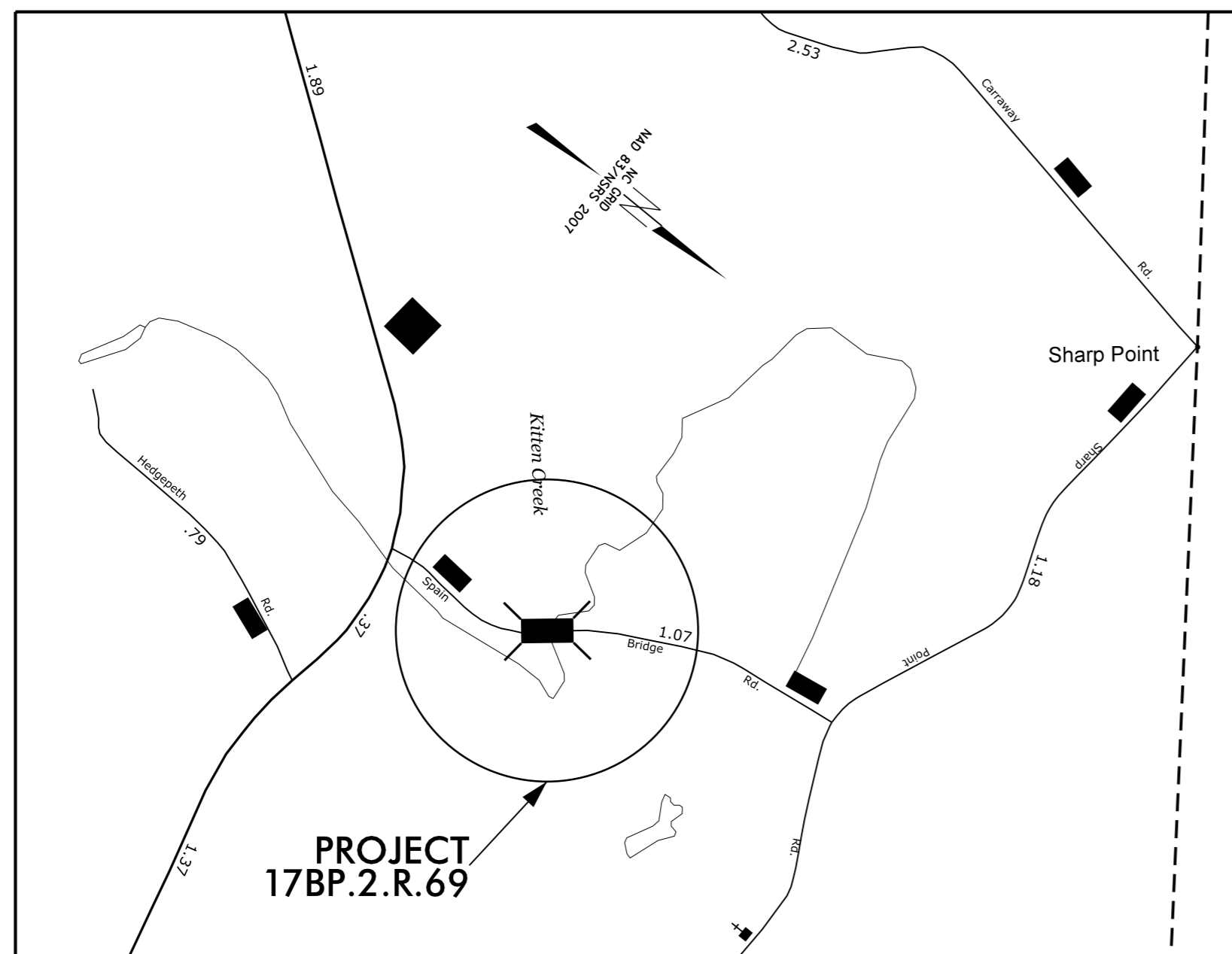


09/08/99

PROJECT: 17BP.2.R.69

CONTRACT: DB00348



PROJECT 17BP.2.R.69

See Sheet 1-A For Index of Sheets

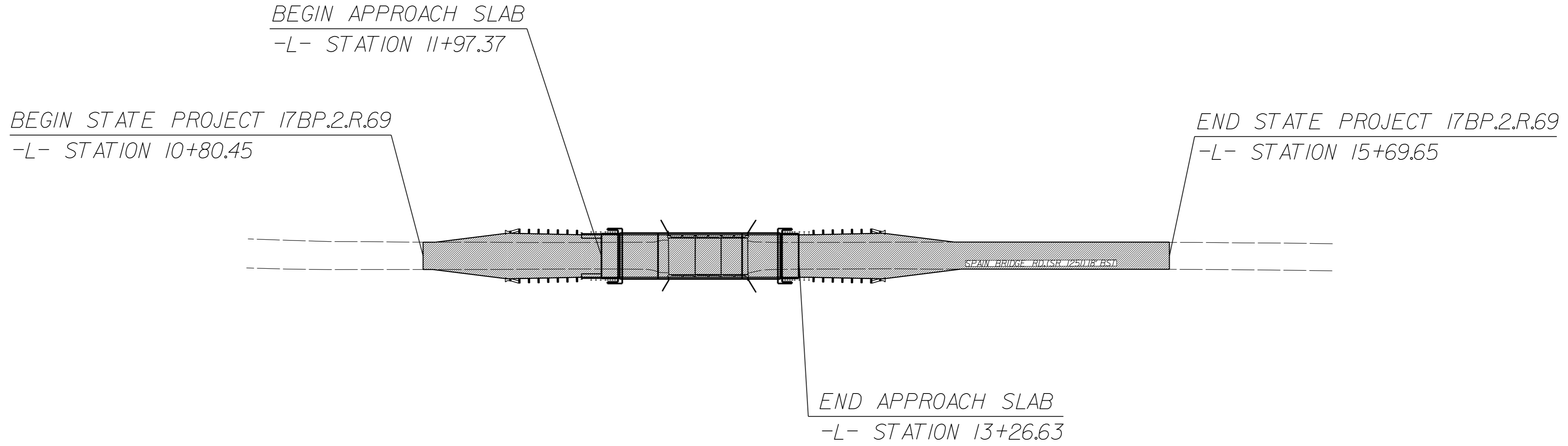
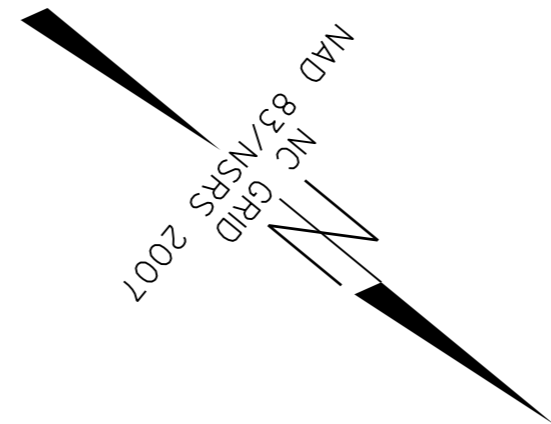
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PITT COUNTY**

**LOCATION: BRIDGE 86 OVER KITTEN CREEK ON SR 1251  
0.7 MILES SOUTH OF JUNCTION WITH SR 1250**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.69	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



**GRAPHIC SCALES**

50 25 0 50 100  
PLANS

50 25 0 50 100  
PROFILE (HORIZONTAL)

10 5 0 10 20  
PROFILE (VERTICAL)

**DESIGN DATA**

ADT 2013 = 140  
ADT 2038 = 200  
DHV = 10 %  
D = 50 %  
T = 2 % \*

STATUTORY = 55 MPH  
ADVISORY = 35 MPH

\* TTST = 1% DUAL 1%  
SUB REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF STATE PROJECT 17BP.2.R.69 = 0.068 MILE  
LENGTH STRUCTURE STATE PROJECT 17BP.2.R.69 = 0.025 MILE  
TOTAL LENGTH STATE PROJECT 17BP.2.R.69 = 0.093 MILE

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1704 N. Greene St., Greenville NC, 27834

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 2016  
LETTING DATE: APRIL 2017

WILLIAM KINCANNON  
PROJECT ENGINEER

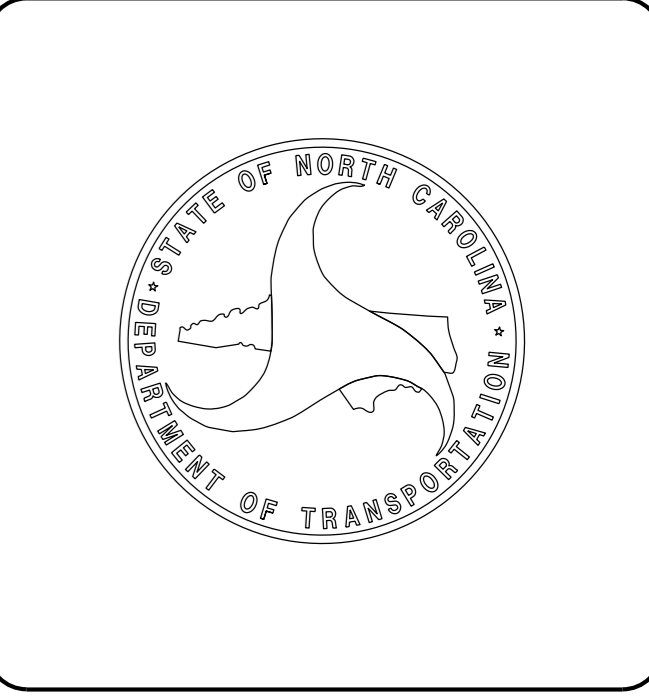
LANG JONES  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

DocuSigned by:  
William C. Kincannon 3/20/2017 P.E.  
SIGNATURE

**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
William C. Kincannon 3/20/2017 P.E.  
SIGNATURE



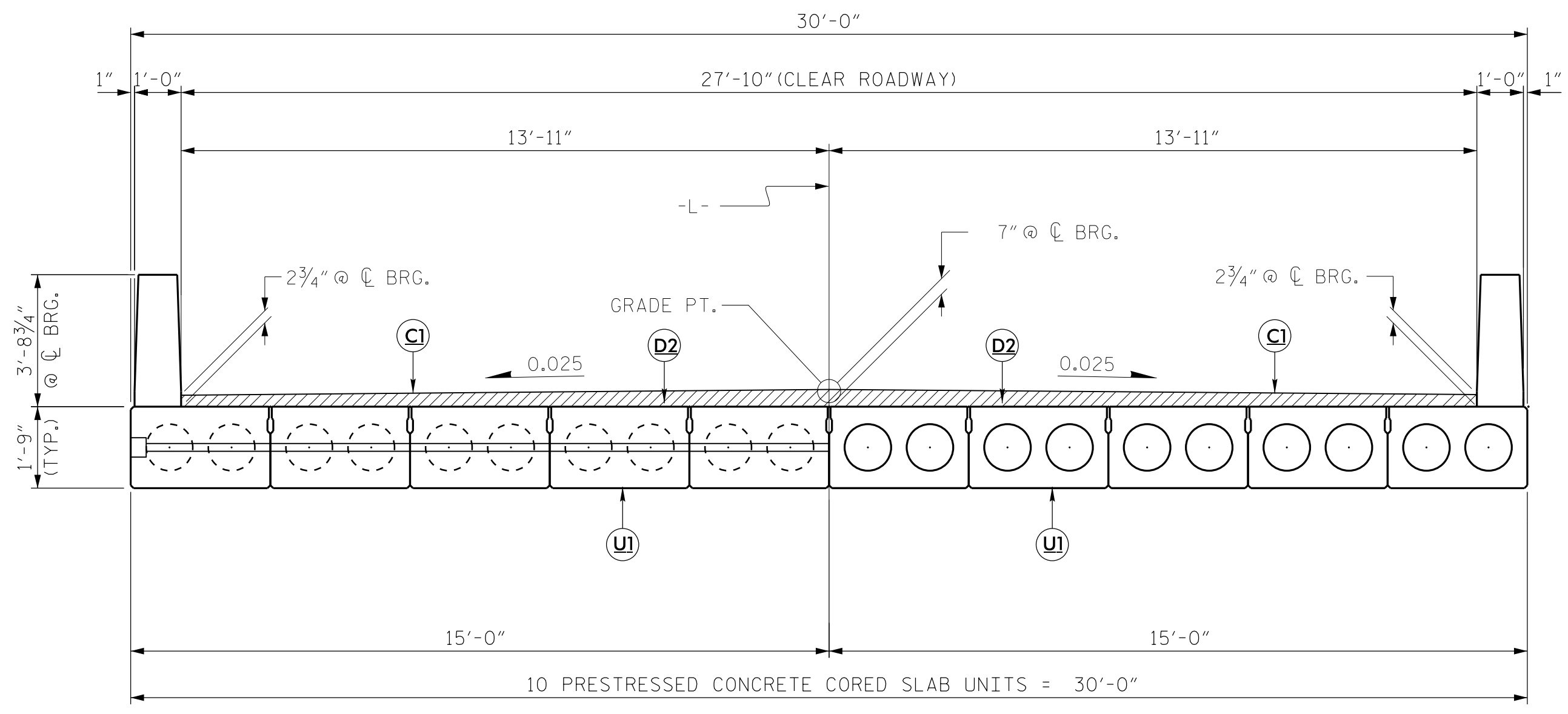
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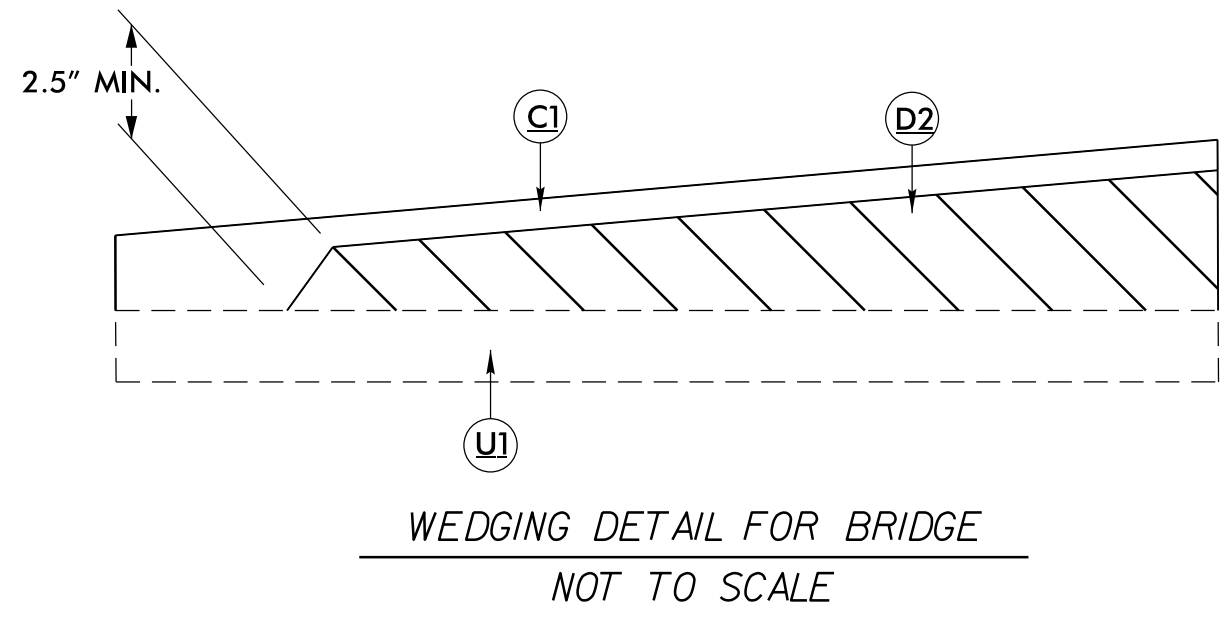


<b>C1</b>	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
<b>D1</b>	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
<b>D2</b>	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B.
<b>E1</b>	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
<b>T</b>	EARTH MATERIAL.
<b>U</b>	EXISTING PAVEMENT.
<b>U1</b>	CONCRETE CORED SLABS

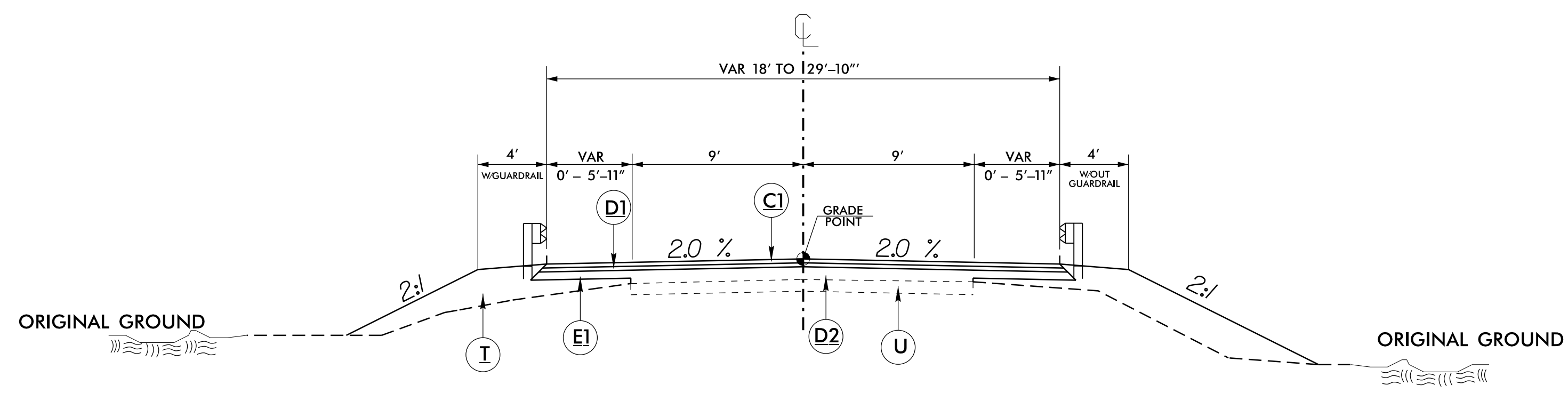
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



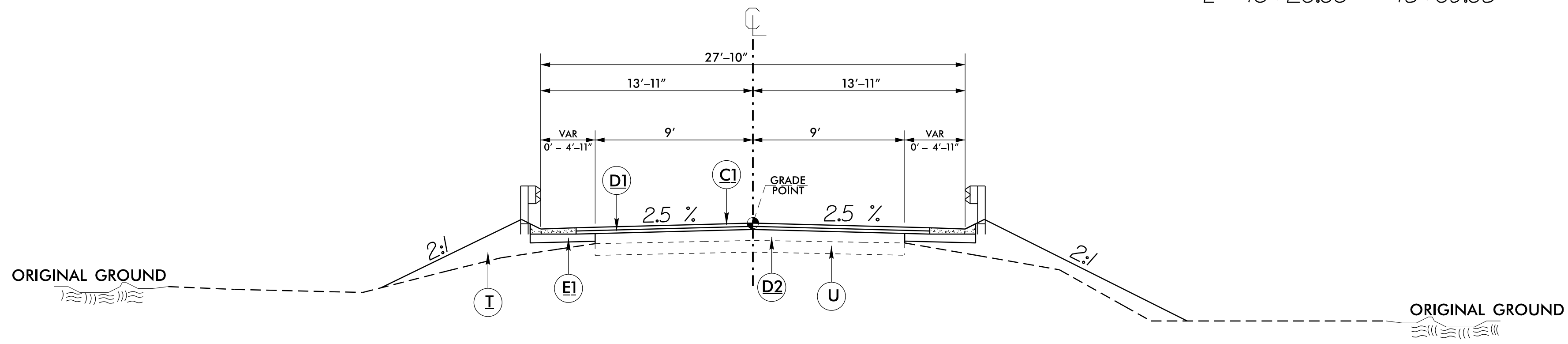
TYPICAL BRIDGE SECTION (NTS)  
-L- STA. 12+62.00



WEDGING DETAIL FOR BRIDGE  
NOT TO SCALE



USE TYPICAL SECTION #1 (NTS)  
-L- 10+80.45 - 11+84.37  
-L- 13+26.63 - 15+69.65



USE TYPICAL SECTION #2 (NTS)  
-L- 11+84.37 - 11+97.37

REVISIONS

8/17/99

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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
SUMMARY OF QUANTITIES

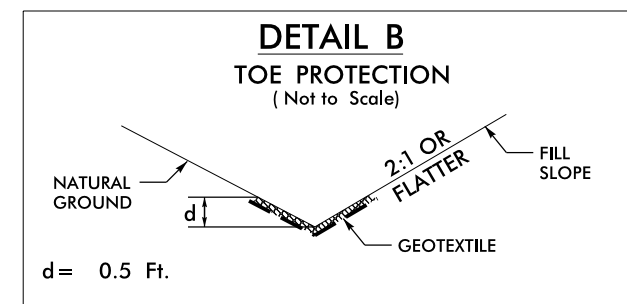
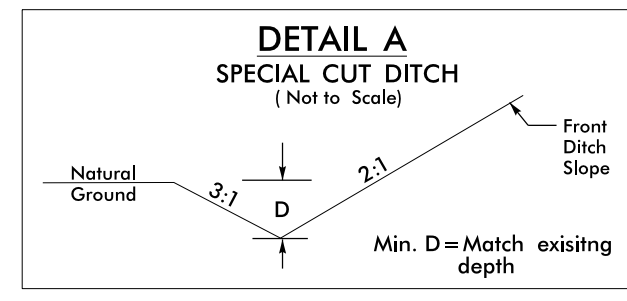
ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION	ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION
1	800	1	LS	MOBILIZATION	31	SP	100	LF	WATTLE
2	801	1	LS	CONSTRUCTION SURVEYING	32	SP	5	LB	POLYACRYLAMIDE (PAM)
3	SP	1	LS	REINFORCED BRIDGE APPROACH FILL, -L- STA 12+62.00	33	1660	1	ACR	SEEDING AND MULCHING
4	226	1	LS	GRADING	34	1661	50	LB	SEED FOR REPAIR SEEDING
5	226	100	CY	UNDERCUT EXCAVATION	35	1661	0.2	TON	FERTILIZER FOR REPAIR SEEDING
6	300	10	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES					
7	300	20	SY	FOUNDATION CONDITIONING GEOTEXTILE					
8	310	40	LF	18" RC PIPE CULVERTS, CLASS III					
9	610	420	TON	ASPHALT CONCRETE BASE COURSE, TYPE B25.0B					
10	610	255	TON	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B					
11	610	245	TON	ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	36	402	1	LS	REMOVAL OF EXISTING STRUCTURE AT -L- STA 12+62.00
12	620	50	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG64-22	37	SP	2	EA	PDA TESTING
13	840	2	EA	MASONRY DRAINAGE STRUCTURES	38	412	1	LS	UNCLASSIFIED STRUCTURE EXCAVATION
14	840	2	EA	FRAME WITH GRATE, STD 840.29	39	420	59.6	CY	CLASS A CONCRETE (BRIDGE)
15	846	26	LF	SHOULDER BERM GUTTER	40	422	1	LS	BRIDGE APPROACH SLABS
16	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	41	425	8764	LB	REINFORCING STEEL (BRIDGE)
17	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	42	450	510	LF	HP 12 X 53 STEEL PILES
18	862	25	LF	STEEL BM GUARDRAIL	43	450	910	LF	HP 14 X 73 STEEL PILES
19	876	20	TON	RIP RAP, CLASS B	44	450	14	EA	PILE REDRIVES
20	1605	550	LF	TEMPORARY SILT FENCE	45	SP	210.5	LF	VERTICAL CONCRETE BARRIER RAIL
21	1610	10	TON	STONE FOR EROSION CONTROL, CLASS B	46	876	265	TON	RIP RAP, CLASS II (2'-0" THICK)
22	1610	1	TON	SEDIMENT CONTROL STONE	47	876	315	SY	GEOTEXTILE FOR DRAINAGE
23	1615	1	ACRE	TEMPORARY MULCHING	48	430	1	LS	ELASTOMETRIC BEARINGS
24	1620	50	LB	SEED FOR TEMPORARY SEEDING	48	430	1050	LF	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS
25	1620	0.2	TON	FERTILIZER FOR TEMPORARY SEEDING	49	SP	1	LS	ASBESTOS ASSESSMENT
26	SP	100	LF	SAFETY FENCE					
27	1630	6	CY	SILT EXCAVATION					
28	1631	560	SY	MATTING FOR EROSION CONTROL					
29	1632	60	LF	1/4" HARDWARE CLOTH					
30	SP	50	SY	FLOATING TURBIDITY CURTAIN					

REVISIONS

8/17/99

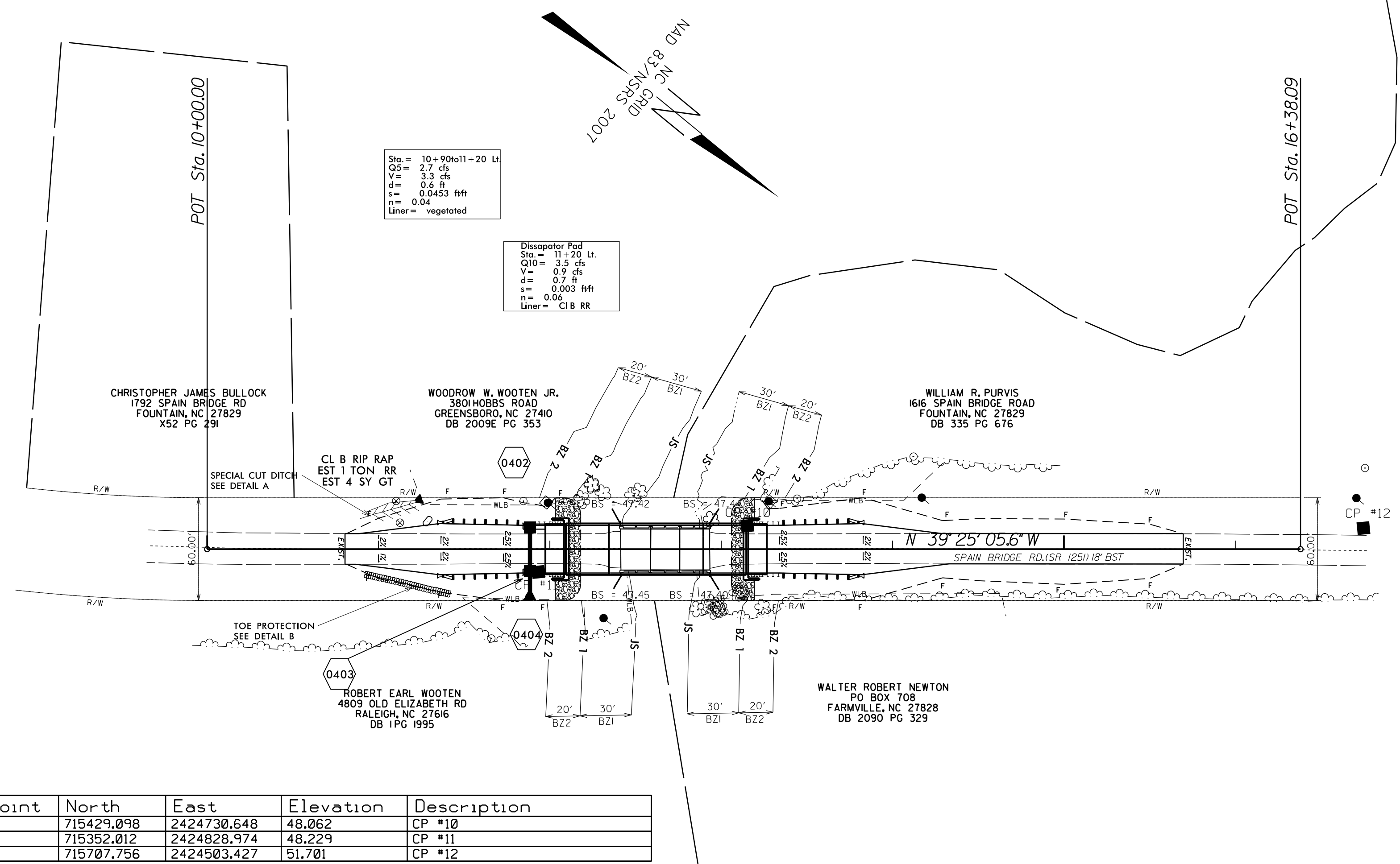
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Sta. = 10+90 to 11+20 Lt.  
Q5 = 2.7 cfs  
V = 3.3 cfs  
d = 0.6 ft  
s = 0.0453 f/ft  
n = 0.04  
Liner = vegetated

Dissipator Pad  
Sta. = 11+20 Lt.  
Q10 = 3.5 cfs  
V = 0.9 cfs  
d = 0.7 ft  
s = 0.003 f/ft  
n = 0.06  
Liner = C1B RR



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "CP #10" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 715429.098(±ft) EASTING: 2424730.648(±ft) ELEVATION: 48.062(±ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999073901

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CP #10" TO -L- STATION 10+00 IS S 41° 54' 30" E 315.56'

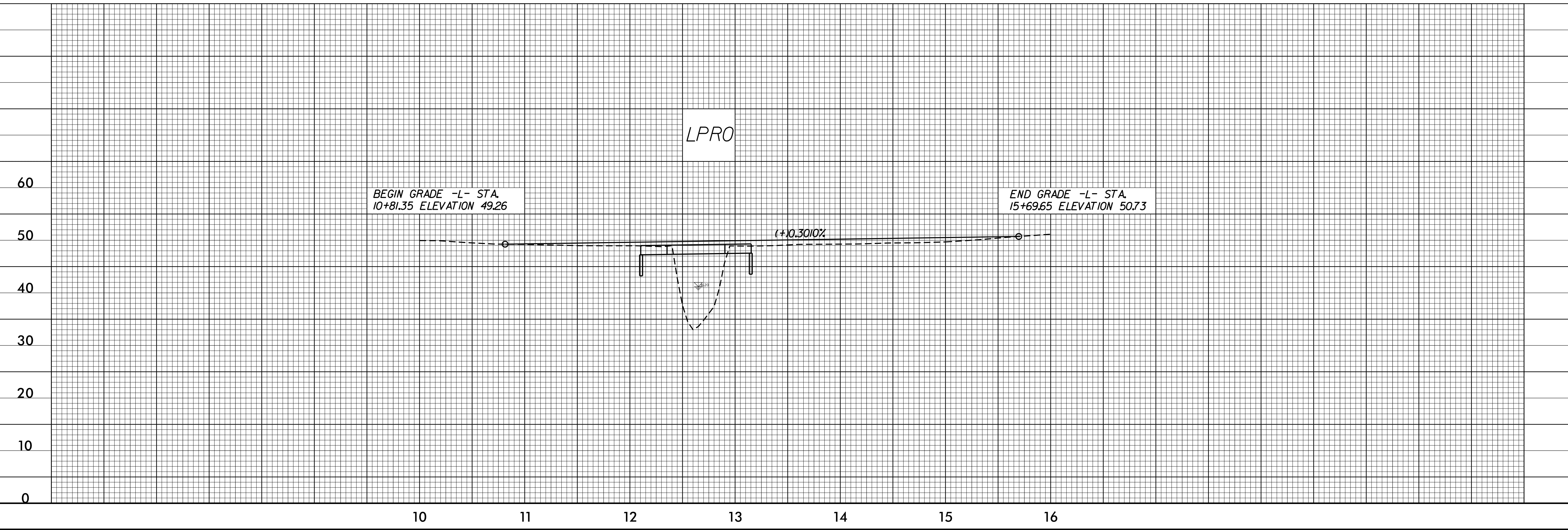
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Point	North	East	Elevation	Description
10	715429.098	2424730.648	48.062	CP #10
11	715352.012	2424828.974	48.229	CP #11
12	715707.756	2424503.427	51.701	CP #12

REVISIONS

8/17/99

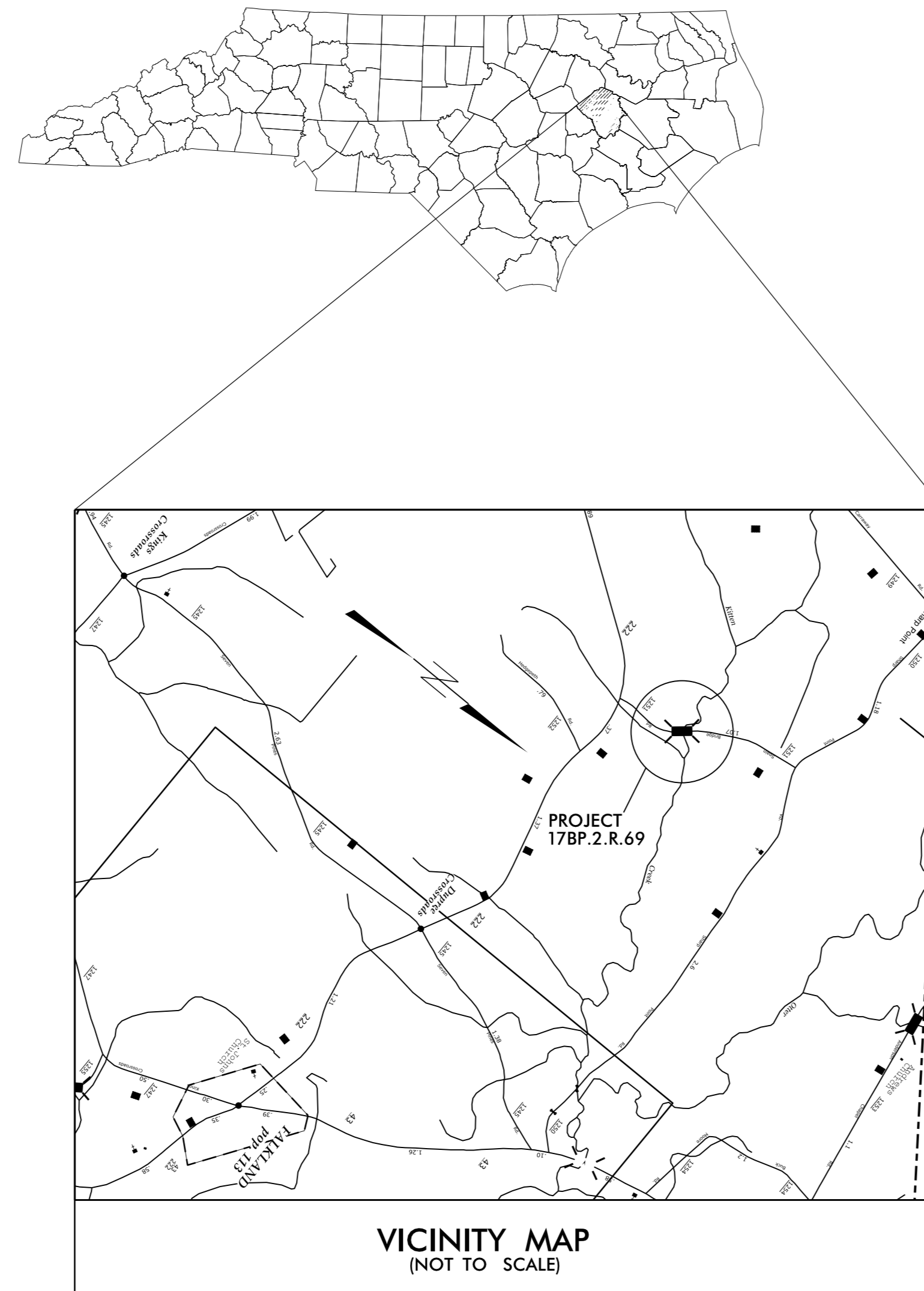
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**PITT 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	PROJECT NOTES, DETOUR AND PLANS.

