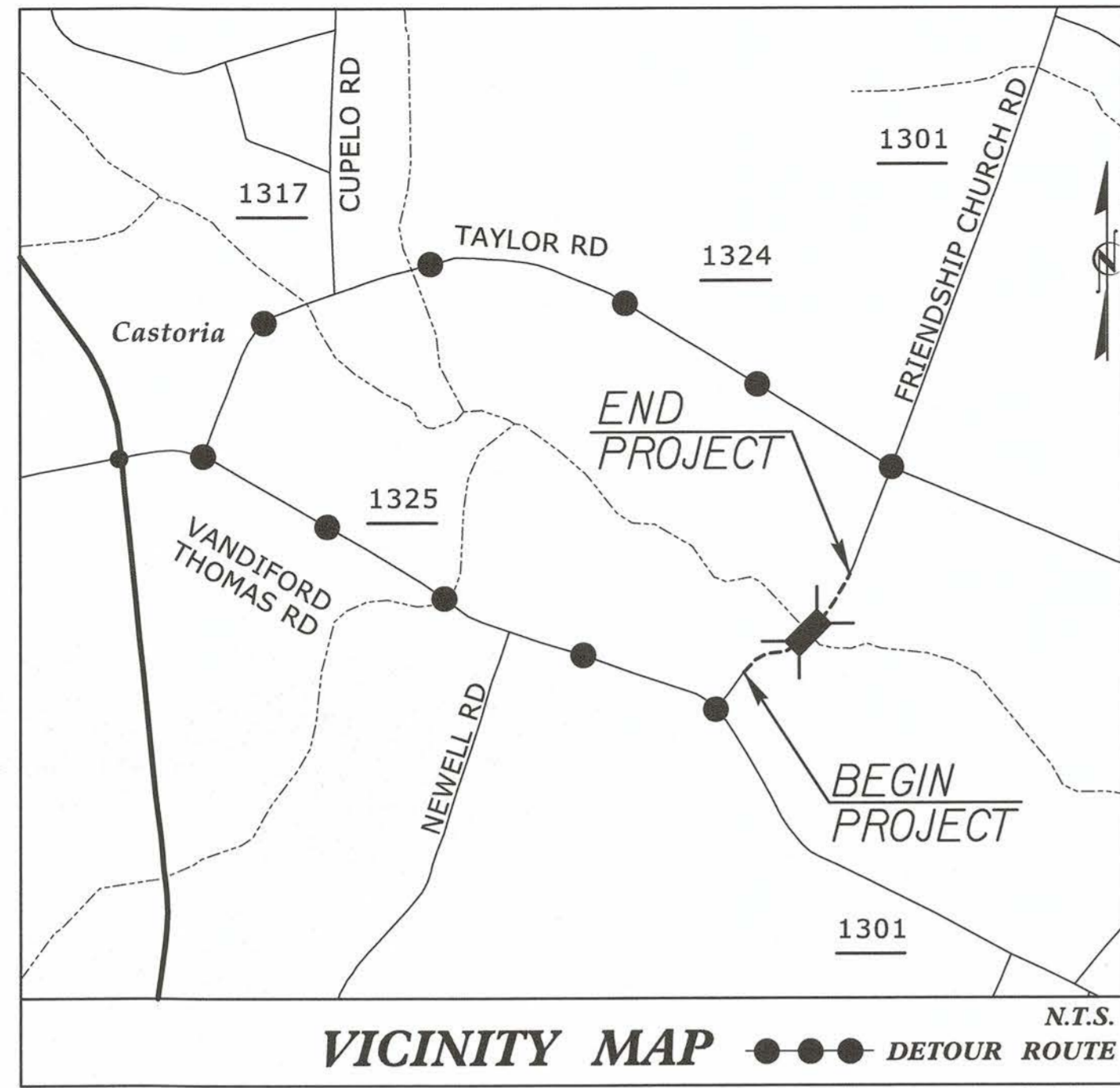


TIP PROJECT: BD-5102T

CONTRACT: DB00190

See Sheet 1-A For Index of Sheets



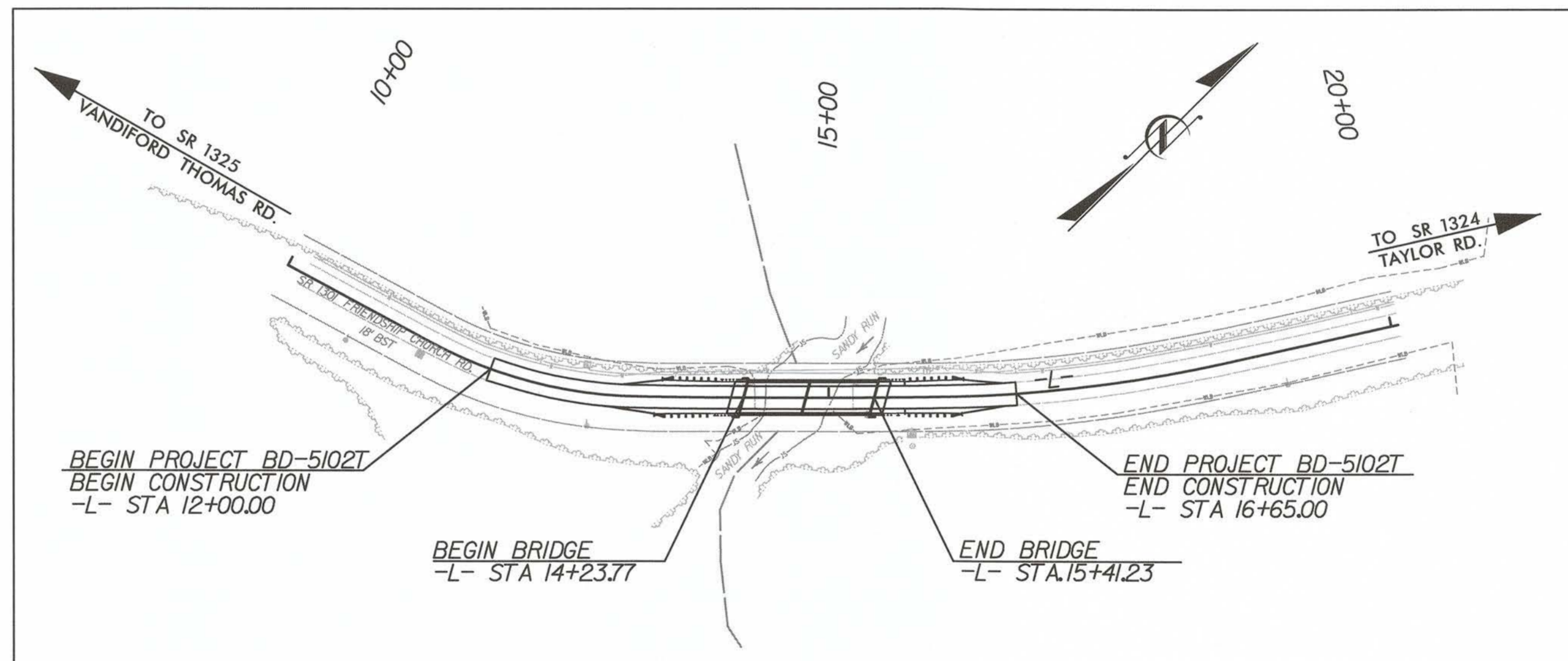
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GREENE COUNTY

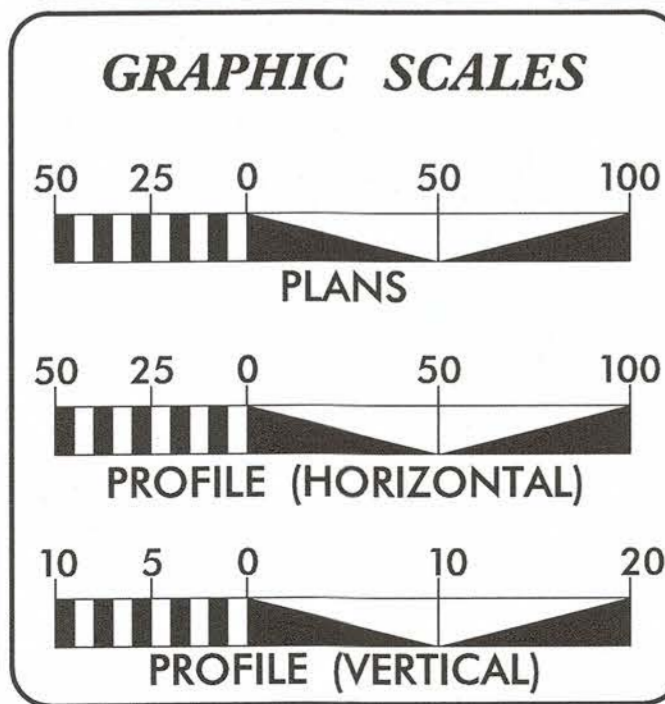
**LOCATION: BRIDGE NO. 008 OVER SANDY RUN
ON SR 1301 (FRIENDSHIP CHURCH RD.)**

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

STATE	PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
NC	BD-5102T	1	X
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45348.1.20	BRSTP-1301(7)	PE, RW	
17BP.2.R.61		CONST.	



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



DESIGN DATA

ADT 2010 =	550
ADT 2035 =	1100
DHV =	10%
D =	60%
T =	6% *
STATUTORY =	55 MPH
* TTST 2% DUAL 4%	SUB REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BD-5102T =	0.07 MI.
LENGTH OF STRUCTURE TIP PROJECT BD-5102T =	0.02 MI.
TOTAL LENGTH OF TIP PROJECT BD-5102T =	0.09 MI.

Prepared In the Office of:

HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1884

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 22, 2013

LETTING DATE:
JULY 14, 2014

ENRICO A. ROQUE, P.E. PROJECT ENGINEER
ANTHONY THOMPSON, P.E. PROJECT DESIGNER
MARIA ROGERSON, P.E. NCDOT CONTACT

HYDRAULICS ENGINEER

James A. Byrd
SIGNATURE: 6/18/14

ROADWAY DESIGN ENGINEER

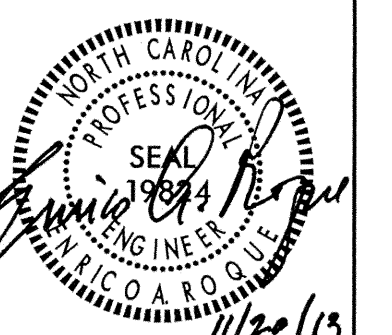
Maria Rogerson
SIGNATURE: 6/18/14

Professional Engineer Seals for James A. Byrd (Seal 15764) and Maria Rogerson (Seal 19824).

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.

6/18/2014 11:45:01 AM ...\\ProJ\BD5102T_rdy_tsh.dgn

PROJECT REFERENCE NO. <i>BD-5102T</i>	SHEET NO. <i>1-A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES & LIST OF STANDARDS
1-B	SYMBOLOLOGY SHEET
2	TYPICAL SECTION SHEET
3	EARTHWORK, PAVEMENT REMOVAL, GUARDRAIL SUMMARY, ROW SUMMARY, & DRAINAGE SUMMARY SHEET
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC CONTROL PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
P-1	PERMIT DRAWING
X-1 THRU X-4	-L- CROSS SECTION SHEETS
S-1 THRU S-13	BRIDGE PLANS
U0-1 THRU U0-2	UTILITIES BY OTHERS

GENERAL NOTES:

2012 SPECIFICATIONS
 EFFECTIVE: 01-17-2012
 REVISED: 07-30-2012

2012 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, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

**GRADE LINE:
 GRADING AND SURFACING:**

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

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	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
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
876.02	Guide for Rip Rap at Pipe Outlets

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 AND/OR STD. NO. 225.05 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 AND/OR STD. NO. 560.02

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.02 USING 3' 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.

SUBSURFACE PLANS:

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

END BENTS:

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

UTILITIES:

- UTILITY OWNERS ON THIS PROJECT ARE Phone - CenturyLink
- Water - Greene County Water
- Power - Pitt and Greene EMC

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

REVISIONS





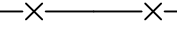







Note: Not to Scale

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












STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS











BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	_____ 
Property Corner	_____ 
Property Monument	_____ 
Parcel/Sequence Number	_____ 
Existing Fence Line	_____ 
Proposed Woven Wire Fence	_____ 
Proposed Chain Link Fence	_____ 
Proposed Barbed Wire Fence	_____ 
Existing Wetland Boundary	_____ 
Proposed Wetland Boundary	_____ 
Existing Endangered Animal Boundary	_____ 
Existing Endangered Plant Boundary	_____ 






BUILDINGS AND OTHER CULTURE:

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





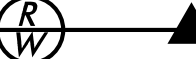








HYDROLOGY:

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

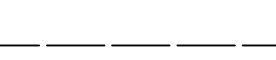
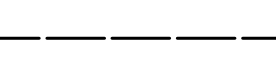





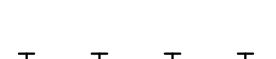

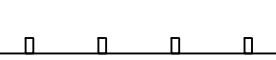



RAILROADS:

Standard Gauge	_____ 
RR Signal Milepost	_____ 
Switch	_____ 
RR Abandoned	_____ 
RR Dismantled	_____ 

RIGHT OF WAY:

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 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 Utility Easement	_____ 

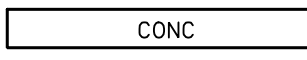
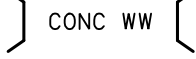
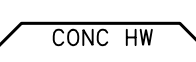


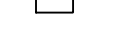



ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____ 
Existing Curb	_____ 
Proposed Slope Stakes Cut	_____ 
Proposed Slope Stakes Fill	_____ 
Proposed Wheel Chair Ramp	_____ 
Proposed Wheel Chair Ramp Curb Cut	_____ 
Curb Cut for Future Wheel Chair 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	_____ 





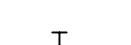
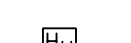
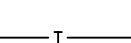
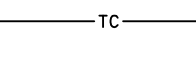
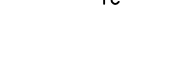



EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____ 
Bridge Wing Wall, Head Wall and End Wall	_____ 
MINOR:	
Head and End Wall	_____ 
Pipe Culvert	_____ 
Footbridge	_____ 
Drainage Box: Catch Basin, DI or JB	_____ 
Paved Ditch Gutter	_____ 
Storm Sewer Manhole	_____ 
Storm Sewer	_____ 








UTILITIES:

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









TELEPHONE:

Existing Telephone Pole	_____ 
Proposed Telephone Pole	_____ 
Telephone Manhole	_____ 
Telephone Booth	_____ 
Telephone Pedestal	_____ 
Telephone Cell Tower	_____ 
U/G Telephone Cable Hand Hole	_____ 
Recorded U/G Telephone Cable	_____ 
Designated U/G Telephone Cable (S.U.E.*)	_____ 
Recorded U/G Telephone Conduit	_____ 
Designated U/G Telephone Conduit (S.U.E.*)	_____ 
Recorded U/G Fiber Optics Cable	_____ 
Designated U/G Fiber Optics Cable (S.U.E.*)	_____






WATER:

Water Manhole	_____ 
Water Meter	_____ 
Water Valve	_____ 
Water Hydrant	_____ 
Recorded U/G Water Line	_____ 
Designated U/G Water Line (S.U.E.*)	_____ 
Above Ground Water Line	_____ 







TV:

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











GAS:

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

SANITARY SEWER:

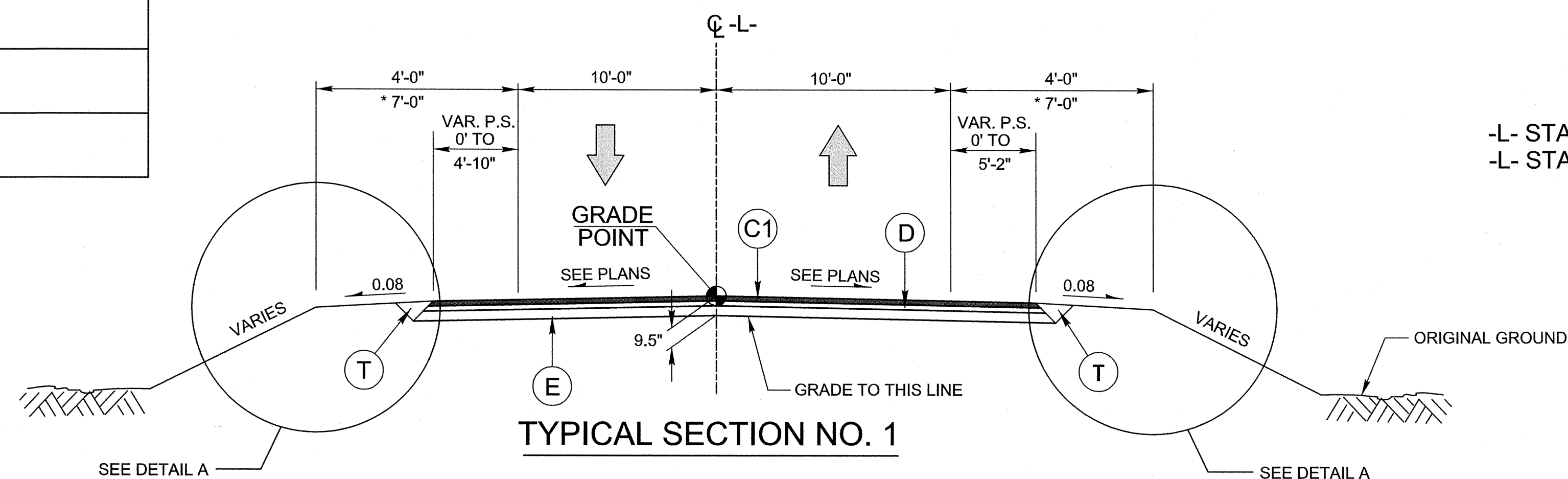
Sanitary Sewer Manhole	_____ 
Sanitary Sewer Cleanout	_____ 
U/G Sanitary Sewer Line	_____ 
Above Ground Sanitary Sewer	_____ 
Recorded SS Forced Main Line	_____ 
Designated SS Forced Main Line (S.U.E.*)	_____ 

MISCELLANEOUS:

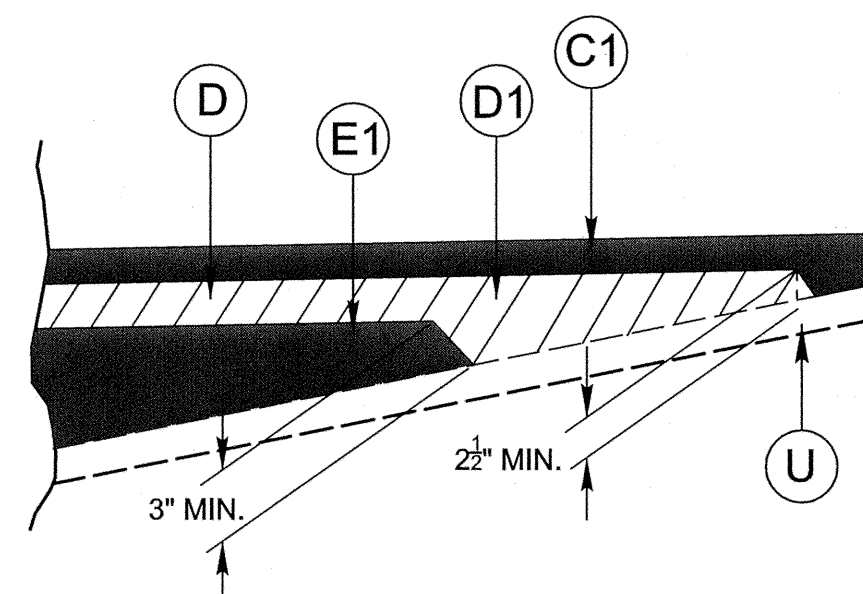
Utility Pole	_____ 
Utility Pole with Base	_____ 
Utility Located Object	_____ 
Utility Traffic Signal Box	_____ 
Utility Unknown U/G Line	_____ 
U/G Tank; Water, Gas, Oil	_____ 
A/G Tank; Water, Gas, Oil	_____ 
U/G Test Hole (S.U.E.*)	_____ 
Abandoned According to Utility Records	_____ 
End of Information	_____ 

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
D	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D1	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.
E1	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

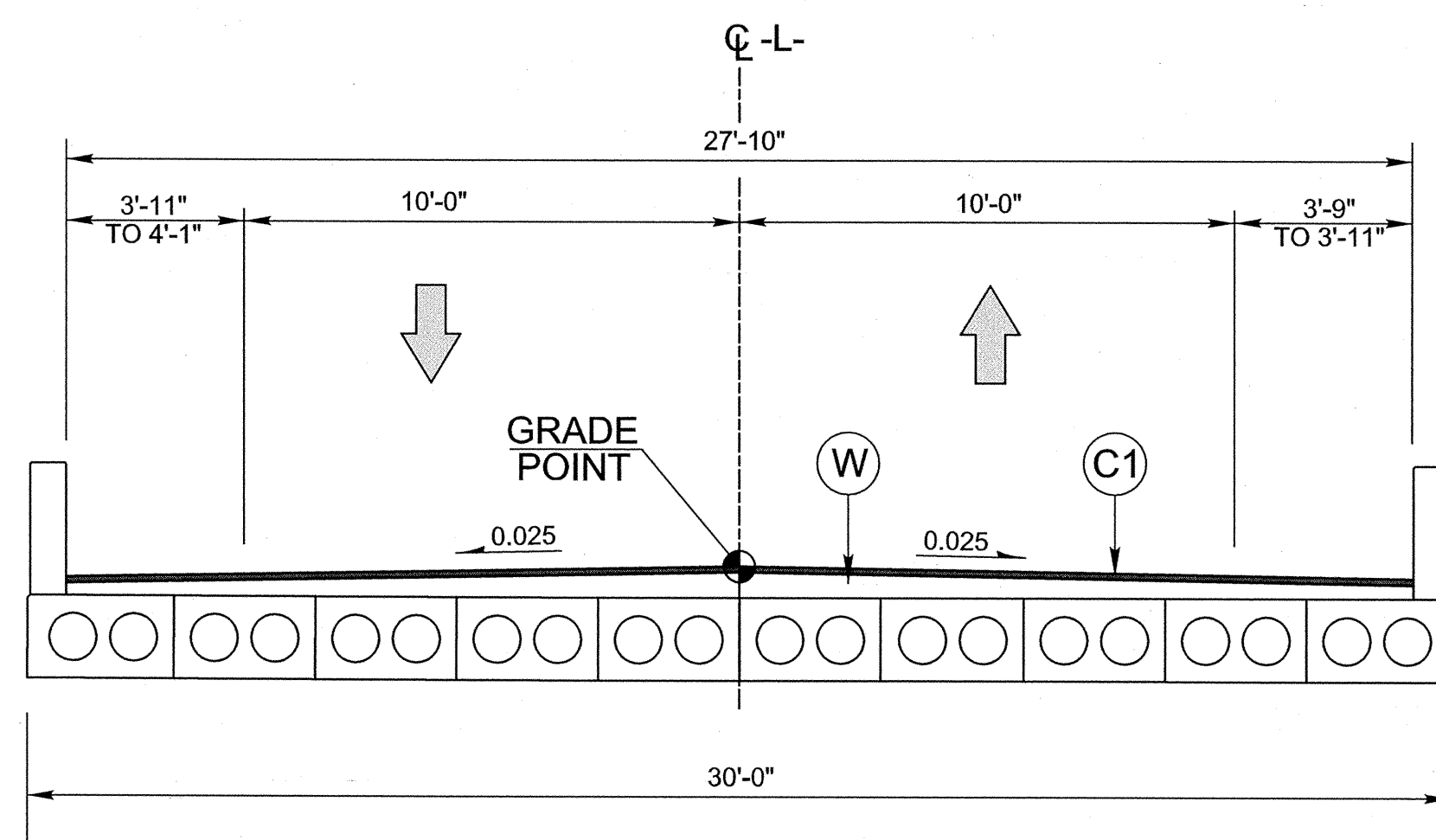
ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



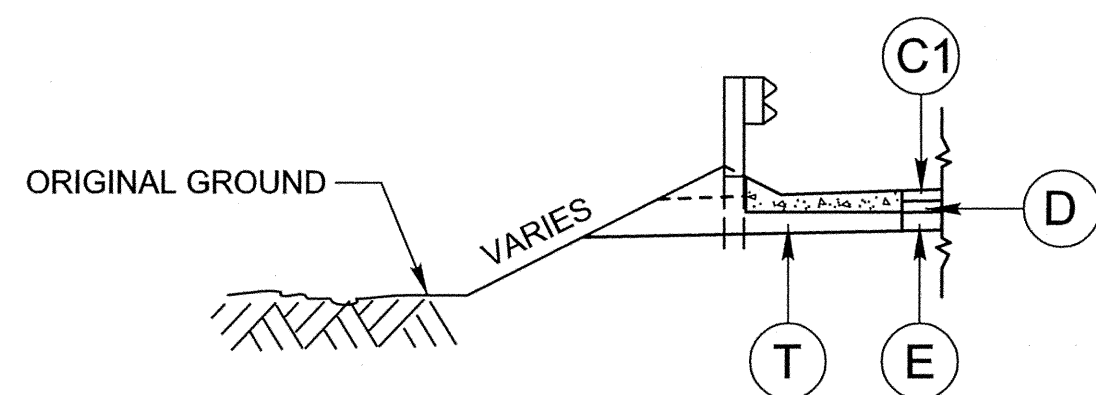
USE TYPICAL SECTION NO. 1 FROM:
 -L- STA. 12+00.00 TO -L- STA. 14+23.77 (BEGIN BRIDGE)
 -L- STA. 15+41.23 (END BRIDGE) TO -L- STA. 16+65.00



DETAIL SHOWING METHOD OF WEDGING
 SEE TYPICAL SECTIONS



USE TYPICAL SECTION NO. 2 FROM:
 -L- STA. 14+23.77 TO -L- STA. 15+41.23



DETAIL A
 SHOULDER BERM GUTTER LOCATIONS
 -L- STA. 15+54.8 TO -L- STA. 15+67.0 (LT.)
 -L- STA. 15+47.2 TO -L- STA. 15+67.0 (RT.)

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

REVISIONS

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

ROW AREA DATA SUMMARY

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN (SQ FT)	AREA REMAINING RT.	AREA REMAINING LT.	CONST. EASE.	PERM. DRAIN. EASE.	TEMP. DRAIN. EASE.
1	WINFIELD A. KNIGHT, JR.	-					296.2 SF	

PAVEMENT REMOVAL SUMMARY IN SQUARE YARDS

LOCATION	REMOVAL OF ASPHALT PAVEMENT	BREAKING OF ASPHALT PAVEMENT
-L- STA. 12+00 TO 14+35	536	
-L- STA. 15+21 TO 16+65	325	
GRAND TOTAL	861	
SAY	865	

DRAINAGE SUMMARY

STATION	LOCATION (LT, RT, OR CJ)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS IV R.C. PIPE (UNLESS NOTED OTHERWISE)			QUANTITIES FOR DRAINAGE STRUCTURES			SIDE DRAIN PIPE	TB GRATED D.I., TYPE 'B' STD. 840.35	T.B.D.I. FRAME AND TWO GRATES STD. 840.29	REMARKS
		FROM	TO					15"	18"	24"	PER EACH (0 THRU 5.0')	A	B				
-L- 15+65.00	LT	0401		73.15										1	1		
-L- 15+65.00	LT	0401	0402		68.41	68.29	24										
-L- 15+65.00	RT	0402		73.14										1	1		
-L- 15+65.00	RT	0402	OUT		68.29	68.23	20										
TOTAL							44							2	2		

SUMMARY OF EARTHWORK IN CUBIC YARDS

STATION	STATION	UNCLASSIFIED EXCAVATION	EMBANK. +%	BORROW	WASTE
-L- STA. 12+00.00	-L- STA. 14+44.00	233	42		191
-L- STA. 14+95.00	-L- STA. 16+65.00	261	9		252
PROJECT SUBTOTAL		494	51		443
WASTE TO REPLACE BORROW					0
PROJECT TOTAL		494			
GRAND TOTALS:		494			
SAY:		500			

GUARDRAIL SUMMARY

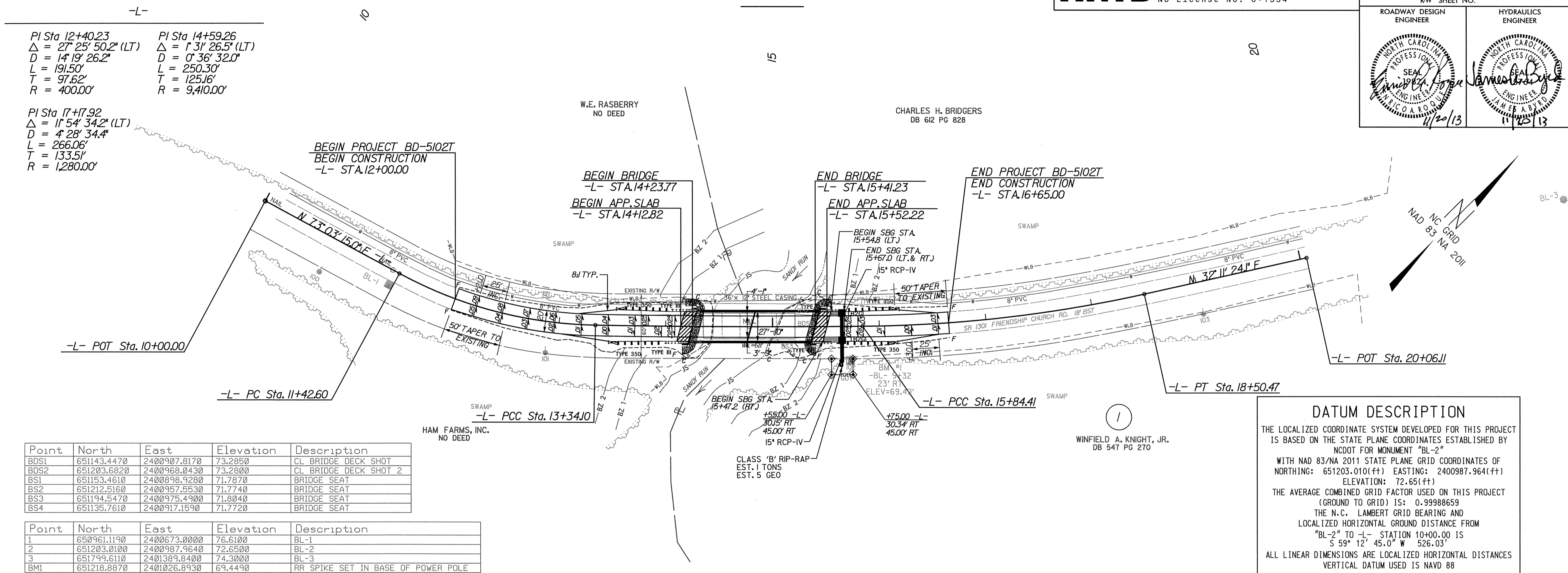
SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS										
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	TYPE 350 (TL-3)	XIII	CAT-1	III	BIC	AT-1	EA	G	NG															
-L-	13+46.48	14+21.36	RT	75.0				14+21.36	4	7	50		1																												
-L-	13+53.54	14+28.65	LT	75.0				14+28.65	4	7		50		1																											
-L-	15+36.19	16+17.00	RT	87.5				15+36.19	4	7		50		1																											
-L-	15+43.82	16+19.27	LT	75.0				15+43.82	4	7	50		1																												
LESS ANCHOR DEDUCTIONS																																									
	TYPE 350, TL-3	4 @ 50.00'	=	200.0																																					
	TYPE III	4 @ 18.75'	=	75.0																																					
	TOTAL			37.5																																					
	SAY			50																																					
	(5 ADDITIONAL GUARDRAIL POST)																																								

REVISIONS

PLAN

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

PROJECT REFERENCE NO. BD-5102T	SHEET NO. 4
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 4/22/13	HYDRAULICS ENGINEER <i>[Signature]</i> 4/22/13



PI Sta 12+40.23 PI Sta 14+59.26
 $\Delta = 27^\circ 25' 50.2''$ (LT) $\Delta = 1^\circ 31' 26.5''$ (LT)
 $D = 14^\circ 19' 26.2''$ $D = 0^\circ 36' 32.0''$
 $L = 191.50'$ $L = 250.30'$
 $T = 97.62'$ $T = 125.16'$
 $R = 400.00'$ $R = 9,410.00'$

PI Sta 17+17.92
 $\Delta = 11^\circ 54' 34.2''$ (LT)
 $D = 4^\circ 28' 34.4''$
 $L = 266.06'$
 $T = 133.51'$
 $R = 1,280.00'$

Point	North	East	Elevation	Description
BDS1	651143.4470	2400907.8170	73.2850	CL BRIDGE DECK SHOT
BDS2	651203.6820	2400968.0430	73.2800	CL BRIDGE DECK SHOT 2
BS1	651153.4610	2400898.9280	71.7870	BRIDGE SEAT
BS2	651212.5160	2400957.5530	71.7740	BRIDGE SEAT
BS3	651194.5470	2400975.4900	71.8040	BRIDGE SEAT
BS4	651135.7610	2400917.1590	71.7720	BRIDGE SEAT

Point	North	East	Elevation	Description
1	650961.1190	2400673.0000	76.6100	BL-1
2	651203.0100	2400987.9640	72.6500	BL-2
3	651799.6110	2401389.8400	74.3000	BL-3
BMI	651218.8870	2401026.8930	69.4490	RR SPIKE SET IN BASE OF POWER POLE

DATUM DESCRIPTION

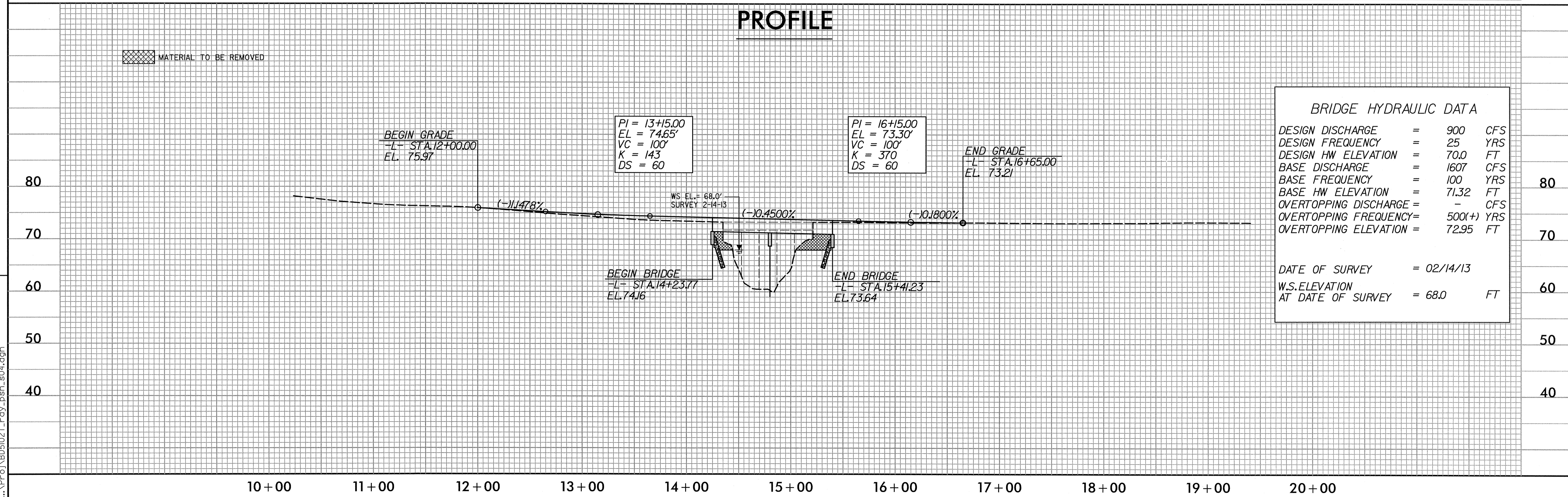
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCOOT FOR MONUMENT "BL-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 651203.010(±ft) EASTING: 2400987.964(±ft) ELEVATION: 72.65(±ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988659

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO -L- STATION 10+00.00 IS S 59° 12' 45.0" W 526.03'

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

PROFILE



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	900	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	70.0	FT
BASE DISCHARGE	=	1607	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	71.32	FT
OVERTOPPING DISCHARGE	=	-	CFS
OVERTOPPING FREQUENCY	=	500(+)	YRS
OVERTOPPING ELEVATION	=	72.95	FT

DATE OF SURVEY	=	02/14/13
W.S. ELEVATION AT DATE OF SURVEY	=	68.0 FT

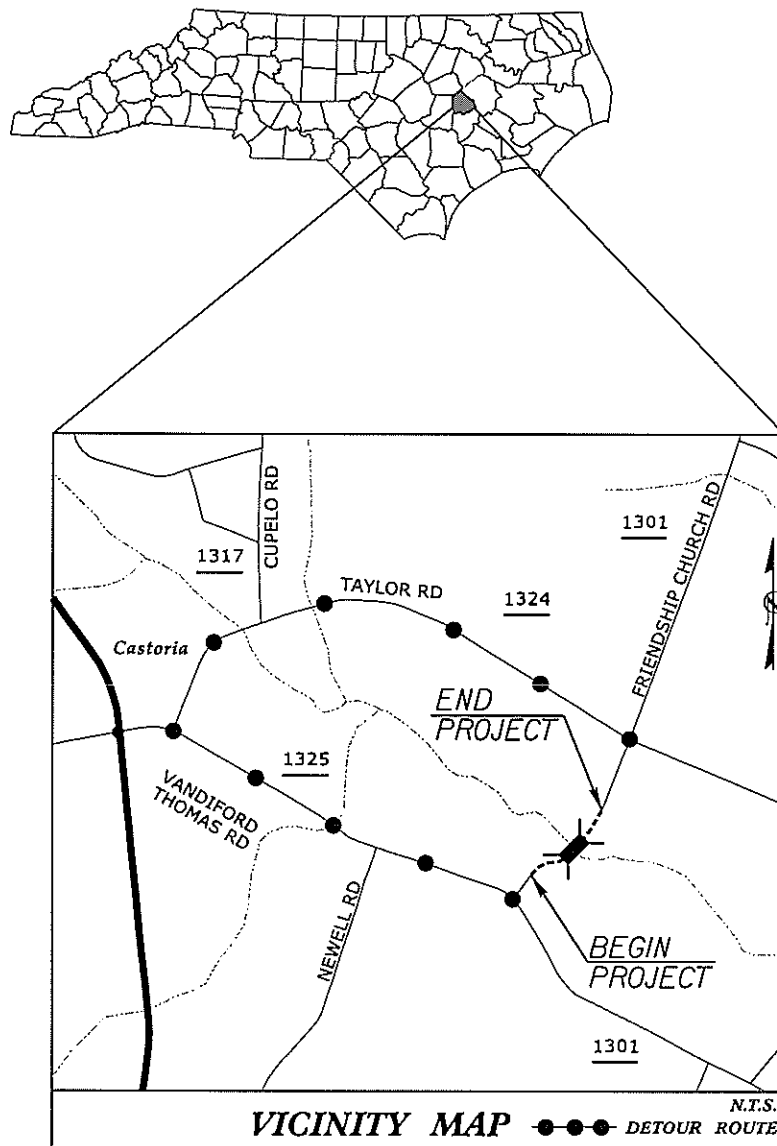
REVISIONS

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

GREENE COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET WITH VICINITY MAP, INDEX OF SHEETS, LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	GENERAL NOTES, DETOUR AND PLAN.

ROADWAY STANDARD DRAWINGS

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

TITLE	TITLE
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.D1	BARRICADES

LEGEND

GENERAL

- ← DIRECTION OF TRAFFIC FLOW
- ← DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PRDPOSED PVMT.

WORK AREA

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

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

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

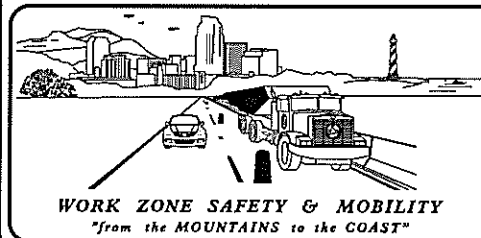
APPROVED: *Ronnda B. Early*
DATE: 10-22-13

SEAL



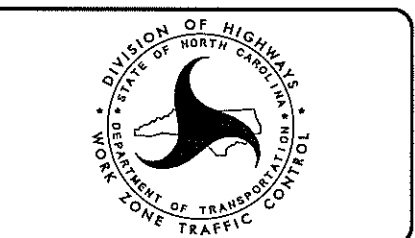
SHEET NO. TMP-1
BD-5102T
TIP PROJECT:

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\$\$\$\$\$USERNAME\$\$\$\$\$



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

STEVEN J. HAMILTON, PE DIVISION TRAFFIC ENGINEER

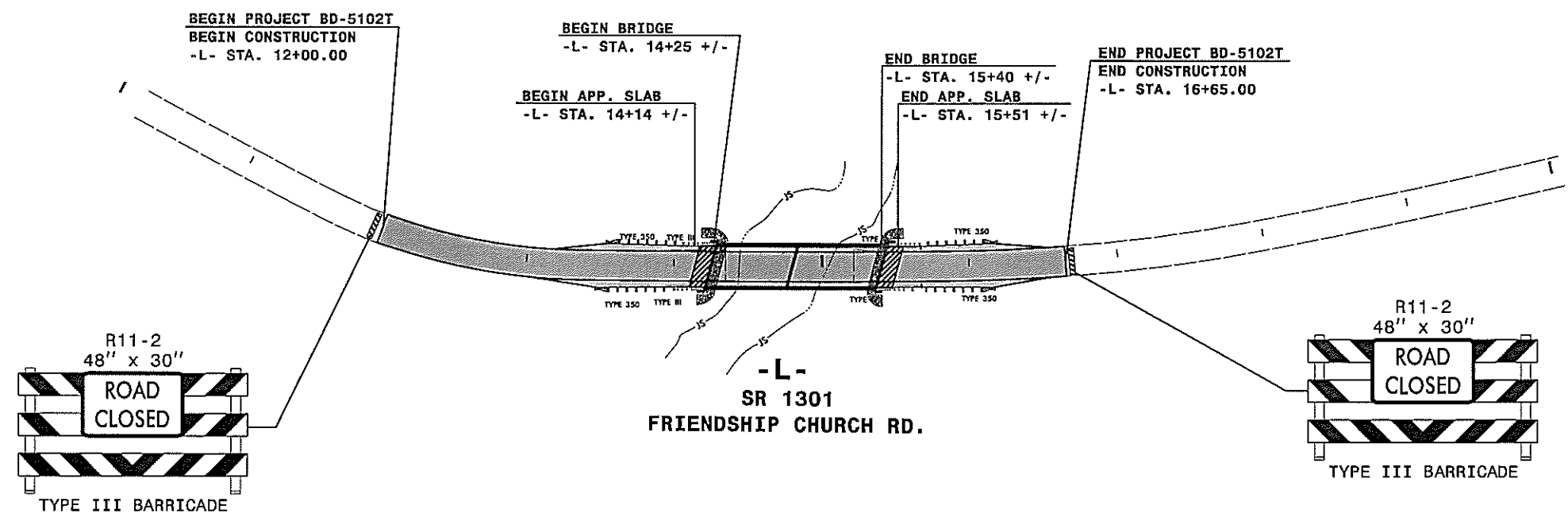
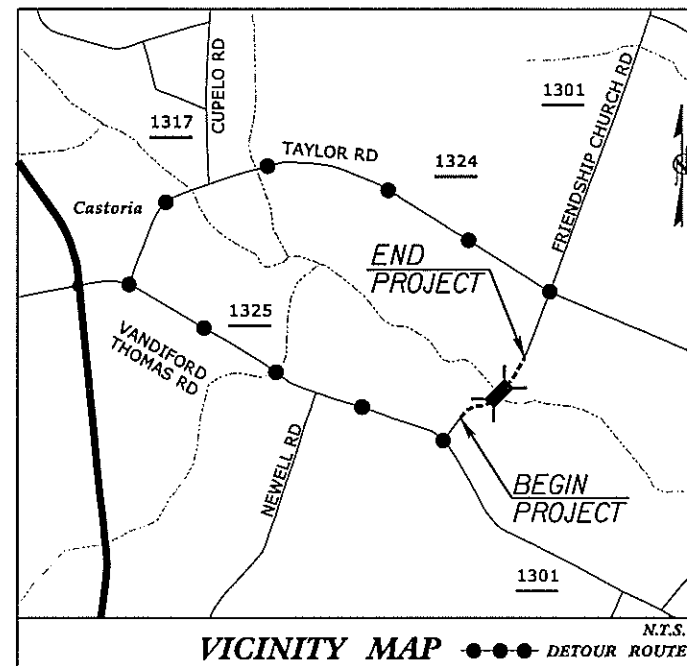


GENERAL NOTES

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

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

STATE FORCES WILL INSTALL AND MAINTAIN THE PROJECT DETOUR AND THE TYPE III BARRICADES AT THE PROJECT LIMITS.
STATE FORCES WILL INSTALL MARKINGS AND MARKERS ON THE FINISHED PROJECT.
CALL JIM EVANS AT 252-830-3493 FOR COORDINATION.



