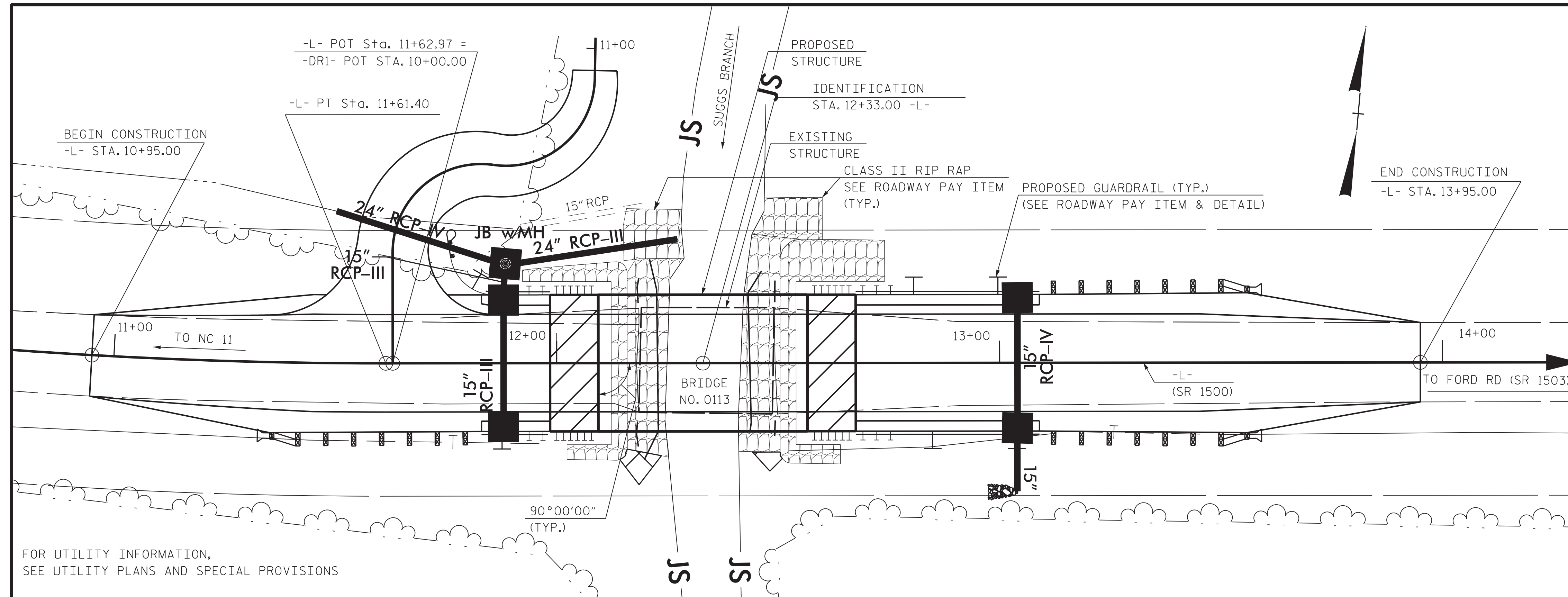
10/19/2017 r:\structures\dgn\FINAL\730113_STR_GEN.dgn

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
 CHECKED BY : Q.J. PAIHEL DATE : OCT. 2017
 DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SET UP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES	PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0") THICK	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES
	LUMP SUM	EA.	LUMP SUM	CU.YDS.	LUMP SUM	LBS.	EACH	NO. LIN.FT.	EACH	LIN.FT.	TONS	SQ.YDS.	LUMP SUM	NO. LIN.FT.	LUMP SUM
SUPERSTRUCTURE					LUMP SUM					90.25				11 495	
END BENT NO.1				21.6		2636	7	7 420	4		105	115			
END BENT NO.2				21.6		2636	7	7 455	4		140	155			
TOTAL	LUMP SUM	1	LUMP SUM	43.2	LUMP SUM	5272	14	14 875	8	90.25	245	270	LUMP SUM	11 495	LUMP SUM

BENCH MARK : BM #1 -L- STA. 10+71.00, 35.2' LT. RR SPIKE SET IN 14" GUM TREE, N 750292 E 2484506 ELEV. 53.42



LOCATION SKETCH

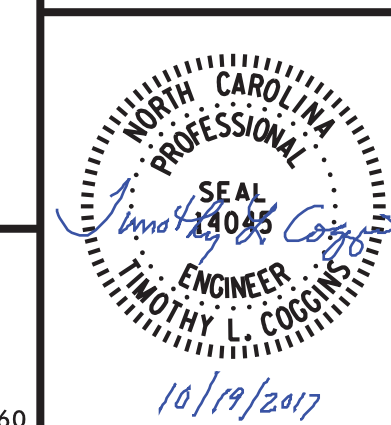
PROJECT NO. 17BP.2.R.81
PITT COUNTY
 STATION: 12+33.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER SUGGS BRANCH
 ON SR 1500 (BIG OAK ROAD)
 BETWEEN NC 11 AND
 SR 1503 (FORD ROAD)

BRIDGE NO. 730113



RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

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

default 10/19/2017 r:\structures\dgn\FINAL\730113_STR_LOC.dgn

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
 CHECKED BY : O.J. PAIHEL DATE : OCT. 2017
 DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET S-15.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 31'-2" WITH AN ASPHALT WEARING SURFACE OVER PRESTRESSED PRECAST CONCRETE CHANNELS SUPERSTRUCTURE AND A CLEAR ROADWAY WIDTH OF 24.33' ON A SUBSTRUCTURE CONSISTING OF END BENTS WITH PRECAST PRESTRESSED CONCRETE CAPS ON TIMBER PILES AND LOCATED AT THE PROPOSED STRUCTURE LOCATION SHALL BE REMOVED AT STATION 12+33.00 -L-.

THE EXISTING BRIDGE IS PRESENTLY POSTED FOR A LOAD LIMIT, SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 25 FEET EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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

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

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

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

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

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS

PILES AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 65 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 115 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

THE SCOUR CRITICAL ELEVATION FOR END BENT NO. 1 AND END BENT NO. 2 IS ELEVATION 35 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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

INSTALL PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A TIP ELEVATION NO HIGHER THAN 15 FEET.

PROJECT NO. 17BP.2.R.81
PITT COUNTY
 STATION: 12+33.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING AND
 FOUNDATION NOTES

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

BRIDGE NO. 730113

12-04-2017

RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

DRAWN BY : F.D. WEEDEN	DATE : OCT. 2017
CHECKED BY : O.J. PAITEL	DATE : OCT. 2017
DESIGN ENGINEER OF RECORD : T.L. COGGINS	DATE : OCT. 2017

default 12/4/2017 R:\Structures\DGN\FINAL\730113_STR_NOTE.dgn

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

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

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	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)

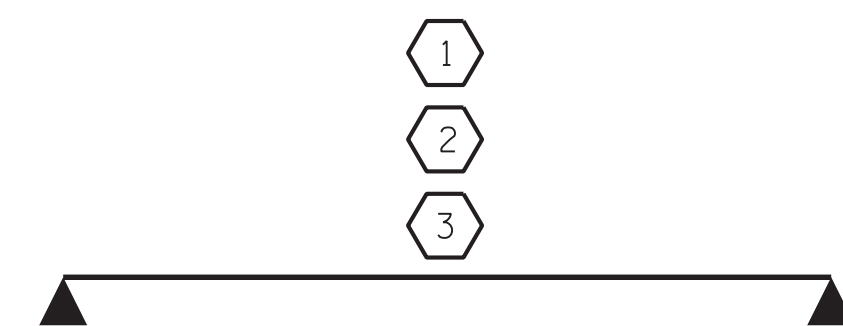
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

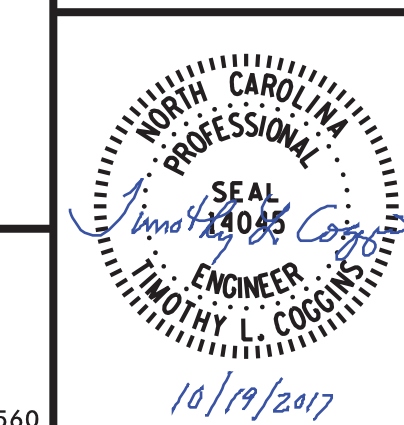


LRFR SUMMARY
FOR SPAN A

PROJECT NO. 17BP.2.R.81
PITT COUNTY
 STATION: 12+33.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 45' CORED SLAB UNIT
 90° SKEW
 (NON-INTERSTATE TRAFFIC)

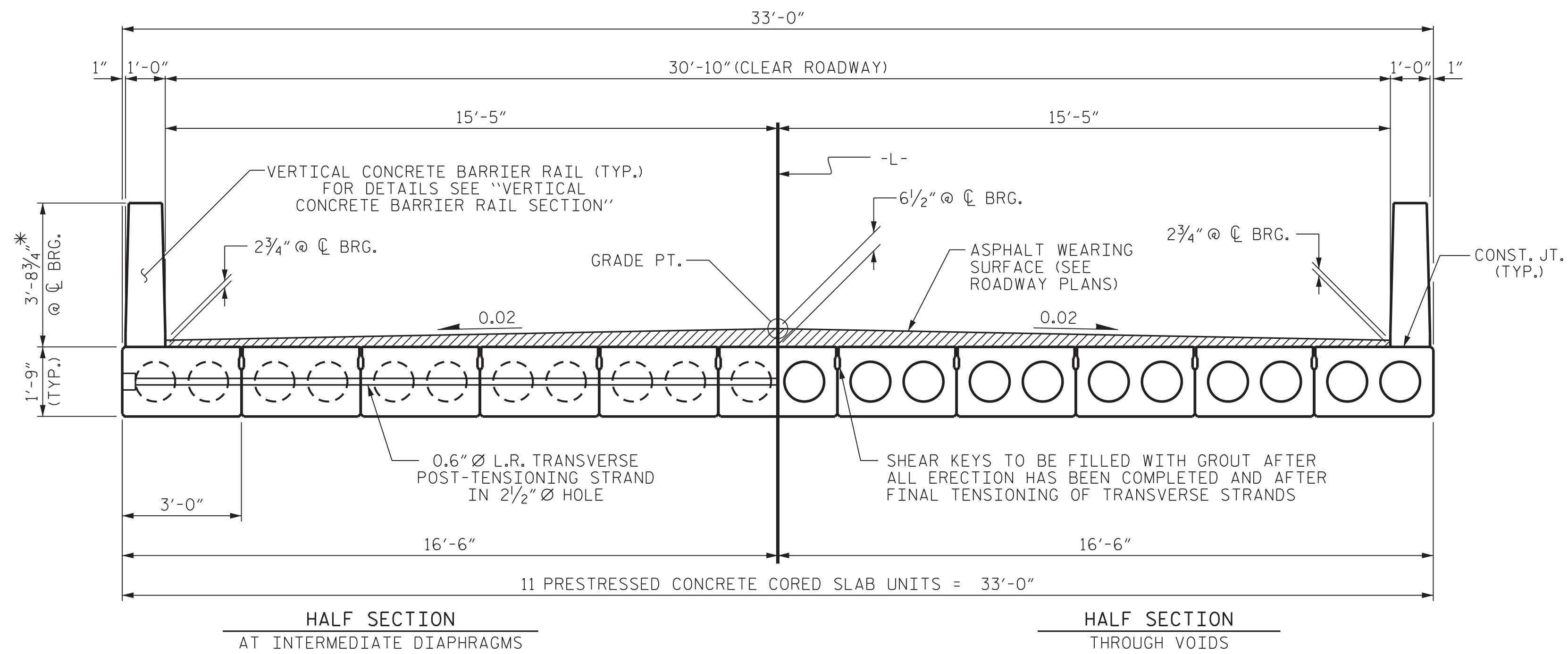
BRIDGE NO. 730113



RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

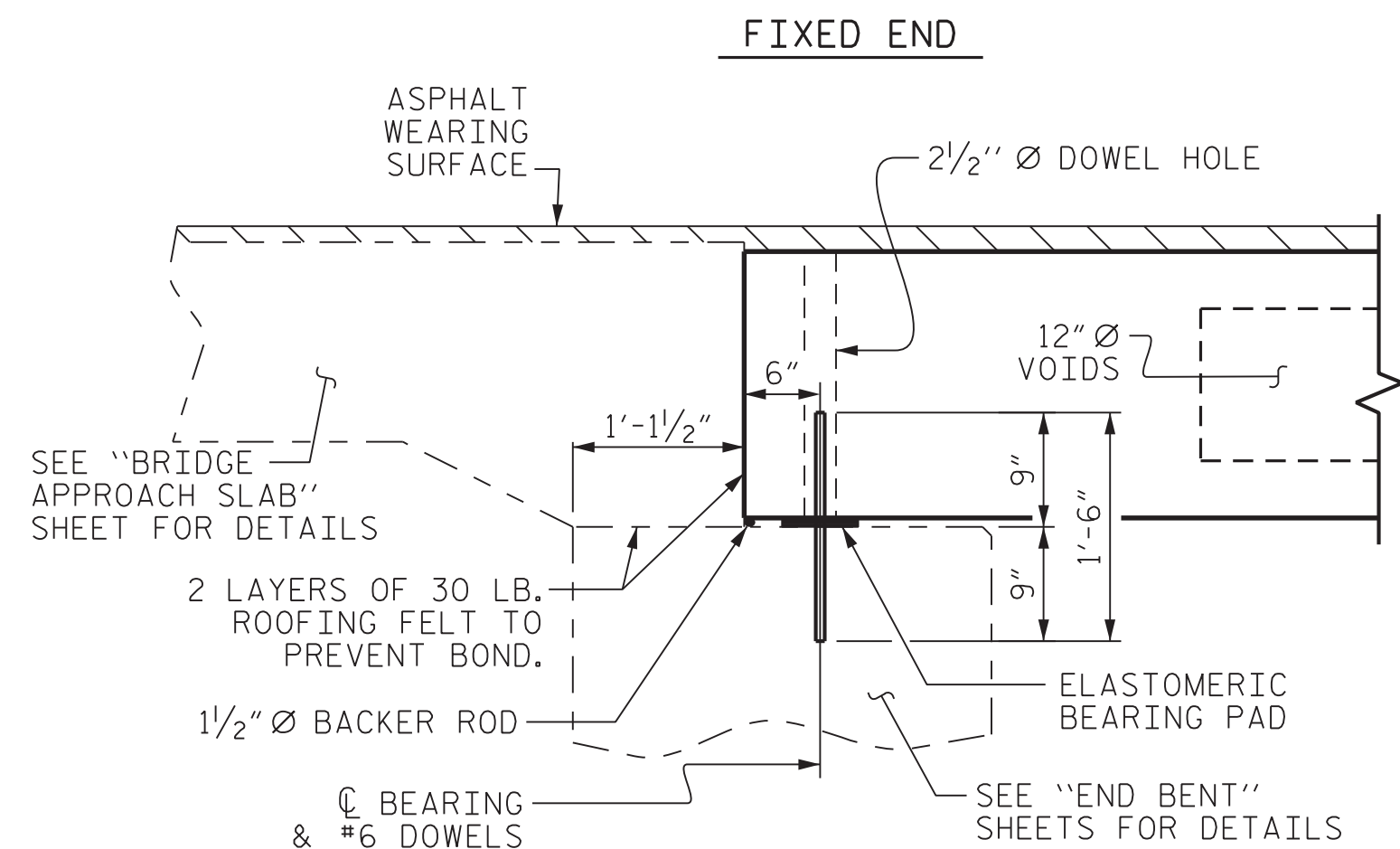
DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

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

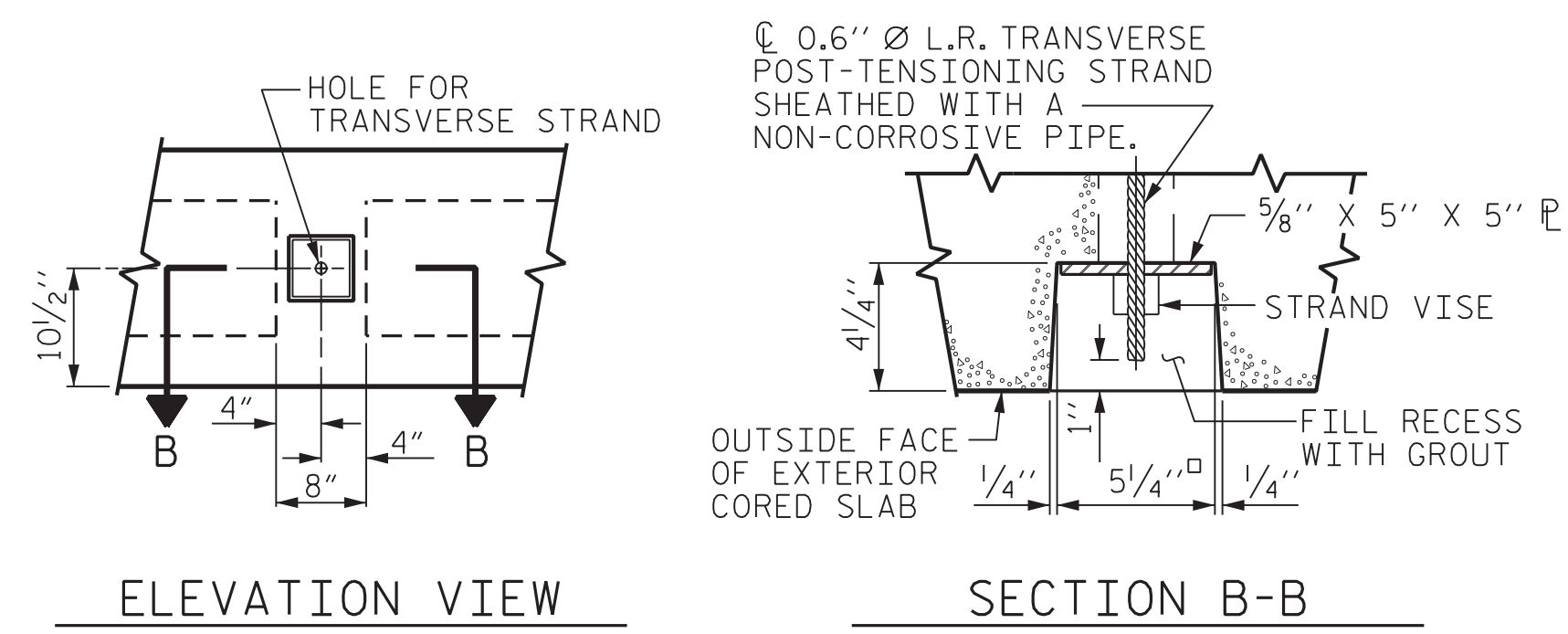


TYPICAL SECTION

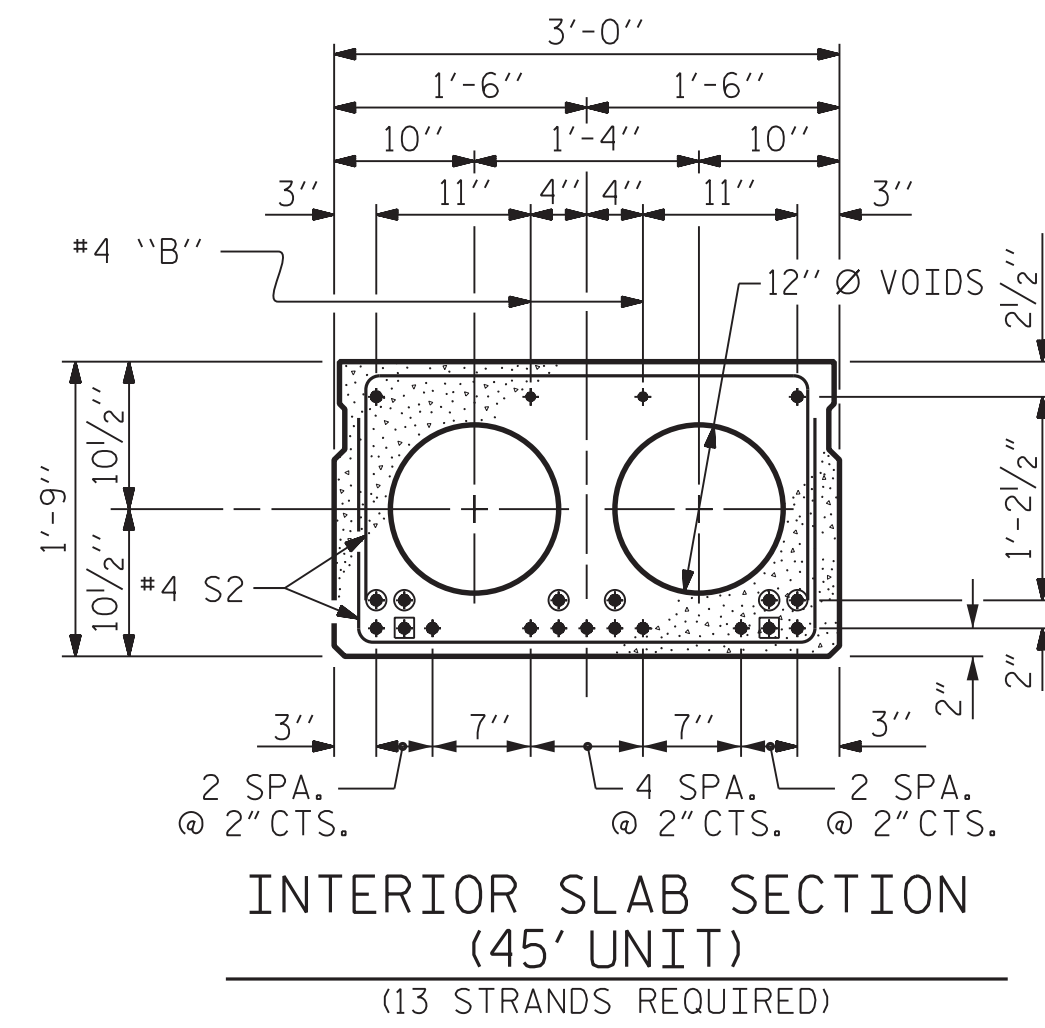
* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