**ROADWAY 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:

STD. NO.	TITLE
1101.03 (SHT. 1 OF 9)	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES (TYPE III)

**LEGEND**

**GENERAL**

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT.
- EXIST. PVMT.
- WORK AREA

**TRAFFIC CONTROL DEVICES**

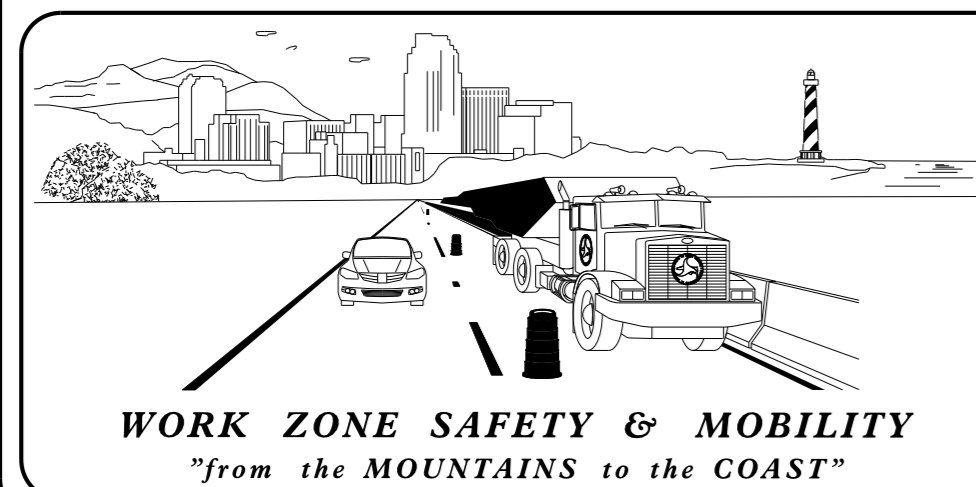
- BARRICADE (TYPE III)

SHEET NO.  
TMP-1

**17BP.2.R.69**

**STATE PROJECT:**

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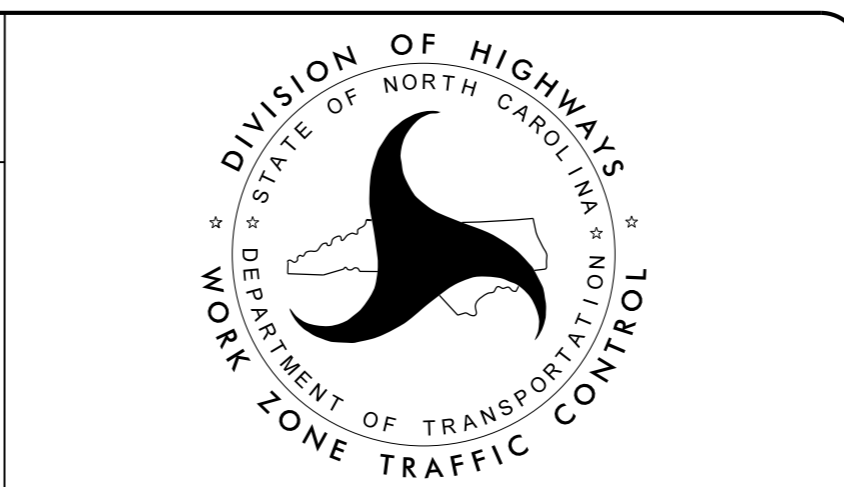
**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
P.O. BOX 1587, GREENVILLE, NC 27835  
105 PACTOLUS HWY. (NC 33), GREENVILLE, NC 27835  
PHONE: (252) 830-3490 FAX: (252) 830-3352

STEVEN HAMILTON, PE **TRAFFIC ENGINEER**

W. C. KINCANNON, PE **TRAFFIC CONTROL PROJECT ENGINEER**

W. C. KINCANNON, PE **TRAFFIC CONTROL PROJECT DESIGN ENGINEER**

LANG JONES **TRAFFIC CONTROL DESIGN ENGINEER**



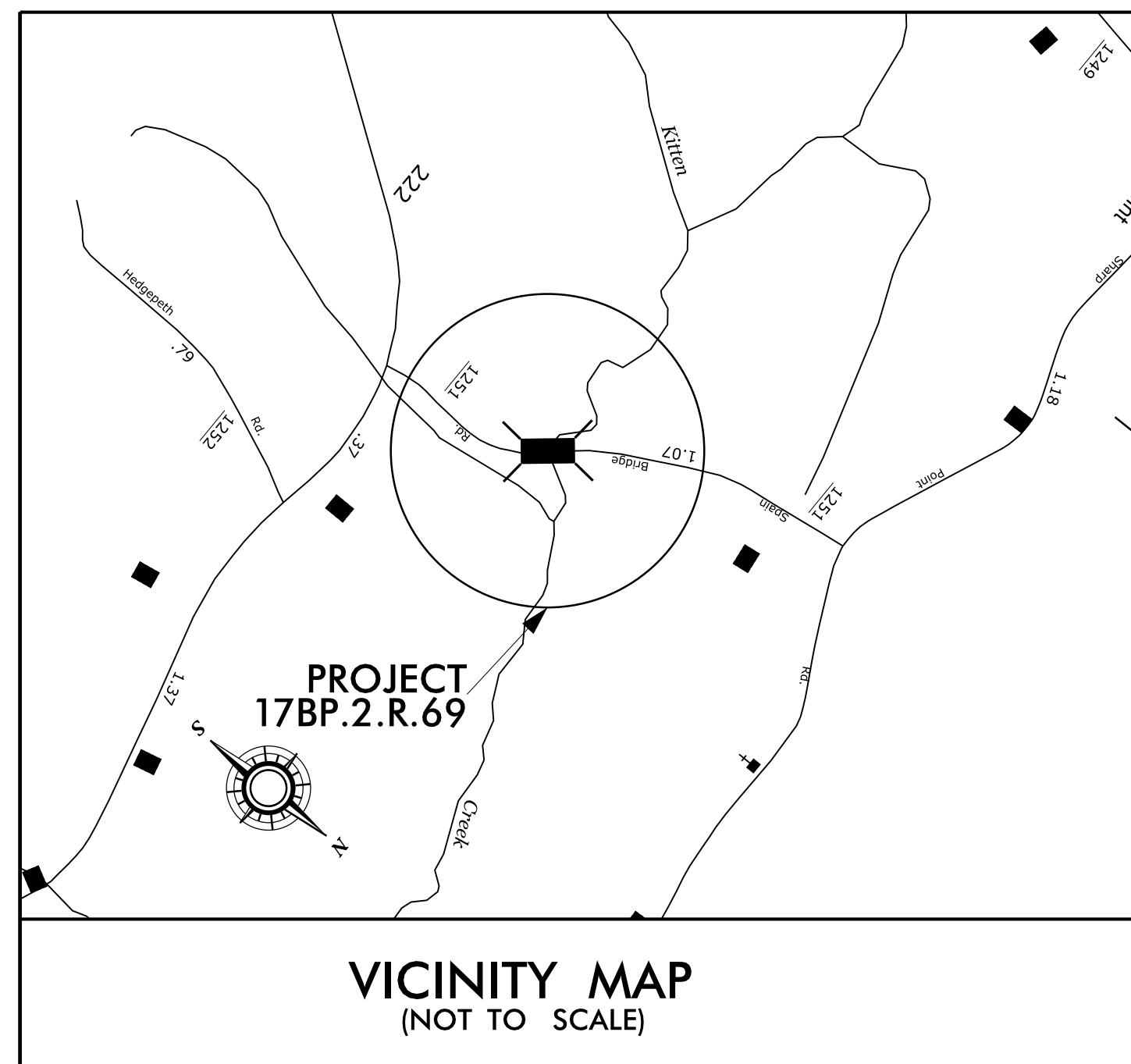
APPROVED: William C. Kincannon  
DATE: 3/20/2017 09:45

SEAL



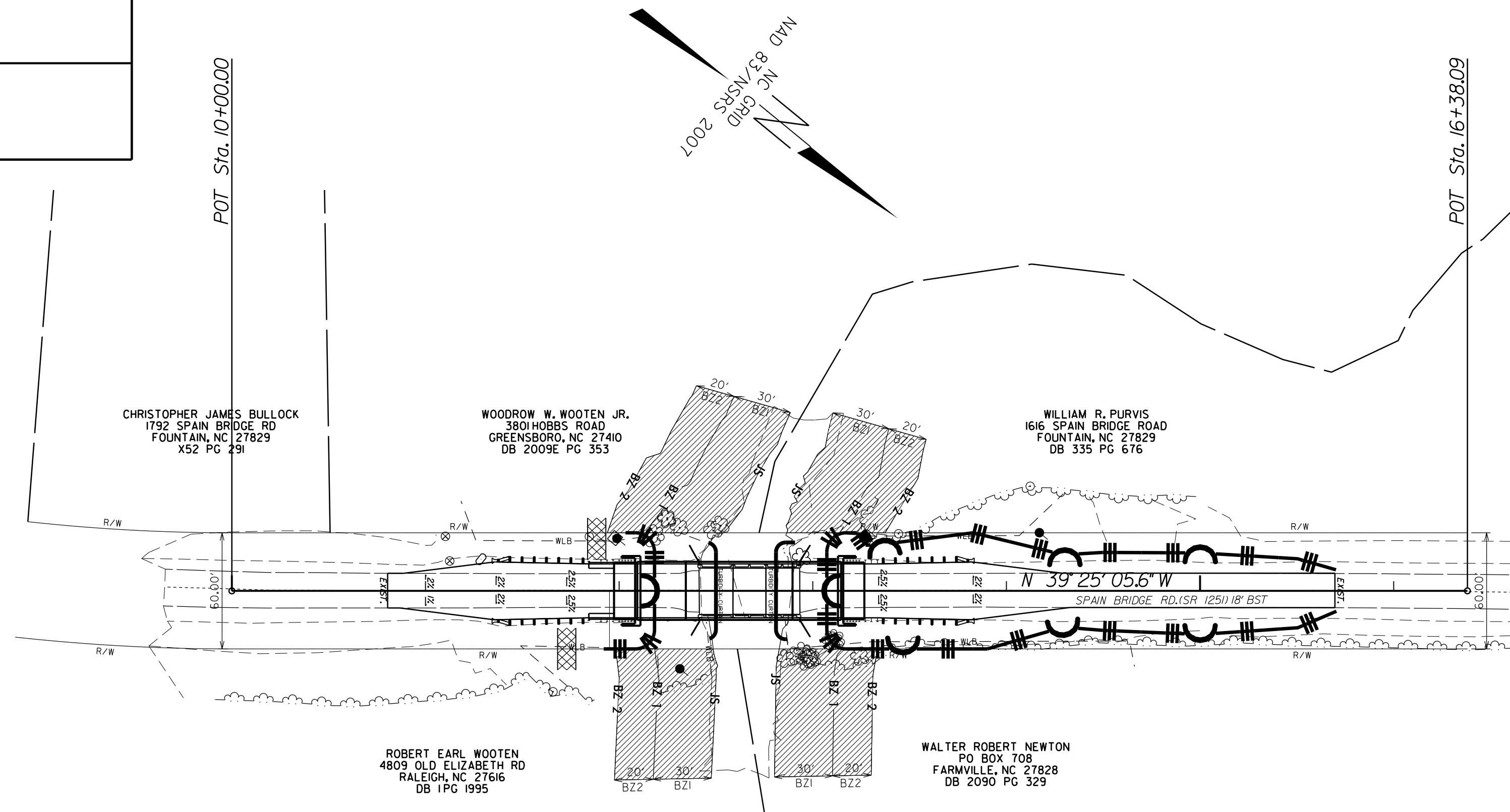


**TIP PROJECT: 17BP.2.R.69**



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

**LOCATION: PITT COUNTY AT THE INTERSECTION OF  
GREENVILLE BLVD AND WILLIAMS RD**



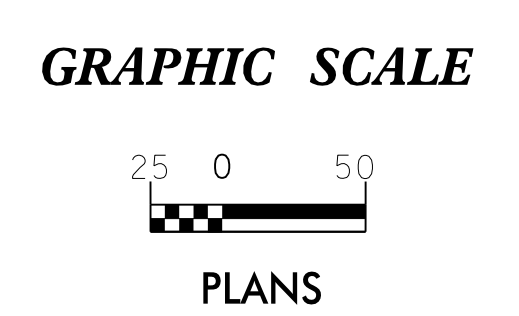
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N.C.	17BP.2.R.69	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
		PE	
		RW	
		CONST	

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	—
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▨
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▨
1633.02	Temporary Rock Silt Check Type-B	▨
	Wattle / 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 CONTAINS  
EROSION CONTROL PLANS  
FOR CLEARING AND  
GRUBBING PHASE OF  
CONSTRUCTION.**

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



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.**

**2012 STANDARD SPECIFICATIONS**

Prepared in the Office of:  
**DIVISION 2 DDC**  
1704 NORTH GREENE STREET  
GREENVILLE, NC 27835

Timothy Pinkham  
Level III  
Certification #3510

Roadway Standard Drawings

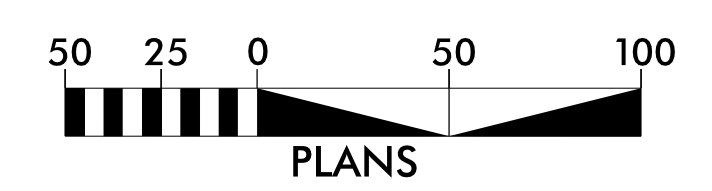
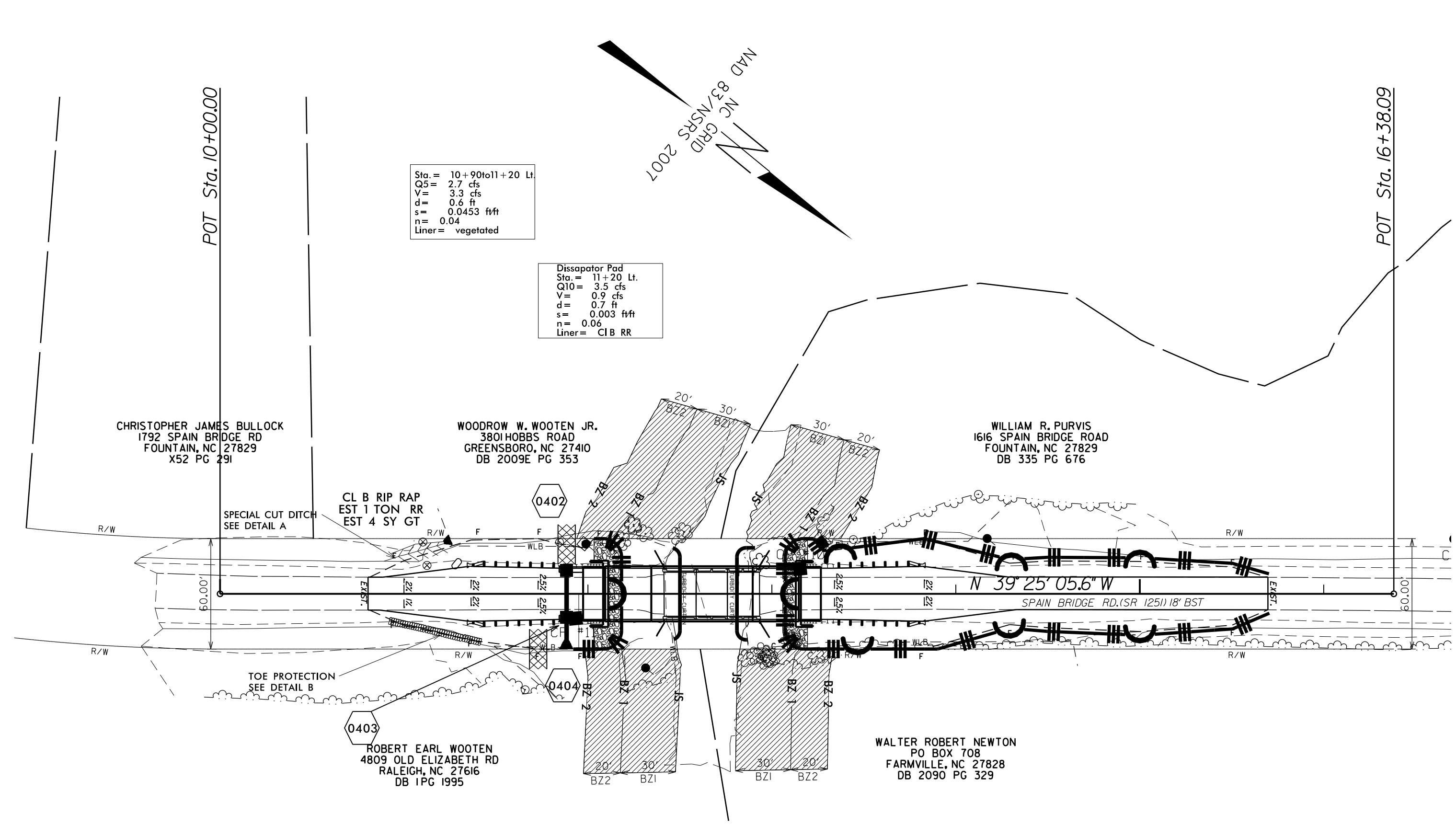
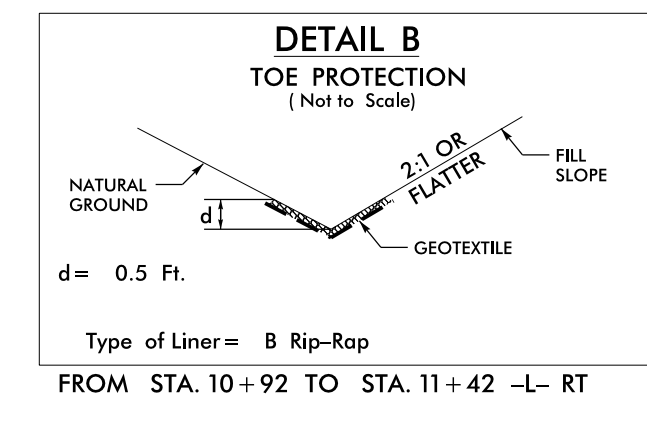
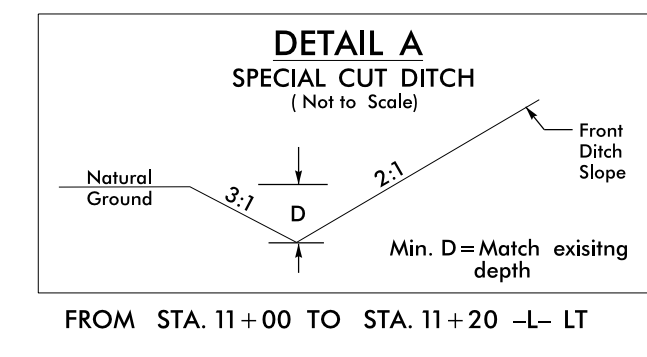
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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 Temporary Silt Ditch	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	

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8/17/99

REVISIONS



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

Std. #	Description	Symbol
1605.01	High Vis Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	□
SP	Wattle with Polyacrylamide	⊖
SP	Wattle	⊖
	Ditch Flow Line	—

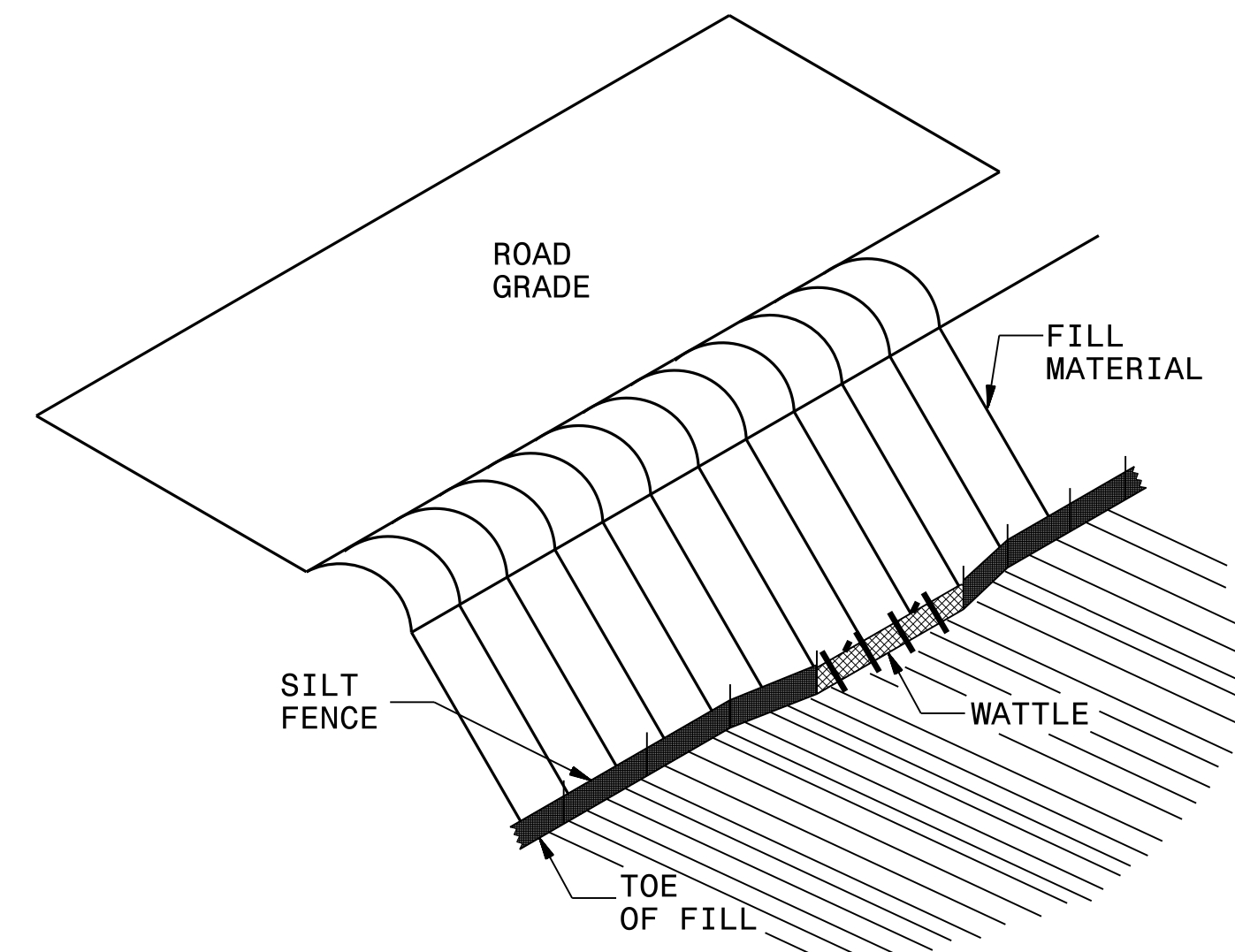
NOTE: THE CONTRACTOR SHALL INSTALL WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR AS DIRECTED BY THE ENGINEER.

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

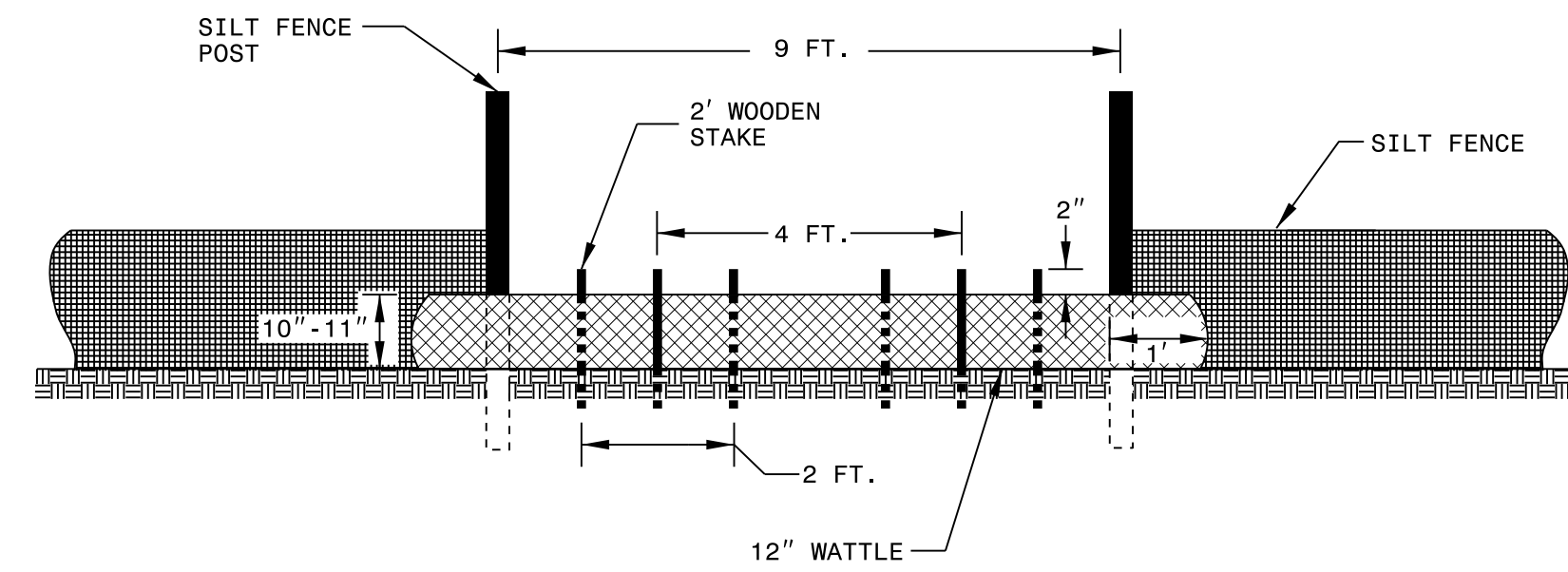
CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR DIRECTED BY THE ENGINEER.

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# SILT FENCE COIR FIBER WATTLE BREAK DETAIL



**ISOMETRIC VIEW**

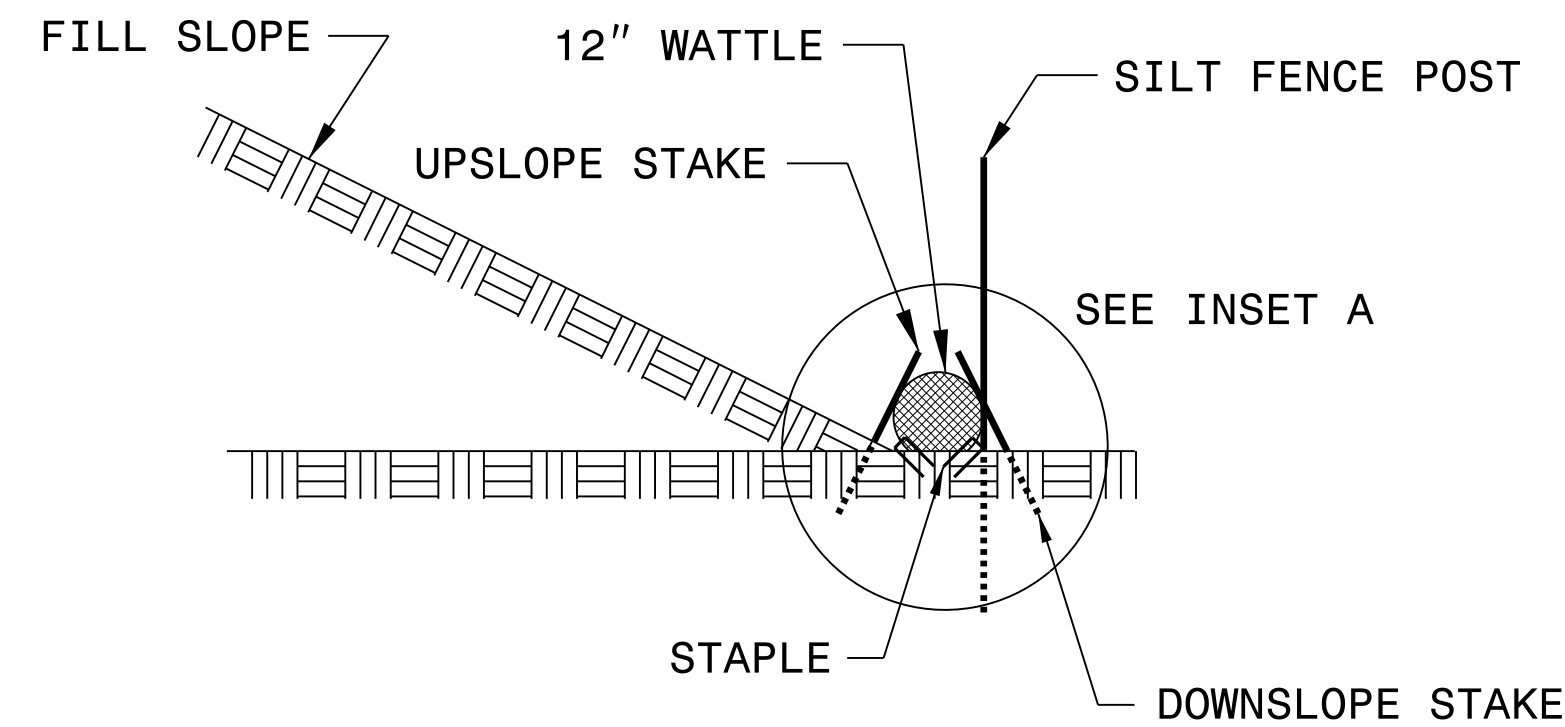
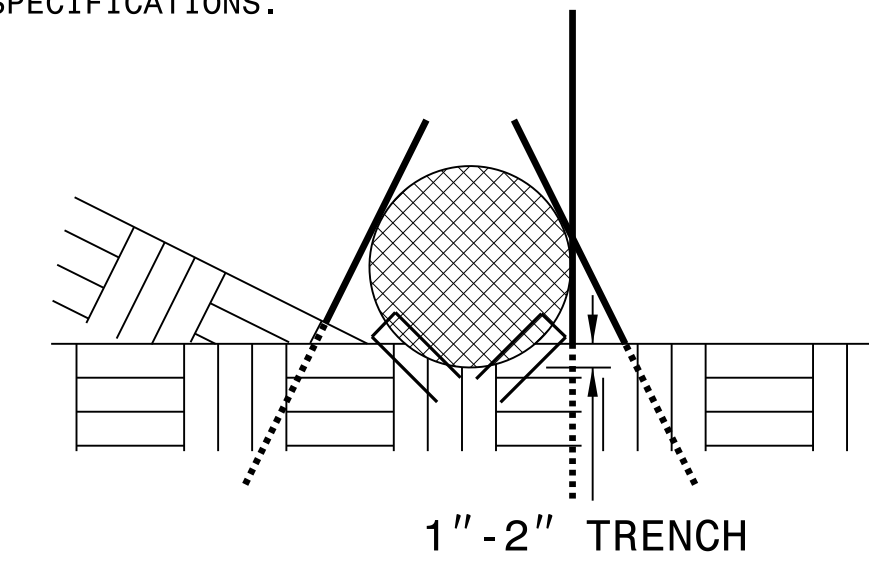


**VIEW FROM SLOPE**

**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**

SHEET 1 OF 1 1633.01	<b>TEMPORARY ROCK SILT CHECK TYPE 'A'</b> ENGLISH STANDARD DRAWING FOR	STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
	<p style="text-align: center;"><b>PLAN</b></p> <p>NOTE          USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.          USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.</p> <p style="text-align: center;"><b>SECTION A-A</b></p> <p style="text-align: center;"><b>SECTION B-B</b>          *T = 12" MIN., 18" MAX.</p>	
SHEET 1 OF 1 1633.01	ENGLISH STANDARD DRAWING FOR <b>TEMPORARY ROCK SILT CHECK TYPE 'A'</b>	
	STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

**CROSS-SECTION SUMMARY**  
*IN CUBIC YARDS*

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

LOCATION (-L-)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
<i>11 + 00.00</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>11 + 36.45</i>	<i>3</i>	<i>0</i>	<i>25</i>
<i>11 + 72.90</i>	<i>3</i>	<i>0</i>	<i>41</i>
<i>11 + 85.27</i>	<i>1</i>	<i>0</i>	<i>13</i>
<i>11 + 88.40</i>	<i>0</i>	<i>0</i>	<i>3</i>
<i>11 + 98.27</i>	<i>1</i>	<i>0</i>	<i>8</i>
<b>BRIDGE</b>			
<i>13 + 27.27</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>13 + 34.02</i>	<i>0</i>	<i>0</i>	<i>10</i>
<i>13 + 82.84</i>	<i>0</i>	<i>0</i>	<i>100</i>
<i>14 + 29.23</i>	<i>0</i>	<i>0</i>	<i>73</i>
<i>14 + 50.00</i>	<i>0</i>	<i>0</i>	<i>10</i>
<i>15 + 00.00</i>	<i>0</i>	<i>0</i>	<i>24</i>
<i>15 + 50.00</i>	<i>0</i>	<i>0</i>	<i>16</i>

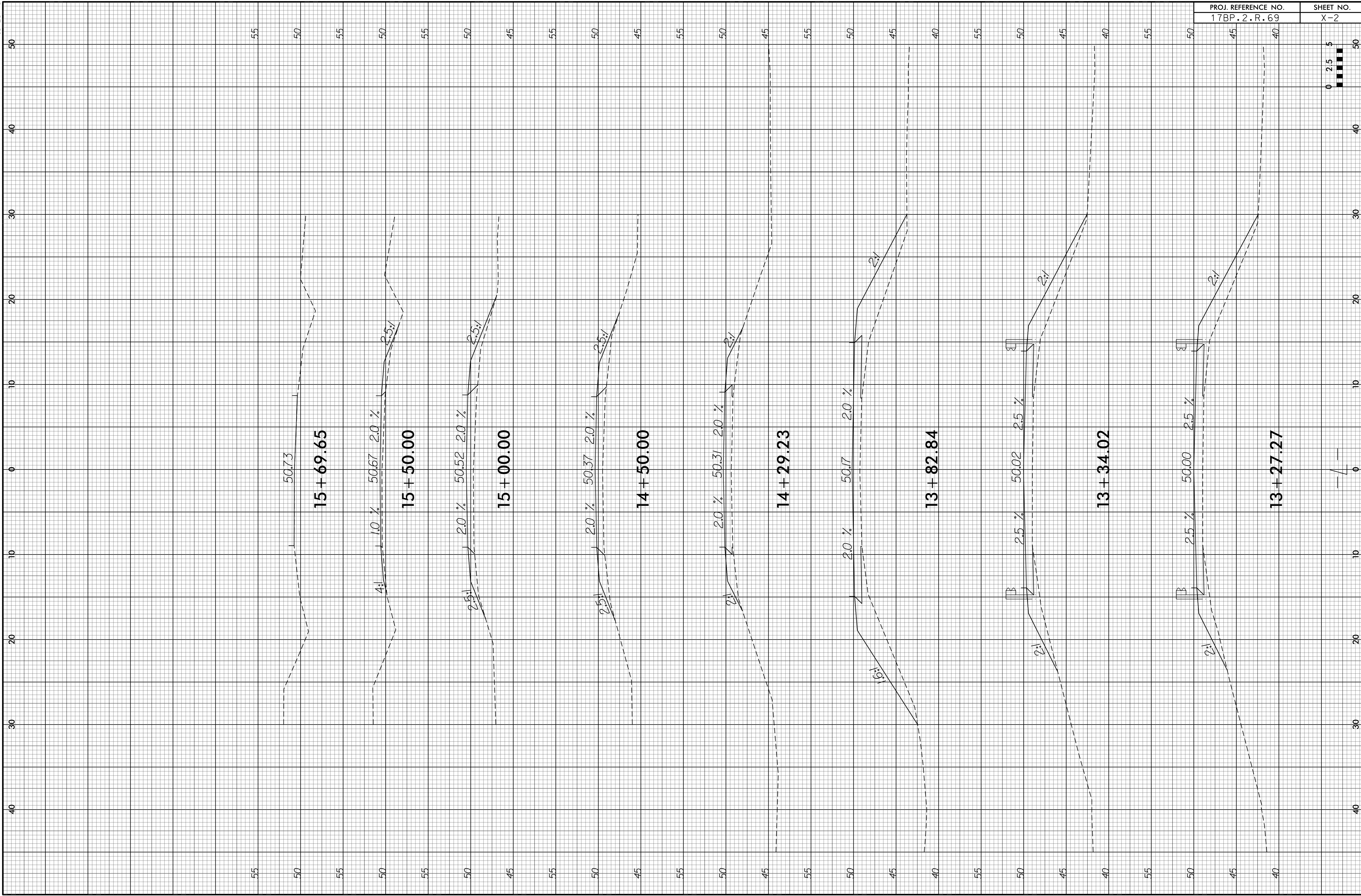
NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract Lump Sum price for "Grading".