9:45:07 AM T:\CP_02_detour.dgn
 8/17/99
 QM/QC STAGE
 REVIEW:
 CONCUR:
 REVISE:
 VERIFY:

HNTB HNTB NORTH CAROLINA, P.C.
 349 E. SIX FORKS ROAD, SUITE 200
 RALEIGH, NORTH CAROLINA 27609
 NC LICENSE NO. C-1524

APPROVED: *[Signature]* DATE: 02/21/13
 SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 023521
 WANDA B. EARLY

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

TRANSPORTATION
 MANAGEMENT PLAN
 GENERAL NOTES,
 DETOUR
 AND PLAN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5103T	EC-1	6
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

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

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.

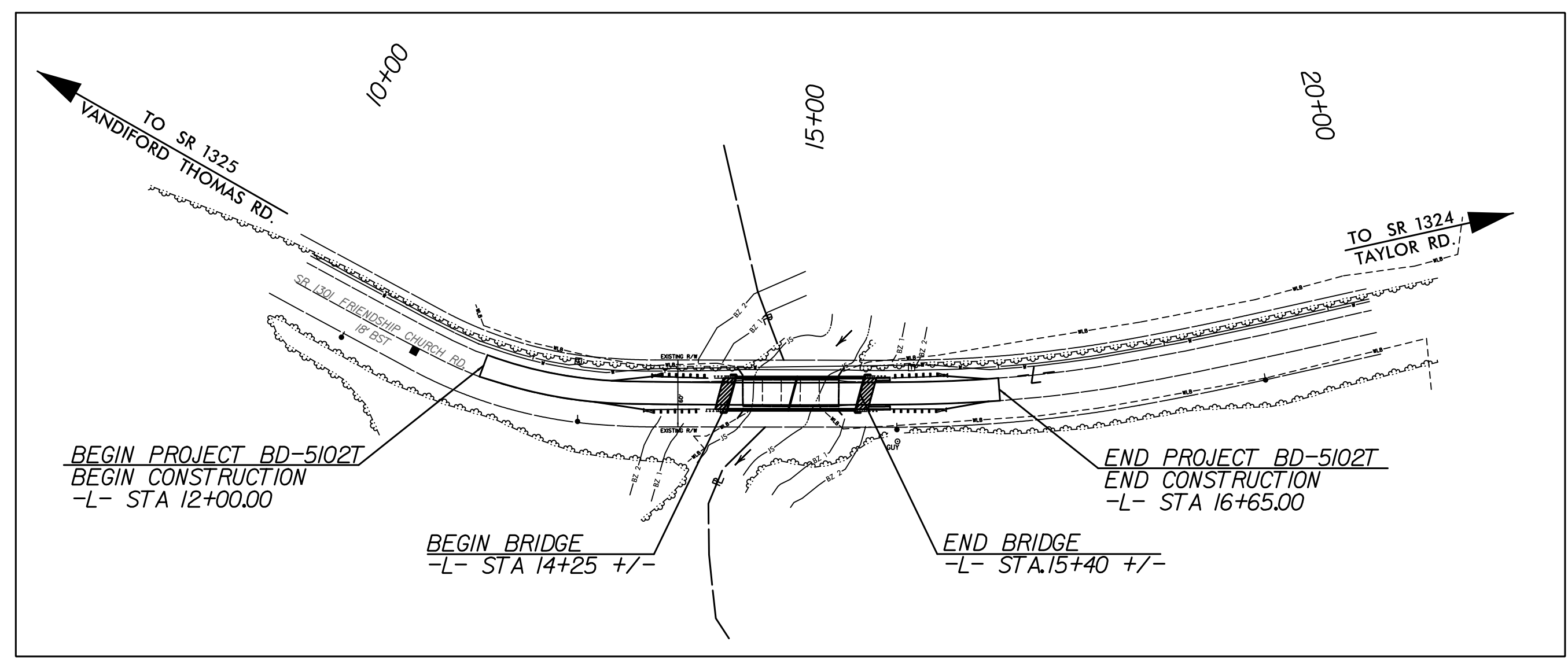
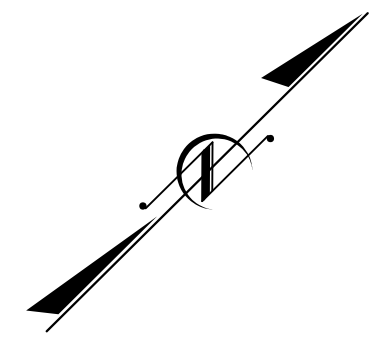
TIP PROJECT: BD-5102T

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

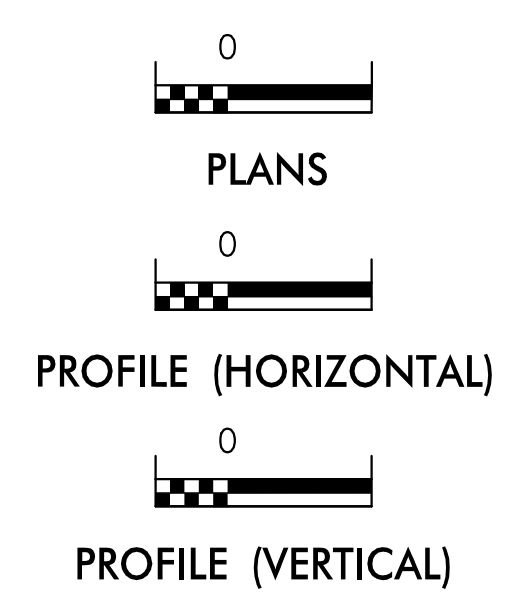
GREENE COUNTY

LOCATION: GREENE COUNTY BRIDGE NO. 008 OVER SANDY RUN
ON SR 1301 (FRIENDSHIP CHURCH RD.)

TYPE OF WORK: LOW IMPACT BRIDGE REPLACEMENT



GRAPHIC SCALE



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Prepared in the Office of:

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

2012 STANDARD SPECIFICATIONS

PHILLIP E. ROGERS, P.E.
EROSION CONTROL
LEVEL III-A
CERTIFICATION #330

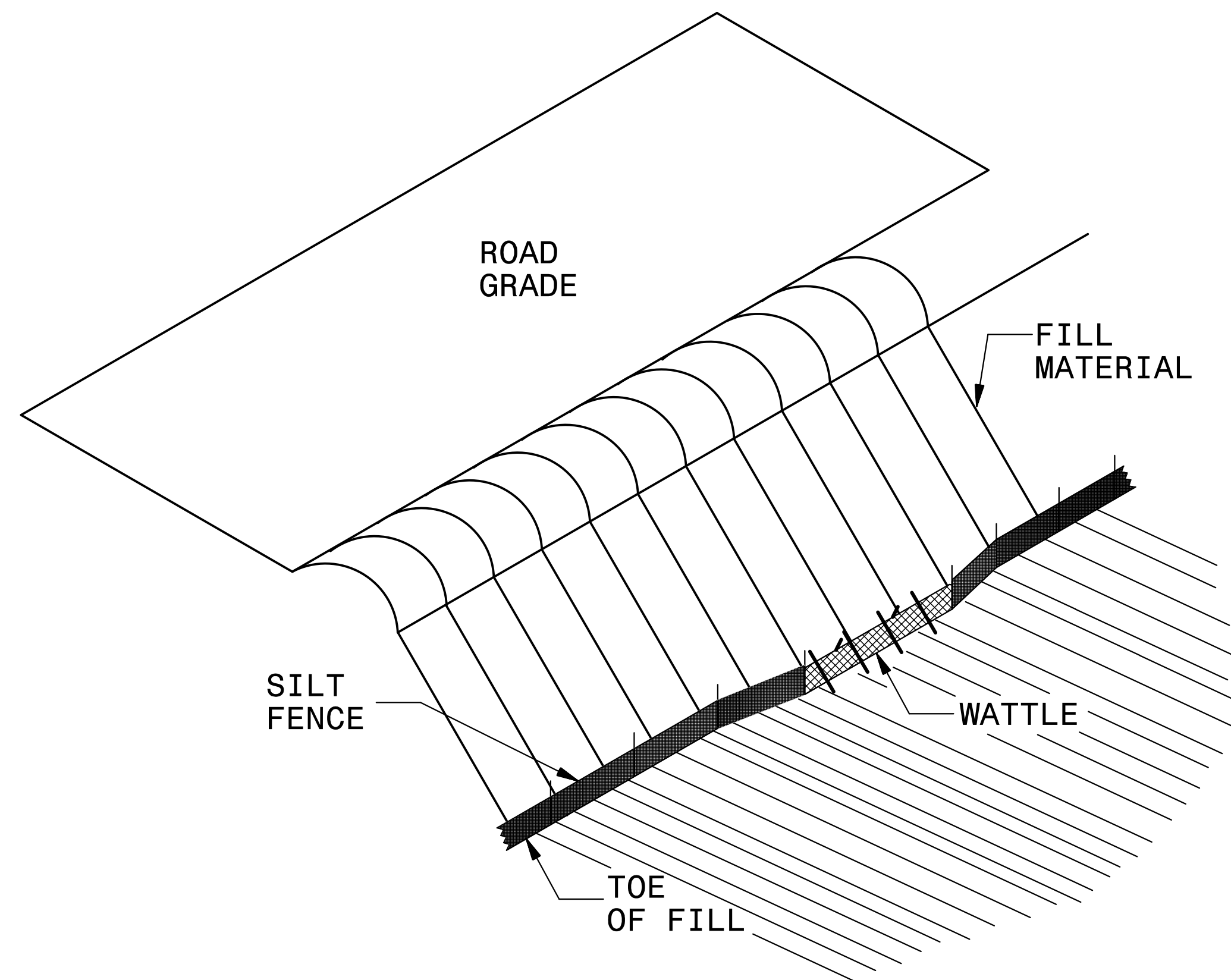
Roadway Standard Drawings

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

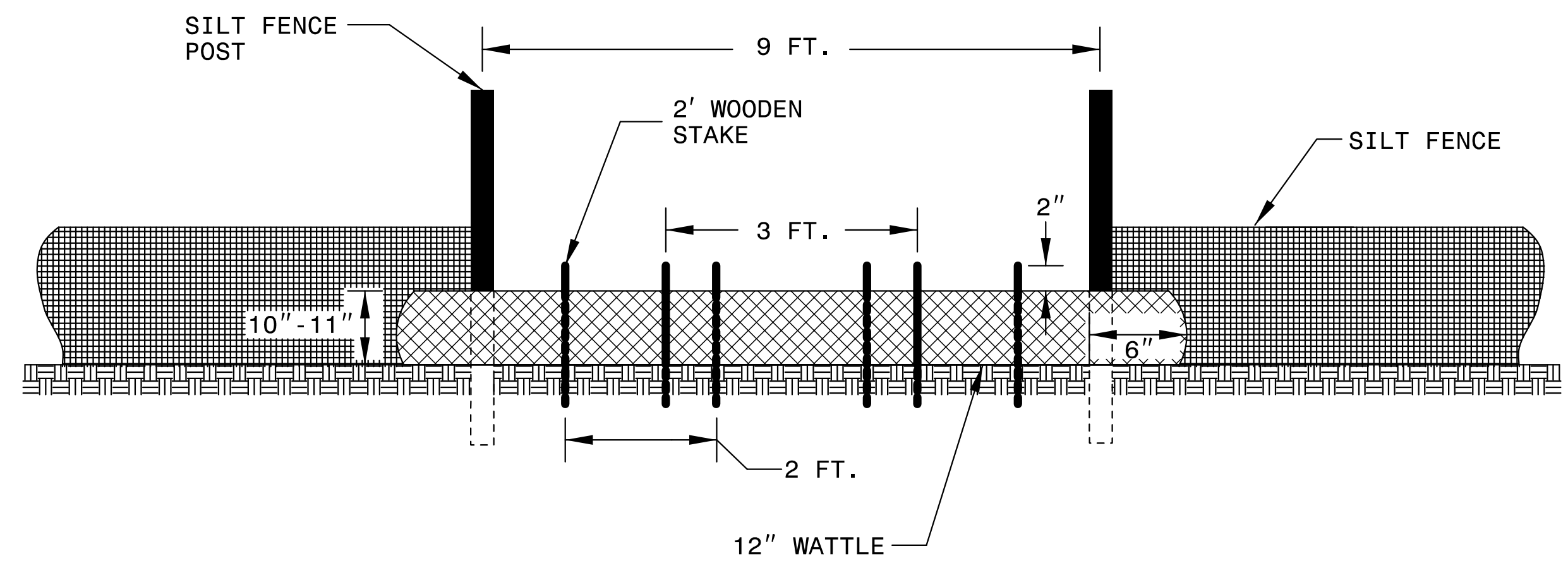
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type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

5:5445 B.M. 01/02T.ec.sah.dgn
###USERNAME###

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW

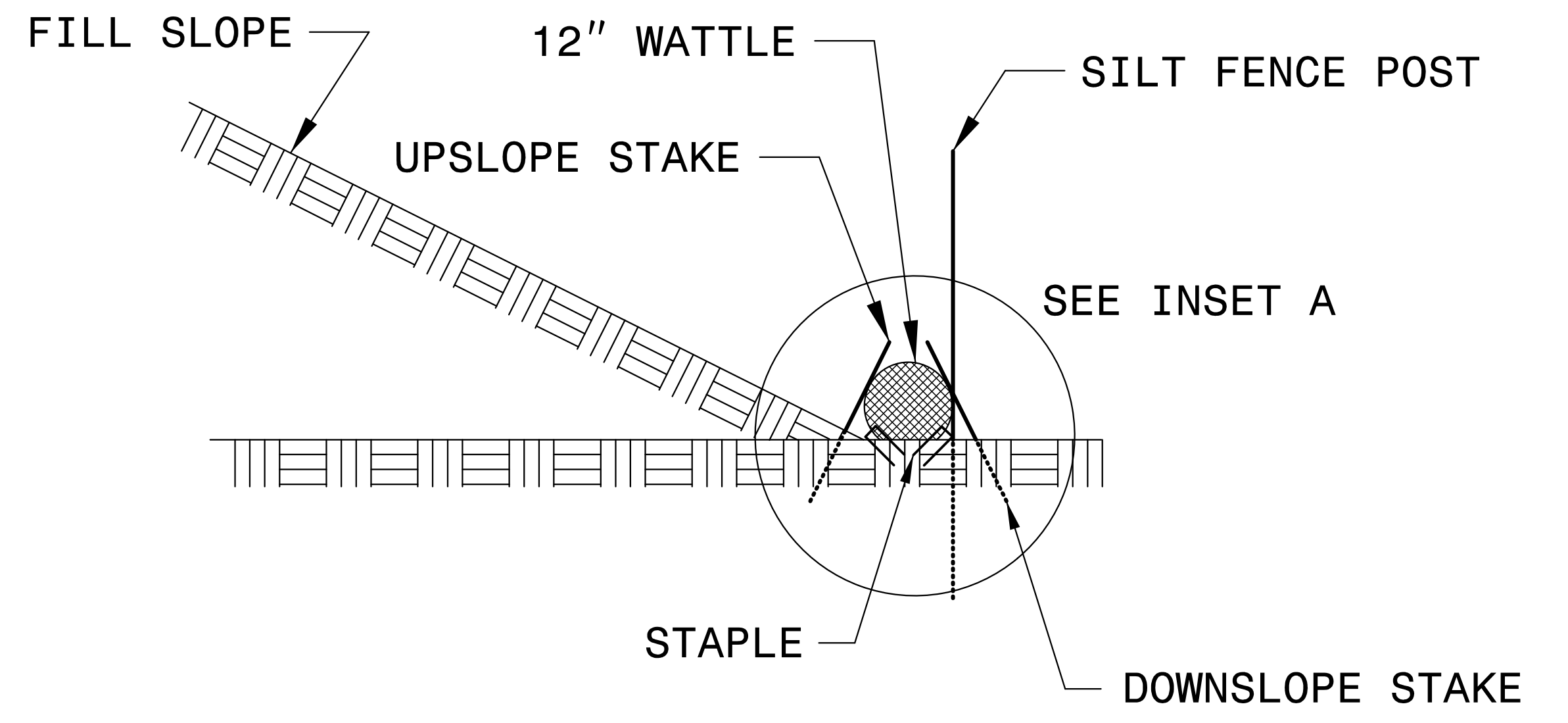
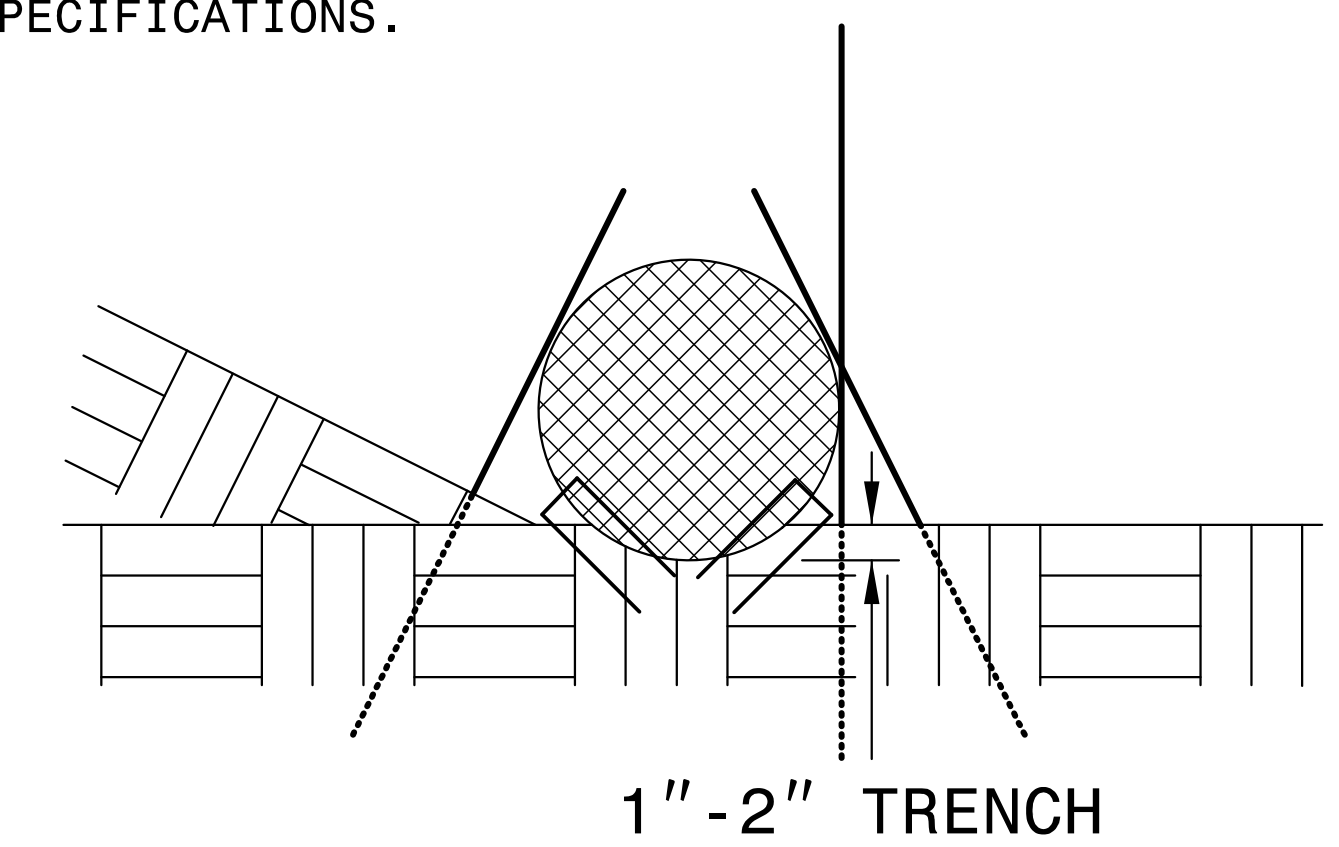


VIEW FROM SLOPE

NOTES:

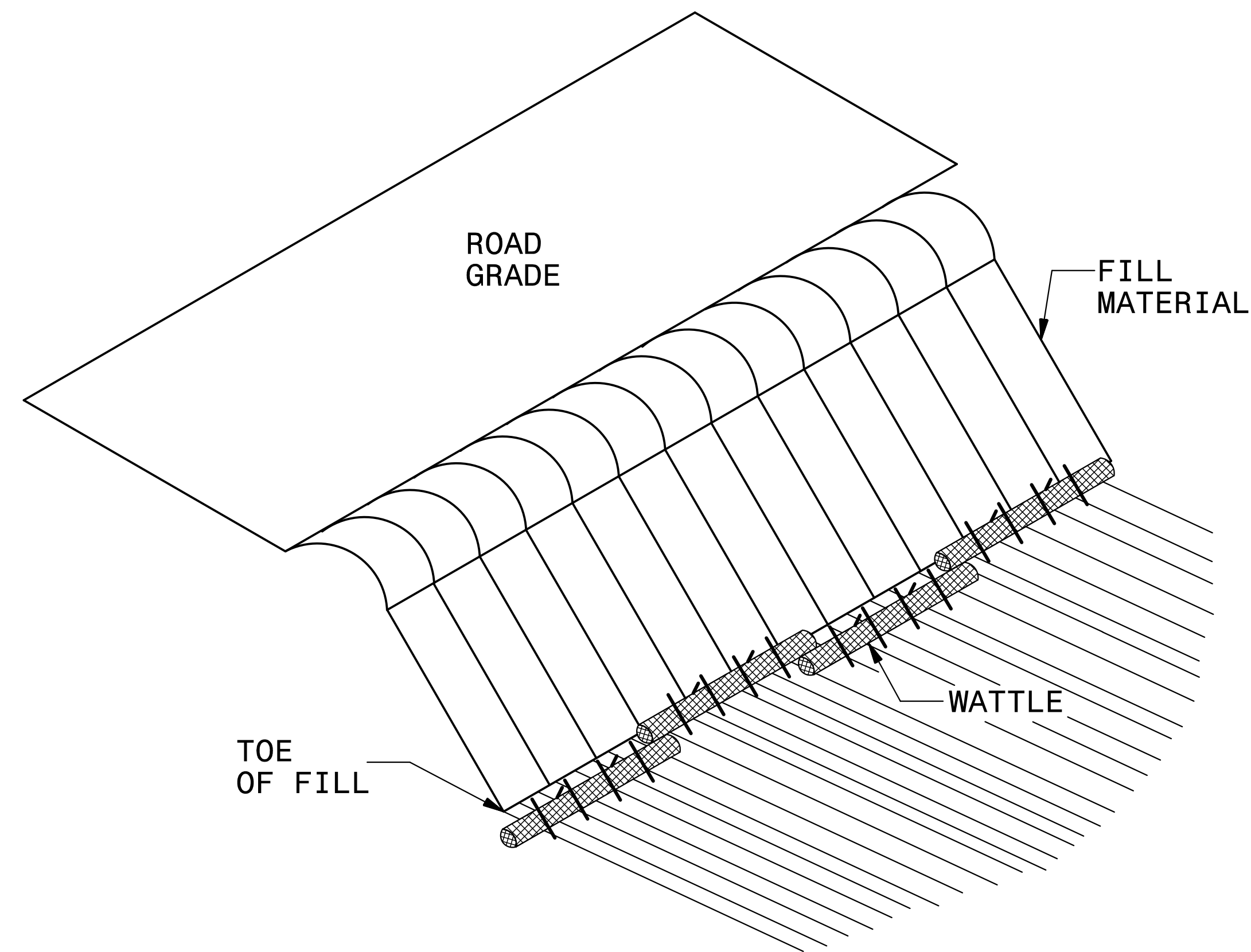
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A

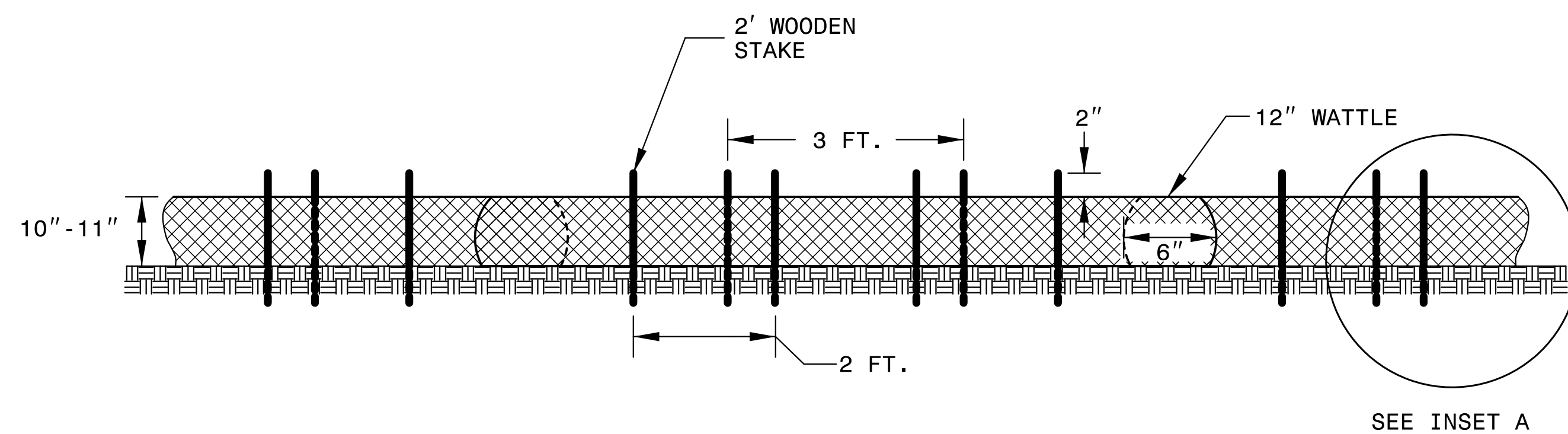


SIDE VIEW

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW



FRONT VIEW

NOTES:

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

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

DO NOT PLACE WATTLES ON TOE OF SLOPE.

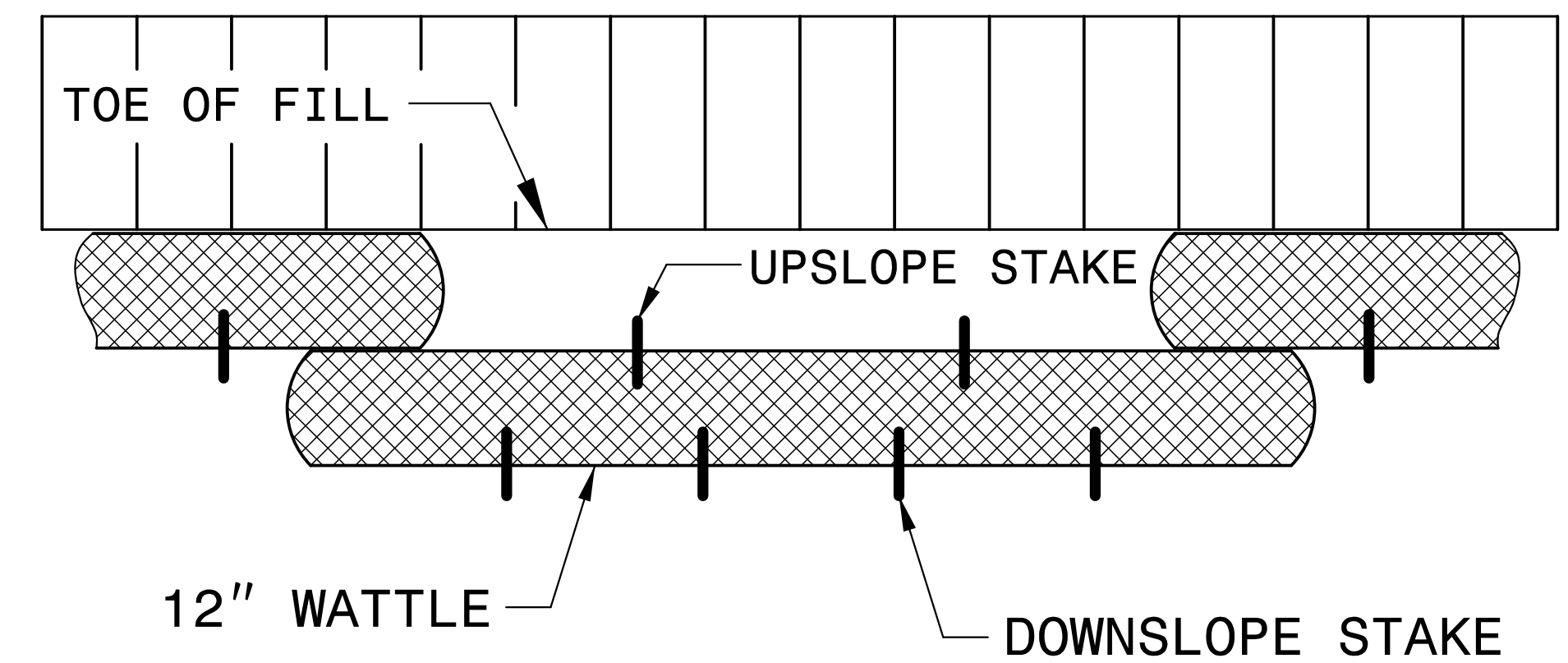
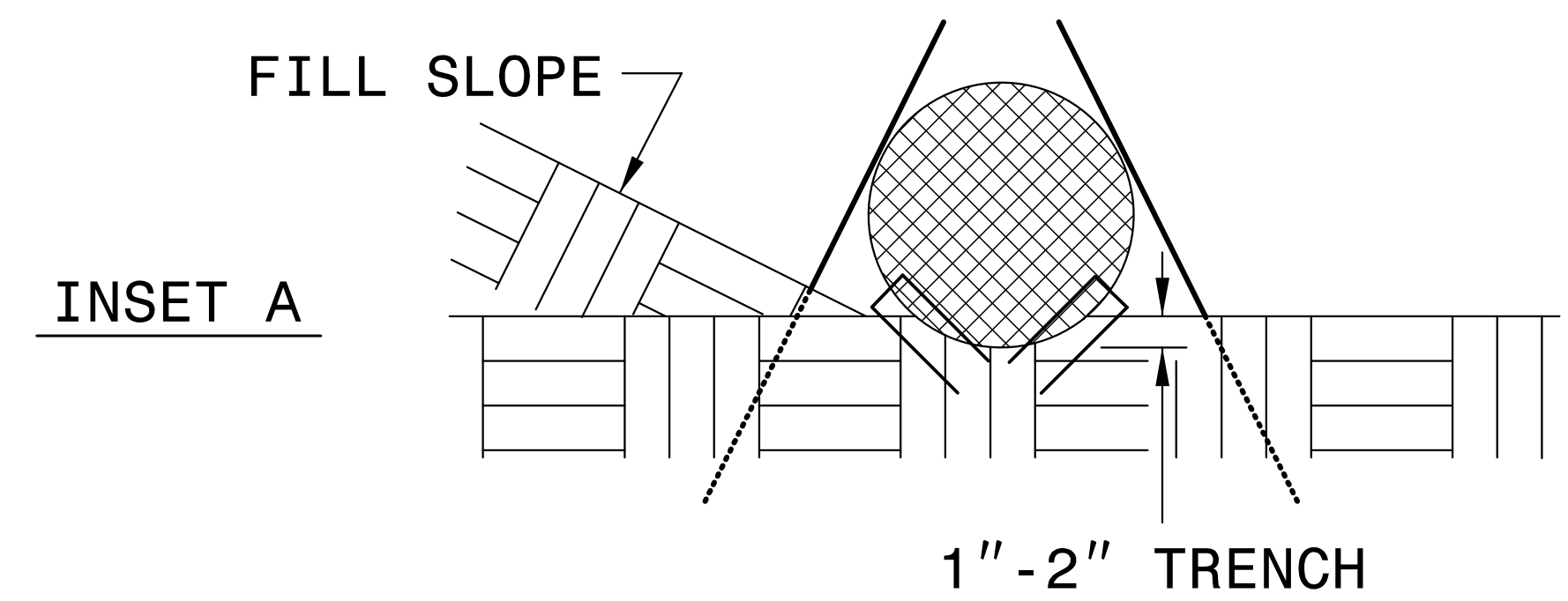
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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

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

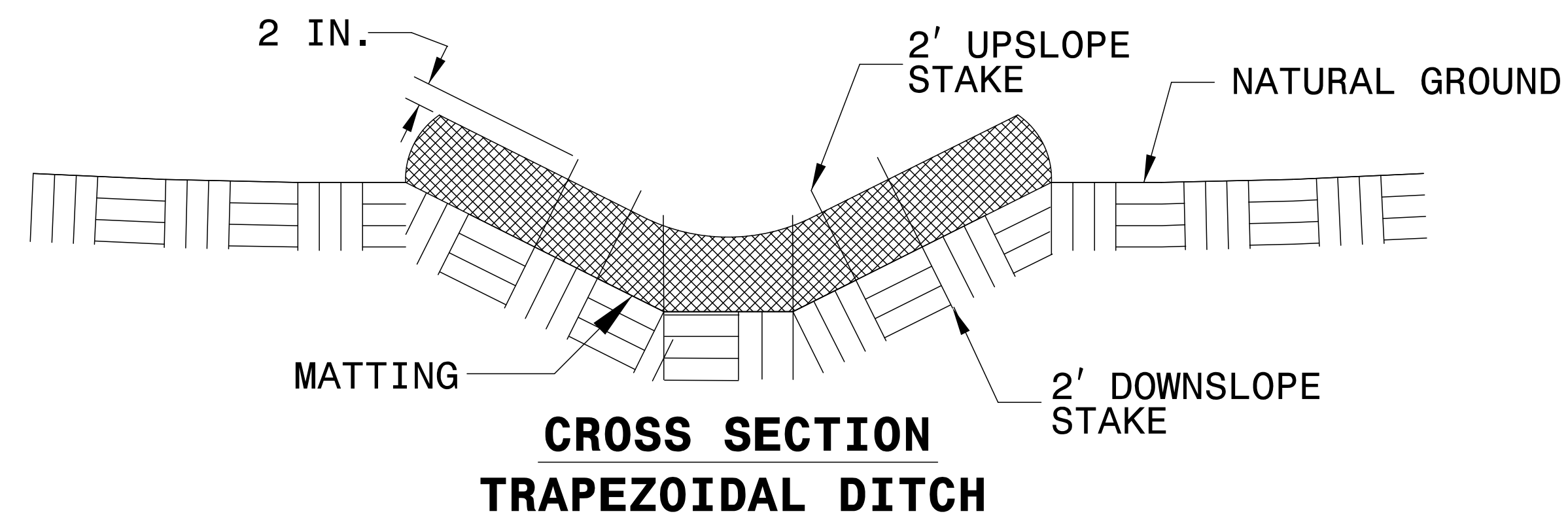
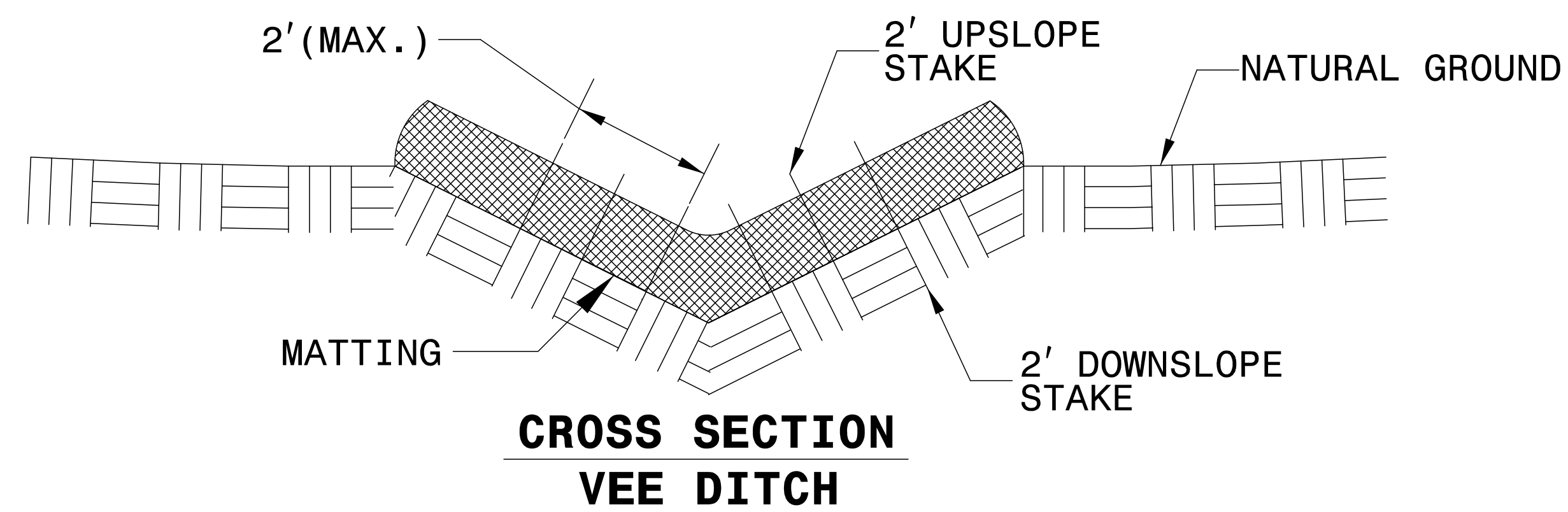
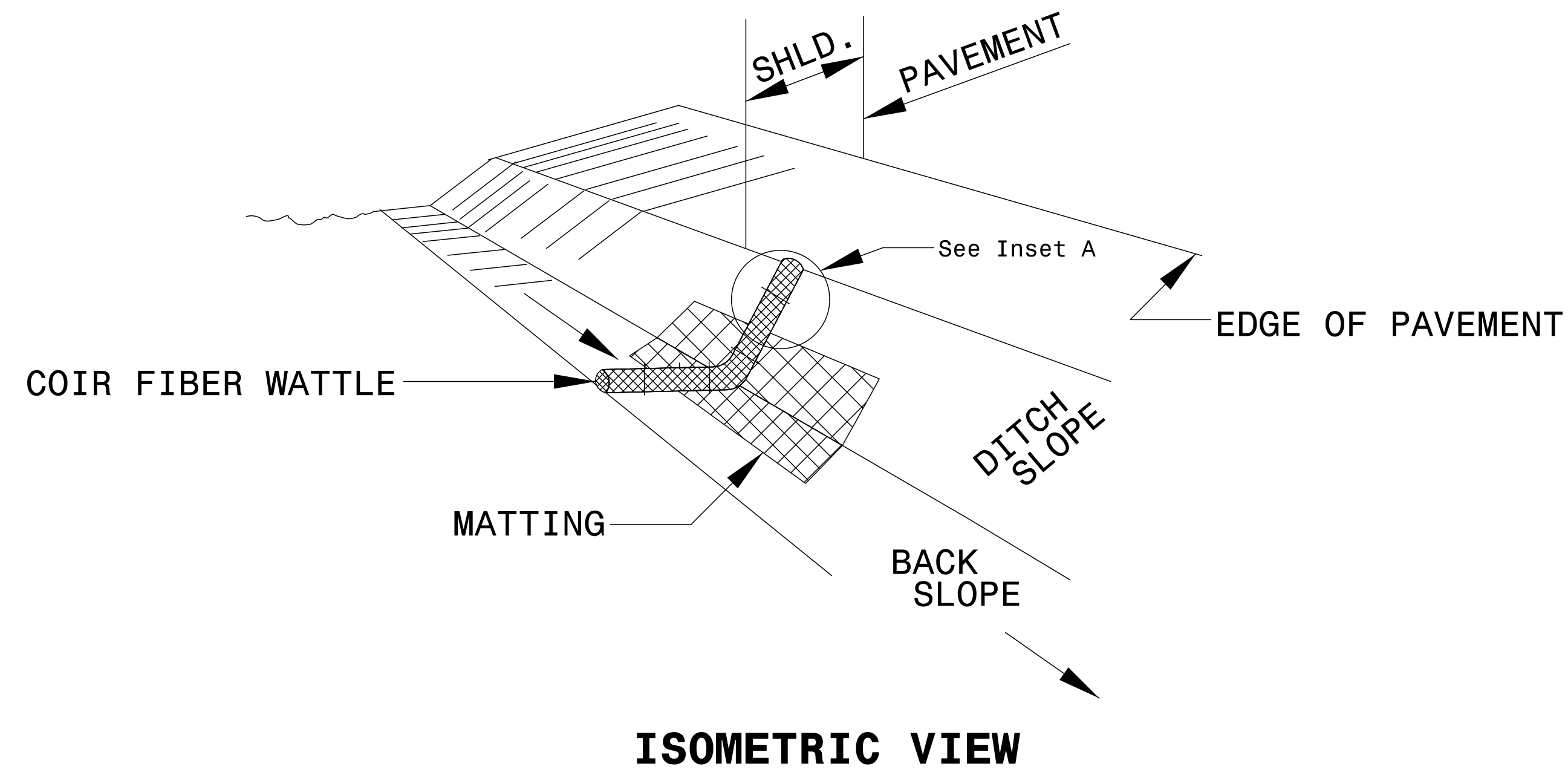
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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



TOP VIEW

COIR FIBER WATTLE 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.