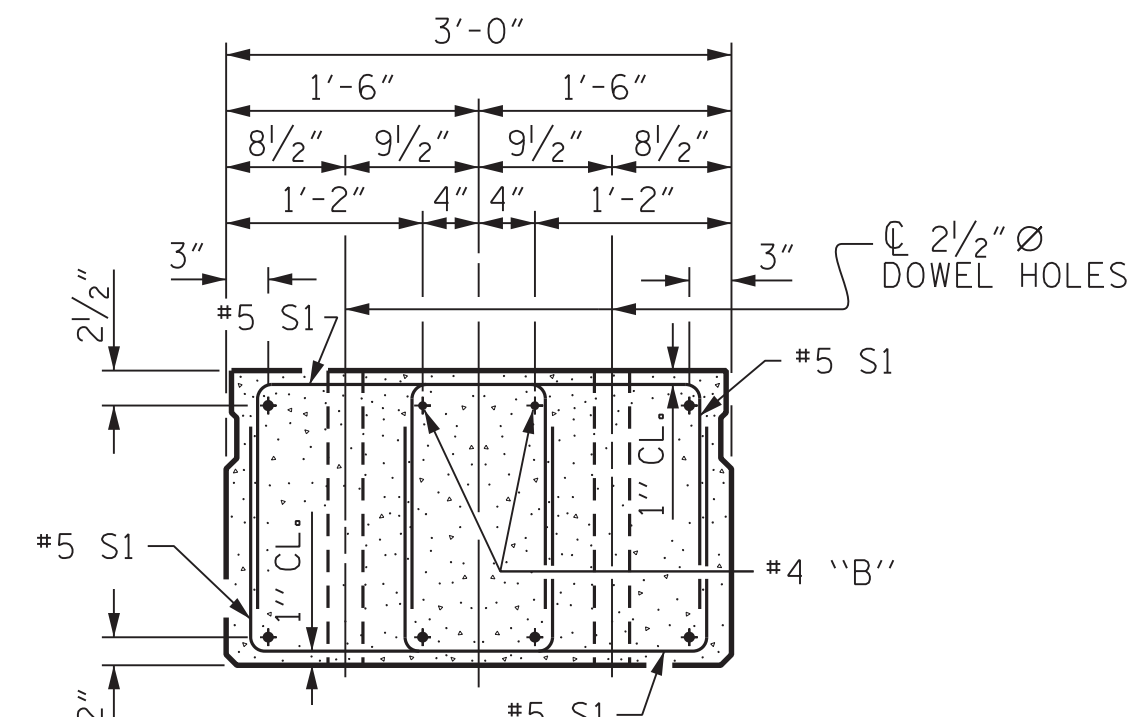
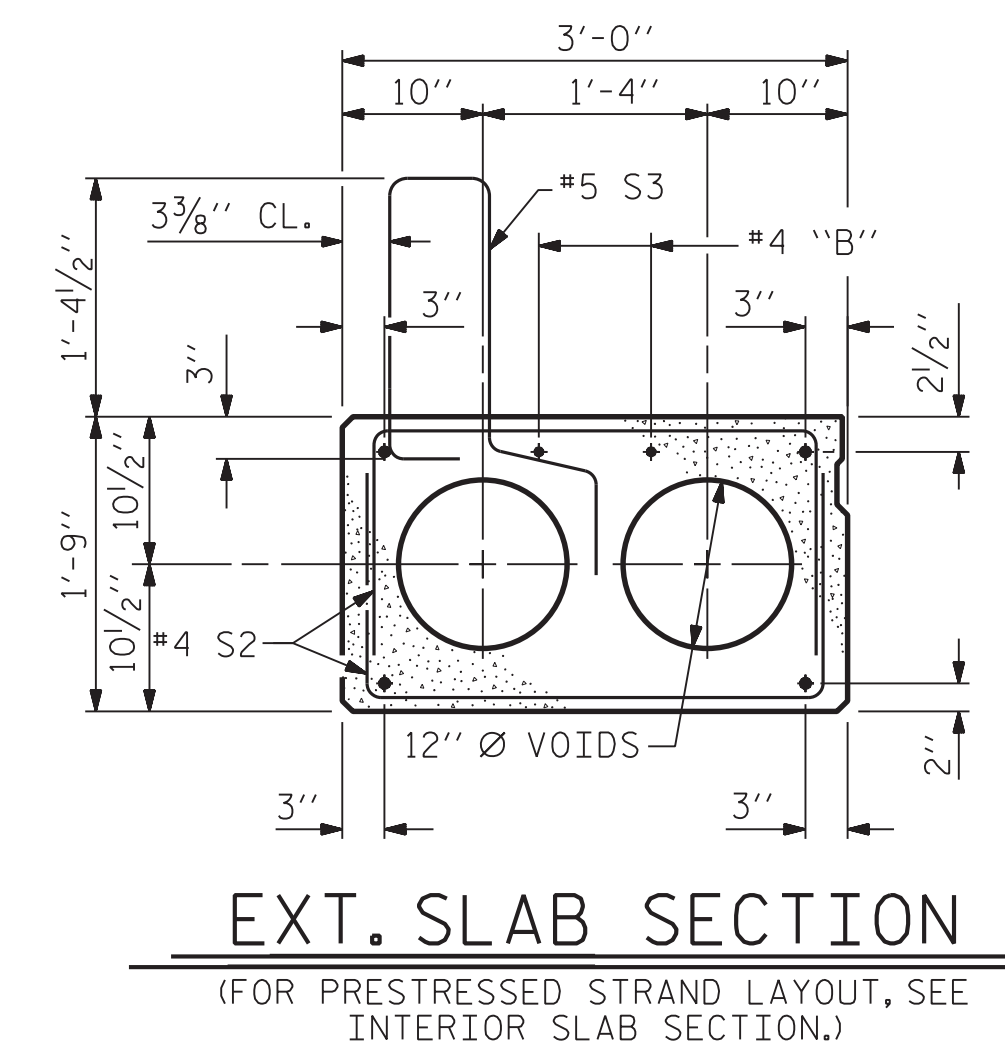
SECTION AT END BENT



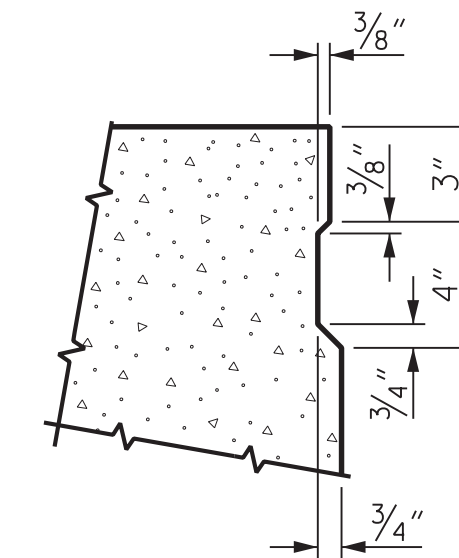
GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS



0.6" Ø LOW RELAXATION STRAND LAYOUT



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



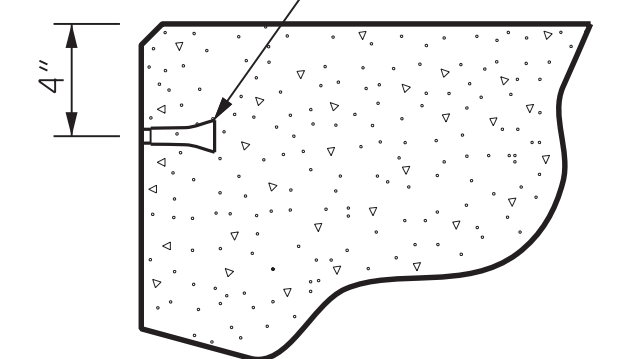
SHEAR KEY DETAIL

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

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

DEBONDING LEGEND

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



THREADED INSERT DETAIL

PROJECT NO. 17BP.2.R.81
PITT COUNTY
STATION: 12+33.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

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

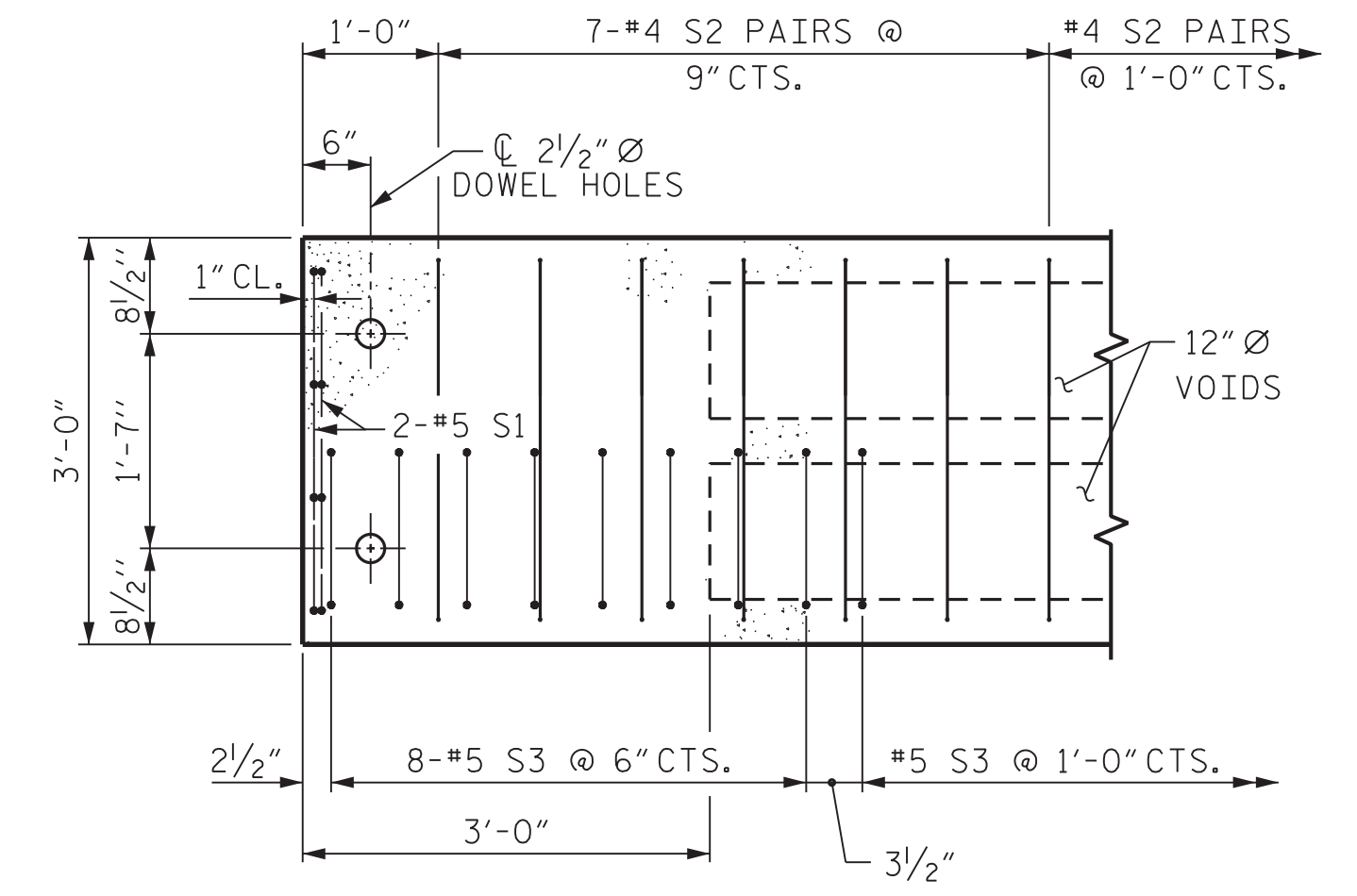
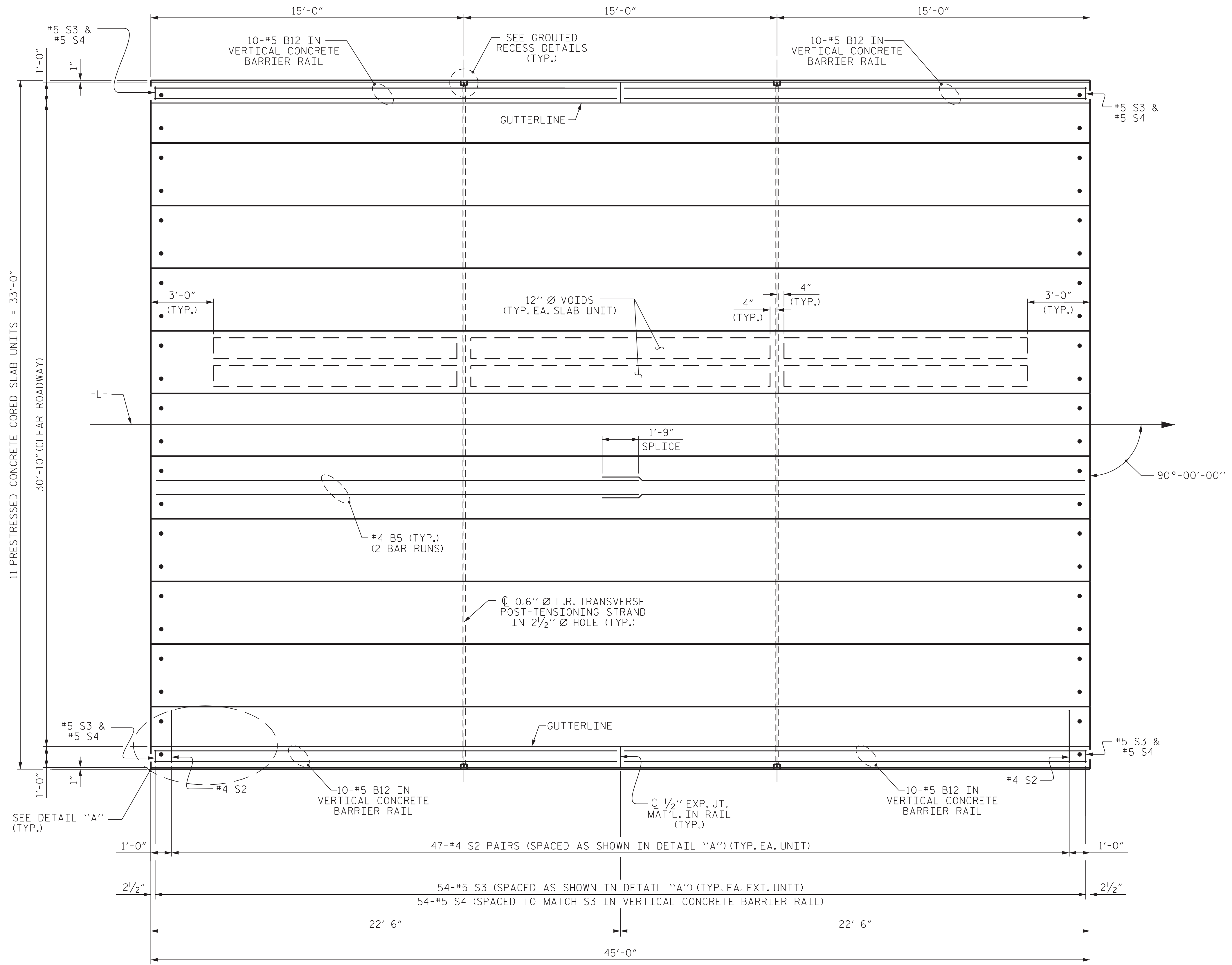
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NC 27609-3960 (919) 878-9560
NC LICENSE NUMBER: F-0112

BRIDGE NO. 730113

PROFESSIONAL ENGINEER
SEAL
TIMOTHY L. COGGINS
10/19/2017

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

default 10/19/2017 r:\structures\dgn\FINAL\730113_STR_POS.dgn

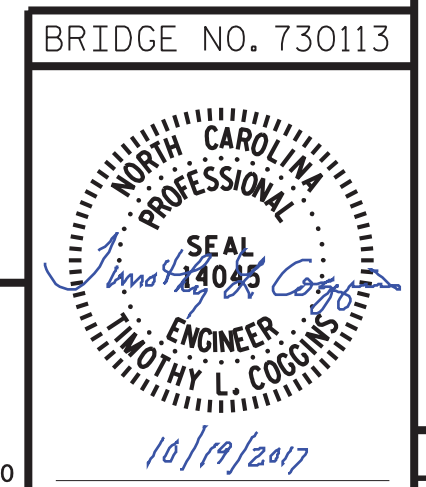


DETAIL "A"
 (TYPICAL EACH END OF UNIT)
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. 17BP.2.R.81
PITT COUNTY
 STATION: 12+33.00 -L-

SHEET 2 OF 3



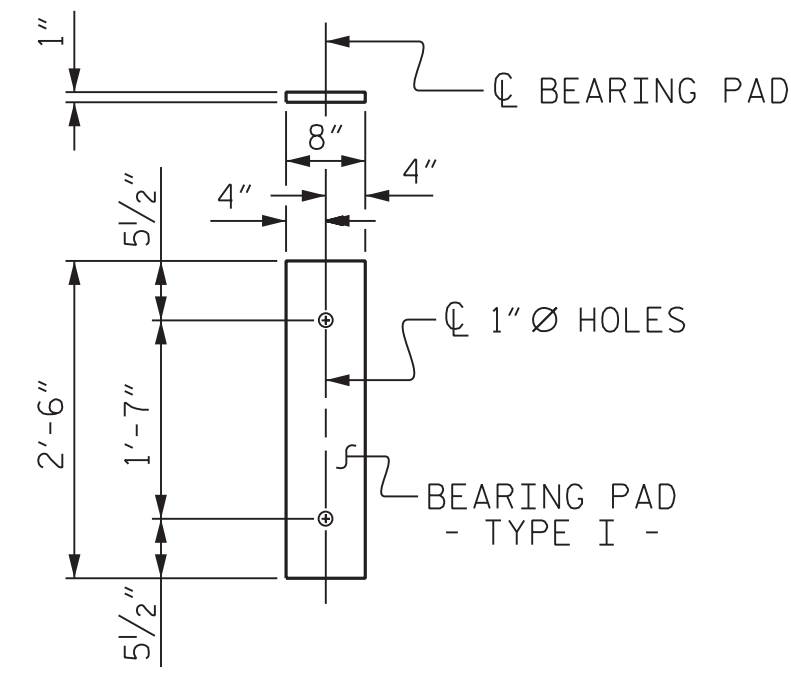
RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF 45' UNIT
 30'-10" CLEAR ROADWAY
 90° SKEW

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
 CHECKED BY : O.J. PAIHEL DATE : OCT. 2017
 DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			15