REVISIONS

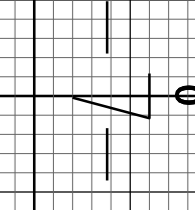
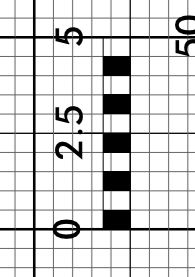
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\$\$\$\$\$USERNAME\$\$\$\$\$





PROJ. REFERENCE NO. 17BP.2.R.69	SHEET NO. X-2
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## STANDARD NOTES

### DESIGN DATA:

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

### MATERIAL AND WORKMANSHIP:

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

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

### CONCRETE:

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

### CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

### DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

### ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.  
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.  
IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.  
DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.  
WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".  
EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.  
WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.  
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

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

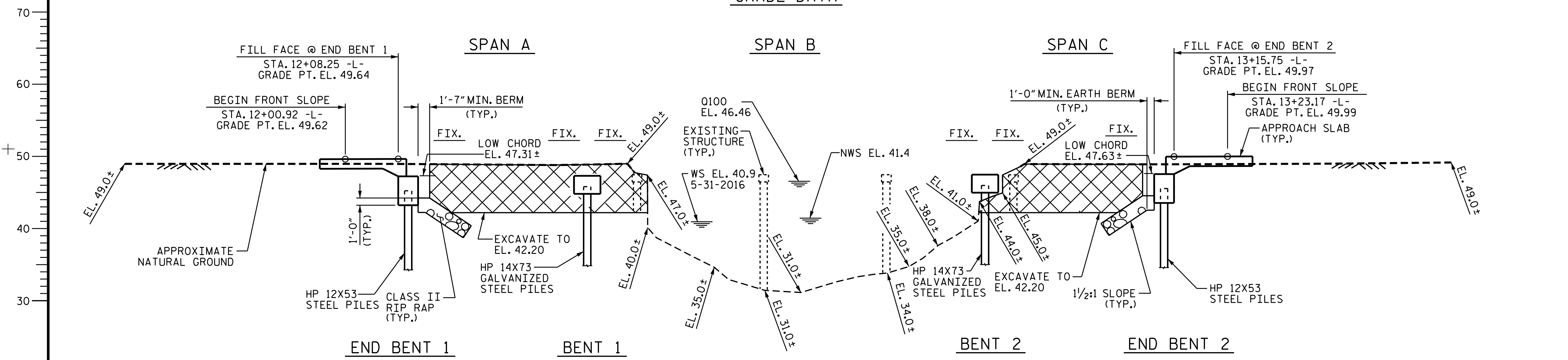
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JANUARY, 1990

STD. NO. SN

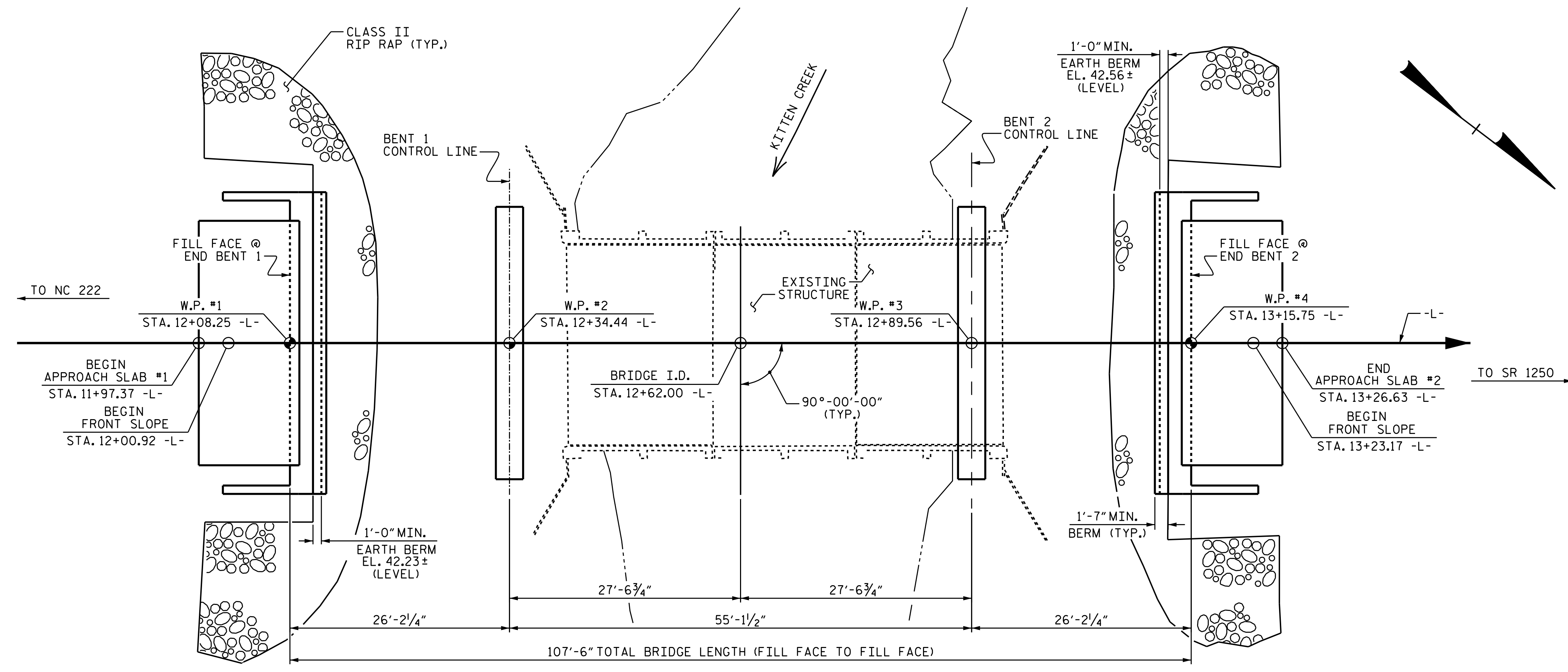


0.3010%  $\Delta$  0.3010%  
 PI STA. 12+62.00  
 EL = 49.81'  
 VC = 200'  
**GRADE DATA**



UNCLASSIFIED STRUCTURE EXCAVATION

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



**PLAN**  
 (FOR CLARITY, PILES ARE NOT SHOWN IN PLAN VIEW)

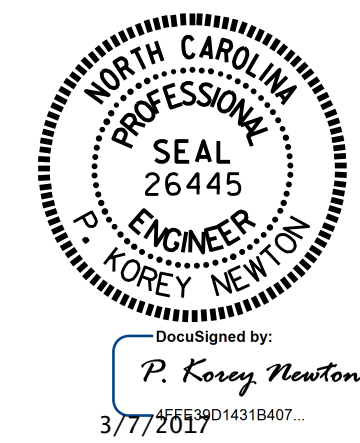
DRAWN BY : A. K. PATEL DATE : 02/22/17  
 CHECKED BY : P. K. NEWTON DATE : 02/22/17

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. 17BP.2.R.69  
 PITT COUNTY  
 STATION: 12+62.00 -L-

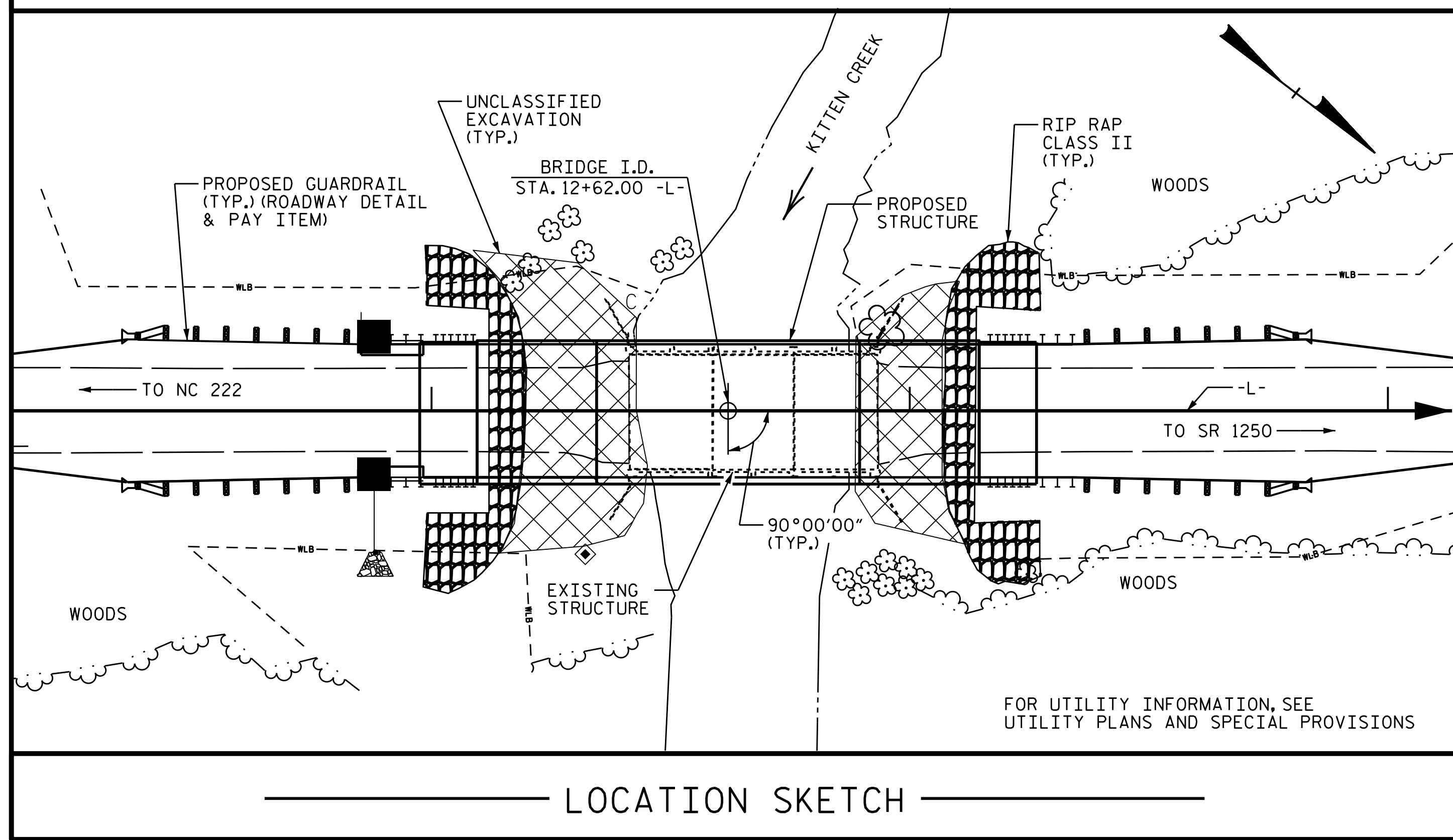
SHEET 1 OF 2 REPLACES BRIDGE NO. 86

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 PRELIMINARY  
 GENERAL DRAWING  
 BRIDGE OVER KITTEN CREEK  
 ON SR 1251 BETWEEN  
 NC 222 AND SR 1250



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1	
1			3			TOTAL SHEETS	
2			4			17	

BENCH MARK : "CP #12" 36.72' BEYOND, 13.20' LEFT OF STA. 16+38.09 -L-, EL. 51.701



**NOTES**

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- 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.
- NO CRANE SHALL BE PLACED OR OPERATED ON SPAN B.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 35 FEET EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
- THE EXISTING STRUCTURE, CONSISTING OF 3 SPANS: 1 @ 17'-7", 1 @ 17'-0", & 1 @ 17'-10" WITH A CLEAR ROADWAY WIDTH OF 24'-0" WITH REINFORCED CONCRETE FLOOR ON TIMBER JOISTS ON TIMBER CAPS AND PILES WITH CONCRETE ENCASEMENTS AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18- EVALUATING SCOUR AT BRIDGES."
- FOR INTERIOR BENTS 1 AND 2, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEETS FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION, SEE SPECIAL PROVISIONS.
- FOR PILES, SEE GEOTECHNICAL SPECIAL PROVISIONS AND SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT END BENT NO. 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 55 TONS PER PILE.
- DRIVE PILES AT END BENT NO. 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 93 TONS PER PILE.
- PILES AT BENT NO. 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.
- DRIVE PILES AT BENT NO. 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 195 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30 TO 45 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO. 1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40 TO 60 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO. 1 AND 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.
- 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.

**TOTAL BILL OF MATERIAL**

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 GALVANIZED STEEL PILES	HP 12 X 53 STEEL PILES	HP 14 X 73 GALVANIZED STEEL PILES	PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS	ASBESTOS ASSESSMENT			
	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EACH	EACH	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.	LUMP SUM
SUPERSTRUCTURE												210.5				30	1050			
END BENT 1			LUMP SUM	20.0		2449	5		5	255	3		130	145						
BENT 1				9.8		1933	7		7	455	4									
BENT 2				9.8		1933	7		7	455	4									
END BENT 2			LUMP SUM	20.0		2449	5		5	255	3		135	150						
TOTAL	LUMP SUM	2	LUMP SUM	59.6	LUMP SUM	8764	10	14	10	510	14	210.5	265	295	LUMP SUM	30	1050	LUMP SUM		

**HYDRAULIC DATA**

DESIGN DISCHARGE = 950 CFS  
 FREQUENCY OF DESIGN DISCHARGE = 25 YR.  
 DESIGN HIGH WATER ELEVATION = 45.4  
 DRAINAGE AREA = 9.0 SQ. MI.  
 BASE DISCHARGE (Q100) = 1,400 CFS  
 BASE HIGH WATER ELEVATION = 46.46

**OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE = 3,000 CFS  
 FREQUENCY OF OVERTOPPING FLOOD = 500+ YR.  
 OVERTOPPING FLOOD ELEVATION = 49.3  
 OVERTOPPING OCCURS AT SAG STA. 10+81.00 -L-

PROJECT NO. 17BP.2.R.69  
 PITT COUNTY  
 STATION: 12+62.00 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 PRELIMINARY  
 GENERAL DRAWING  
 BRIDGE OVER KITTEN CREEK  
 ON SR 1251 BETWEEN  
 NC 222 AND SR 1250

DRAWN BY : A. K. PATEL DATE : 02/22/17  
 CHECKED BY : P. K. NEWTON DATE : 02/22/17

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	17
1			3			
2			4			

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

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{dc}$	$\gamma_{dw}$
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.018	--	1.75	0.284	2.53	25'	EL	12	0.591	<b>1.02</b>	25'	EL	<b>1.2</b>	0.80	0.284	2.34	25'	EL	12		
	HL-93(0pr)	N/A	--	1.319	--	1.35	0.284	3.29	25'	EL	12	0.591	1.32	25'	EL	1.2	N/A	--	--	--	--	--	--	
	HS-20(Inv)	36.000	2	1.178	42.397	1.75	0.284	3.76	25'	EL	12	0.591	<b>1.18</b>	25'	EL	<b>1.2</b>	0.80	0.284	3.46	25'	EL	12		
	HS-20(0pr)	36.000	--	1.527	54.959	1.35	0.284	4.87	25'	EL	12	0.591	1.53	25'	EL	1.2	N/A	--	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.728	36.833	1.4	0.284	6.83	25'	EL	12	0.591	2.73	25'	EL	1.2	0.80	0.284	5.04	25'	EL	12	
		SNGARBS2	20.000	--	2.186	43.718	1.4	0.284	6.39	25'	EL	12	0.591	2.19	25'	EL	1.2	0.80	0.284	4.72	25'	EL	12	
		SNAGRIS2	22.000	--	2.141	47.107	1.4	0.284	6.83	25'	EL	12	0.591	2.14	25'	EL	1.2	0.80	0.284	5.04	25'	EL	12	
		SNCOTTS3	27.250	--	1.385	37.731	1.4	0.284	3.57	25'	EL	12	0.591	1.38	25'	EL	1.2	0.80	0.284	2.64	25'	EL	12	
		SNAGGRS4	34.925	--	1.332	46.511	1.4	0.284	3.56	25'	EL	12	0.591	1.33	25'	EL	1.2	0.80	0.284	2.62	25'	EL	12	
		SNS5A	35.550	--	1.392	49.477	1.4	0.284	3.45	25'	EL	12	0.591	1.39	25'	EL	1.2	0.80	0.284	2.54	25'	EL	12	
		SNS6A	39.950	--	1.334	53.31	1.4	0.284	3.23	25'	EL	12	0.591	1.33	25'	EL	1.2	0.80	0.284	2.39	25'	EL	12	
	SNS7B	42.000	--	1.344	56.455	1.4	0.284	3.23	25'	EL	12	0.591	1.34	25'	EL	1.2	0.80	0.284	2.37	25'	EL	12		
	TTST	TNAGRIT3	33.000	--	1.634	53.934	1.4	0.284	4.55	25'	EL	12	0.591	1.63	25'	EL	1.2	0.80	0.284	3.36	25'	EL	12	
		TNT4A	33.075	--	1.483	49.049	1.4	0.284	3.95	25'	EL	12	0.591	1.48	25'	EL	1.2	0.80	0.284	2.92	25'	EL	12	
		TNT6A	41.600	--	1.398	58.138	1.4	0.284	3.71	25'	EL	12	0.591	1.4	25'	EL	1.2	0.80	0.284	2.74	25'	EL	12	
		TNT7A	42.000	--	1.391	58.419	1.4	0.284	3.84	25'	EL	12	0.591	1.39	25'	EL	1.2	0.80	0.284	2.83	25'	EL	12	
		TNT7B	42.000	--	1.343	56.385	1.4	0.284	3.46	25'	EL	12	0.591	1.34	25'	EL	1.2	0.80	0.284	2.55	25'	EL	12	
		TNAGRIT4	43.000	--	1.340	57.604	1.4	0.284	3.71	25'	EL	12	0.591	1.34	25'	EL	1.2	0.80	0.284	2.73	25'	EL	12	
TNAGT5A		45.000	--	1.367	61.501	1.4	0.284	3.71	25'	EL	12	0.591	1.37	25'	EL	1.2	0.80	0.284	2.73	25'	EL	12		
TNAGT5B	45.000	3	1.239	55.766	1.4	0.284	3.65	25'	EL	9.6	0.591	<b>1.24</b>	25'	EL	<b>1.2</b>	0.80	0.284	2.71	25'	EL	9.6			

NOTES:

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

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

COMMENTS:

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

# CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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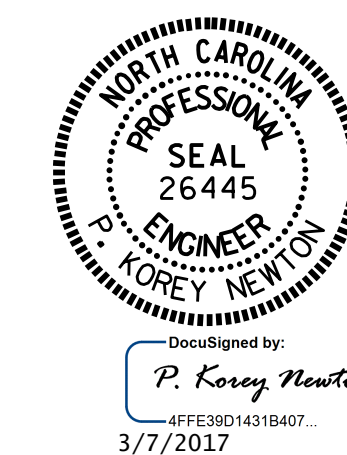
GIRDER LOCATION

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



LRFR SUMMARY  
FOR SPAN 'A' OR 'C'

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
 STATION: 12+62.00 -L-



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			17

ASSEMBLED BY : P. K. NEWTON DATE : 3/1/17  
 CHECKED BY : G. W. DICKEY DATE : 3/2/17  
 DRAWN BY : CVC 6/10  
 CHECKED BY : DNS 6/10

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.055	--	1.75	0.275	1.23	55'	EL	27	0.523	1.23	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27		
	HL-93(0pr)	N/A	--	1.591	--	1.35	0.275	1.59	55'	EL	27	0.523	1.59	55'	EL	5.4	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.322	47.585	1.75	0.275	1.54	55'	EL	27	0.523	1.47	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27		
	HS-20(0pr)	36.000	--	1.9	68.396	1.35	0.275	1.99	55'	EL	27	0.523	1.9	55'	EL	5.4	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.776	37.476	1.4	0.275	4.04	55'	EL	27	0.523	4.17	55'	EL	5.4	0.80	0.275	2.78	55'	EL	27	
		SNGARBS2	20.000	--	2.155	43.095	1.4	0.275	3.14	55'	EL	27	0.523	3.02	55'	EL	5.4	0.80	0.275	2.15	55'	EL	27	
		SNAGRIS2	22.000	--	2.079	45.734	1.4	0.275	3.03	55'	EL	27	0.523	2.83	55'	EL	5.4	0.80	0.275	2.08	55'	EL	27	
		SNCOTTS3	27.250	--	1.384	37.708	1.4	0.275	2.01	55'	EL	27	0.523	2.09	55'	EL	5.4	0.80	0.275	1.38	55'	EL	27	
		SNAGGRS4	34.925	--	1.189	41.527	1.4	0.275	1.73	55'	EL	27	0.523	1.77	55'	EL	5.4	0.80	0.275	1.19	55'	EL	27	
		SNS5A	35.550	--	1.16	41.255	1.4	0.275	1.69	55'	EL	27	0.523	1.82	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		SNS6A	39.950	--	1.079	43.102	1.4	0.275	1.57	55'	EL	27	0.523	1.68	55'	EL	5.4	0.80	0.275	1.08	55'	EL	27	
	SNS7B	42.000	--	1.028	43.175	1.4	0.275	1.5	55'	EL	27	0.523	1.67	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27		
	TTST	TNAGRIT3	33.000	--	1.32	43.556	1.4	0.275	1.92	55'	EL	27	0.523	1.98	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		TNT4A	33.075	--	1.33	43.979	1.4	0.275	1.94	55'	EL	27	0.523	1.91	55'	EL	5.4	0.80	0.275	1.33	55'	EL	27	
		TNT6A	41.600	--	1.101	45.811	1.4	0.275	1.6	55'	EL	27	0.523	1.83	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNT7A	42.000	--	1.114	46.804	1.4	0.275	1.62	55'	EL	27	0.523	1.71	55'	EL	5.4	0.80	0.275	1.11	55'	EL	27	
		TNT7B	42.000	--	1.163	48.848	1.4	0.275	1.69	55'	EL	27	0.523	1.62	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		TNAGRIT4	43.000	--	1.101	47.33	1.4	0.275	1.6	55'	EL	27	0.523	1.56	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
TNAGT5A		45.000	--	1.031	46.405	1.4	0.275	1.5	55'	EL	27	0.523	1.58	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27		
TNAGT5B	45.000	3	1.013	45.582	1.4	0.275	1.47	55'	EL	27	0.523	1.48	55'	EL	5.4	0.80	0.275	1.01	55'	EL	27			

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

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

# CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

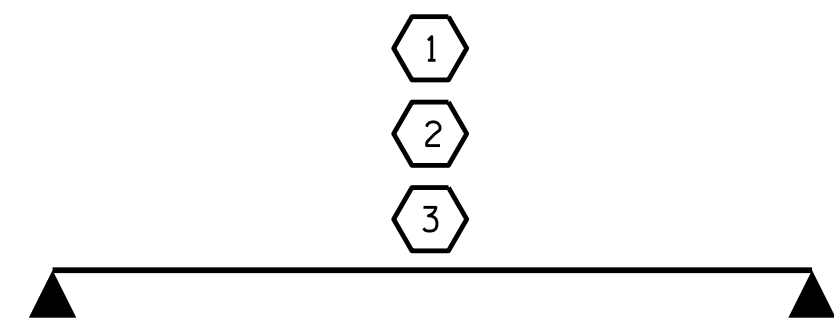
3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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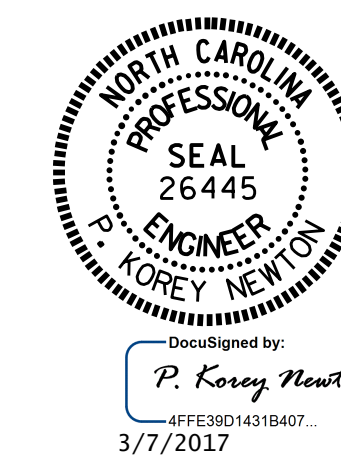
GIRDER LOCATION

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



LRFR SUMMARY  
FOR SPAN 'B'

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-



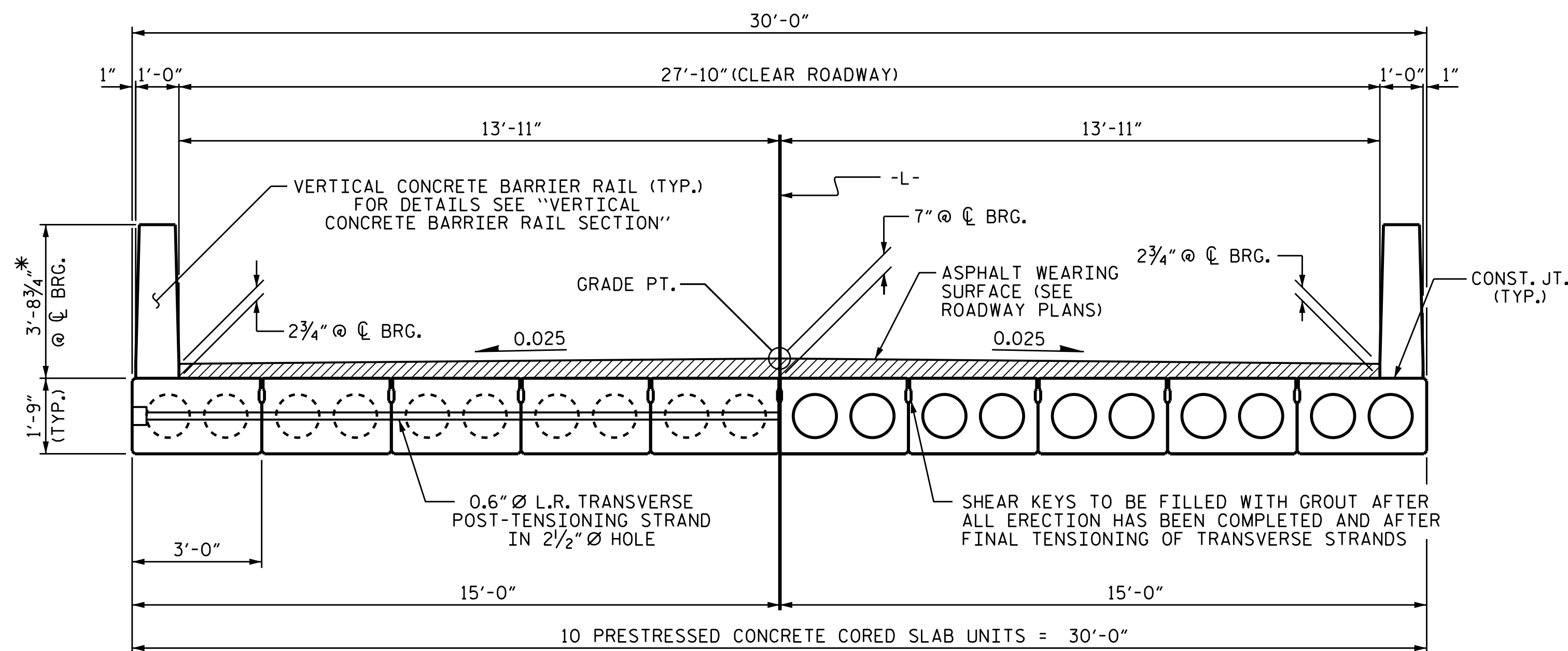
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			17

ASSEMBLED BY : P. K. NEWTON DATE : 3/1/17  
CHECKED BY : G. W. DICKEY DATE : 3/2/17  
DRAWN BY : CVC 6/10  
CHECKED BY : DNS 6/10

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED



HALF SECTION  
AT INTERMEDIATE DIAPHRAGMS

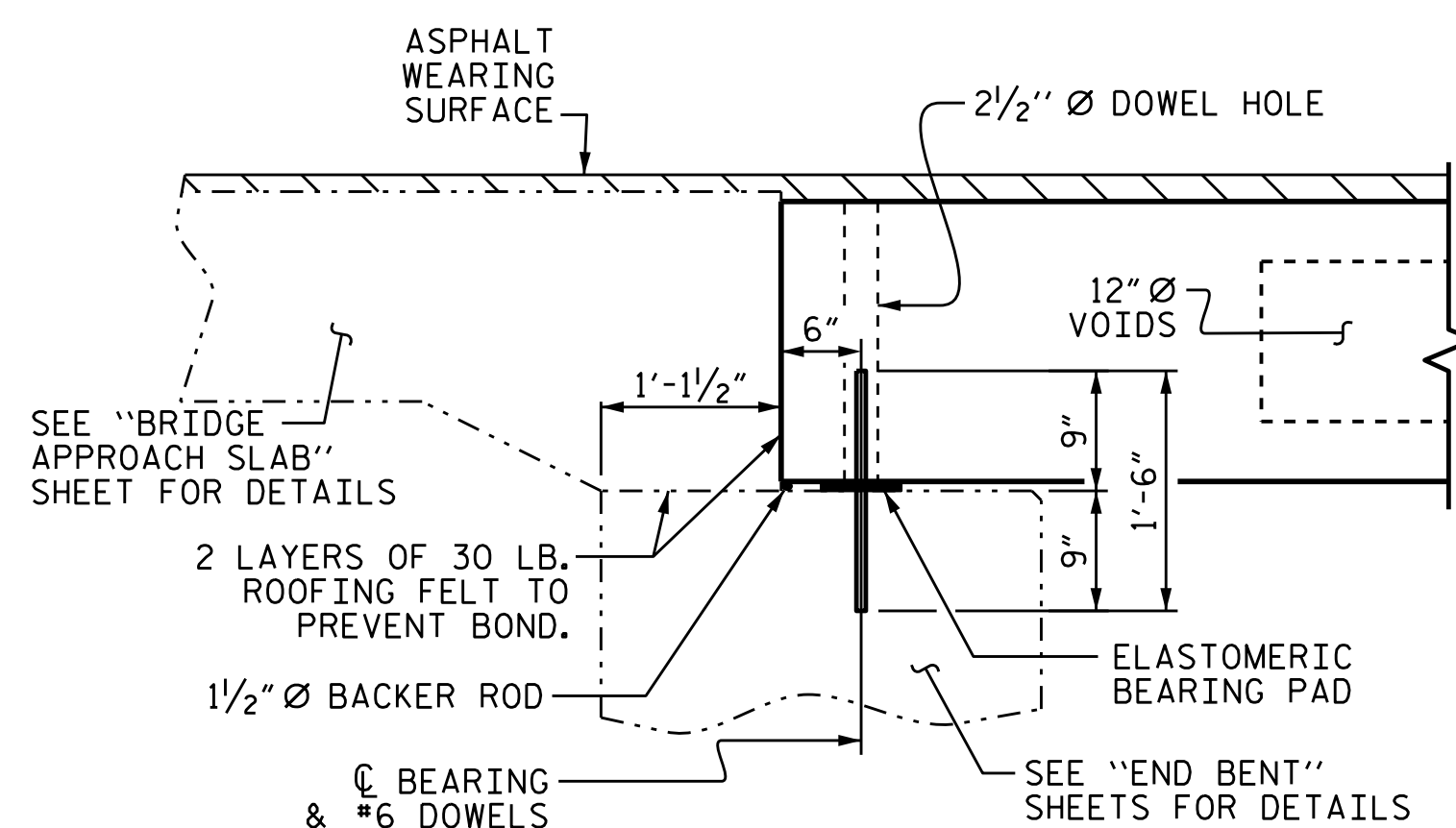
HALF SECTION  
THROUGH VOIDS

TYPICAL SECTION

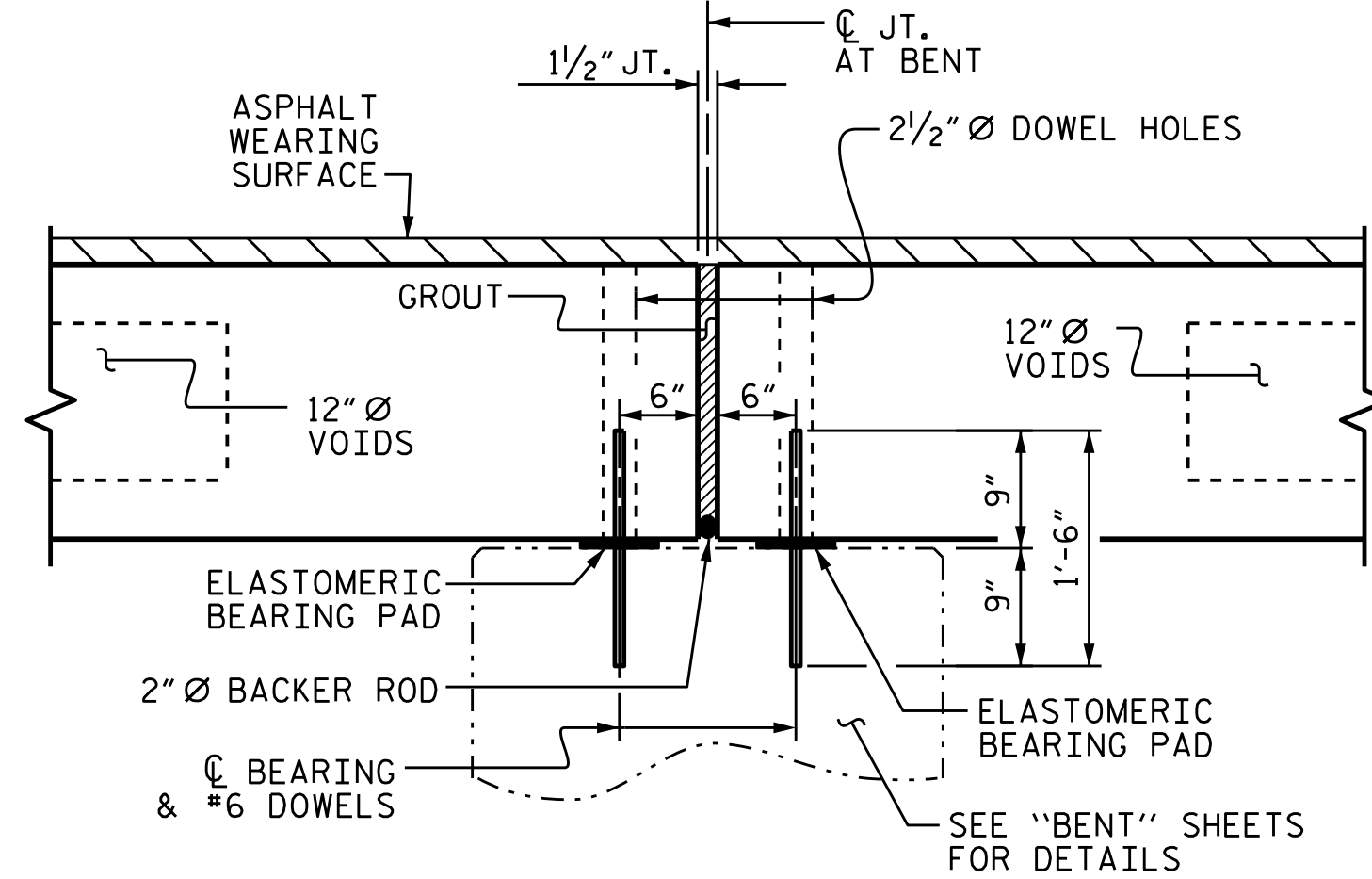
\* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.