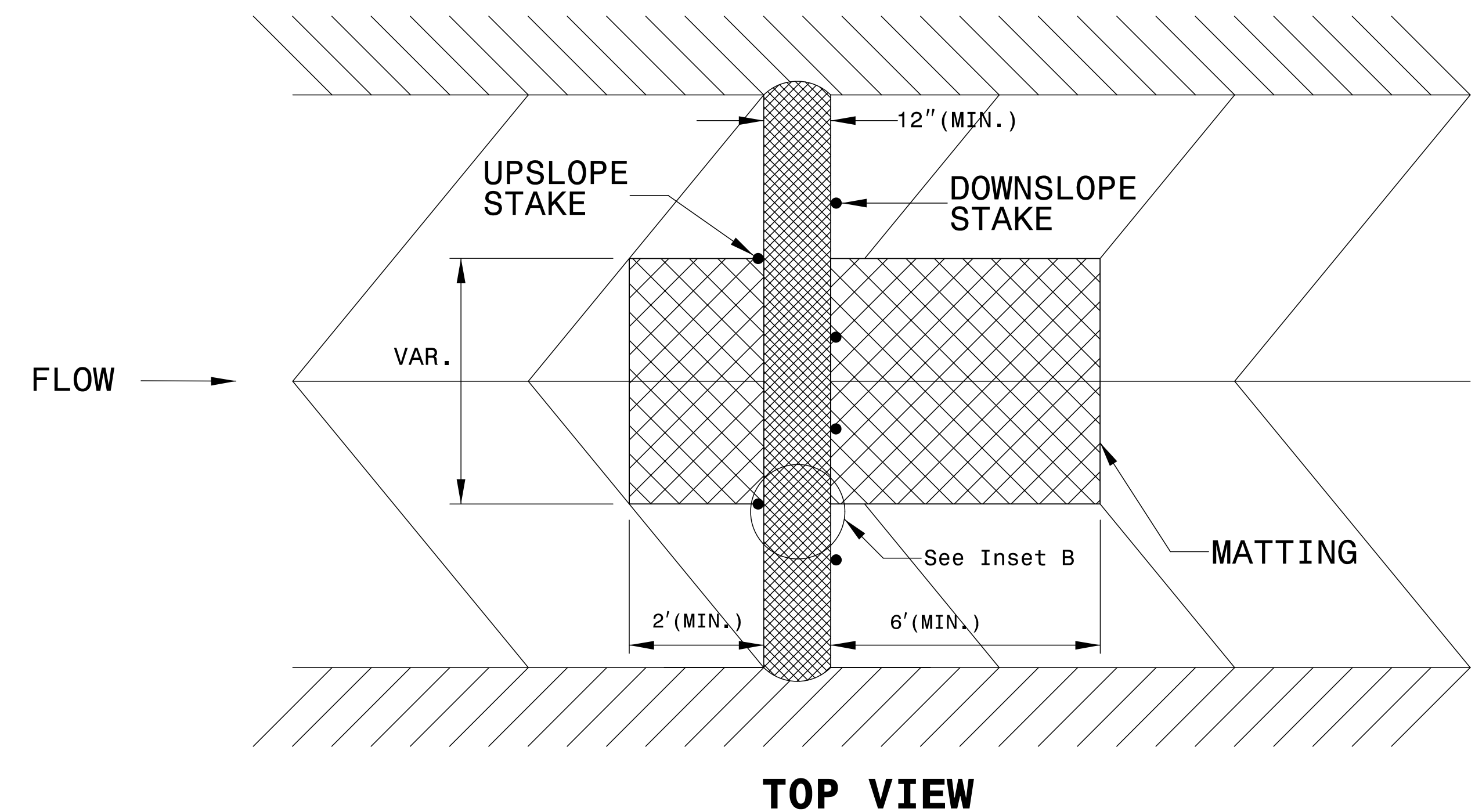
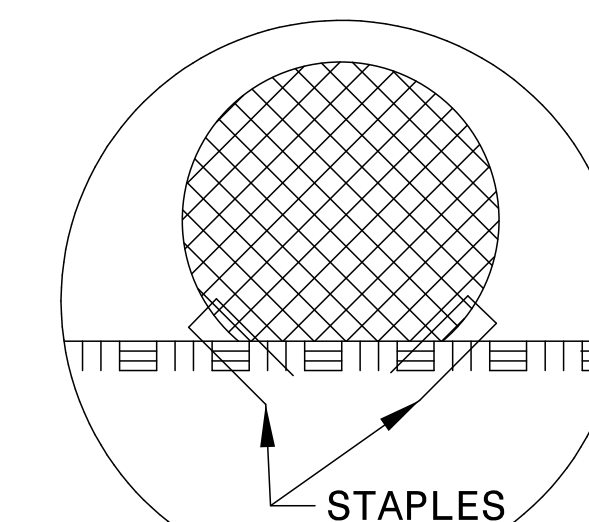
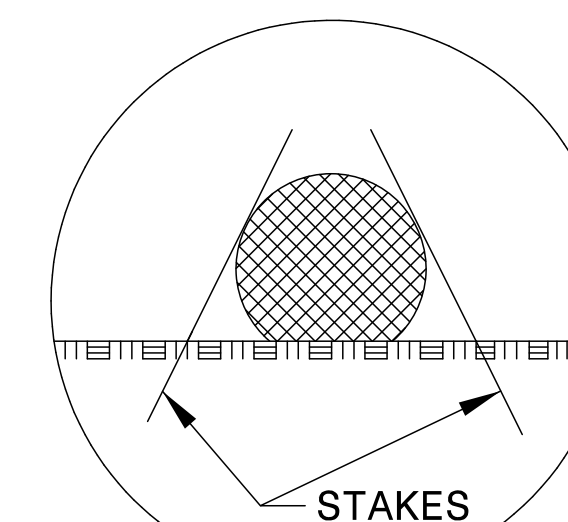
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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.

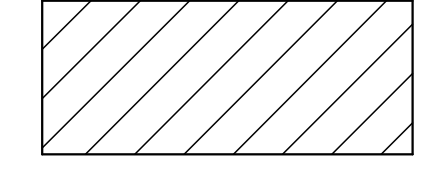
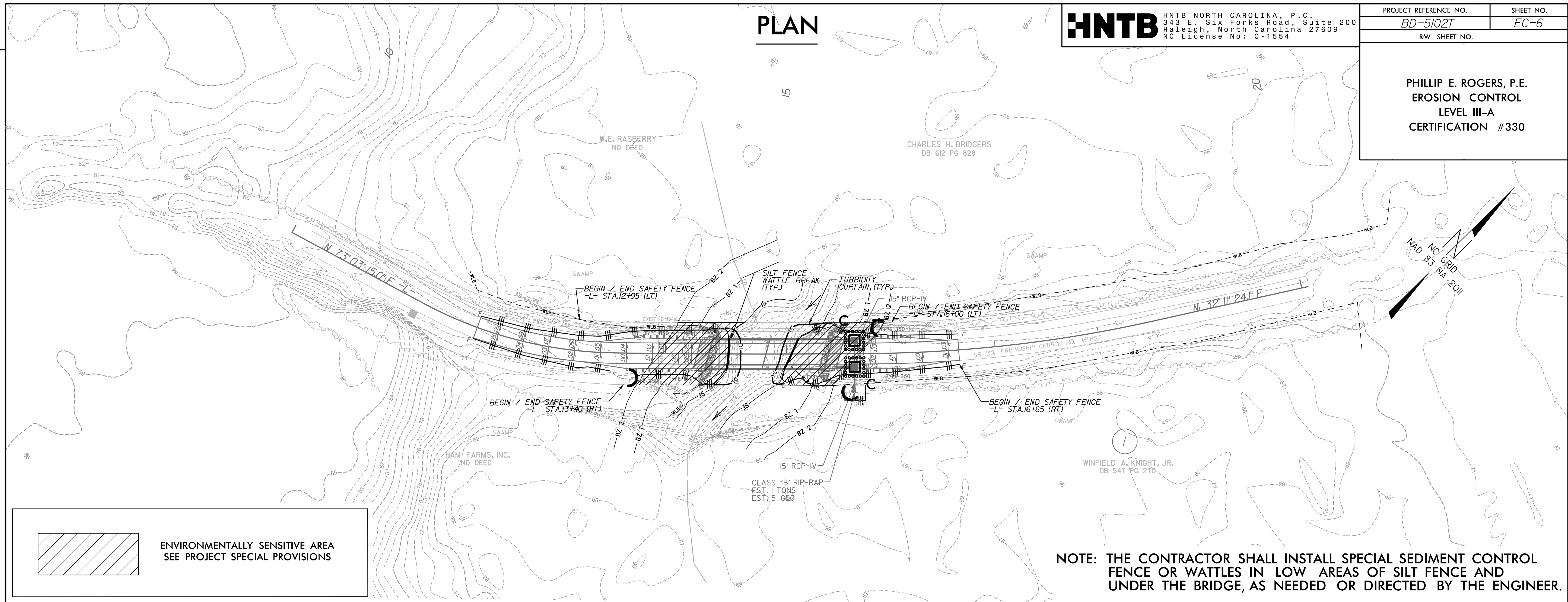
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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



PHILLIP E. ROGERS, P.E.
 EROSION CONTROL
 LEVEL III-A
 CERTIFICATION #330

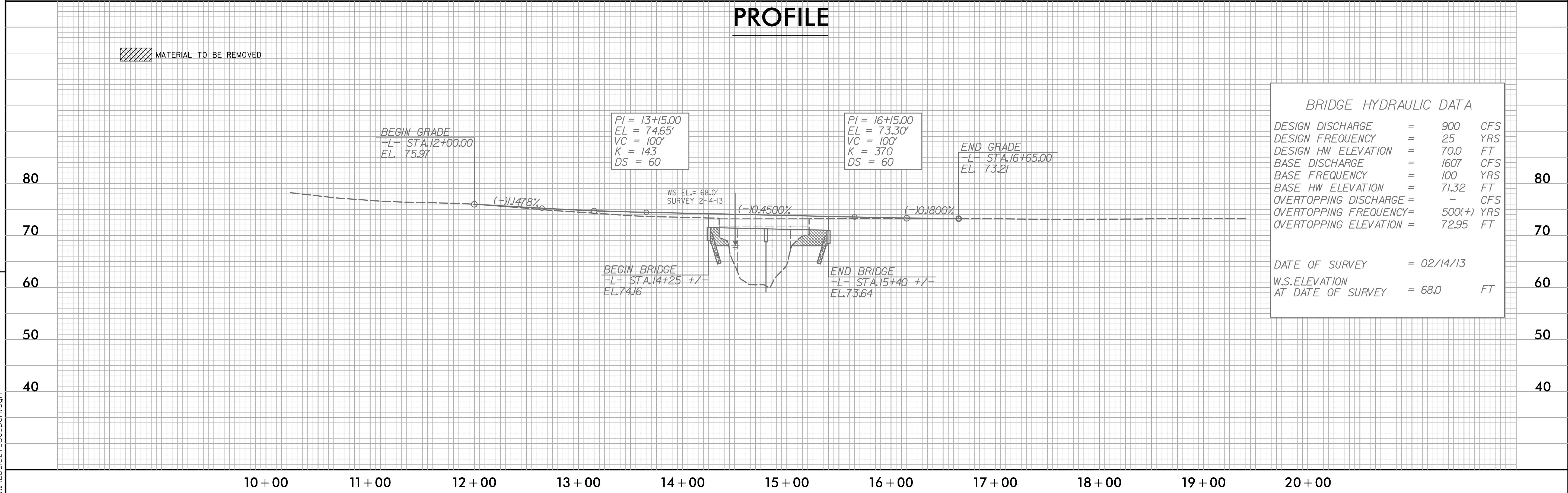
PLAN



ENVIRONMENTALLY SENSITIVE AREA
 SEE PROJECT SPECIAL PROVISIONS

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

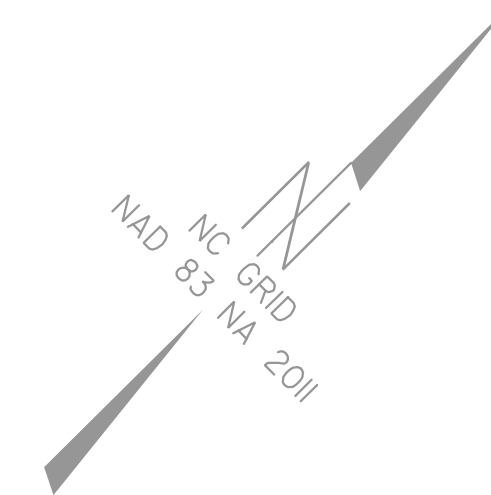
PROFILE



REVISIONS

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BD-5102T	P-1
RW SHEET NO.	



10

15

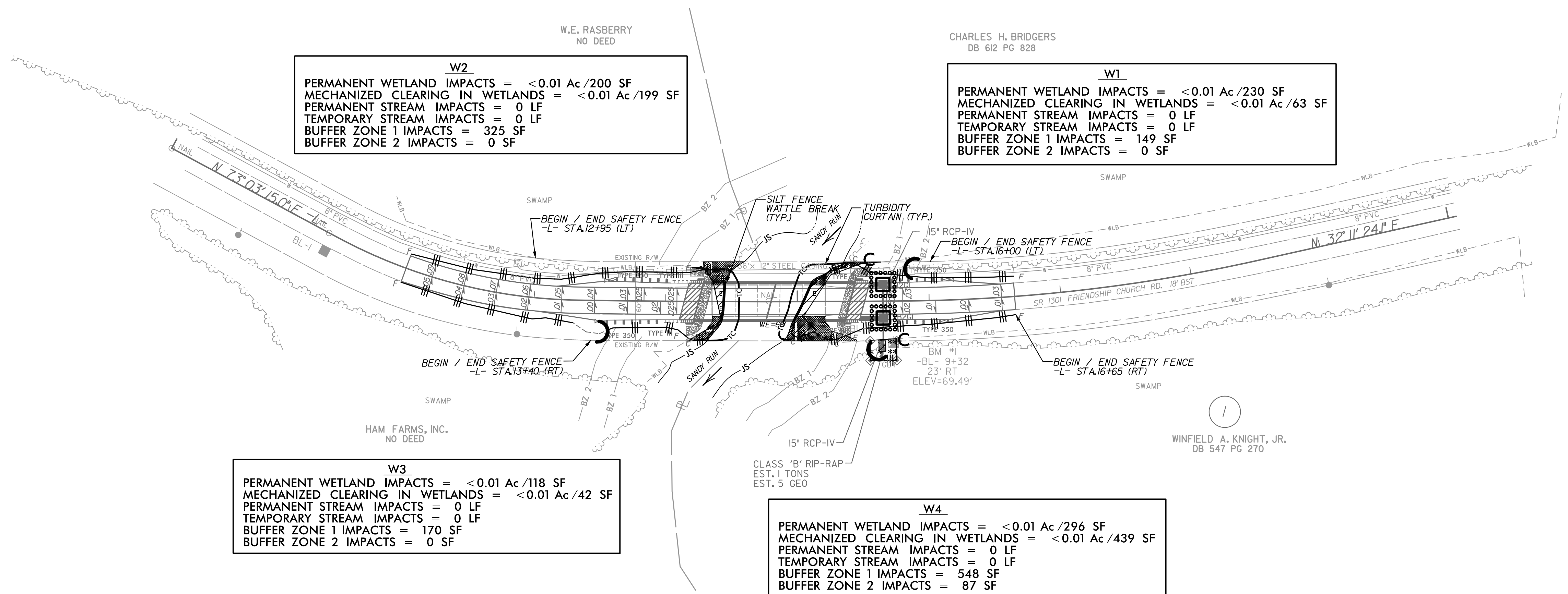
20

W.E. RASBERRY
NO DEED

CHARLES H. BRIDGERS
DB 612 PG 828

W2
 PERMANENT WETLAND IMPACTS = <0.01 Ac /200 SF
 MECHANIZED CLEARING IN WETLANDS = <0.01 Ac /199 SF
 PERMANENT STREAM IMPACTS = 0 LF
 TEMPORARY STREAM IMPACTS = 0 LF
 BUFFER ZONE 1 IMPACTS = 325 SF
 BUFFER ZONE 2 IMPACTS = 0 SF

W1
 PERMANENT WETLAND IMPACTS = <0.01 Ac /230 SF
 MECHANIZED CLEARING IN WETLANDS = <0.01 Ac /63 SF
 PERMANENT STREAM IMPACTS = 0 LF
 TEMPORARY STREAM IMPACTS = 0 LF
 BUFFER ZONE 1 IMPACTS = 149 SF
 BUFFER ZONE 2 IMPACTS = 0 SF



W3
 PERMANENT WETLAND IMPACTS = <0.01 Ac /118 SF
 MECHANIZED CLEARING IN WETLANDS = <0.01 Ac /42 SF
 PERMANENT STREAM IMPACTS = 0 LF
 TEMPORARY STREAM IMPACTS = 0 LF
 BUFFER ZONE 1 IMPACTS = 170 SF
 BUFFER ZONE 2 IMPACTS = 0 SF

W4
 PERMANENT WETLAND IMPACTS = <0.01 Ac /296 SF
 MECHANIZED CLEARING IN WETLANDS = <0.01 Ac /439 SF
 PERMANENT STREAM IMPACTS = 0 LF
 TEMPORARY STREAM IMPACTS = 0 LF
 BUFFER ZONE 1 IMPACTS = 548 SF
 BUFFER ZONE 2 IMPACTS = 87 SF

IMPACT SUMMARY:
 404 WETLAND IMPACTS = 0.05 AC
 STREAM IMPACTS = 0 FT.
 BUFFER ZONE 1 IMPACT = 1192 SQ. FT.
 BUFFER ZONE 2 IMPACT = 87 SQ. FT.

LEGEND

	ALLOWABLE IMPACTS ZONE 1
	ALLOWABLE IMPACTS ZONE 2
	DENOTES EXCAVATION IN WETLAND
	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

NCDOT
 BD-5102T GREENE COUNTY
 REPLACE BRIDGE NO. 008
 SR 1301 (FRIENDSHIP CHURCH RD.)
 OVER SANDY RUN
 BETWEEN SR 1325
 AND SR 1324
 SCALE: 1" = 50'
 OCTOBER 21, 2013
 FOR PERMITTING ONLY:
 NOT FOR CONSTRUCTION

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

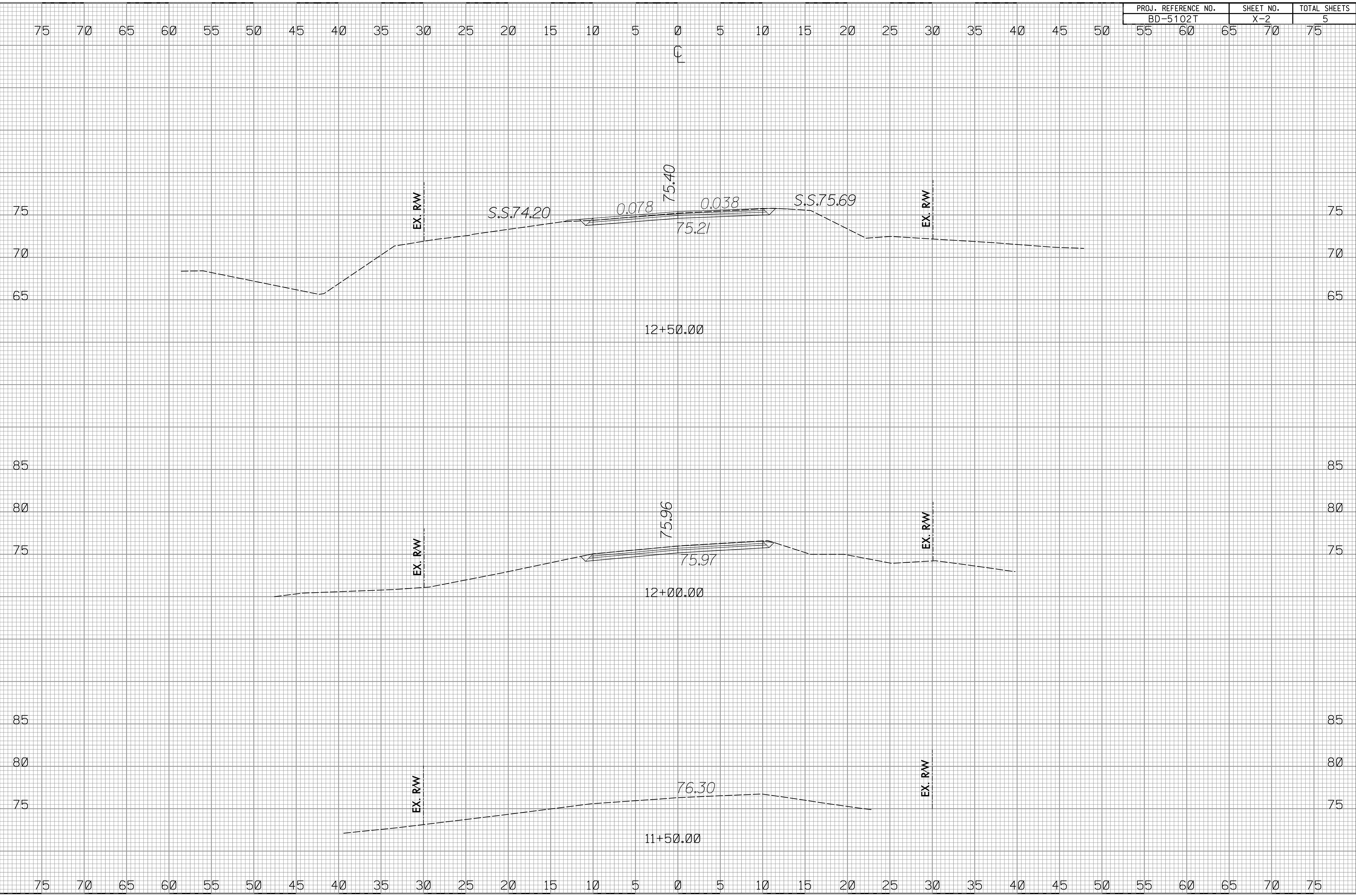
CROSS-SECTION SUMMARY
IN CUBIC YARDS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

STATION	UNCLASSIFIED EXCAVATION	EMBANK.	UNDERCUT
-L- STA. 11 + 50.00	0	0	0
-L- STA. 12 + 00.00	0	0	0
-L- STA. 12 + 50.00	29	0	0
-L- STA. 13 + 00.00	21	2	0
-L- STA. 13 + 50.00	11	8	0
-L- STA. 14 + 00.00	0	18	0
-L- STA. 14 + 50.00	172	5	0
-L- STA. 15 + 00.00	1	0	0
-L- STA. 15 + 50.00	184	2	0
-L- STA. 16 + 00.00	33	5	0
-L- STA. 16 + 50.00	37	0	0
-L- STA. 17 + 00.00	6	0	0
-L- STA. 17 + 50.00	0	0	0

02/03/98

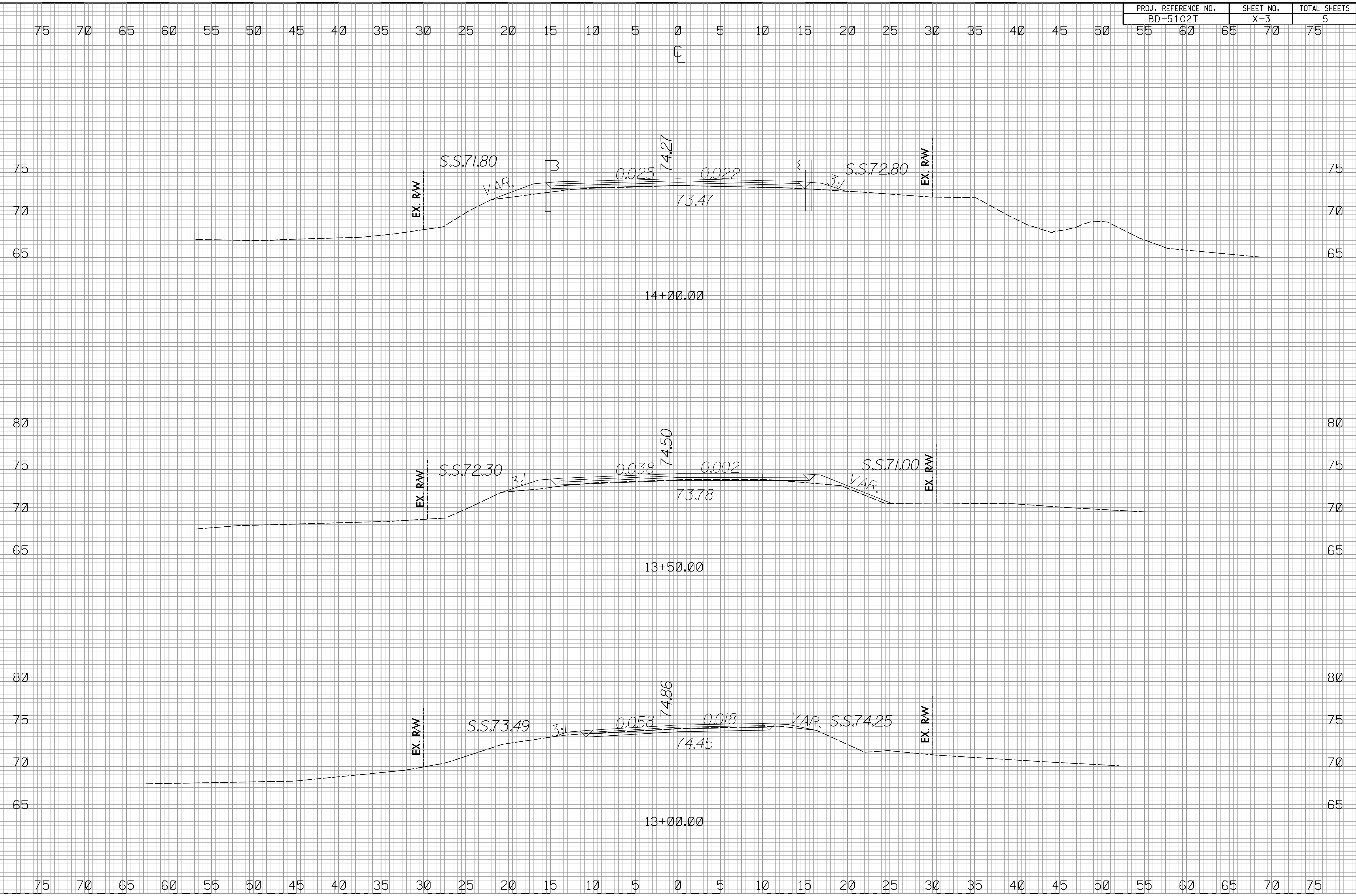
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
BD-5102T	X-2	5



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02/03/98

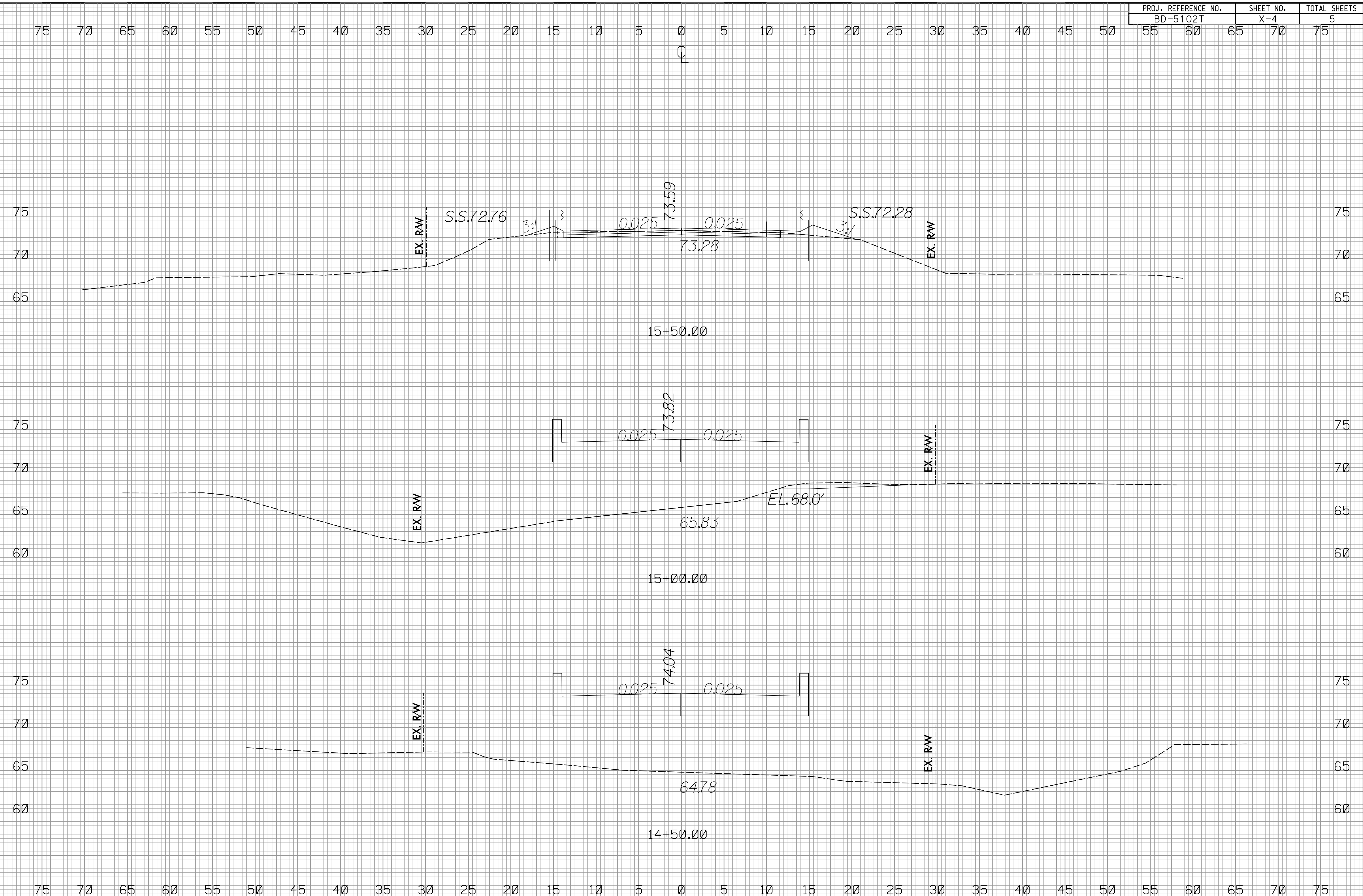
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BD-5102T	X-3	5



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PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
BD-5102T	X-4	5



14+00

15+00

16+00

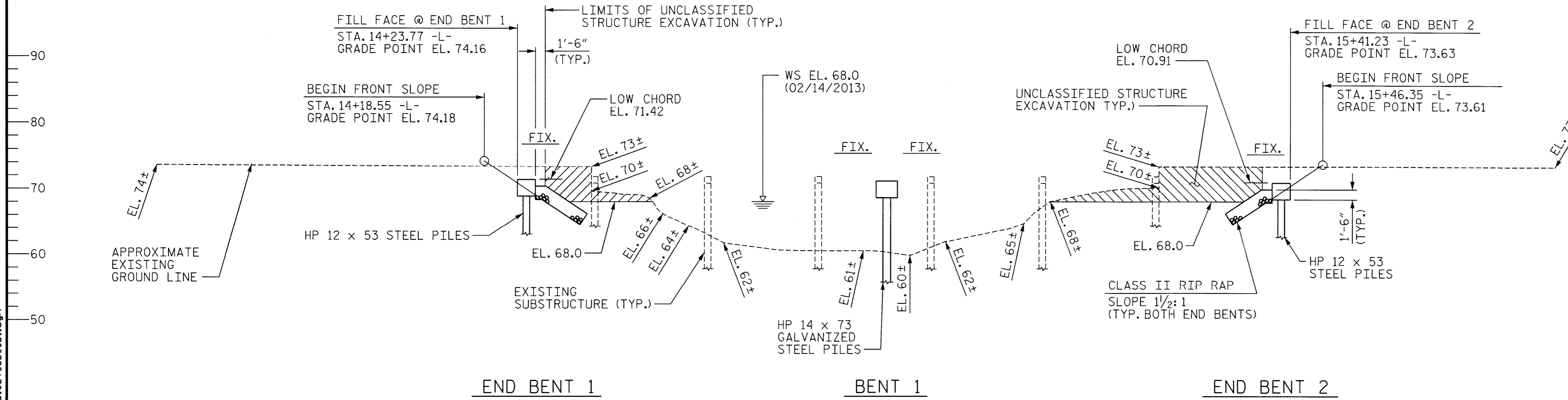
-0.4500% -0.1800%

PVI STA. 16+15.00 -L-
PVI EL. = 73.30
V.C. = 100'

GRADE DATA -L-

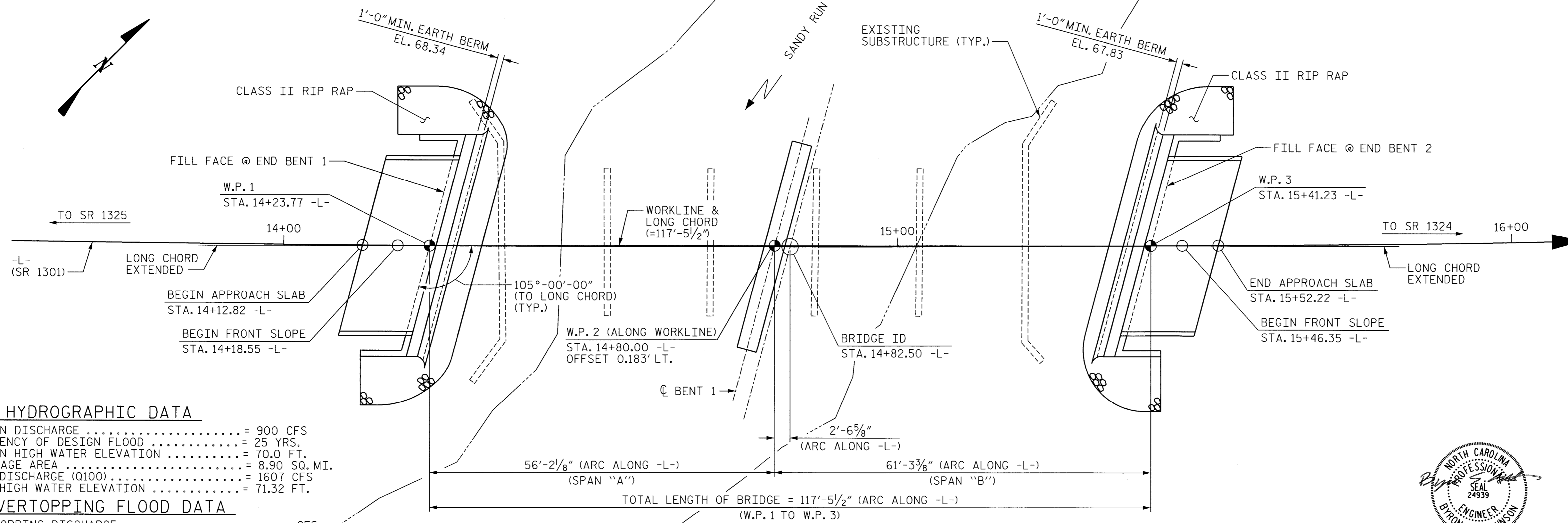
SPAN "A"

SPAN "B"



HORIZONTAL CURVE DATA

PI STA. 14+59.26 -L-
 $\Delta = 1^{\circ}-31'-26.5"$ (LT.)
 $D = 0^{\circ}-36'-32"$
 $L = 250.30'$
 $T = 125.16'$
 $R = 9410.00'$



HYDROGRAPHIC DATA

DESIGN DISCHARGE = 900 CFS
 FREQUENCY OF DESIGN FLOOD = 25 YRS.
 DESIGN HIGH WATER ELEVATION = 70.0 FT.
 DRAINAGE AREA = 8.90 SQ. MI.
 BASE DISCHARGE (Q100) = 1607 CFS
 BASE HIGH WATER ELEVATION = 71.32 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = --- CFS
 FREQUENCY OF OVERTOPPING FLOOD = 500+ YRS.
 OVERTOPPING FLOOD ELEVATION = 72.95 FT.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. BD-5102T
GREENE COUNTY
 STATION: 14+82.50 -L-

SHEET 1 OF 2 REPLACE BRIDGE NO. 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1301
 OVER SANDY RUN
 BETWEEN SR 1325 & SR 1324

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

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

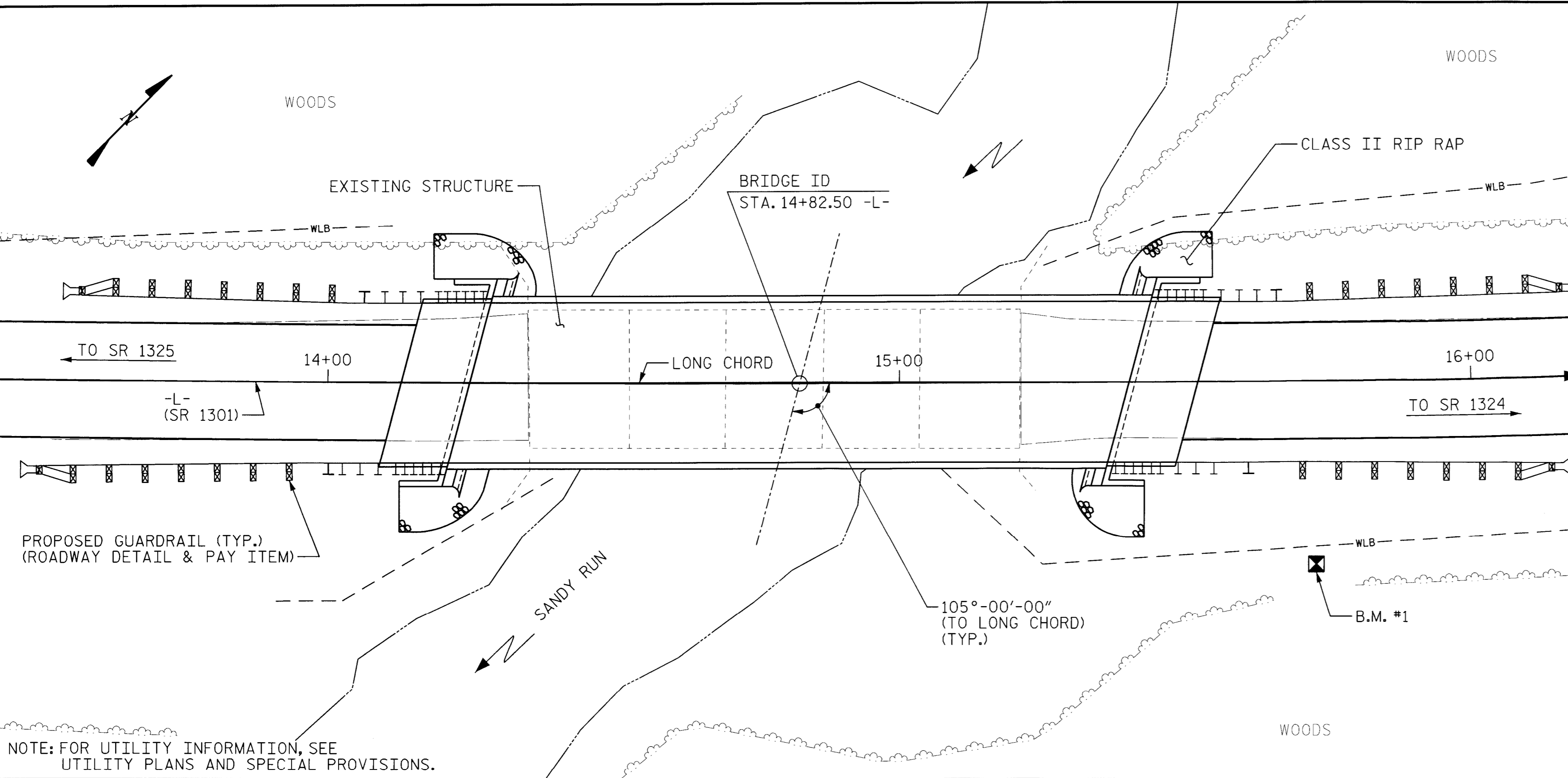
TOTAL SHEETS: 8

DRAWN BY : J.S. ISRAELNAIM DATE : 07/13
 CHECKED BY : B.E. ATKINSON DATE : 10/13

11/18/2013 9:06:26 AM User:blanning File: P:\NC Projects\MI2013 - Div 02 Low Impact Bridge Replacement\NTB\MI2013\04 BD-5102T Structures\BD-5102T_SD_CD1.dgn

B.M. #1: RAILROAD SPIKE IN BASE OF POWER POLE, 31.84' RT. OF STA. 15+72.72 -L-, EL. 69.49

NOTES



LOCATION SKETCH

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 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.
 THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.
 THE EXISTING STRUCTURE CONSISTING OF FIVE SPANS (1 @ 17'-8", 1 @ 16'-10", 2 @ 17'-0", AND 1 @ 17'-4"), WITH A REINFORCED CONCRETE FLOOR ON TIMBER JOISTS AND A CLEAR ROADWAY WIDTH OF 24'-0" ON TIMBER CAP WITH TIMBER PILE END BENTS AND INTERIOR BENTS AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE SHALL BE REMOVED.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS TO NOT ALLOW DEBRIS TO FALL 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 SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. EACH SIDE OF THE 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 THE DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
 ASPHALT WEARING SURFACE IS INCLUDED IN THE ROADWAY QUANTITY. SEE ROADWAY QUANTITIES.