FIXED END
(TYPE I - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

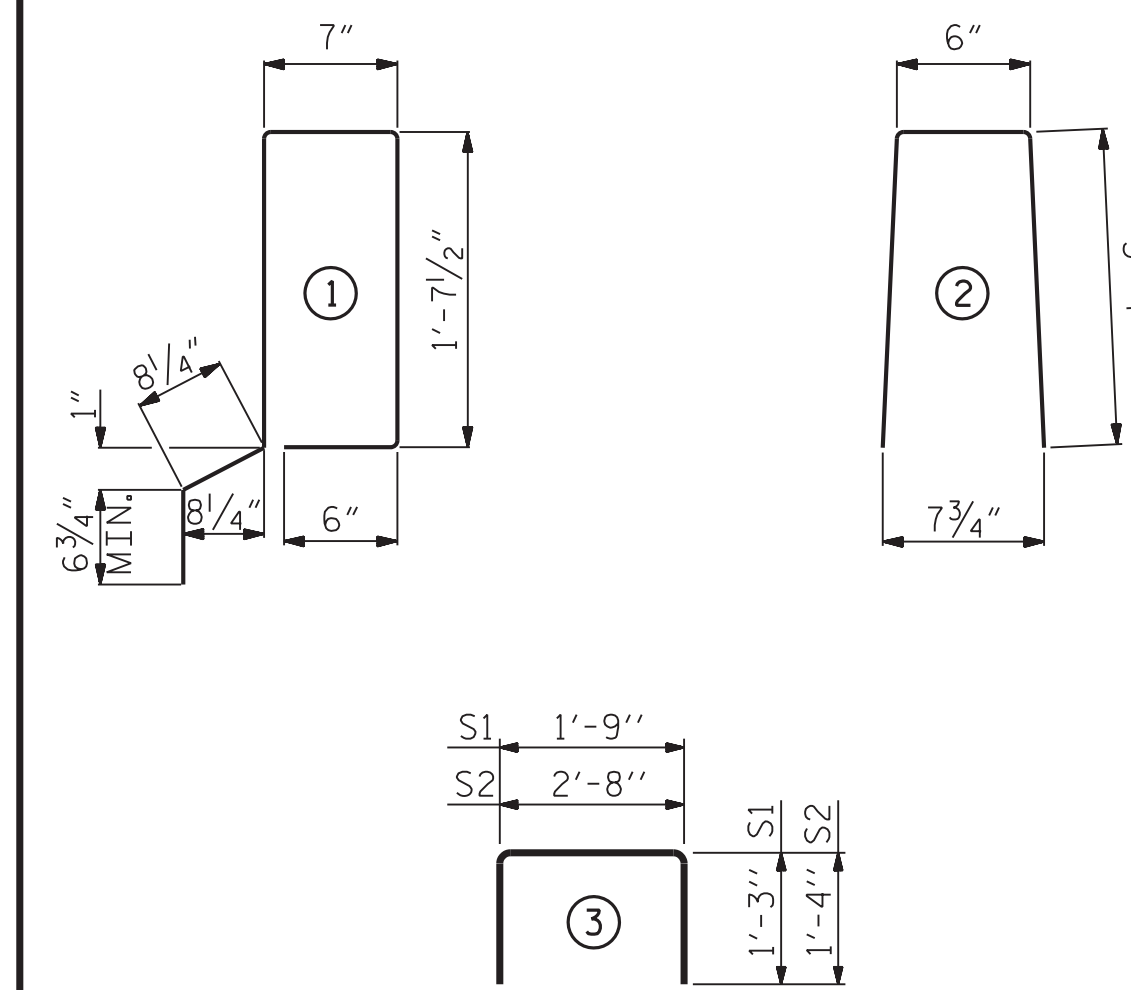
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
45' UNIT						
*B12	40	40	#5	STR	22'-1"	921
*S4	108	108	#5	2	7'-2"	807
*EPOXY COATED REINFORCING STEEL				LBS.		1728
CLASS AA CONCRETE				CU.YDS.		11.5
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		90.25

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-9"
45' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	7/8" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓
FINAL CAMBER	3/4" ↑

** INCLUDES FUTURE WEARING SURFACE

BAR TYPES



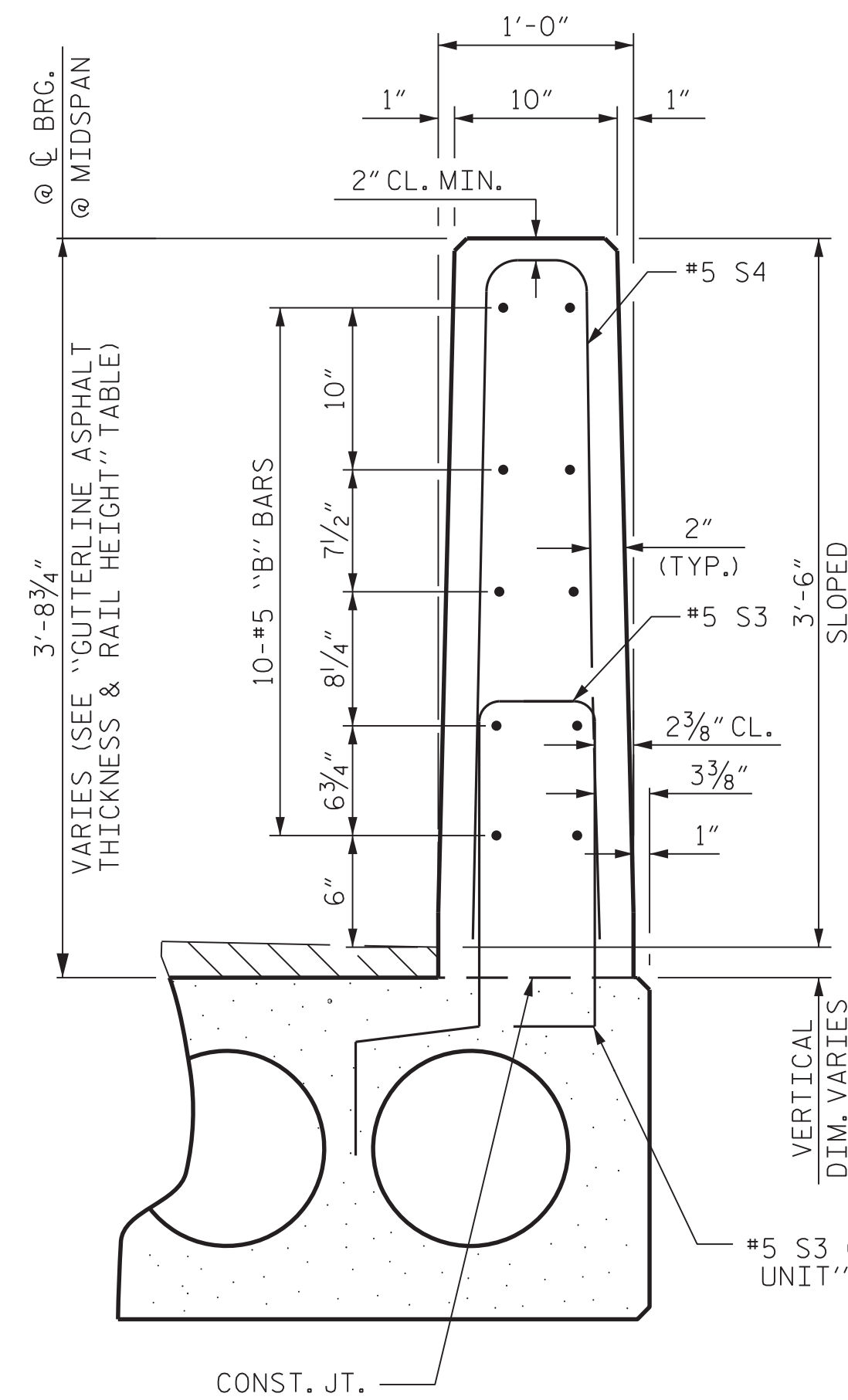
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE 45' CORED SLAB UNIT

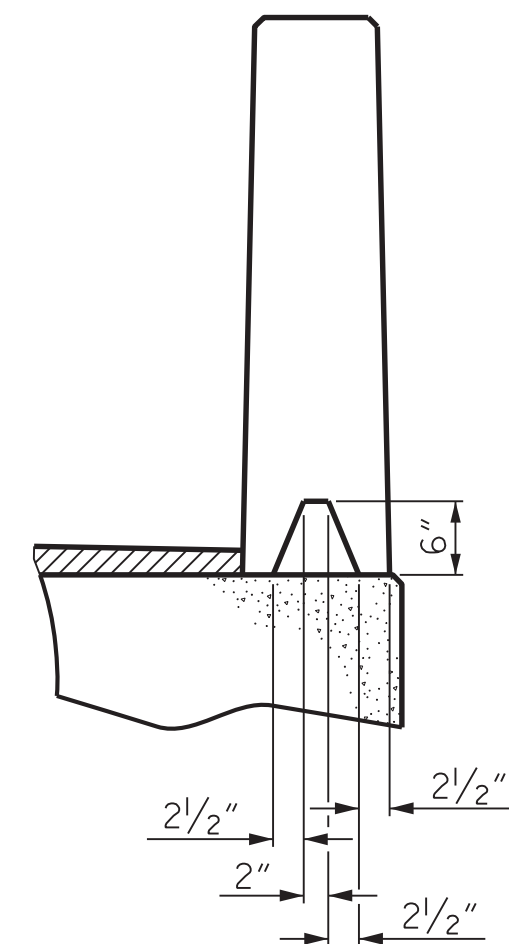
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B5	4	#4	STR	23'-3"	62	23'-3"	62
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	94	#4	3	5'-4"	335	5'-4"	335
*S3	54	#5	1	5'-7"	314		
REINFORCING STEEL				LBS.	432	432	
*EPOXY COATED REINFORCING STEEL				LBS.	314		
5000 P.S.I. CONCRETE				CU. YDS.	6.5	6.5	
0.6" Ø L.R. STRANDS				No.	13	13	

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
45' UNIT			
EXTERIOR C.S.	2	45'-0"	90'-0"
INTERIOR C.S.	9	45'-0"	405'-0"
TOTAL			495'-0"



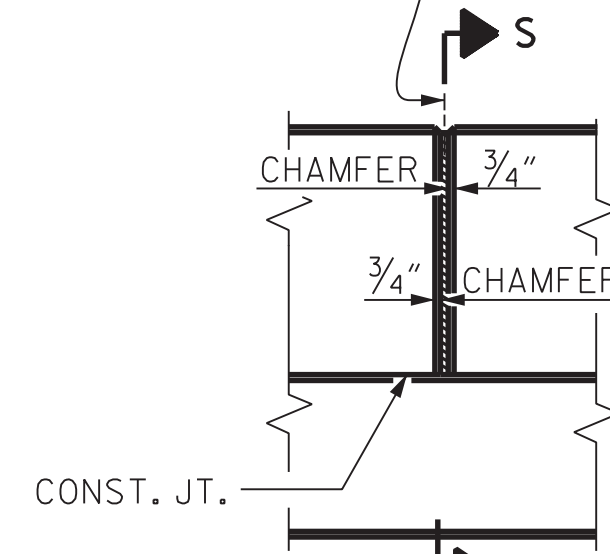
VERTICAL CONCRETE BARRIER RAIL SECTION



SECTION S-S

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

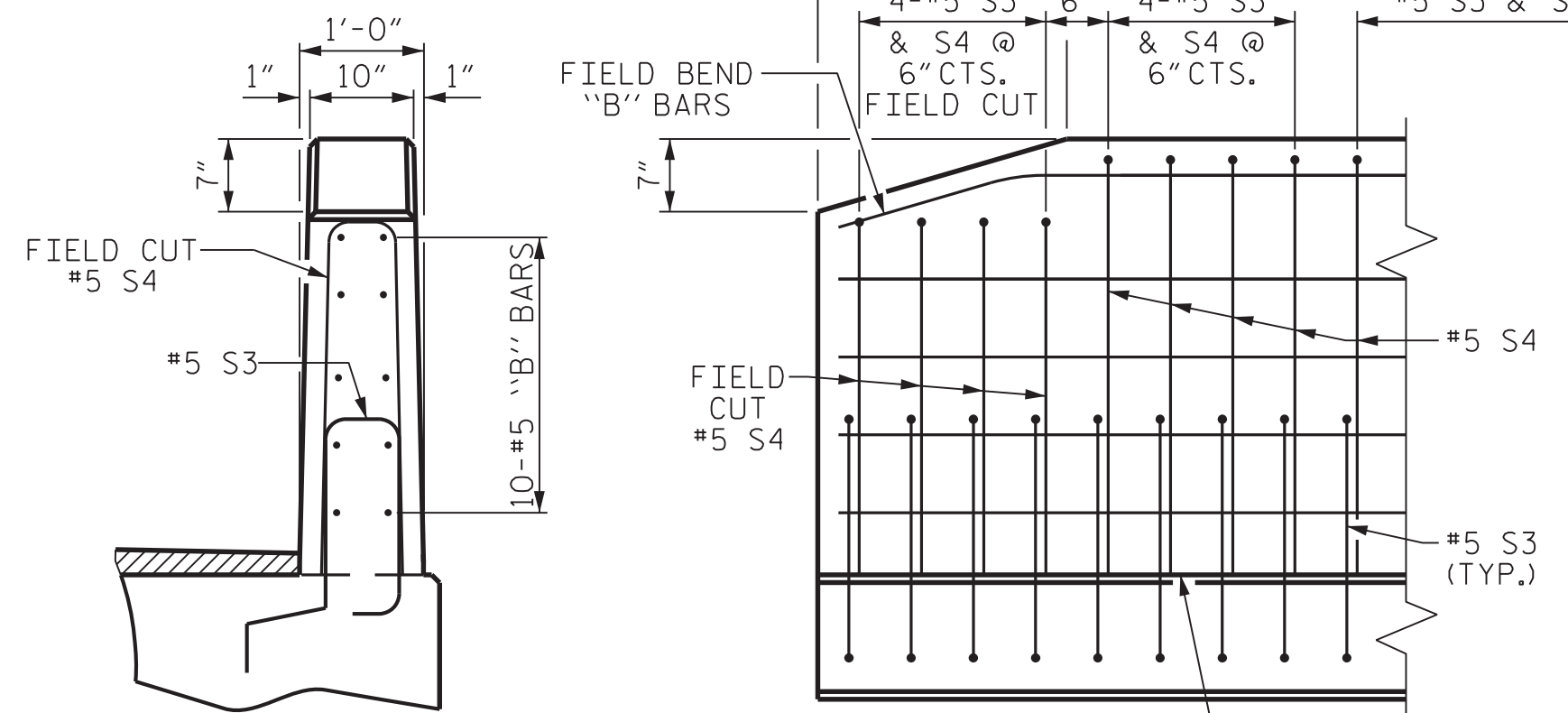
1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
45' UNITS	2"	3'-8"



END VIEW

SIDE VIEW

END OF RAIL DETAILS

CONCRETE RELEASE STRENGTH

UNIT	PSI
45' UNITS	4000

NOTES

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

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

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

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

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

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

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

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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.

GRADE 270 STRANDS

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

PROJECT NO. 17BP.2.R.81

PITT COUNTY

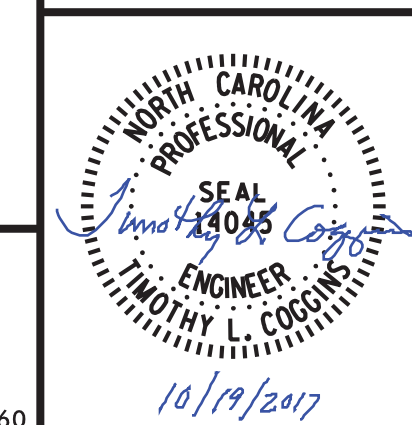
STATION: 12+33.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

BRIDGE NO. 730113



RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NC 27609-3960 (919) 878-9560
NC LICENSE NUMBER: F-0112