FIXED END

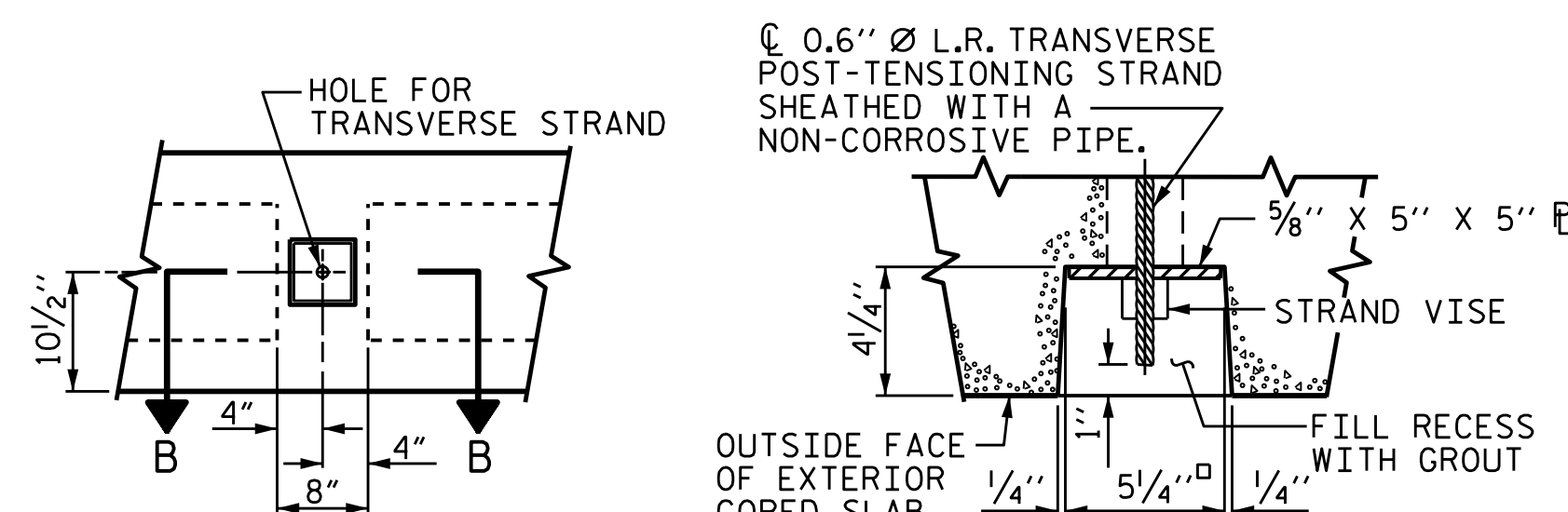
FIXED END



SECTION AT END BENT



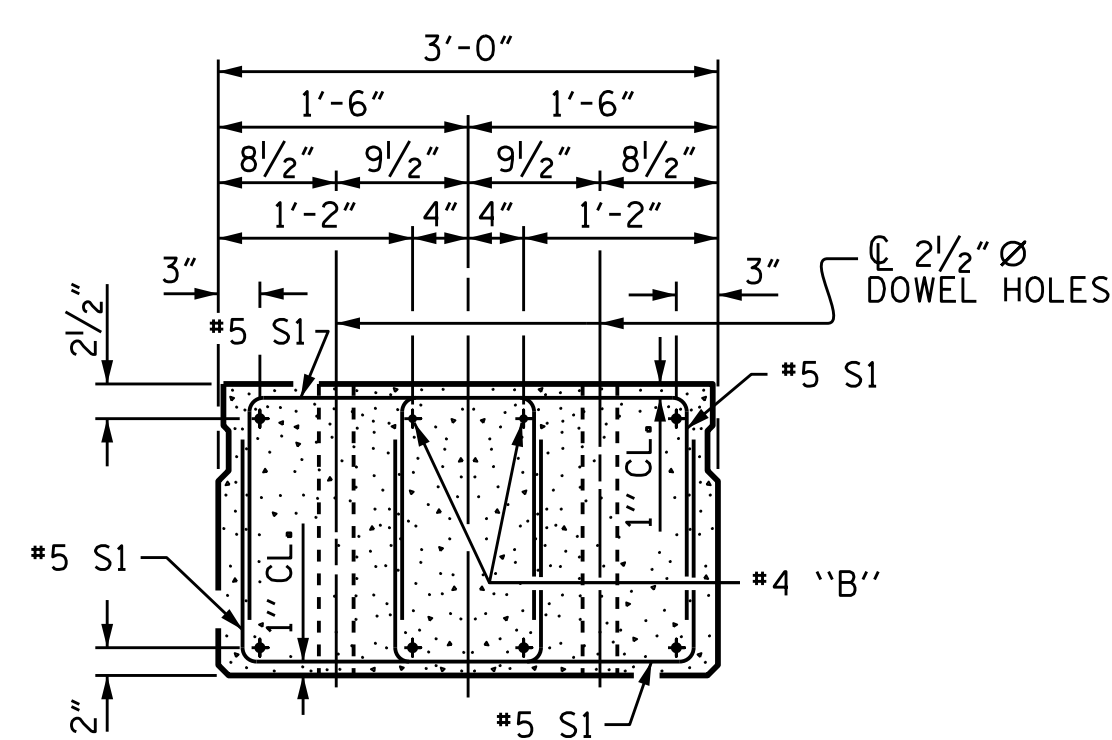
SECTION AT BENT



ELEVATION VIEW

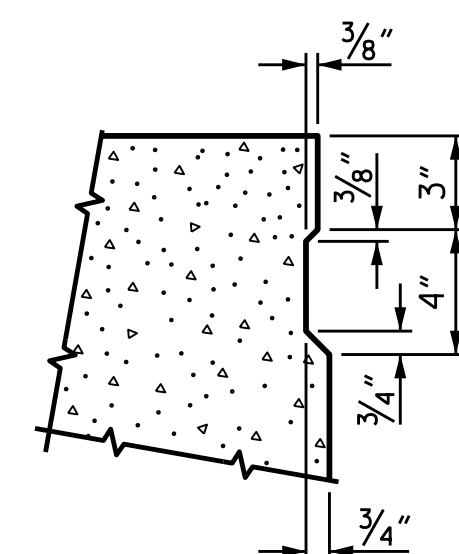
SECTION B-B

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



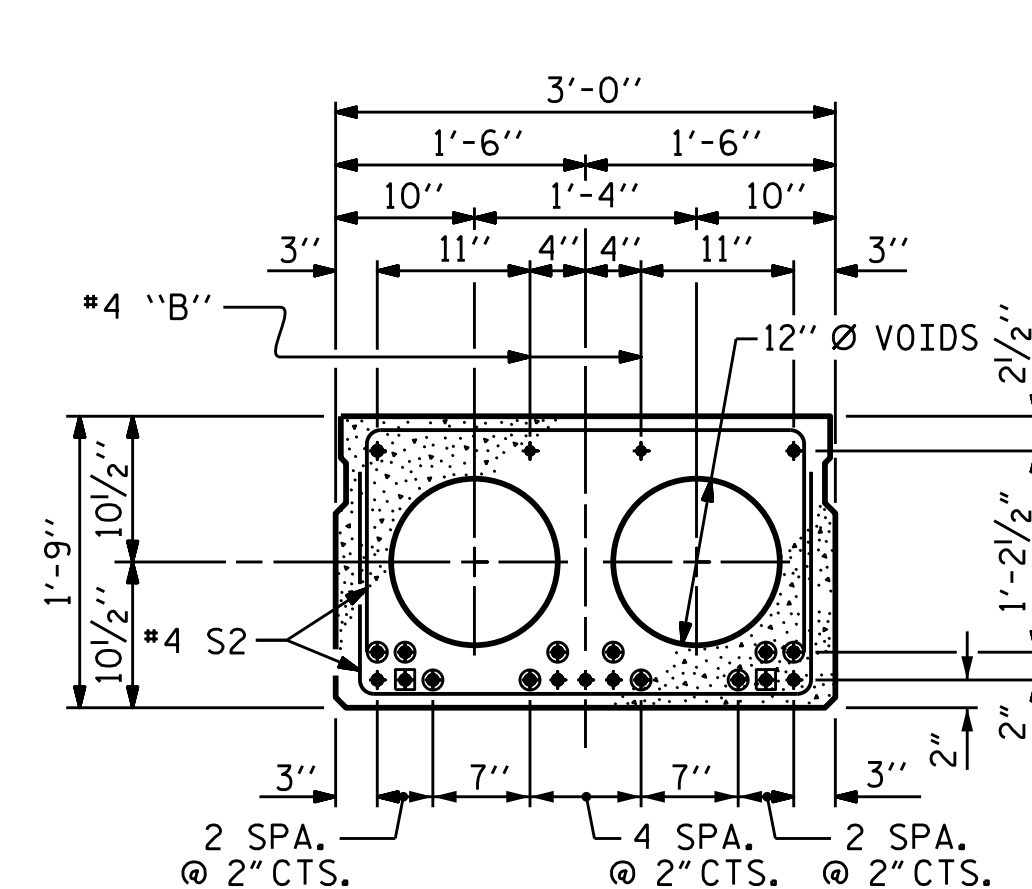
END ELEVATION

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

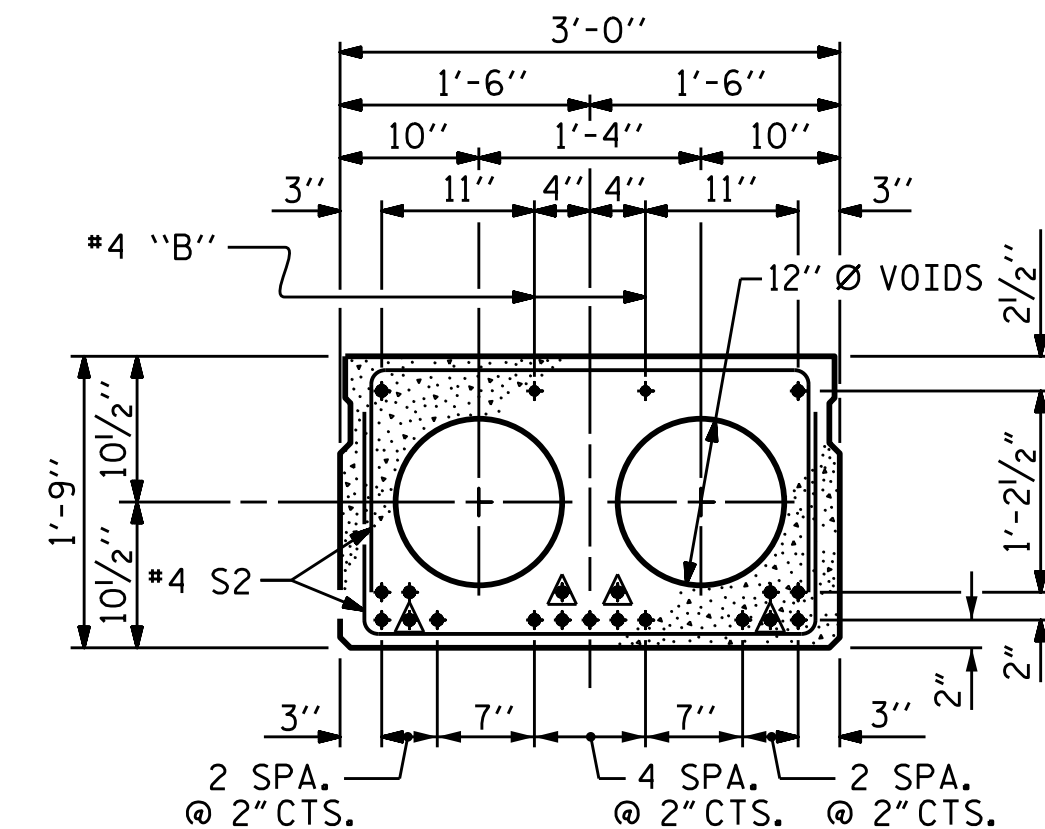


SHEAR KEY DETAIL

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

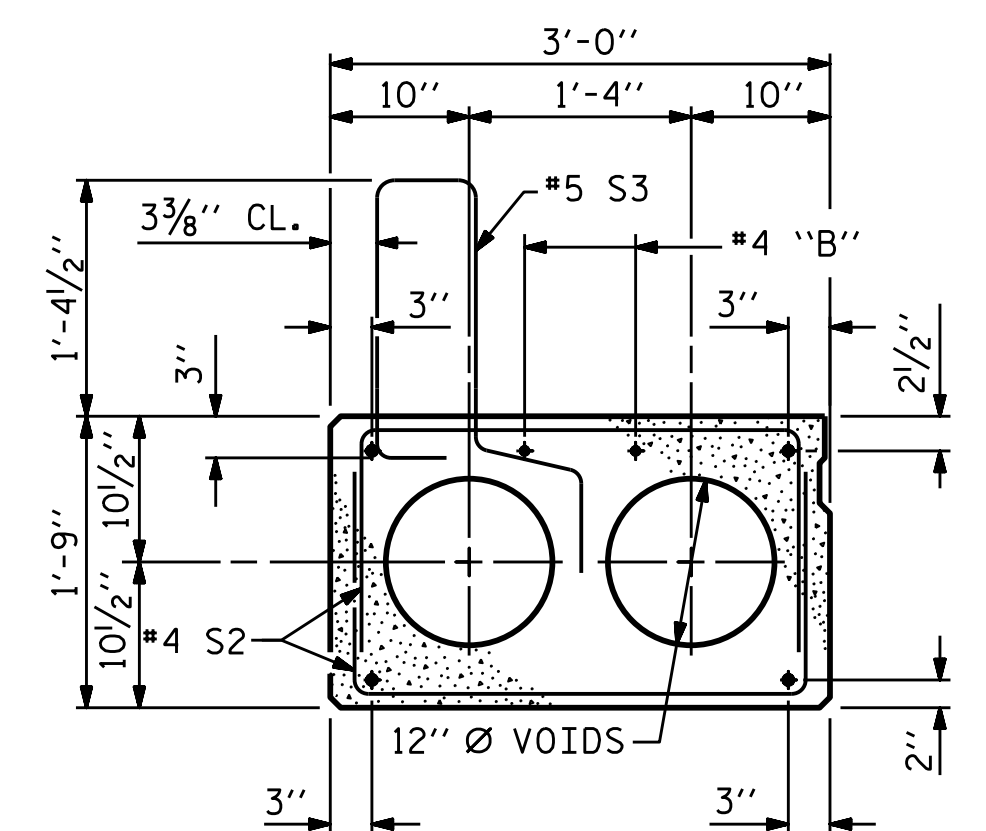


INTERIOR SLAB SECTION  
(25' UNIT)  
(9 STRANDS REQUIRED)



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

0.6" Ø LOW  
RELAXATION STRAND LAYOUT



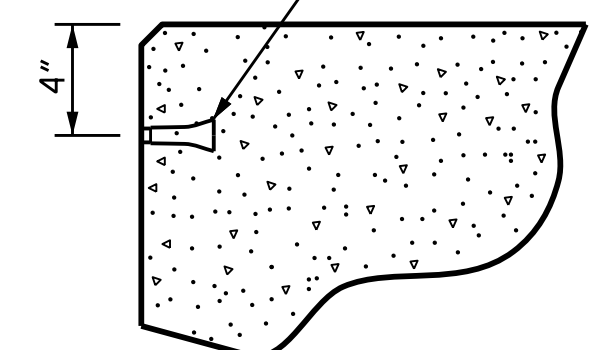
EXT. SLAB SECTION

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

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

DEBONDING LEGEND

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



THREADED INSERT DETAIL

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-

SHEET 1 OF 4

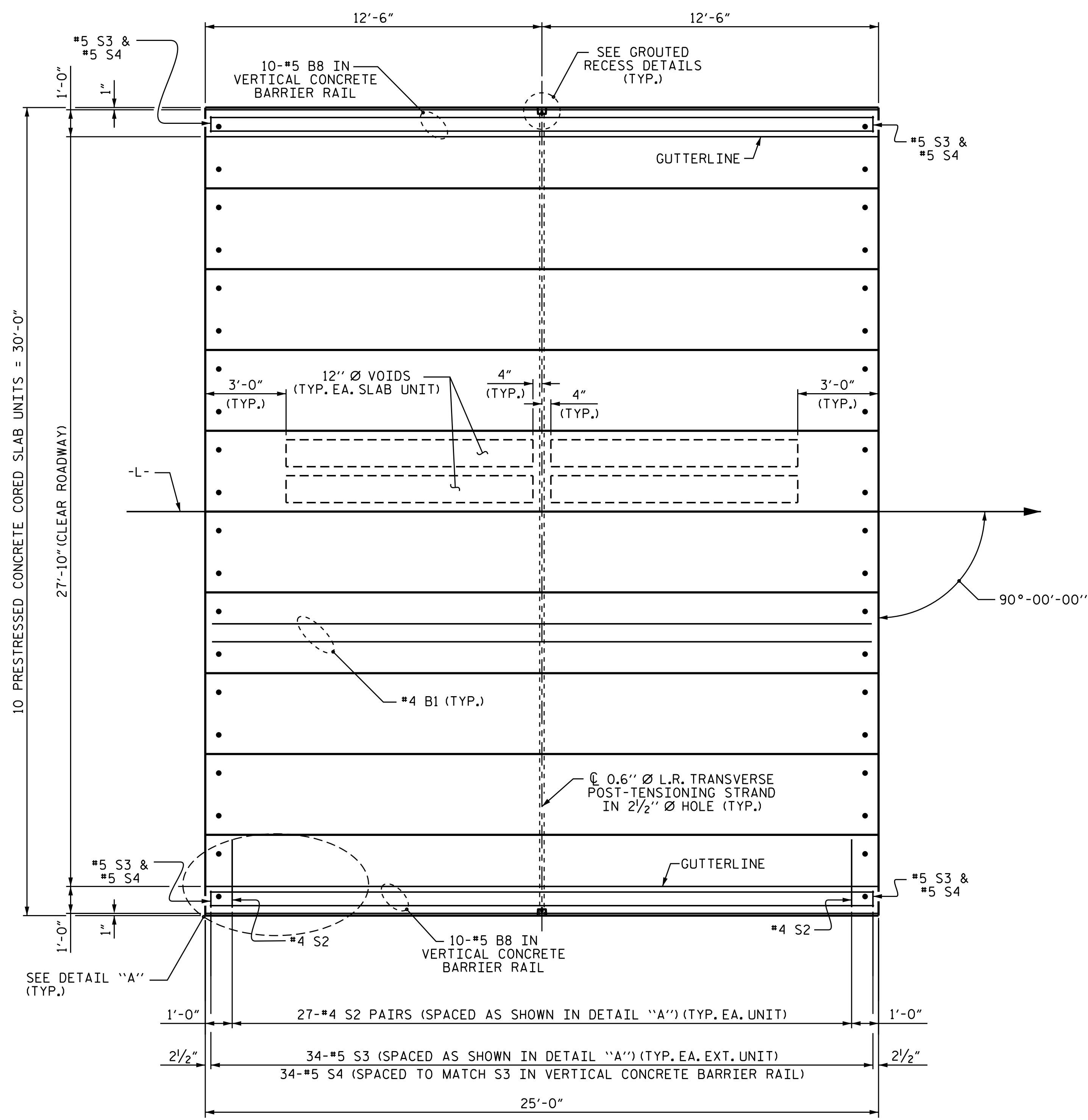


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
3'-0" X 1'-9"  
PRESTRESSED CONCRETE  
CORED SLAB UNIT  
90° SKEW

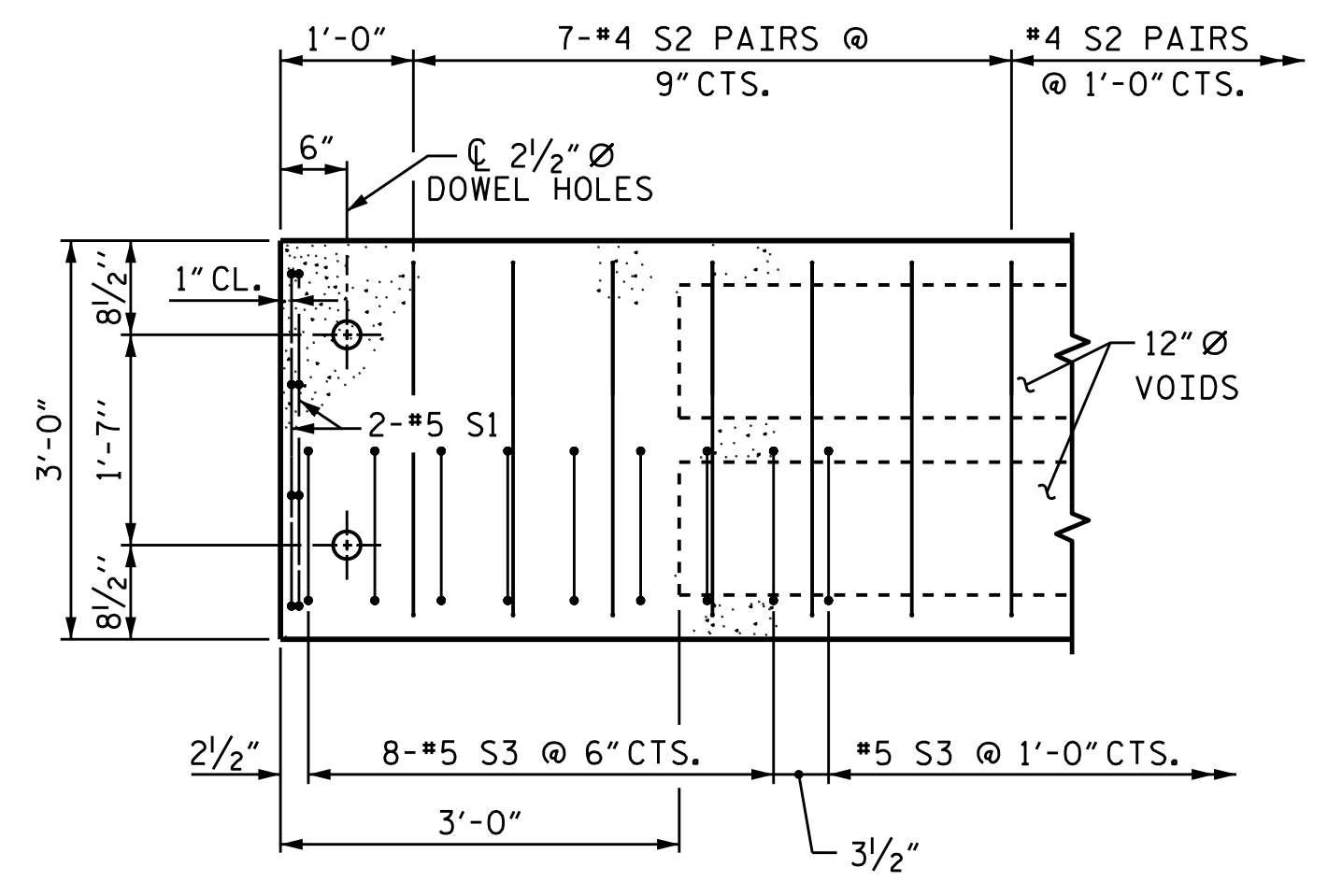
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5	
1			3			TOTAL SHEETS 17	
2			4				

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
DRAWN BY : DGE	5/09
CHECKED BY : BCH	6/09
REV. 8/14	MAA/TMG



PLAN OF UNIT



DETAIL "A"

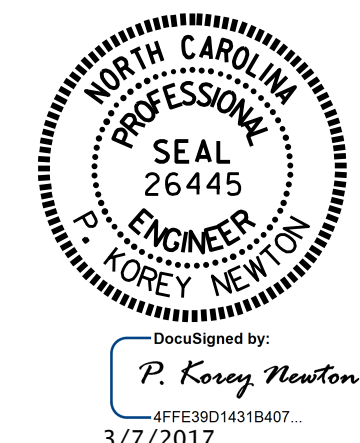
(TYPICAL EACH END OF UNIT)  
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
 STATION: 12+62.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF 25' UNIT  
 27'-10" CLEAR ROADWAY  
 90° SKEW

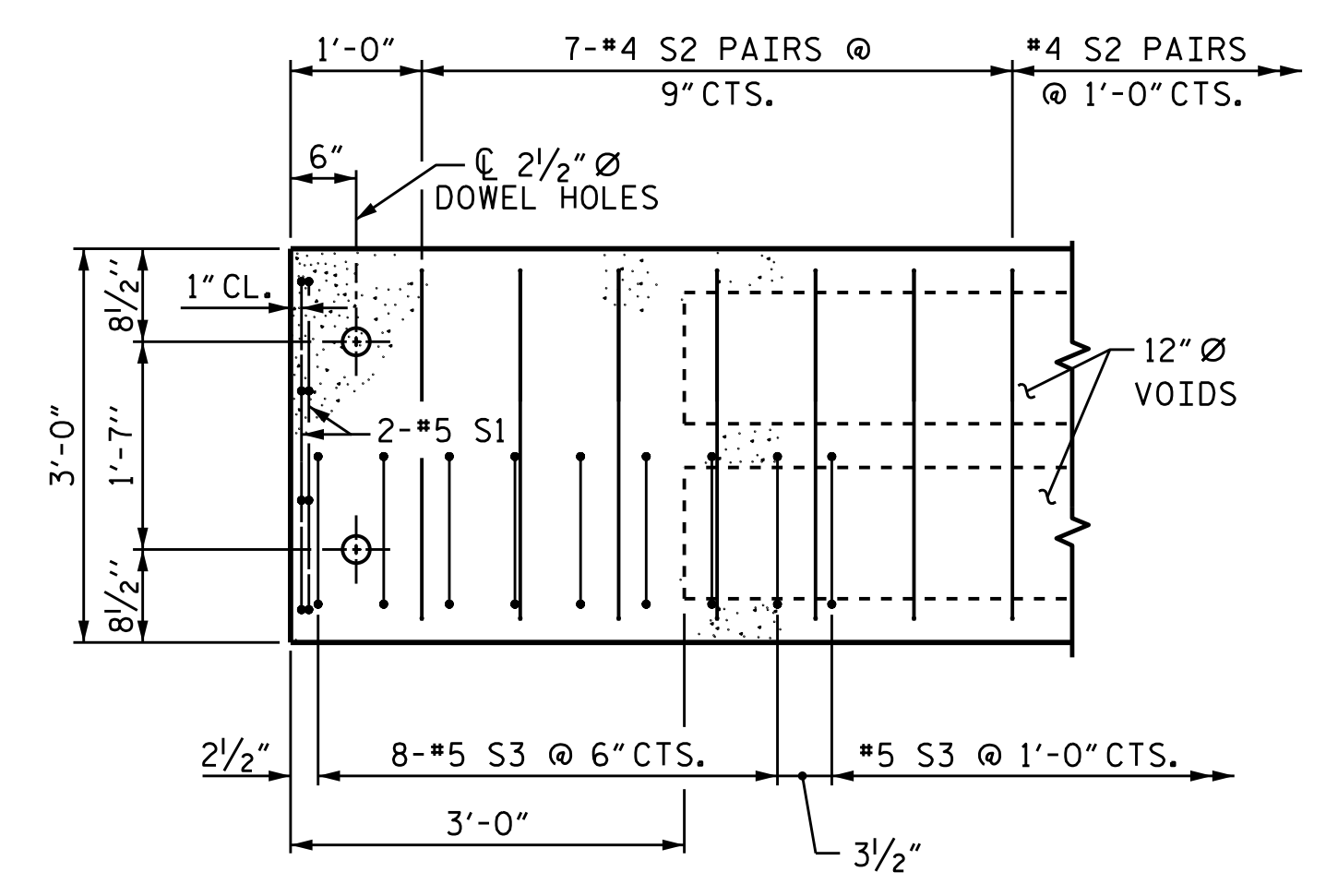
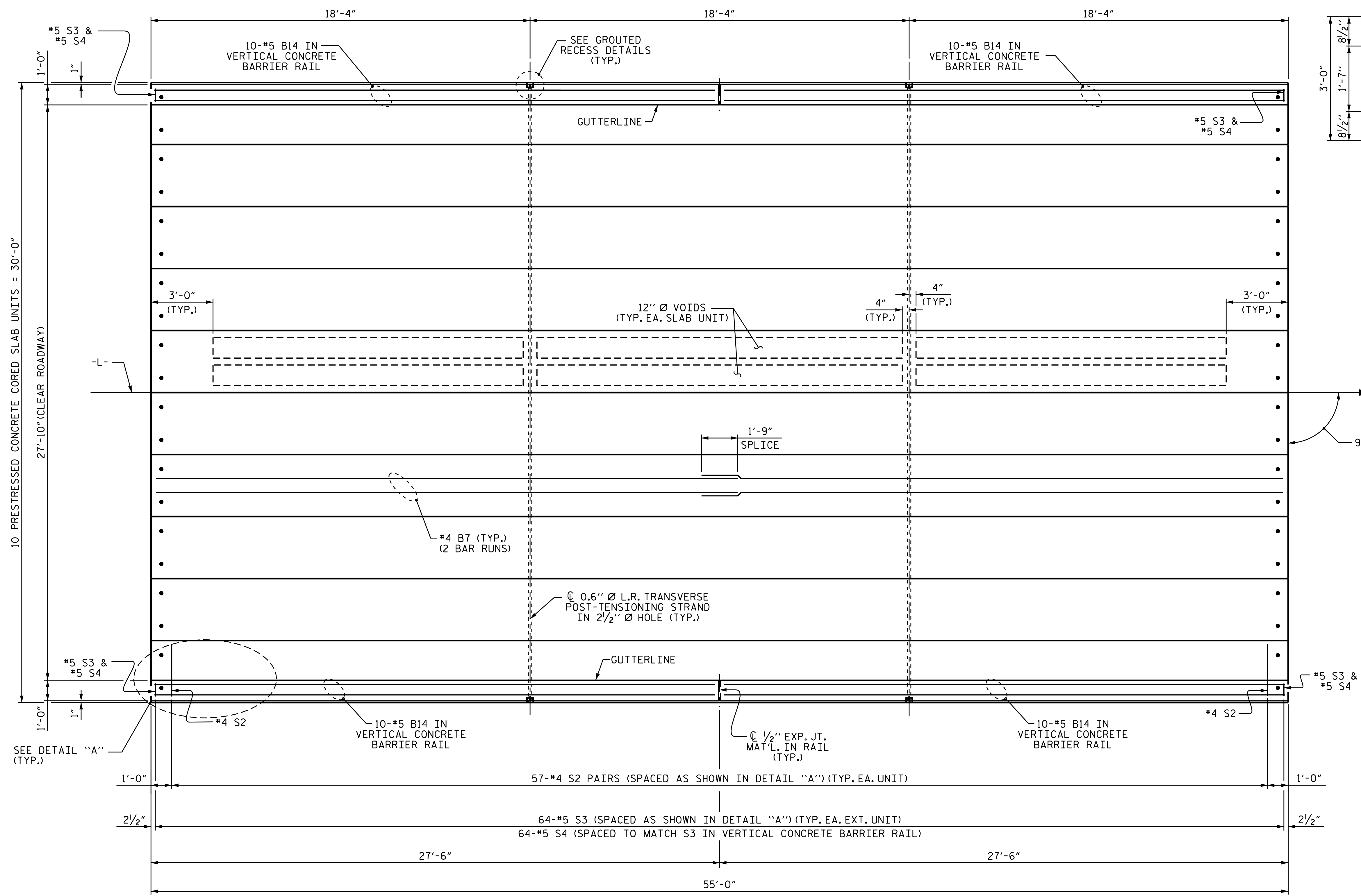


DocuSigned by:  
 P. Corey Newton  
 4FFE39D14318407...  
 3/7/2017

ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	REV. 8/14 MAA/TMG

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			17



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

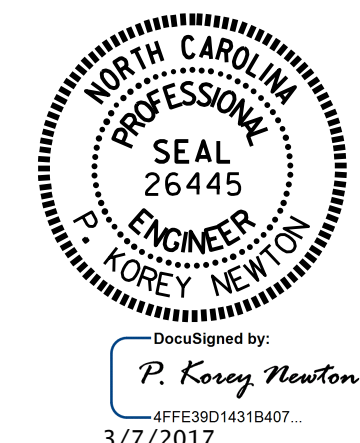
NO CRANE SHALL BE PLACED NOR OPERATED ON SPAN B.

**PLAN OF UNIT**

PROJECT NO. 17BP.2.R.69  
 PITT COUNTY  
 STATION: 12+62.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 PLAN OF 55' UNIT  
 27'-10" CLEAR ROADWAY  
 90° SKEW



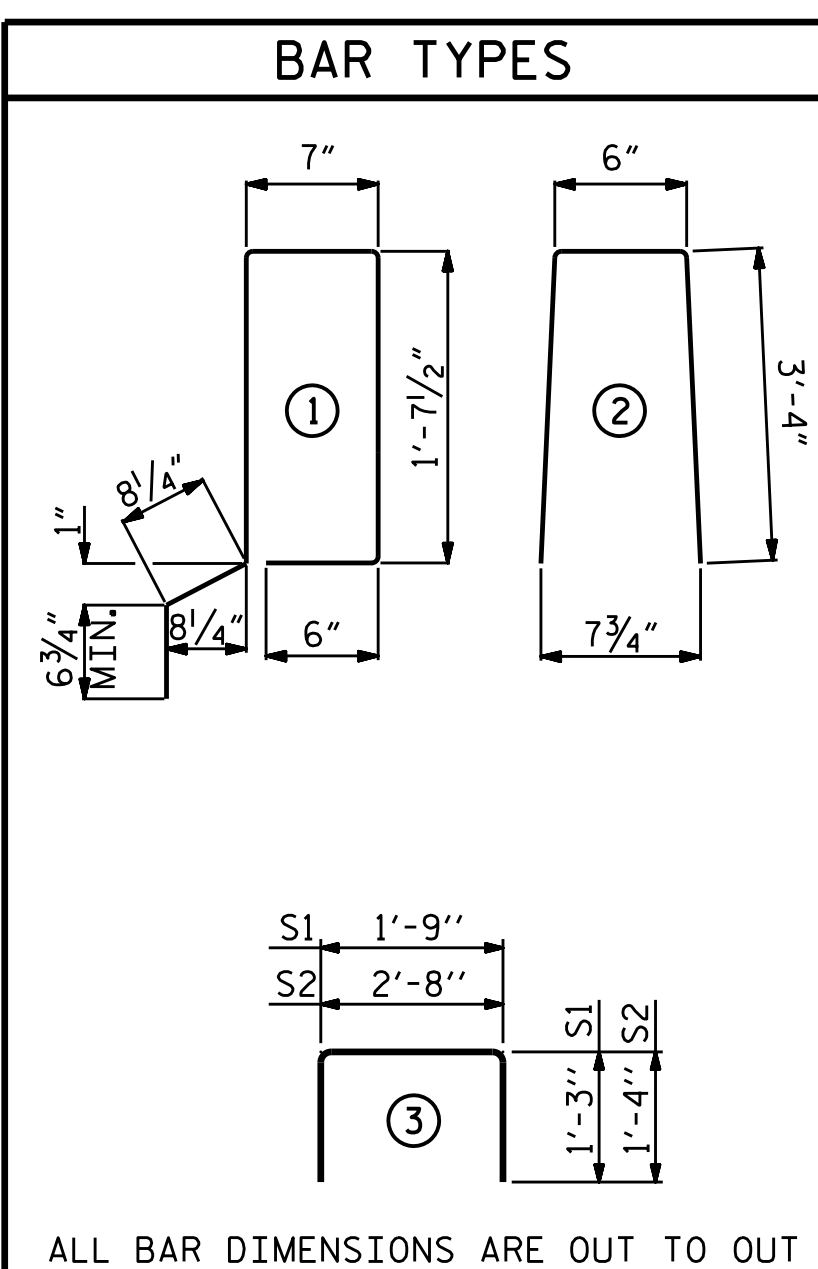
ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	REV. 8/14 MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS 17
2			4			

BILL OF MATERIAL FOR ONE 25' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B1	2	#4	STR	24'-8"	33	24'-8"	33
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	54	#4	3	5'-4"	192	5'-4"	192
*S3	34	#5	1	5'-7"	198		
REINFORCING STEEL				LBS.	260	260	
*EPOXY COATED REINFORCING STEEL				LBS.	198		
5000 P.S.I. CONCRETE				CU. YDS.	3.7	3.7	
0.6" Ø L.R. STRANDS				No.	9	9	

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	114	#4	3	5'-4"	406	5'-4"	406
*S3	64	#5	1	5'-7"	373		
REINFORCING STEEL				LBS.	516	516	
*EPOXY COATED REINFORCING STEEL				LBS.	373		
6500 P.S.I. CONCRETE				CU. YDS.	7.8	7.8	
0.6" Ø L.R. STRANDS				No.	19	19	