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 PILES AT END BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE. DRIVE PILES AT END BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.
 PILES AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 125 TONS PER PILE. DRIVE PILES AT BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 260 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW OR SCOUR.
 PILES AT END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE. DRIVE PILES AT END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.
 INSTALL PILES AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN 29.0 FT.
 STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT BENT 1. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 47.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
 IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 35 TO 50 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
 IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 60 TO 75 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT 1. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
 TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS AND FOR PILE DRIVING CRITERIA, SEE PILE DRIVING CRITERIA PROVISION.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES". THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.
 FOR FORMWORK AND FALSEWORK, SEE SPECIAL PROVISIONS.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

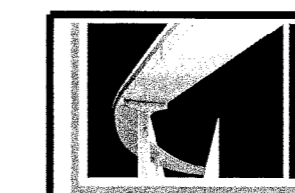
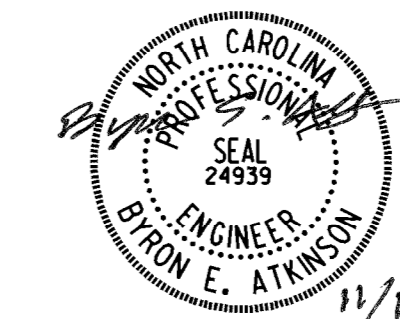
	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES	HP 14 X 73 GALVANIZED STEEL PILES	STEEL PILE POINTS	PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	CLASS II RIP RAP (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 2'-0" PRESTRESSED CONCRETE CORED SLABS			
	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	EACH	LIN. FT.	TONS	SQ.YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE					LUMP SUM										230.25	LUMP SUM	20	1150.00
END BENT 1			LUMP SUM	13.7		2039	5	300		3		75	83					
BENT 1				10.6		2102		7	525	7	4							
END BENT 2			LUMP SUM	13.7		2039	5	300		3		64	71					
TOTAL	LUMP SUM	1	LUMP SUM	38.0	LUMP SUM	6180	10	600	7	10	230.25	139	154	LUMP SUM	20	1150.00		

PROJECT NO. BD-5102T
GREENE COUNTY
 STATION: 14+82.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1301
 OVER SANDY RUN
 BETWEEN SR 1325 & SR 1324



MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

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

TOTAL SHEETS: 5-2

DRAWN BY: J.S. ISRAELNAIM DATE: 07/13
 CHECKED BY: B.E. ATKINSON DATE: 10/13

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(InV)	N/A	1	1.128	--	1.75	0.27	1.35	60'	EL	29.482	0.608	1.13	60'	EL	2.948	0.80	0.27	1.39	60'	EL	29.482		
	HL-93(0pr)	N/A	--	1.463	--	1.35	0.27	1.76	60'	EL	29.482	0.608	1.46	60'	EL	2.948	N/A	--	--	--	--	--		
	HS-20(InV)	36.000	2	1.381	49.722	1.75	0.27	1.72	60'	EL	29.482	0.608	1.38	60'	EL	2.948	0.80	0.27	1.76	60'	EL	29.482		
	HS-20(0pr)	36.000	--	1.79	64.455	1.35	0.27	2.22	60'	EL	29.482	0.608	1.79	60'	EL	2.948	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.791	51.185	1.4	0.27	4.62	60'	EL	29.482	0.608	4.02	60'	EL	2.948	0.80	0.27	3.79	60'	EL	29.482	
		SNGARBS2	20.000	--	2.888	57.751	1.4	0.27	3.53	60'	EL	29.482	0.608	2.89	60'	EL	2.948	0.80	0.27	2.90	60'	EL	29.482	
		SNAGRIS2	22.000	--	2.691	59.194	1.4	0.27	3.39	60'	EL	29.482	0.608	2.69	60'	EL	2.948	0.80	0.27	2.78	60'	EL	29.482	
		SNCOTTS3	27.250	--	1.889	51.473	1.4	0.27	2.3	60'	EL	29.482	0.608	2.01	60'	EL	2.948	0.80	0.27	1.89	60'	EL	29.482	
		SNAGGRS4	34.925	--	1.608	56.157	1.4	0.27	1.96	60'	EL	29.482	0.608	1.69	60'	EL	2.948	0.80	0.27	1.61	60'	EL	29.482	
		SNS5A	35.550	--	1.57	55.826	1.4	0.27	1.91	60'	EL	29.482	0.608	1.72	60'	EL	2.948	0.80	0.27	1.57	60'	EL	29.482	
		SNS6A	39.950	--	1.453	58.064	1.4	0.27	1.77	60'	EL	29.482	0.608	1.58	60'	EL	2.948	0.80	0.27	1.45	60'	EL	29.482	
	SNS7B	42.000	--	1.385	58.152	1.4	0.27	1.69	60'	EL	29.482	0.608	1.56	60'	EL	2.948	0.80	0.27	1.38	60'	EL	29.482		
	TTST	TNAGRIT3	33.000	--	1.776	58.612	1.4	0.27	2.16	60'	EL	29.482	0.608	1.87	60'	EL	2.948	0.80	0.27	1.78	60'	EL	29.482	
		TNT4A	33.075	--	1.787	59.12	1.4	0.27	2.18	60'	EL	29.482	0.608	1.81	60'	EL	2.948	0.80	0.27	1.79	60'	EL	29.482	
		TNT6A	41.600	--	1.474	61.31	1.4	0.27	1.79	60'	EL	29.482	0.608	1.68	60'	EL	2.948	0.80	0.27	1.47	60'	EL	29.482	
		TNT7A	42.000	--	1.488	62.489	1.4	0.27	1.81	60'	EL	29.482	0.608	1.62	60'	EL	2.948	0.80	0.27	1.49	60'	EL	29.482	
		TNT7B	42.000	--	1.515	63.636	1.4	0.27	1.89	60'	EL	29.482	0.608	1.52	60'	EL	2.948	0.80	0.27	1.55	60'	EL	29.482	
		TNAGRIT4	43.000	--	1.464	62.958	1.4	0.27	1.79	60'	EL	29.482	0.608	1.46	60'	EL	2.948	0.80	0.27	1.47	60'	EL	29.482	
TNAGT5A		45.000	--	1.378	62.016	1.4	0.27	1.68	60'	EL	29.482	0.608	1.47	60'	EL	2.948	0.80	0.27	1.38	60'	EL	29.482		
TNAGT5B	45.000	3	1.356	61.038	1.4	0.27	1.65	60'	EL	29.482	0.608	1.39	60'	EL	2.948	0.80	0.27	1.36	60'	EL	29.482			

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

- 1.
- 2.
- 3.
- 4.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

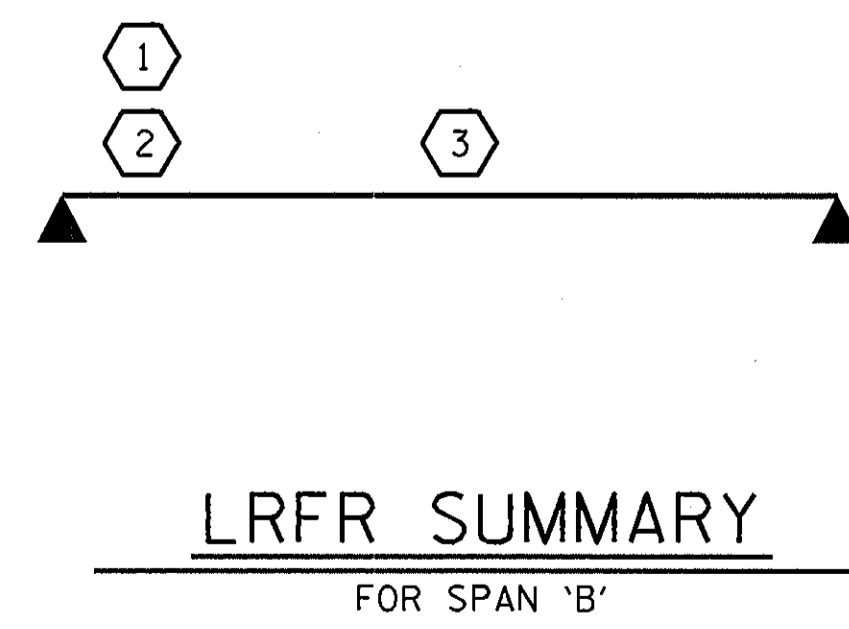
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

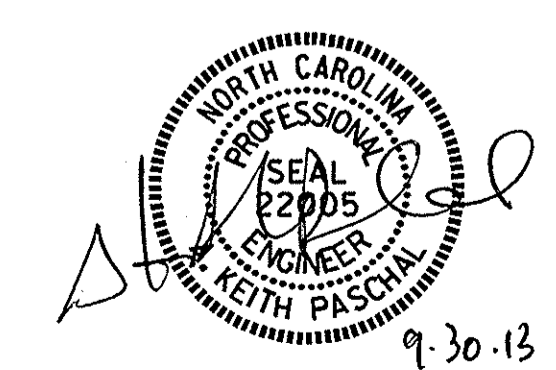
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



PROJECT NO. BD-5102T
GREENE COUNTY
STATION: 14+82.50 -L-

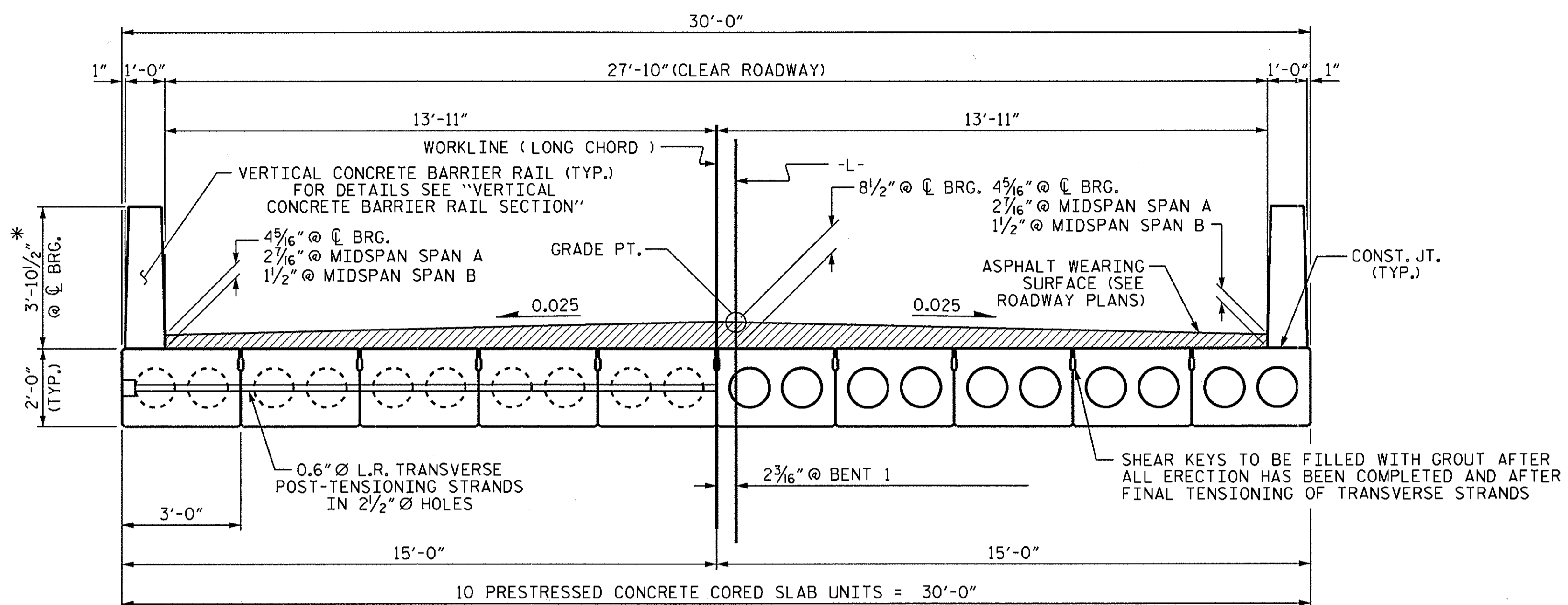
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
60' CORED SLAB UNIT
105° SKEW
(NON-INTERSTATE TRAFFIC)



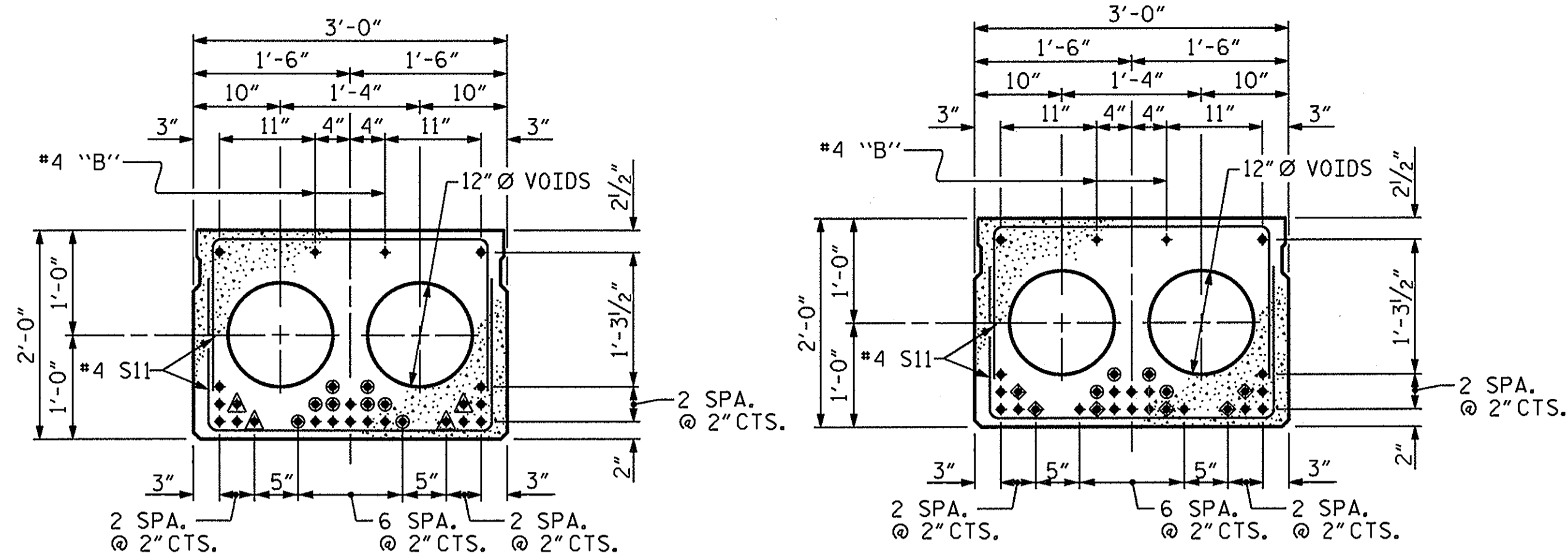
ASSEMBLED BY: M. M. AHMED DATE: 7-9-13
CHECKED BY: KENAN EZZARD DATE: 7-29-13
DRAWN BY: CVC 6/10
CHECKED BY: DNS 6/10

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

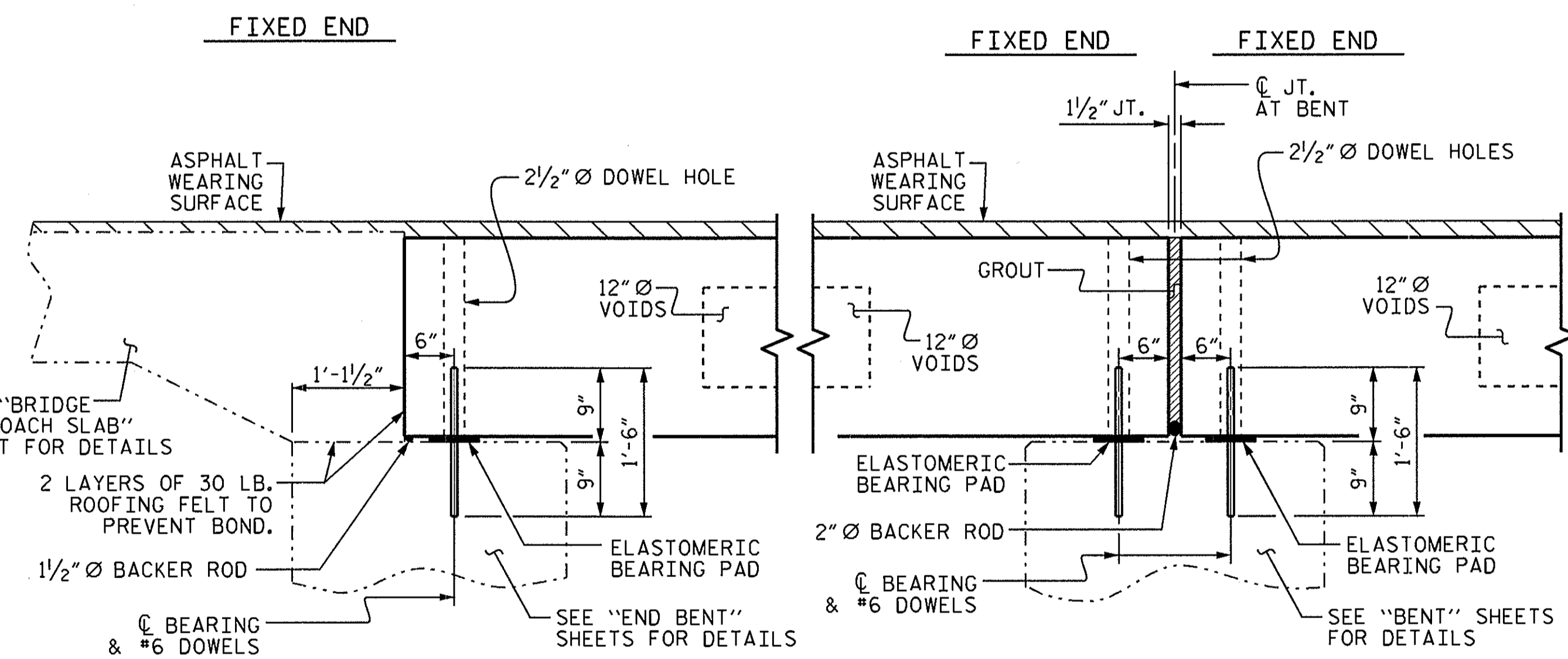


HALF SECTION AT INTERMEDIATE DIAPHRAGMS
TYPICAL SECTION
 HALF SECTION THROUGH VOIDS

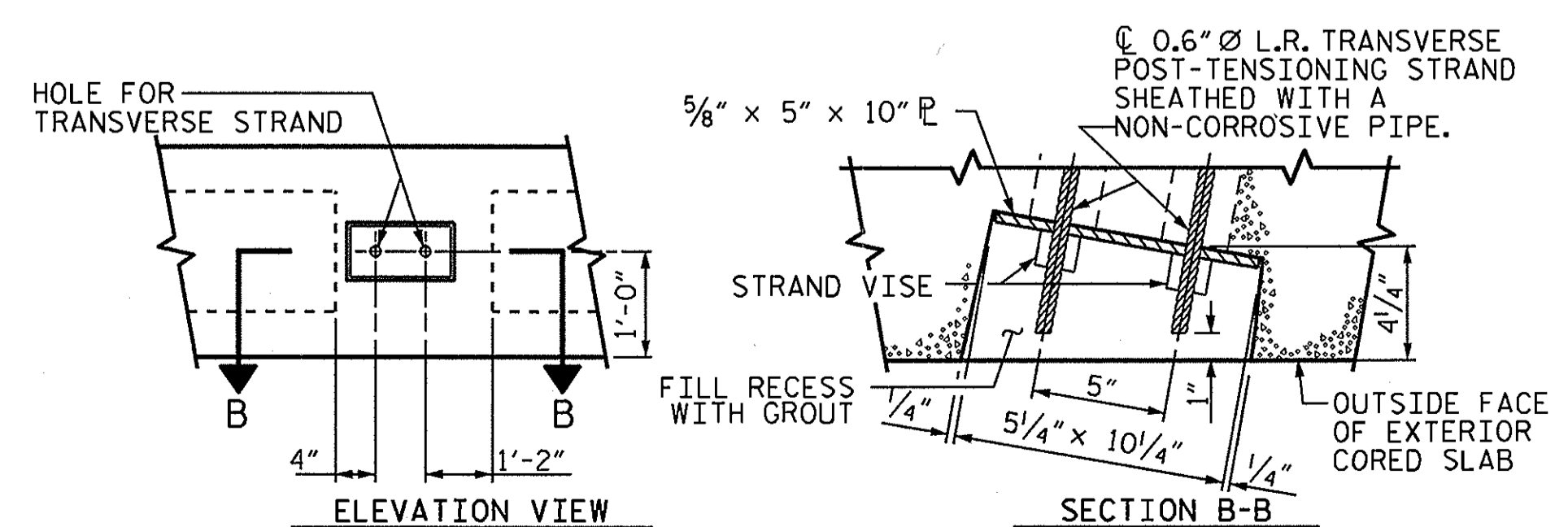
* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN, THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



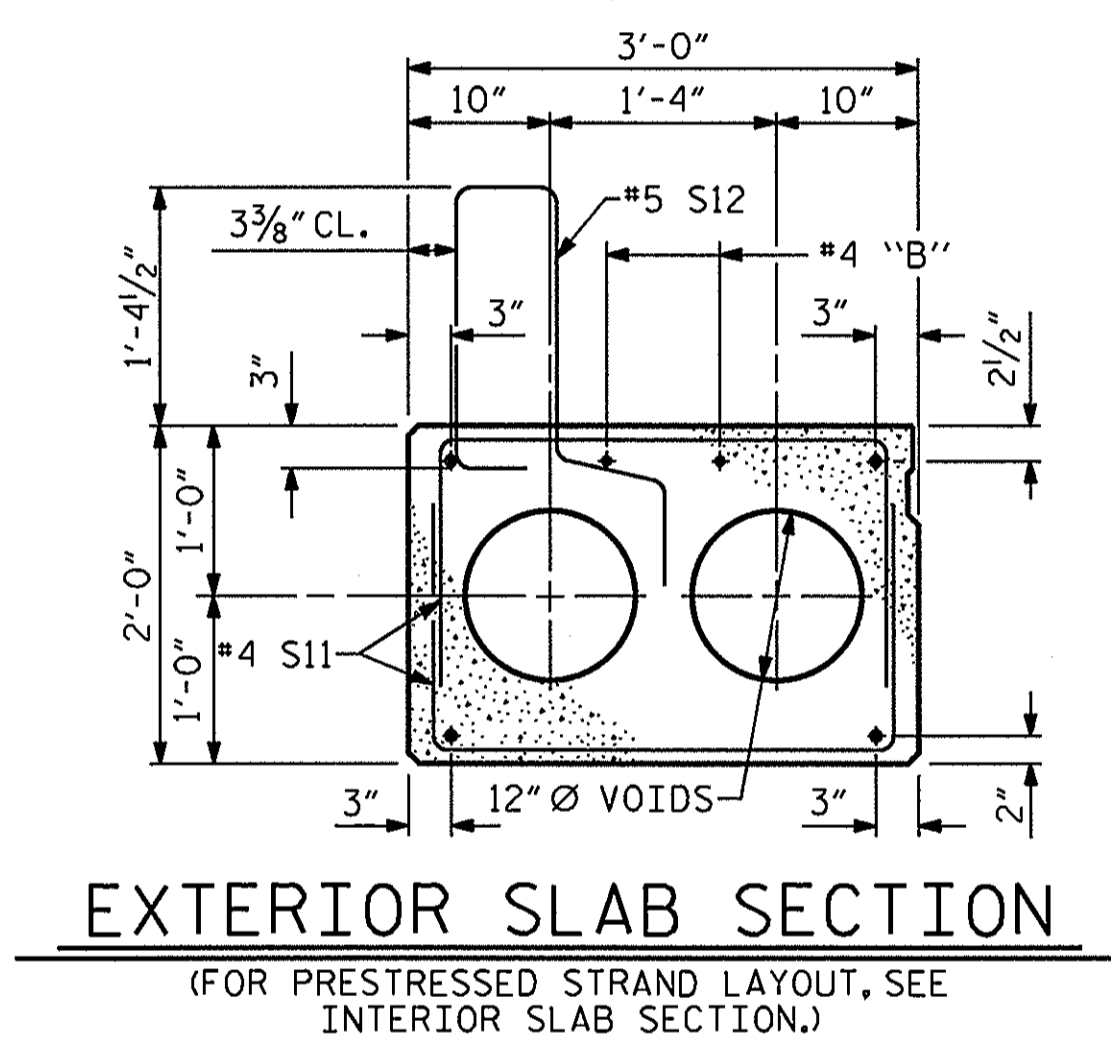
INTERIOR SLAB SECTION (55' UNIT)
 (20 STRANDS REQUIRED)
INTERIOR SLAB SECTION (60' UNIT)
 (24 STRANDS REQUIRED)
0.6" Ø LOW RELAXATION STRAND LAYOUT



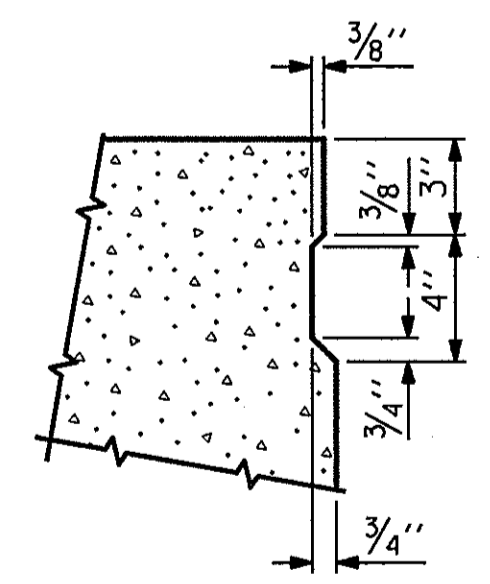
SECTION AT END BENT
SECTION AT BENT



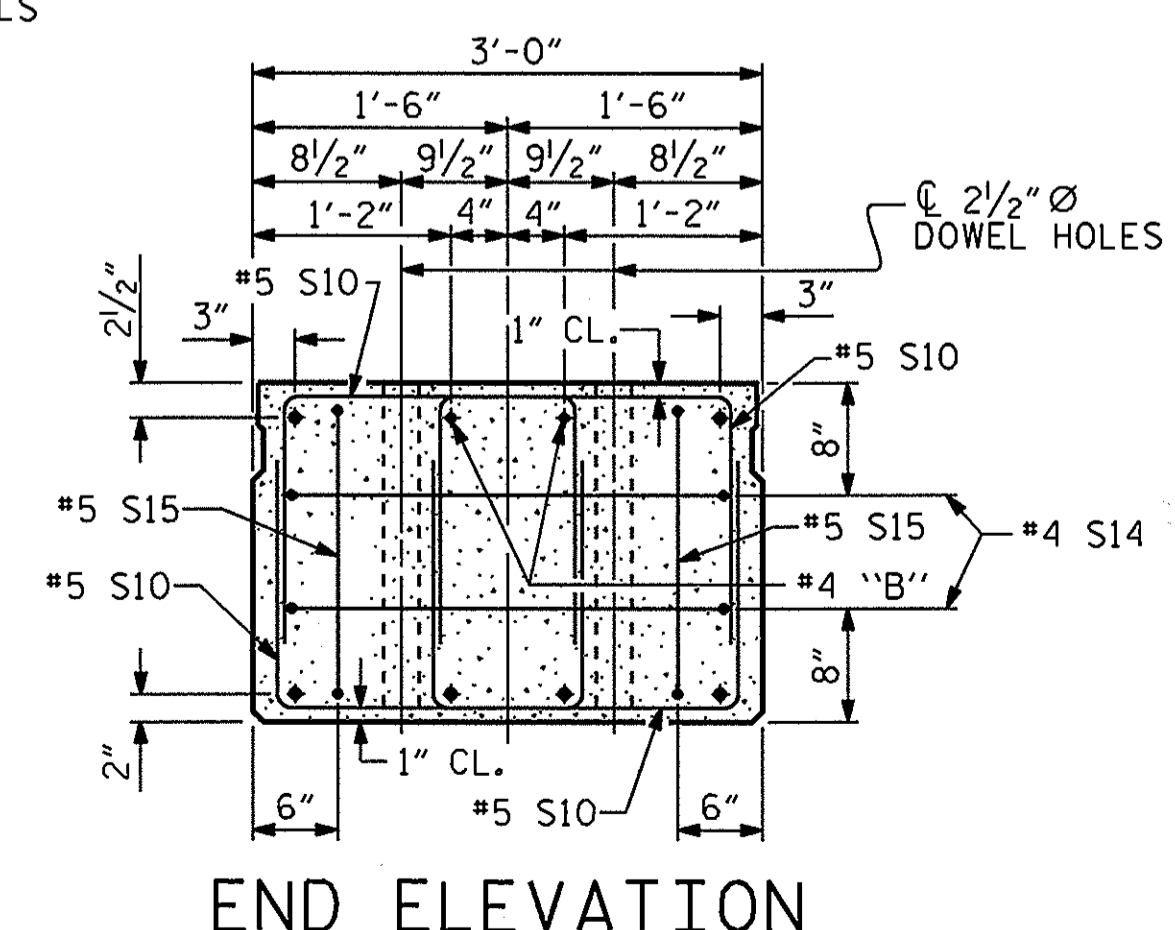
GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



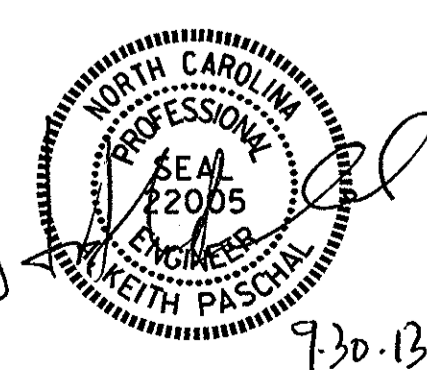
EXTERIOR SLAB SECTION
 (FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



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



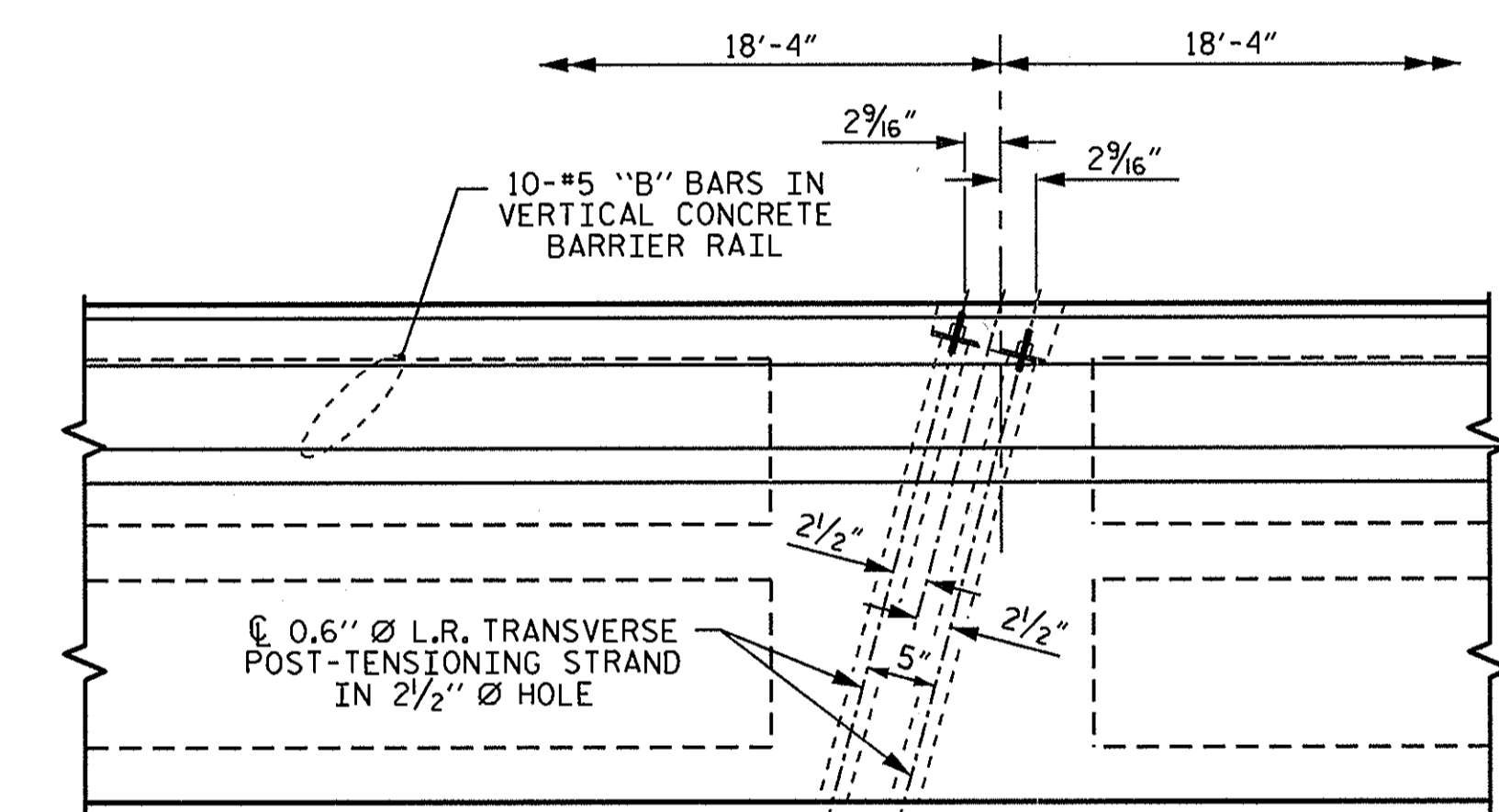
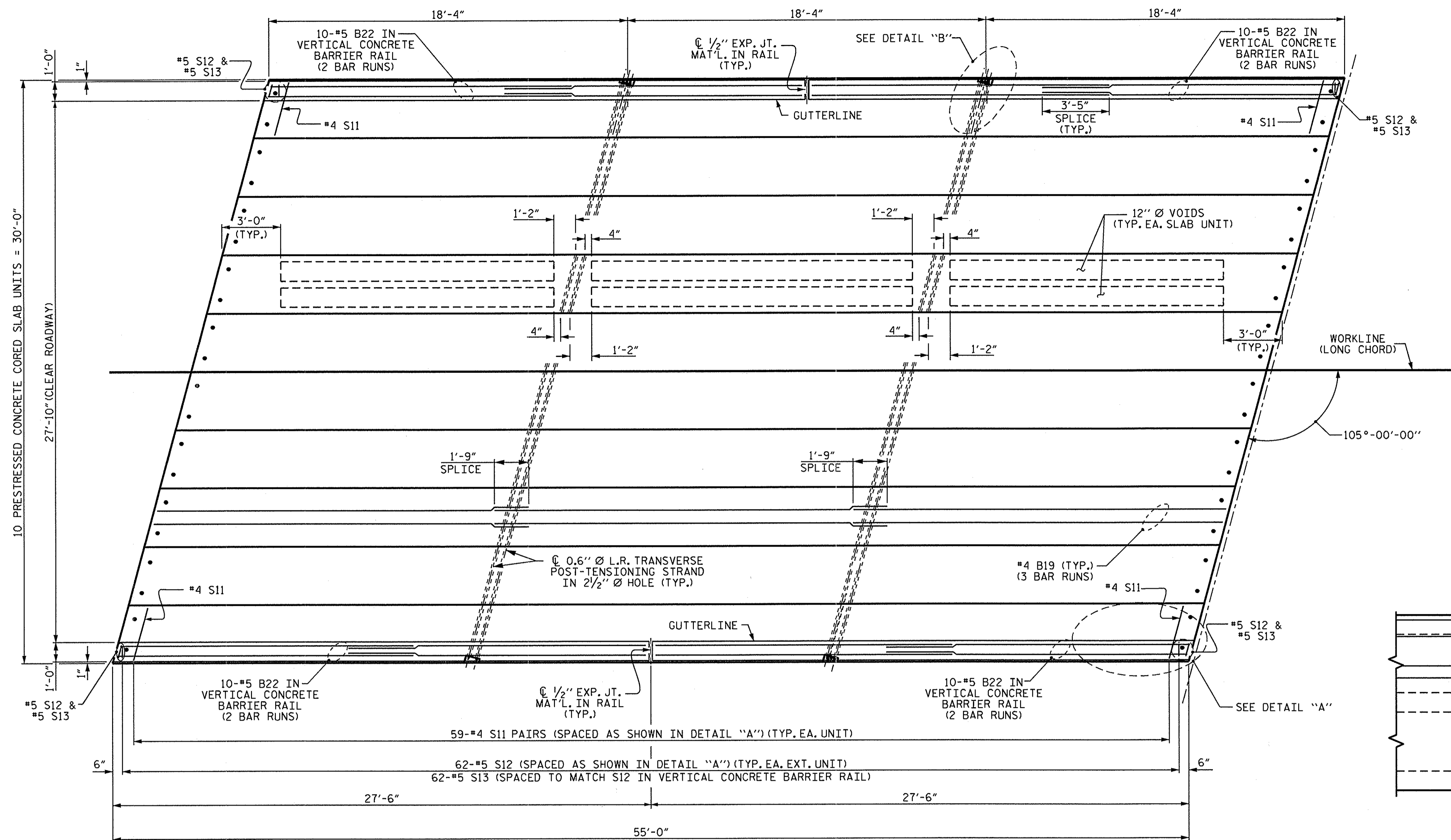
END ELEVATION
 SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.)
 INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



PROJECT NO. BD-5102T
GREENE COUNTY
 STATION: 14+82.50 -L-
 SHEET 1 OF 4

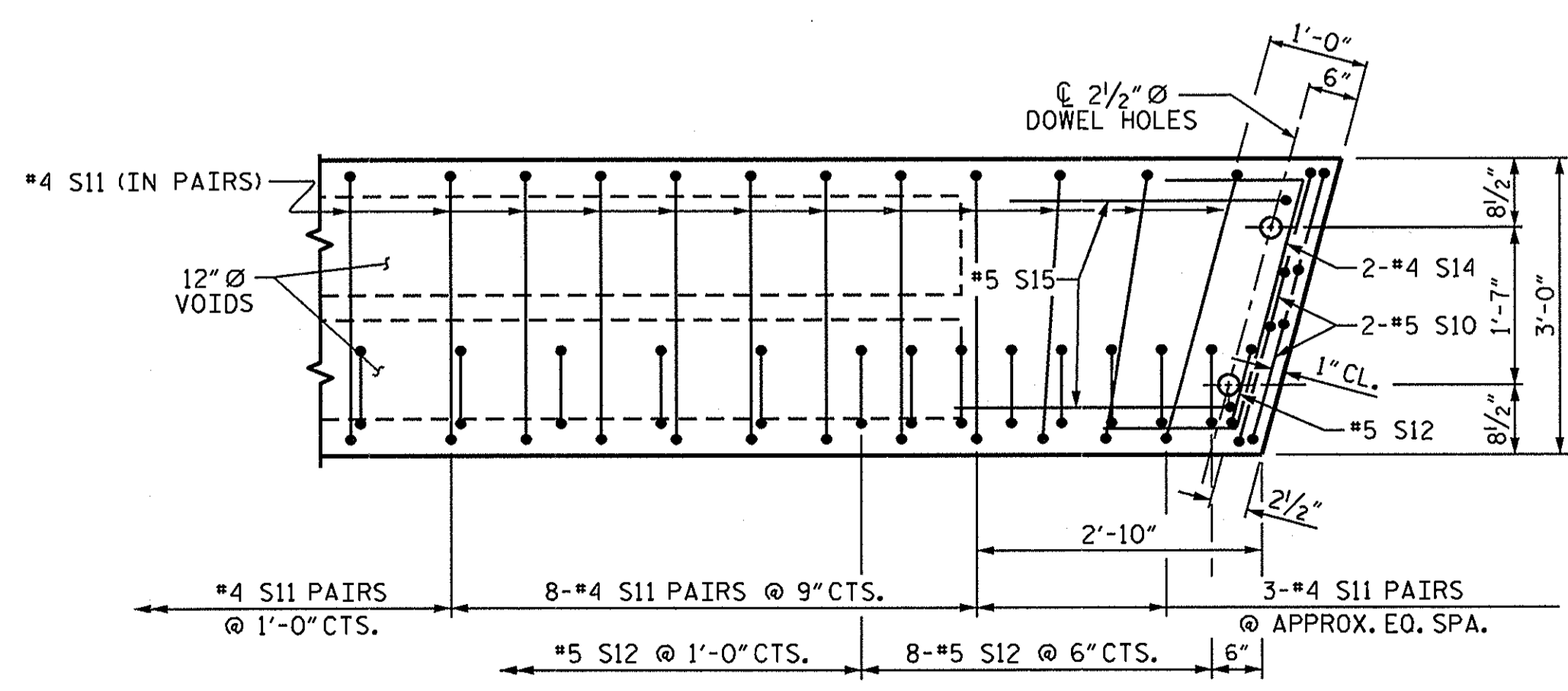
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD					
3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

ASSEMBLED BY : M. M. AHMED DATE : 7-9-13
 CHECKED BY : KENAN EZZARD DATE : 7-29-13
 DRAWN BY : MAA 6/10 REV. 12/11 MAA/AAC
 CHECKED BY : MKT 7/10



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

PLAN OF UNIT



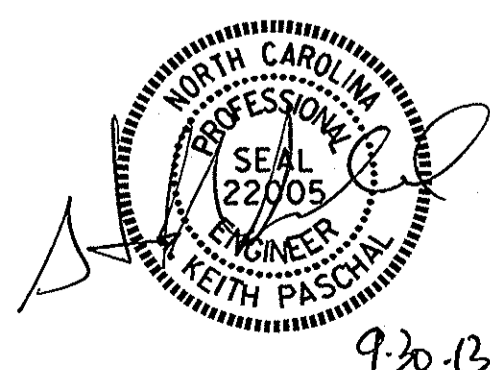
DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.

