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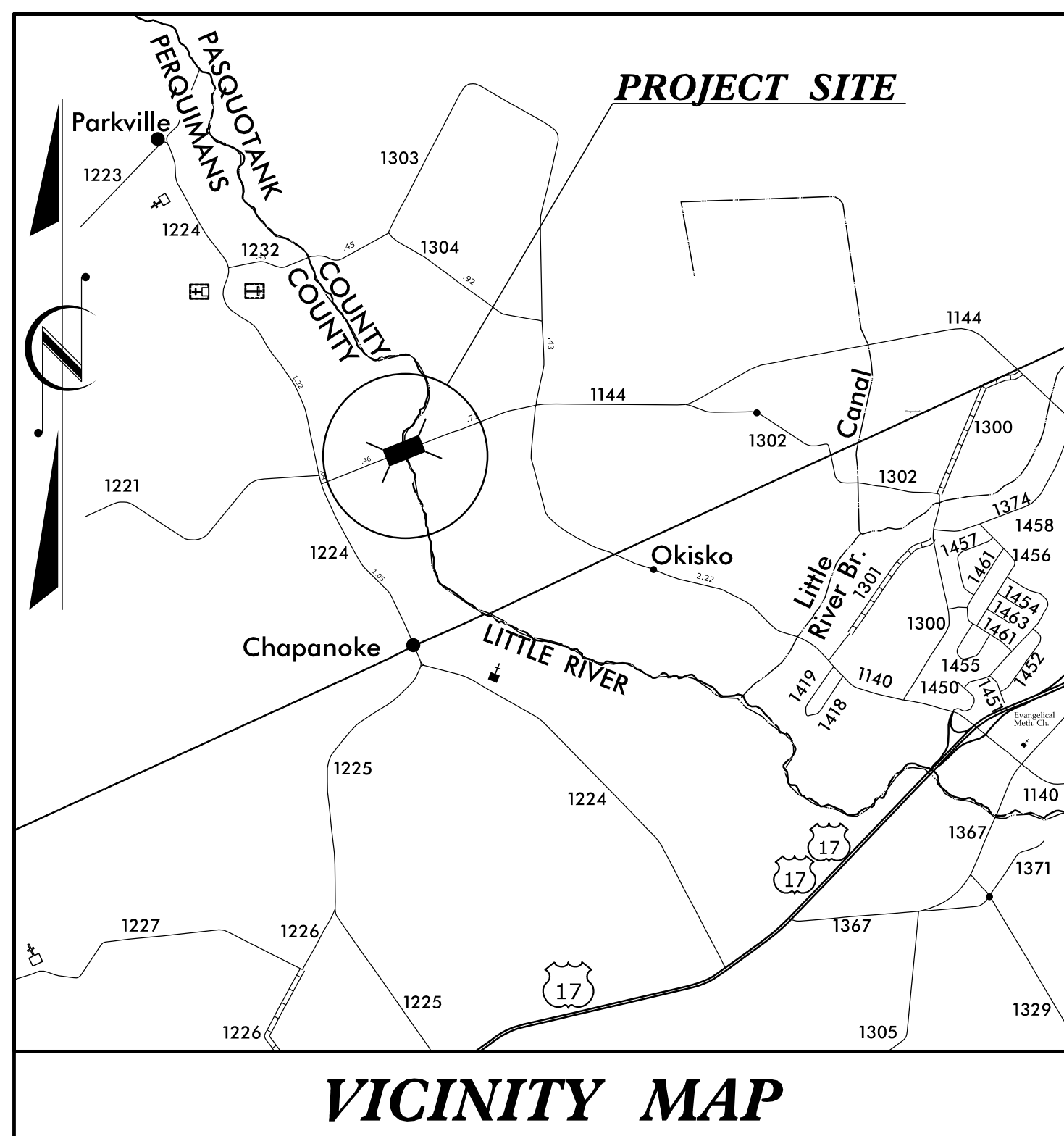
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CONTRACT: 17BP.1.R.65