**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.

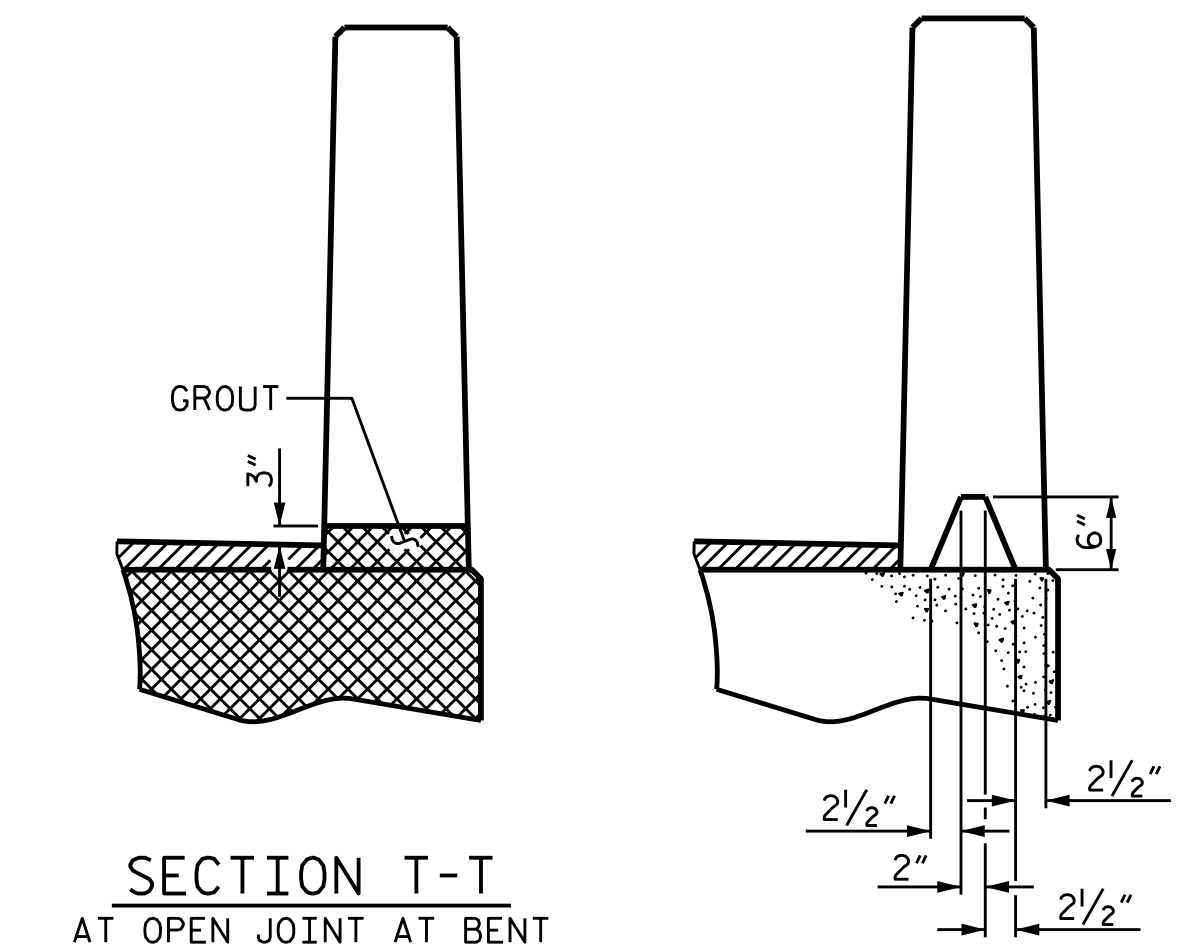
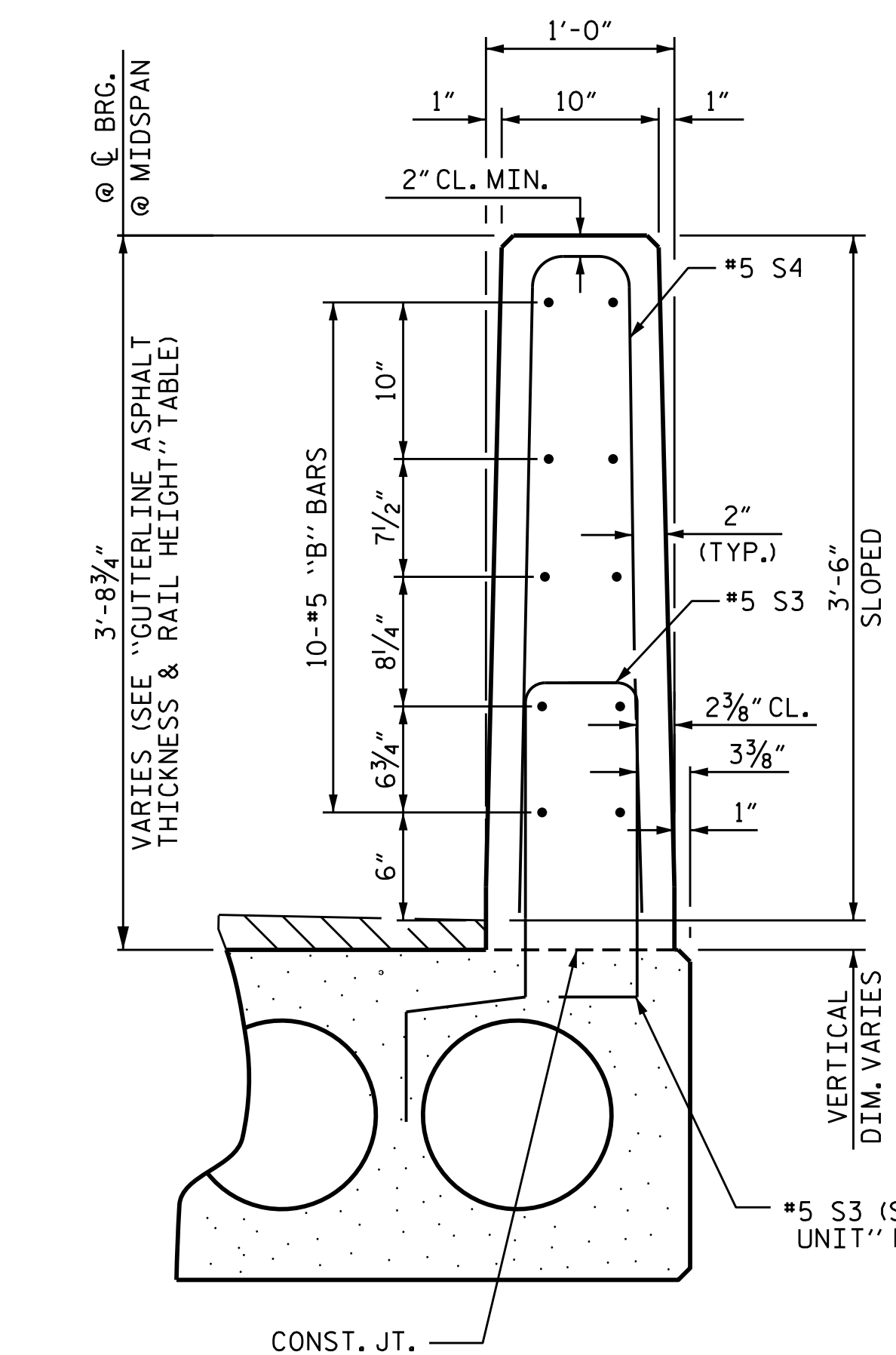
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED 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.

CORED SLABS REQUIRED			
UNIT	NUMBER	LENGTH	TOTAL LENGTH
25' UNIT			
EXTERIOR C.S.	4	25'-0"	100'-0"
INTERIOR C.S.	16	25'-0"	400'-0"
TOTAL	20	25'-0"	500'-0"
55' UNIT			
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	8	55'-0"	440'-0"
TOTAL	10	55'-0"	550'-0"

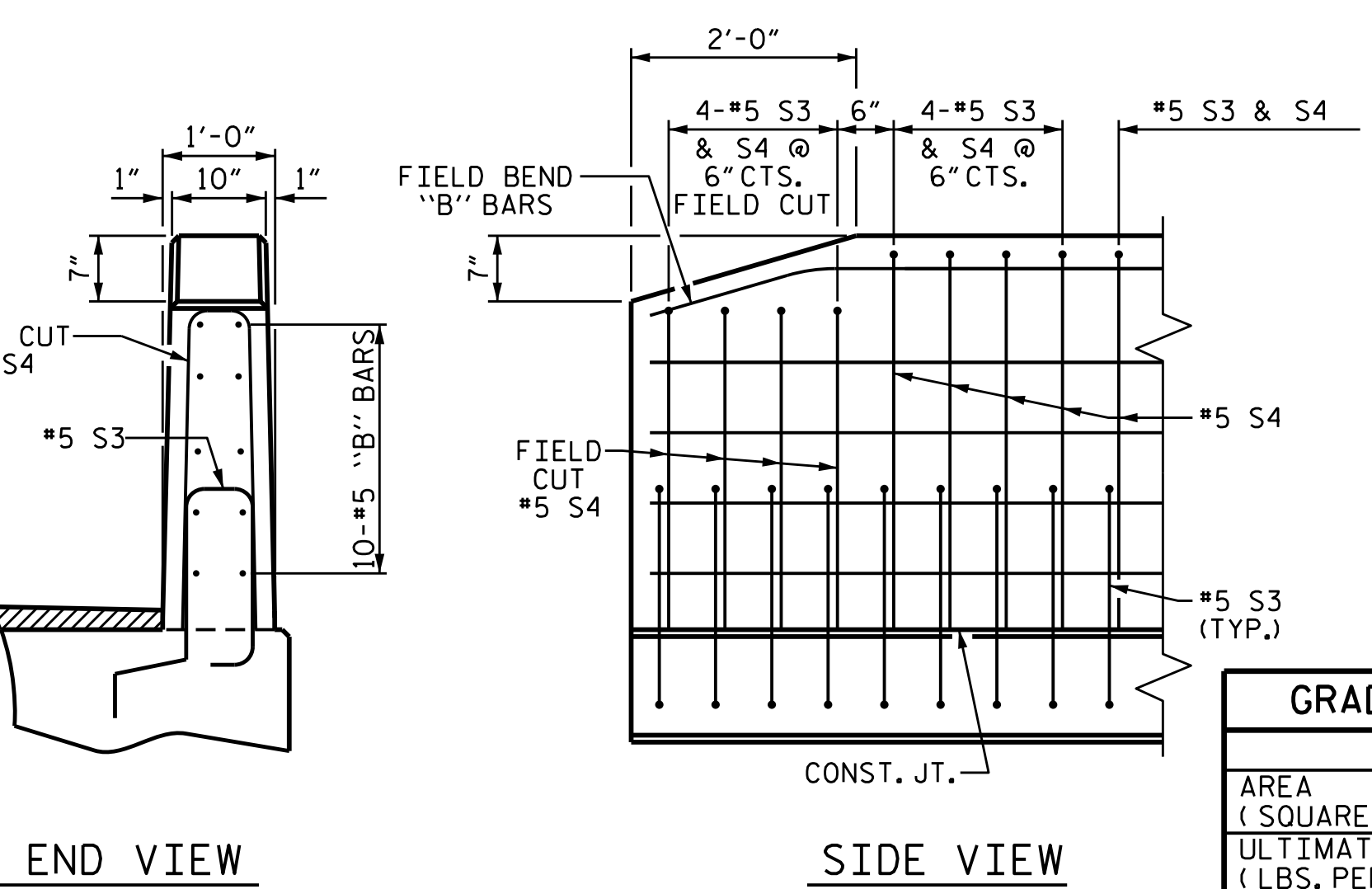
DEAD LOAD DEFLECTION AND CAMBER		
21" C. S. UNIT--0.6" Ø L.R. STRAND	SPAN A OR C (25'-0" UNITS)	SPAN B (55'-0" UNITS)
CAMBER (SLAB ALONE IN PLACE)	1/4" ↑	1 1/2" ↑
DEFLECTION DUE TO CONCRETE WEARING SURFACE	1/8" ↓	3/8" ↓
FINAL CAMBER	1/8" ↑	1 1/8" ↑

GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA ( SQUARE INCHES )	0.217
ULTIMATE STRENGTH ( LBS. PER STRAND )	58,600
APPLIED PRESTRESS ( LBS. PER STRAND )	43,950

CONCRETE RELEASE STRENGTH	
UNIT	PSI
25' UNITS	4000
55' UNITS	4900



**ELASTOMERIC BEARING DETAILS**  
ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.



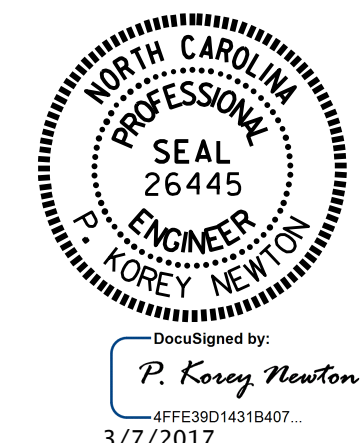
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
25' UNIT						
*B8	20	40	#5	STR	24'-7"	1026
*S4	68	136	#5	2	7'-2"	1017
55' UNIT						
*B14	40	40	#5	STR	27'-1"	1130
*S4	128	128	#5	2	7'-2"	957
*EPOXY COATED REINFORCING STEEL						LBS. 4130
CLASS AA CONCRETE						CU.YDS. 26.9
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN.FT. 210.50

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
25' UNITS	2 3/8"	3'-8 5/8"
55' UNITS	1 5/8"	3'-7 5/8"

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
3'-0" X 1'-9"  
PRESTRESSED CONCRETE  
CORED SLAB UNIT  
90° SKEW



GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA ( SQUARE INCHES )	0.217
ULTIMATE STRENGTH ( LBS. PER STRAND )	58,600
APPLIED PRESTRESS ( LBS. PER STRAND )	43,950

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS 17
2			4			

ASSEMBLED BY : P. K. NEWTON DATE : 3/1/17  
CHECKED BY : G. W. DICKEY DATE : 3/2/17  
DRAWN BY : DGE 5/09  
CHECKED BY : BCH 6/09  
REV. 11/14 MAA/TMG



NOTES

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

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

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

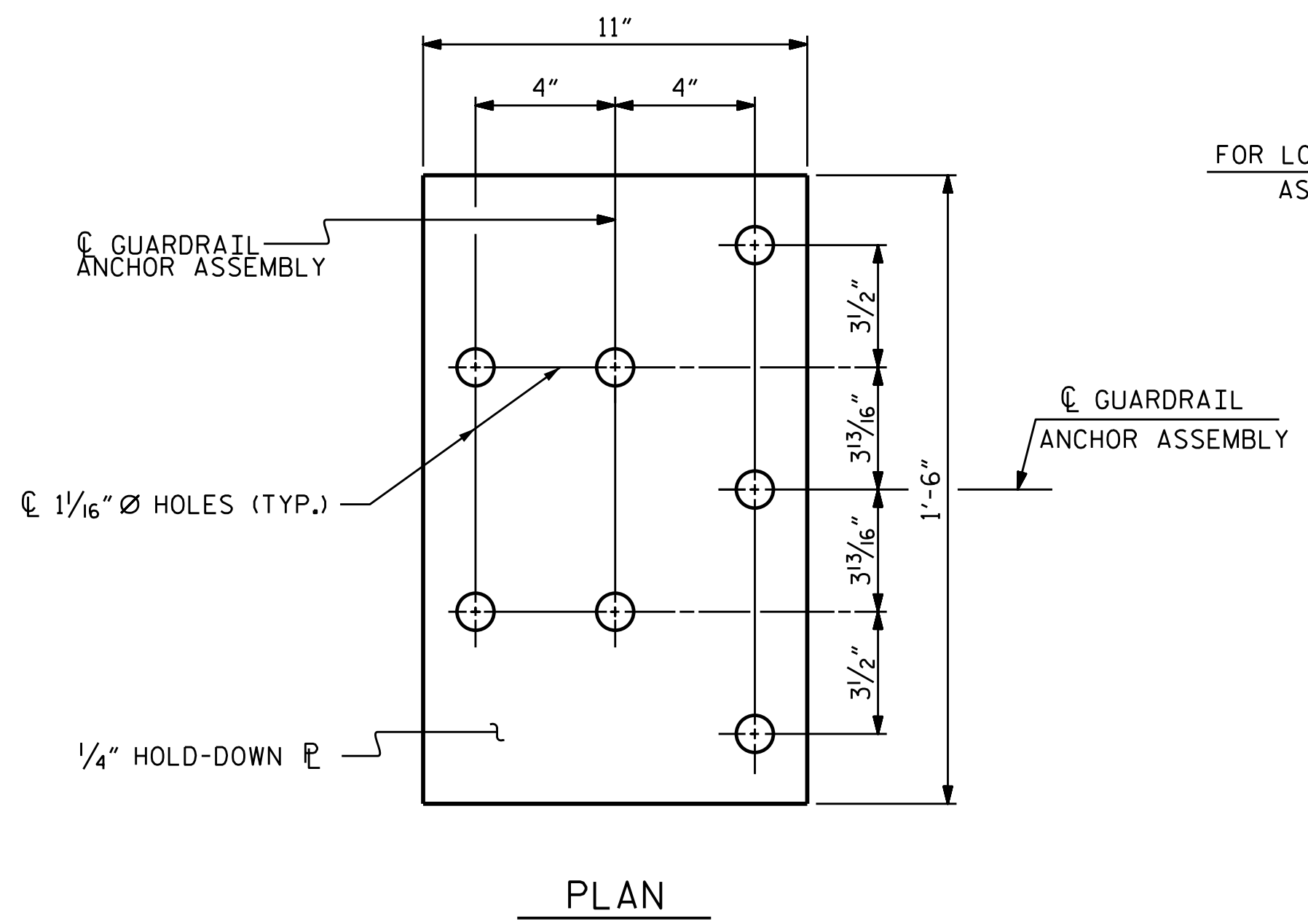
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

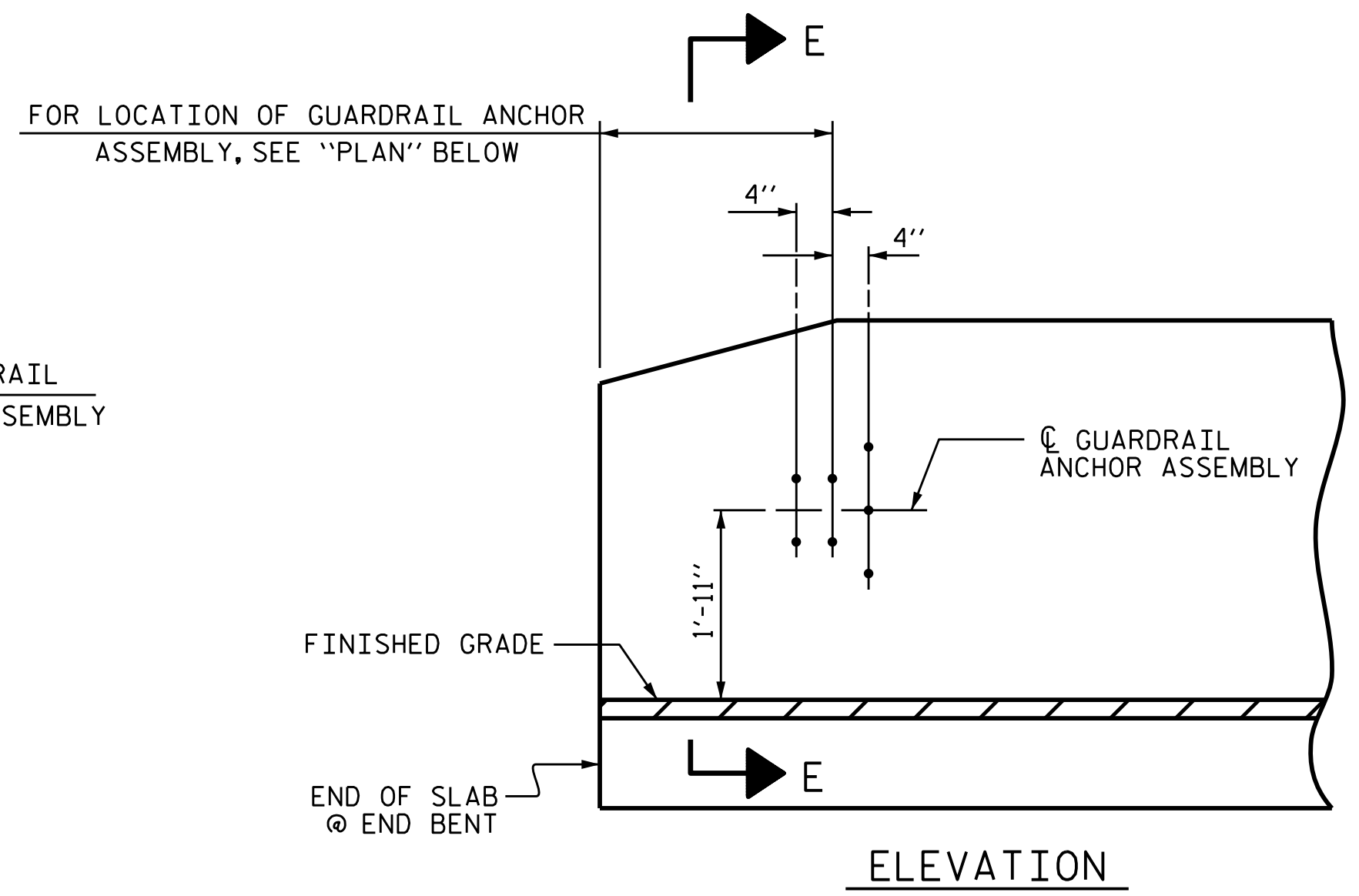
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

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

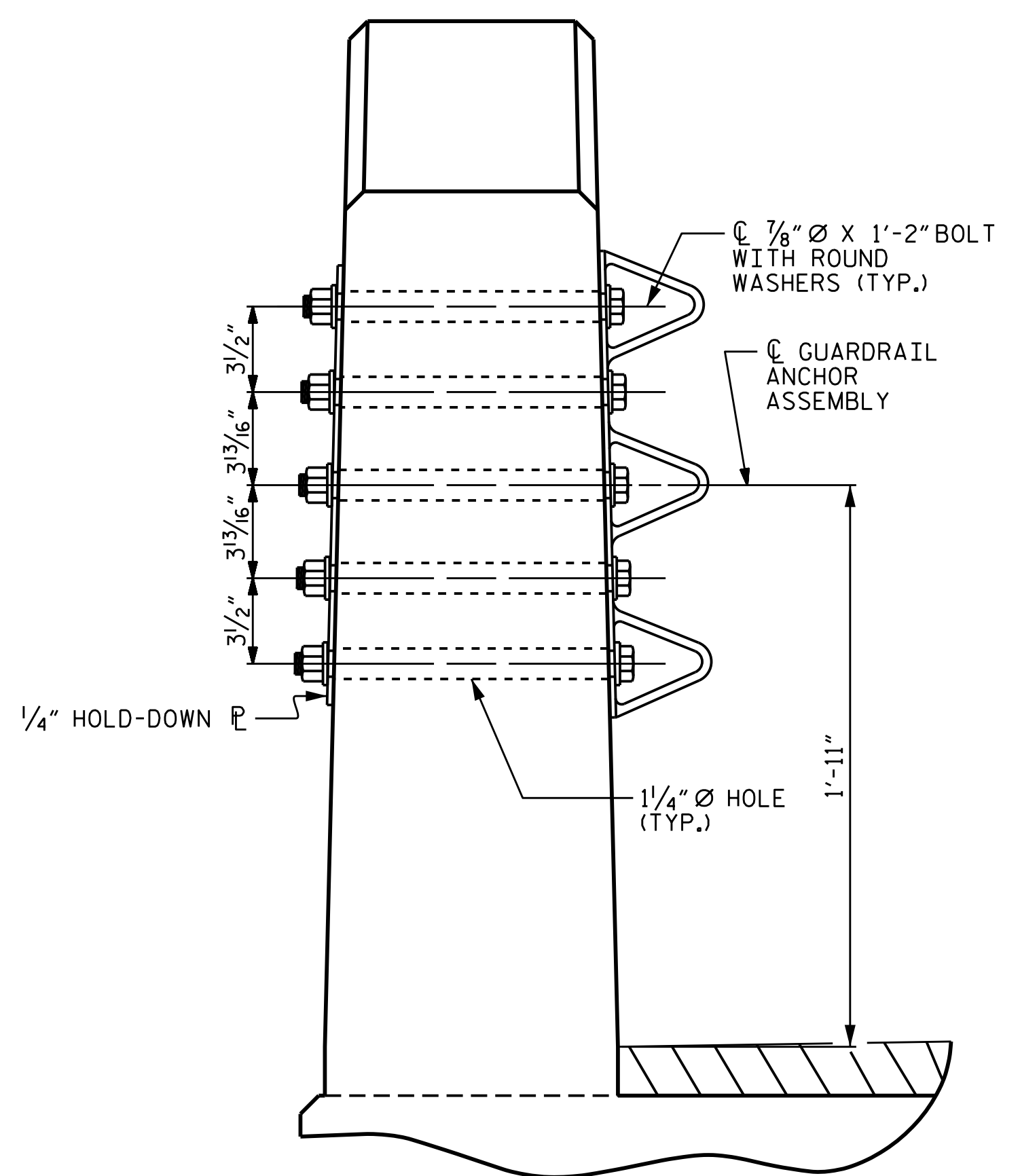
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



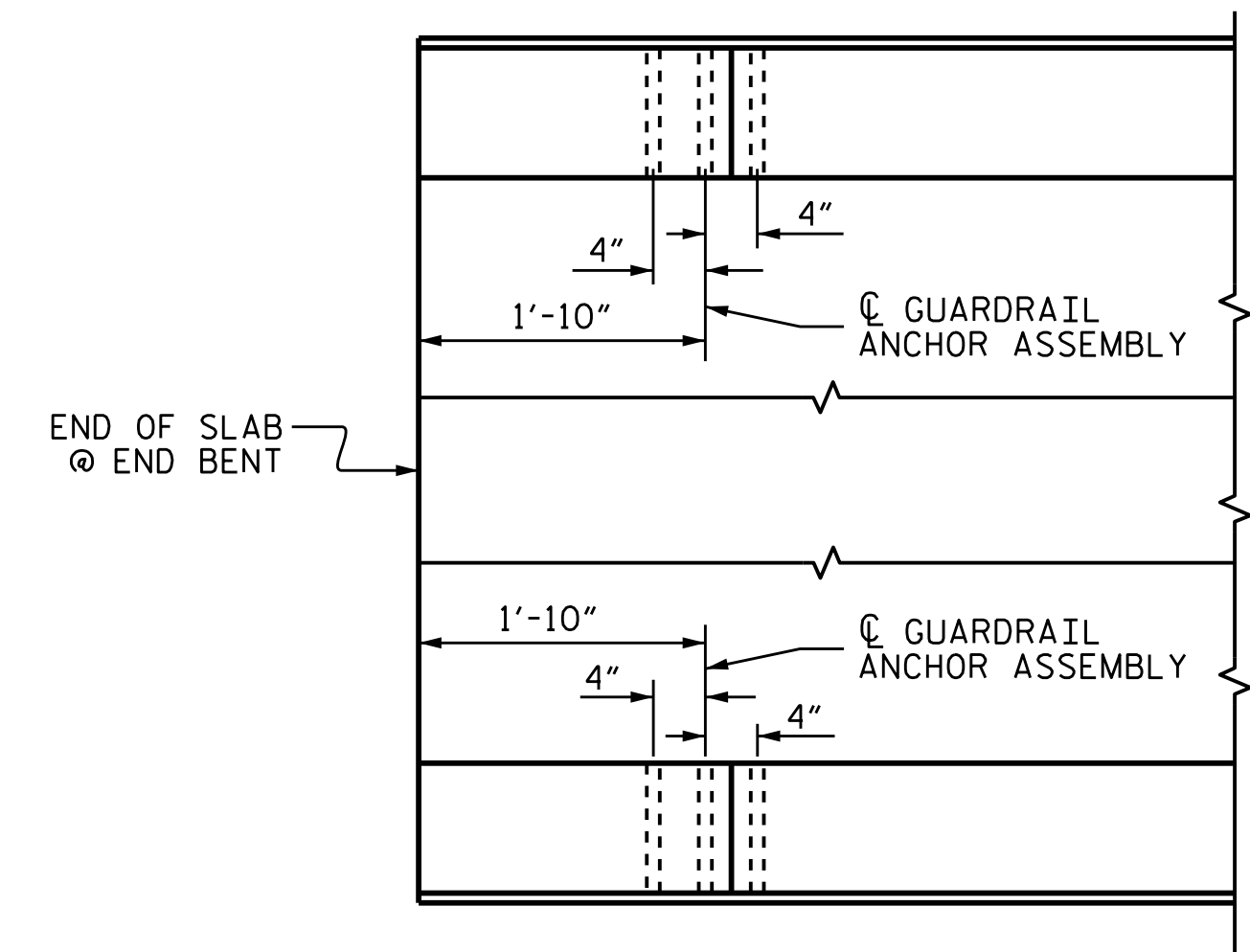
PLAN



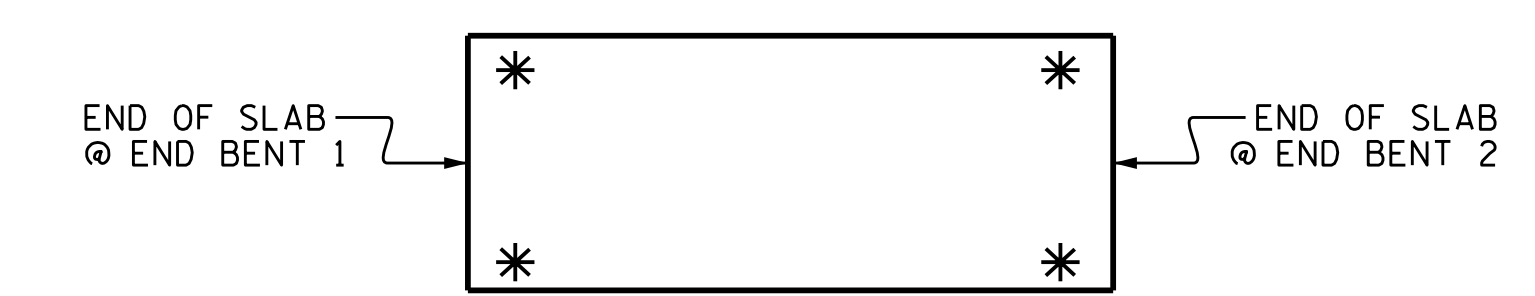
ELEVATION



SECTION E-E  
GUARDRAIL ANCHOR ASSEMBLY DETAILS

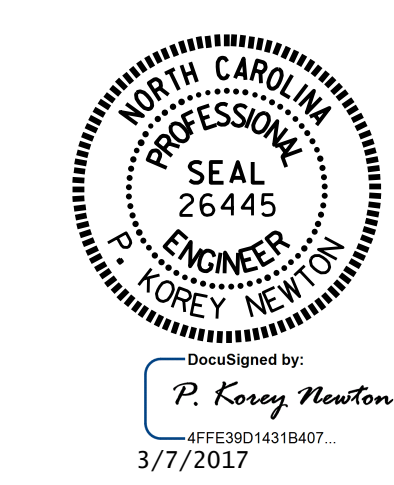


PLAN  
LOCATION OF ANCHORS FOR GUARDRAIL  
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT  
\* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-



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

ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
DRAWN BY : MAA 5/10	REV. 12/5/11 MAA/GM
CHECKED BY : GM 5/10	REV. 6/13 MAA/GM
	REV. 1/15 MAA/TMG

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			17

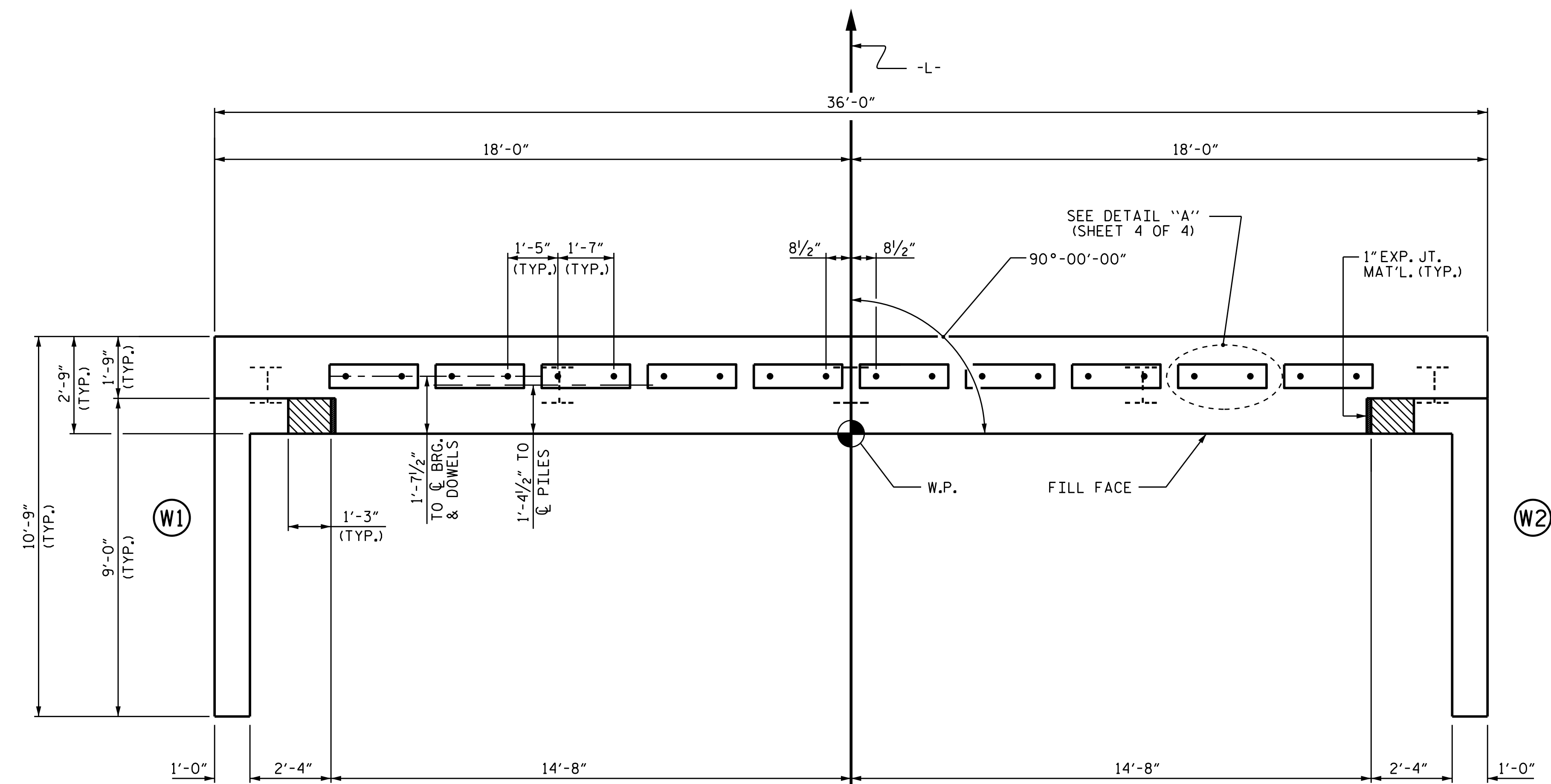
**NOTES**

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

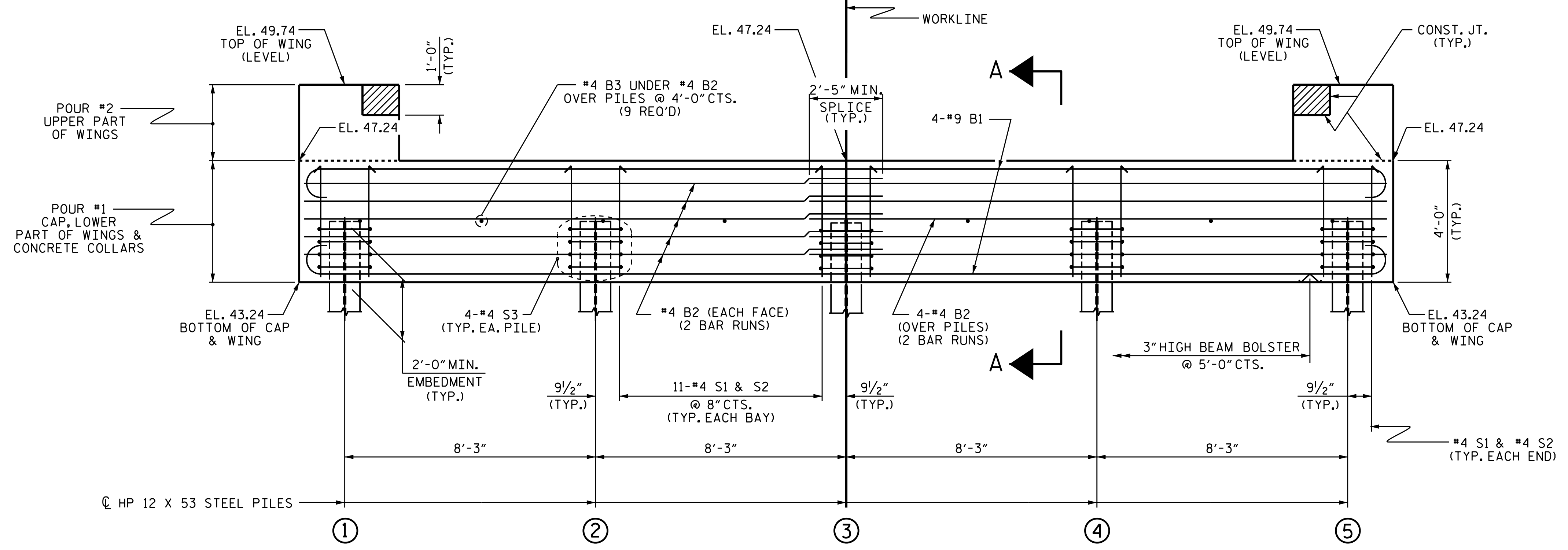
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