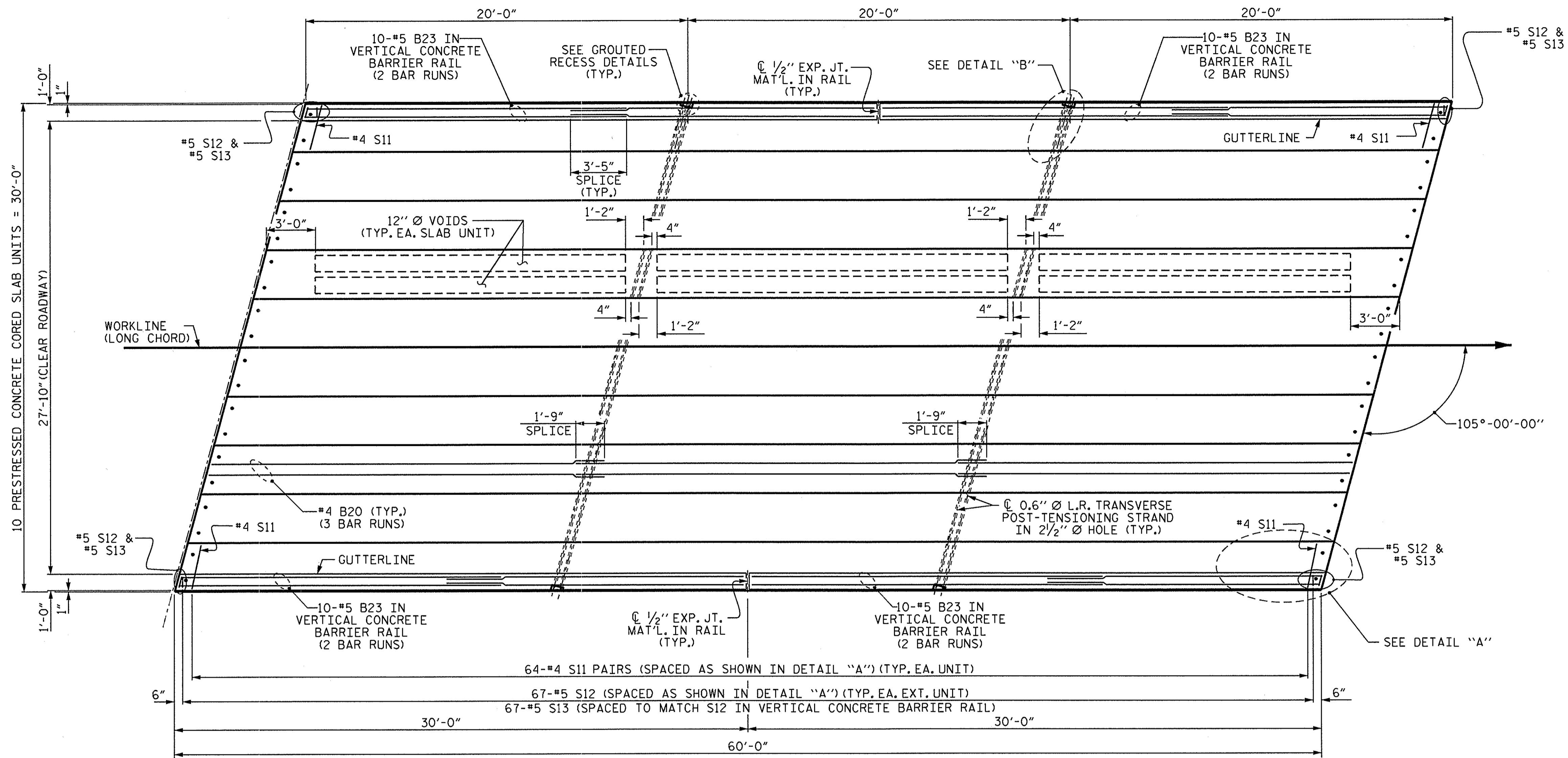
PROJECT NO. BD-5102T
 GREENE COUNTY
 STATION: 14+82.50 -L-

SHEET 2 OF 4

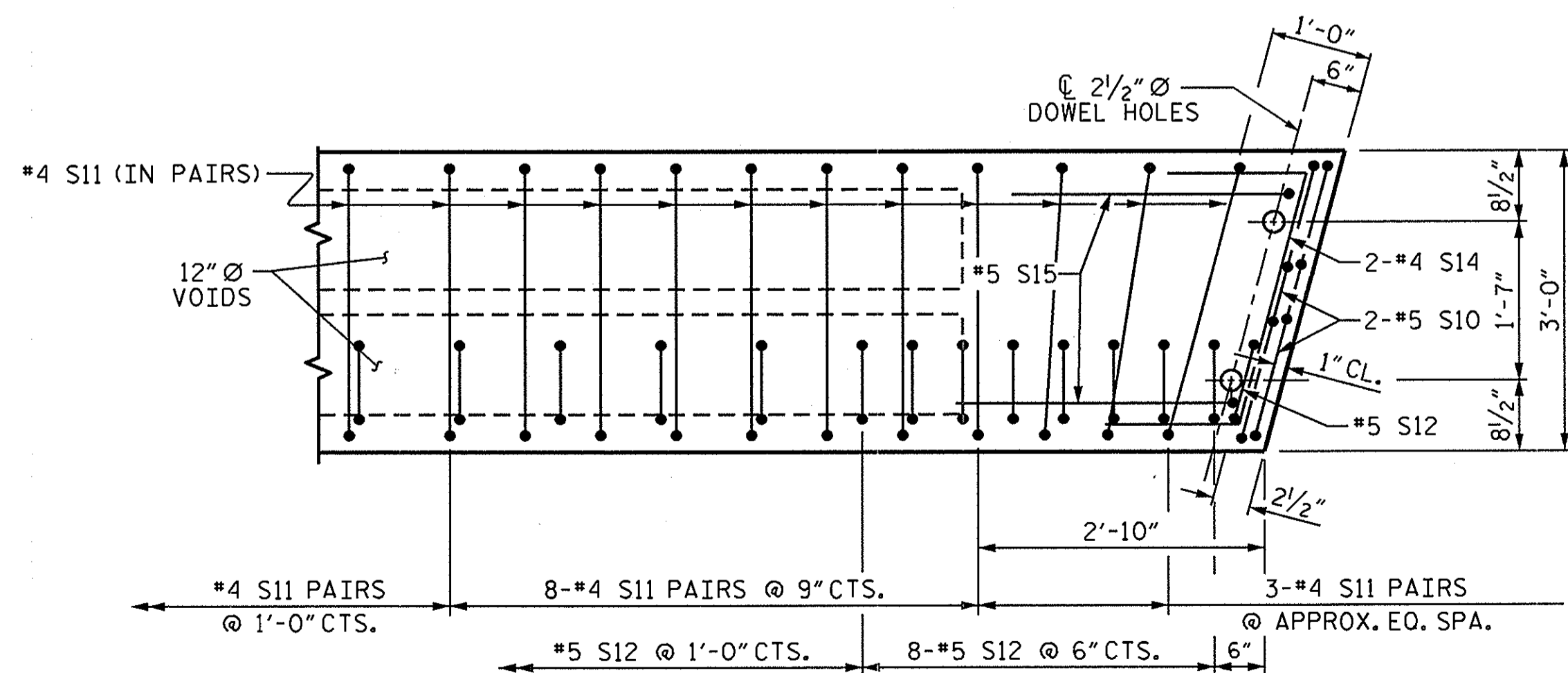
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF 55' UNIT 27'-10" CLEAR ROADWAY 105° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. TOTAL SHEETS



ASSEMBLED BY : M. M. AHMED DATE : 7-9-13
 CHECKED BY : KENAN EZZARD DATE : 7-29-13
 DRAWN BY : DGE 3/09 REV. 12/5/11 MAA/AAC
 CHECKED BY : BCH 3/09

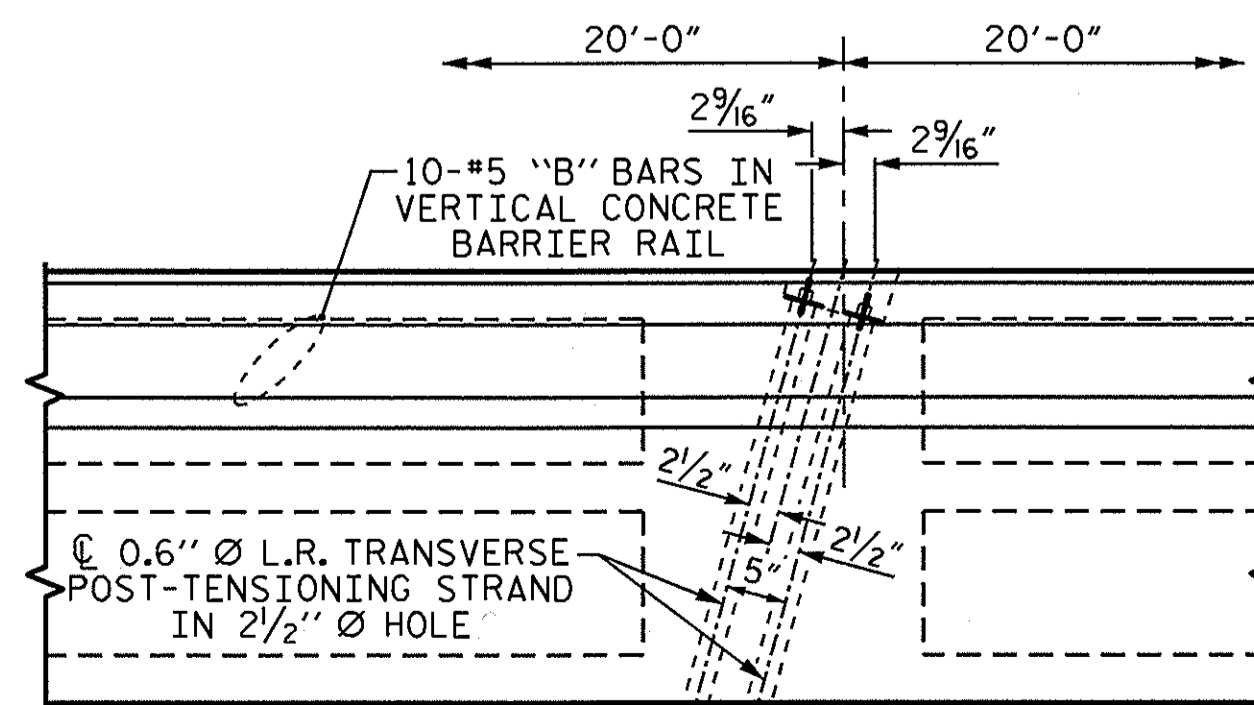


PLAN OF UNIT



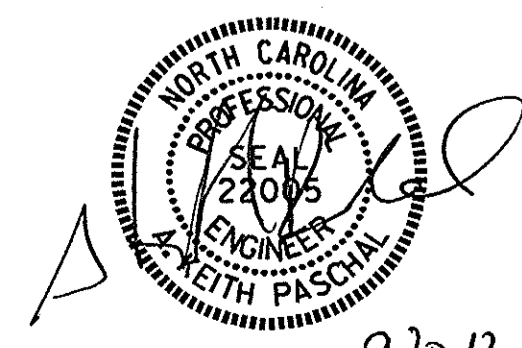
DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



DETAIL "B"

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



PROJECT NO. BD-5102T
GREENE COUNTY
 STATION: 14+82.50 -L-

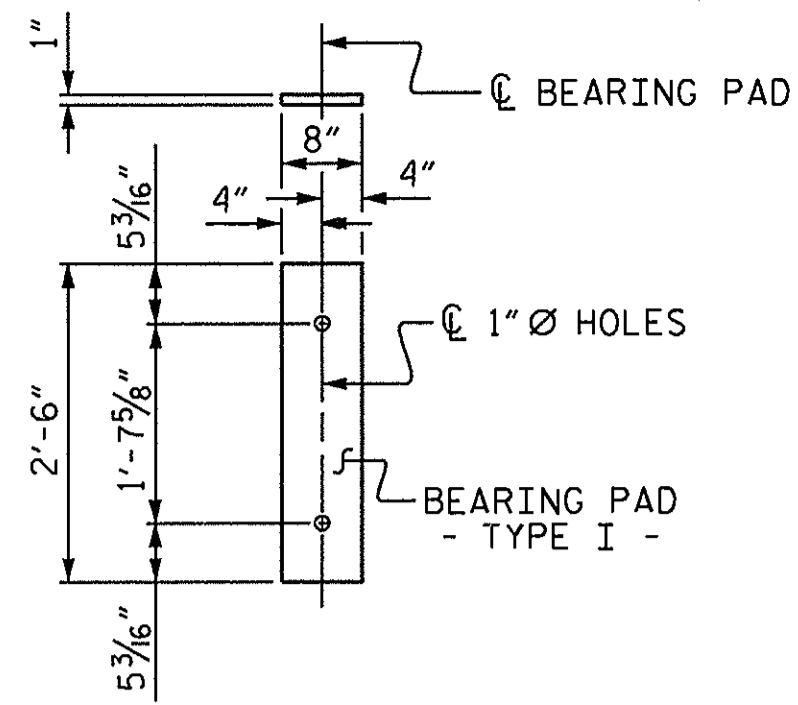
SHEET 3 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF 60' UNIT 27'-10" CLEAR ROADWAY 105° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

ASSEMBLED BY: M. M. AHMED DATE: 7-9-13
 CHECKED BY: KENAN EZZARD DATE: 7-29-13
 DRAWN BY: MAA 6/10 REV. 12/5/11 MAA/AAC
 CHECKED BY: MKT 7/10

30-SEP-2013 12:56
 S:\DPCI\Kefth\BD-5102T\mmd\BD_5102T_S0_CS.dgn
 kpaschal

STD. NO. 24PCS_30_105S_60L

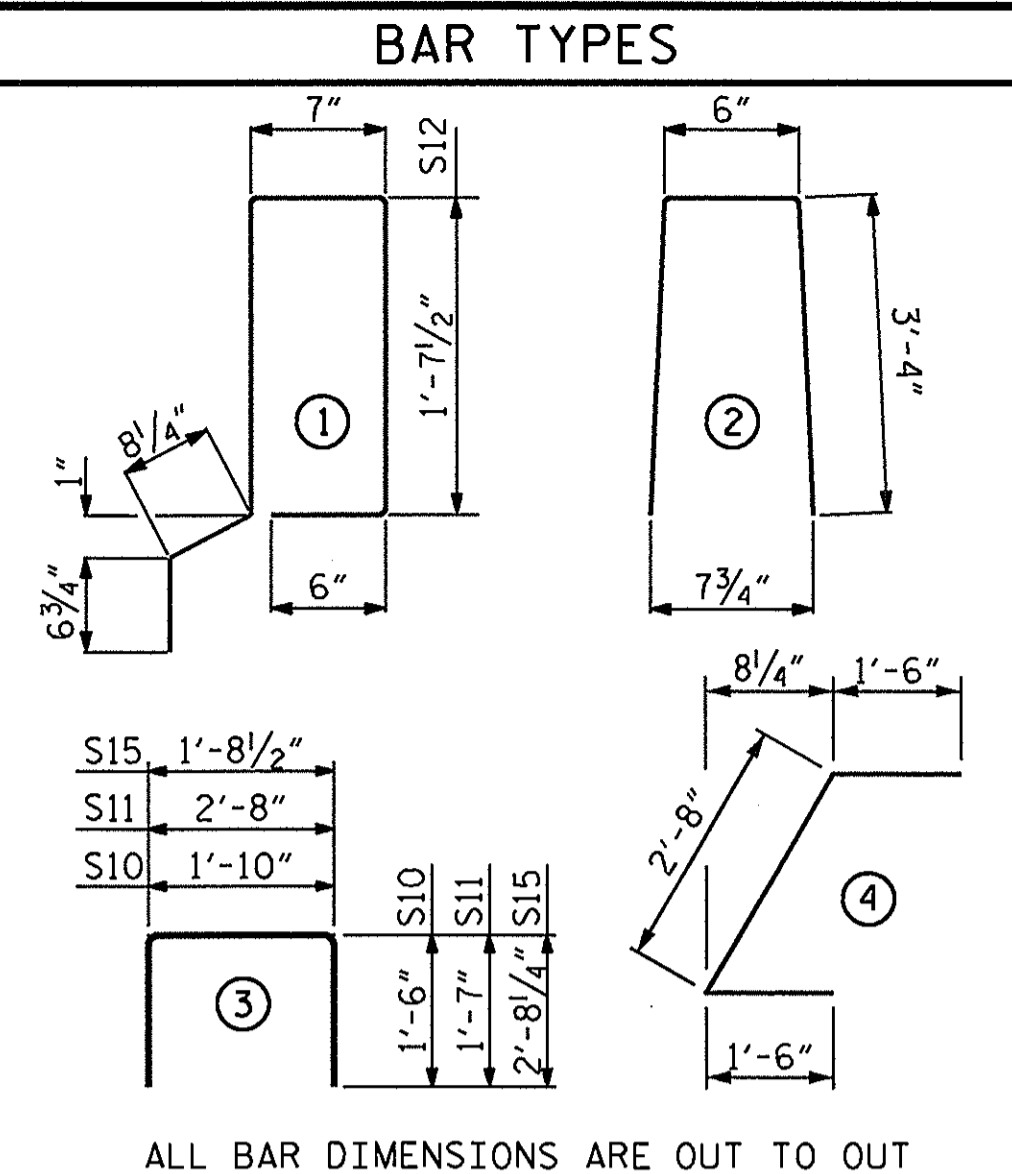


ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
55' UNIT						
*B22	80	80	#5	STR	15'-5"	1286
*S13	128	128	#5	2	7'-2"	957
* EPOXY COATED REINFORCING STEEL					LBS.	2243
CLASS AA CONCRETE					CU.YDS.	14.4
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN.FT.	110.13

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
60' UNIT						
*B23	80	80	#5	STR	16'-11"	1412
*S13	138	138	#5	2	7'-2"	1032
* EPOXY COATED REINFORCING STEEL					LBS.	2444
CLASS AA CONCRETE					CU.YDS.	16.2
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN.FT.	120.12



ALL BAR DIMENSIONS ARE OUT TO OUT

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 SIDWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

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

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

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

** INCLUDES FUTURE WEARING SURFACE

DEAD LOAD DEFLECTION AND CAMBER	
60' CORED SLAB UNIT	3'-0" x 2'-0" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	3 5/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/2" ↓
FINAL CAMBER	2 13/16" ↑

** INCLUDES FUTURE WEARING SURFACE

CONCRETE RELEASE STRENGTH	
UNIT	PSI
55' UNITS	4800
60' UNITS	4800

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

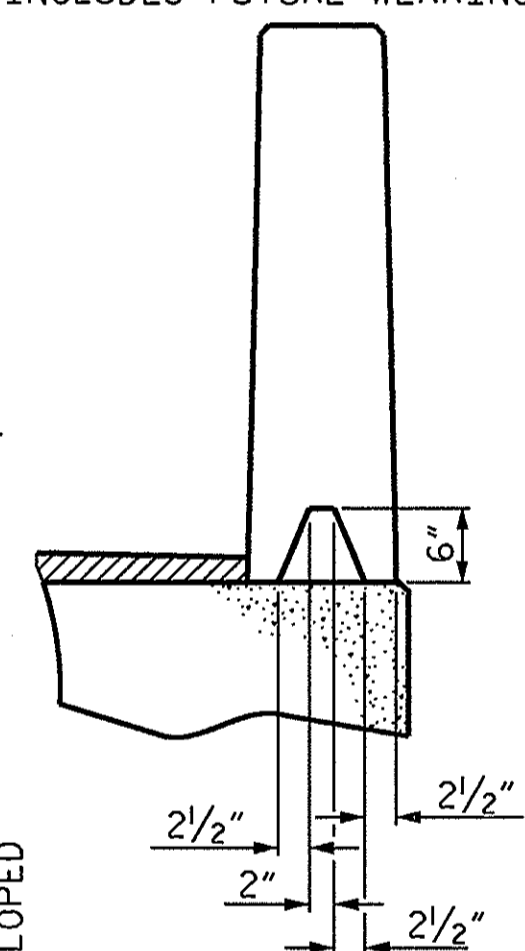
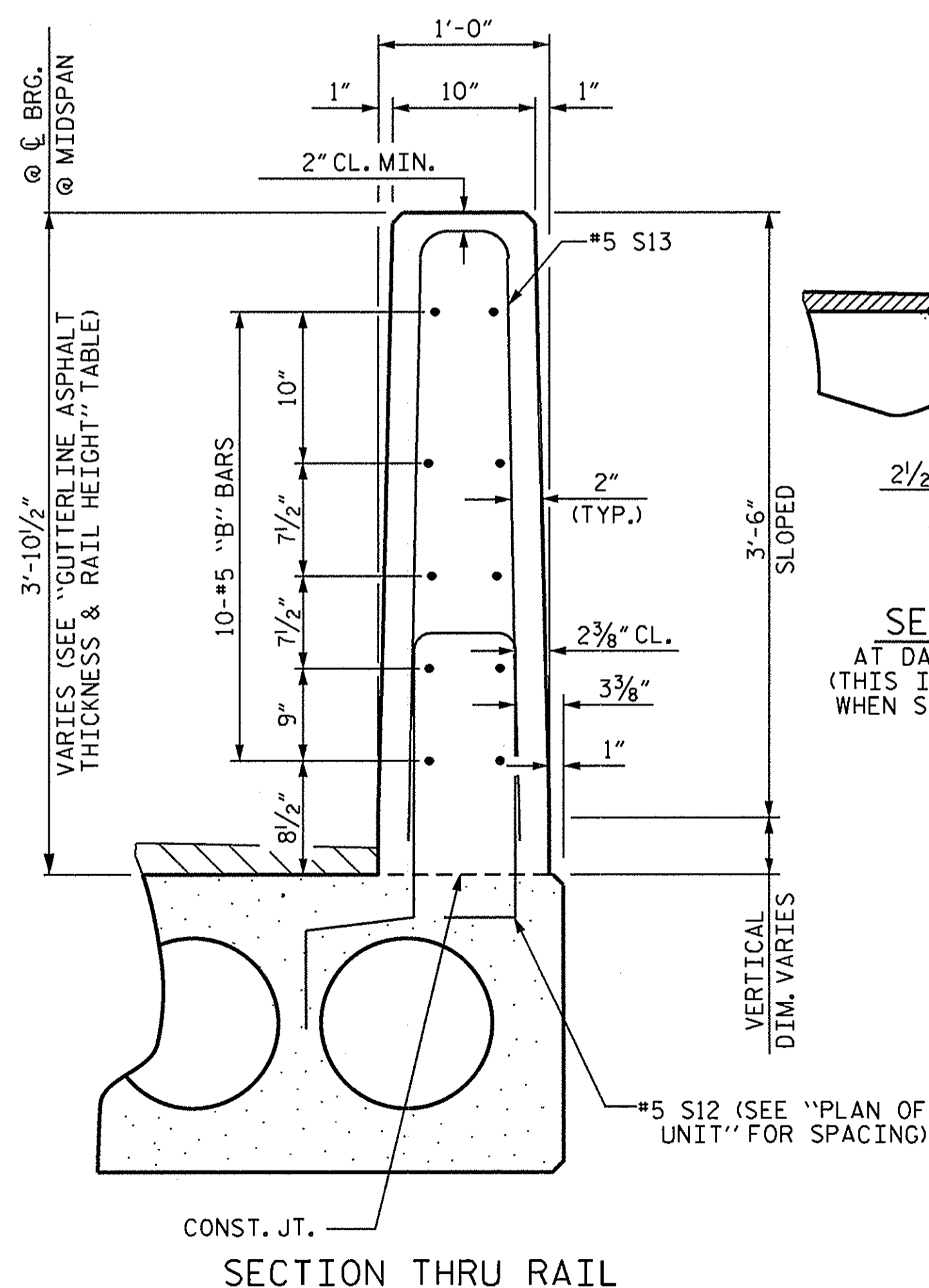
BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B19	6	#4	STR	19'-5"	78	19'-5"	78
S10	8	#5	3	4'-10"	40	4'-10"	40
S11	118	#4	3	5'-10"	460	5'-10"	460
*S12	64	#5	1	5'-7"	373		
S14	4	#4	4	5'-8"	15	5'-8"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.	623	623	
* EPOXY COATED REINFORCING STEEL				LBS.	373		
6000 P.S.I. CONCRETE				CU.YDS.	9.4	9.4	
0.6" Ø L.R. STRANDS				No.	20	20	

CORED SLABS REQUIRED			
55' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	8	55'-0"	440'-0"
TOTAL	10		550'-0"

CORED SLABS REQUIRED			
60' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	60'-0"	120'-0"
INTERIOR C.S.	8	60'-0"	480'-0"
TOTAL	10		600'-0"

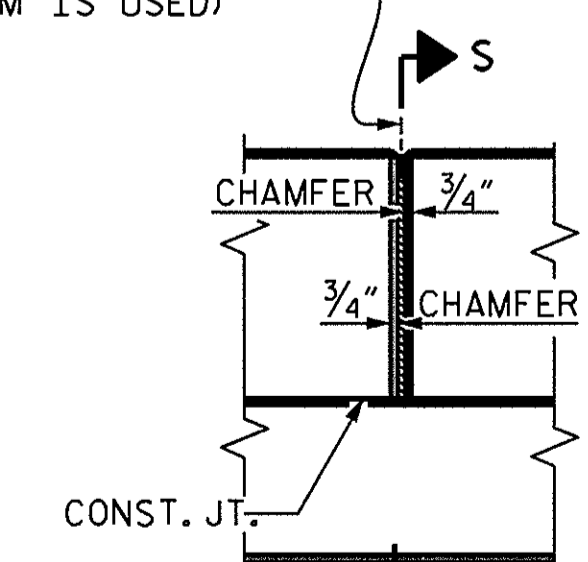
BILL OF MATERIAL FOR ONE 60' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B20	6	#4	STR	21'-2"	85	21'-2"	85
S10	8	#5	3	4'-10"	40	4'-10"	40
S11	128	#4	3	5'-10"	499	5'-10"	499
*S12	69	#5	1	5'-7"	402		
S14	4	#4	4	5'-8"	15	5'-8"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.	669	669	
* EPOXY COATED REINFORCING STEEL				LBS.	402		
6000 P.S.I. CONCRETE				CU.YDS.	10.3	10.3	
0.6" Ø L.R. STRANDS				No.	24	24	

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
27'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	NORMAL CROWN SECTION	
55' UNITS	2 7/16"	3'-8 7/16"
60' UNITS	1 1/2"	3'-7 1/2"

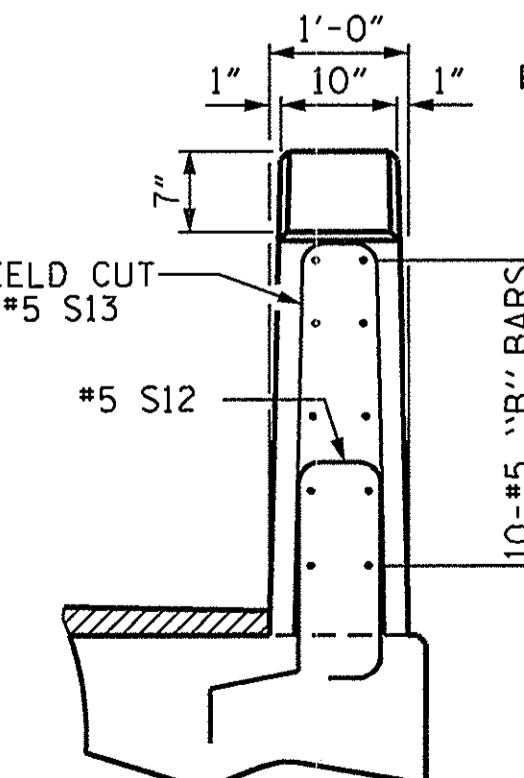


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

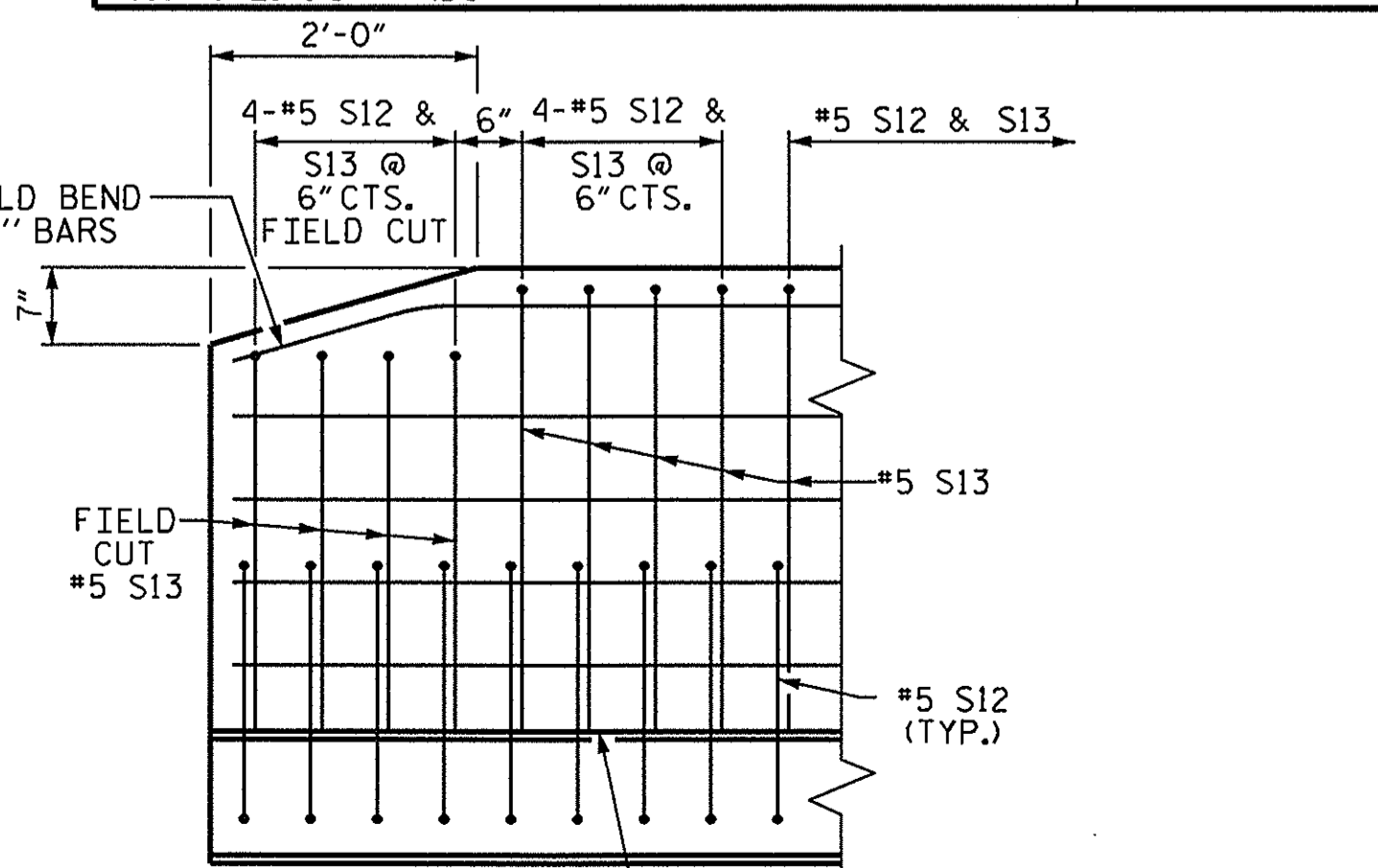
1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS



END VIEW



SIDE VIEW

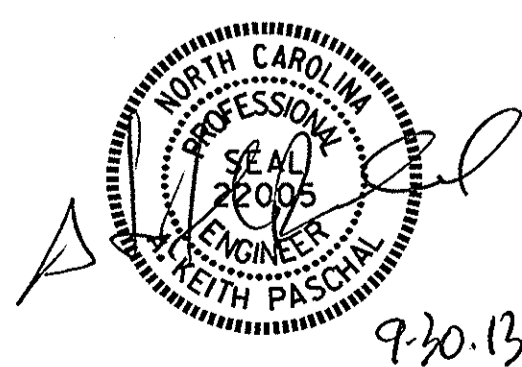
END OF RAIL DETAILS

ASSEMBLED BY: M. M. AHMED DATE: 7-10-13
CHECKED BY: KENAN EZZARD DATE: 7-29-13
DRAWN BY: MAA 6/10 REV. 12/11 MAA/AAC
CHECKED BY: MKT 7/10

VERTICAL CONCRETE BARRIER RAIL DETAILS

PROJECT NO. BD-5102T
GREENE COUNTY
STATION: 14+82.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT
105° SKEW



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

NOTES

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

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

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

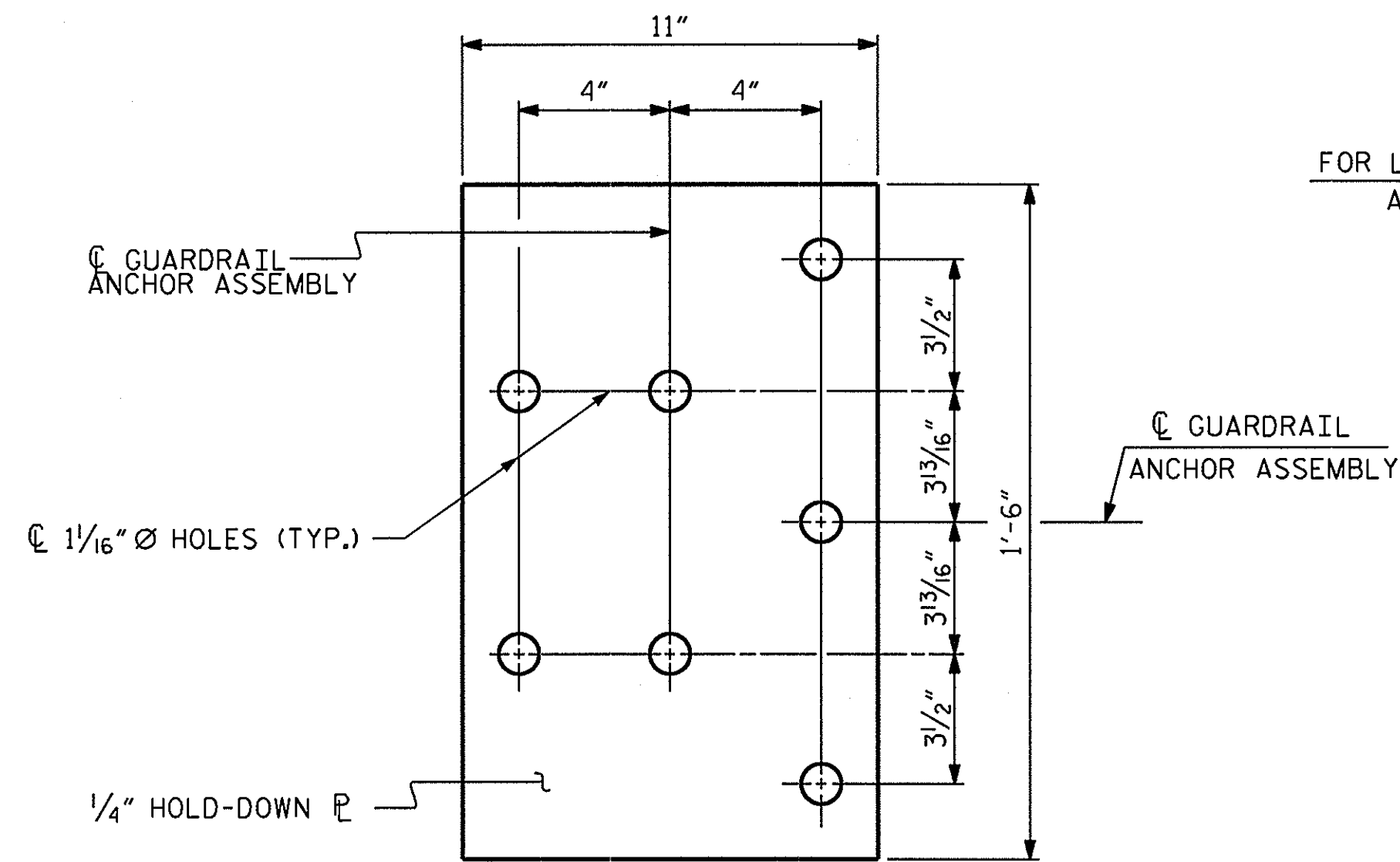
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

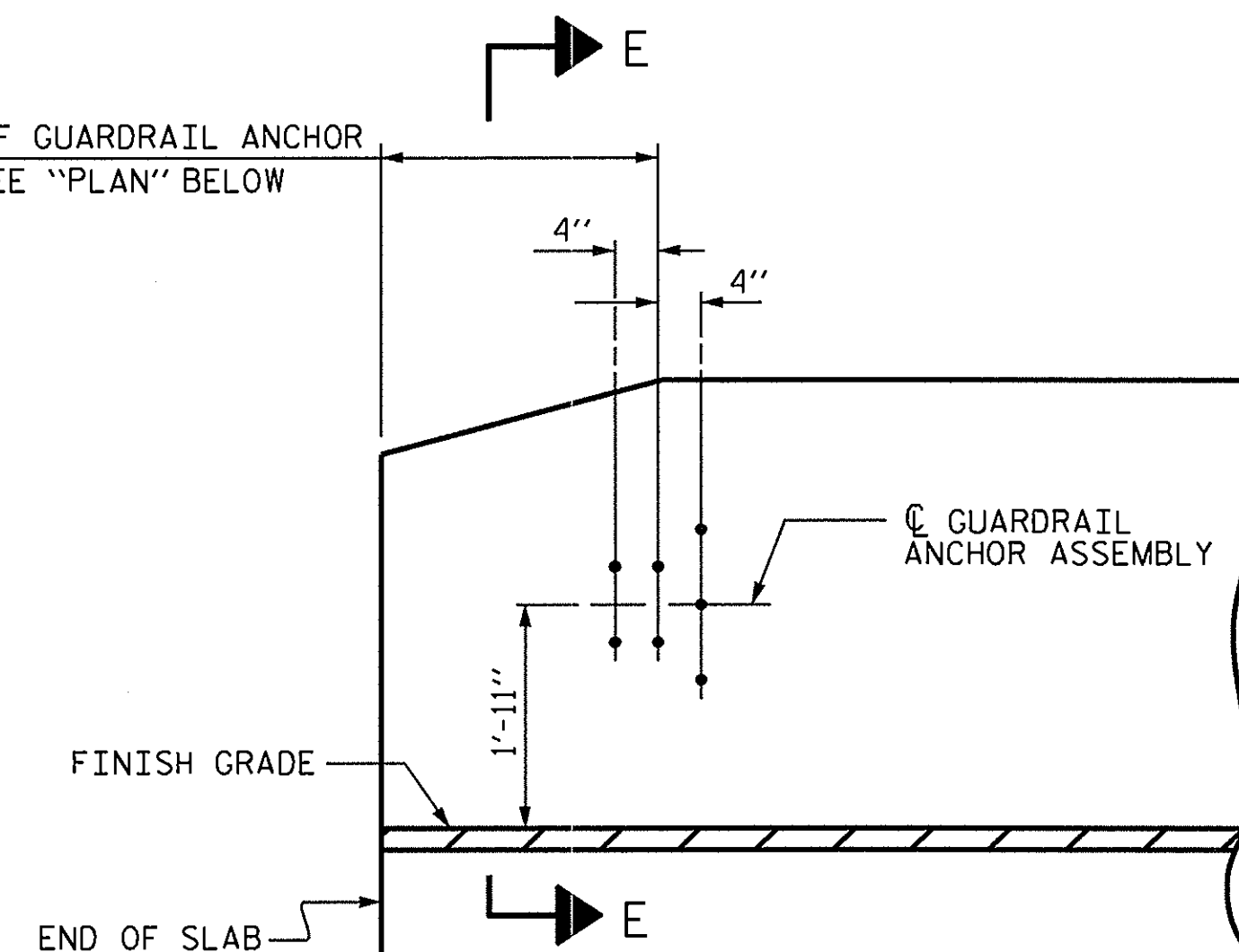
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

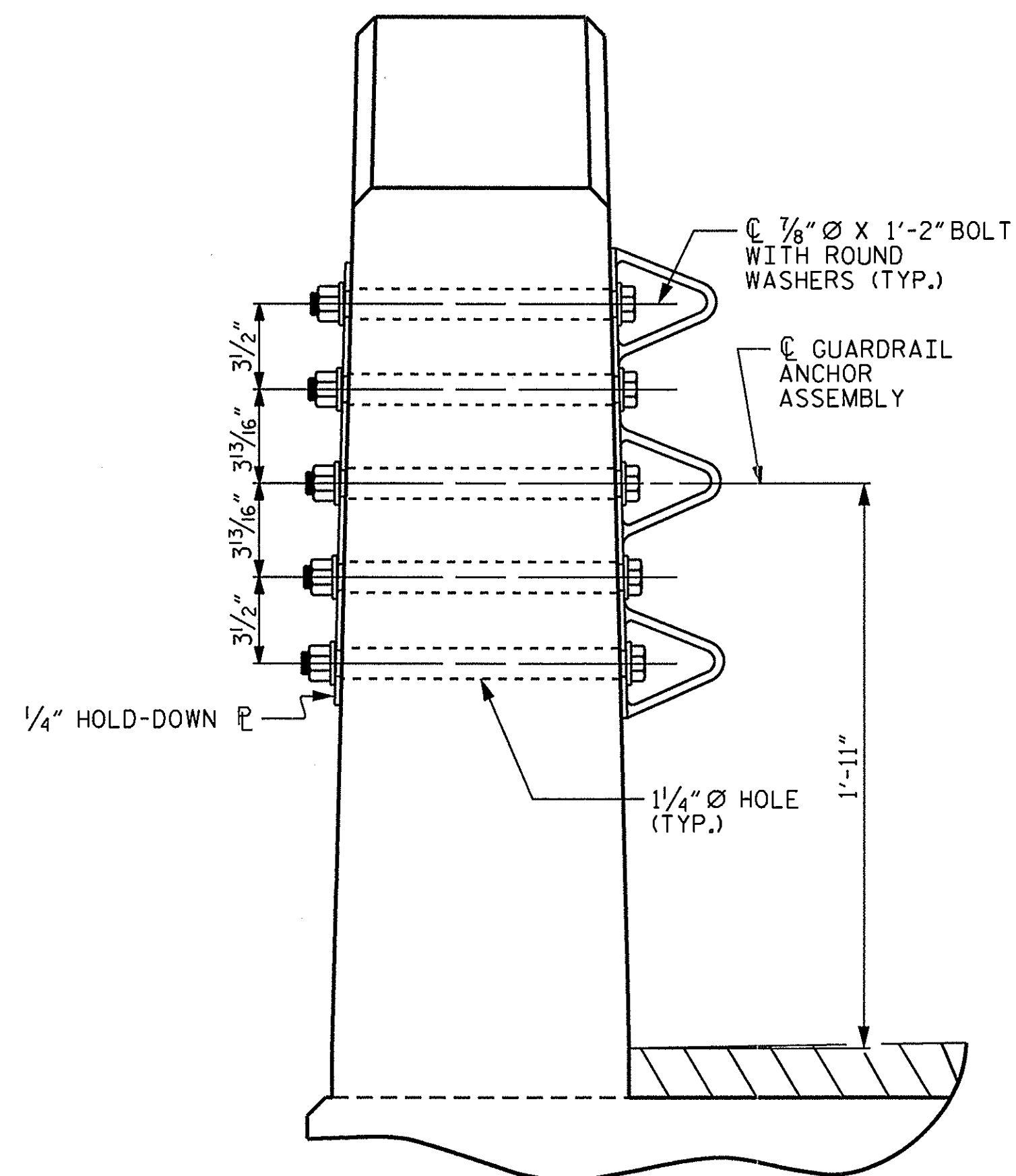


PLAN

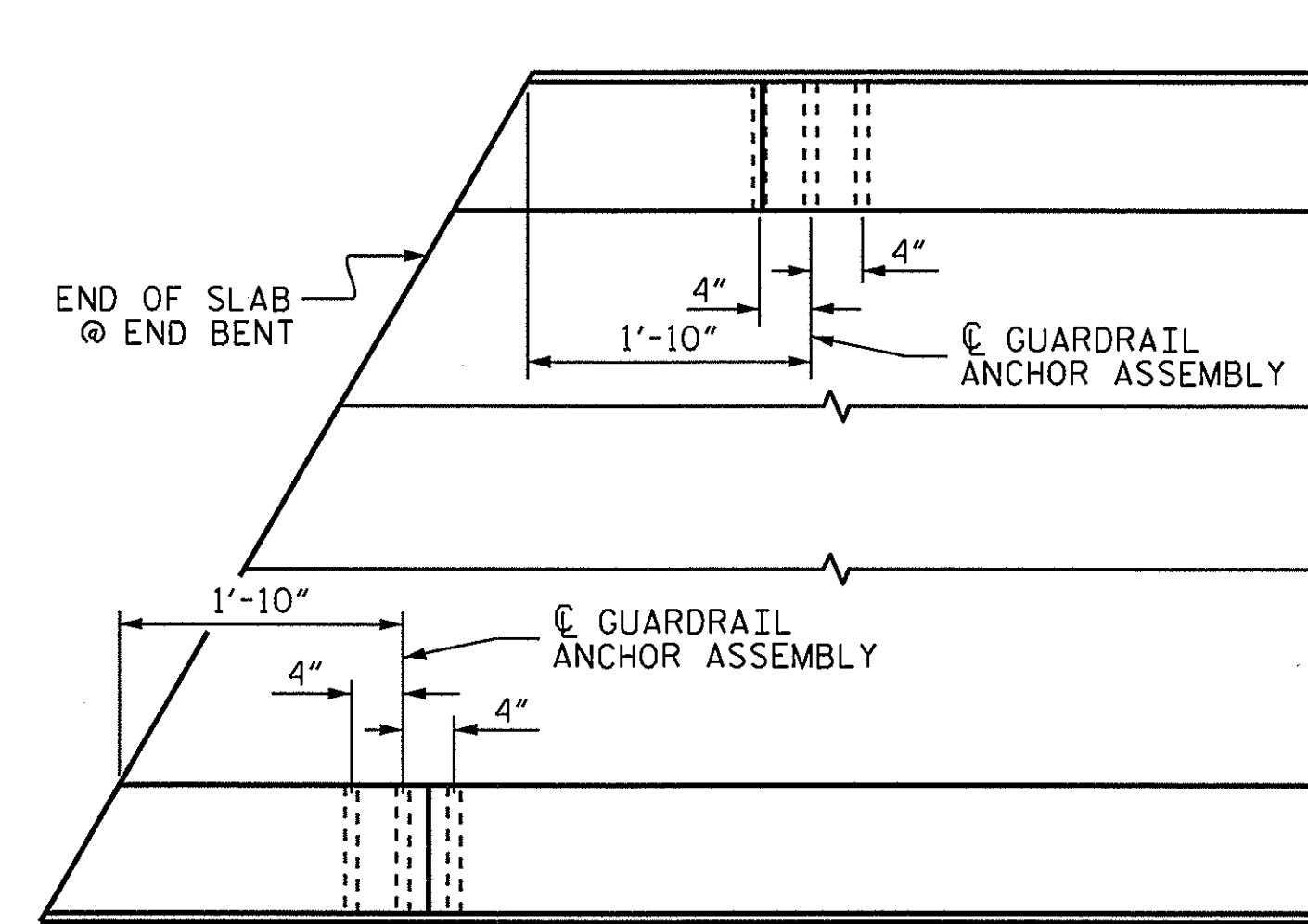
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



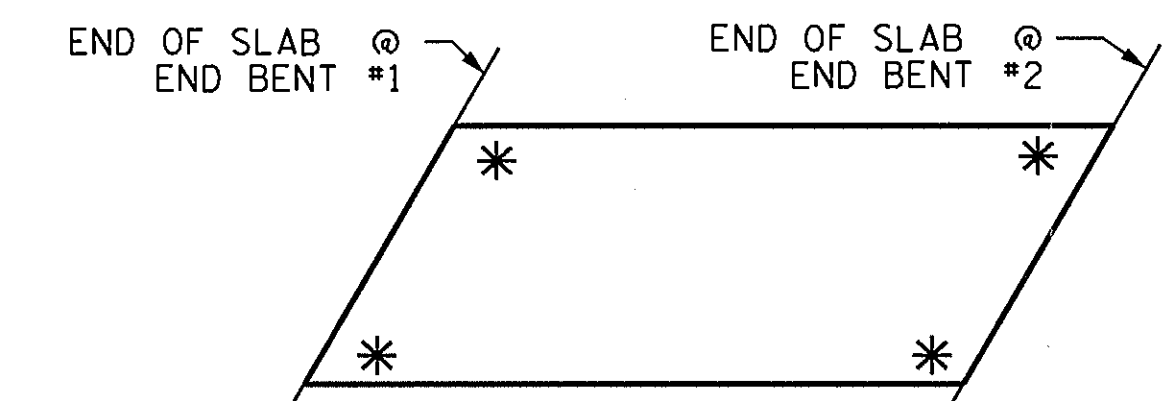
SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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