CONTRACT: 17BP.1.R.65

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

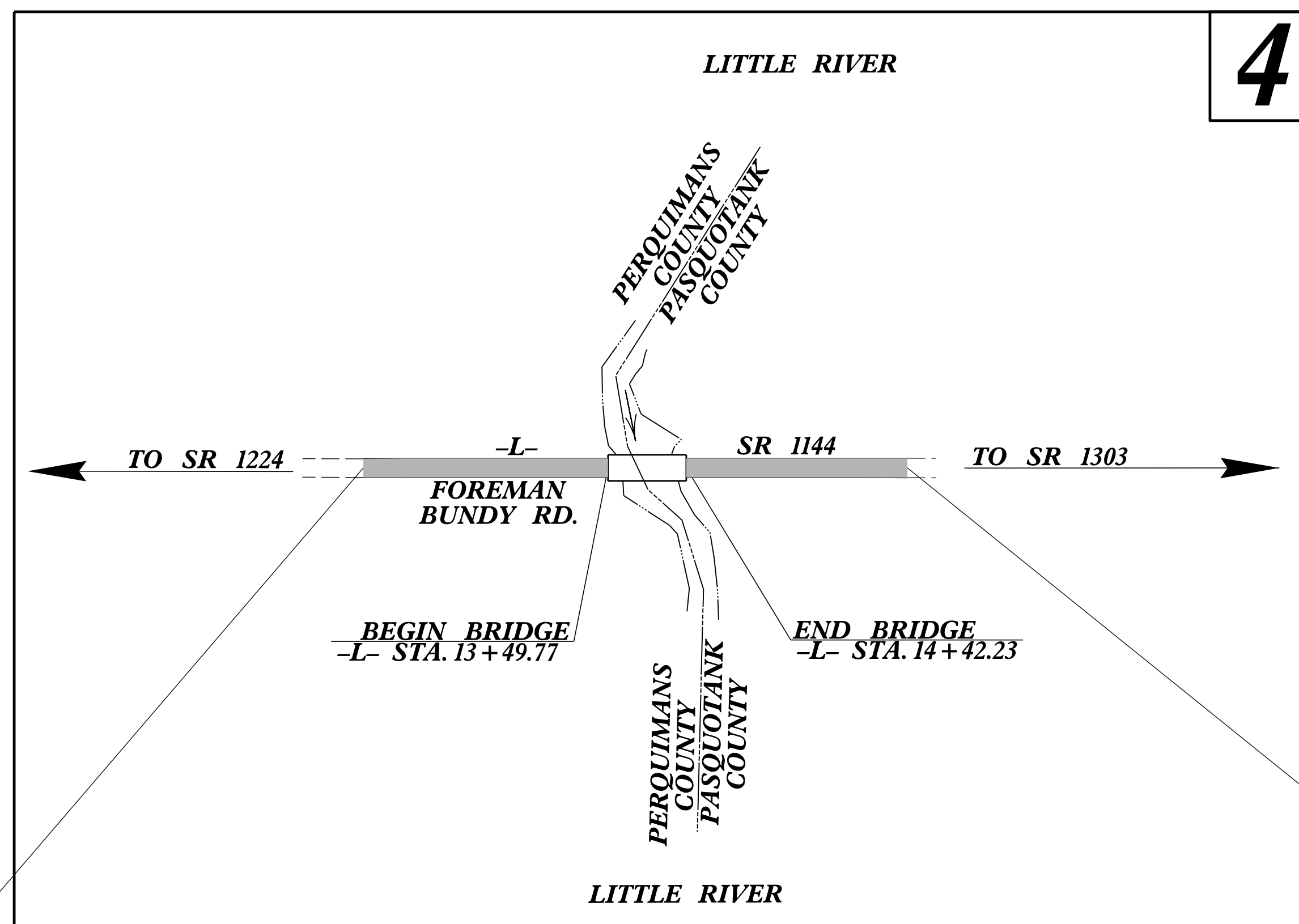


VICINITY MAP

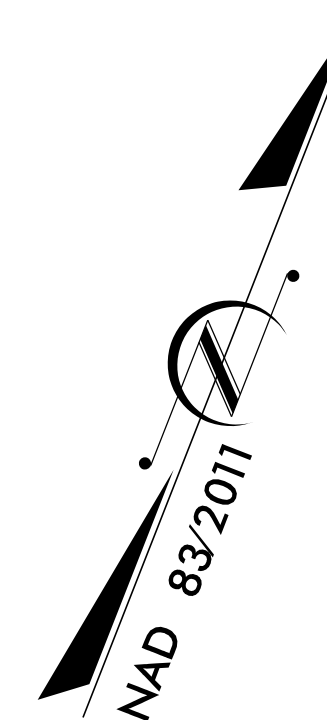
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PASQUOTANK COUNTY

**LOCATION: BRIDGE NO. 29 OVER LITTLE RIVER ON SR 1144
(FOREMAN BUNDY RD.)**

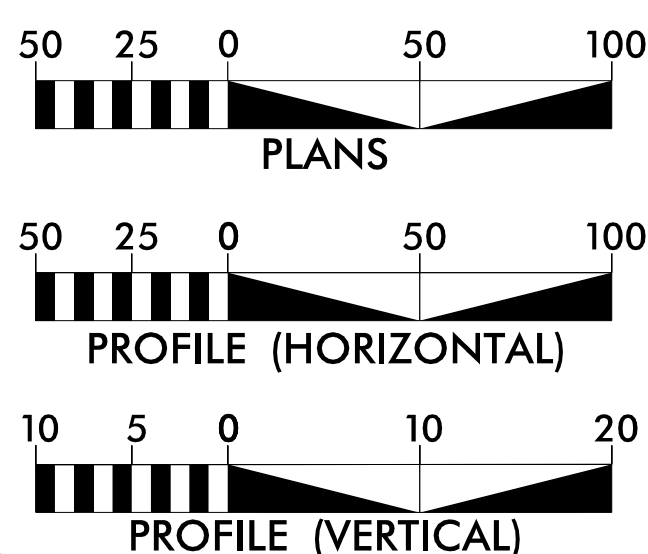
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.1.R.65	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.1.R.65		PE	
17BP.1.R.65		UTIL., RW	
17BP.1.R.65		CONST.	



GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 530
ADT 2034 = 780
DHV = 10 %
D = 60 %
T = 6 % *
V = 55 MPH
* TTST = 2% DUAL 4%
FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.1.R.65 = 0.100 MILES
LENGTH STRUCTURE TIP PROJECT 17BP.1.R.65 = 0.018 MILES
TOTAL LENGTH TIP PROJECT 17BP.1.R.65 = 0.118 MILES



Prepared for the North Carolina Department of Transportation in the Office of:
559 JONES FRANKLIN ROAD
SUITE 104
RALEIGH, N.C. 27606
License No. F-0377
Bus: 919-851-8077
Fax: 919-851-8107

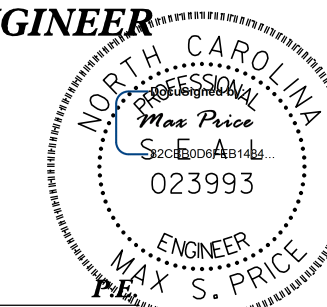
2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **EDWARD G. WETHERILL, PE**
PROJECT ENGINEER