**PLAN**

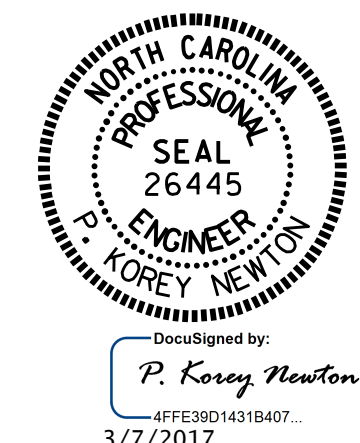


**ELEVATION**

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

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-

SHEET 1 OF 4



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SUBSTRUCTURE**  
**END BENT No. 1**

ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS 17
2			4			

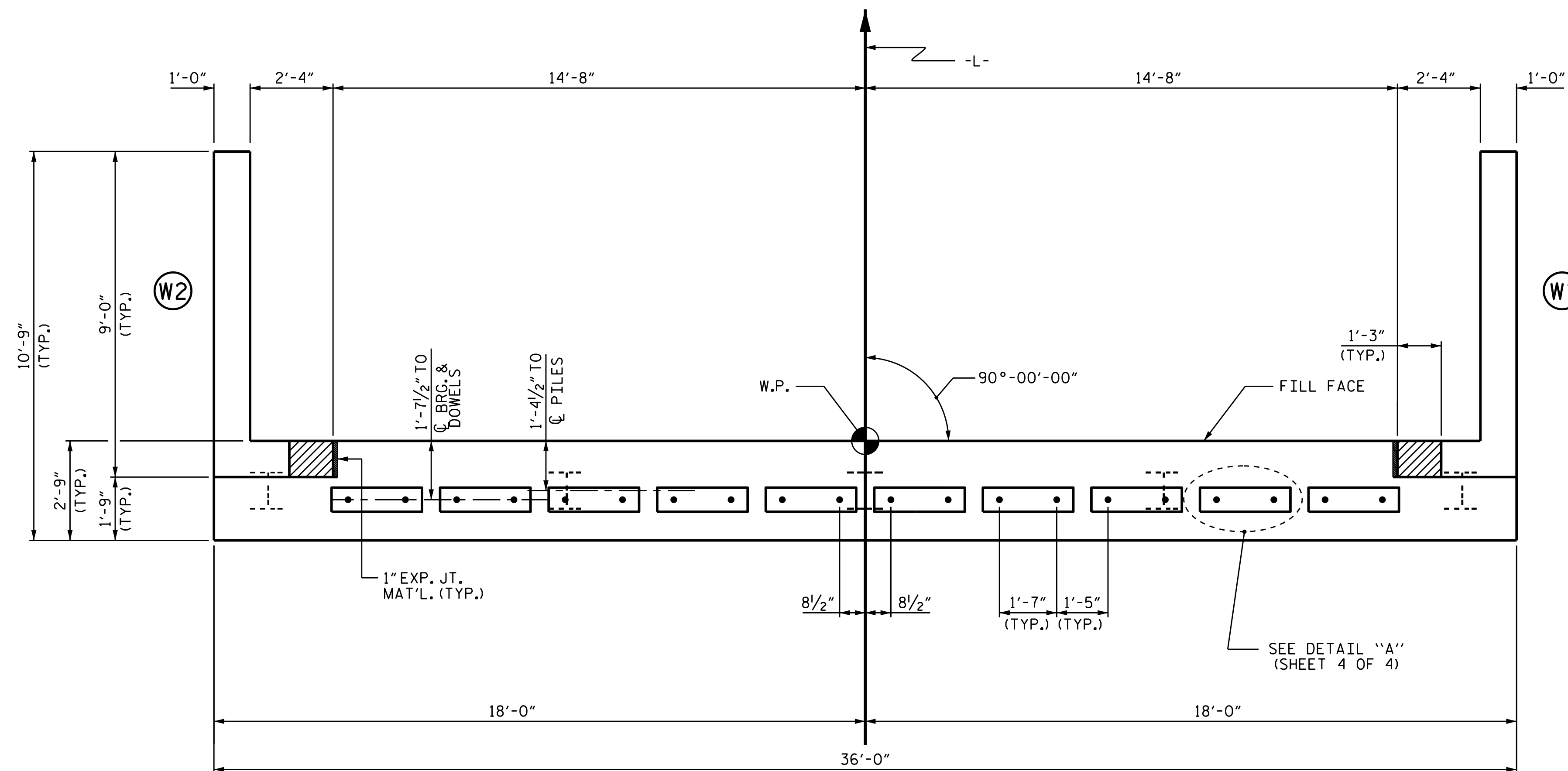
**NOTES**

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

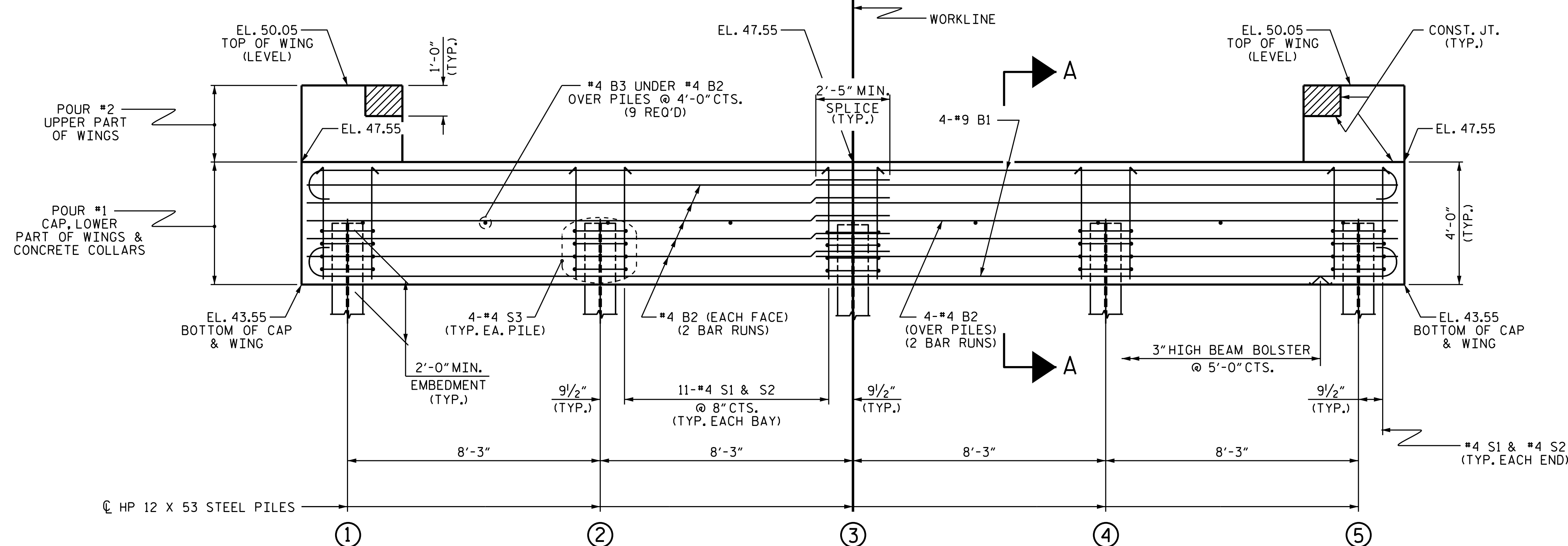
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



**PLAN**



**ELEVATION**

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

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-  
SHEET 2 OF 4



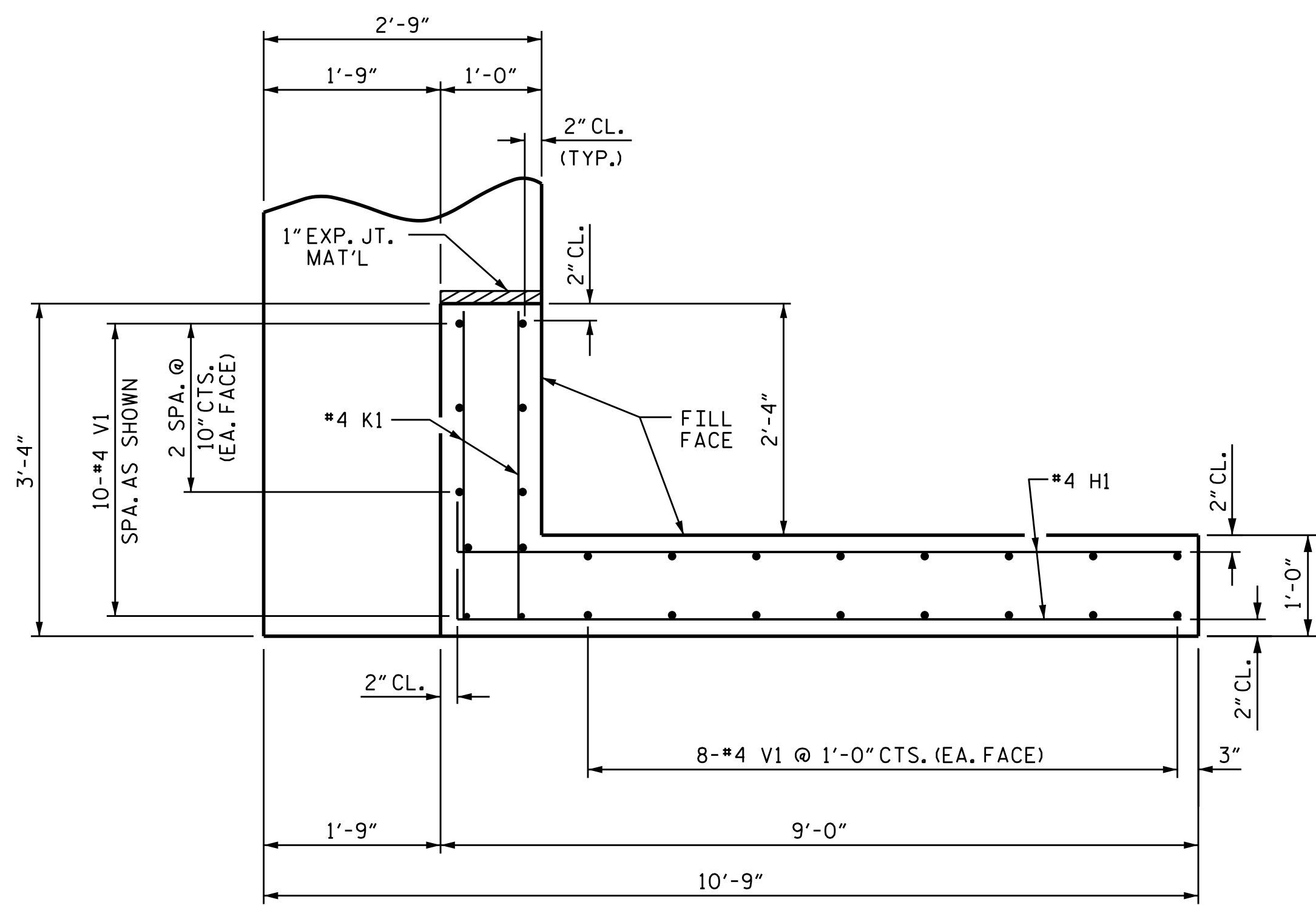
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SUBSTRUCTURE**  
**END BENT No. 2**

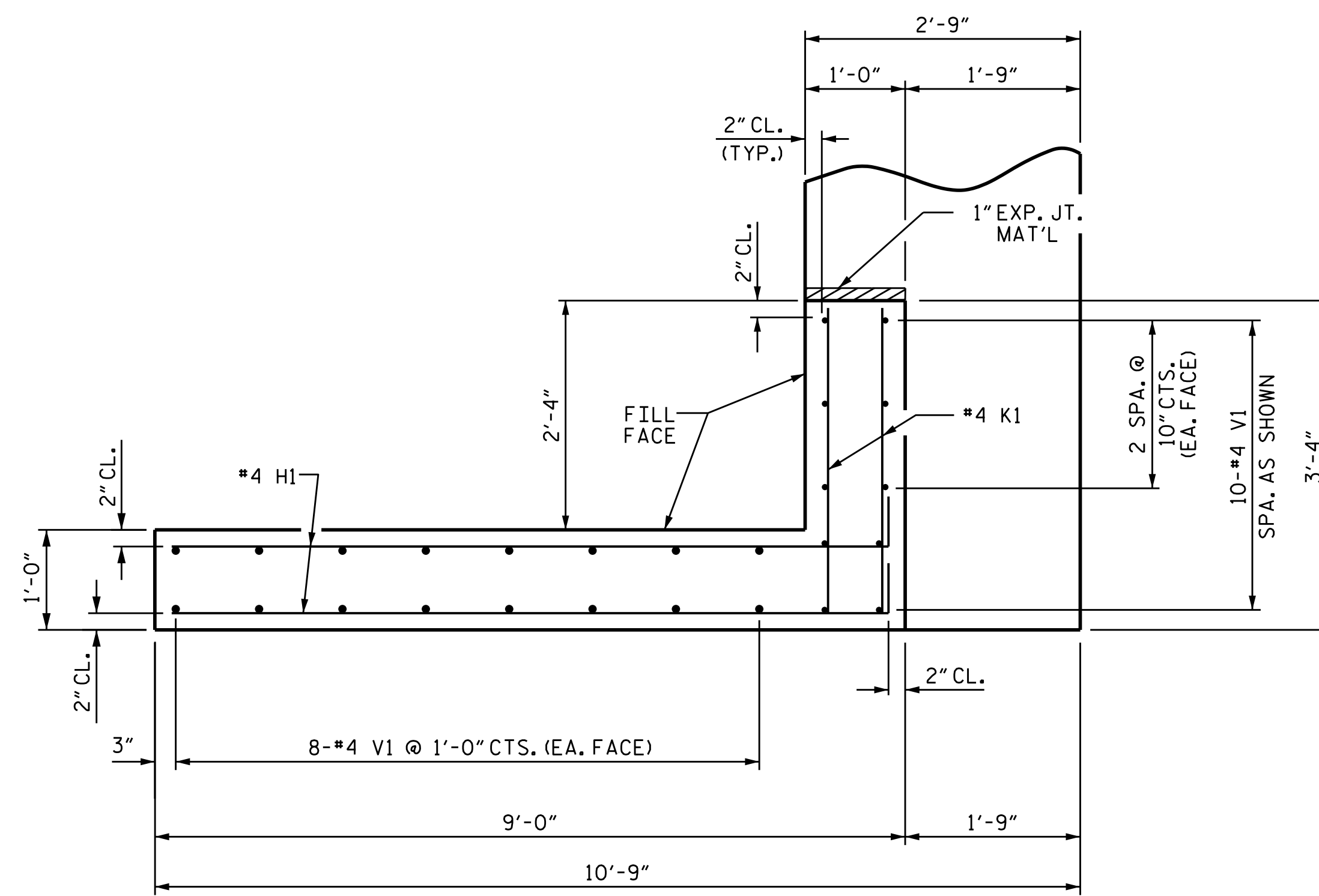
ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

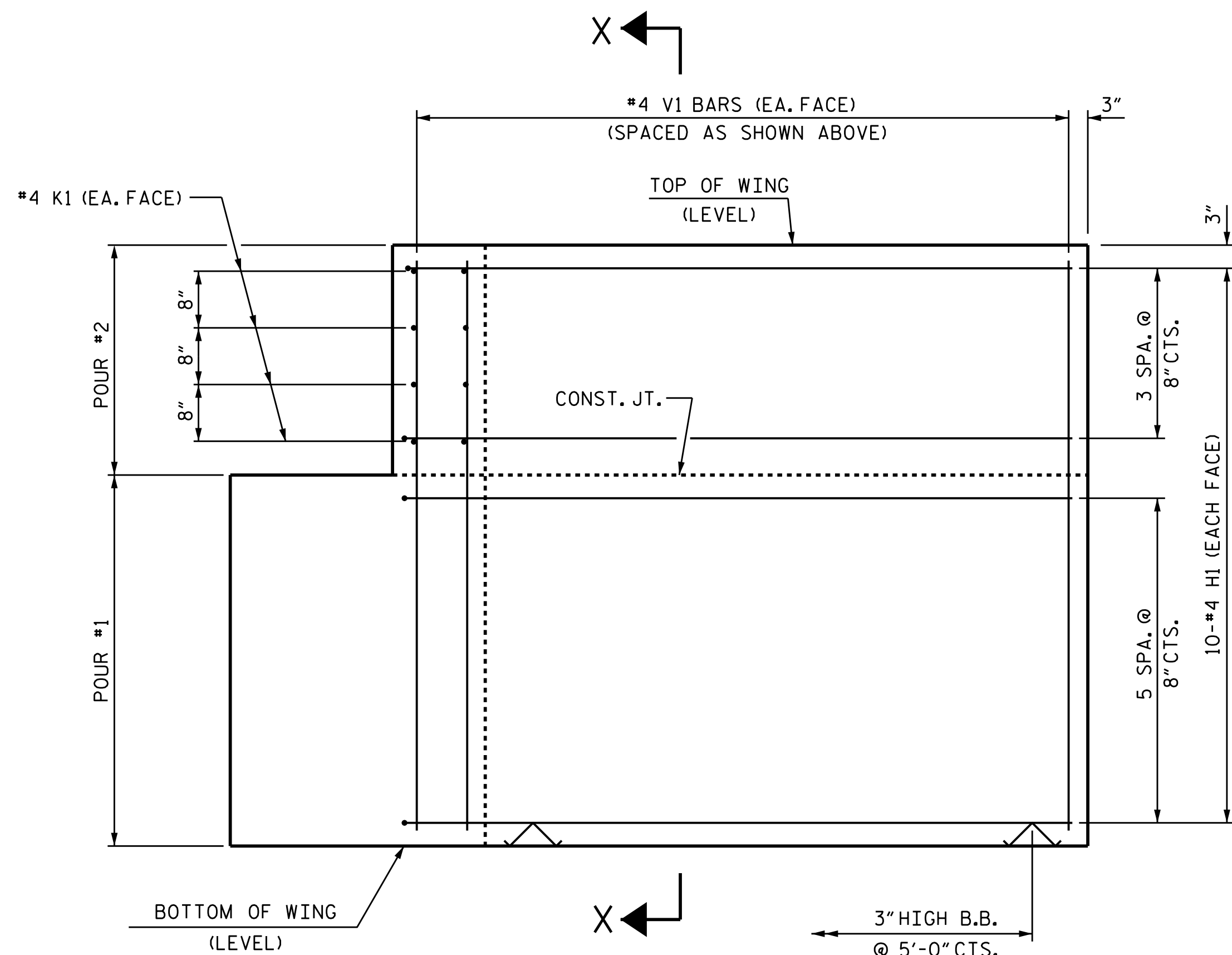
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
1			3			TOTAL SHEETS 17	
2			4				



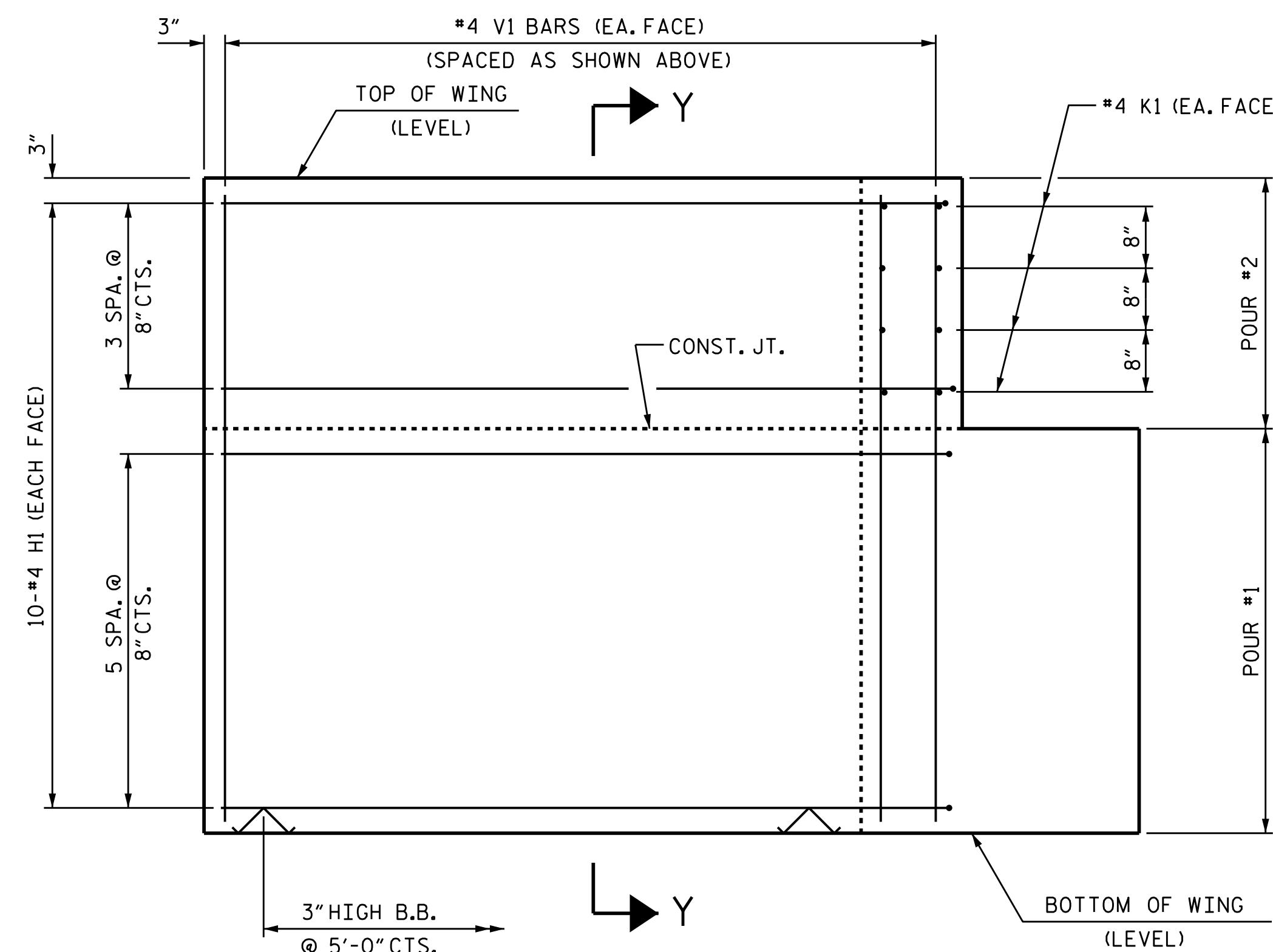
PLAN OF WING (W1)



PLAN OF WING (W2)

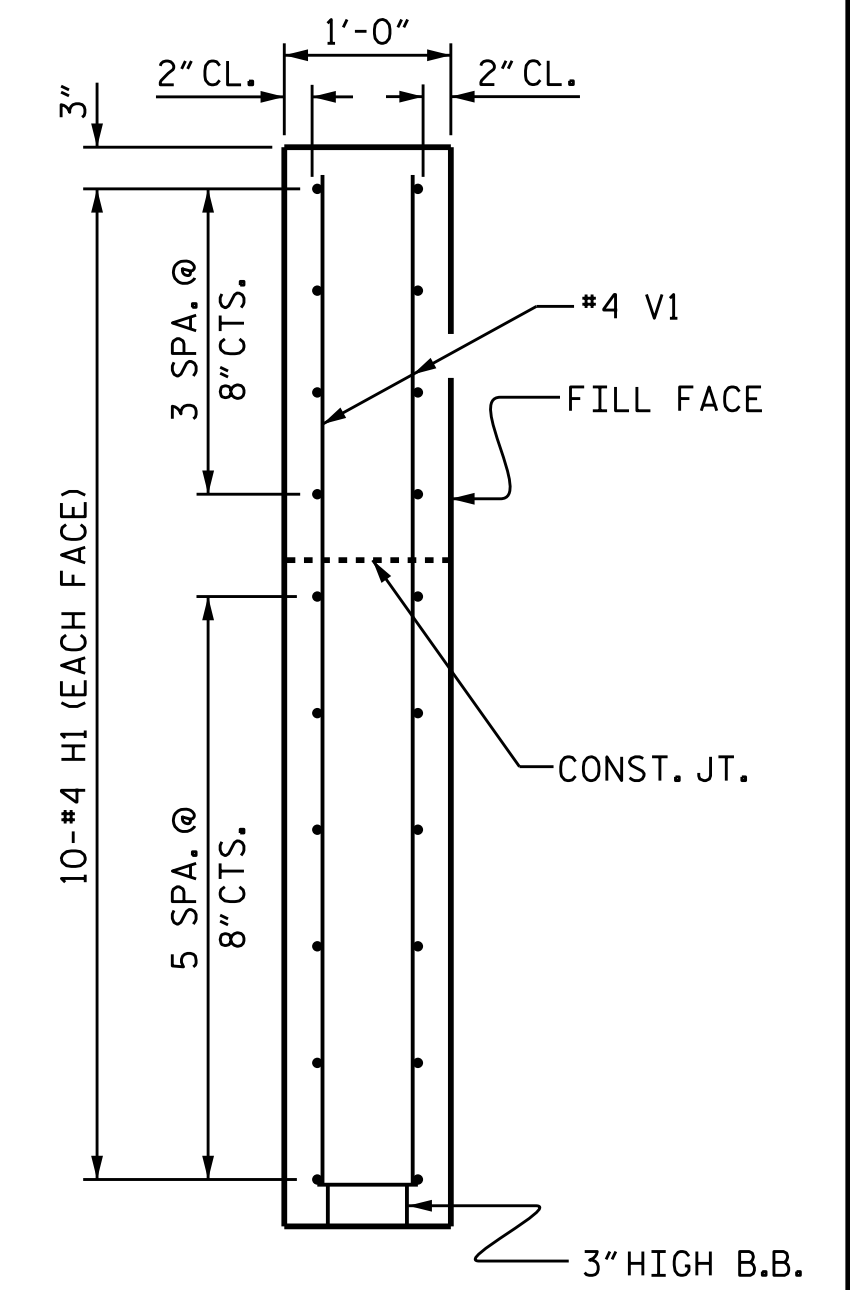


ELEVATION OF WING (W1)

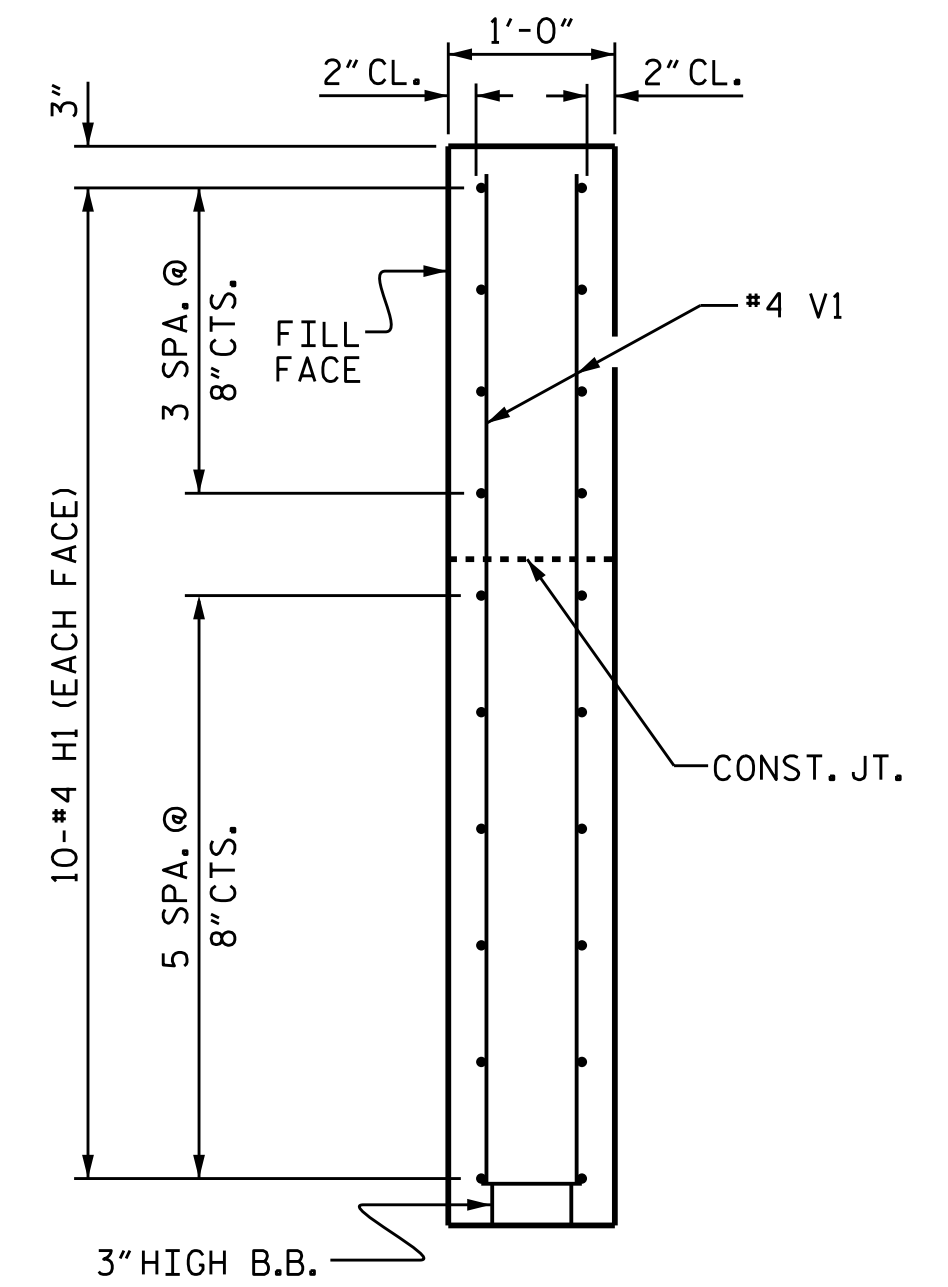


ELEVATION OF WING (W2)

WING DETAILS



SECTION X-X



SECTION Y-Y

PROJECT NO. 17BP.2.R.69  
 PITT COUNTY  
 STATION: 12+62.00 -L-

SHEET 3 OF 4

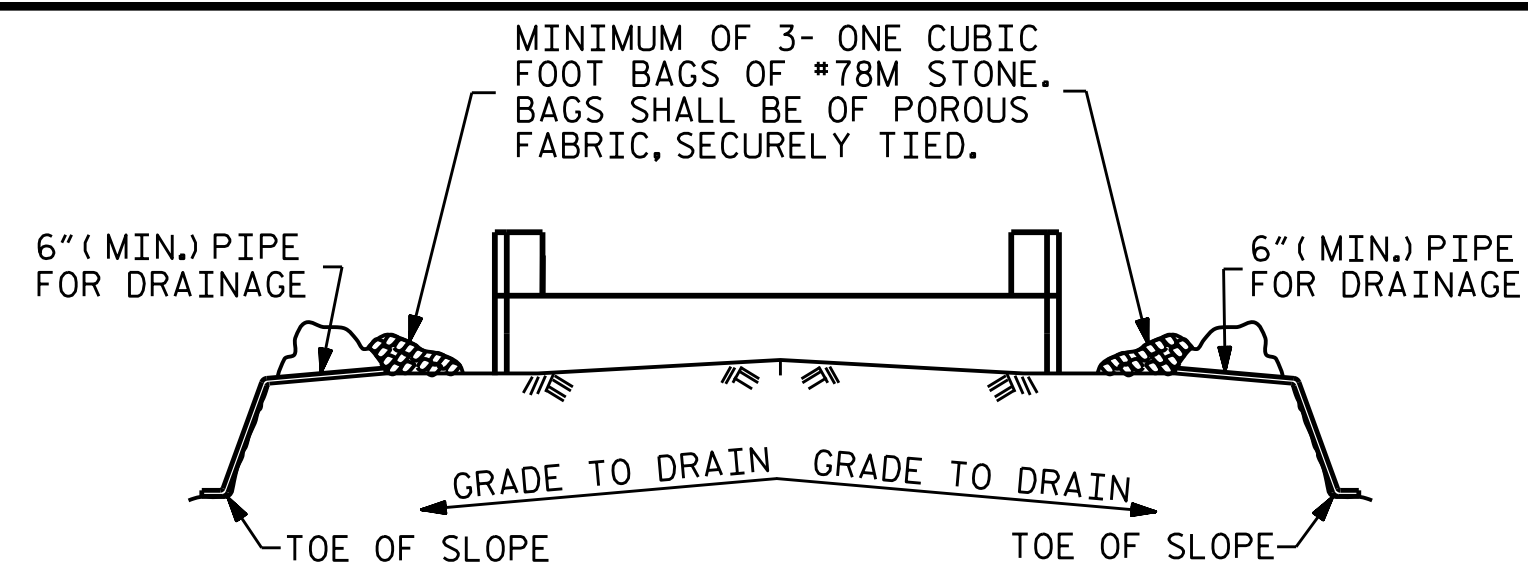


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 END BENT  
 WING DETAILS

ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12	
1			3			TOTAL SHEETS	
2			4			17	