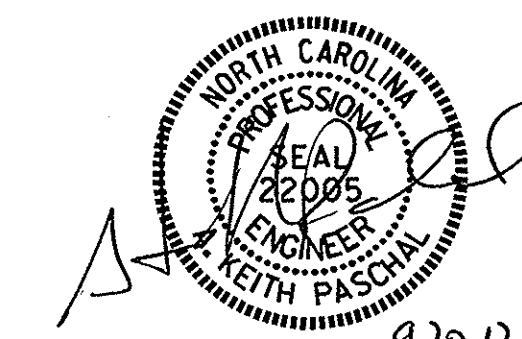


SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. BD-5102T
GREENE COUNTY
 STATION: 14+82.50 -L-

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



ASSEMBLED BY : M. M. AHMED	DATE : 7-10-13
CHECKED BY : KENAN EZZARD	DATE : 7-29-13
DRAWN BY : MAA 5/10	REV. 10/1/11 MAA/GM
CHECKED BY : GM 5/10	REV. 12/5/11 MAA/GM
	REV. 6/13 MAA/GM

30-SEP-2013 12:55
 S:\DPC\Keith\BD-5102T\mms\BD-5102T_SD_CS.dgn
 kpaschal

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

(SHT 2) STD. NO. GRA3

NOTES

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

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

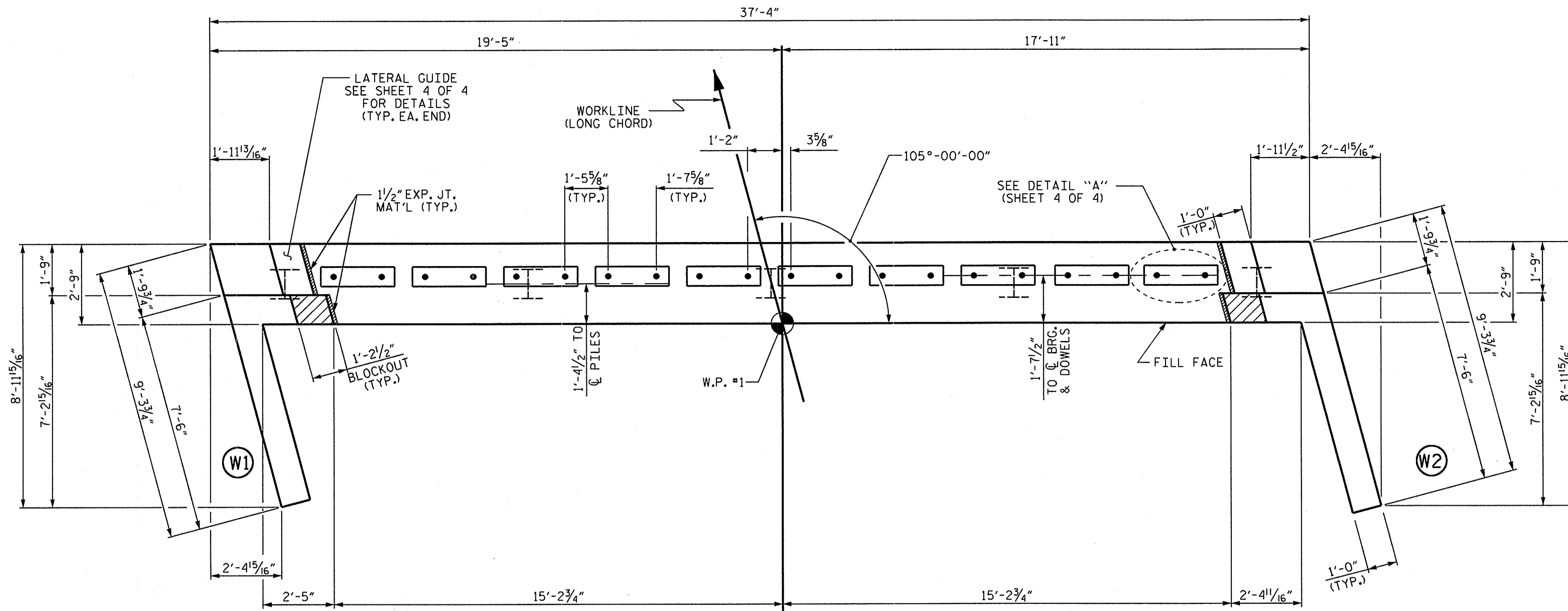
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

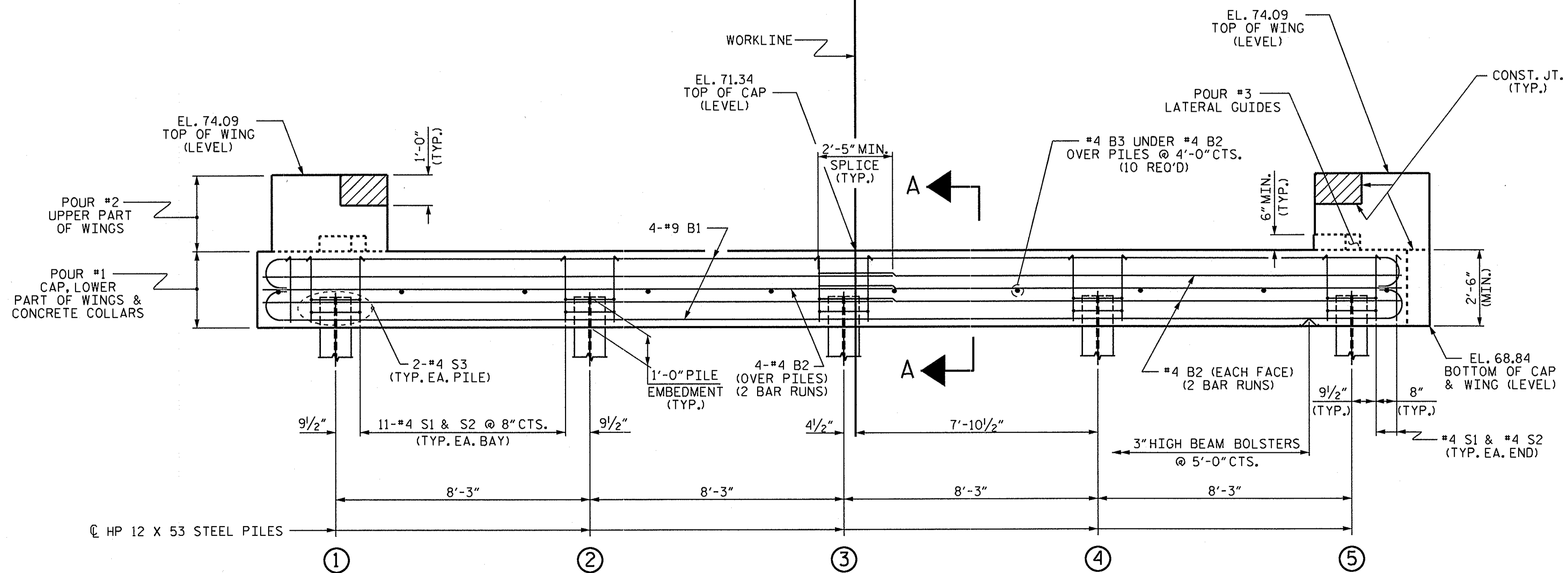
FOR WING DETAILS, SEE SHEET 3 OF 4.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

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



PLAN



ELEVATION

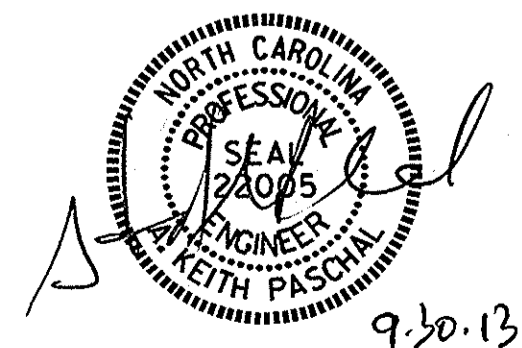
WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. BD-5102T
GREENE COUNTY
STATION: 14+82.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1



ASSEMBLED BY : M. M. AHMED DATE : 7-10-13
CHECKED BY : KENAN EZZARD DATE : 7-29-13
DRAWN BY : DGE 02/10
CHECKED BY : MKT 02/10

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

NOTES

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

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

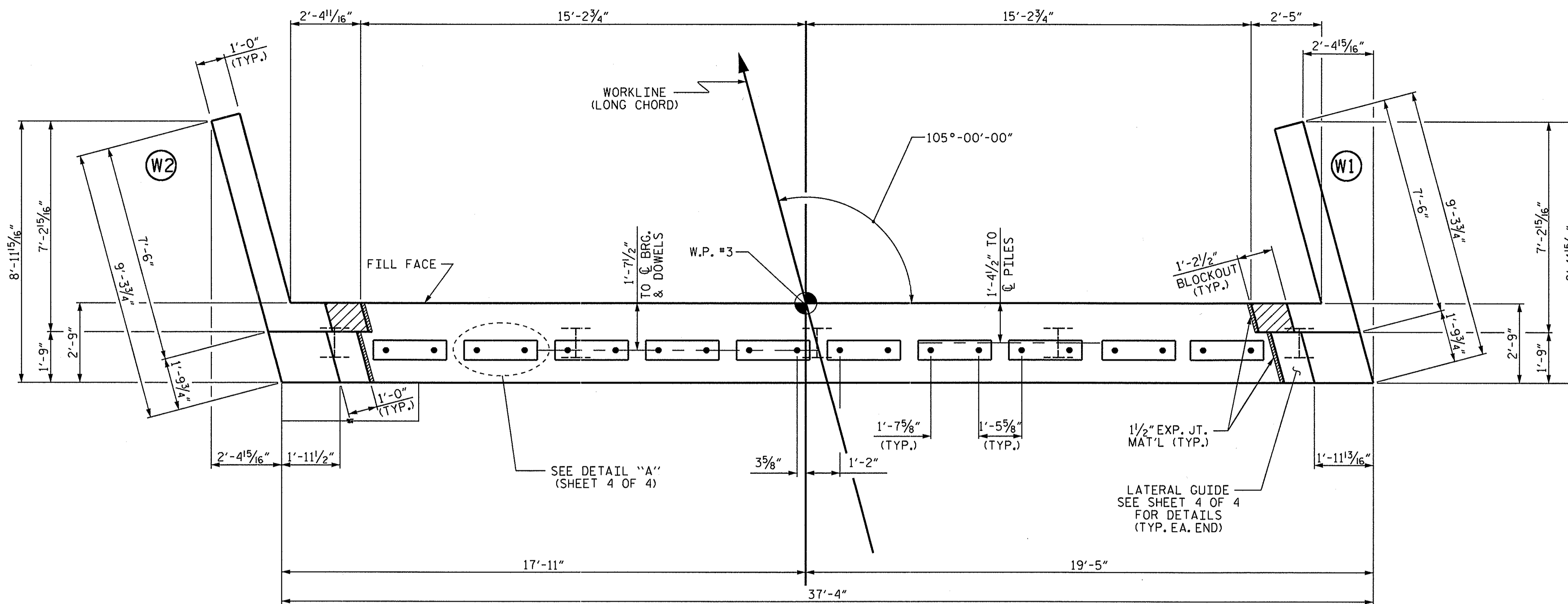
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPlice DETAILS, SEE SHEET 4 OF 4.

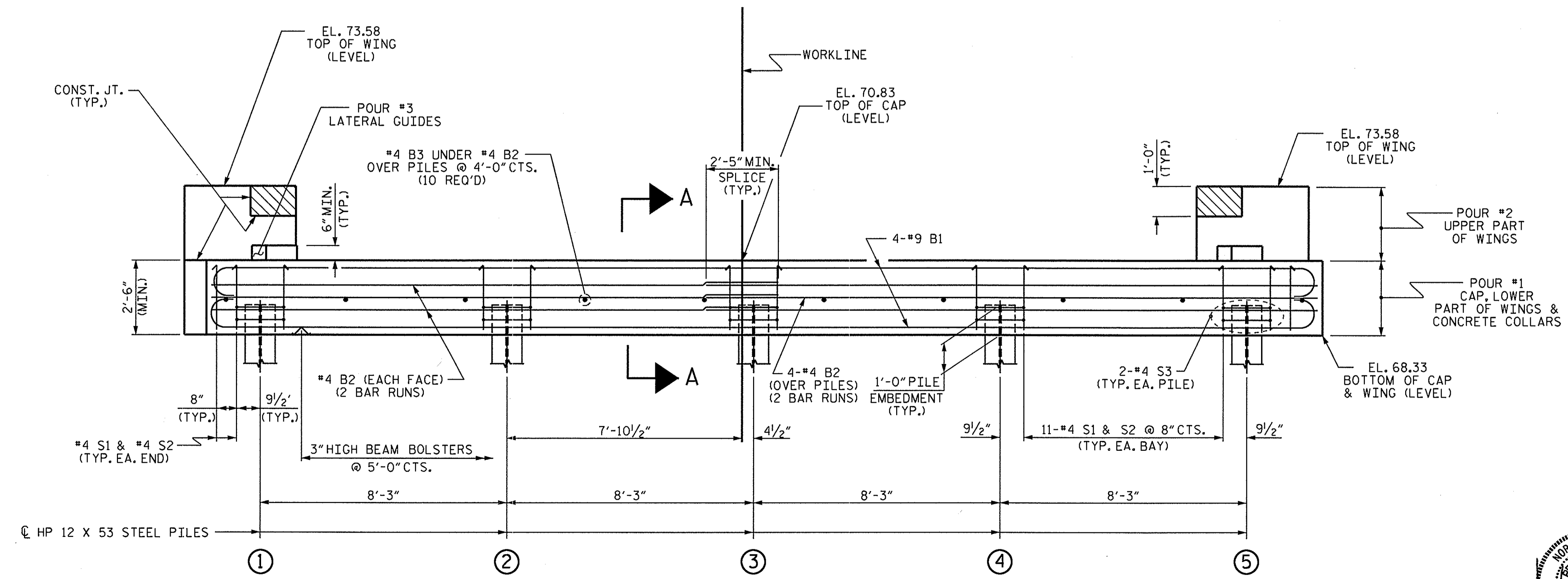
FOR WING DETAILS, SEE SHEET 3 OF 4.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

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



PLAN



ELEVATION

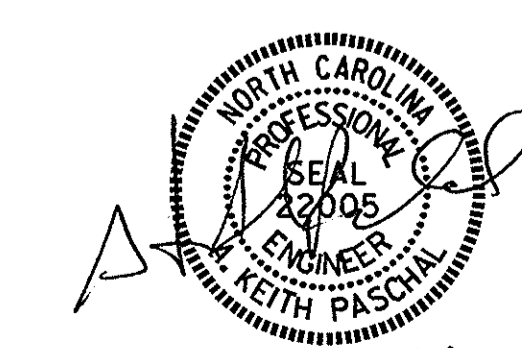
WINGS NOT SHOWN FOR CLARITY. FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. BD-5102T
GREENE COUNTY
STATION: 14+82.50 -L-

SHEET 2 OF 4

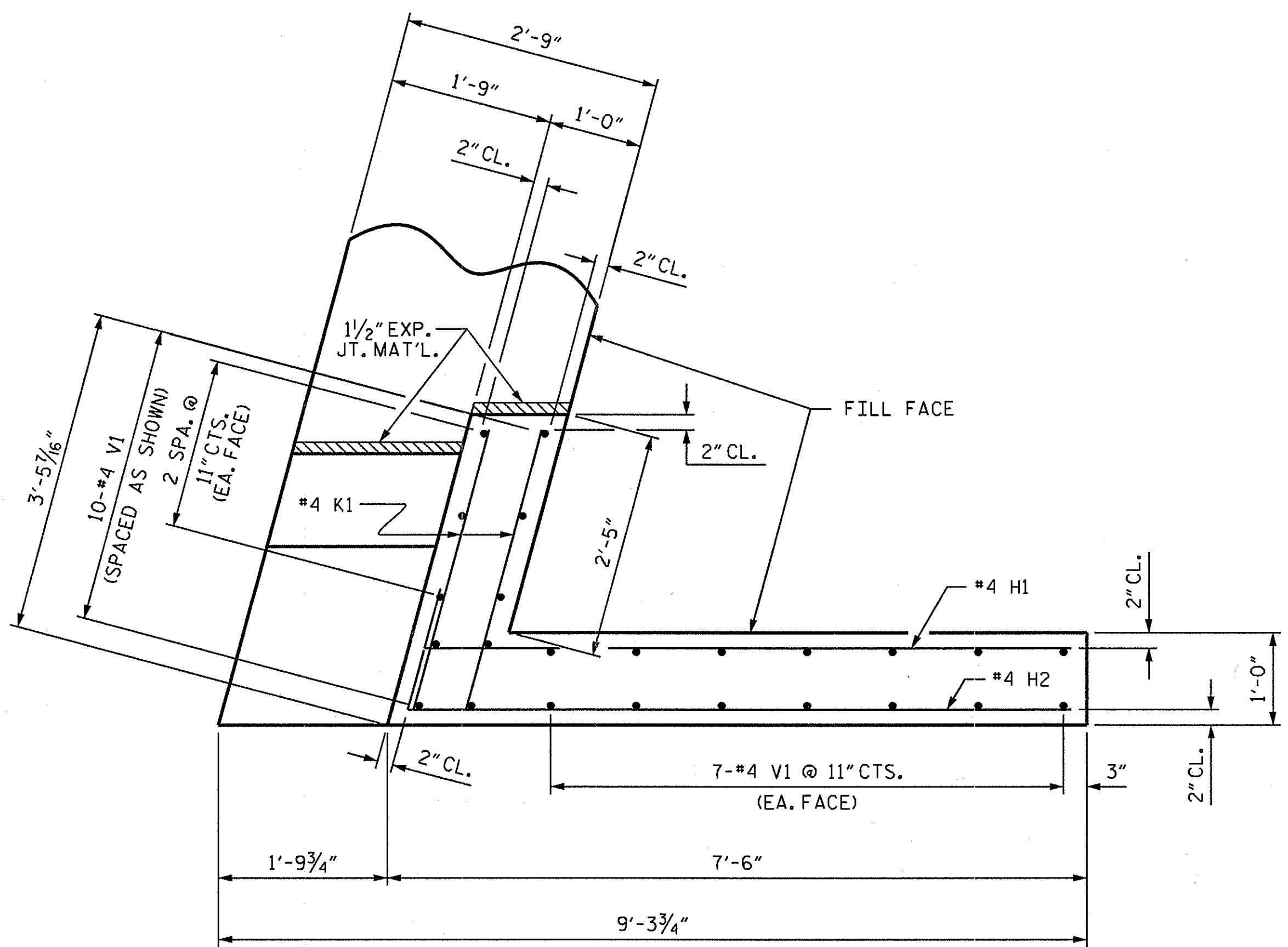
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
END BENT No. 2**

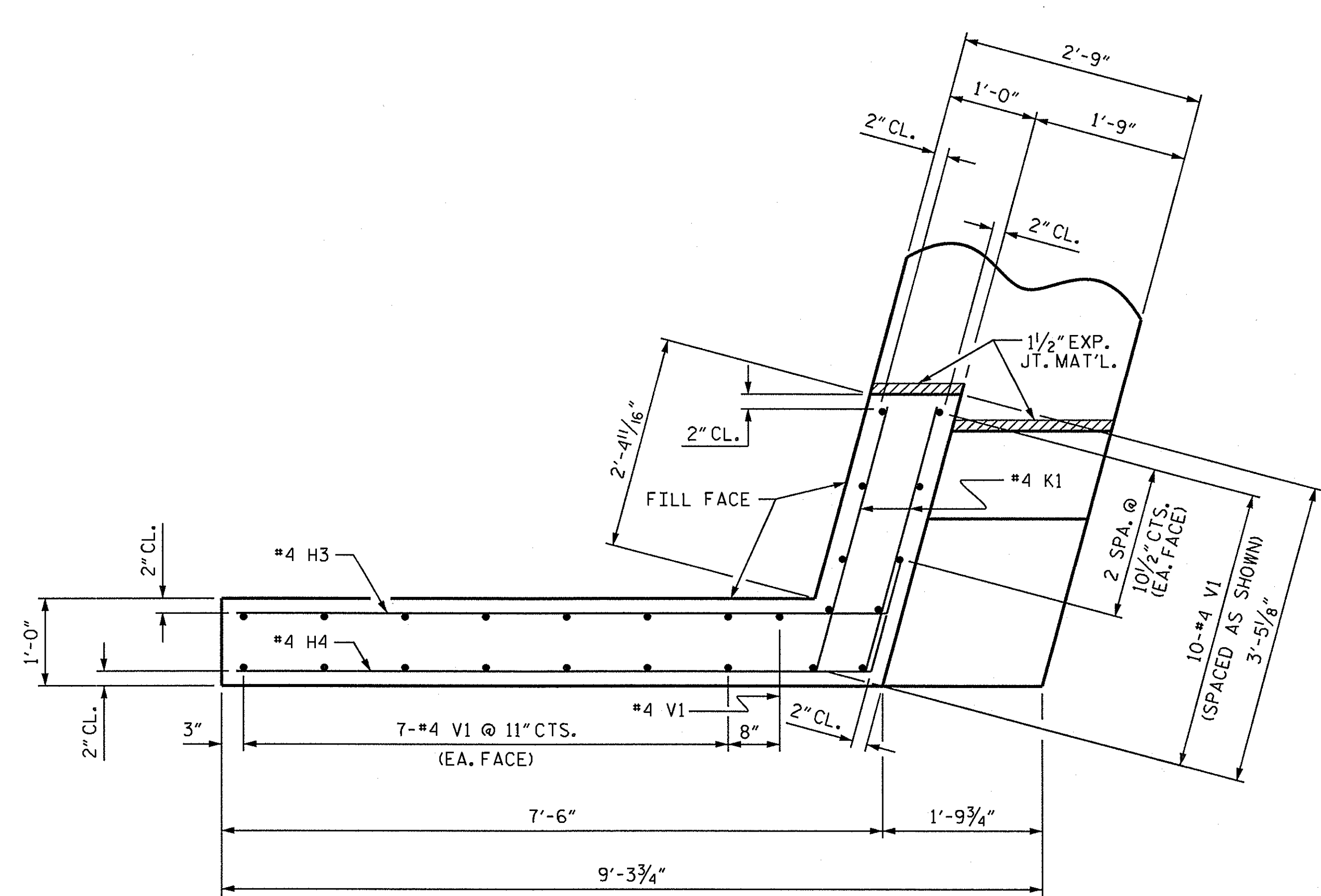


ASSEMBLED BY : M. M. AHMED DATE : 7-11-13
CHECKED BY : KENAN EZZARD DATE : 7-29-13
DRAWN BY : DGE 02/10
CHECKED BY : MKT 02/10

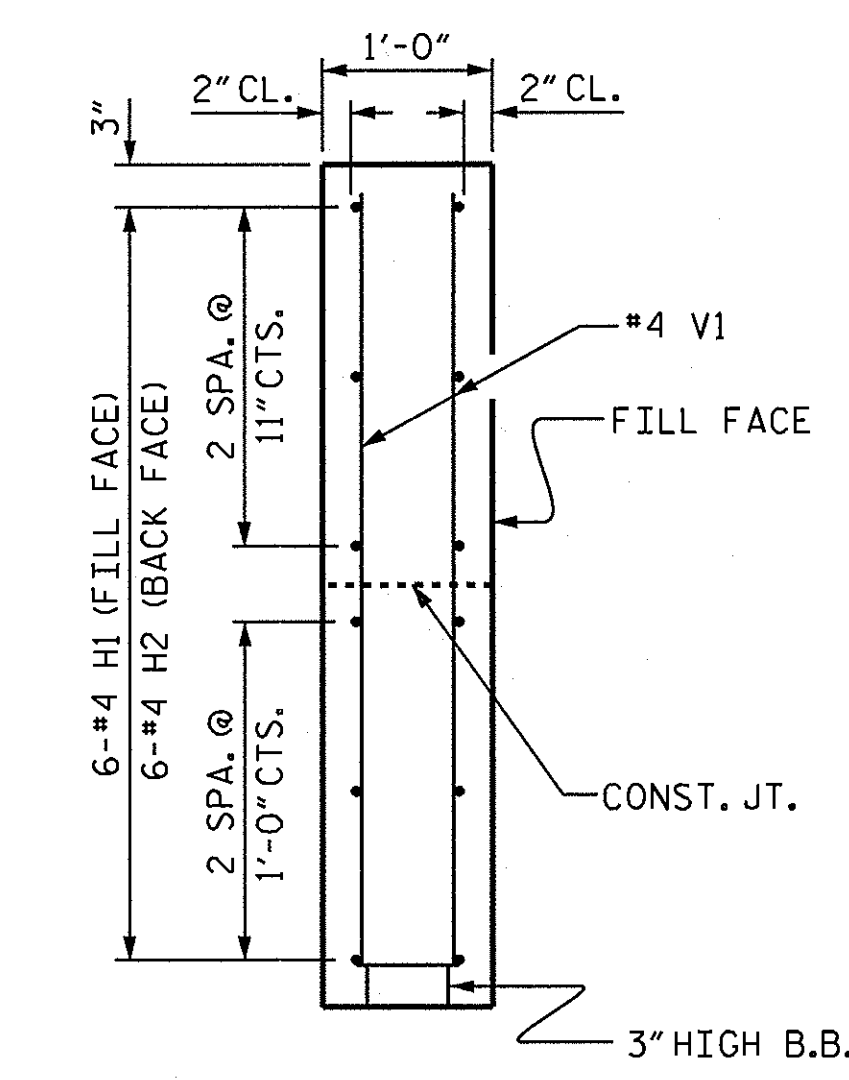
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			



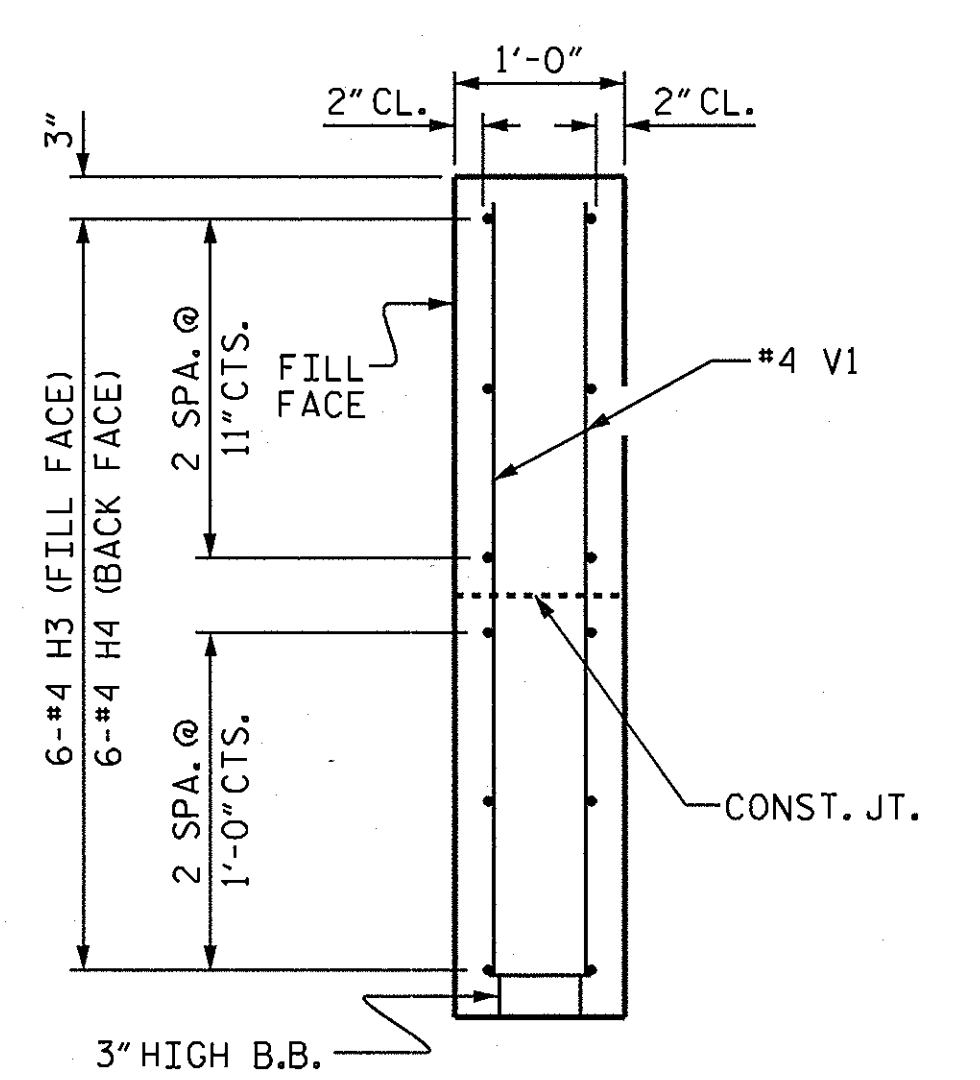
PLAN OF WING (W1)



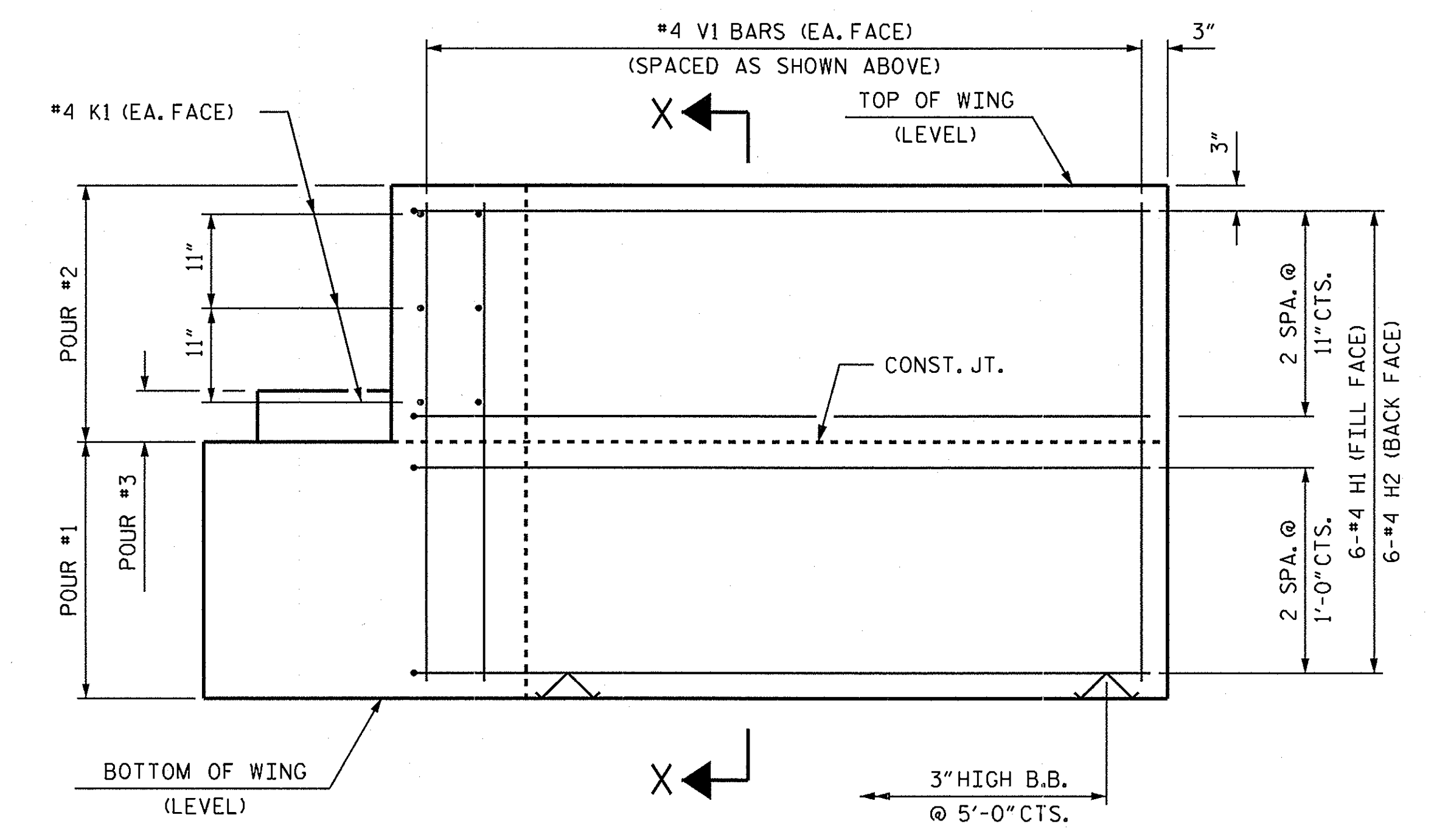
PLAN OF WING (W2)



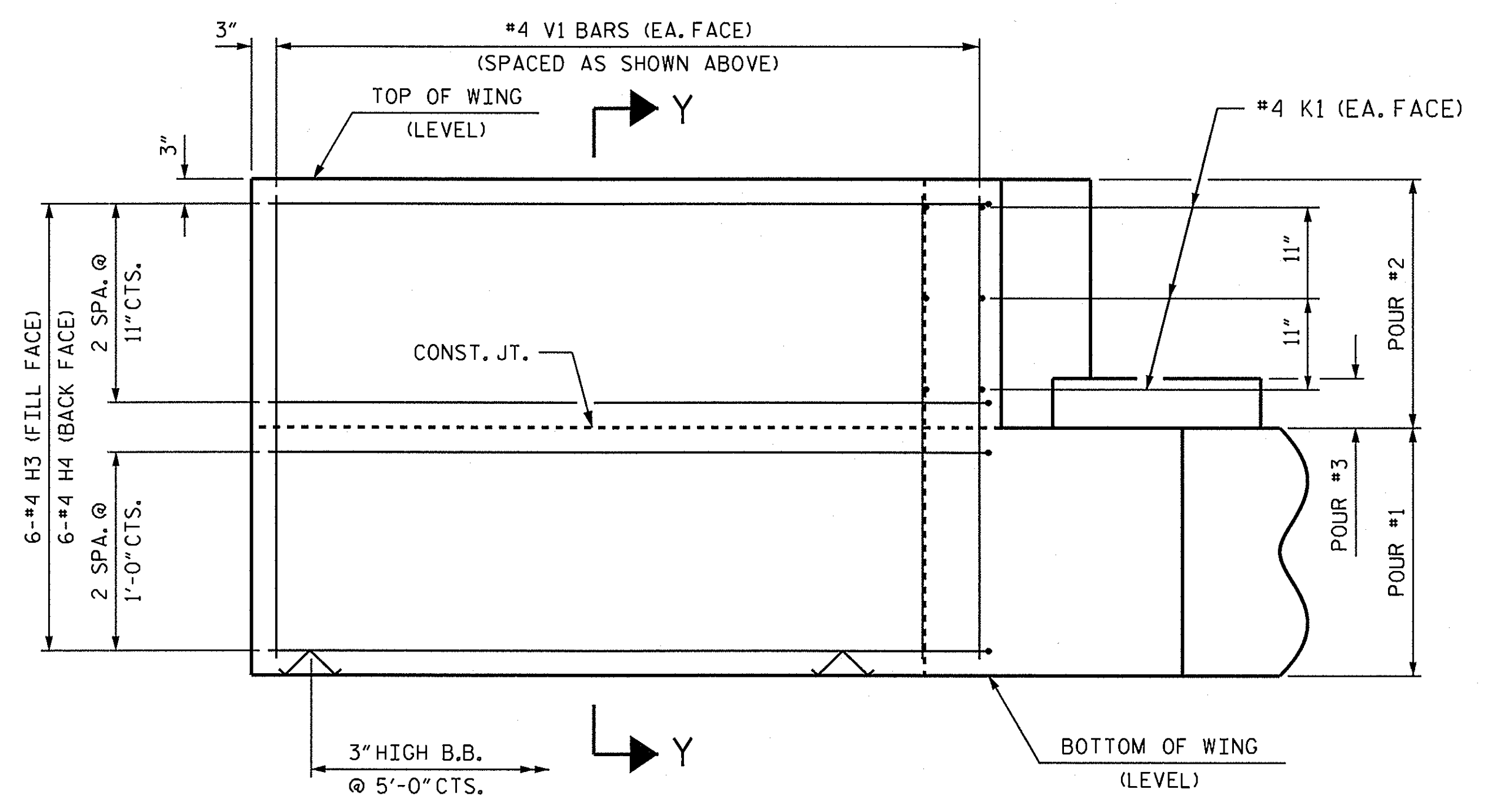
SECTION X-X



SECTION Y-Y

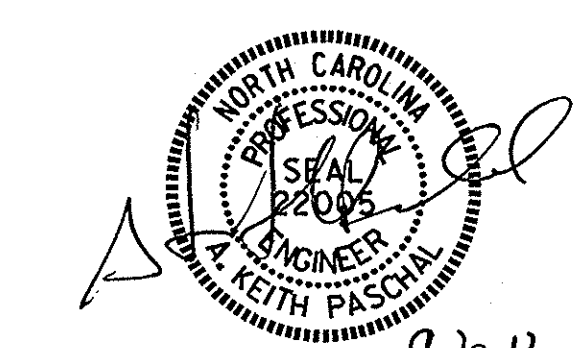


ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

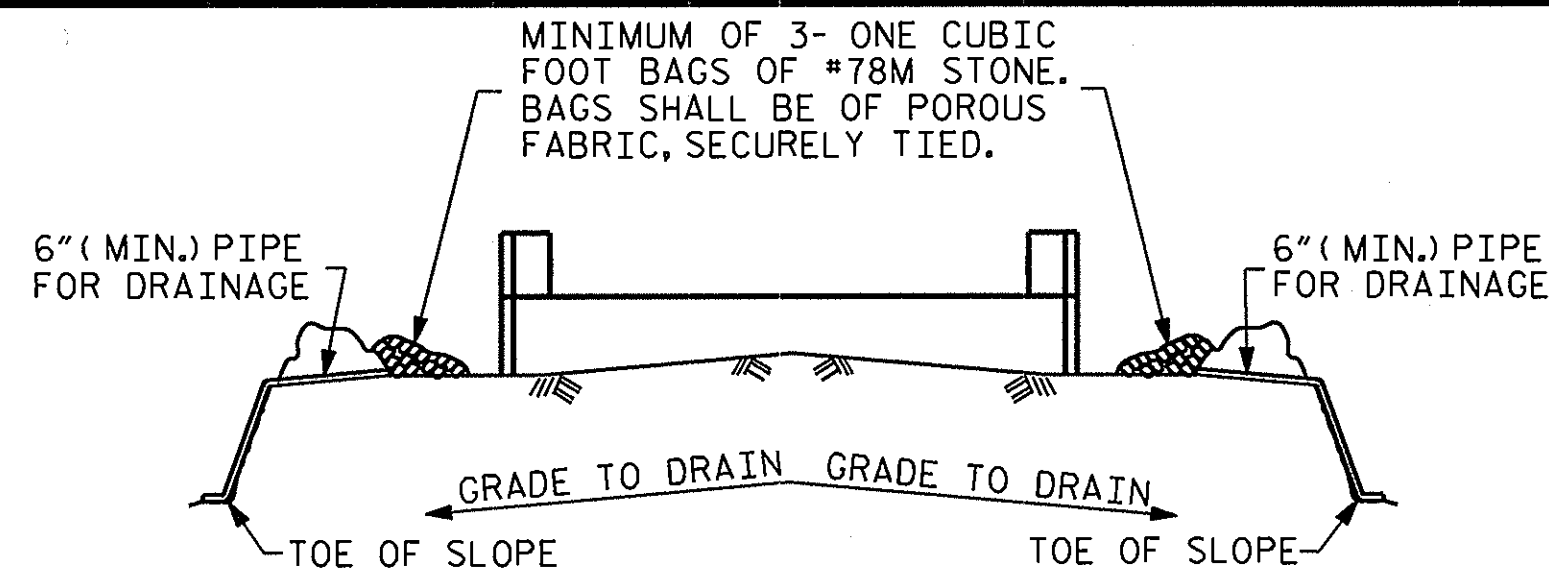
WING DETAILS



PROJECT NO. BD-5102T
GREENE COUNTY
 STATION: 14+82.50 -L-
 SHEET 3 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT WING DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. TOTAL SHEETS

ASSEMBLED BY : M. M. AHMED DATE : 7-11-13
 CHECKED BY : KENAN EZZARD DATE : 7-29-13
 DRAWN BY : DGE 03/10
 CHECKED BY : MKT 03/10

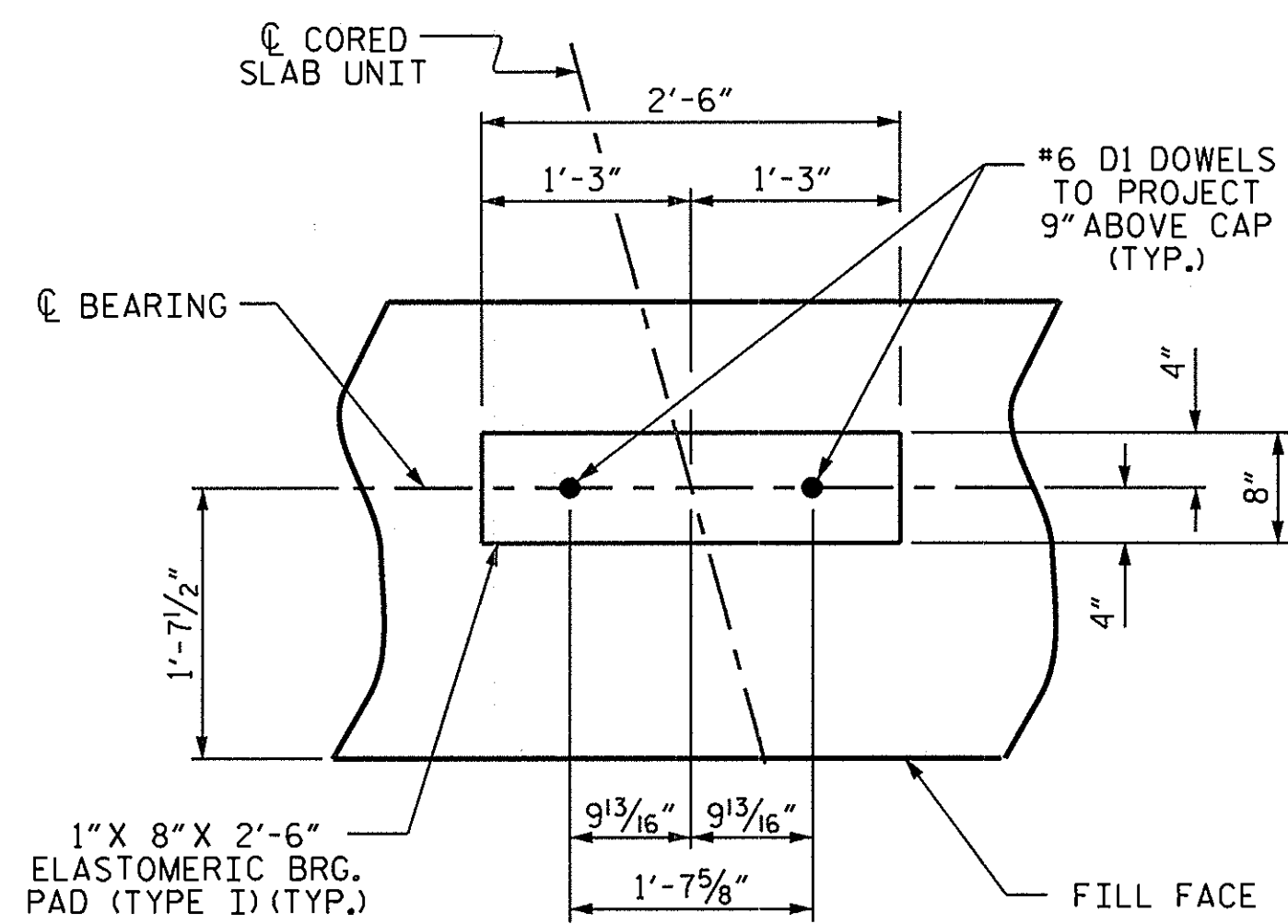


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

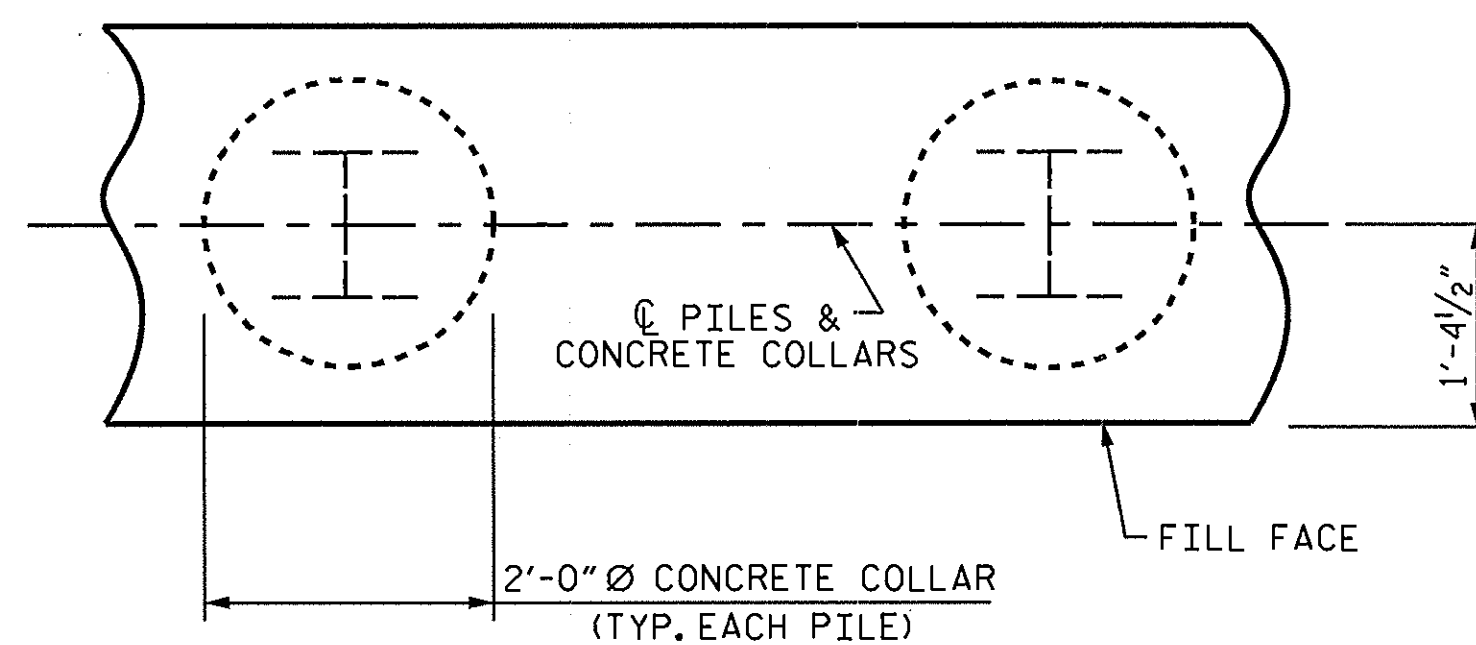
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