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

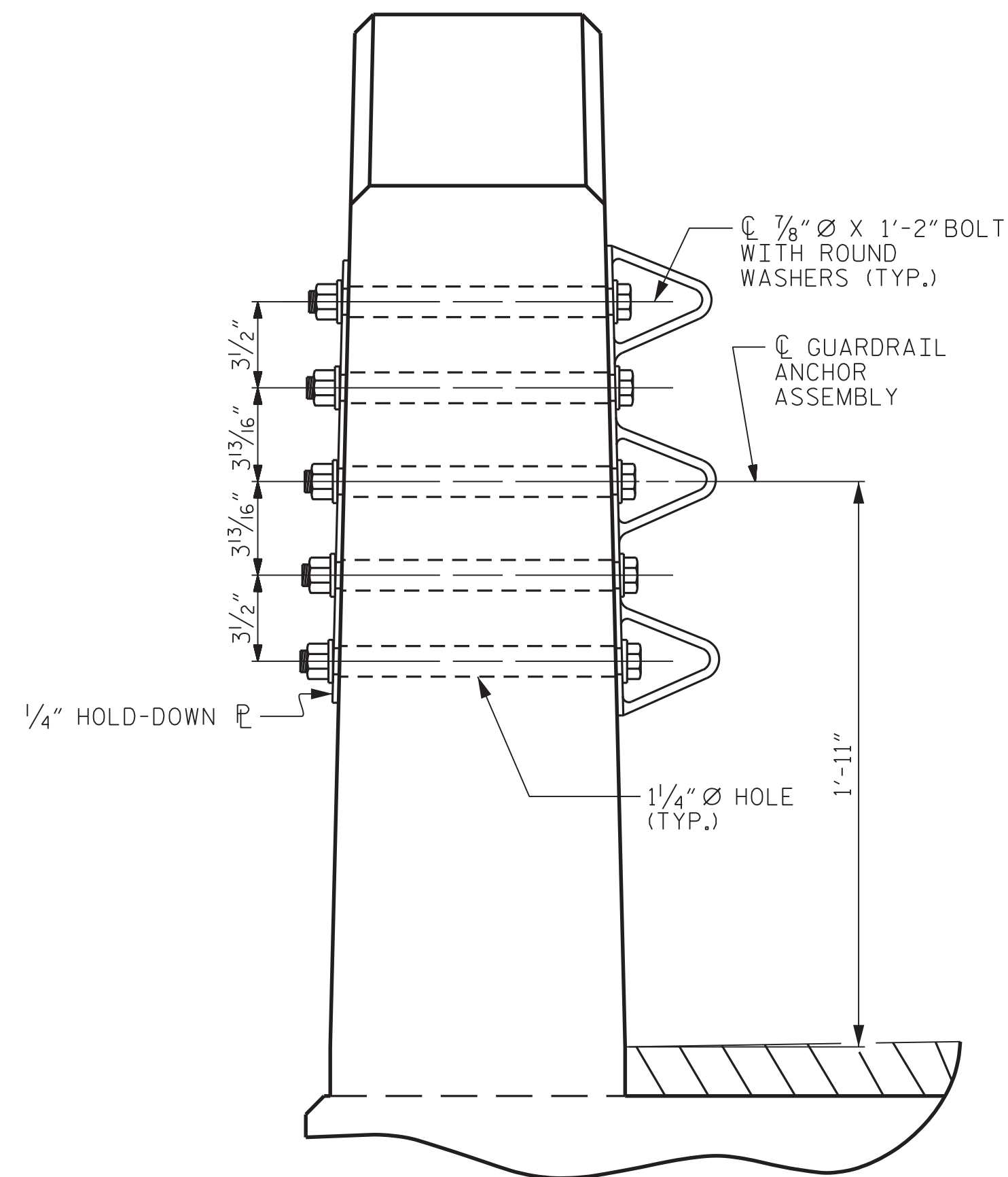
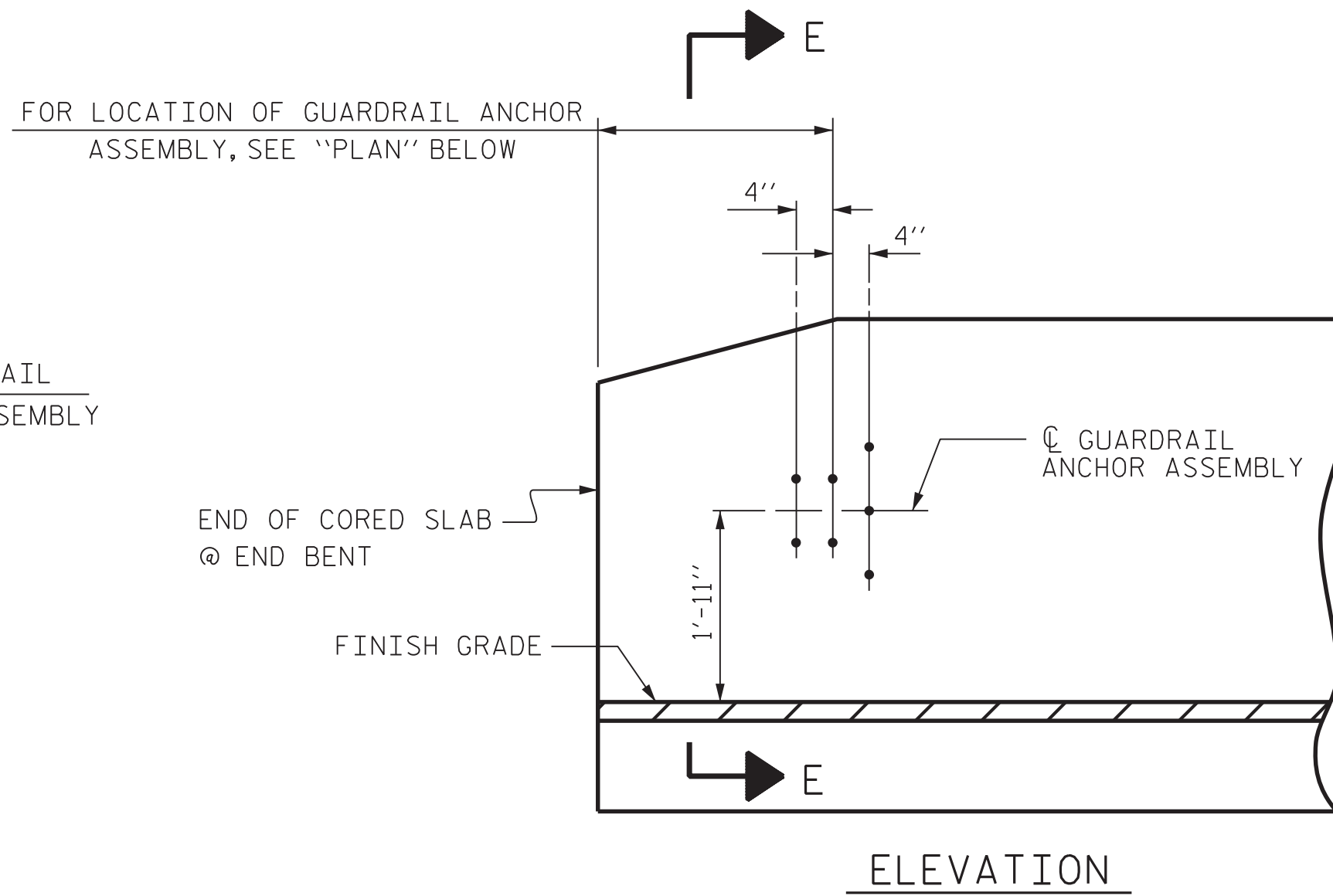
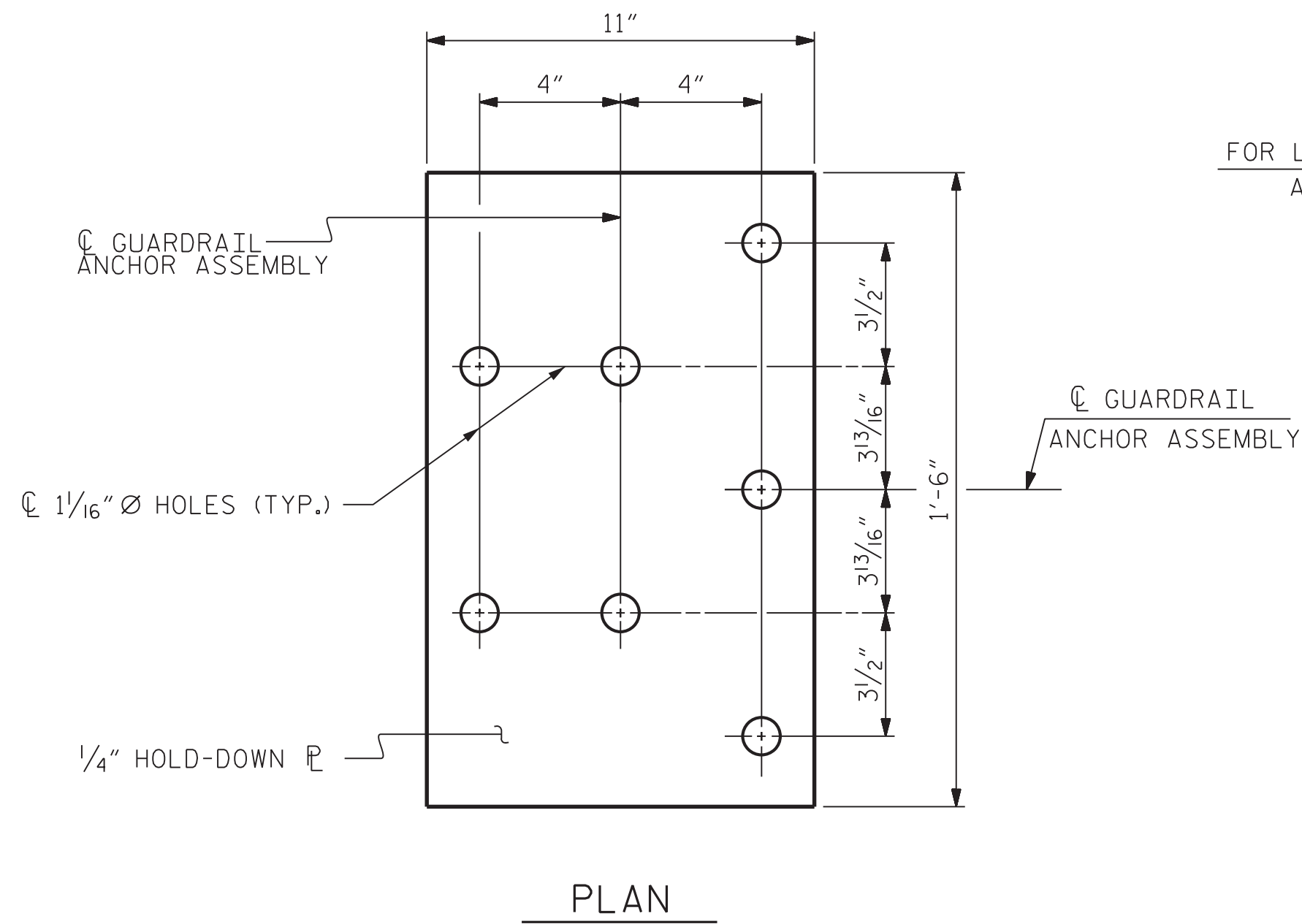
REVISIONS		SHEET NO.			
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
			S-7		
			TOTAL SHEETS 15		

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
CHECKED BY : Q.J. PAITEL DATE : OCT. 2017
DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

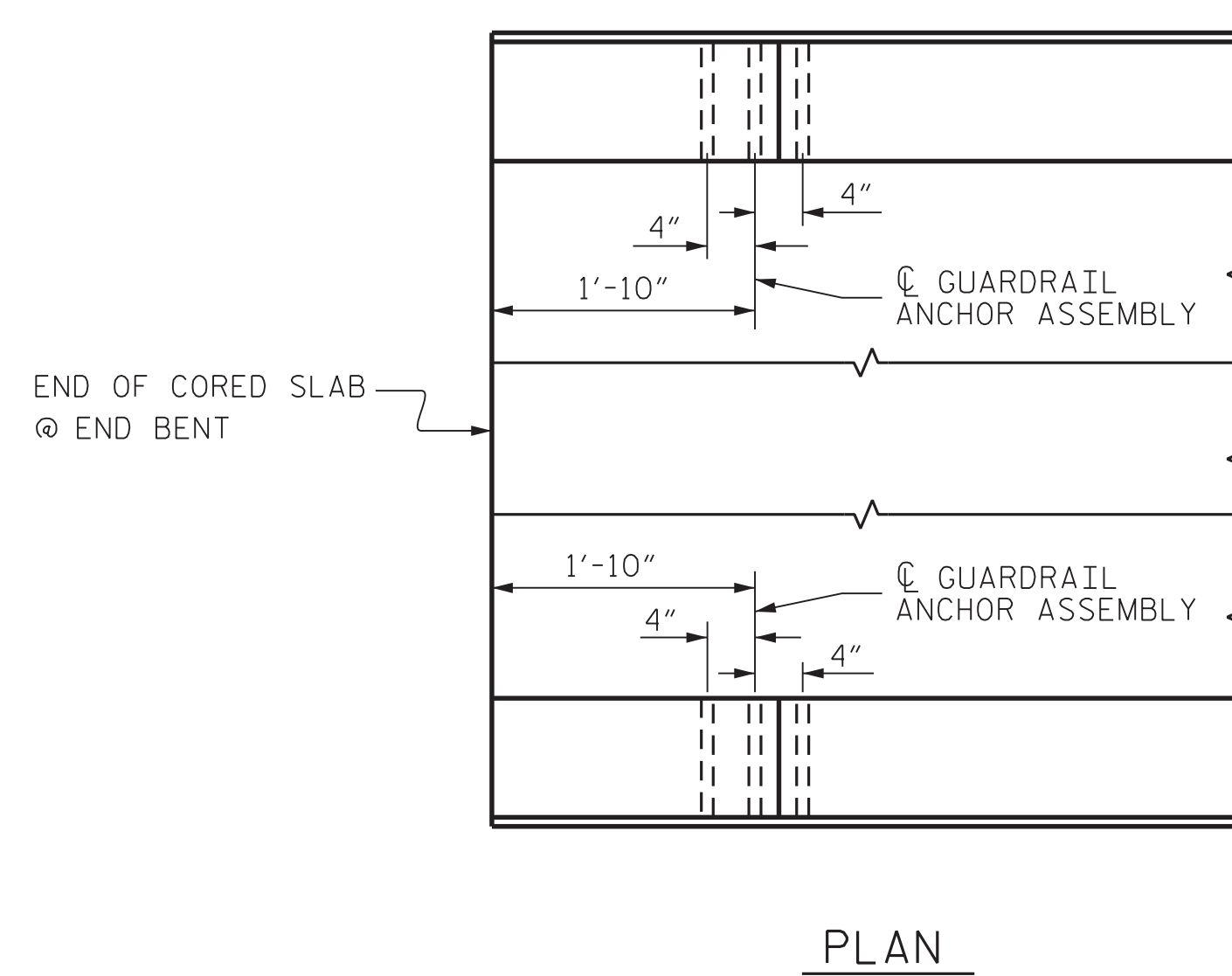
r:\structures\dgn\FINAL\730113_STR_POSBOM.dgn

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.



GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

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



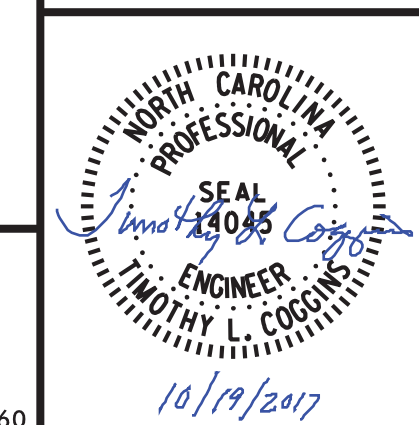
SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.2.R.81
PITT COUNTY
 STATION: 12+33.00 -L-

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

BRIDGE NO. 730113



RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

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

10/19/2017 r:\structures\dgn\FINAL\730113_STR_GRA.dgn

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
 CHECKED BY : Q.J. PAIHEL DATE : OCT. 2017
 DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

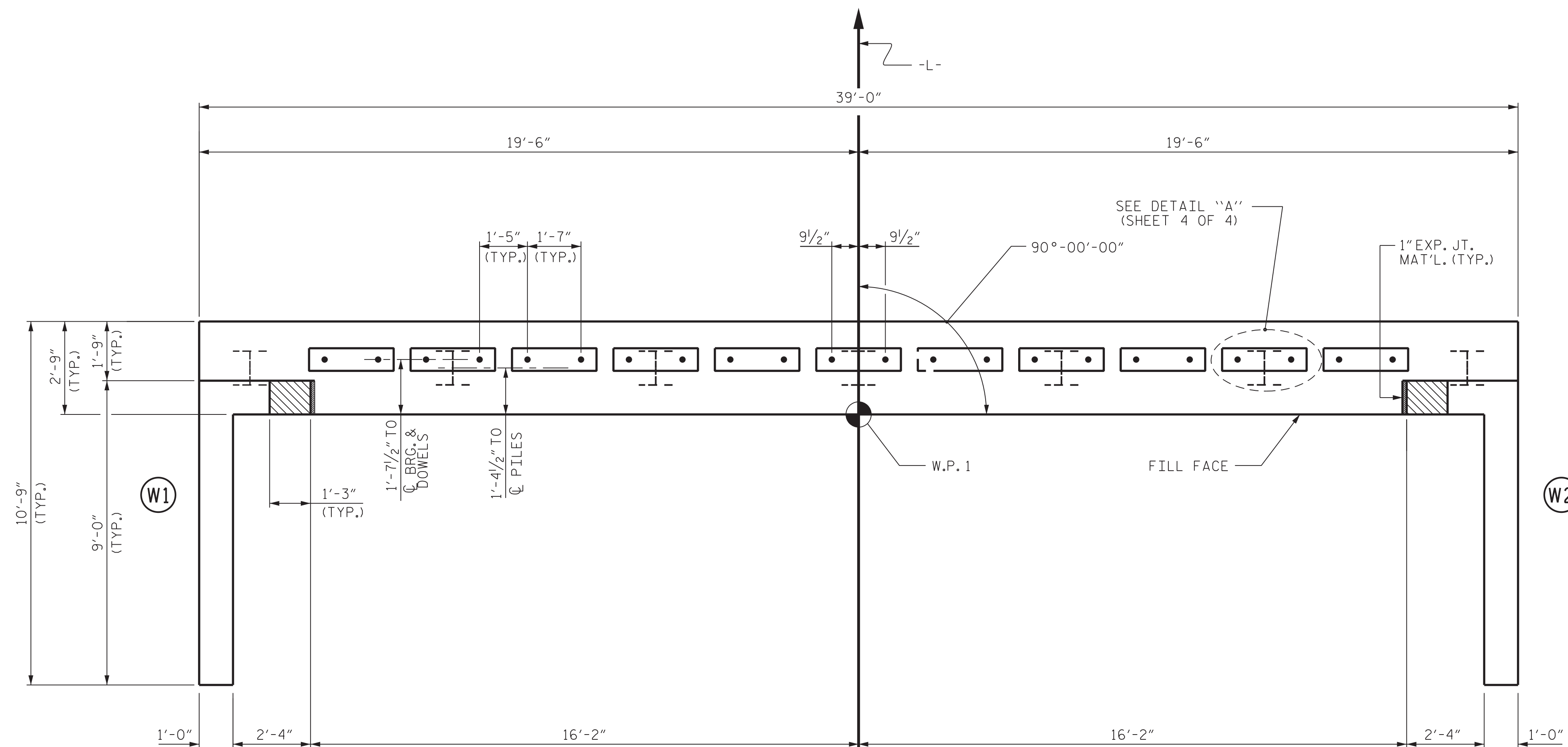
NOTES

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

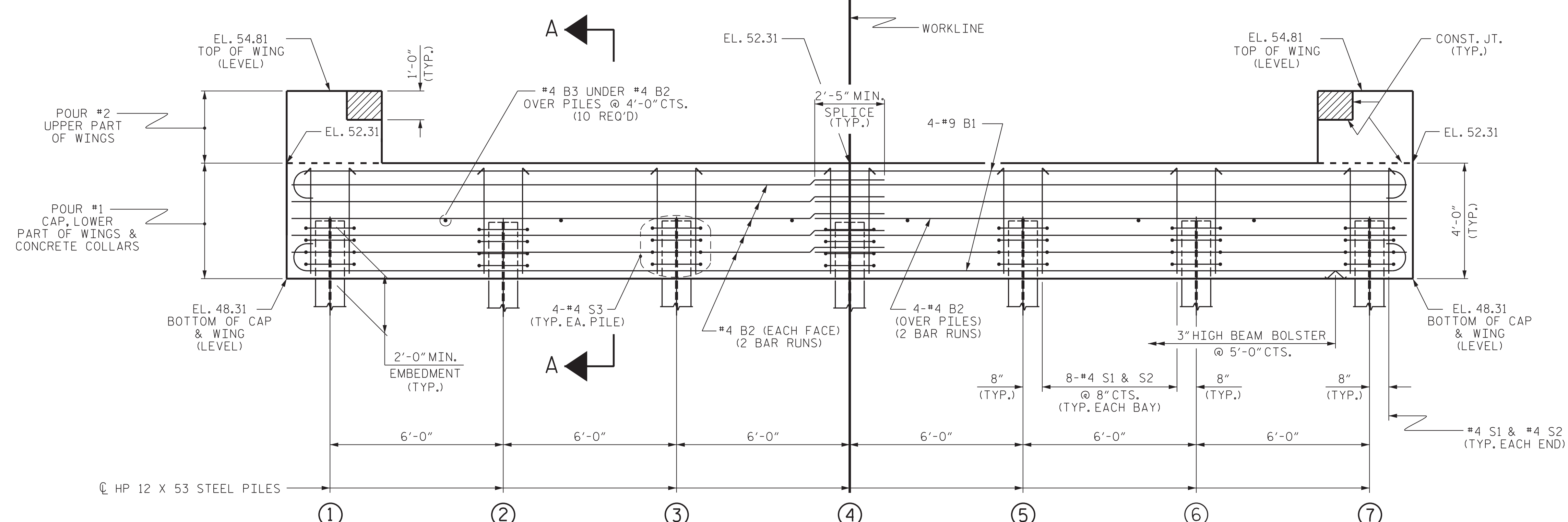
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

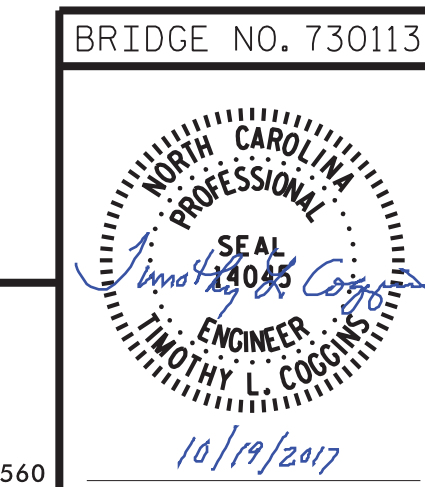
WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. 17BP.2.R.81
PITT COUNTY
STATION: 12+33.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1



RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NC 27609-3960 (919) 878-9560
NC LICENSE NUMBER: F-0112

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9	
1			3			TOTAL SHEETS	
2			4			15	

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

default 10/19/2017 r:\structures\dgn\FINAL\730113_STR_EB1.dgn

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
CHECKED BY : Q.J. PAIHEL DATE : OCT. 2017
DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