LETTING DATE: **BOB A. MAY, PE**
PROJECT DESIGN ENGINEER

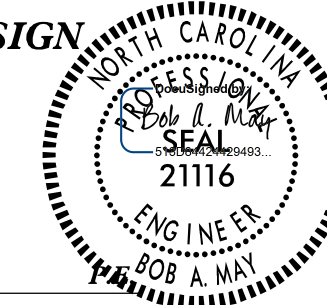
NCDOT CONTACT: **JOHN S. ABEL, JR.**
DIVISION 1 BRIDGE PROGRAM MANAGER

HYDRAULICS ENGINEER

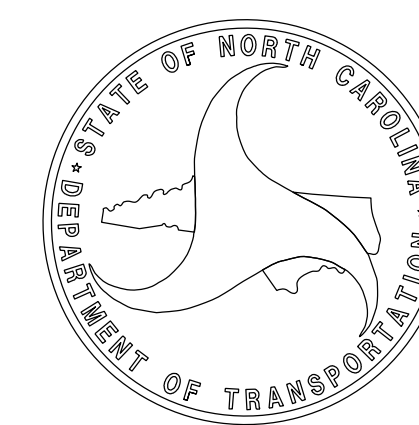


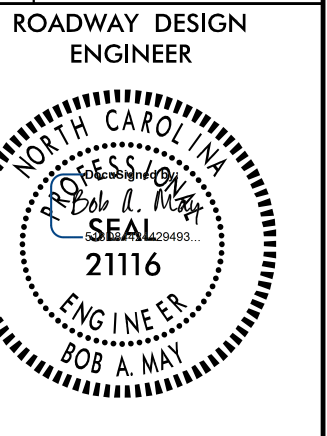
SIGNATURE: _____

ROADWAY DESIGN ENGINEER



SIGNATURE: _____





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

EFF. 01-17-2012
 REV. 10-30-2012

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:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS 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.

TEMPORARY SHORING:

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

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 PERQUIMANS COUNTY WATER DEPARTMENT.

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.

STD.NO. TITLE

DIVISION 2 - EARTHWORK

- 200.02 Method of Clearing - Method II
- 225.02 Guide for Grading Subgrade - Secondary and Local
- 225.04 Method of Obtaining Superelevation - Two Lane Pavement

DIVISION 3 - PIPE CULVERTS

- 300.01 Method of Pipe Installation

DIVISION 4 - MAJOR STRUCTURES

- 422.11 Reinforced Bridge Approach Fills - Sub Regional Tier

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS

- 560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method I

DIVISION 6 - ASPHALT BASES AND PAVEMENTS

- 654.01 Pavement Repairs

DIVISION 8 - INCIDENTALS

- 815.03 Pipe Underdrain and Blind Drain
- 840.00 Concrete Base Pad for Drainage Structures
- 840.29 Frames and Narrow Slot Flat Grates
- 840.35 Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
- 840.46 Traffic Bearing Precast Drainage Structure
- 840.66 Drainage Structure Steps
- 846.01 Concrete Curb, Gutter and Curb & Gutter
- 862.01 Guardrail Placement
- 862.02 Guardrail Installation
- 876.02 Guide for Rip Rap at Pipe Outlets

INDEX OF SHEETS

SHEET NUMBER

SHEET

- 1.....TITLE SHEET
- 1-A.....INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
- 1-B.....CONVENTIONAL SYMBOLS
- 2.....PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAIL
- 2-A.....DETAIL FOR STRUCTURE ANCHOR UNIT, TYPE III
- 3.....SUMMARY OF QUANTITIES
- 3-A.....SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
- 4.....PLAN SHEET & PROFILE SHEET
- TCP-1.....TRAFFIC CONTROL PLANS
- EC-1 THRU EC-4.....EROSION CONTROL PLANS
- RF-1.....REFORESTATION PLANS
- X-1A.....CROSS-SECTION SUMMARY
- X-1 THRU X-4.....CROSS-SECTIONS
- S-1 THRU S-20.....STRUCTURE PLANS
- STANDARD STRUCTURE NOTES

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

Table listing boundary symbols: 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, Known Soil Contamination: Area or Site, Potential Soil Contamination: Area or Site.

BUILDINGS AND OTHER CULTURE:

Table listing building and culture symbols: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing hydrology symbols: 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:

Table listing railroad symbols: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing right of way symbols: Baseline Control Point, Existing Right of Way Marker, Existing Right of Way Line, Proposed Right of Way Line, Proposed Right of Way Line with Iron Pin and Cap Marker, Proposed Right of Way Line with Concrete or Granite RW Marker, Proposed Control of Access Line with Concrete CA Marker, Existing Control of Access, Proposed Control of Access, Existing Easement Line, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Drainage / Utility Easement, Proposed Permanent Utility Easement, Proposed Temporary Utility Easement, Proposed Aerial Utility Easement, Proposed Permanent Easement with Iron Pin and Cap Marker.

ROADS AND RELATED FEATURES:

Table listing road and related features symbols: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Curb Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal.

VEGETATION:

Table listing vegetation symbols: Single Tree, Single Shrub, Hedge, Woods Line.

Table listing Orchard and Vineyard symbols.

EXISTING STRUCTURES:

Table listing existing structures symbols: 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:

Table listing utility symbols: 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:

Table listing water symbols: 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:

Table listing TV symbols: 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:

Table listing gas symbols: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

Table listing sanitary sewer symbols: 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:

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

12/05/11

6/2/99

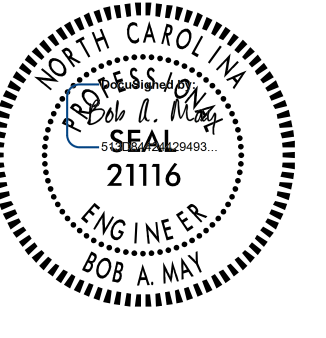

PAVEMENT SCHEDULE

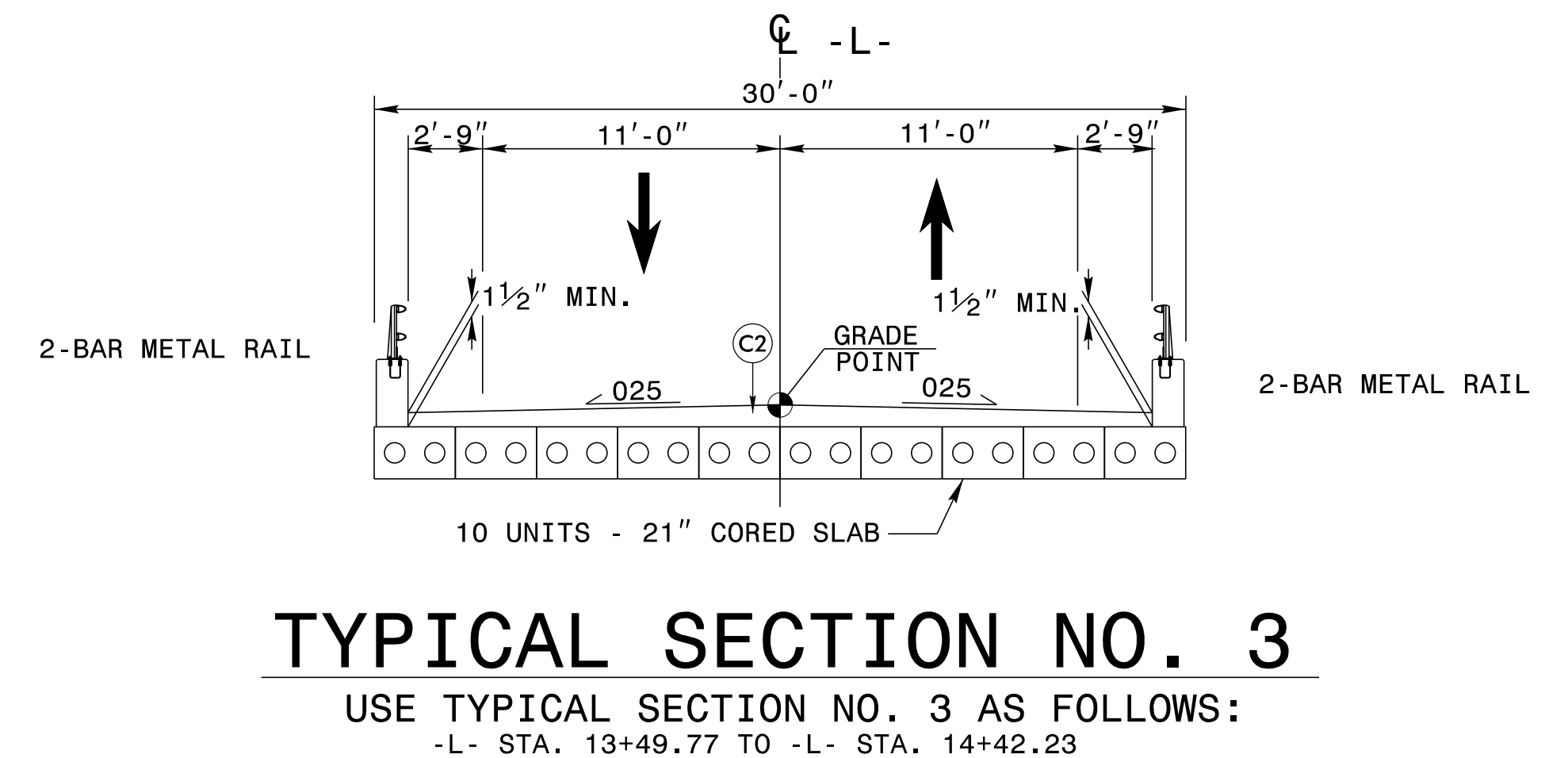