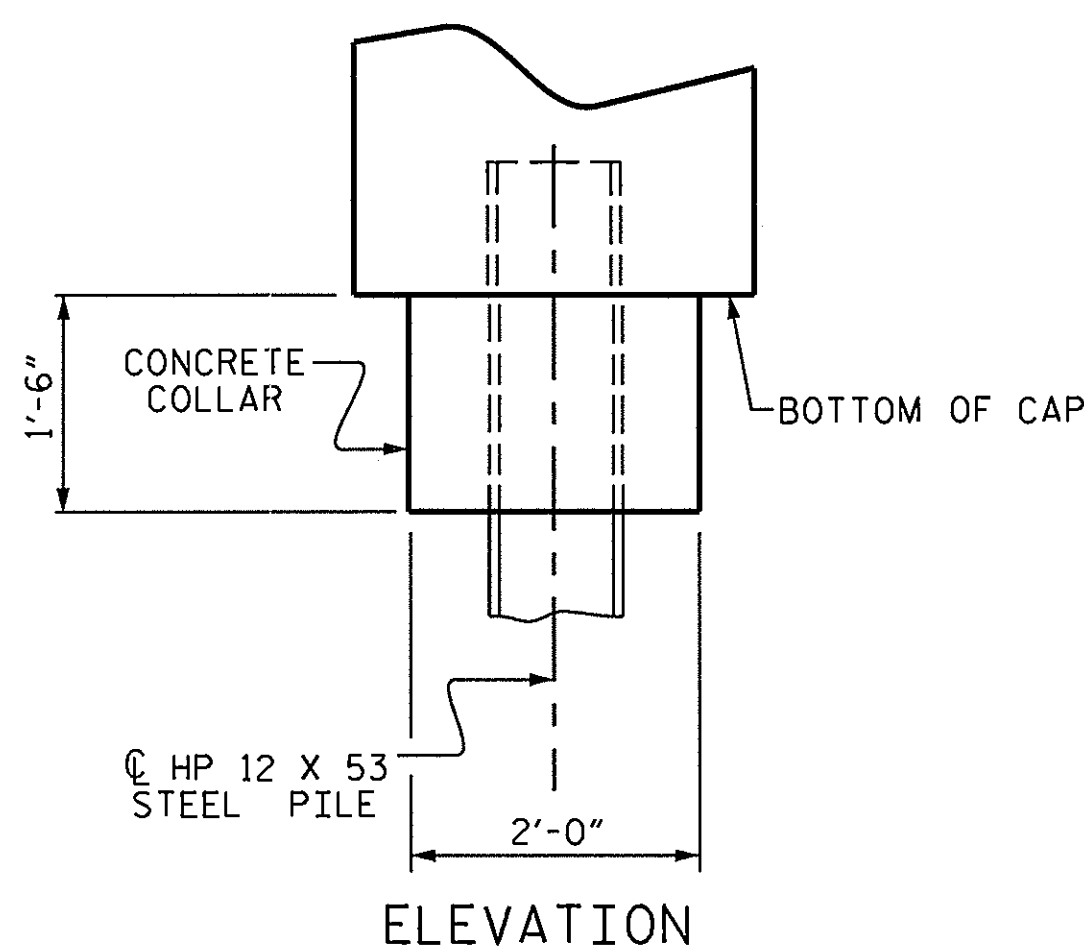


DETAIL "A"

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



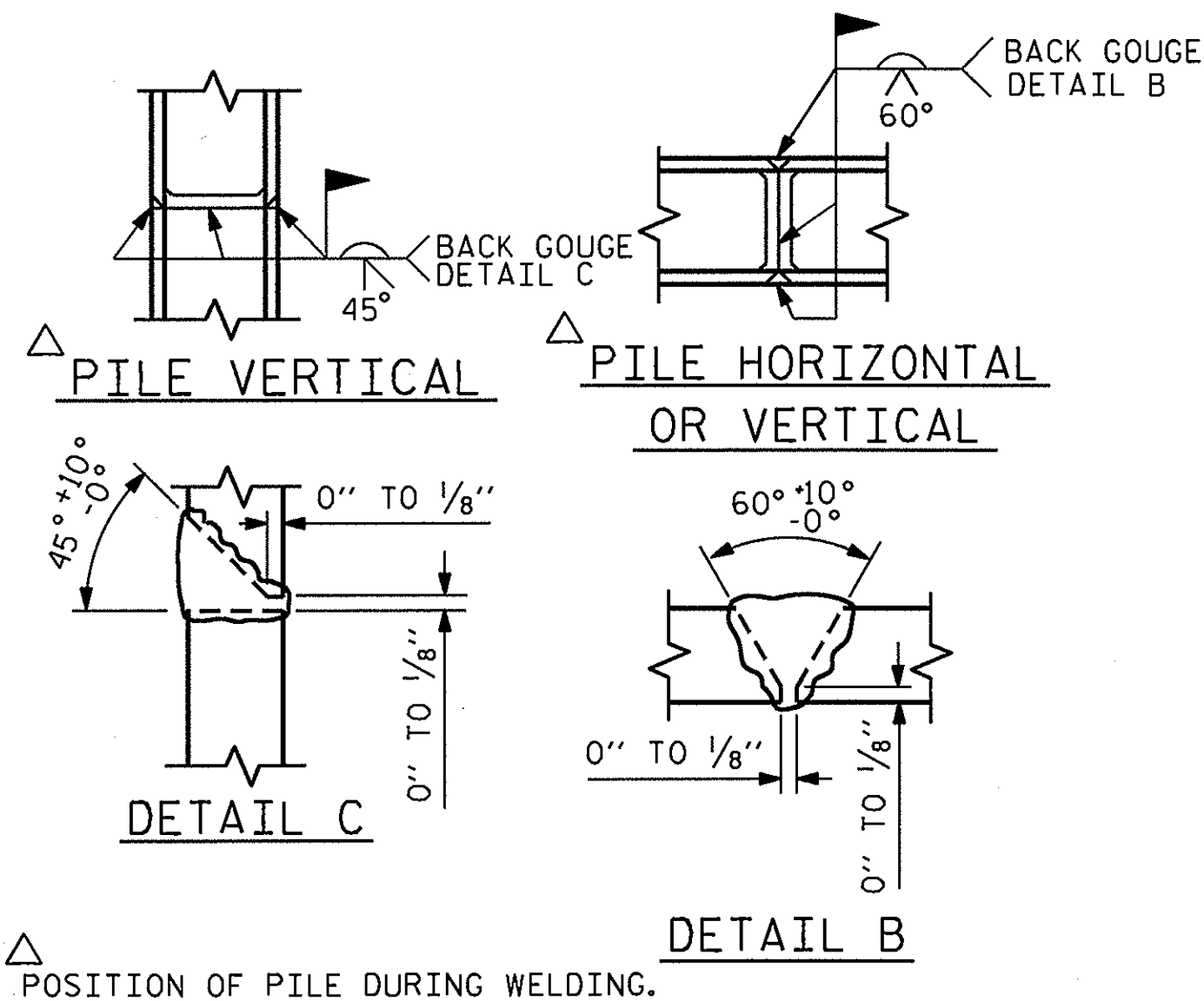
PLAN



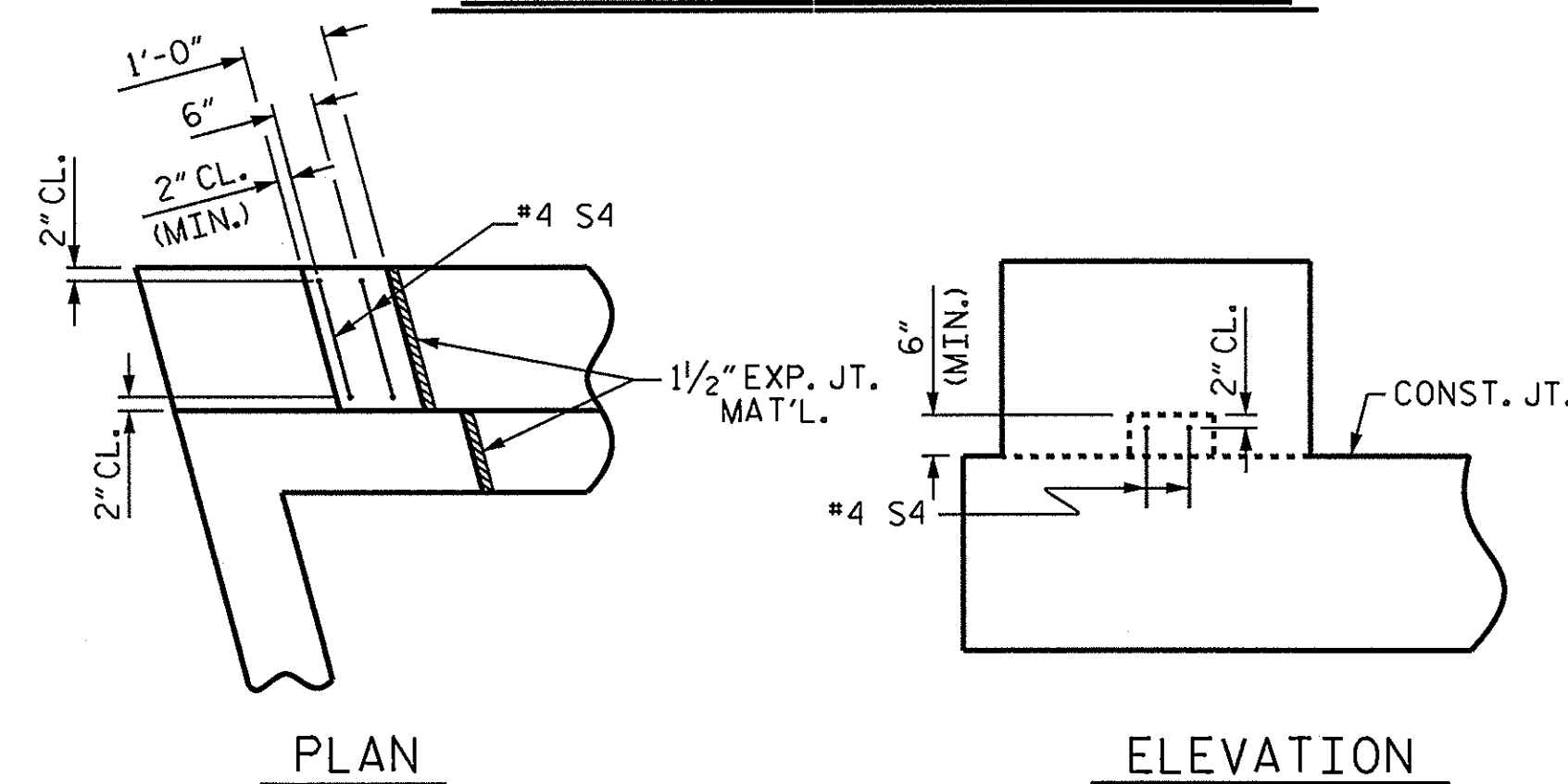
ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

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



PILE SPLICE DETAILS



LATERAL GUIDE DETAILS

(END BENT No. 1, LEFT LATERAL GUIDE SHOWN, RIGHT END SIMILAR)
(END BENT No. 2 SIMILAR BY ROTATION)

BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		39'-4"	1070
B2	16	#4	STR	19'-9"	211
B3	10	#4	STR	2'-5"	16
D1	20	#6	STR	1'-6"	45
H1	6	#4	2	7'-7"	30
H2	6	#4	2	7'-9"	31
H3	6	#4	3	8'-0"	32
H4	6	#4	3	7'-10"	31
K1	12	#4	STR	3'-1"	25
S1	48	#4	4	7'-5"	238
S2	48	#4	5	3'-2"	102
S3	10	#4	6	6'-6"	43
S4	4	#4	7	4'-5"	12
V1	49	#4	STR	4'-8"	153
REINFORCING STEEL (FOR ONE END BENT)					2039 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					11.6 C.Y.
POUR #2 UPPER PART OF WINGS					2.0 C.Y.
POUR #3 LATERAL GUIDES					0.1 C.Y.
TOTAL CLASS A CONCRETE					13.7 C.Y.

END BENT No. 1		END BENT No. 2	
HP 12 X 53 STEEL PILES	NO: 5	HP 12 X 53 STEEL PILES	NO: 5
PILE REDRIVES	3 EA.	PILE REDRIVES	3 EA.

ALL BAR DIMENSIONS ARE OUT TO OUT.

SECTION A-A

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

PROJECT NO. BD-5102T
GREENE COUNTY
 STATION: 14+82.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
 DETAILS

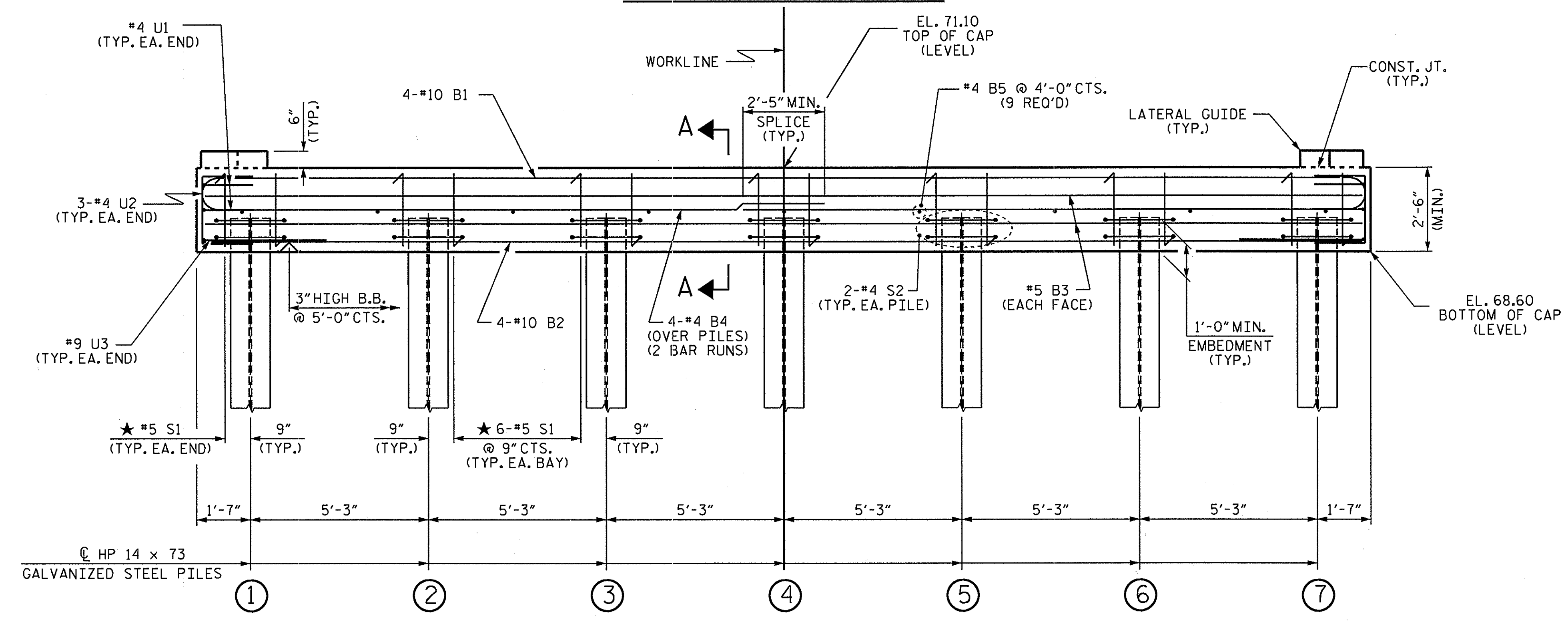
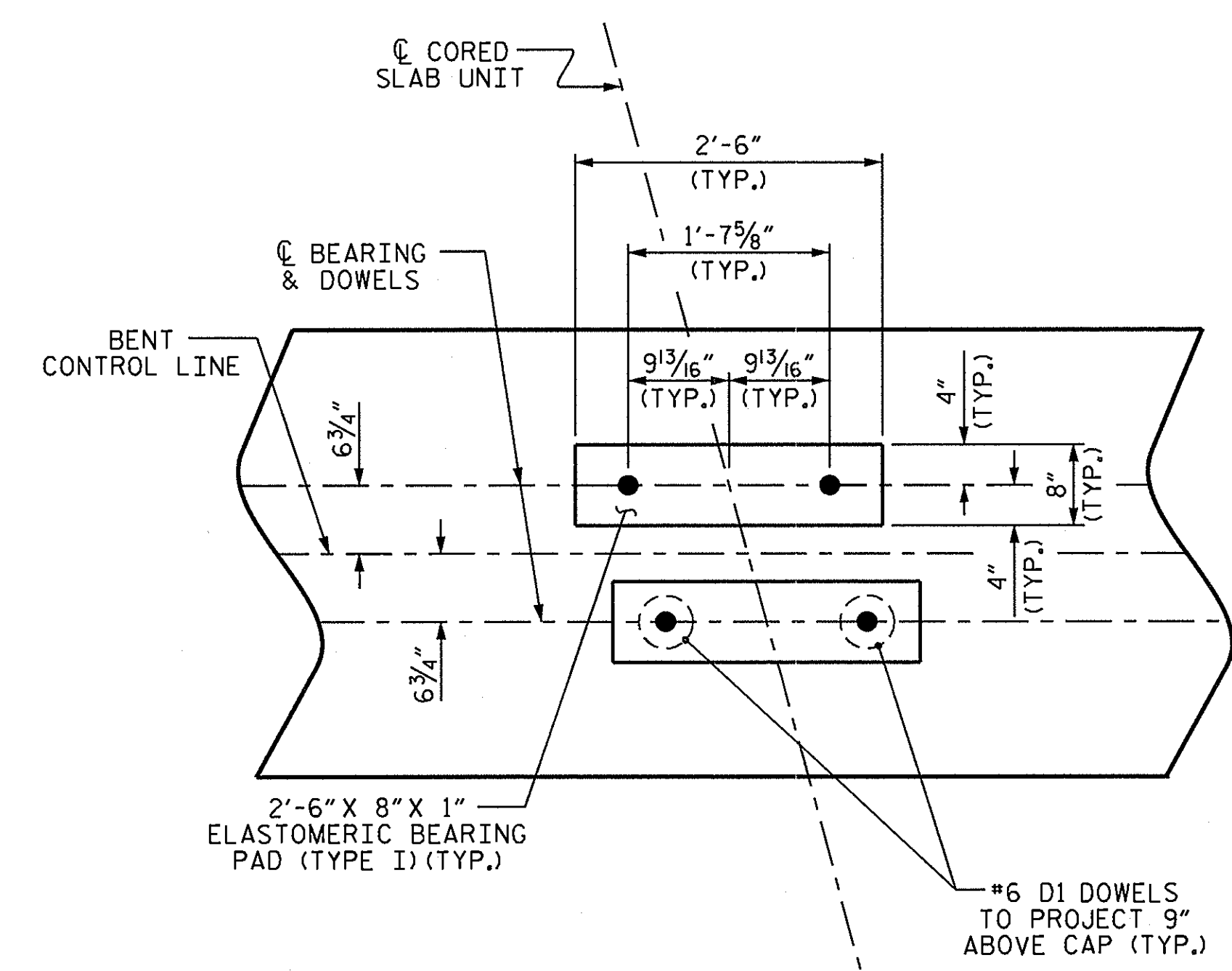
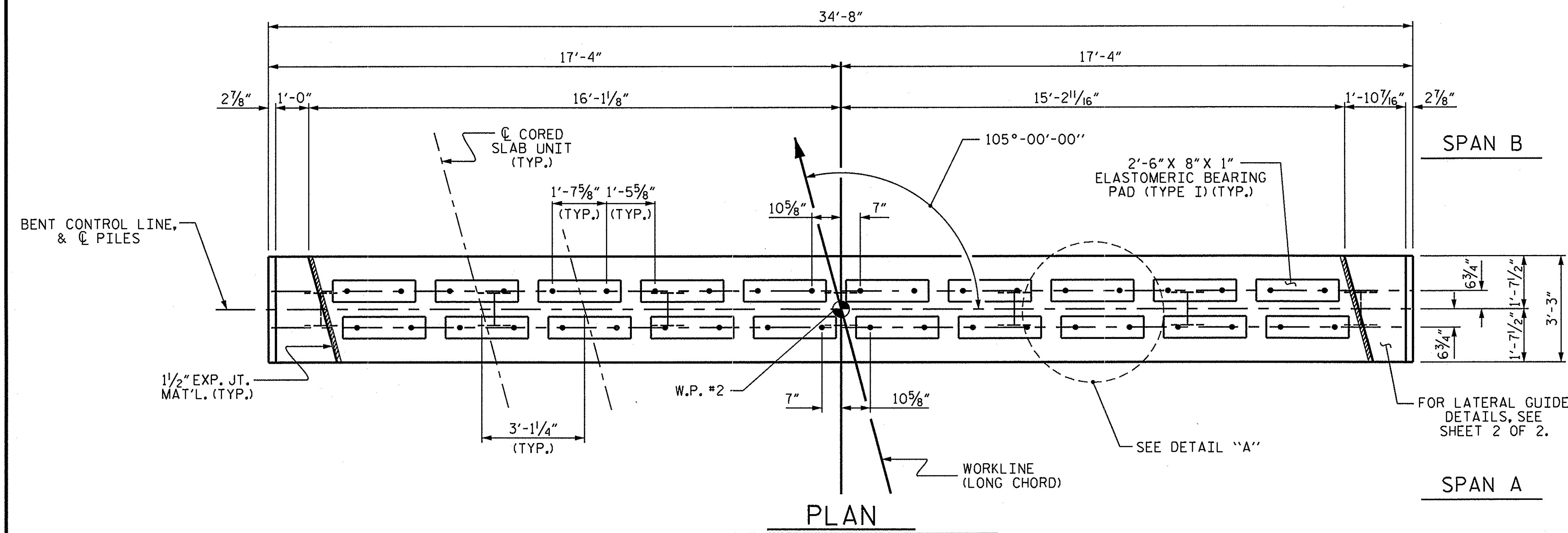
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			
2			4			

ASSEMBLED BY : M. M. AHMED DATE : 7-11-13
 CHECKED BY : KENAN EZZARD DATE : 7-29-13

DRAWN BY : DGE 03/10
 CHECKED BY : MKT 03/10

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.
- ★ INVERT ALTERNATE STIRRUPS.
- GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 30.0 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

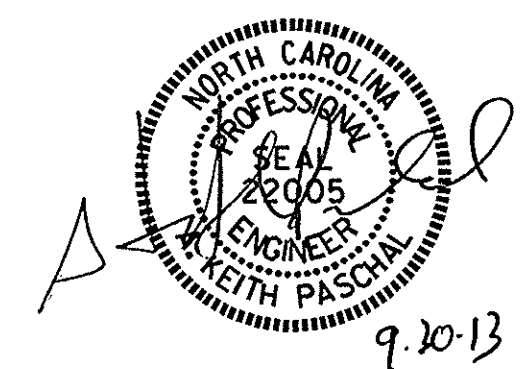


PROJECT NO. BD-5102T
GREENE COUNTY
 STATION: 14+82.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

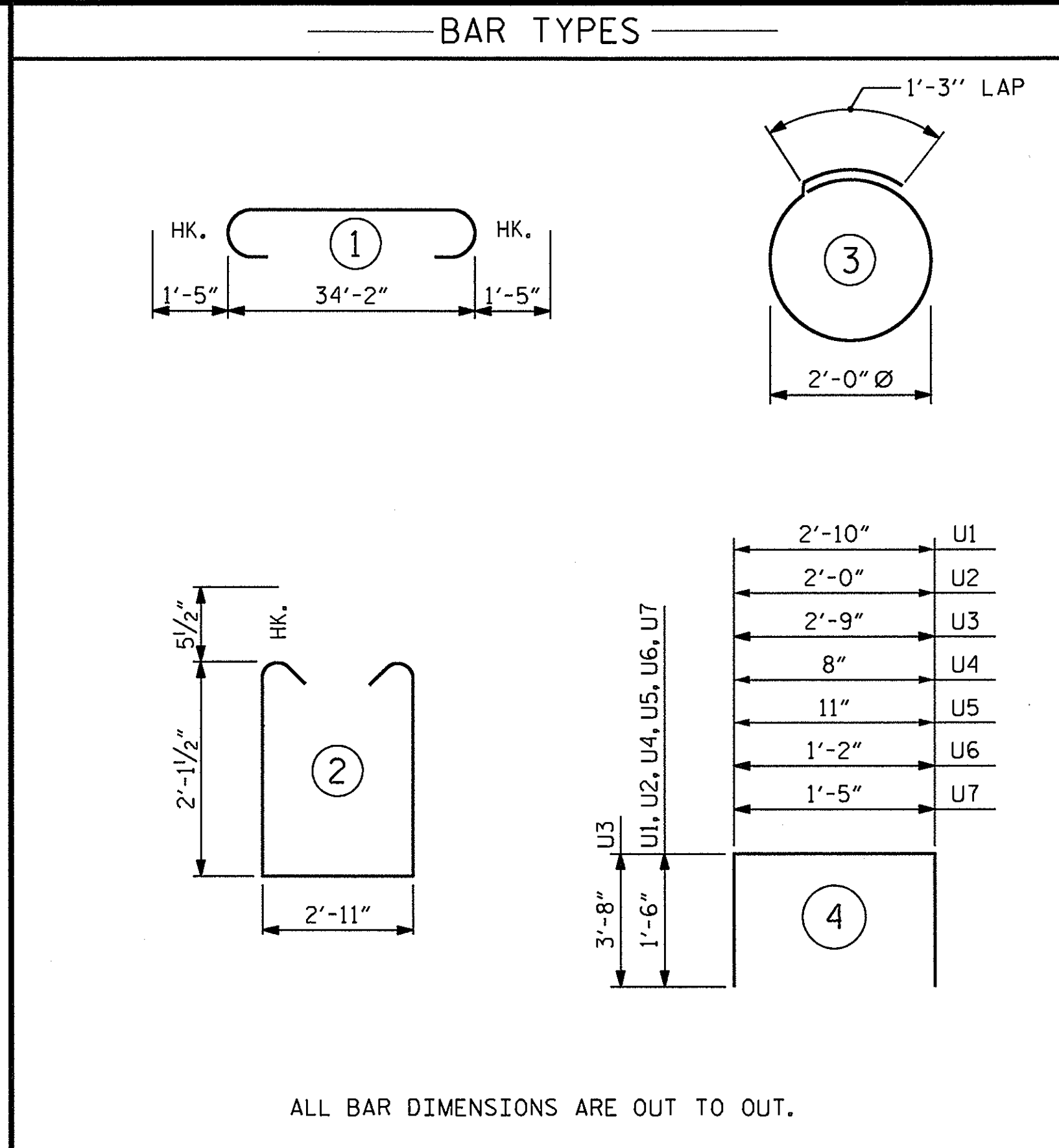
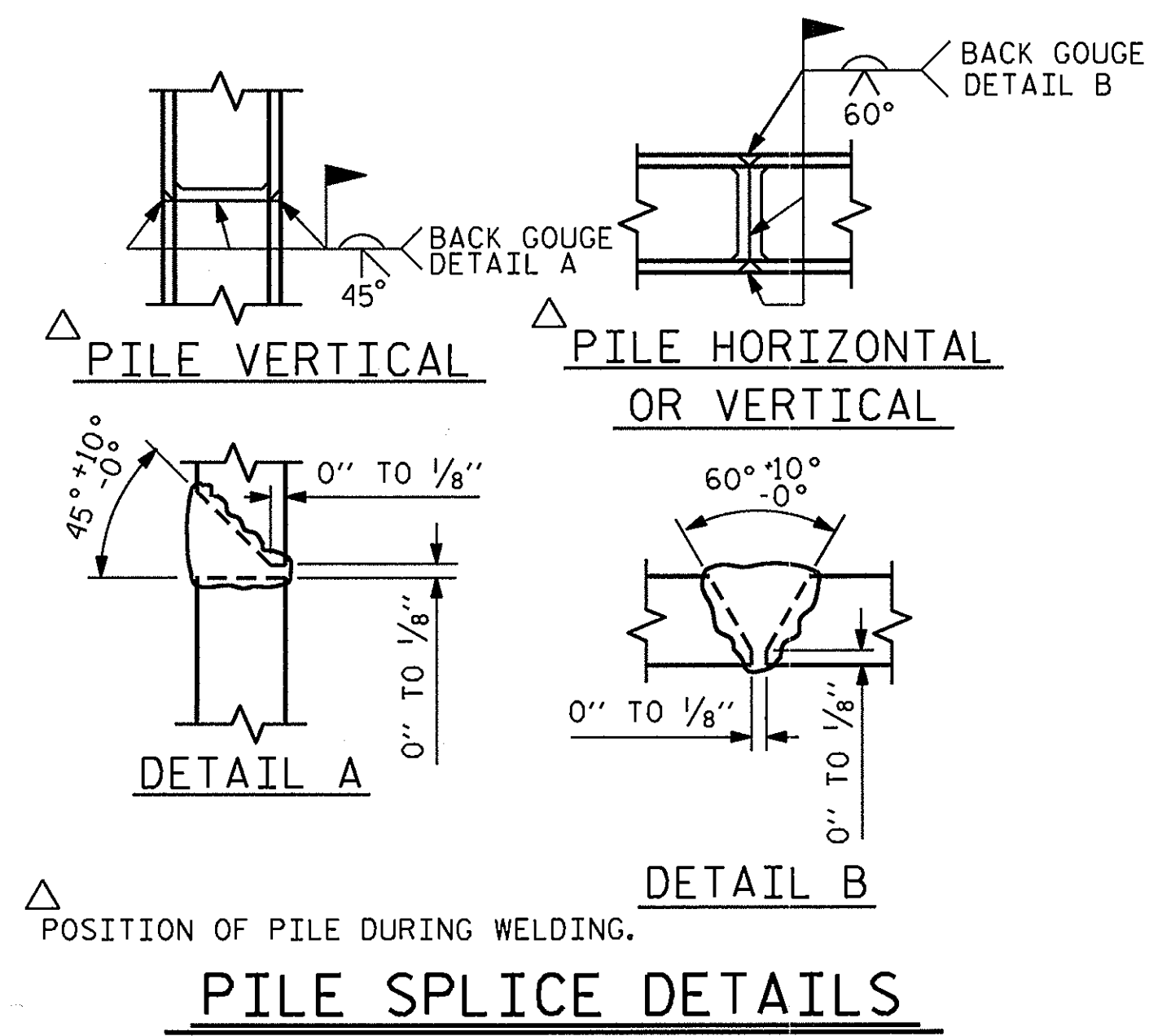
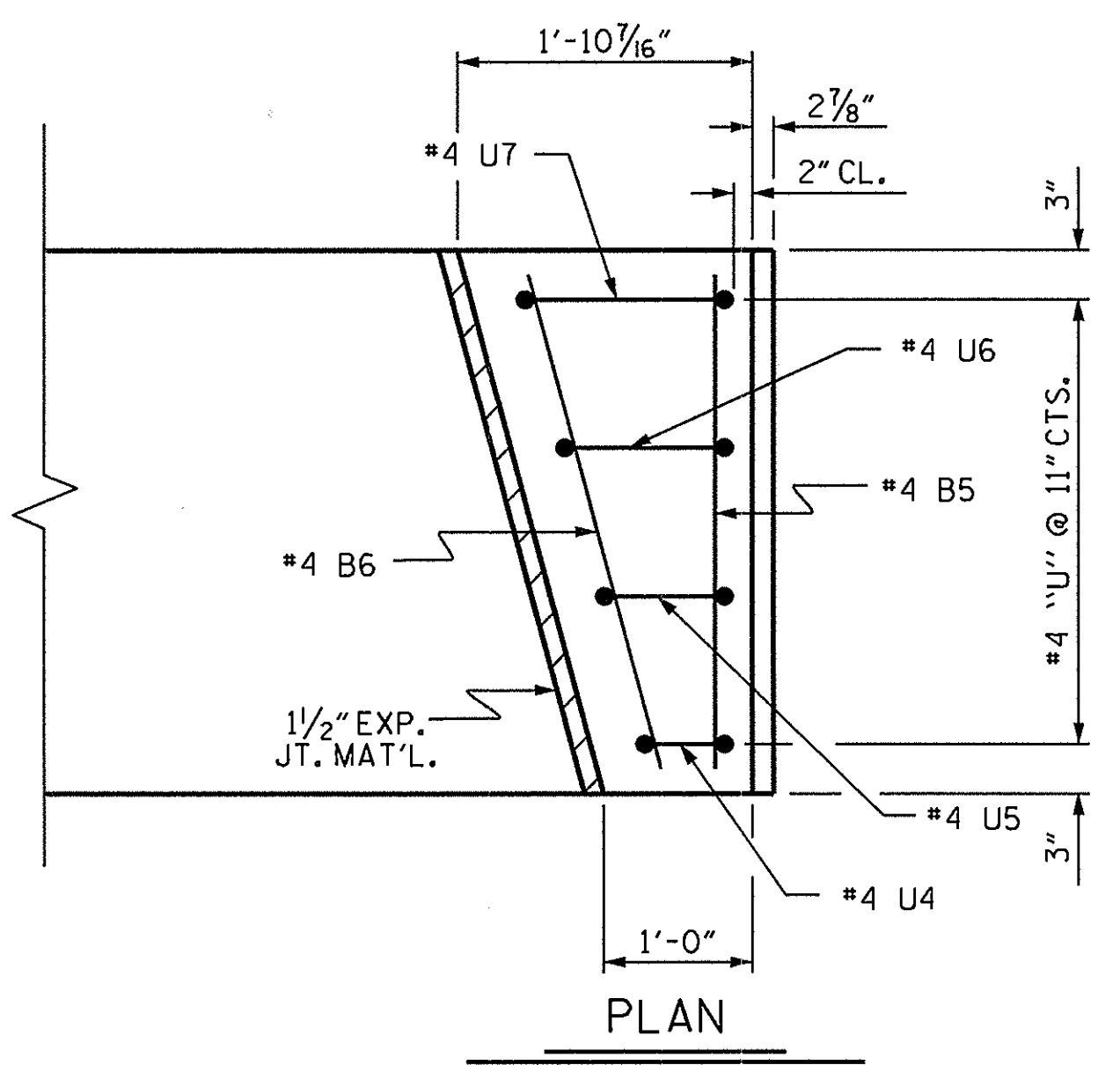
SUBSTRUCTURE
 BENT No. 1



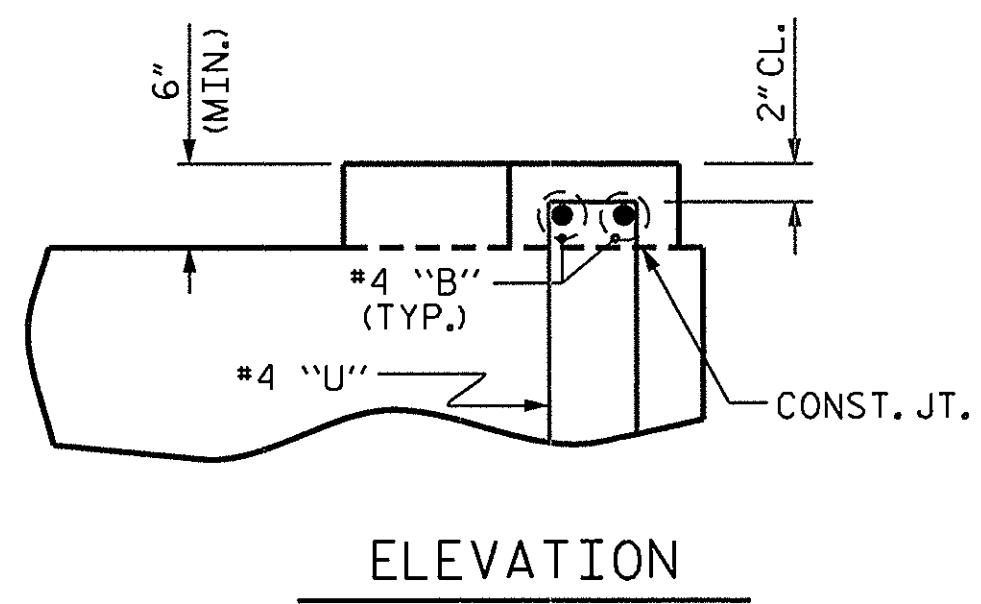
ASSEMBLED BY : M. M. AHMED DATE : 9-4-13
 CHECKED BY : KENAN EZZARD DATE : 9-29-13
 DRAWN BY : DGE 5/10
 CHECKED BY : MKT 5/10

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

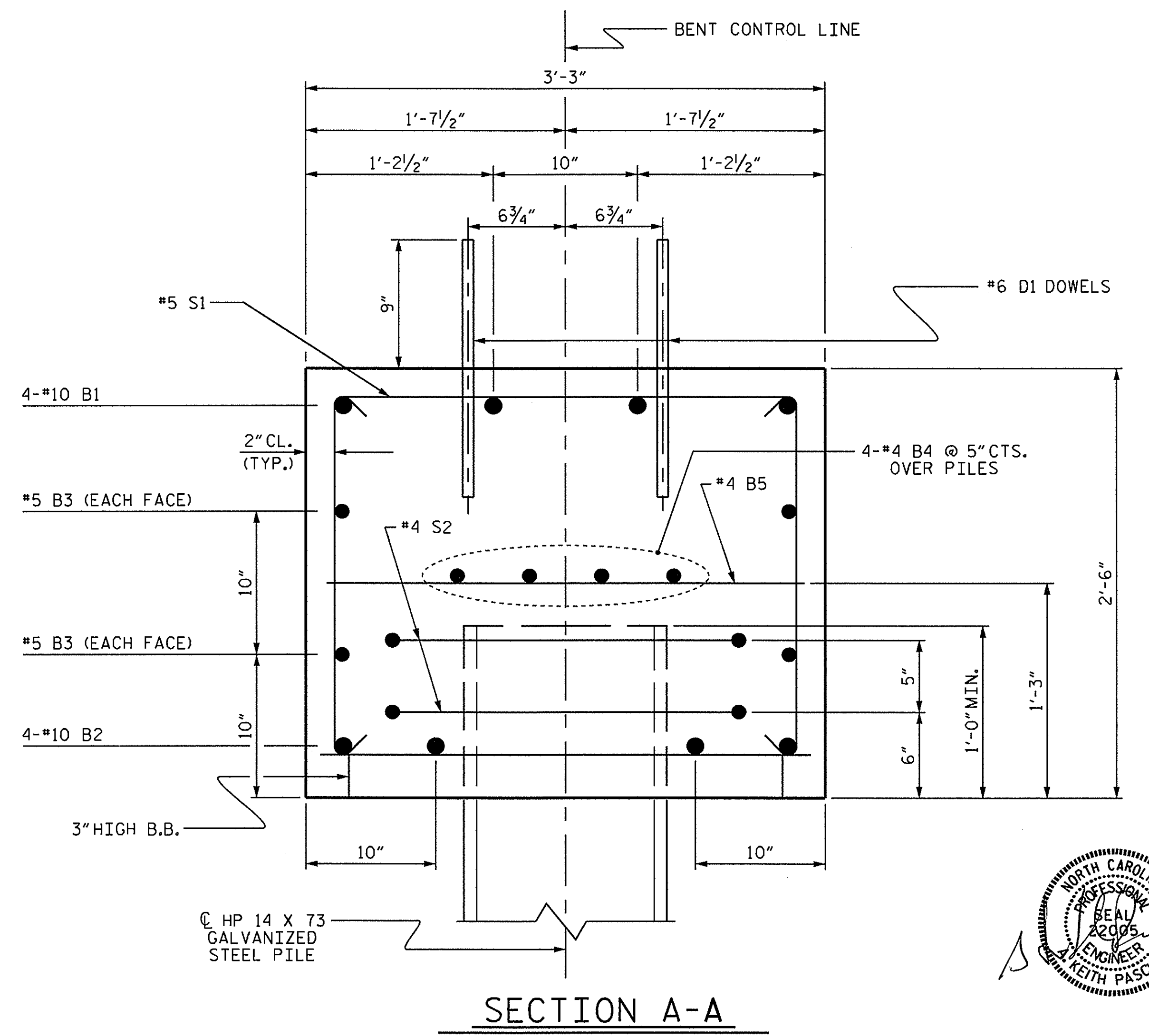
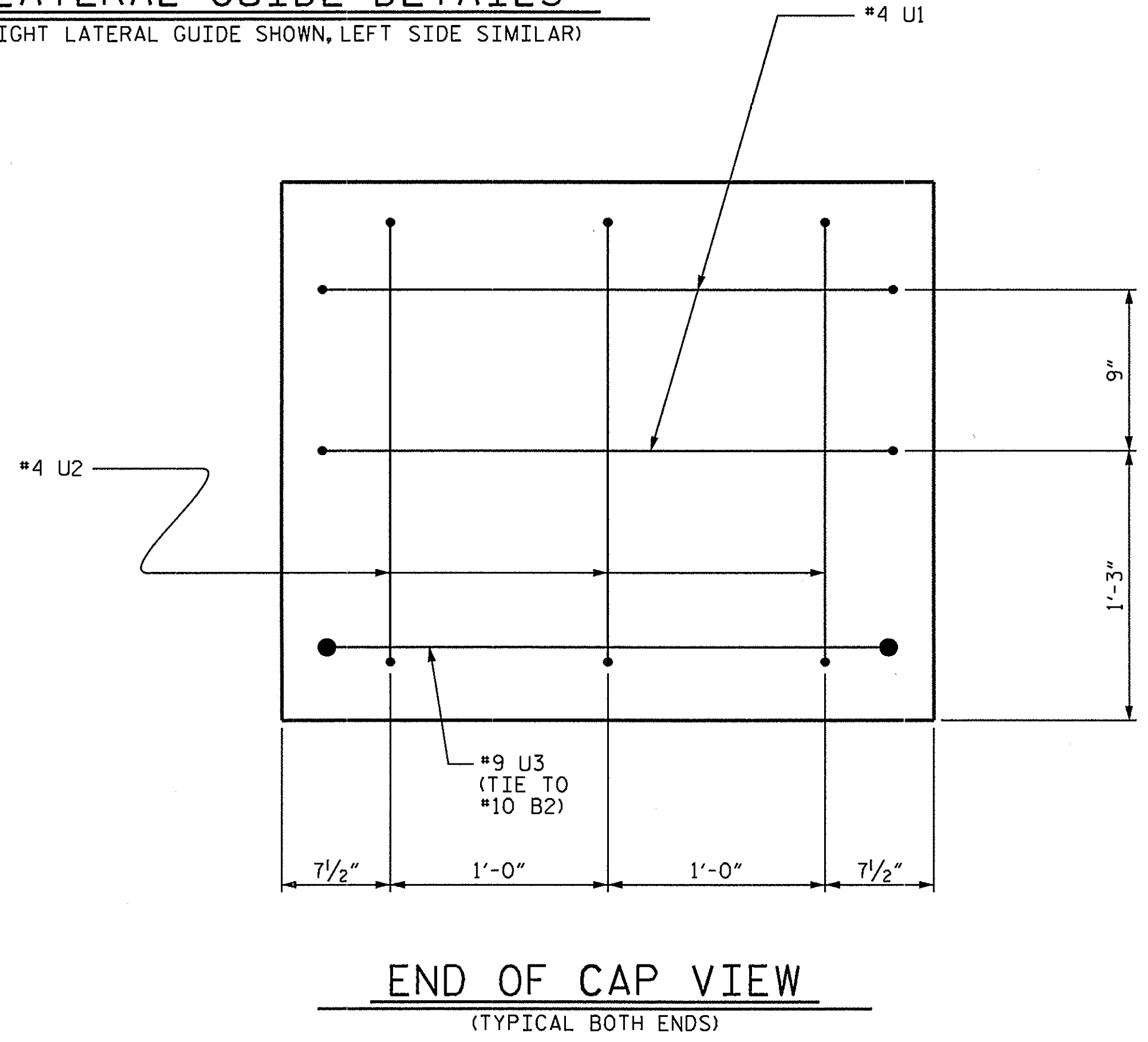
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 kpaschal



BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-0"	637
B2	4	#10	STR	34'-4"	591
B3	4	#5	STR	34'-4"	143
B4	8	#4	STR	18'-5"	98
B5	11	#4	STR	2'-11"	21
B6	2	#4	STR	3'-0"	4
D1	40	#6	STR	1'-6"	90
S1	38	#5	2	8'-1"	320
S2	14	#4	3	7'-7"	71
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	2	#4	4	3'-8"	5
U5	2	#4	4	3'-11"	5
U6	2	#4	4	4'-2"	6
U7	2	#4	4	4'-5"	6
REINFORCING STEEL (FOR ONE BENT)					2102 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #1 (CAP)				10.4 C.Y.	
POUR #2 (LATERAL GUIDES)				0.2 C.Y.	
TOTAL CLASS A CONCRETE				10.6 C.Y.	
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 7				525.0 LIN. FT.	
PILE REDRIVES				4 EA.	
STEEL PILE POINTS				7 EA.	