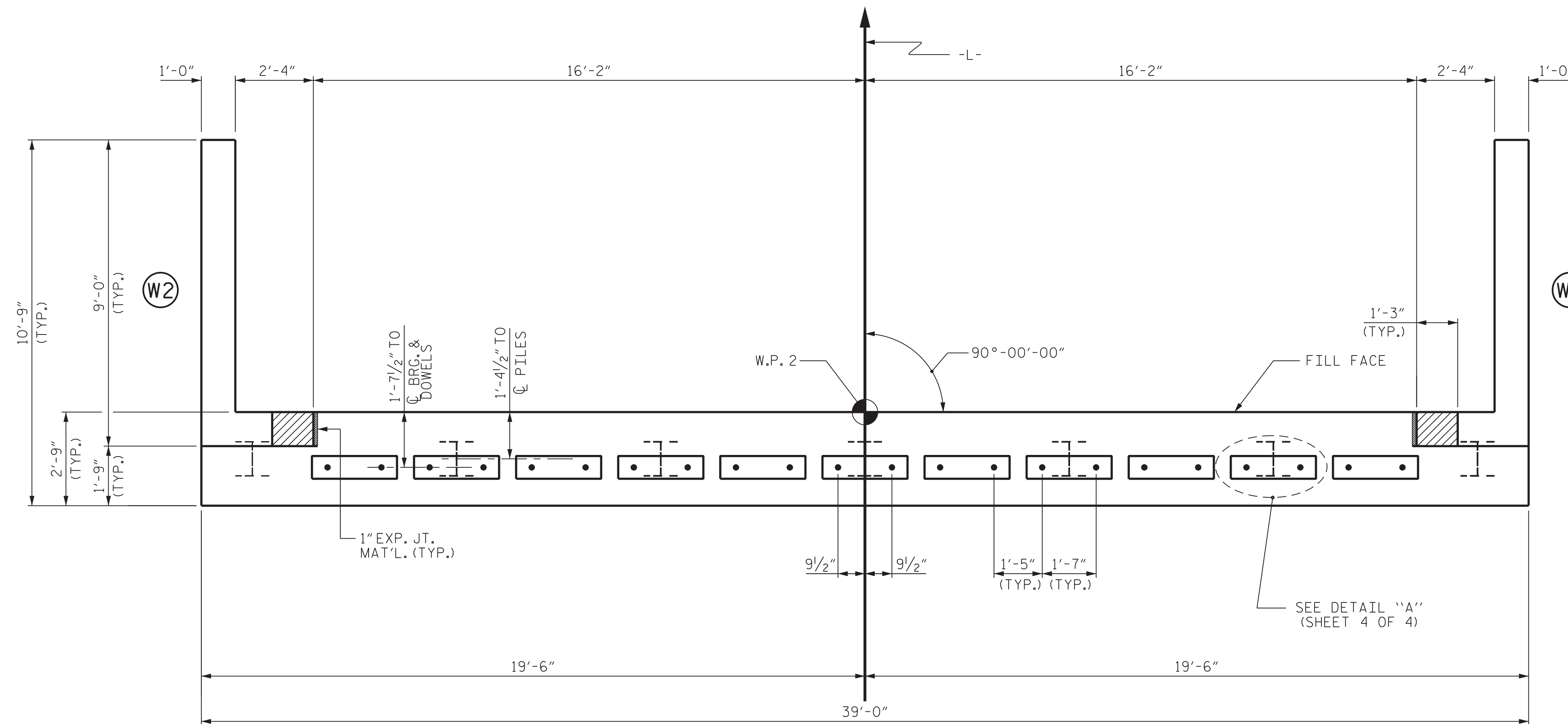
NOTES

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

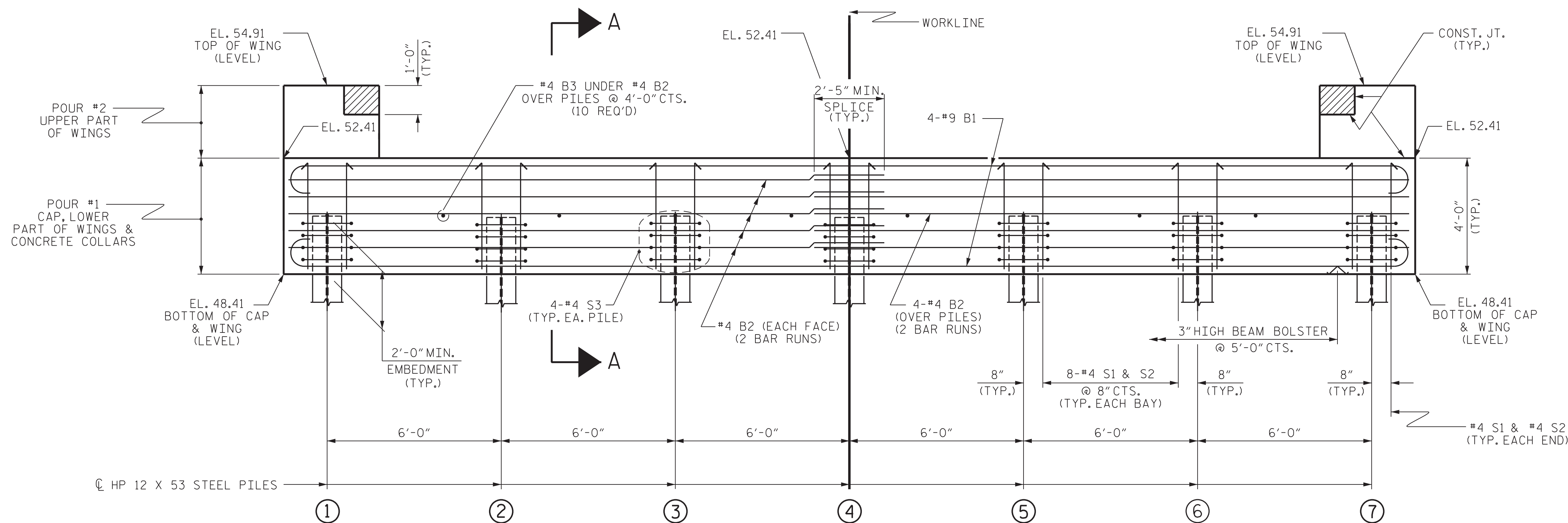
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

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

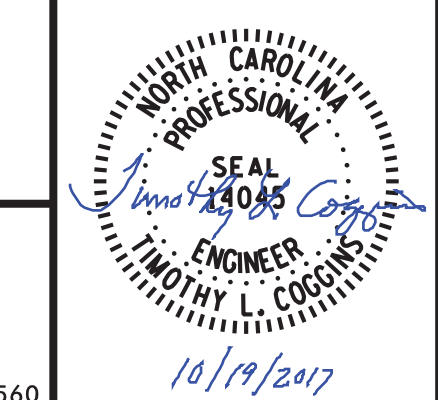
PROJECT NO. 17BP.2.R.81
PITT COUNTY
STATION: 12+33.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2

BRIDGE NO. 730113



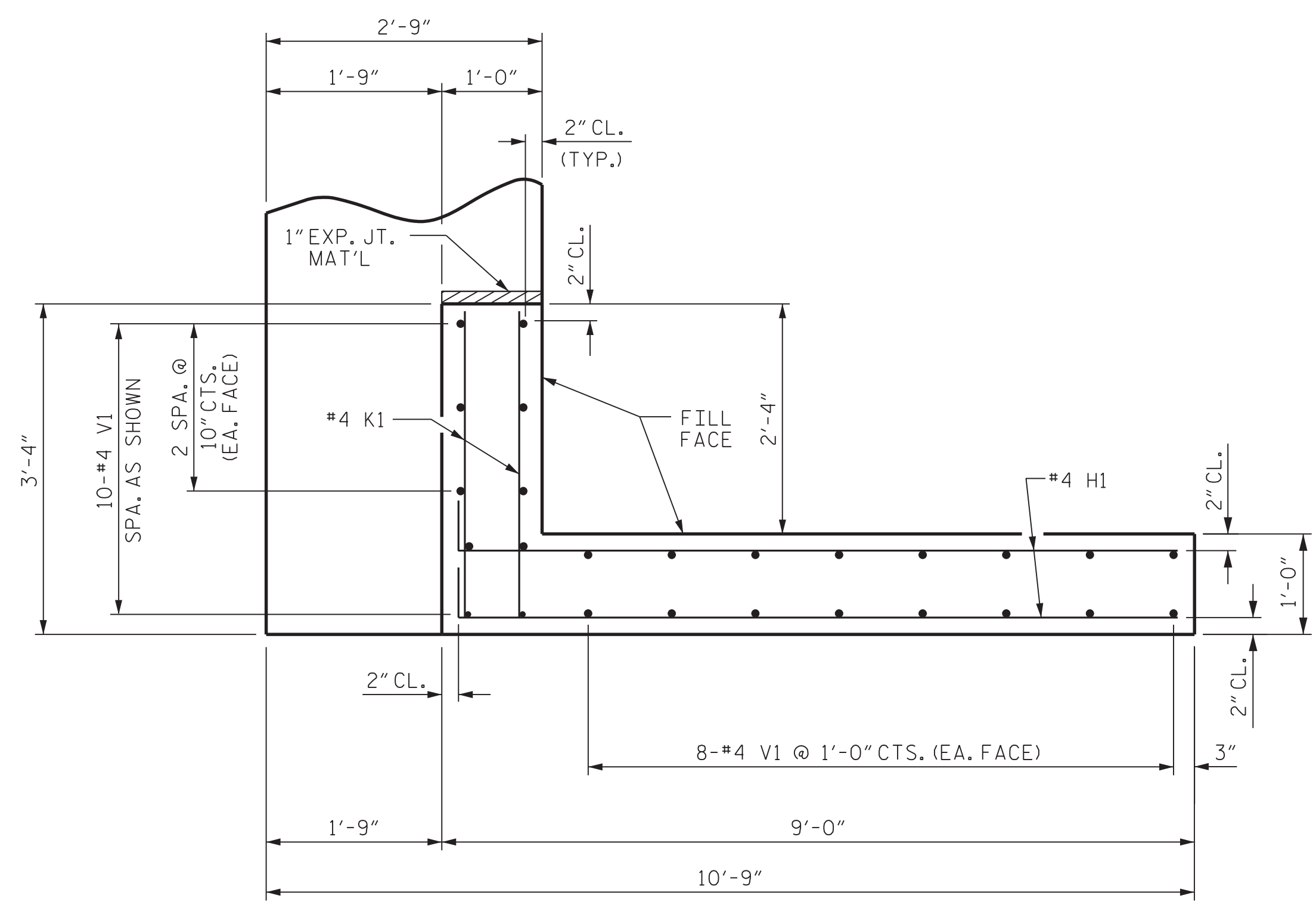
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NC 27609-3960 (919) 878-9560
NC LICENSE NUMBER: F-0112

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

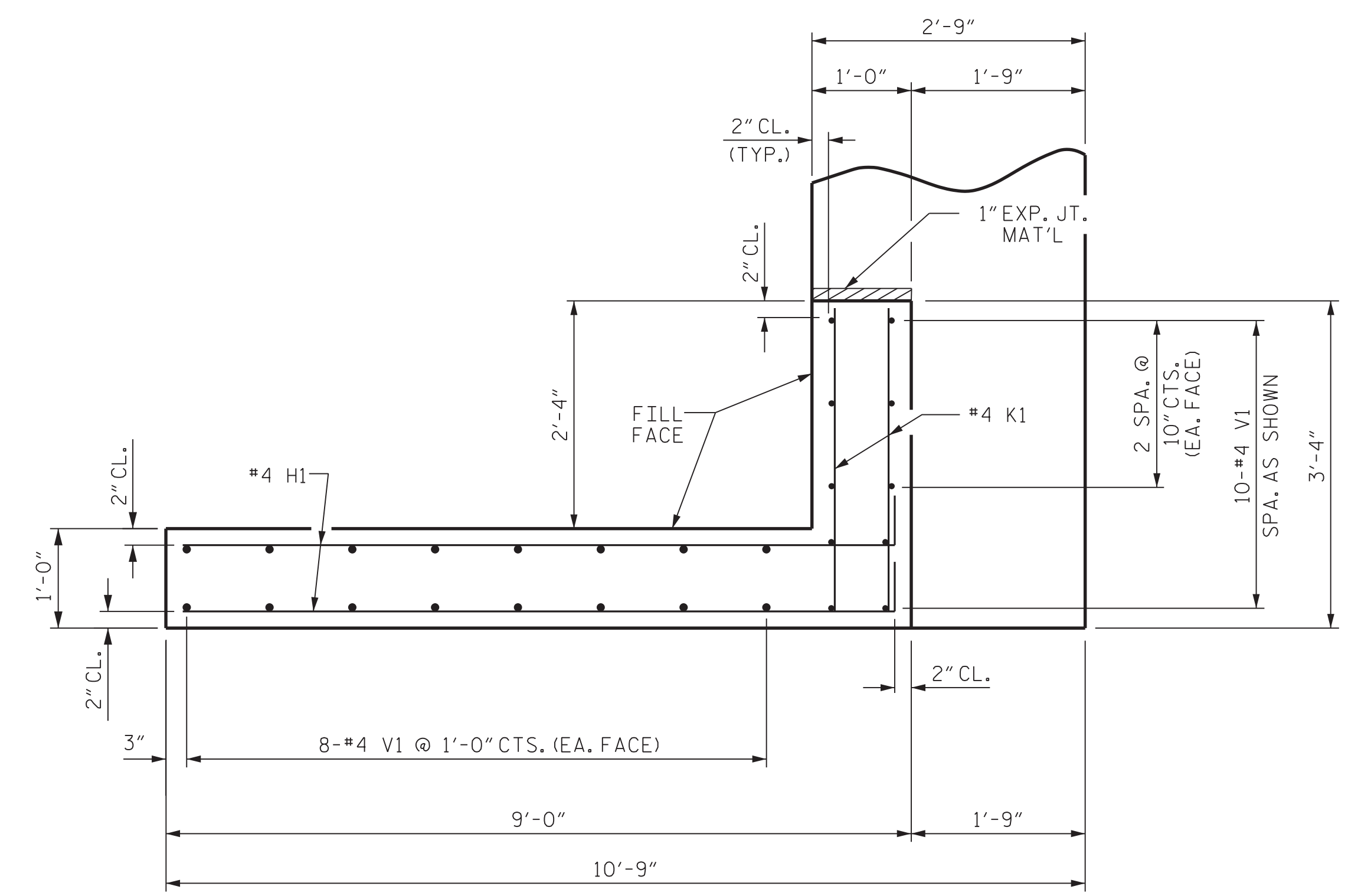
REVISIONS		SHEET NO.	
NO.	BY:	DATE:	NO.
1			3
2			4
			TOTAL SHEETS
			15

default 10/19/2017 r:\structures\dgn\FINAL\730113_STR_EB2.dgn

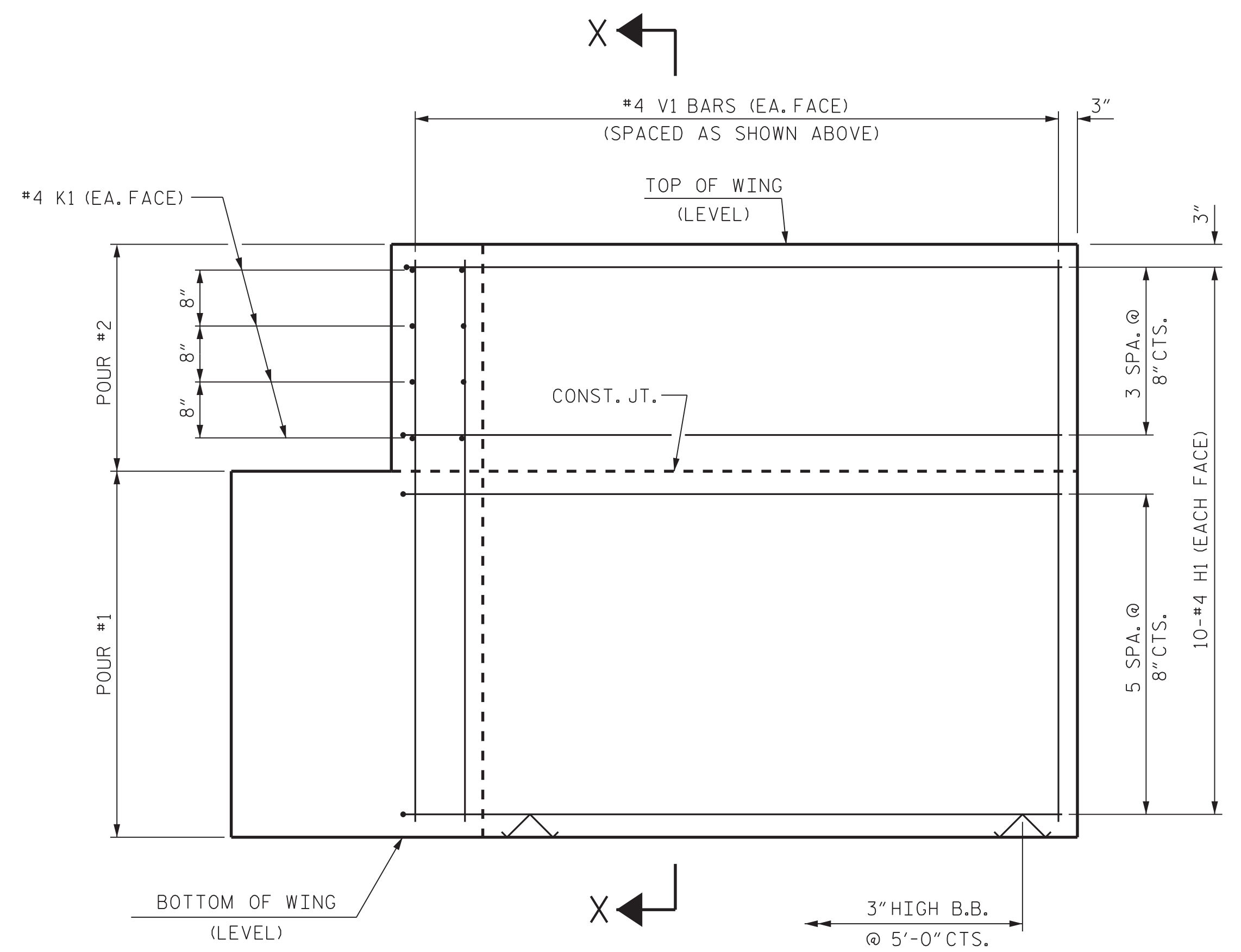
DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
CHECKED BY : Q.J. PAIHEL DATE : OCT. 2017
DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017



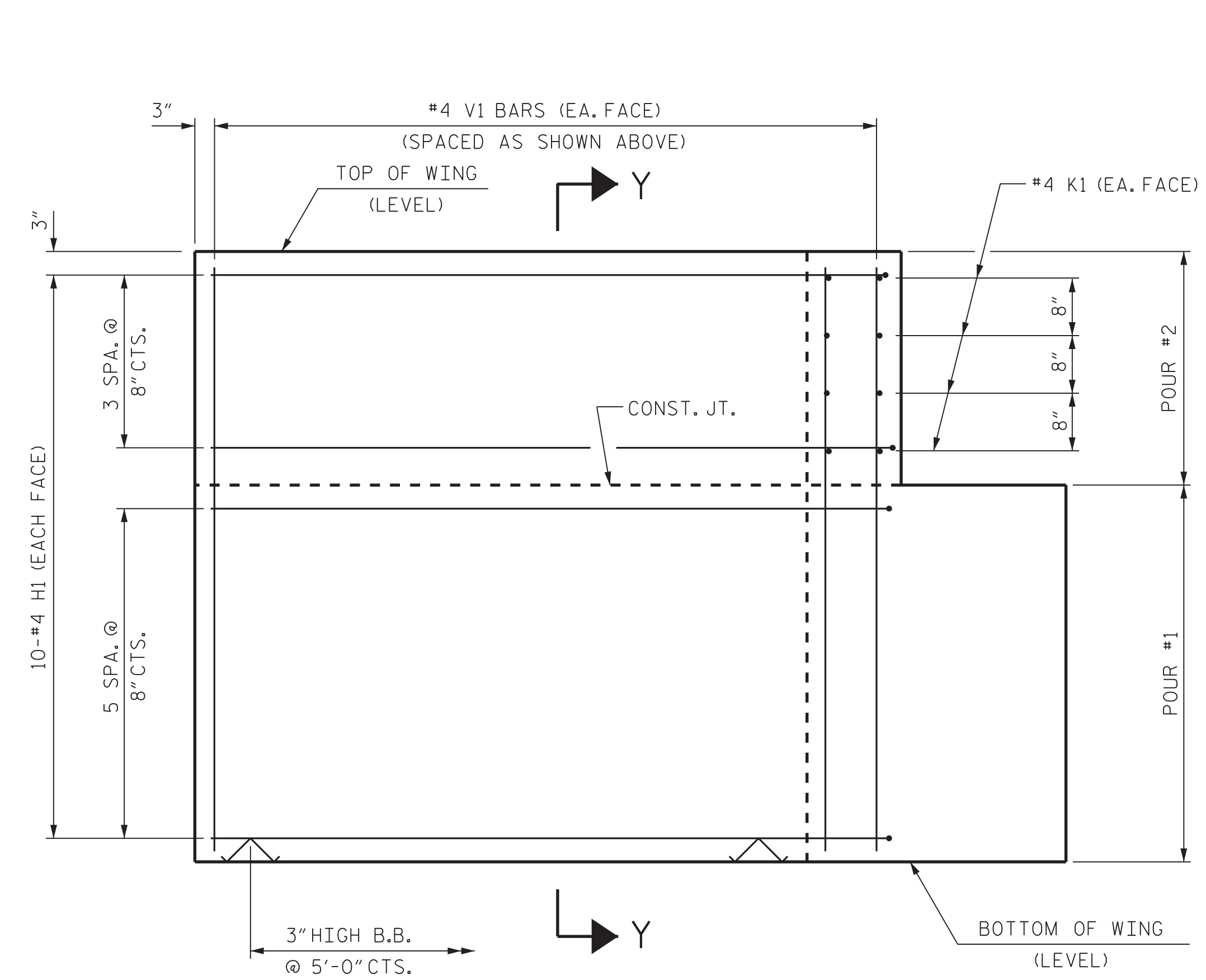
PLAN OF WING (W1)



PLAN OF WING (W2)