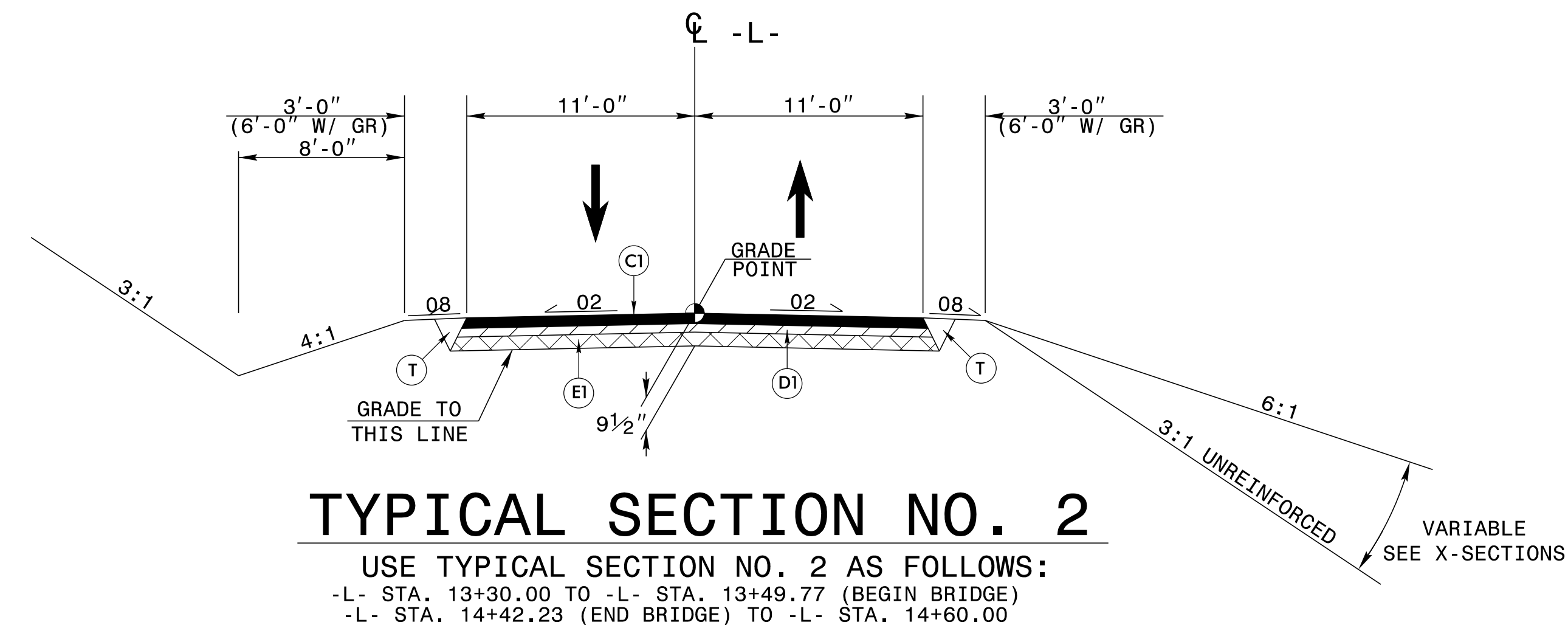
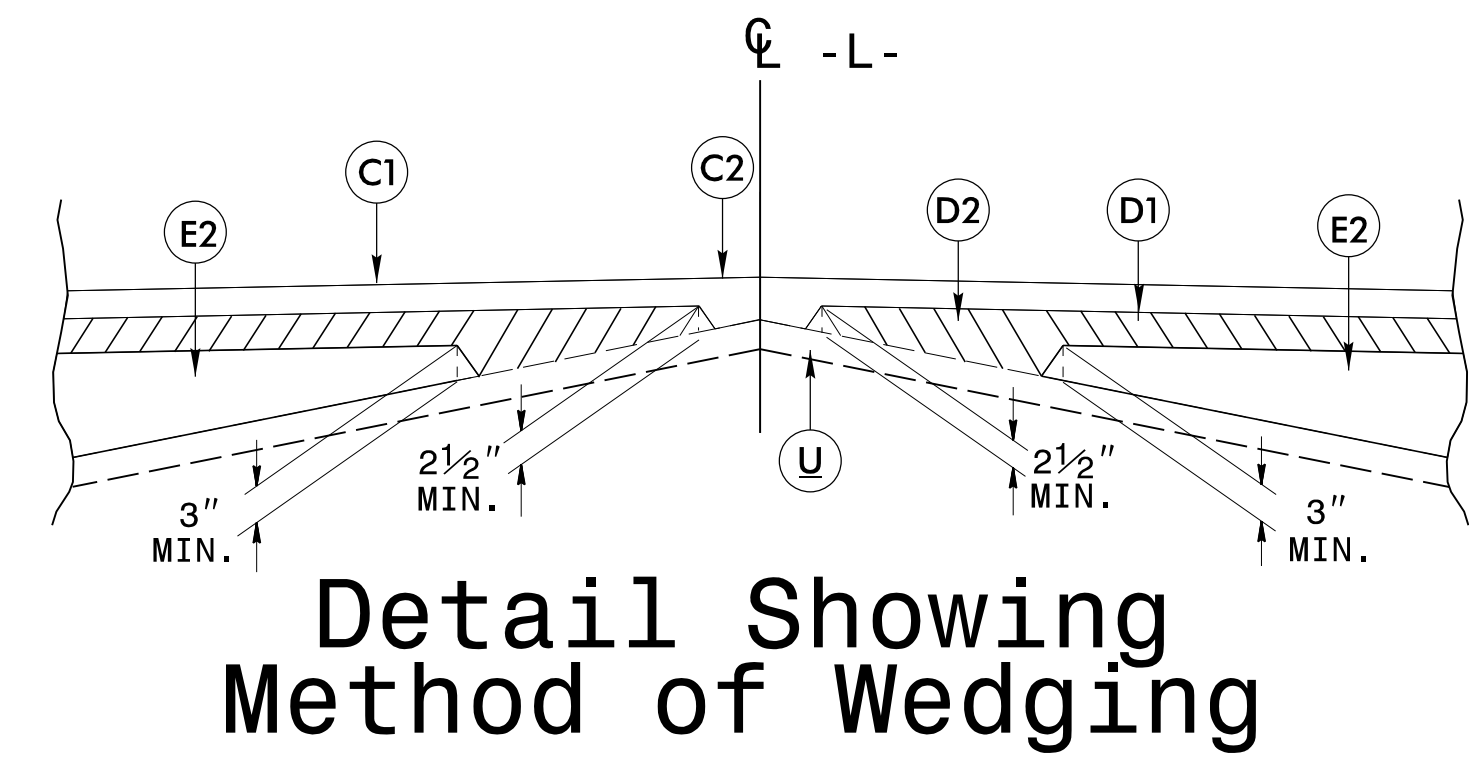
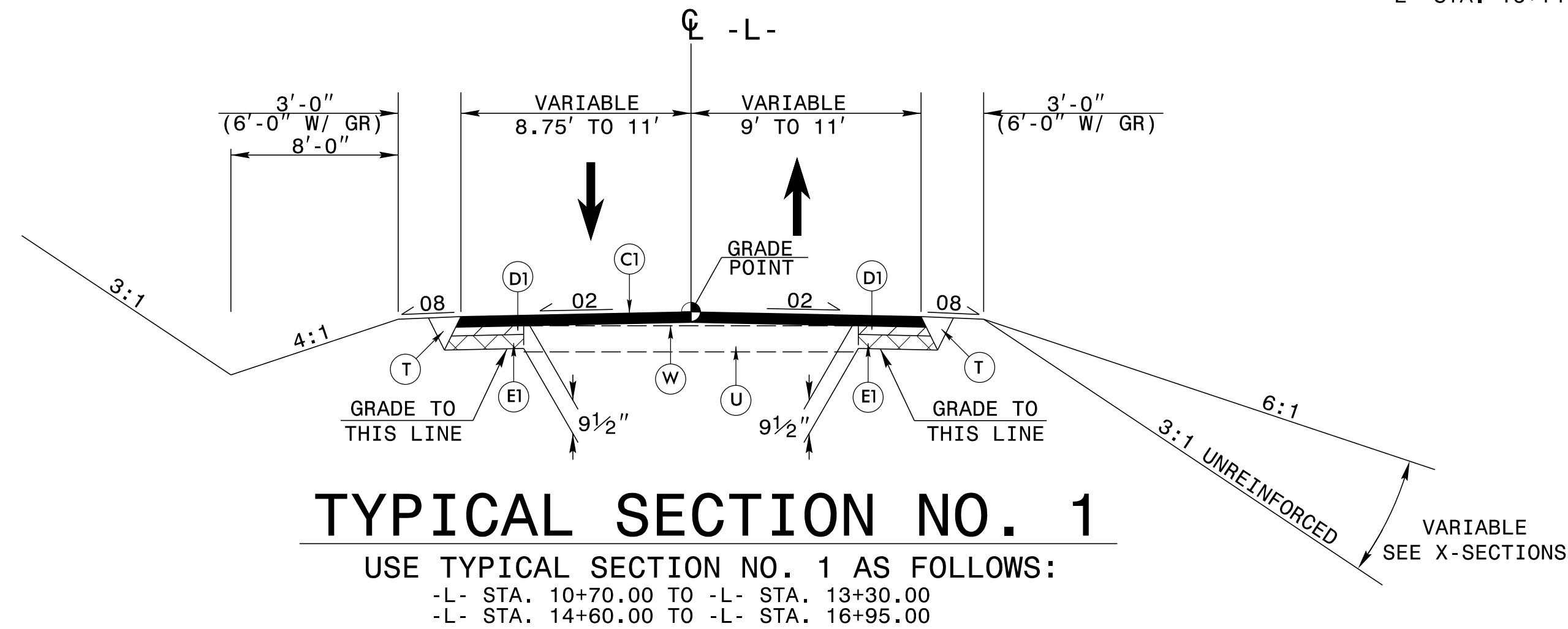
FINAL PAVEMENT DESIGN