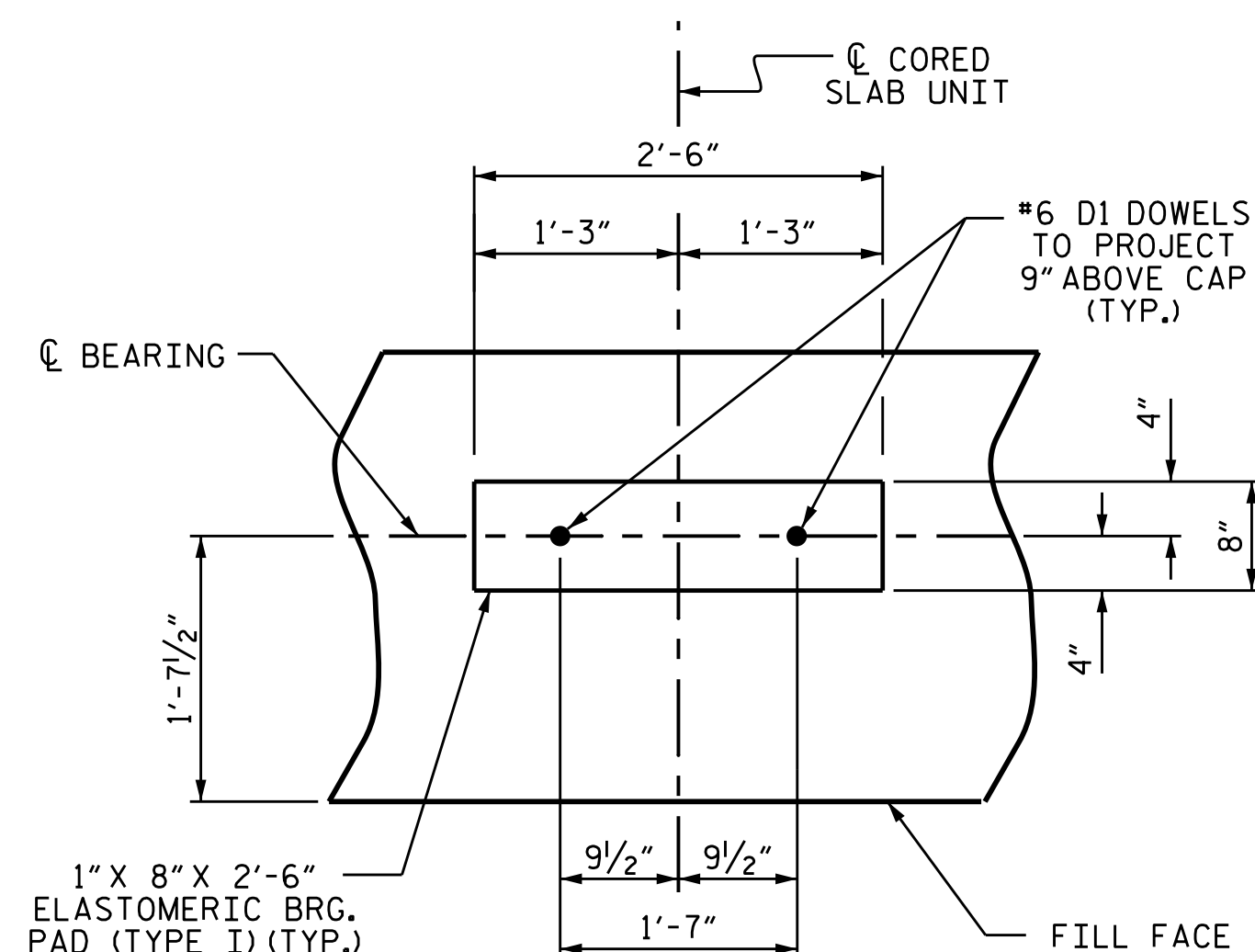


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

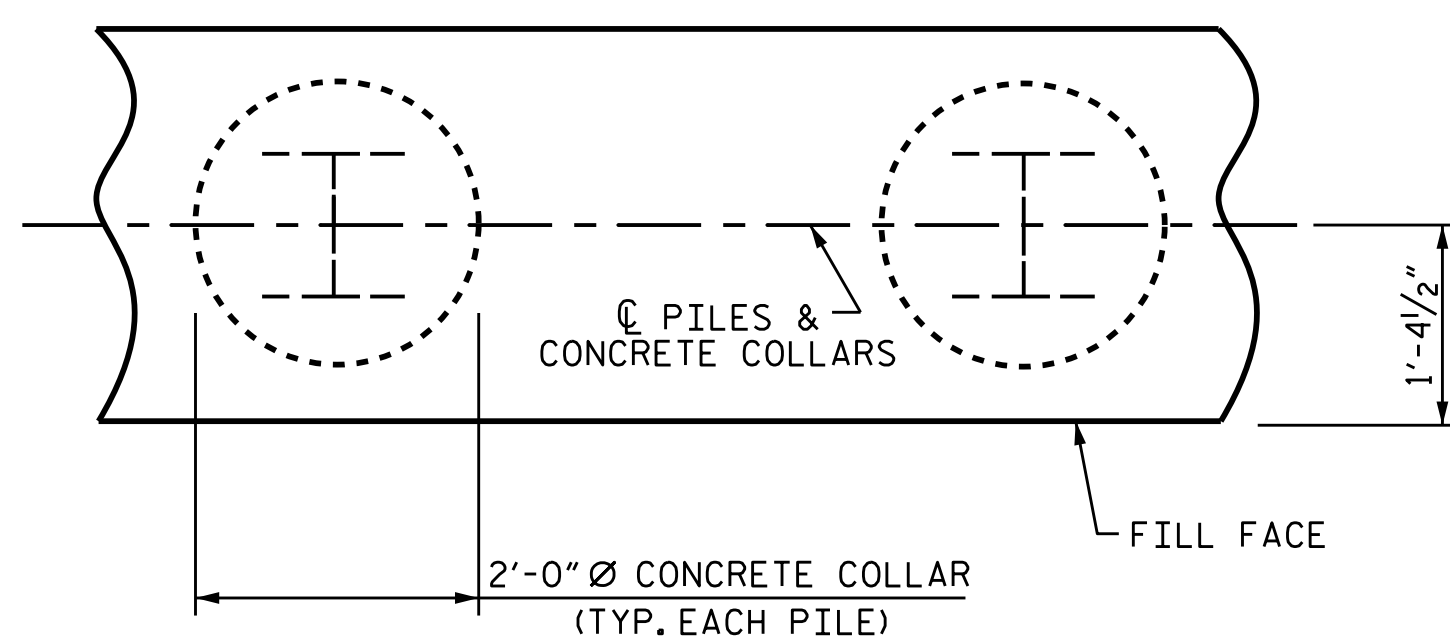
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

### TEMPORARY DRAINAGE AT END BENT



### DETAIL "A"

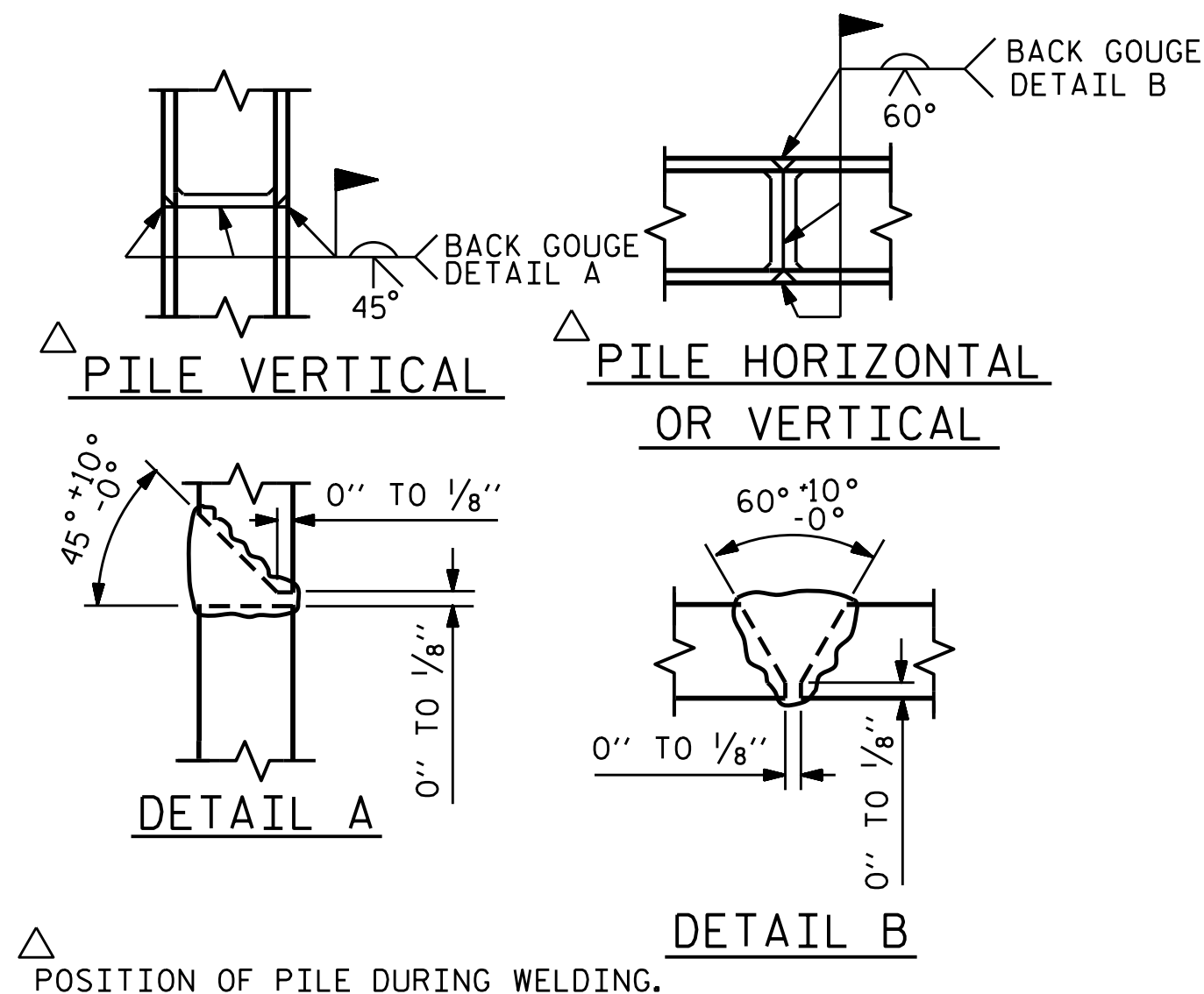
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



### PLAN

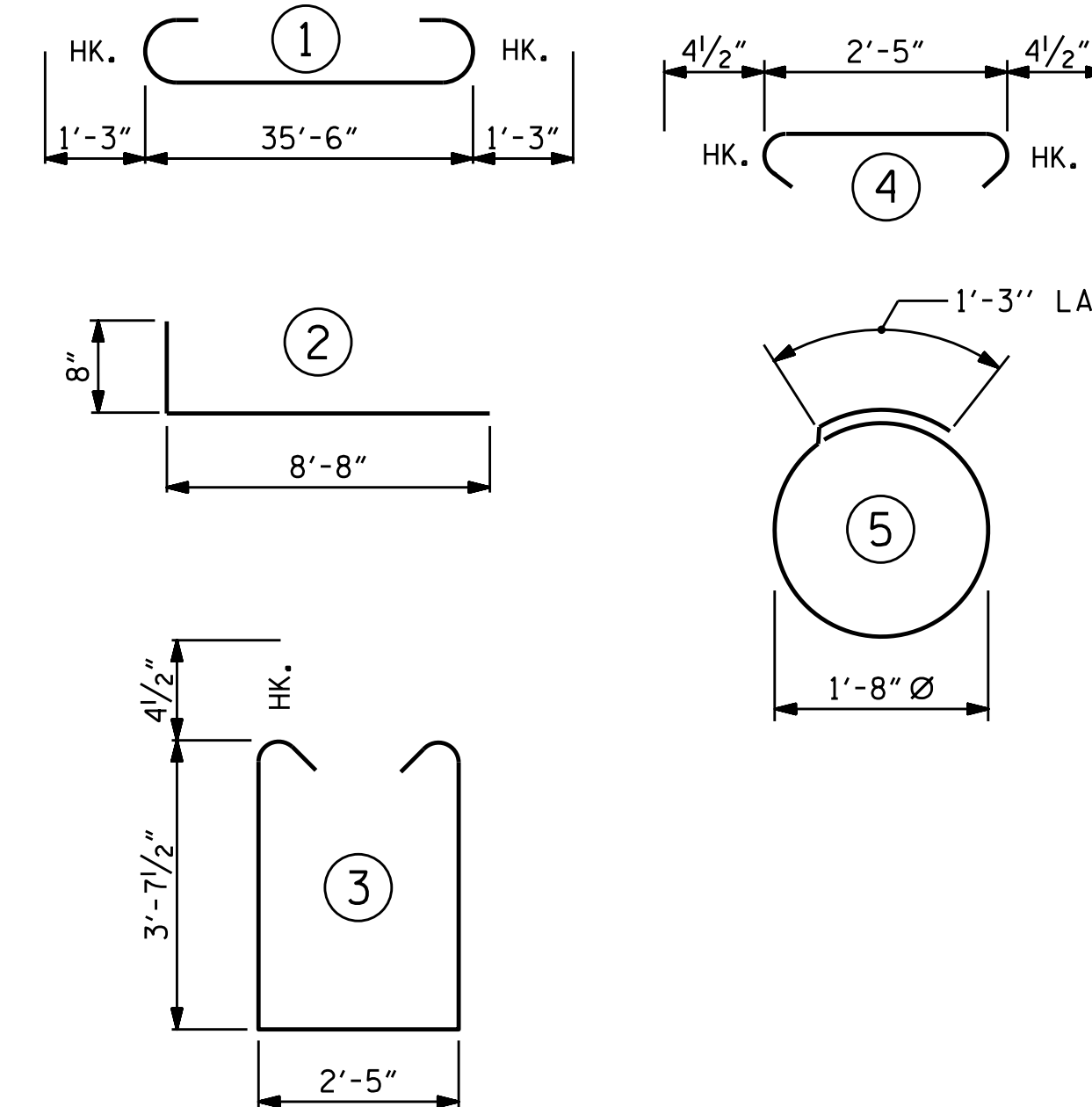
### CORROSION PROTECTION FOR STEEL PILES DETAIL

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



### PILE SPLICE DETAILS

### BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1		END BENT No. 2	
HP 12 X 53 STEEL PILES	NO: 5	HP 12 X 53 STEEL PILES	NO: 5
PILE REDRIVES	NO: 3	PILE REDRIVES	NO: 3
LIN. FT.= 275		LIN. FT.= 275	

### BILL OF MATERIAL

#### FOR ONE END BENT

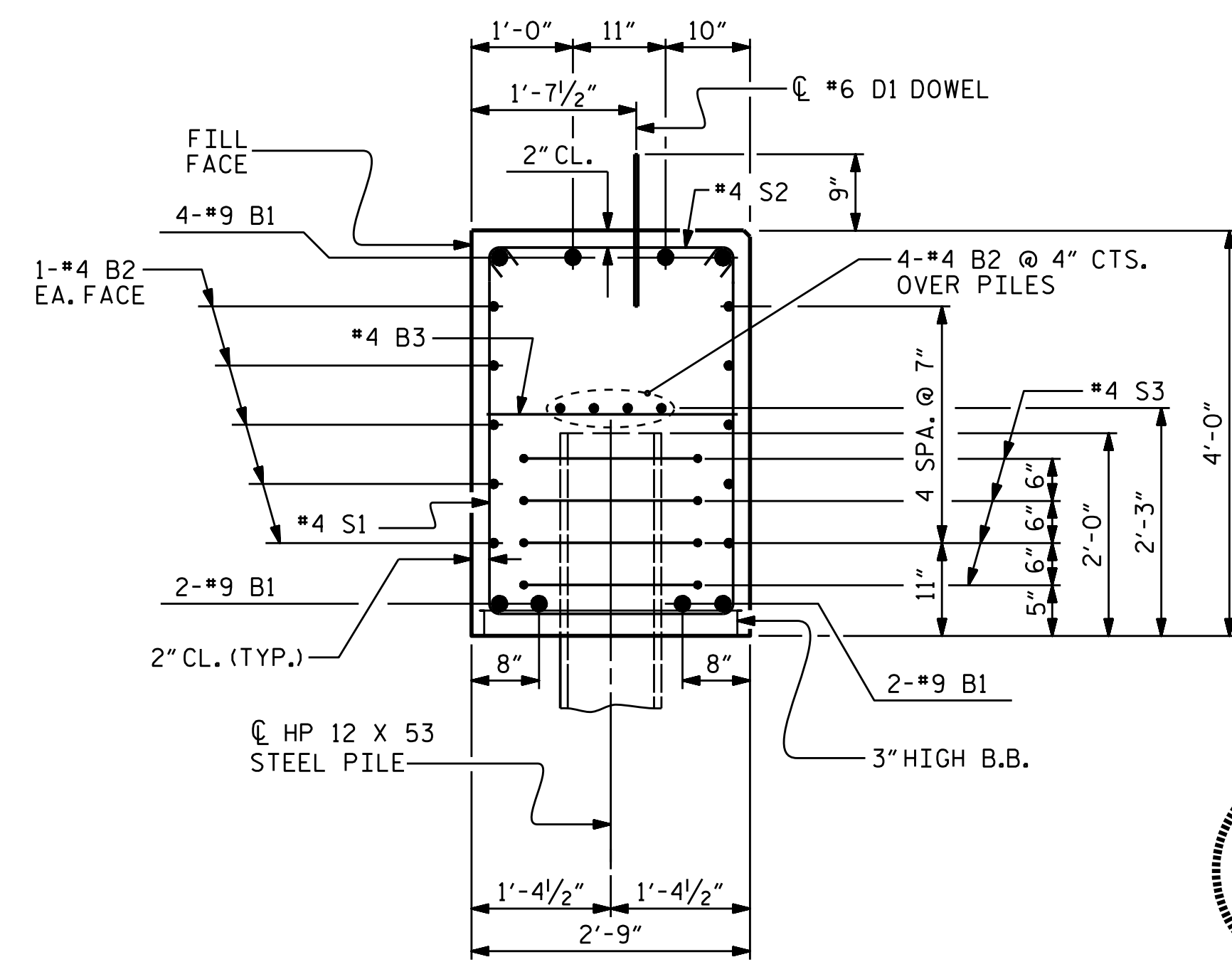
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-0"	1034
B2	28	#4	STR	19'-1"	357
B3	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	46	#4	3	10'-5"	320
S2	46	#4	4	3'-2"	97
S3	20	#4	5	6'-6"	87
V1	52	#4	STR	6'-2"	214

REINFORCING STEEL (FOR ONE END BENT) 2449 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

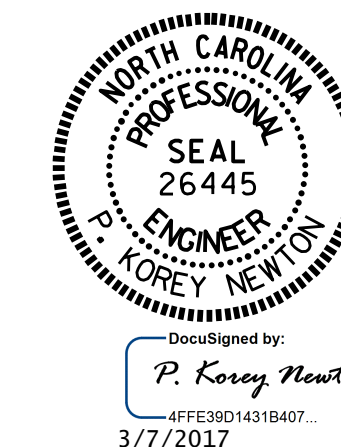
POUR #1	CAP, LOWER PART OF WINGS & COLLARS	17.9 C.Y.
POUR #2	UPPER PART OF WINGS	2.1 C.Y.

TOTAL CLASS A CONCRETE 20.0 C.Y.



### SECTION A-A

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



PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-  
SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT No. 1 & 2  
DETAILS

ASSEMBLED BY: P. K. NEWTON	DATE: 3/1/17
CHECKED BY: G. W. DICKEY	DATE: 3/2/17
DRAWN BY: WJH 12/11	
CHECKED BY: AAC 12/11	

07-MAR-2017 08:31  
S:\DPG1\Division2\17BP.2.R.69\Plans\17BP.2.R.69.SMU. FinalPlans.730086.dgn  
pknewton

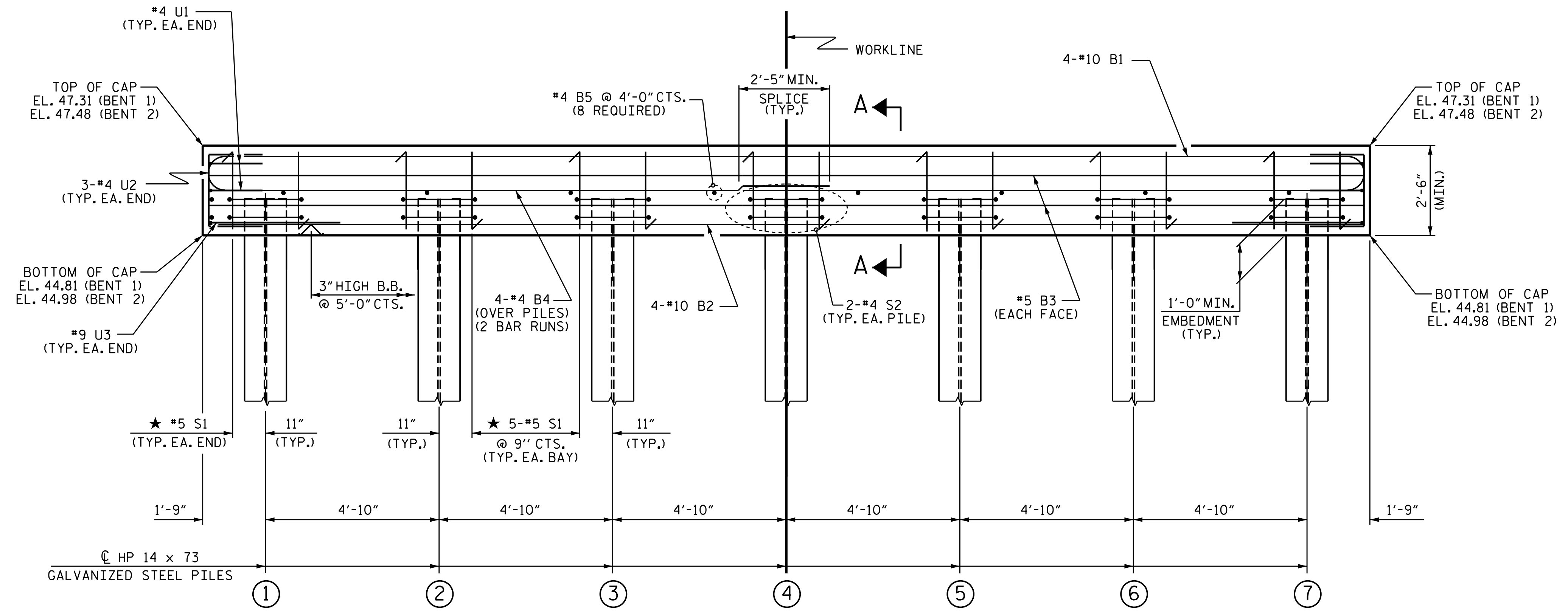
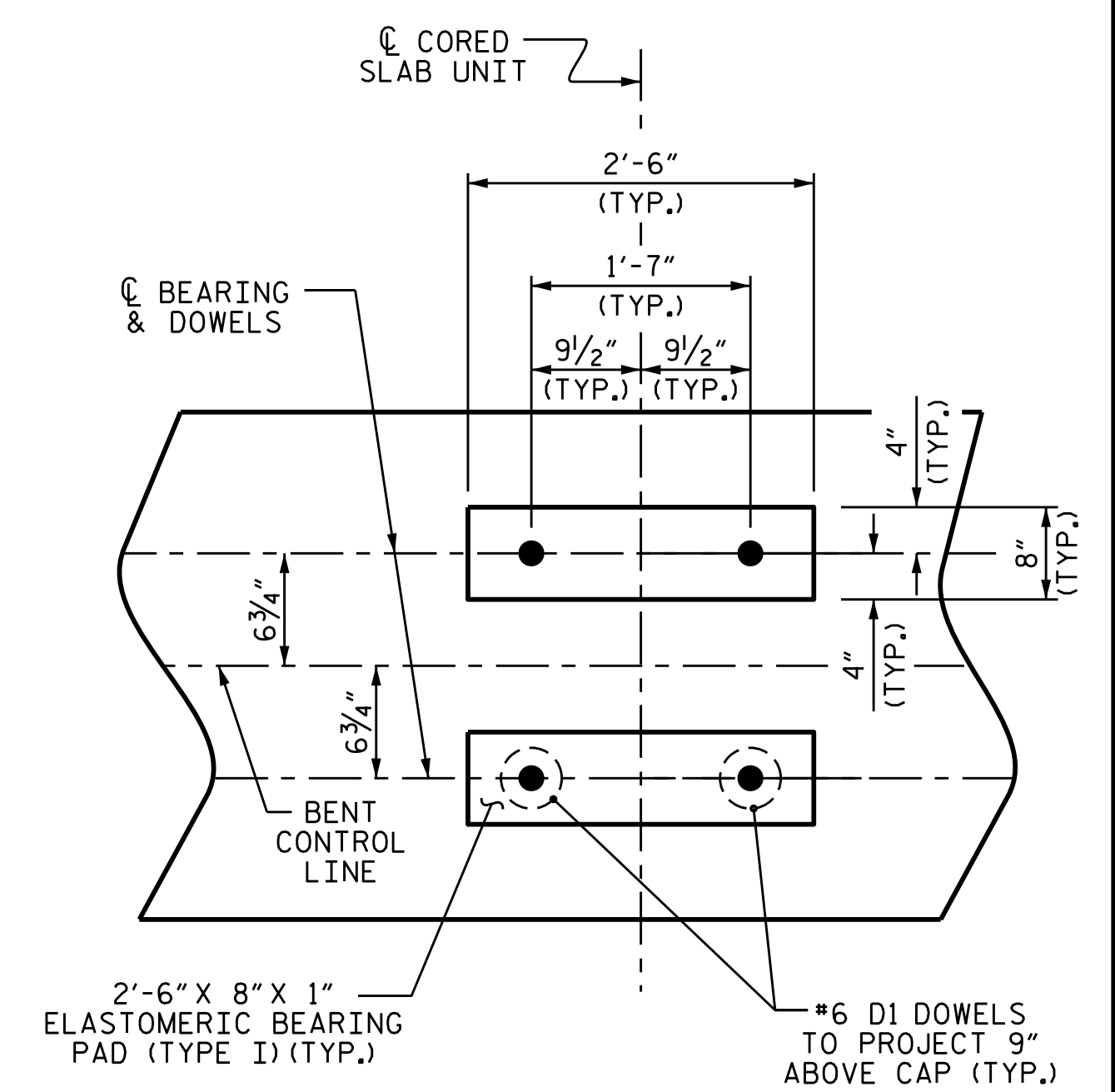
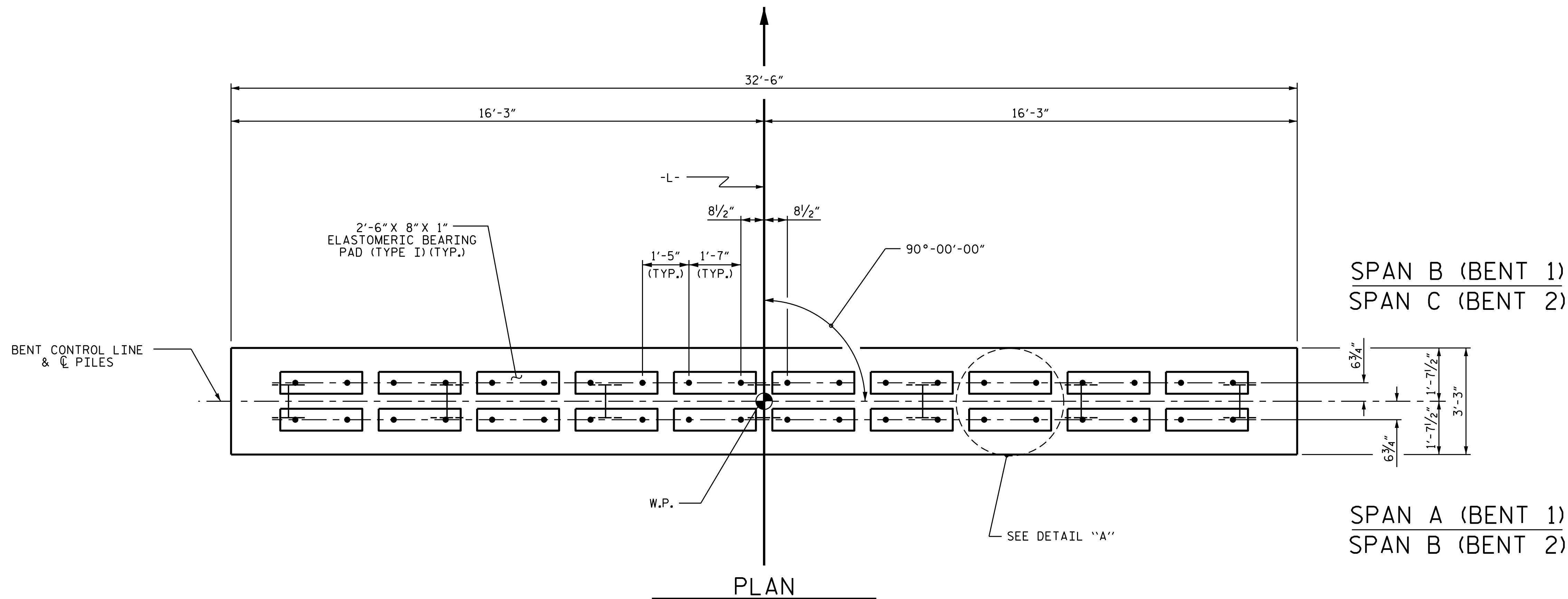
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13	
1			3			TOTAL SHEETS	
2			4			17	

STD. NO. EB\_30\_90SA

**NOTES**

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.  
 ★ INVERT ALTERNATE STIRRUPS.  
 GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 46 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



PROJECT NO. 17BP.2.R.69  
 PITT COUNTY  
 STATION: 12+62.00 -L-

SHEET 1 OF 2

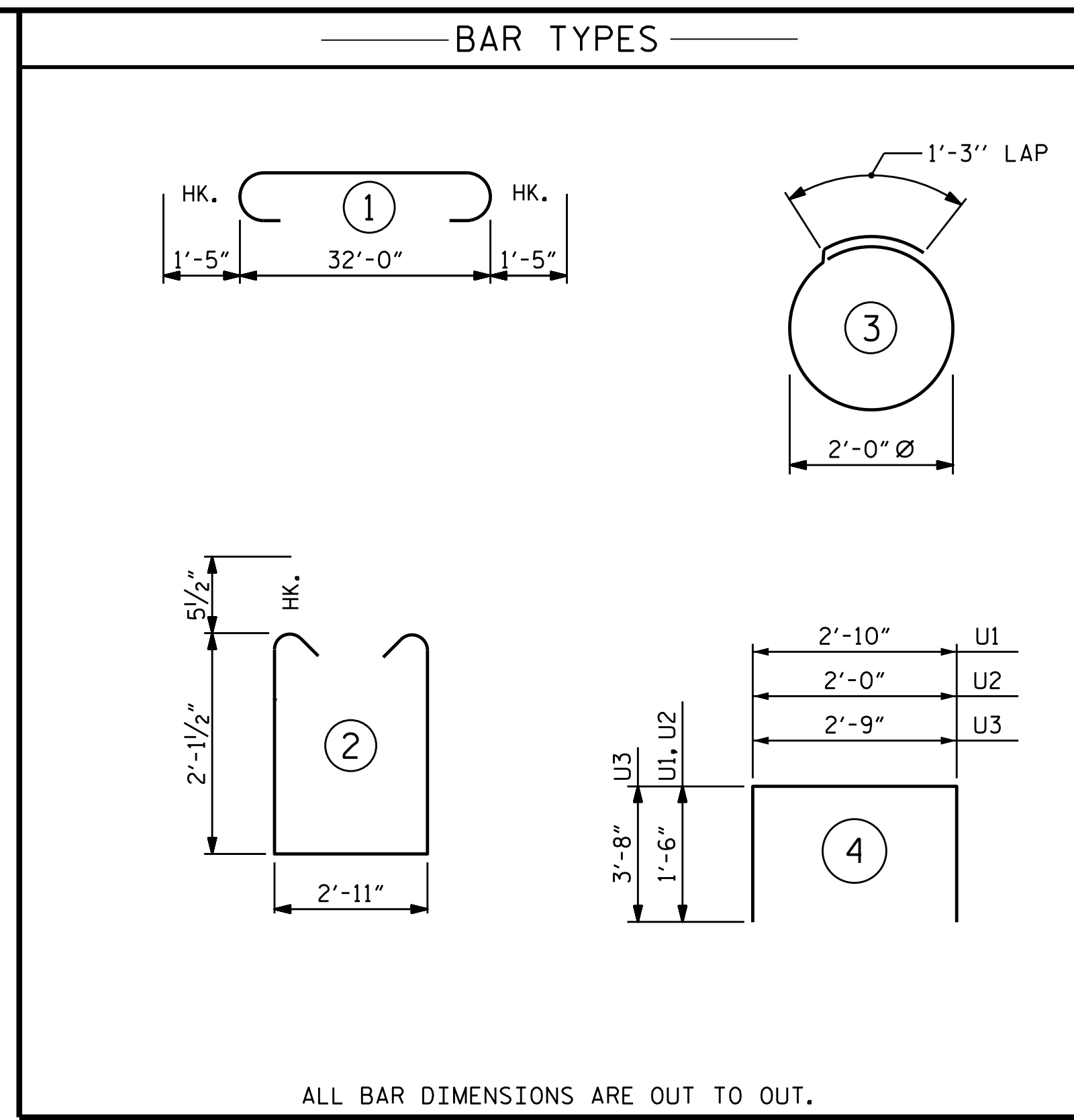
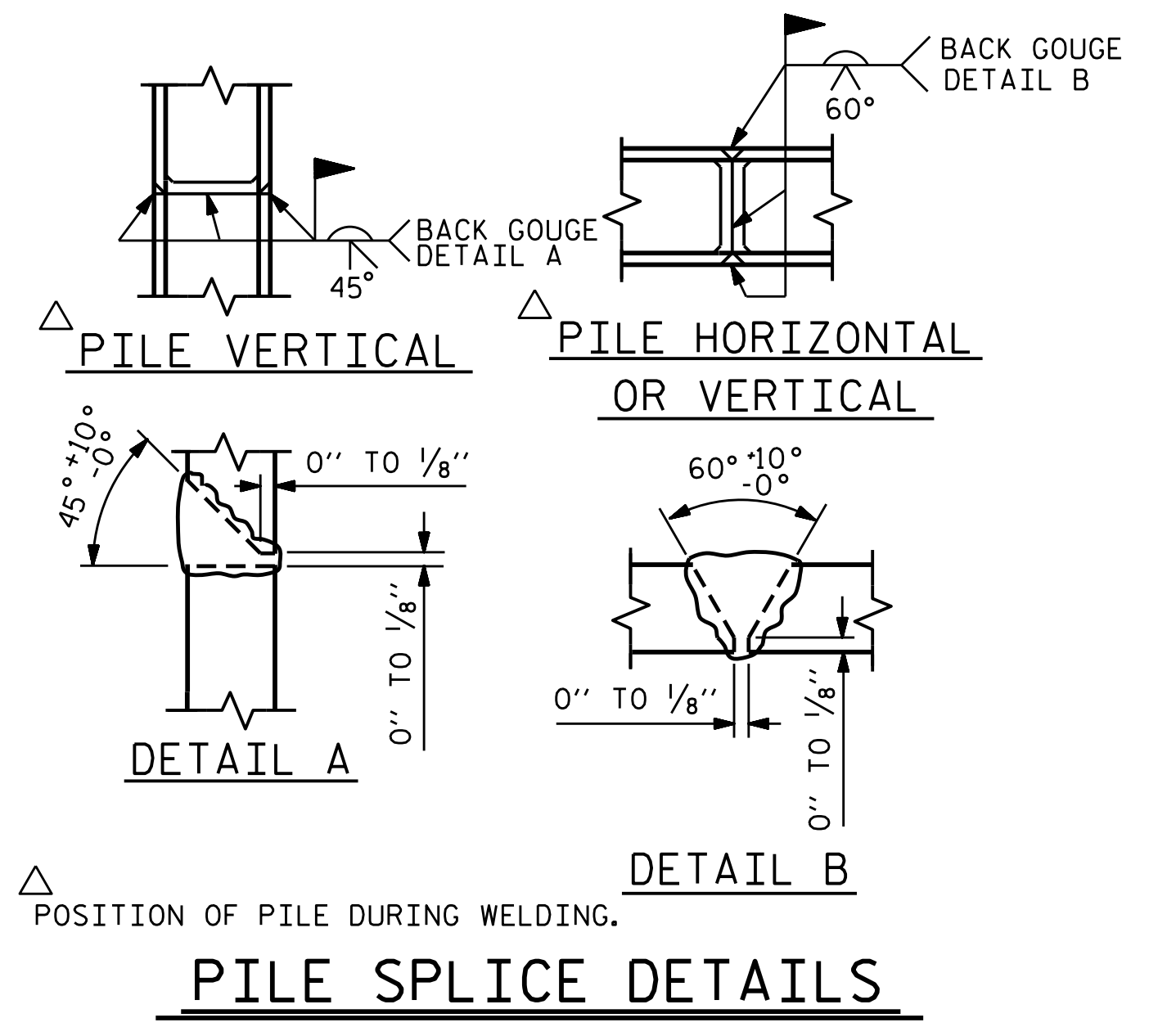