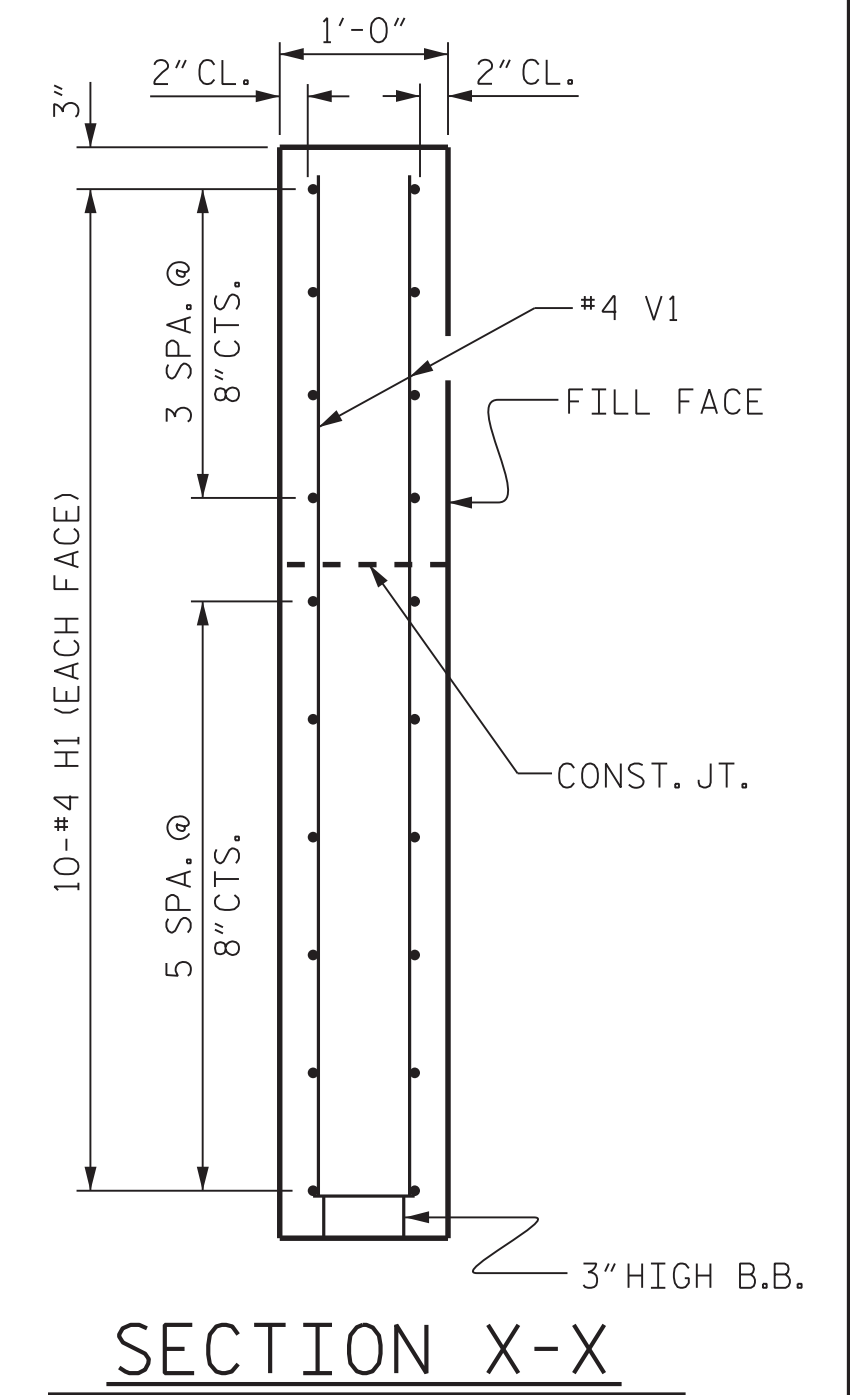


ELEVATION OF WING (W1)

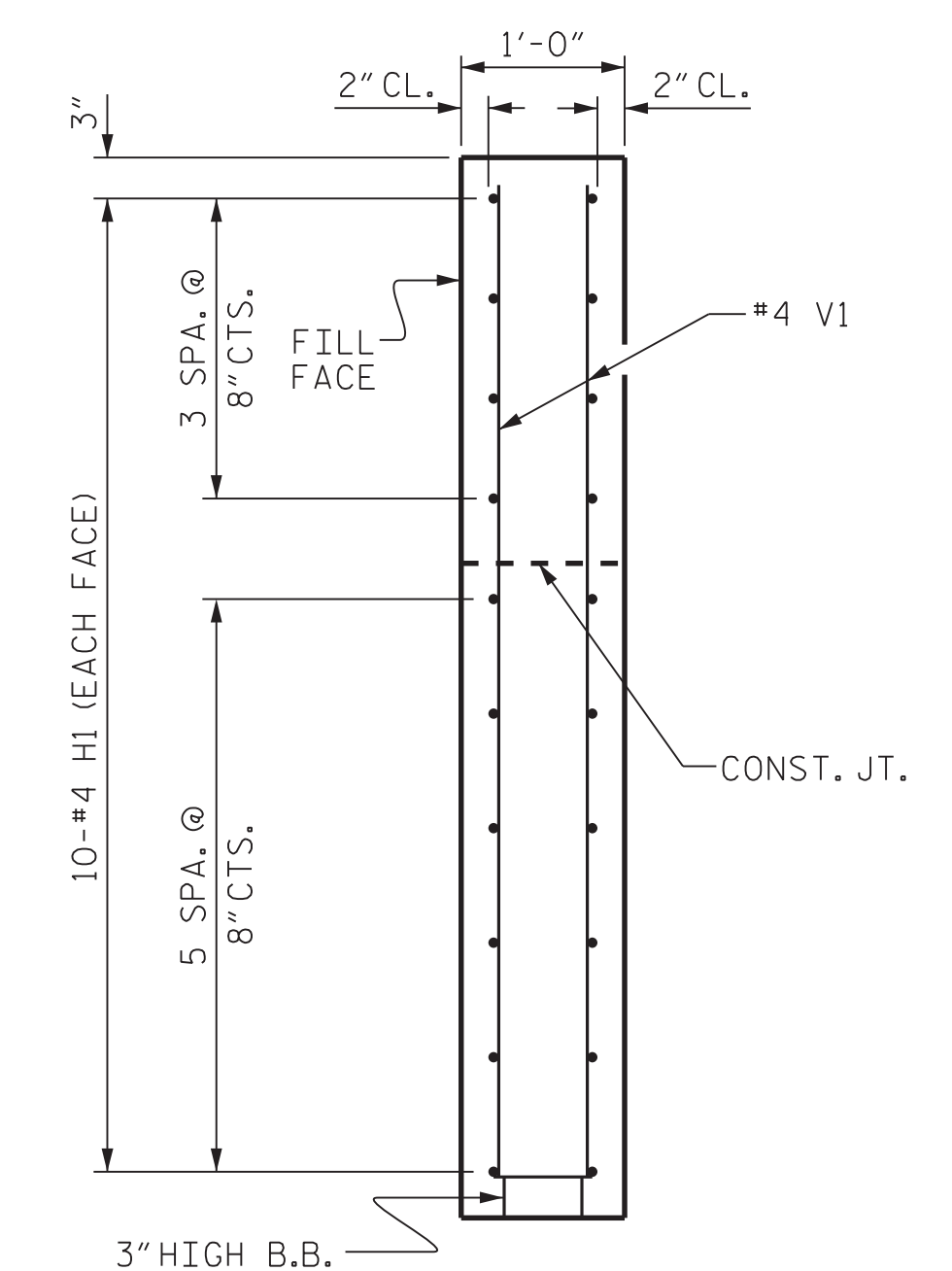


ELEVATION OF WING (W2)

WING DETAILS



SECTION X-X



SECTION Y-Y

PROJECT NO. 17BP.2.R.81
 PITT COUNTY
 STATION: 12+33.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS

BRIDGE NO. 730113

PROFESSIONAL ENGINEER
 SEAL
 TIMOTHY L. COGGINS
 10/19/2017

RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

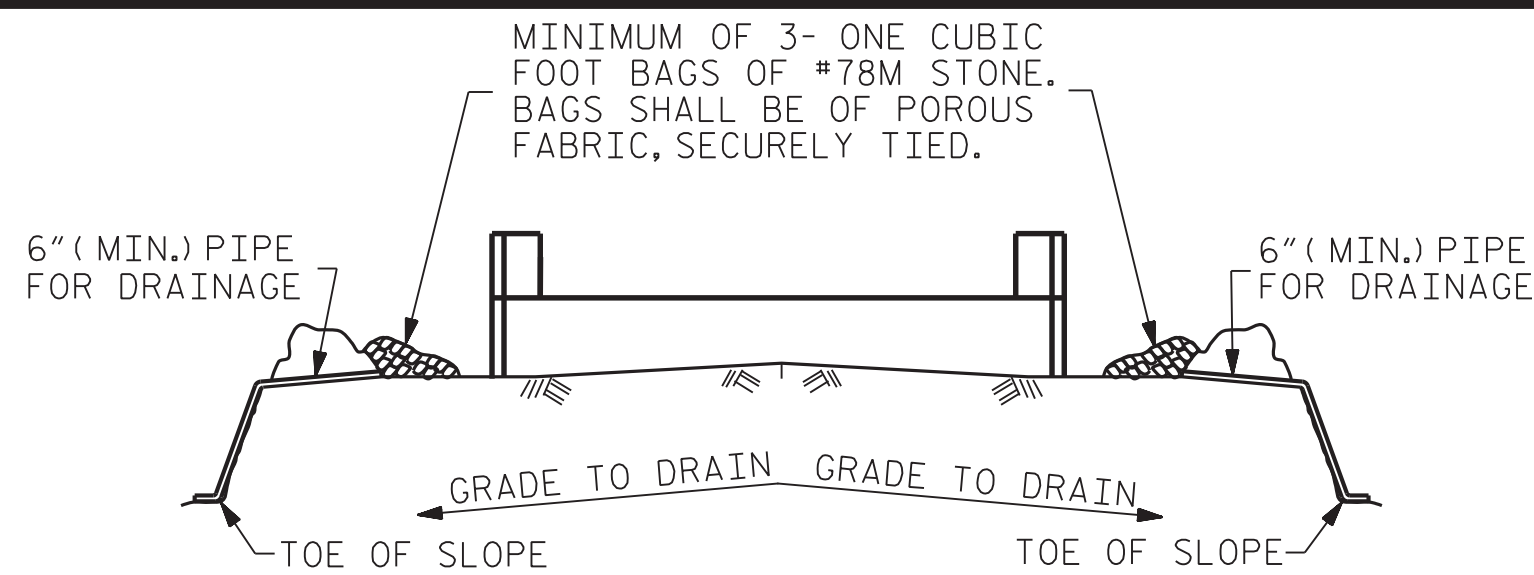
DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

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

TOTAL SHEETS: 15

default 10/19/2017 r:\structures\dgn\FINAL\730113_STR_EBW.dgn

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
 CHECKED BY : Q.J. PAIHEL DATE : OCT. 2017
 DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

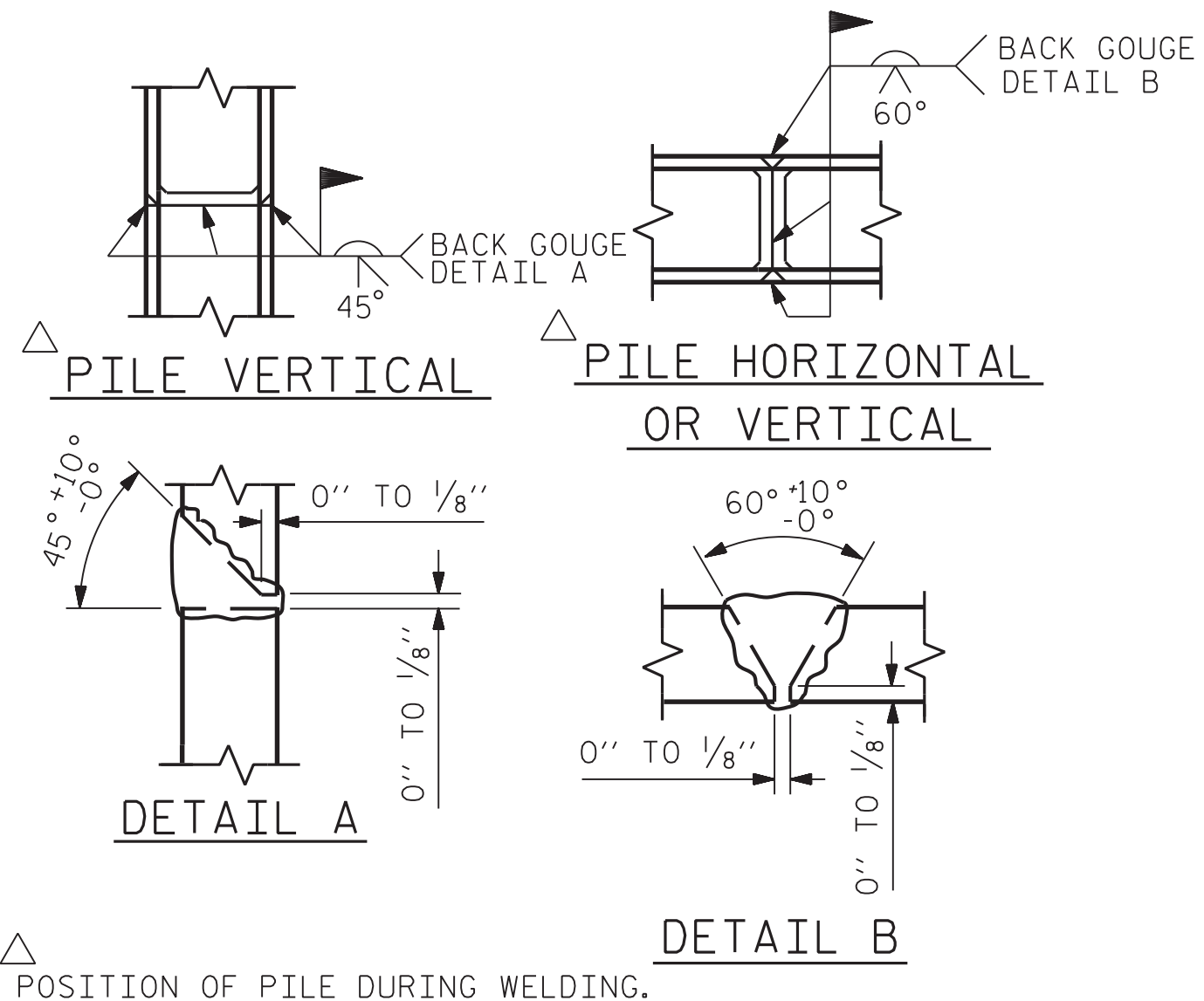


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

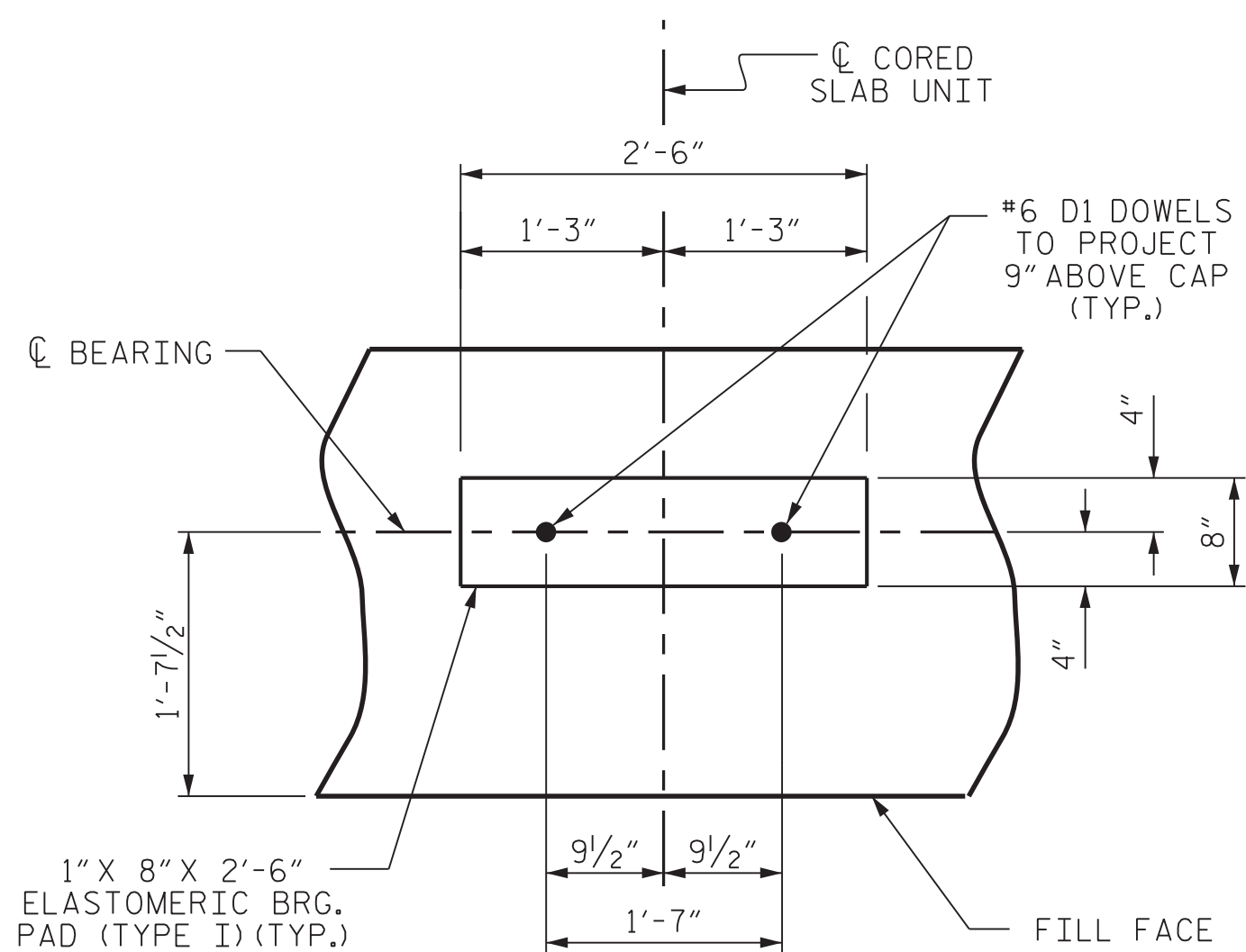
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