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.	T	EARTH MATERIAL.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
D2	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 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.		

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

NOTE: UTILIZE INCIDENTAL MILLING TO MAKE PAVEMENT TIE-INS
 -L- STA. 10+70.00 TO -L- STA. 11+70.00
 -L- STA. 16+14.00 TO -L- STA. 16+95.00

PROJECT REFERENCE NO. 17BP1.R.65	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
	
559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27606 License No. F-0277 Bus: 919 851 8077 Fax: 919 851 8107	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	



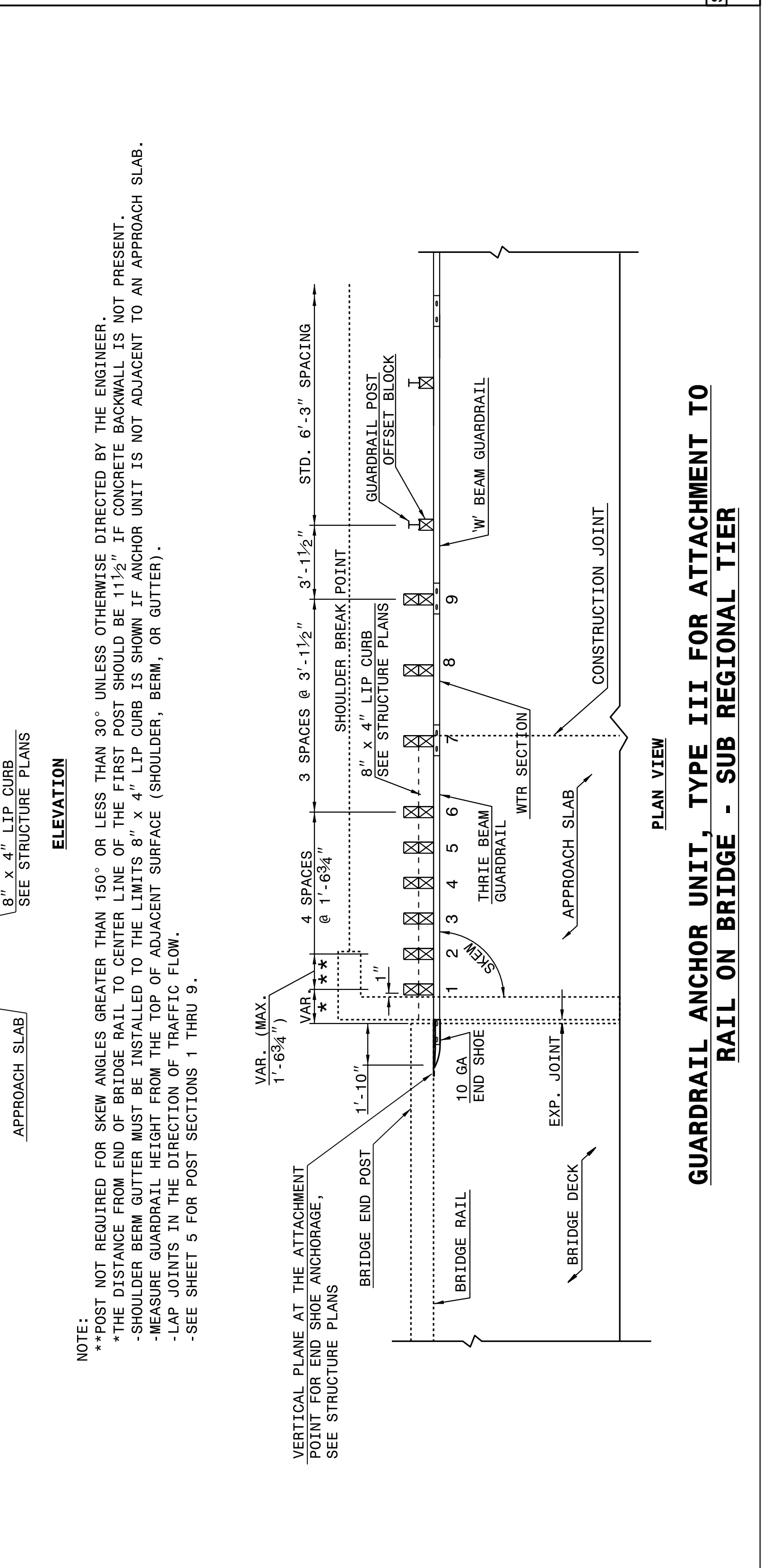
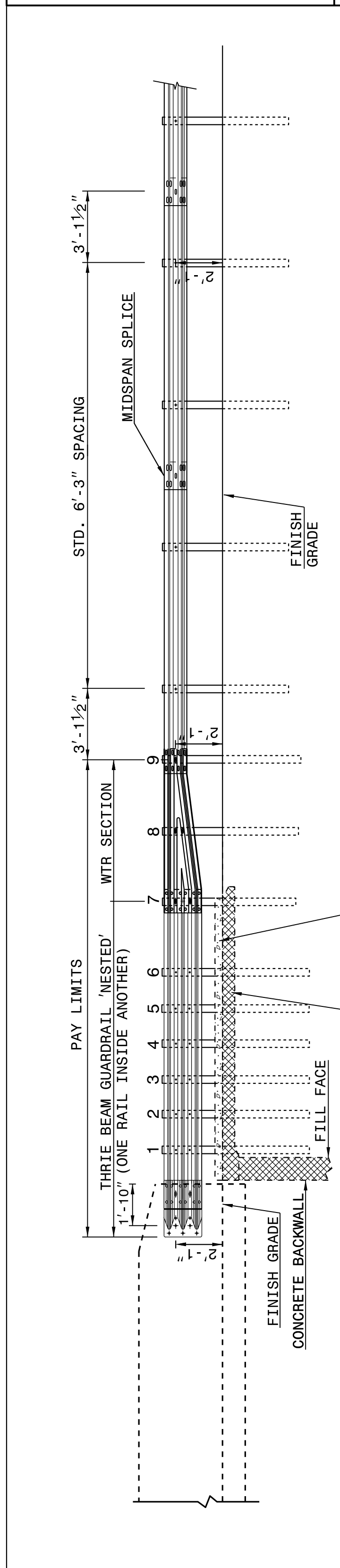
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04-MAY-2017 14:53 S:\Contracts\Contractors\Special Details\Standard Drawings\Details in Lieu of Standards\Division 8\862d01 862d03 862d03.862d03.dgn jhowerton A1 CS0-272595