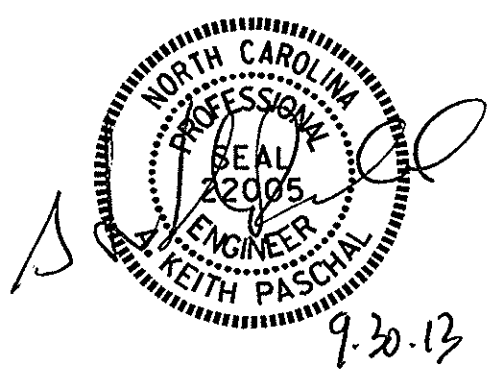
LATERAL GUIDE DETAILS
(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)



PROJECT NO. BD-5102T
GREENE COUNTY
STATION: 14+82.50 -L-
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

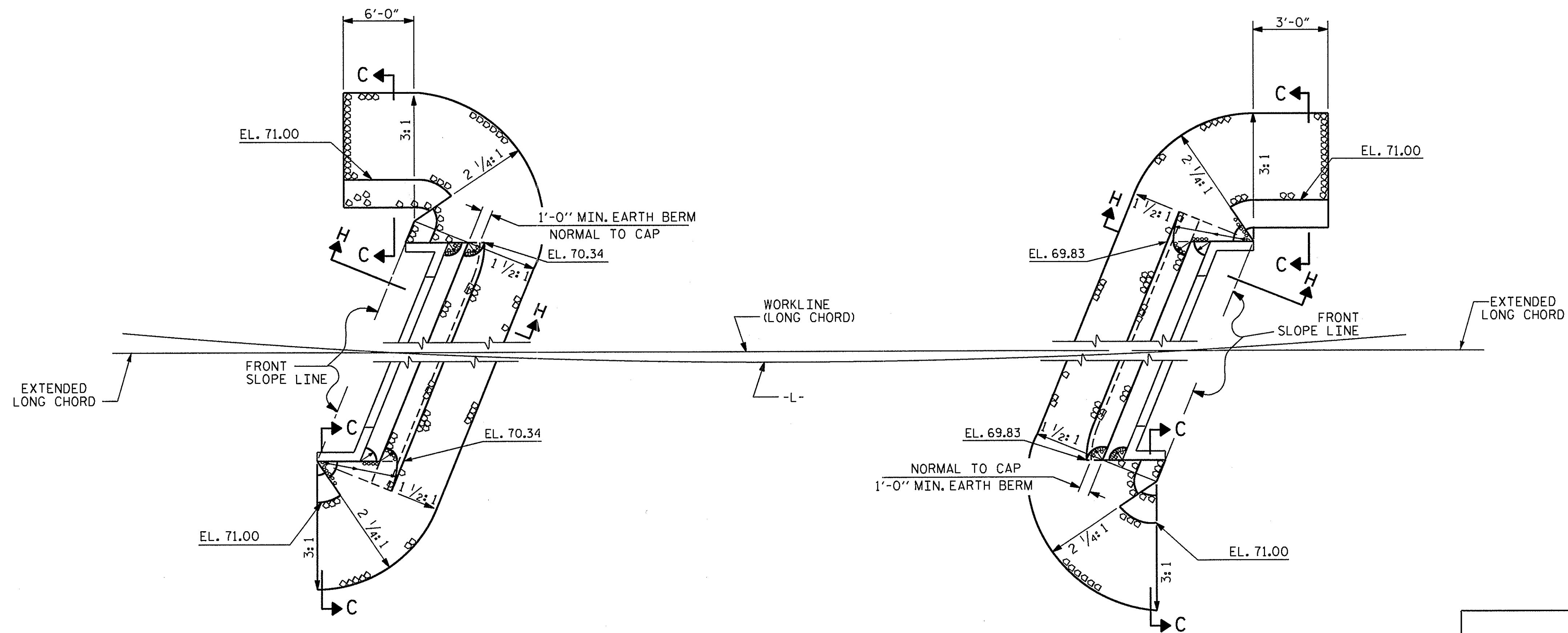
SUBSTRUCTURE
BENT No. 1



DRAWN BY: M. M. AHMED DATE: 9-4-13
CHECKED BY: KENAN EZZARD DATE: 9-29-13
DRAWN BY: DGE 05/10
CHECKED BY: MKT 05/10

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

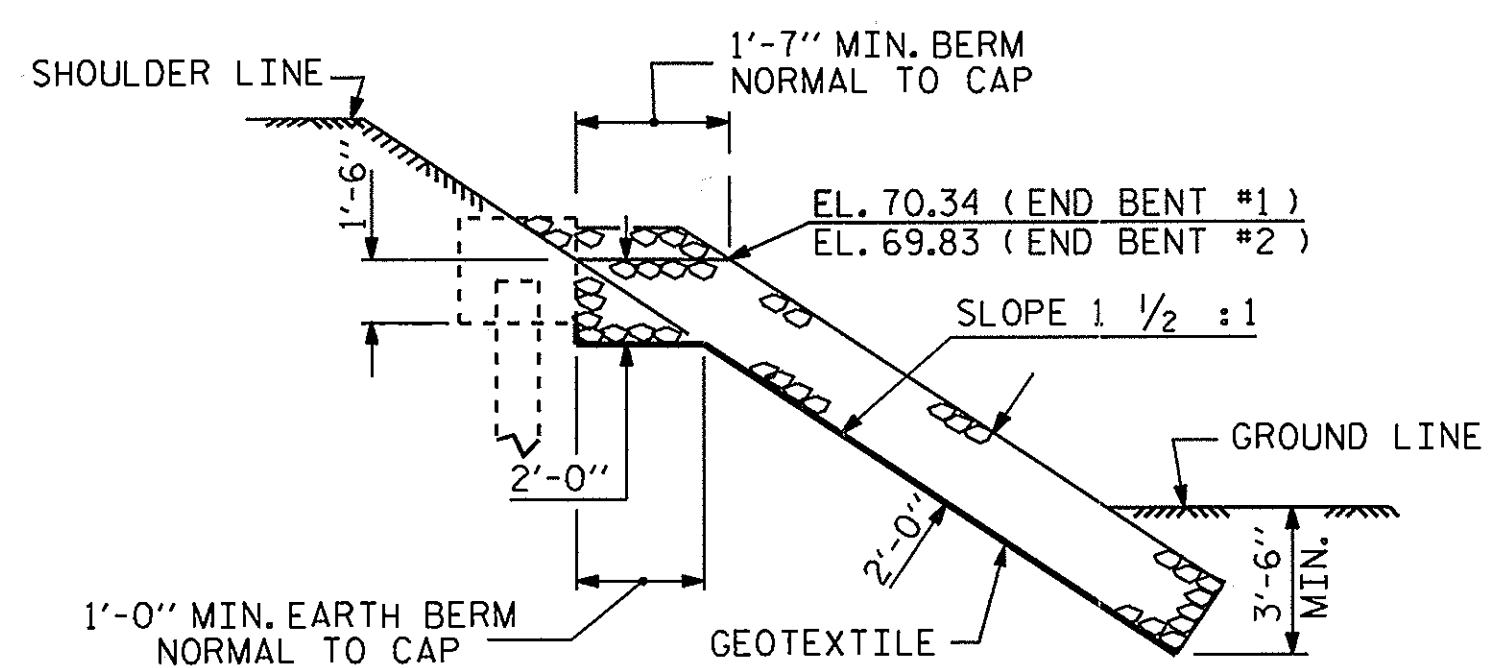
NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



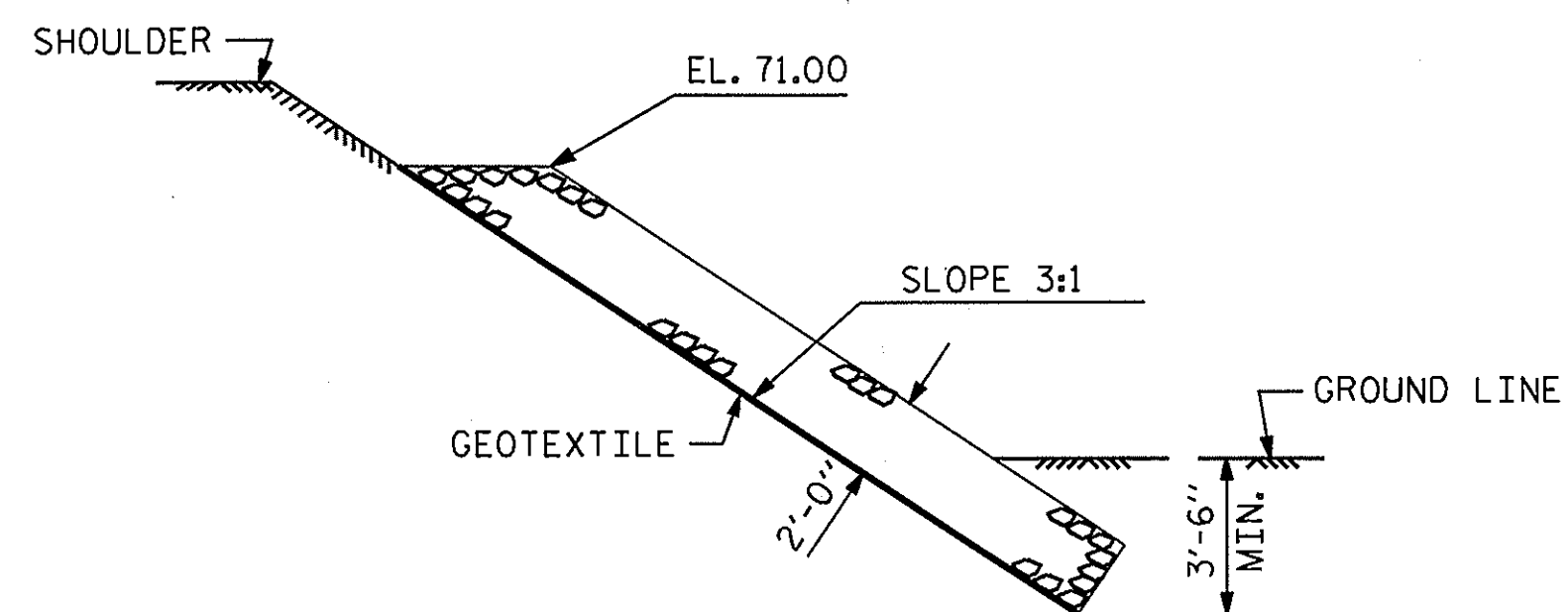
END BENT 1

END BENT 2

ESTIMATED QUANTITIES		
BRIDGE @ STA. 14+82.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	75	83
END BENT 2	64	71



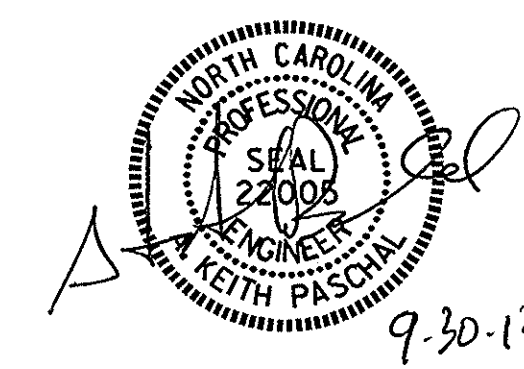
SECTION H-H



SECTION C-C

PROJECT NO. BD-5102T
GREENE COUNTY
STATION: 14+82.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
= RIP RAP DETAILS =



ASSEMBLED BY : M. M. AHMED DATE : 7-16-13
CHECKED BY : KENAN EZZARD DATE : 7-29-13
DRAWN BY : REK 1/84 REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84 REV. 10/1/11 MAA/GM
REV. 12/21/11 MAA/GM

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

NOTES

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

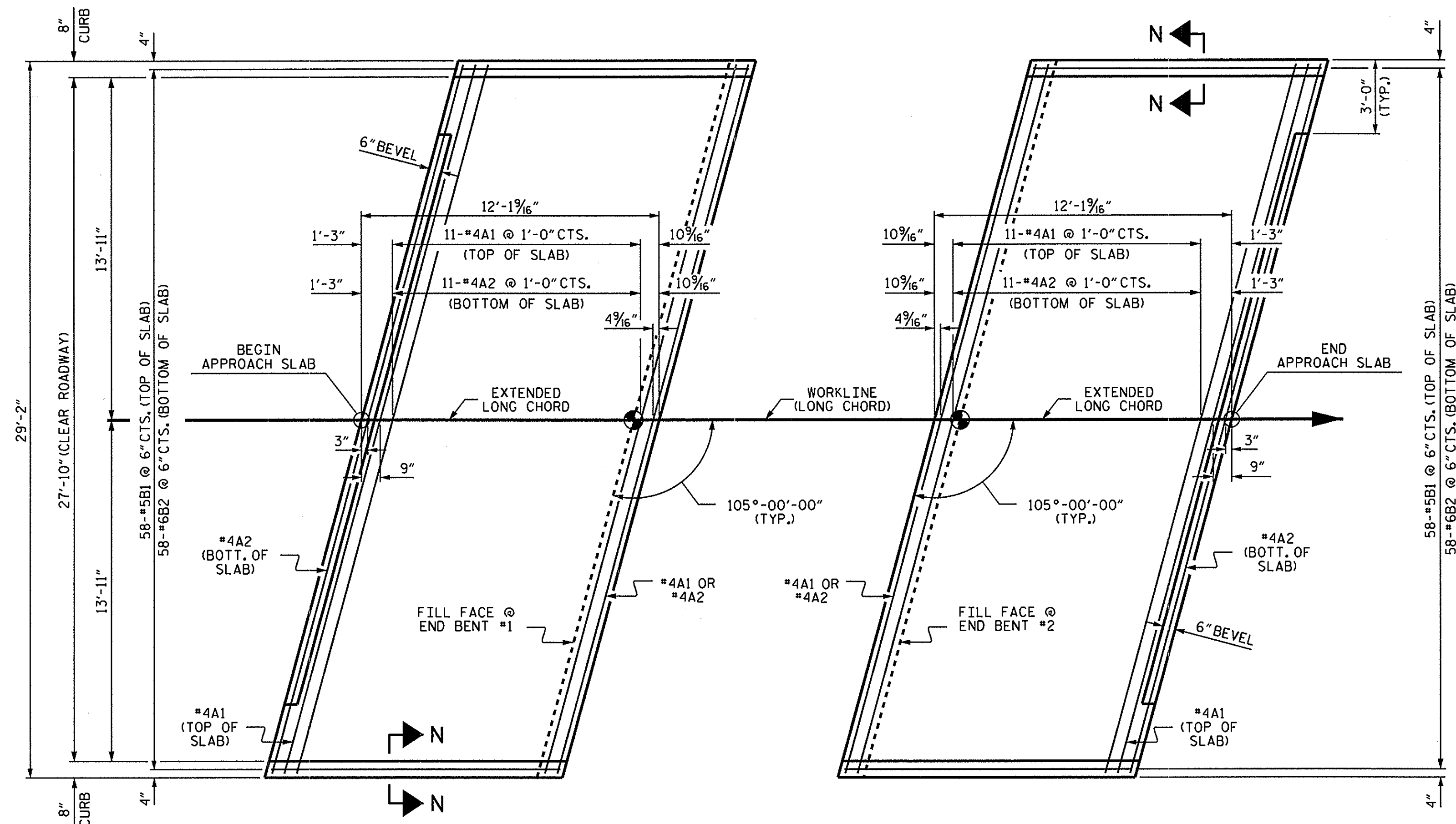
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED, SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

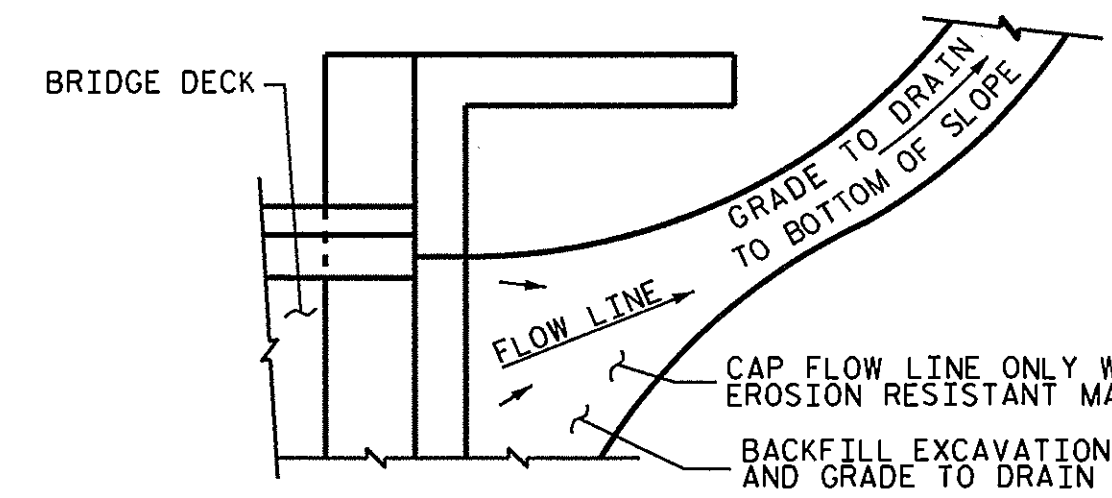
BILL OF MATERIAL

APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	29'-10"	259
A2	13	#4	STR	29'-10"	259
*B1	58	#5	STR	11'-1"	670
B2	58	#6	STR	11'-7"	1009
REINFORCING STEEL				LBS.	1268
* EPOXY COATED REINFORCING STEEL				LBS.	929
CLASS AA CONCRETE				C. Y.	18.2

APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	29'-10"	259
A2	13	#4	STR	29'-10"	259
*B1	58	#5	STR	11'-1"	670
B2	58	#6	STR	11'-7"	1009
REINFORCING STEEL				LBS.	1268
* EPOXY COATED REINFORCING STEEL				LBS.	929
CLASS AA CONCRETE				C. Y.	18.2

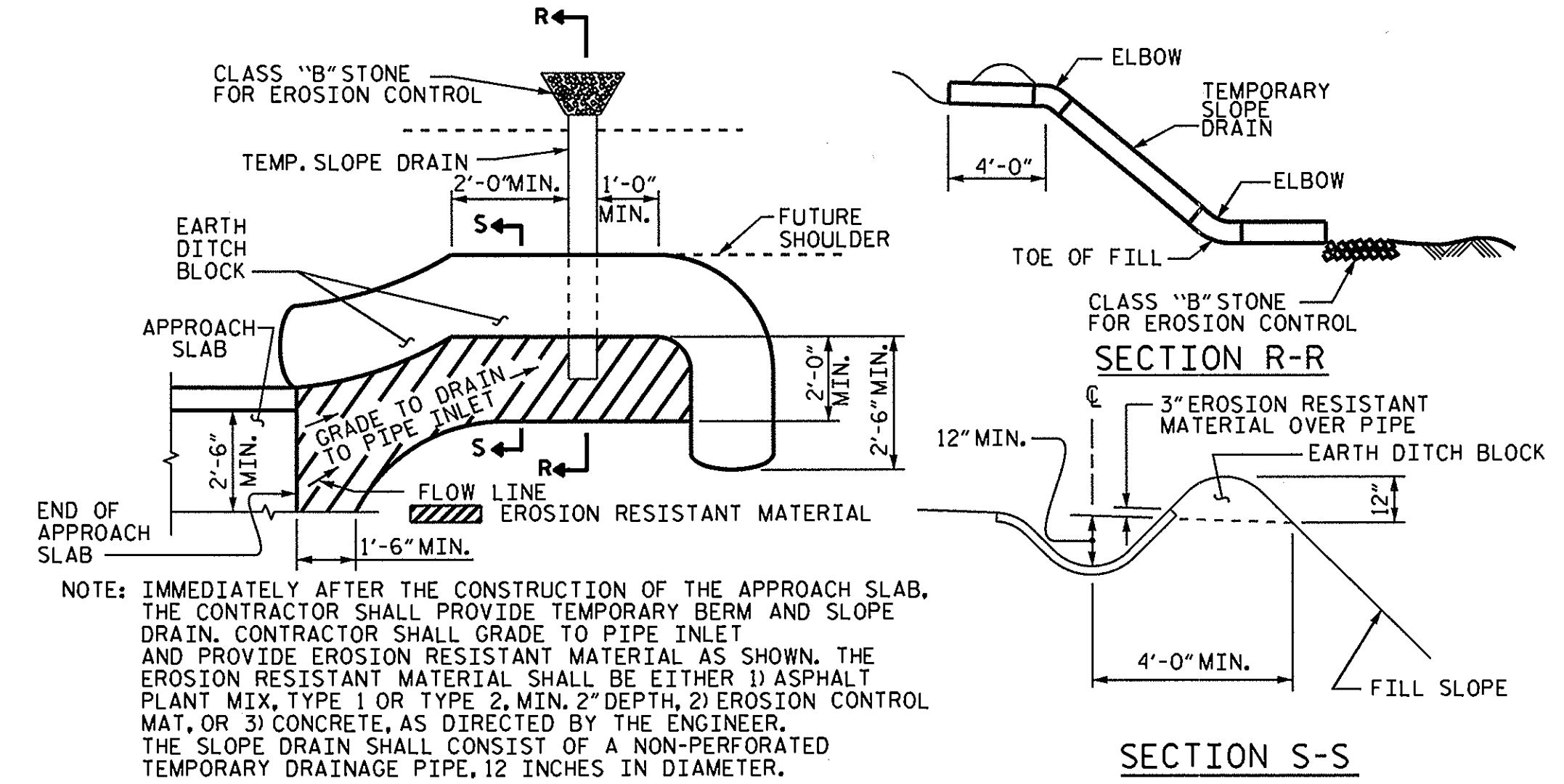


PLAN @ END BENT #1 **PLAN @ END BENT #2**
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



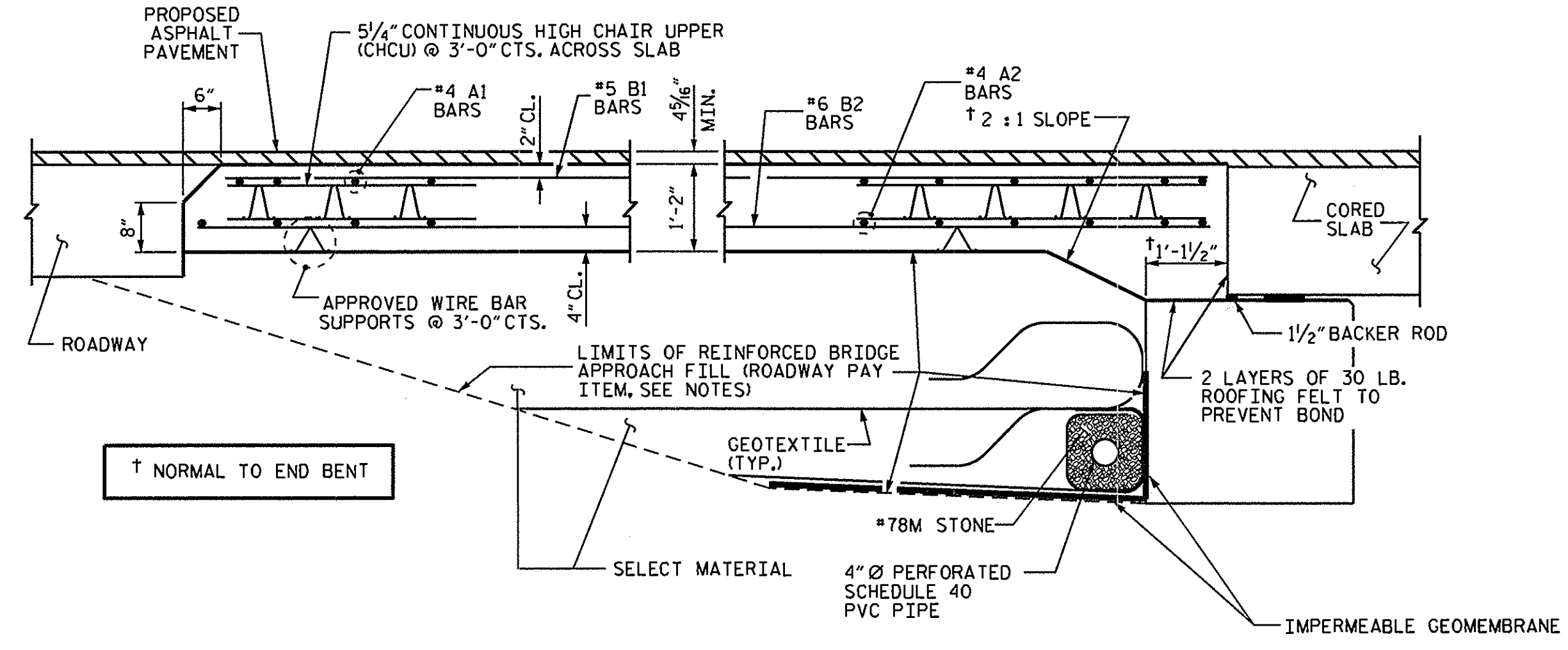
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

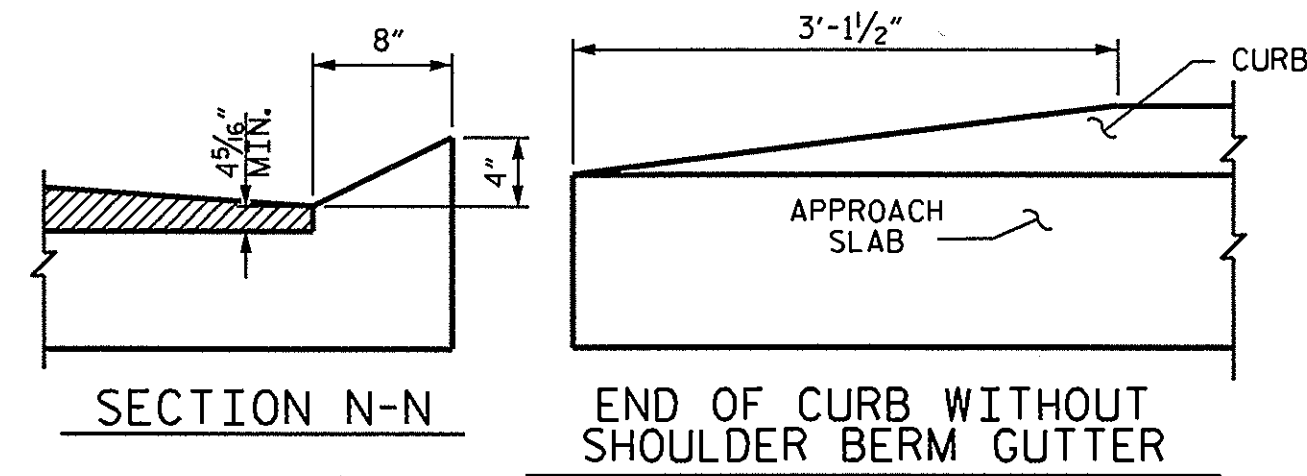


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

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

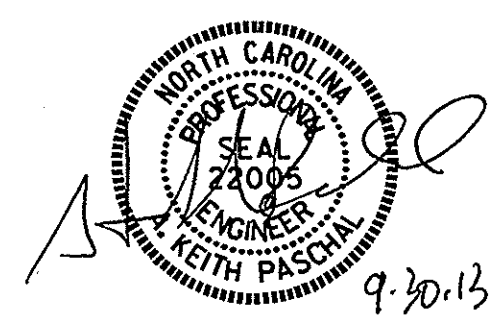


SECTION THRU SLAB



CURB DETAILS

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



PROJECT NO. BD-5102T
GREENE COUNTY
STATION: 14+82.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT					
105° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

ASSEMBLED BY: M. M. AHMED DATE: 7-11-13
CHECKED BY: KENAN EZZARD DATE: 7-29-13
DRAWN BY: SHS/MAA 5-09 REV. 12-11 MAA/AAC
CHECKED BY: BCH 5-09

09/08/99

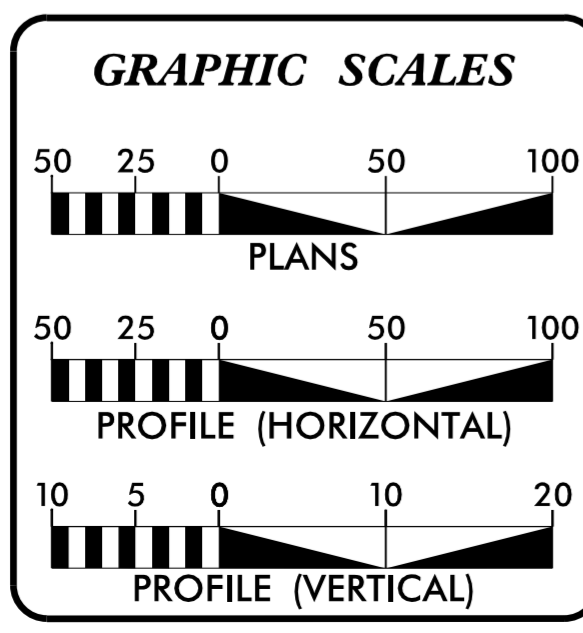
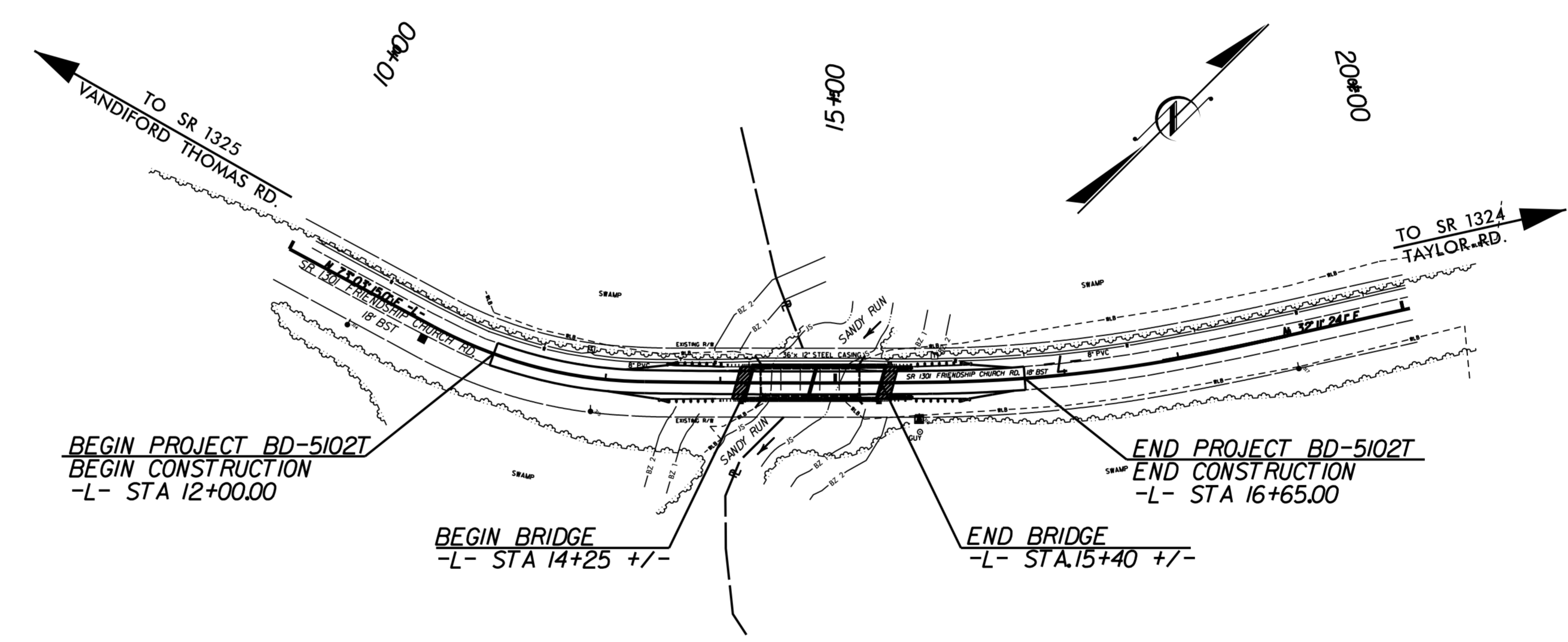
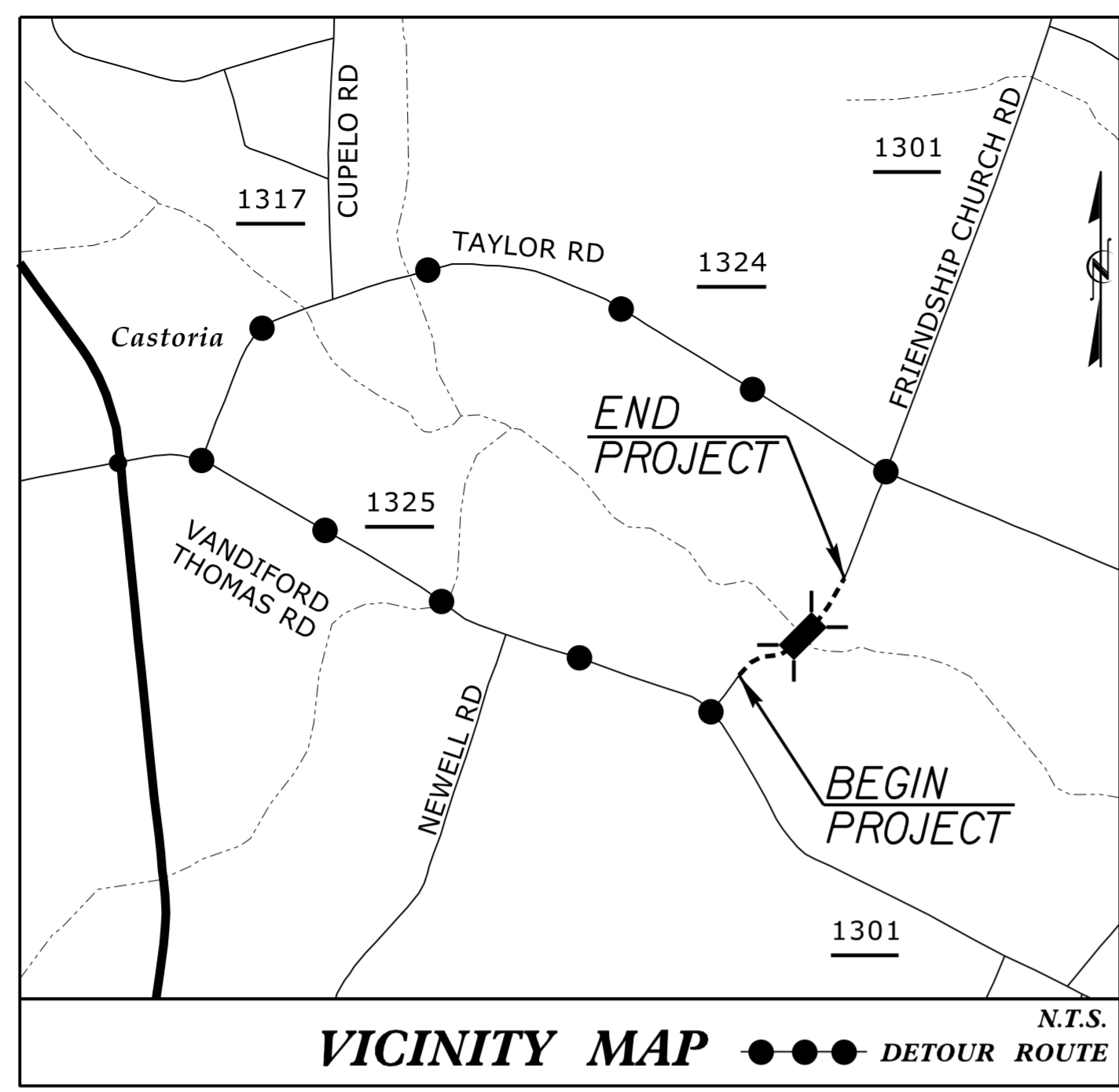
TIP PROJECT: BD-5102T

T.I.P. NO.	SHEET NO.
BD-5102T	UO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
GREENE COUNTY**

**LOCATION: BRIDGE NO. 008 OVER SANDY RUN
ON SR 1301 (FRIENDSHIP CHURCH RD.)**
TYPE OF WORK: UTILITY BY OTHERS RELOCATION



INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(1) POWER - PITT & GREENE EMC

UTILITY DESIGN BY:
MA Engineering
CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919 297 0220 Fax: 919 297 0221

NCDOT PROJECT ENGINEER:
MARIA ROGERSON, P.E.

PREPARED FOR:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION BRIDGE PROGRAM

10/3/2013
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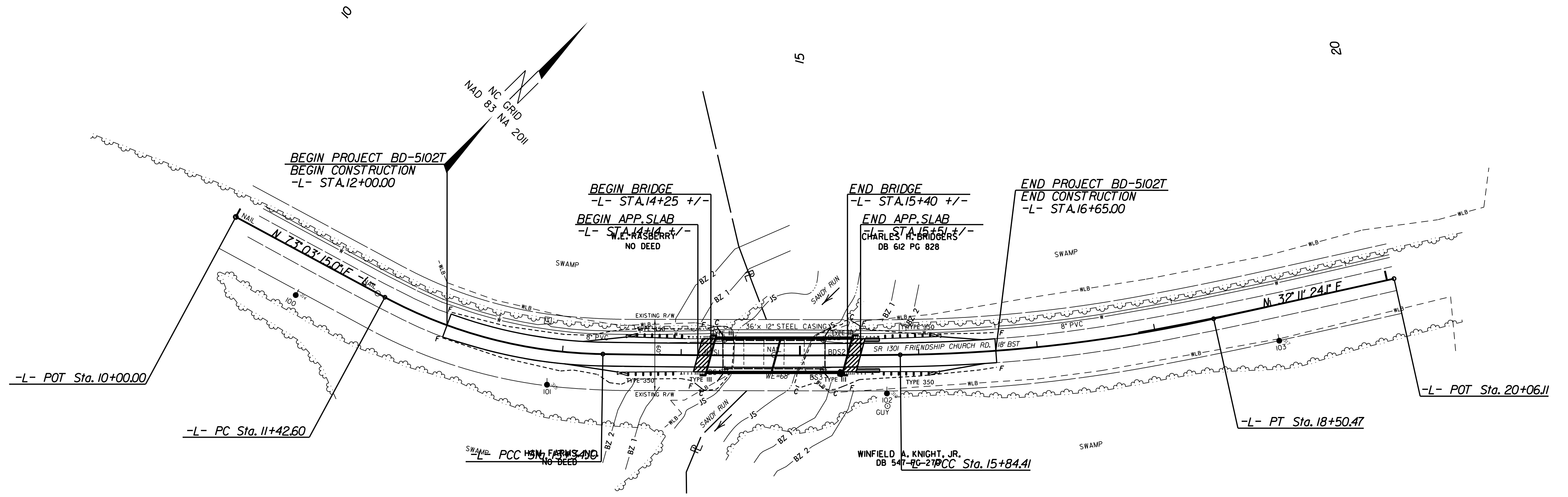
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

MA Engineering
CONSULTANTS, INC. 598 E. Chatham Street,
Suite 137
Cary, N. C. 27511

NOTES:

1. PITT & GREENE EMC WILL BACK FEED DURING CONSTRUCTION.
2. WATER LINE OWNED BY GREENE COUNTY WATER IS NOT EXPECTED TO BE IN CONFLICT BUT SHALL BE LOCATED BY CONTRACTOR.



5/14/99
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