TEMPORARY DRAINAGE AT END BENT

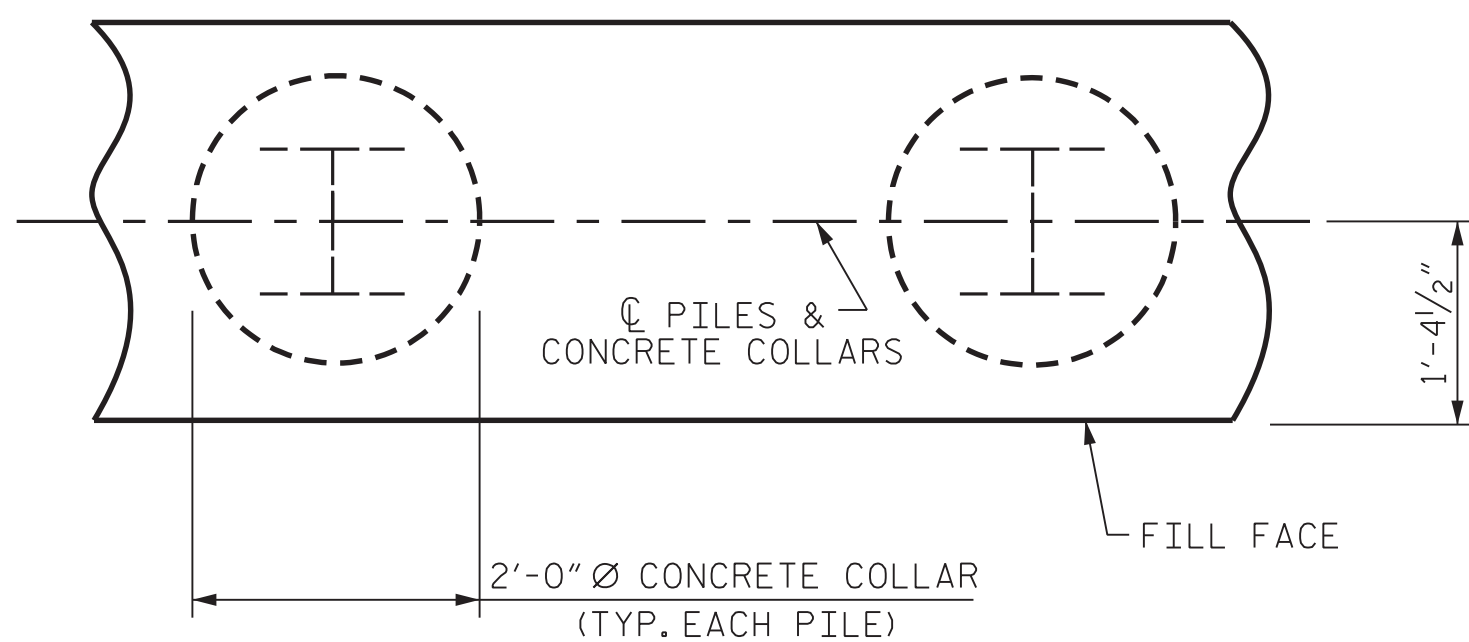


PILE SPLICE DETAILS

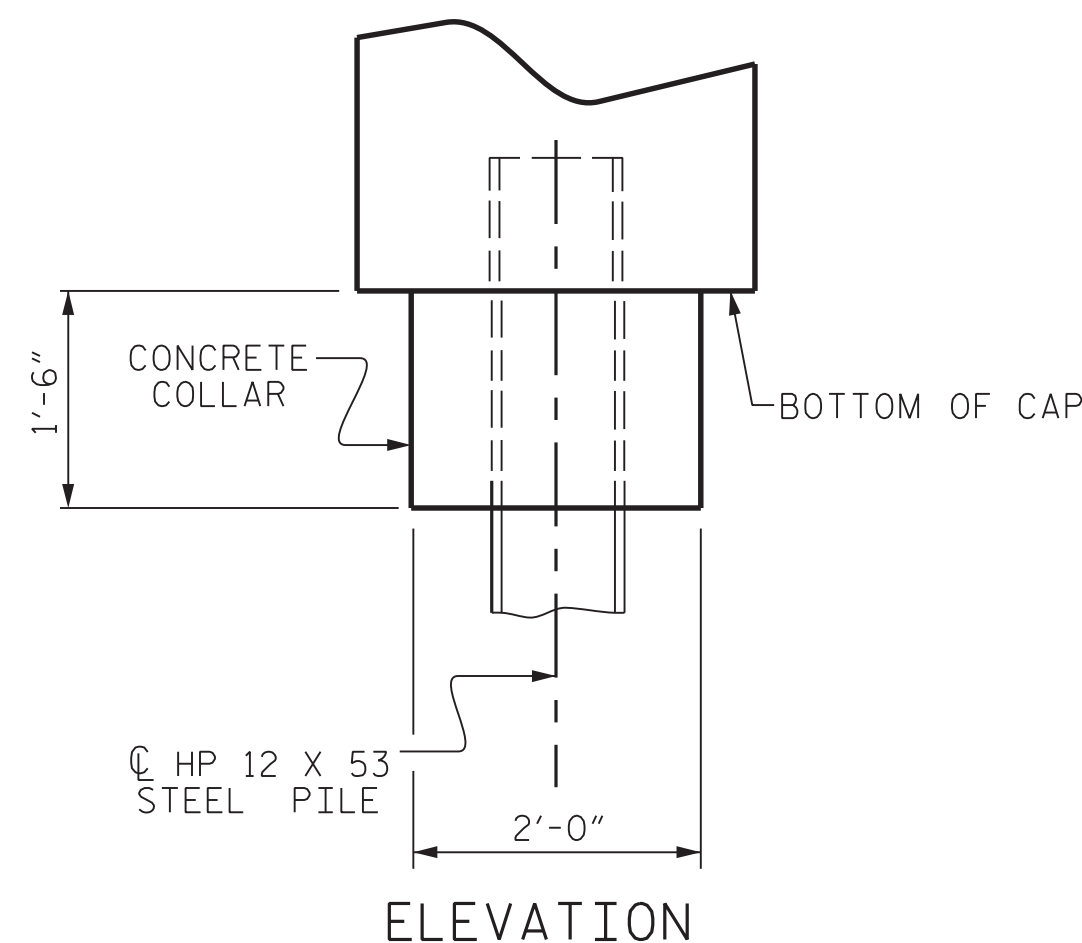


DETAIL "A"

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



PLAN



ELEVATION

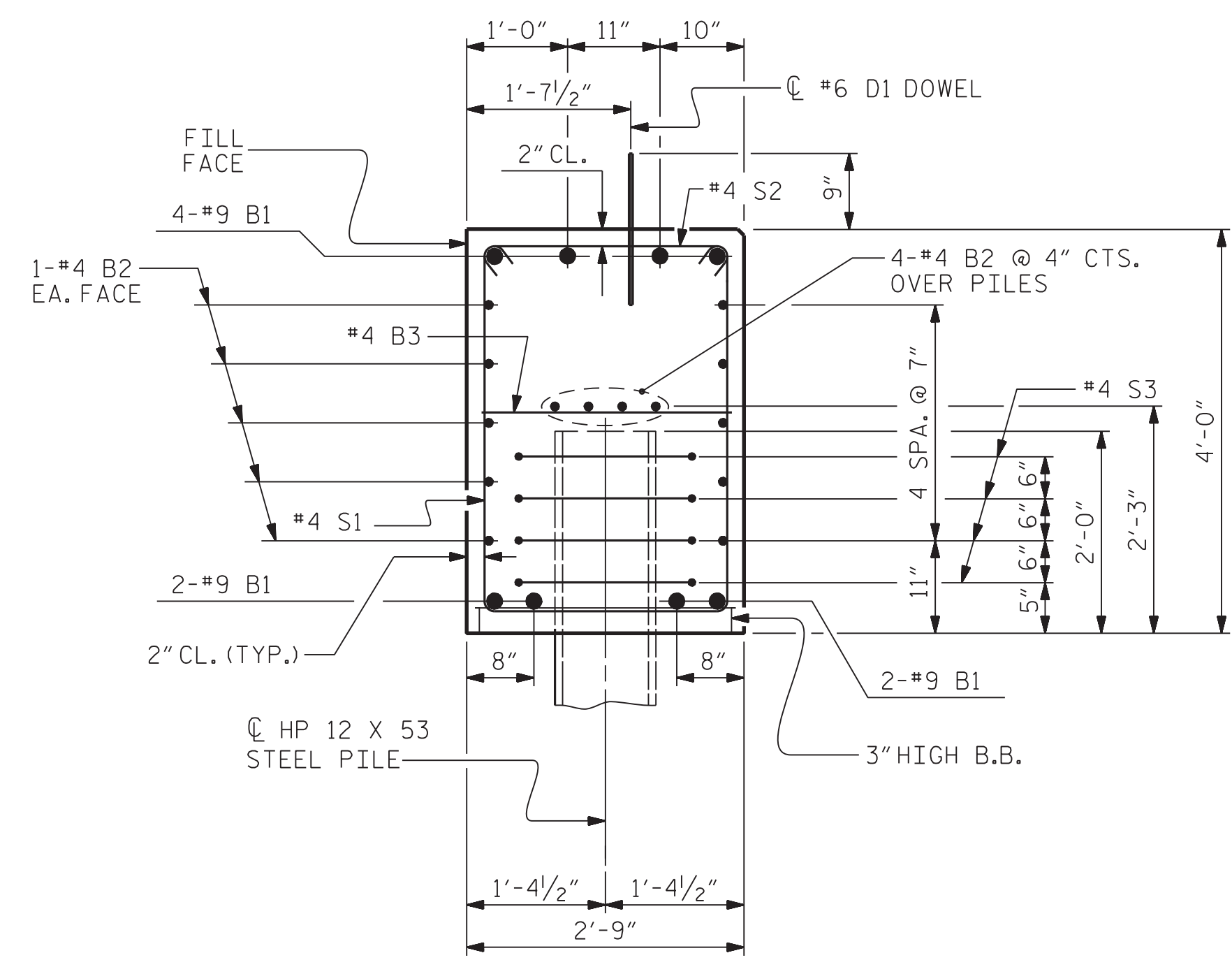
CORROSION PROTECTION FOR STEEL PILES DETAIL

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

BAR TYPES					BILL OF MATERIAL FOR ONE END BENT				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	#8		41'-0"	1115	B1	#8		41'-0"	1115
B2	#4	STR	20'-7"	385	B2	#4	STR	20'-7"	385
B3	#4	STR	2'-5"	16	B3	#4	STR	2'-5"	16
D1	#6	STR	1'-6"	50	D1	#6	STR	1'-6"	50
H1	#4	2	9'-4"	249	H1	#4	2	9'-4"	249
K1	#4	STR	2'-11"	31	K1	#4	STR	2'-11"	31
S1	#4	3	10'-5"	348	S1	#4	3	10'-5"	348
S2	#4	4	3'-2"	106	S2	#4	4	3'-2"	106
S3	#4	5	6'-6"	122	S3	#4	5	6'-6"	122
V1	#4	STR	6'-2"	214	V1	#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					2.1 C.Y.				
TOTAL CLASS A CONCRETE					21.6 C.Y.				

ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES LIN. FT. = 420	HP 12 X 53 STEEL PILES LIN. FT. = 455
END BENT No. 1 PILE REDRIVES EACH: 4	END BENT No. 2 PILE REDRIVES EACH: 4
END BENT No. 1 PILE DRIVING EQUIPMENT SET UP FOR HP 12 X 53 STEEL PILES EACH: 7	END BENT No. 2 PILE DRIVING EQUIPMENT SET UP FOR HP 12 X 53 STEEL PILES EACH: 7



SECTION A-A

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

PROJECT NO. 17BP.2.R.81
PITT COUNTY
STATION: 12+33.00 -L-

SHEET 4 OF 4
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT No. 1 & 2
DETAILS

BRIDGE NO. 730113
NORTH CAROLINA PROFESSIONAL SEAL
10/19/2017
ENGINEER
TIMOTHY L. COGGINS

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NC 27609-3960 (919) 878-9560
NC LICENSE NUMBER: F-0112

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

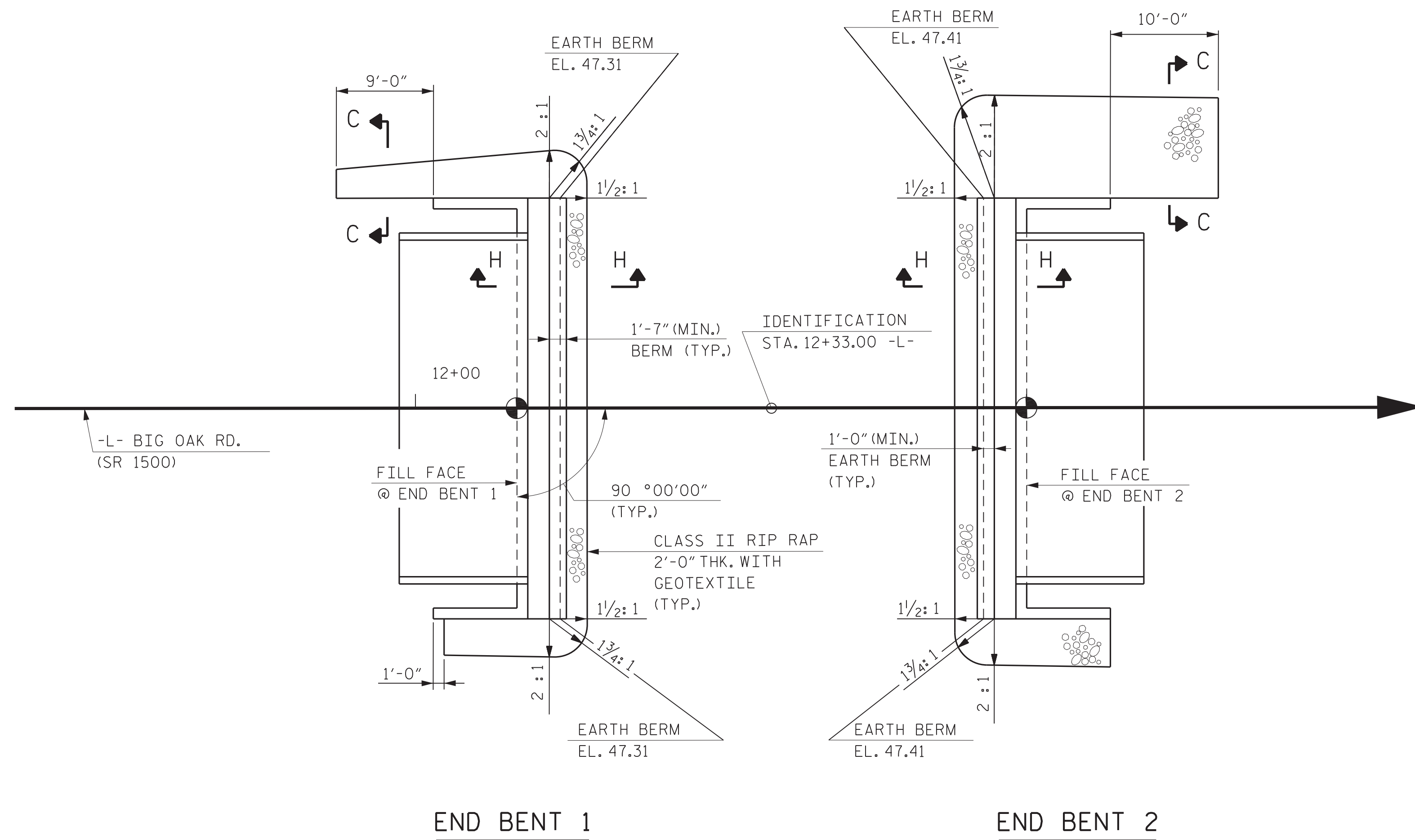
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

S-12
TOTAL SHEETS 15

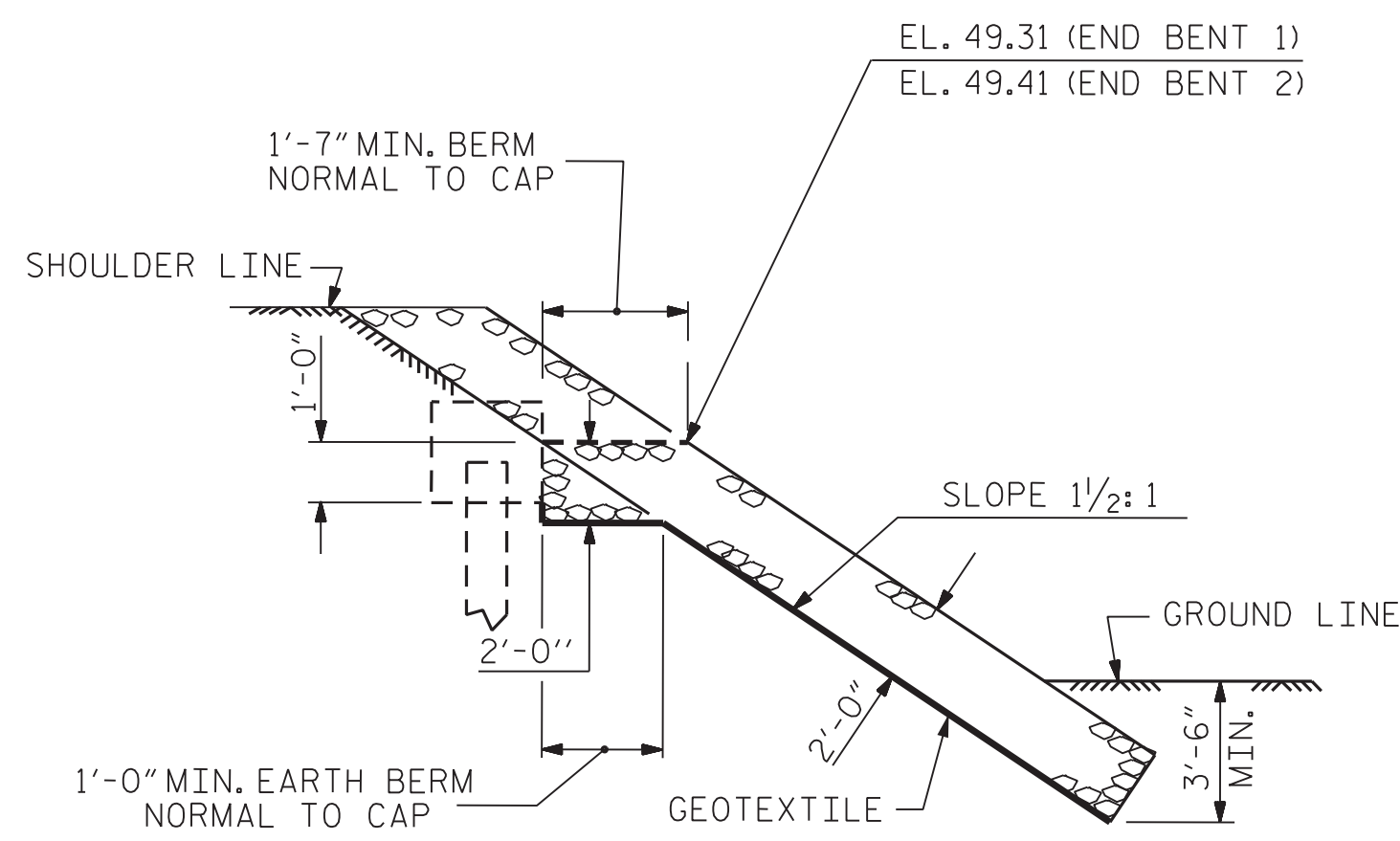
default 10/19/2017 r:\structures\dgn\FINAL\730113_STR_EBD.dgn

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
CHECKED BY : Q.J. PAITEL DATE : OCT. 2017
DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

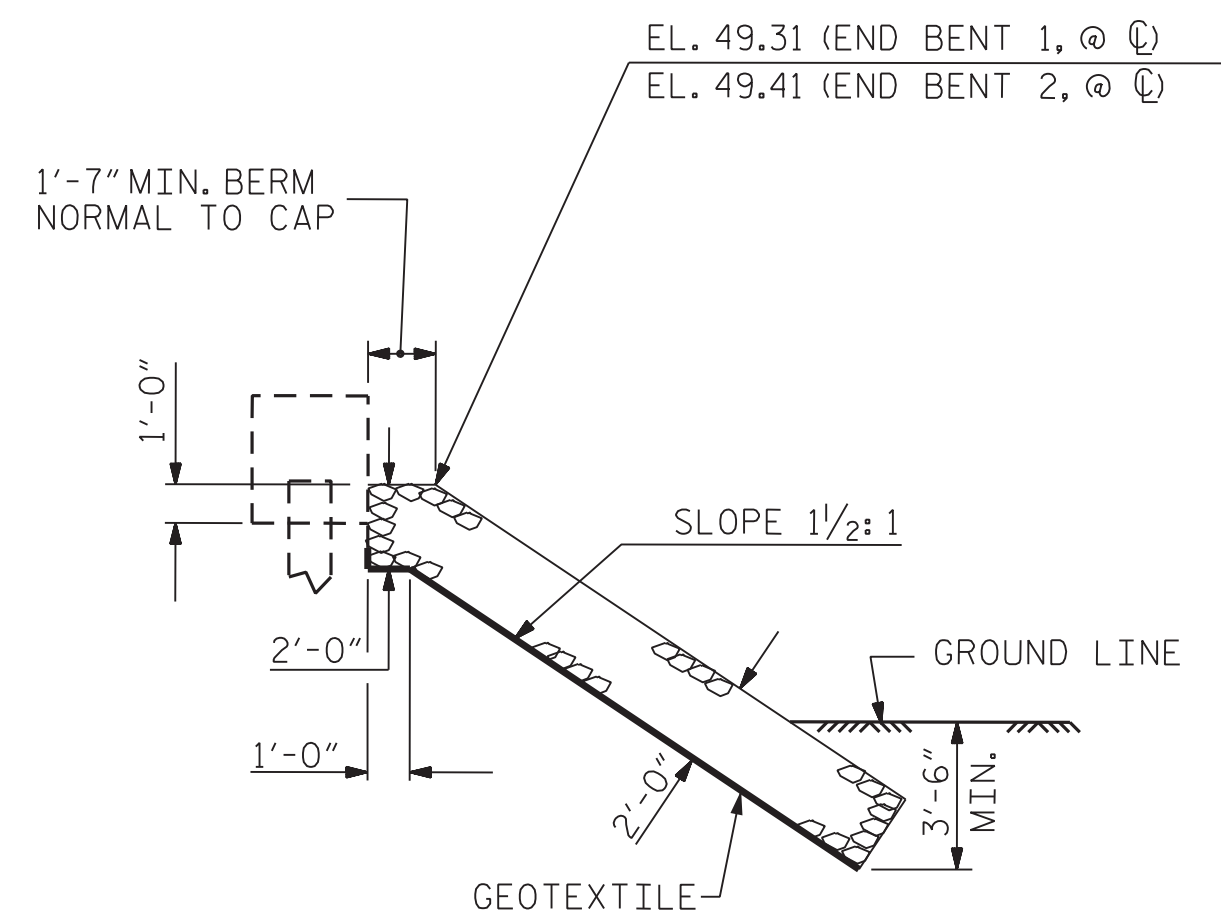
ESTIMATED QUANTITIES		
BRIDGE AT STA. 12+33.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	105	115
END BENT 2	140	155