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

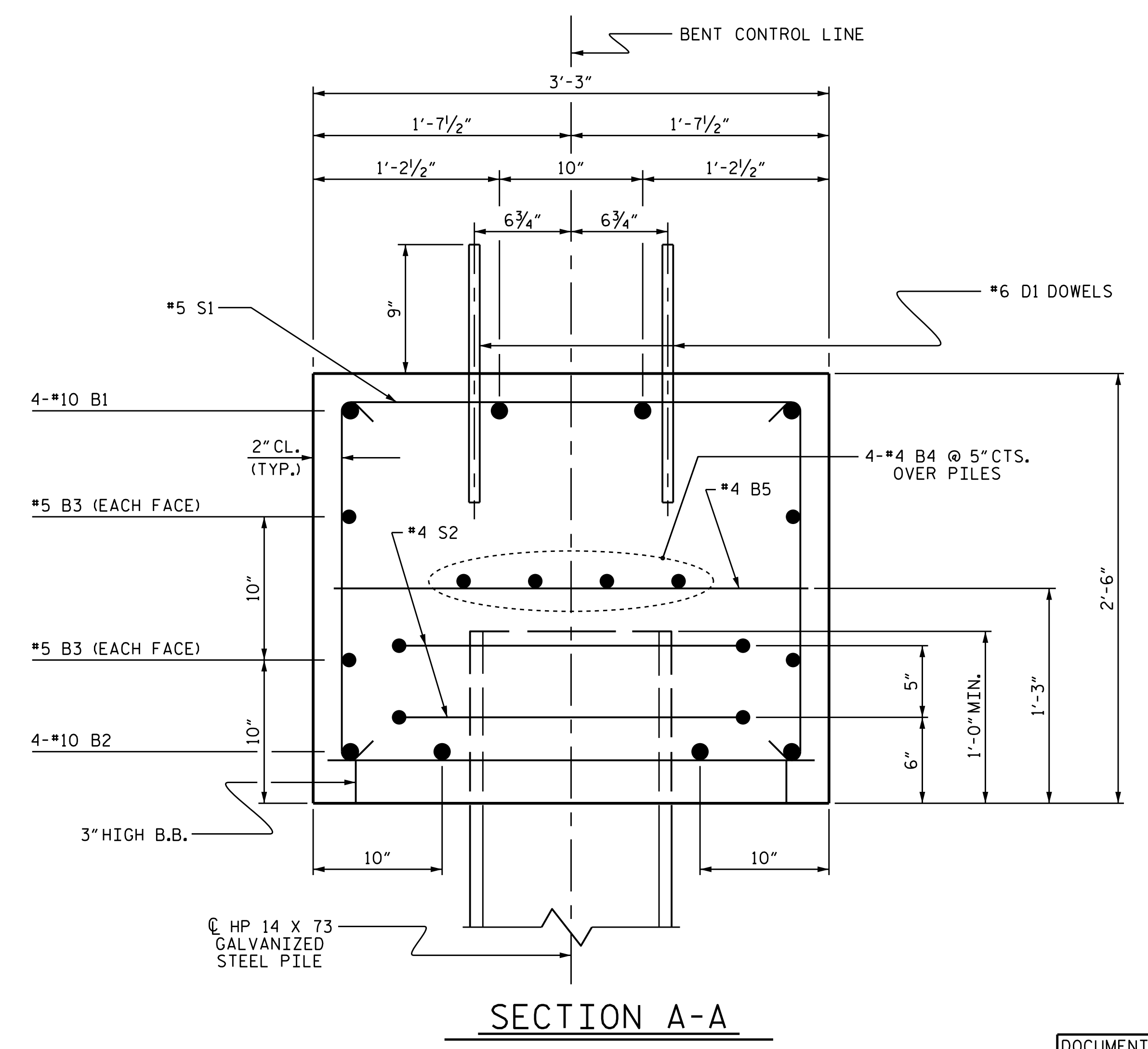
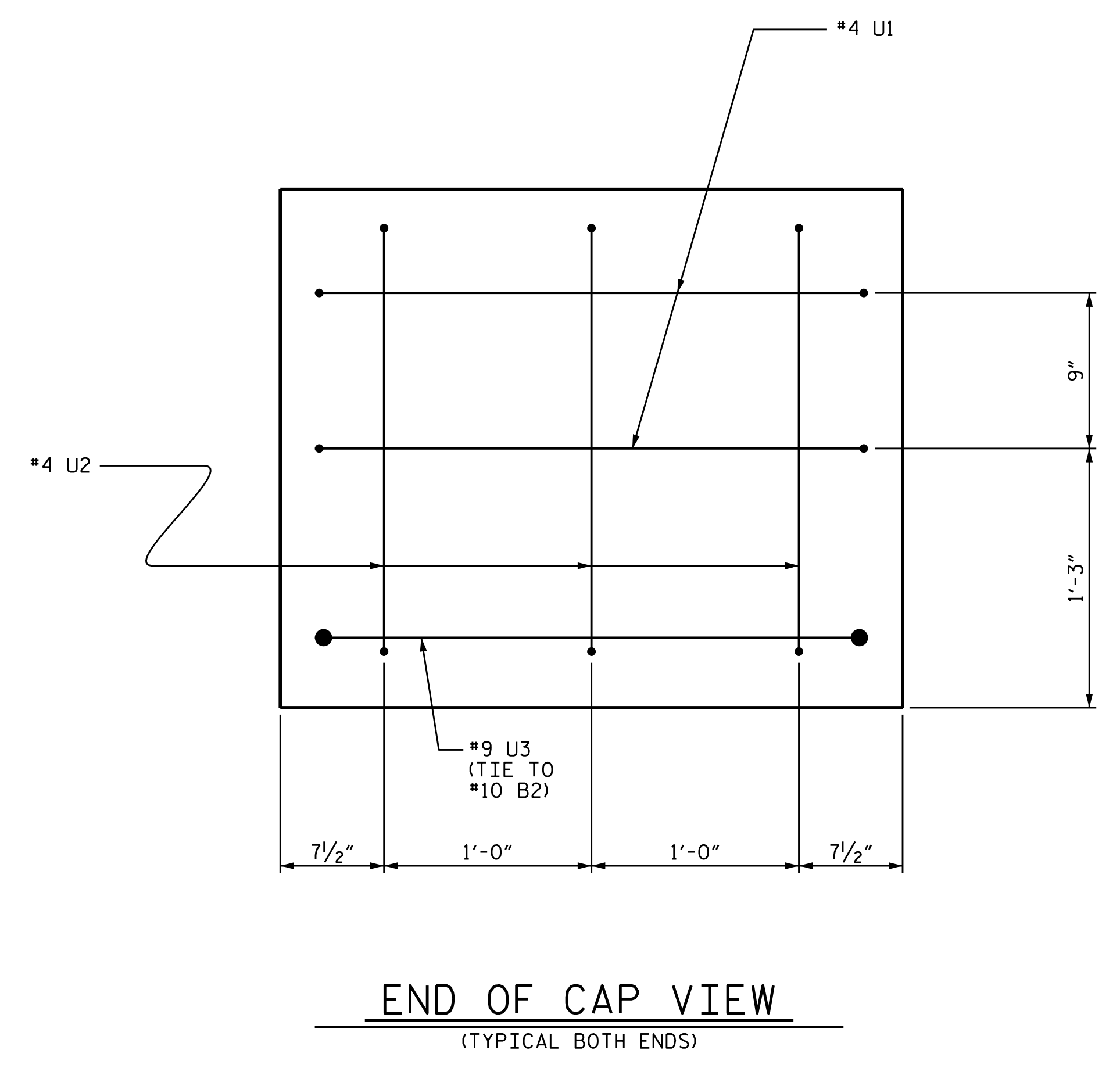
SUBSTRUCTURE  
 BENTS No. 1 & No. 2

ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
DRAWN BY : DGE 05/10	
CHECKED BY : MKT 05/10	
REV. 11/14	MAA/TMG

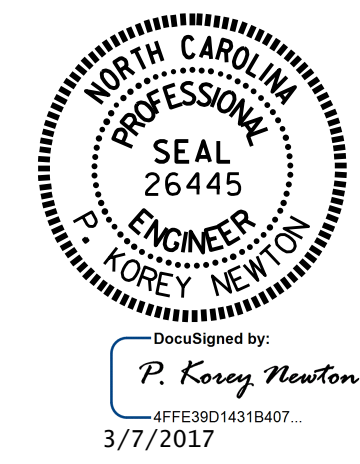
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	REVISIONS						SHEET NO. S-14 TOTAL SHEETS 17
	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			
	2			4			



BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	34'-10"	600
B2	4	#10	STR	32'-2"	554
B3	4	#5	STR	32'-2"	134
B4	8	#4	STR	17'-4"	93
B5	8	#4	STR	2'-11"	16
D1	40	#6	STR	1'-6"	90
S1	32	#5	2	8'-1"	270
S2	14	#4	3	7'-7"	71
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
REINFORCING STEEL (FOR ONE BENT)					1933 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
TOTAL CLASS A CONCRETE					9.8 C.Y.
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 7					LIN. FT. 455
PILE REDRIVES					NO: 4



PROJECT NO. 17BP.2.R.69  
 PITT COUNTY  
 STATION: 12+62.00 -L-  
 SHEET 2 OF 2



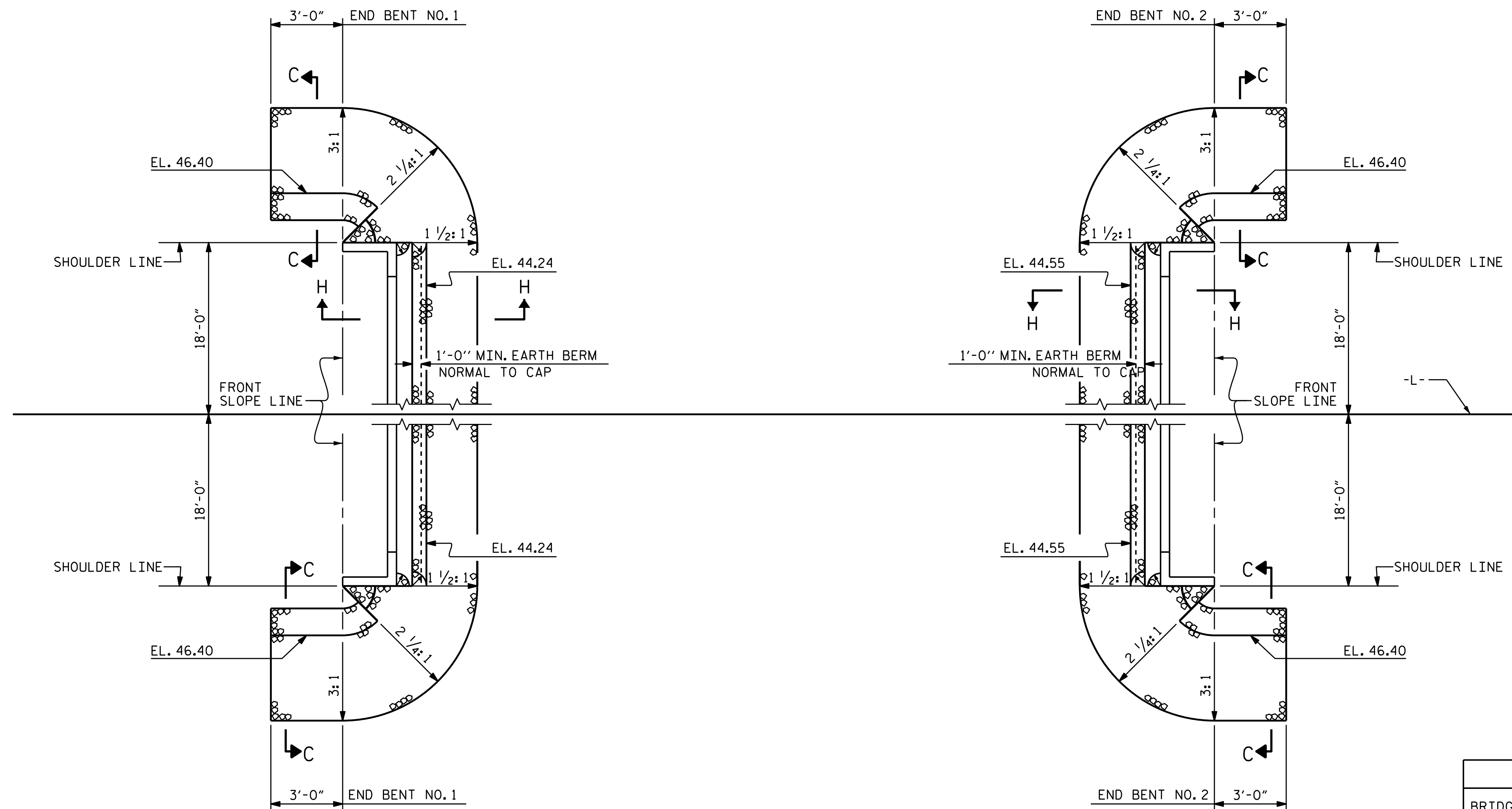
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 BENTS No. 1 & No. 2

ASSEMBLED BY : P. K. NEWTON DATE : 3/1/17
CHECKED BY : G. W. DICKEY DATE : 3/2/17
DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10
REV. 11/14
MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

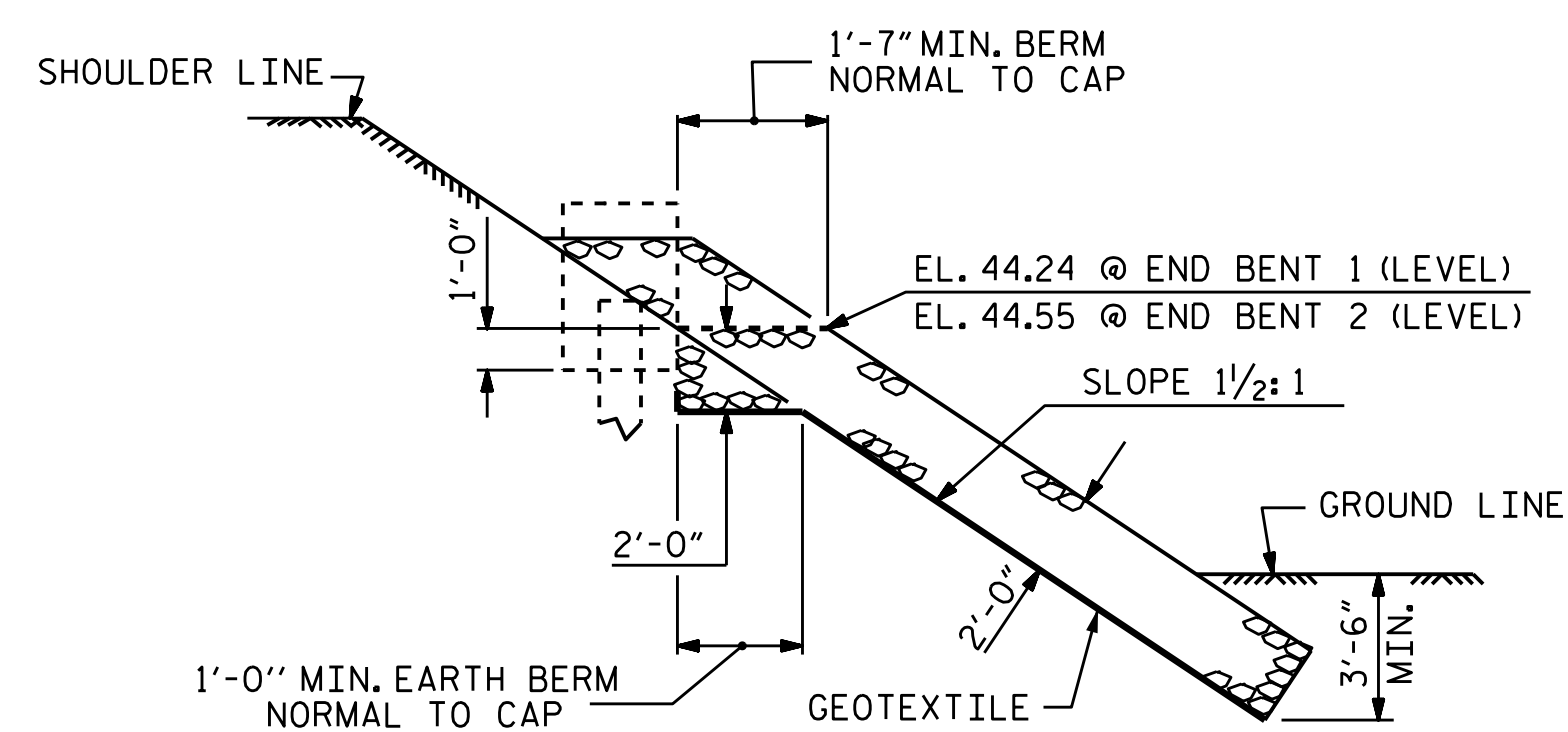
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15	
1			3			TOTAL SHEETS 17	
2			4				

NOTES :  
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

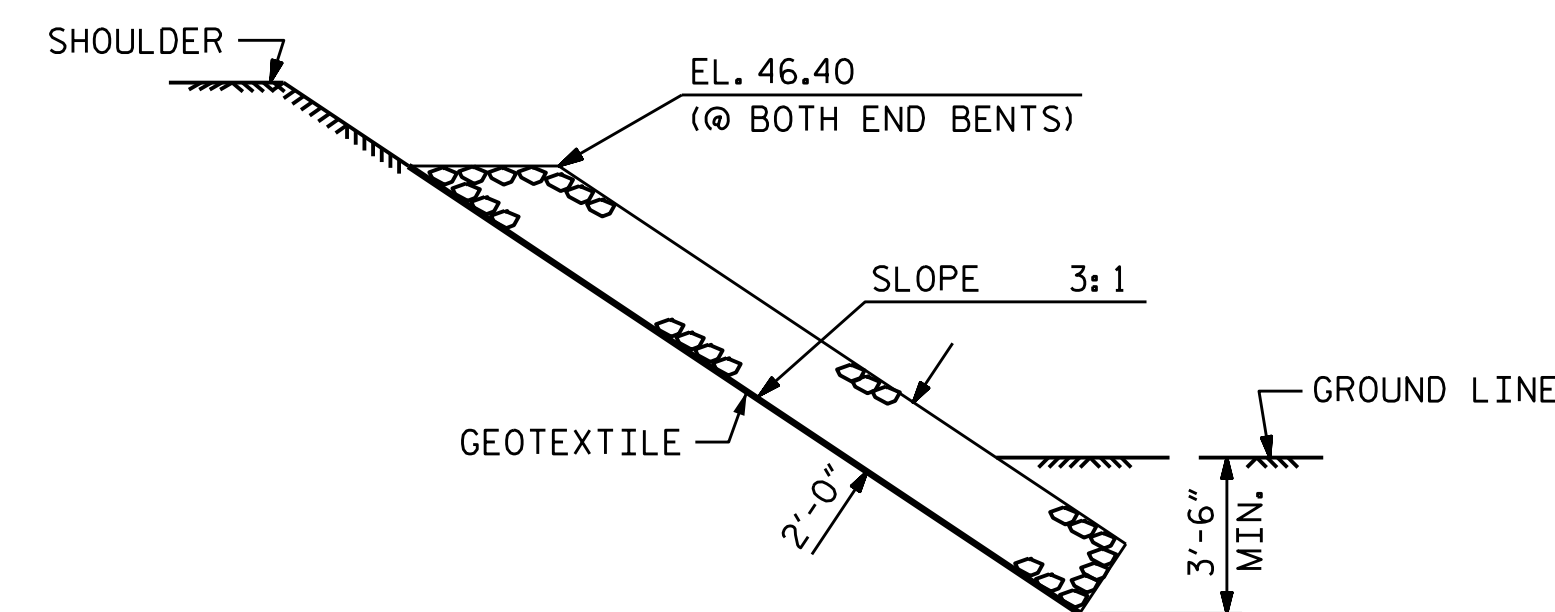


PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA.	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	130	145
END BENT 2	135	150

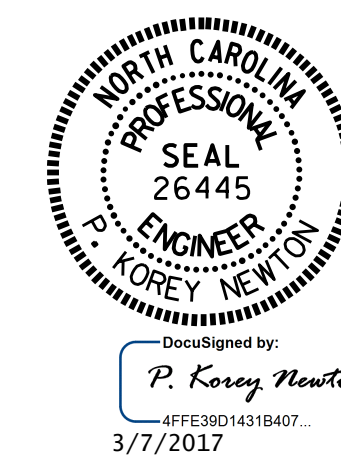


SECTION H-H



SECTION C-C

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-



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

ASSEMBLED BY : P. K. NEWTON	DATE : 3/1/17
CHECKED BY : G. W. DICKEY	DATE : 3/2/17
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

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS 17
2			4			



**NOTES**

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY PLANS.

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

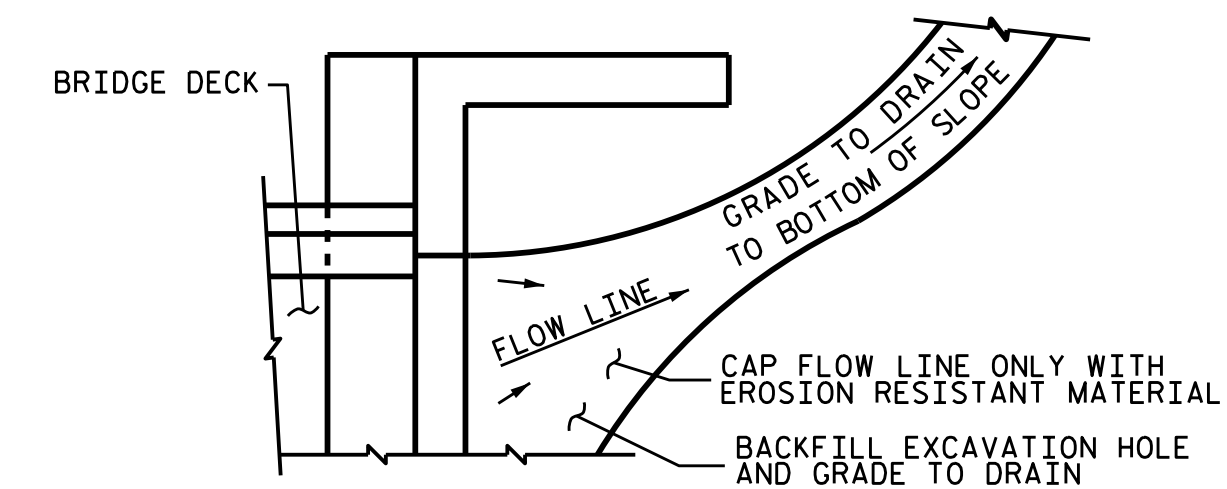
#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

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

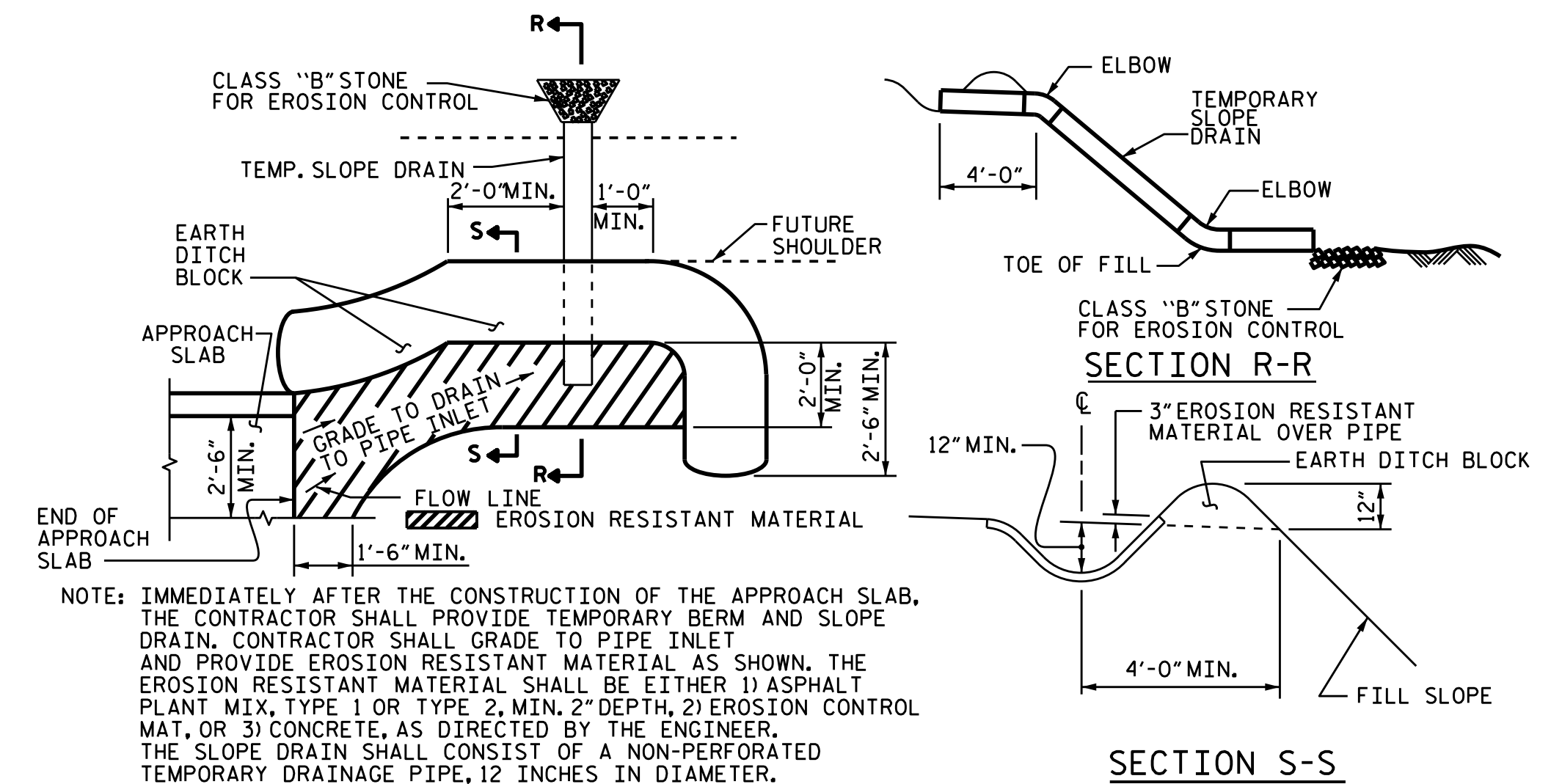
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



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

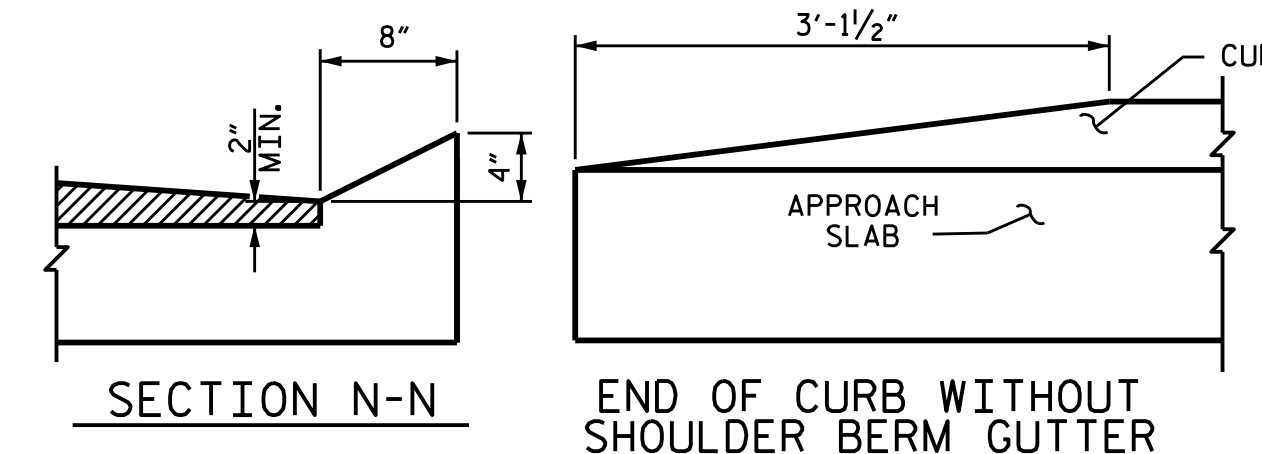
**TEMPORARY DRAINAGE DETAIL**



**PLAN VIEW**

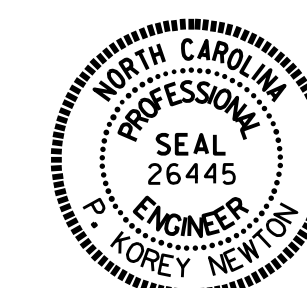
**TEMPORARY BERM AND SLOPE DRAIN DETAILS**

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



**CURB DETAILS**

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



DocuSigned by:  
P. Corey Newton  
AFFIDAVIT 1418407...  
3/7/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**BILL OF MATERIAL**

**APPROACH SLAB AT EB #1**

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016

REINFORCING STEEL	LBS.	1266
*EPOXY COATED REINFORCING STEEL	LBS.	926

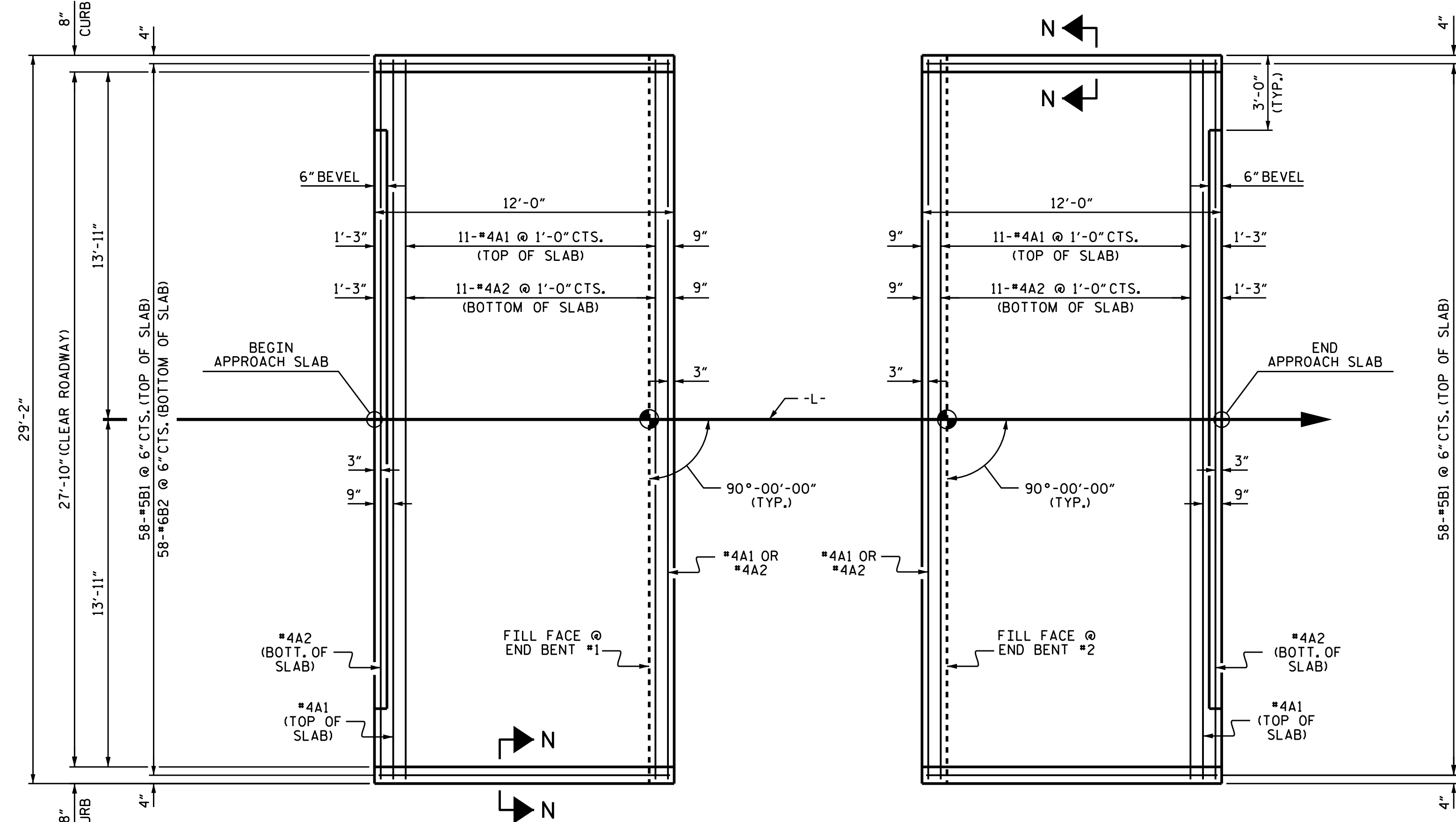
CLASS AA CONCRETE	C. Y.	16.7
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**APPROACH SLAB AT EB #2**

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016

REINFORCING STEEL	LBS.	1266
*EPOXY COATED REINFORCING STEEL	LBS.	926

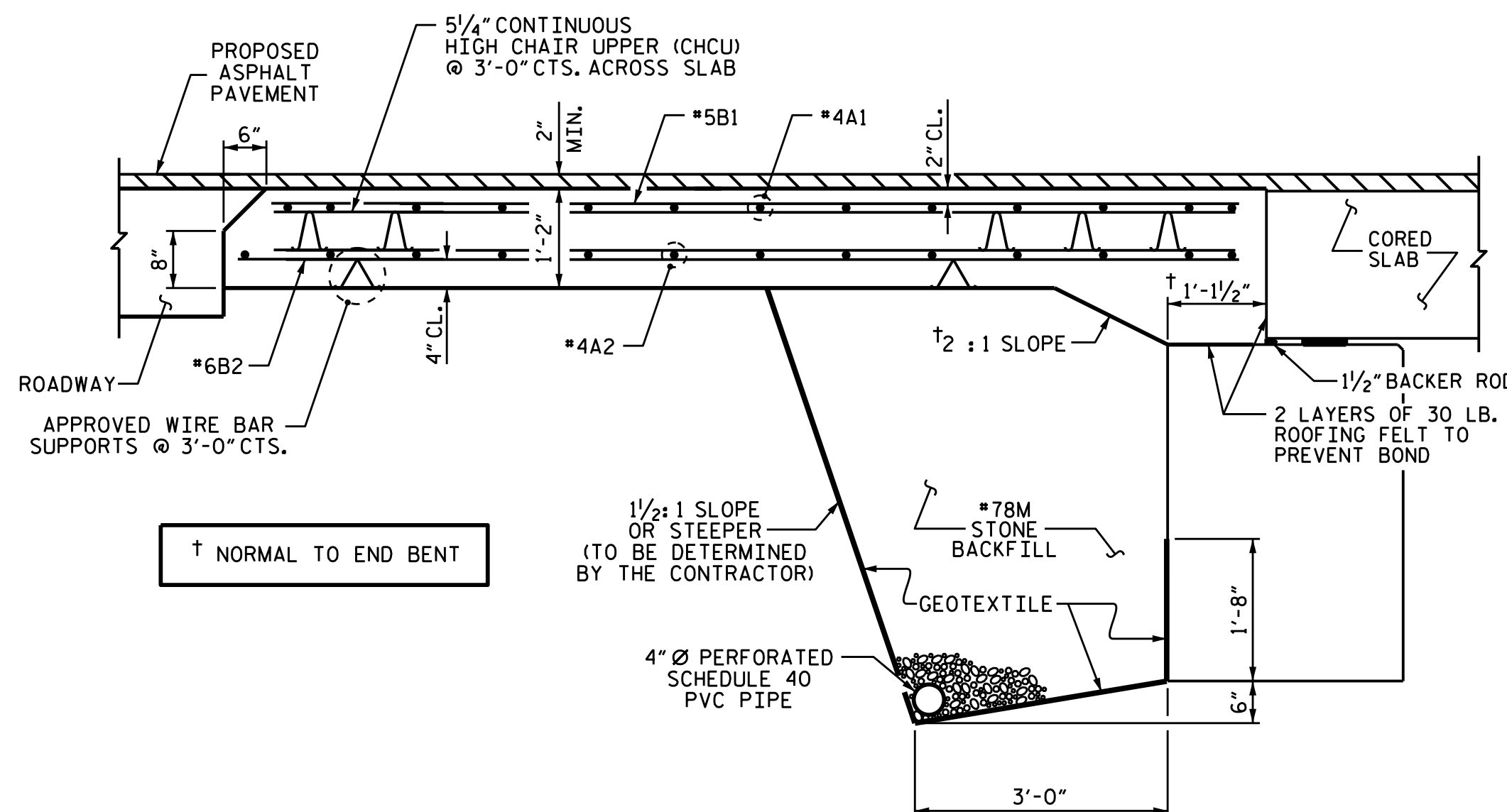
CLASS AA CONCRETE	C. Y.	16.7
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**PLAN @ END BENT #1**

**PLAN @ END BENT #2**

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



**SECTION THRU SLAB**

ASSEMBLED BY : P. K. NEWTON DATE : 3/1/17  
CHECKED BY : G. W. DICKEY DATE : 3/2/17  
DRAWN BY : SHS/MAA 5-09  
CHECKED BY : BCH 5-09

REV. 9-15 MAA/TMG

PROJECT NO. 17BP.2.R.69  
PITT COUNTY  
STATION: 12+62.00 -L-

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

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17	
1			3			TOTAL SHEETS	
2			4			17	