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

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

SHEET 2 OF 7
862D03



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

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

SHEET 1 OF 7
862D03

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

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

SHEET 2 OF 7
862D03

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

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

SHEET 1 OF 7
862D03

NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8' x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.

NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8' x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

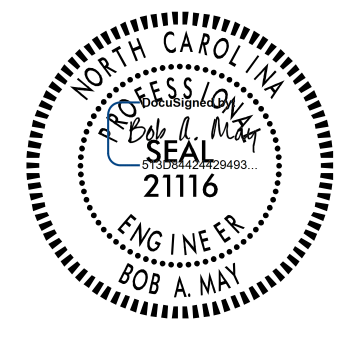




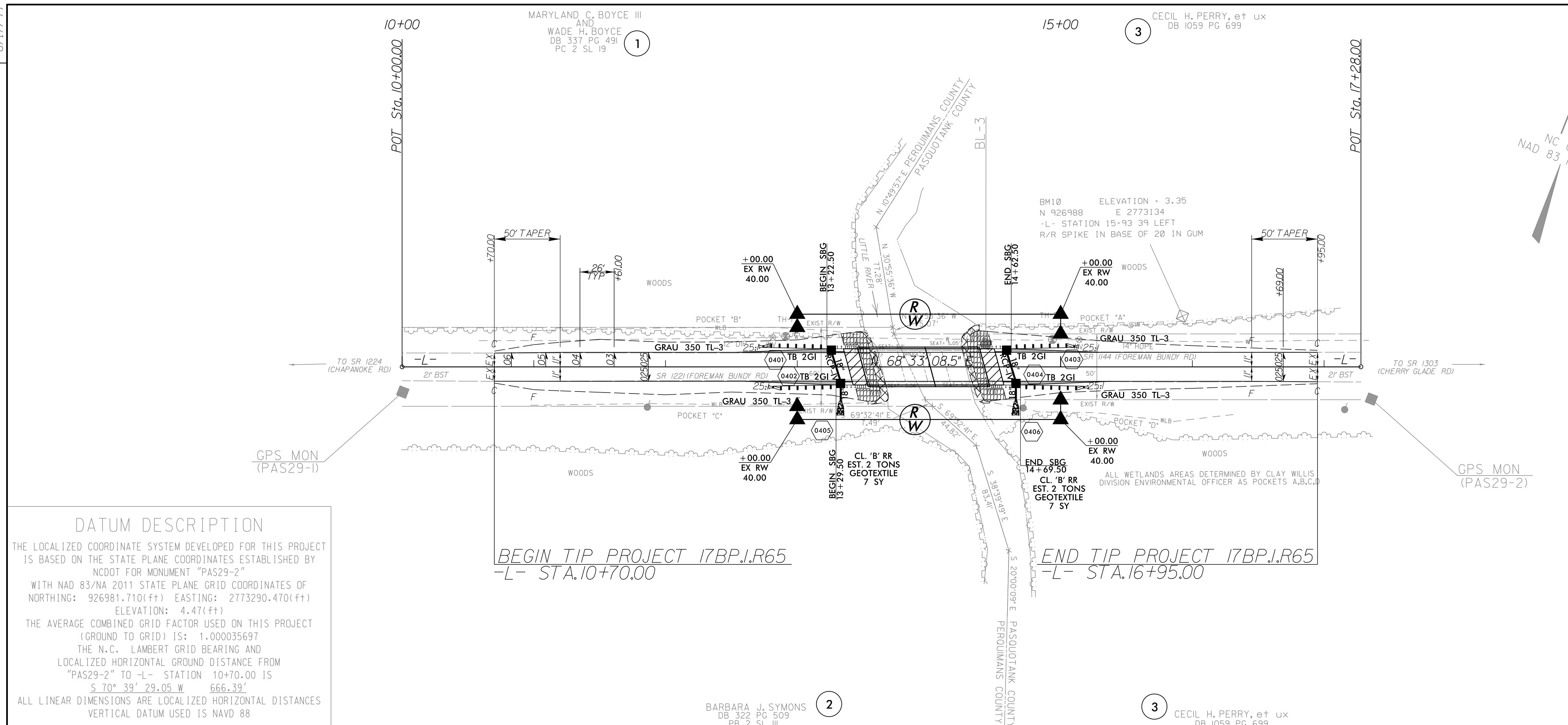
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