PLAN

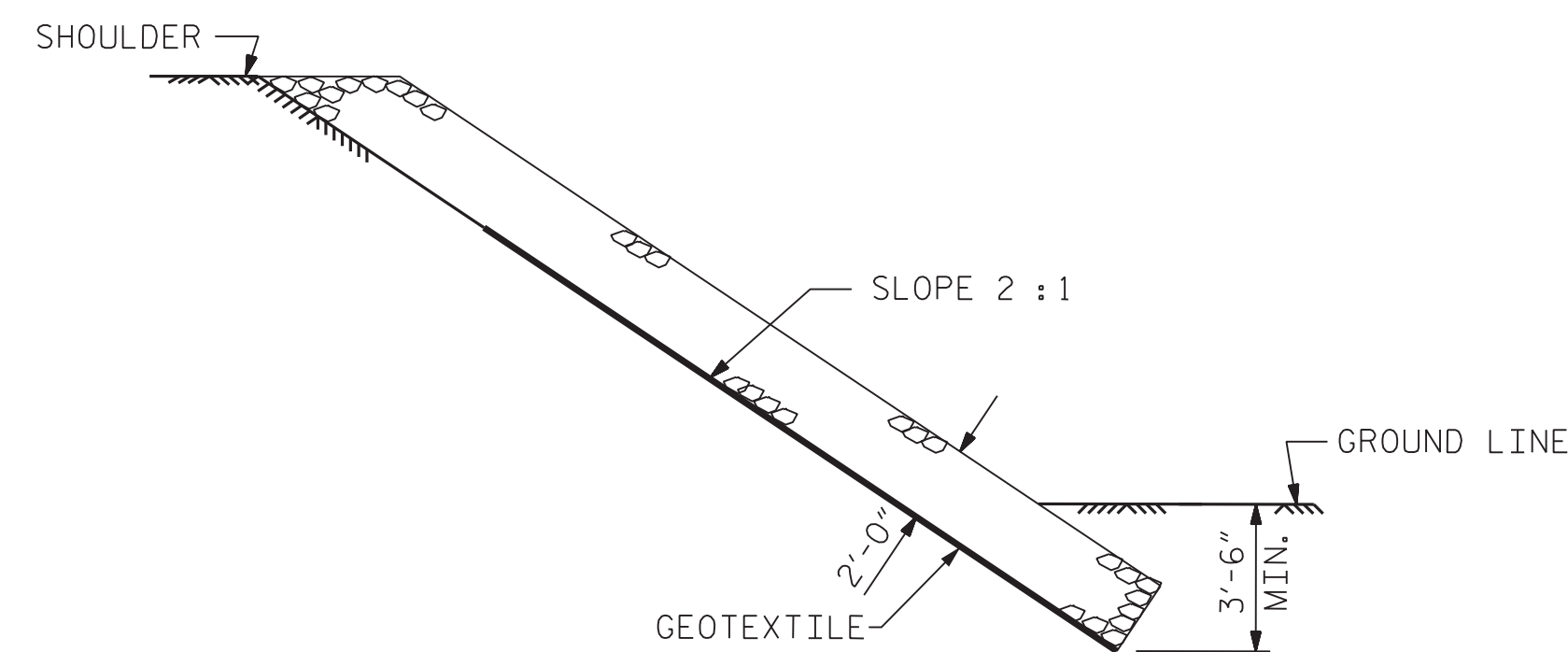


SECTION H-H



SECTION C-C

BERM RIP RAPPED



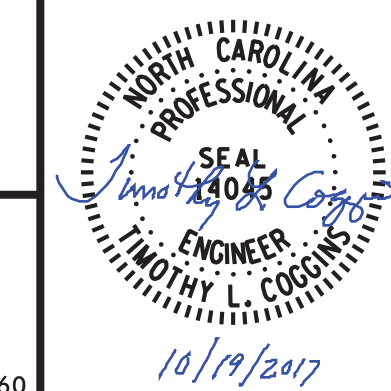
SECTION C-C

PROJECT NO. 17BP.2.R.81
PITT COUNTY
 STATION: 12+33.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SLOPE PROTECTION

BRIDGE NO. 730113



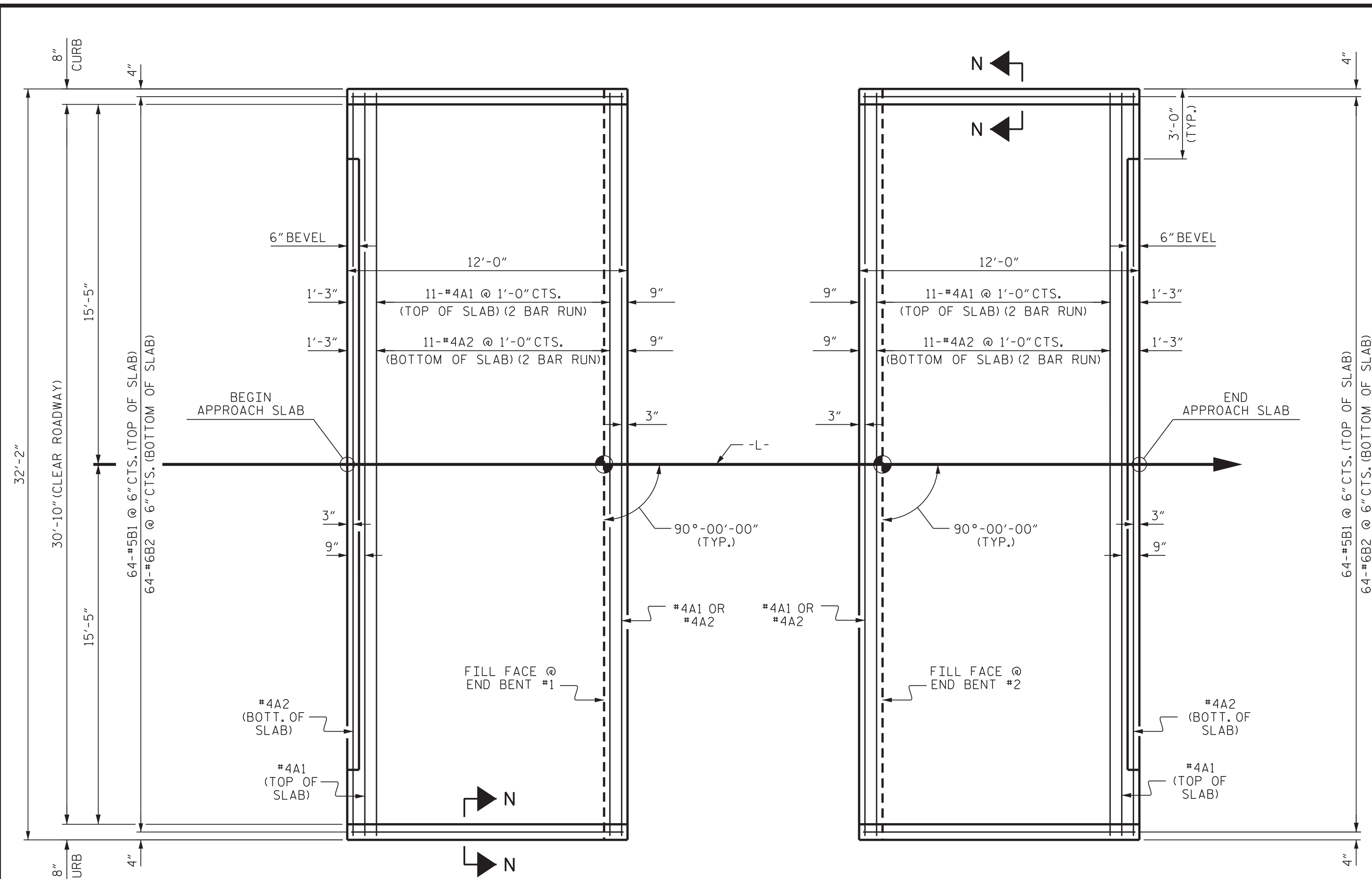
RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

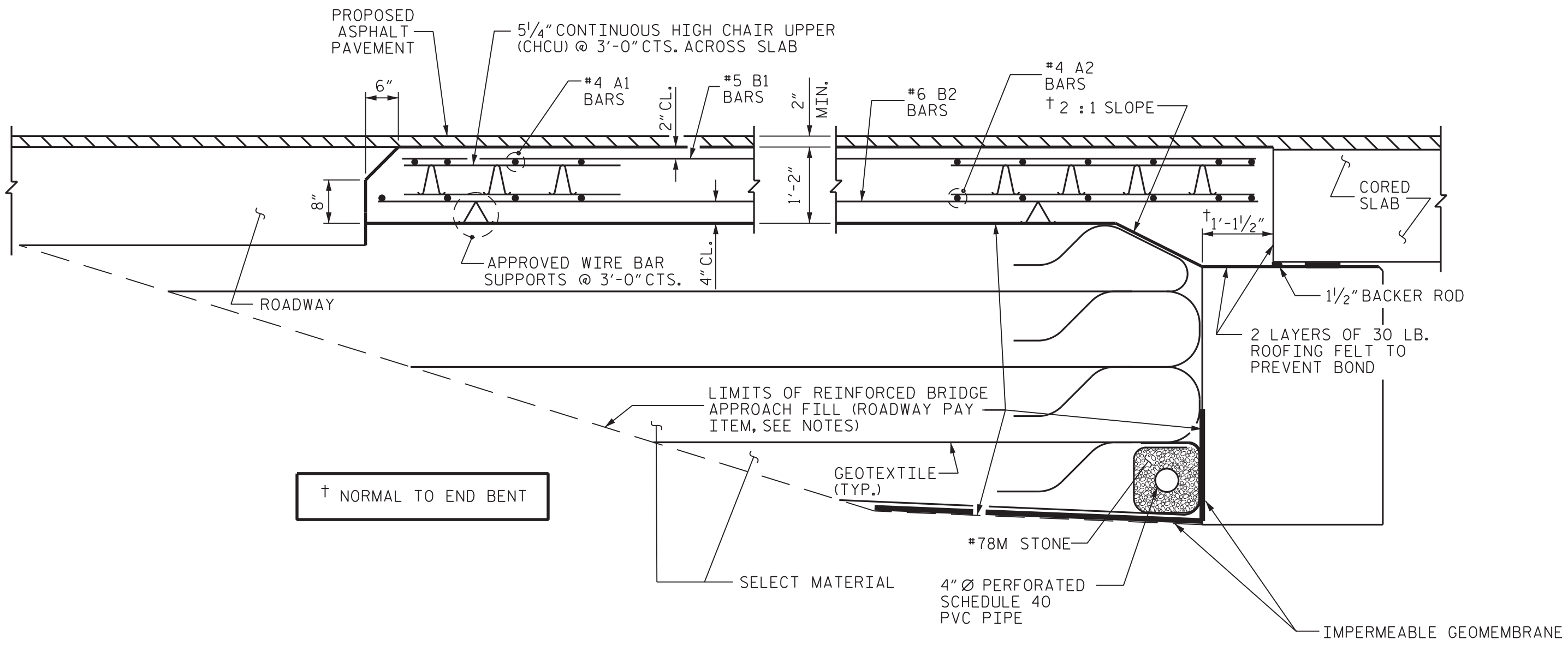
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			15

10/19/2017 r:\structures\dgn\FINAL\730113_STR.SP.dgn

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
 CHECKED BY : Q.J. PAITEL DATE : OCT. 2017
 DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017



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



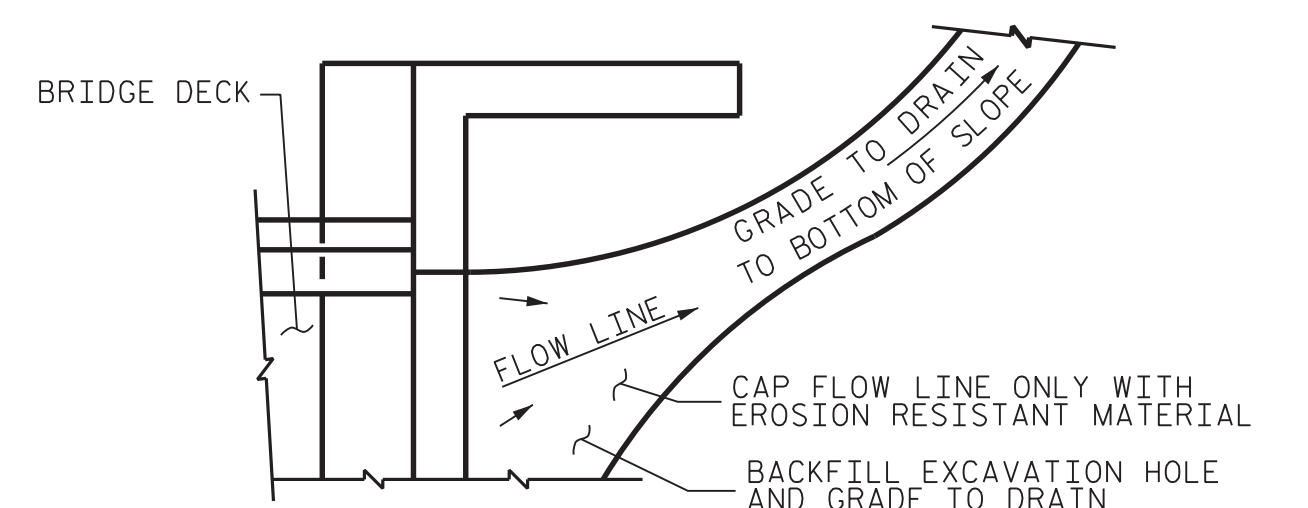
SECTION THRU SLAB

NOTES

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

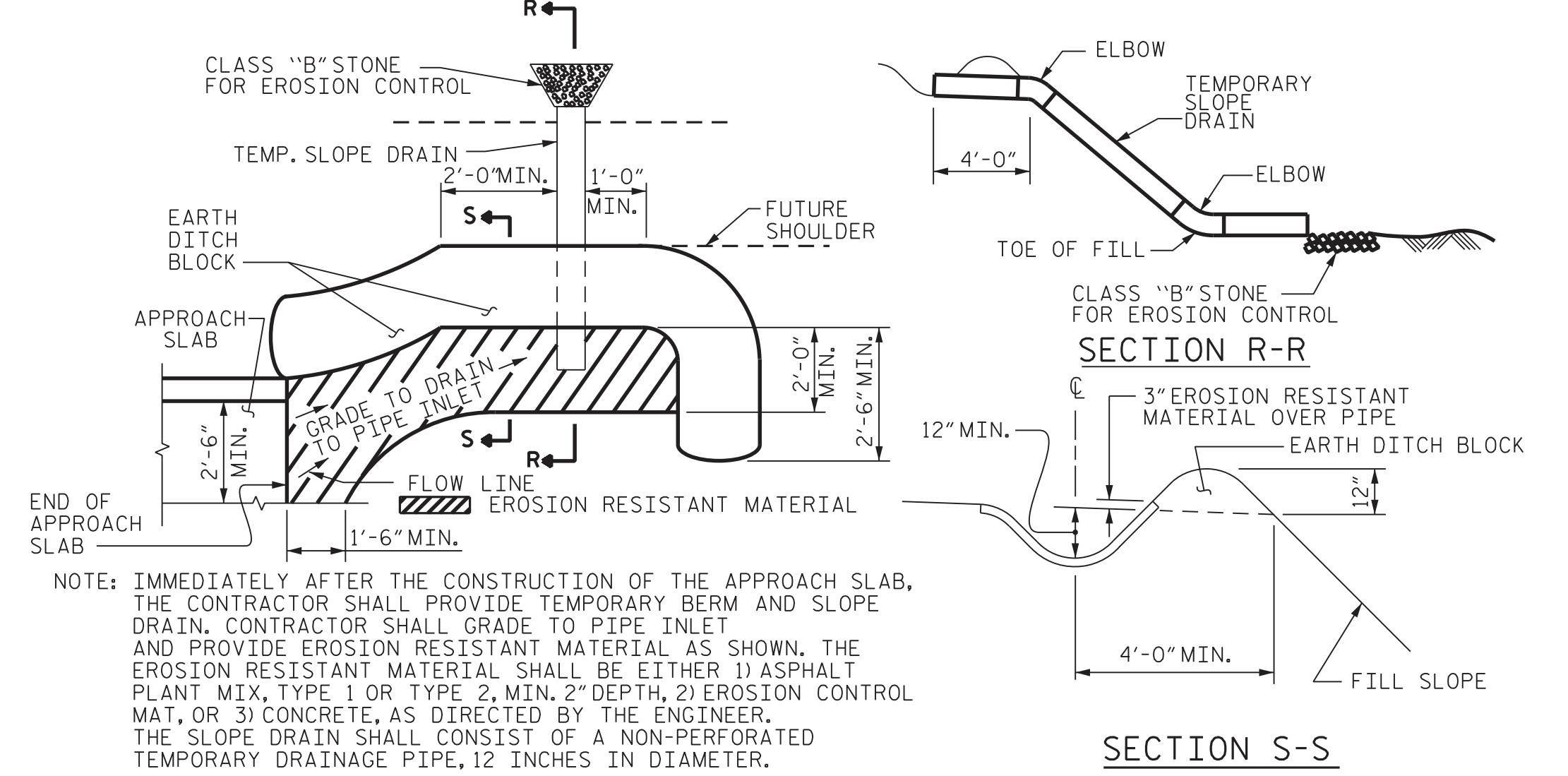
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

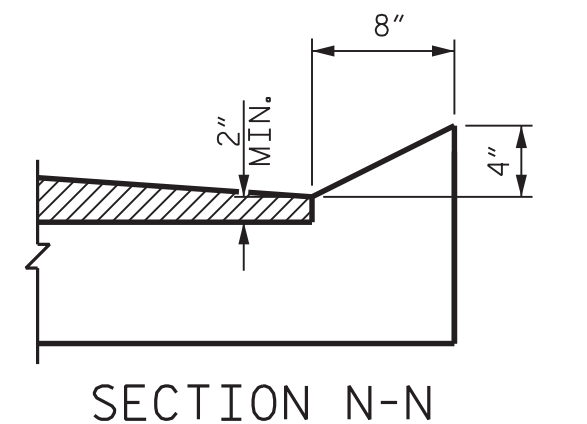


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



PLAN VIEW
TEMPORARY BERM AND SLOPE DRAIN DETAILS
 (TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION N-N
CURB DETAILS

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

BILL OF MATERIAL						
APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	26	#4	STR	16'-11"	294	
A2	26	#4	STR	16'-9"	291	
*B1	64	#5	STR	11'-2"	745	
B2	64	#6	STR	11'-8"	1121	
REINFORCING STEEL					LBS.	1412
*EPOXY COATED REINFORCING STEEL					LBS.	1039
CLASS AA CONCRETE					C. Y.	18.4
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.	18.4

RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NC 27609-3960 (919) 878-9560
 NC LICENSE NUMBER: F-0112

BRIDGE NO. 730113
 NORTH CAROLINA PROFESSIONAL SEAL
 ENGINEER
 TIMOTHY L. COGGINS
 10/19/2017

PROJECT NO. 17BP.2.R.81
PITT COUNTY
 STATION: 12+33.00 -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					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
 S-14
 TOTAL SHEETS
 15

DRAWN BY : F.D. WEEDEN DATE : OCT. 2017
 CHECKED BY : Q.J. PAITEL DATE : OCT. 2017
 DESIGN ENGINEER OF RECORD : T.L. COGGINS DATE : OCT. 2017

default 10/19/2017 r:\structures\dgn\FINAL\730113_STR_AS.dgn

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

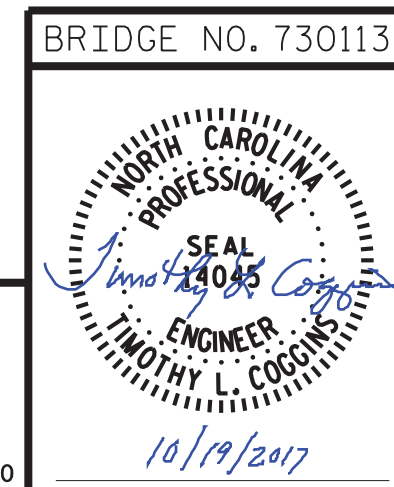
SPECIAL NOTES:

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

PROJECT NO. 17BP.2.R.81
PITT COUNTY
STATION: 12+33.00 -L-

STATE OF NORTH CAROLINA	
DEPARTMENT OF TRANSPORTATION	
RALEIGH	
STANDARD NOTES	
BRIDGE NO. 730113	
REVISIONS	
NO.	BY: DATE:
1	3
2	4
SHEET NO. S-15	
TOTAL SHEETS 15	

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NC 27609-3960 (919) 878-9560
NC LICENSE NUMBER: F-0112



**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

default 10/19/2017 r:\structures\dgn\FINAL\730113_STR_SN.dgn

DRAWN BY : F.D. WEEDEN	DATE : OCT. 2017
CHECKED BY : Q.J. PAITEL	DATE : OCT. 2017
DESIGN ENGINEER OF RECORD : T.L. COGGINS	DATE : OCT. 2017