ITEM #	SECT. #	DESCRIPTION	QUANTITY	UNIT
0000100000-N	800	Mobilization	1.00	LS
0000400000-N	801	Construction Surveying	1.00	LS
0043000000-N	226	Grading	1.00	LS
0030000000-N	SP	Reinforced Bridge Approach Fill-Sub Regional, Station 13+96.00	1.00	LS
0050000000-E	226	Supplemental Clearing & Grubbing	1.00	AC
0057000000-E	226	Undercut Excavation	50.00	CY
0195000000-E	265	Select Granular Material	50.00	CY
0196000000-E	270	Geotextile for Soil Stabilization	175.00	SY
0318000000-E	300	Foundation Conditioning Material	20.00	TON
0320000000-E	300	Foundation Conditioning Geotextile	40.00	SY
0335300000-E	305	18" Drainage Pipe	48.00	LF
0448300000-E	310	18" RC Pipe Culverts, Class IV	48.00	SY
1220000000-E	545	Incidental Stone Base	10.00	TON
1330000000-E	607	Incidental Milling	450.00	SY
1489000000-E	610	Asphalt Conc. Base Course, Type B25.0B	95.00	TON
1498000000-E	610	Asphalt Conc. Intermediate Course, Type I19.0B	135.00	TON
1519000000-E	610	Asphalt Conc. Surface Course, Type S9.5B	335.00	TON
1575000000-E	620	Asphalt Binder for Plant Mix	34.00	TON
2022000000-E	815	Subdrain Excavation	23.00	CY
2033000000-E	815	Subdrain Fine Aggregate	17.00	CY
2044000000-E	815	6" Perforated Subdrain Pipe	100.00	LF
2070000000-N	815	Subdrain Pipe Outlet	1.00	EACH
2077000000-E	815	6" Outlet Pipe	6.00	LF
2286000000-N	840	Masonry Drainage Structures	4.00	EACH
2367000000-N	840	Frame w/Two Grates, STD. 840.29	4.00	EACH
2556000000-E	846	Shoulder Berm Gutter	60.00	LF
3030000000-E	862	Steel Bm Guardrail	50.00	LF
3150000000-N	862	Additional Guardrail Posts	5.00	EACH
3215000000-N	862	Guardrail Anchor Unit, Type III	4.00	EACH
3270000000-N	SP	Guardrail Anchor Unit, Type 350	4.00	EACH
3649000000-E	876	Class B Rip Rap	4.00	TON
3656000000-E	876	Geotextile for Drainage	204.00	SY
4400000000-E	1110	Work Zone Signs (Stationary)	302.00	SF
4405000000-E	1110	Work Zone Signs (Portable)	84.00	SF
4410000000-E	1110	Work Zone Signs (Barricade Mounted)	70.00	SF
4435000000-N	1135	Cones	14.00	EACH
4445000000-E	1145	Barricades (Type III)	80.00	LF
4685000000-E	1205	Thermoplastic Pavement Marking (4", 90 mils)	1250.00	LF
4686000000-E	1205	Thermoplastic Pavement Marking (4", 120 mils)	156.00	LF
4900000000-N	1251	Permanent Raised Pavement Markers	8.00	EACH
6000000000-E	1605	Temporary Silt Fence	1555.00	LF
6006000000-E	1610	Stone for Erosion Control, Class A	75.00	TON
6009000000-E	1610	Stone for Erosion Control, Class B	5.00	TON
6012000000-E	1610	Sediment Control Stone	55.00	TON
6015000000-E	1615	Temporary Mulching	0.50	ACRE
6018000000-E	1620	Seed for Temporary Seeding	100.00	LB
6021000000-E	1620	Fertilizer for Temporary Seeding	0.50	TON
6024000000-E	1622	Temporary Slope Drains	200.00	LF
6029000000-E	SP	Safety Fence	200.00	LF
6030000000-E	1630	Silt Excavation	10.00	CY
6036000000-E	1631	Matting for Erosion Control	1250.00	SY
6037000000-E	SP	Coir Fiber Mat	100.00	SY
6042000000-E	1632	1/4" Hardware Cloth	250.00	LF
6048000000-E	SP	Floating Turbidity Curtain	150.00	SY

ITEM #	SECT. #	DESCRIPTION	QUANTITY	UNIT
6084000000-E	1660	Seeding & Mulching	0.50	ACRE
6087000000-E	1660	Mowing	0.50	ACRE
6090000000-E	1661	Seed for Repair Seeding	50.00	LB
6093000000-E	1661	Fertilizer for Repair Seeding	0.25	TON
6096000000-E	1662	Seed for Supplemental Seeding	50.00	LB
6108000000-E	1665	Fertilizer Topdressing	0.25	TON
6114000000-N	1667	Specialized Hand Mowing	10.00	HR
6117000000-N	SP	Response for Erosion Control	13.00	EACH
6123000000-E	1670	Reforestation	1.00	ACRE
8035000000-N	402	Removal of Exist. Structure at Sta. 13+96.00	1.00	LS
8112730000-N	450	PDA Testing	2.00	EACH
8121000000-N	412	Unclassified Structure Exc. at Sta. 13+96.00	1.00	LS
8182000000-E	420	Class A Concrete (Bridge)	37.20	CY
8210000000-N	422	Bridge Approach Slabs, Station 13+96.00	1.00	LS
8217000000-E	425	Reinforcing Steel (Bridge)	6127.00	LBS
8364000000-E	450	HP 12x53 Steel Piles	700.00	LF
8393000000-N	450	Pile Redrives	17.00	EACH
8475000000-E	460	Two Bar Metal Rail	164.63	LF
8517000000-E	460	1'-2"x2-8 1/2" Concrete Parapet	180.26	LF
8584200000-E	450	HP 14x73 Galvanized Steel Piles	490.00	LF
8608000000-E	876	Rip Rap Class II (2'-0" Thick)	162.00	Tons
8622000000-E	876	Geotextile for Drainage	182.00	SY
8657000000-N	430	Elastomeric Bearings	1.00	LS
8762000000-E	430	3'-0"x1'-9" Prestressed Conc. Cored Slabs	900.00	LF

PROJECT REFERENCE NO. 17BP.I.R.65	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
	
559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	

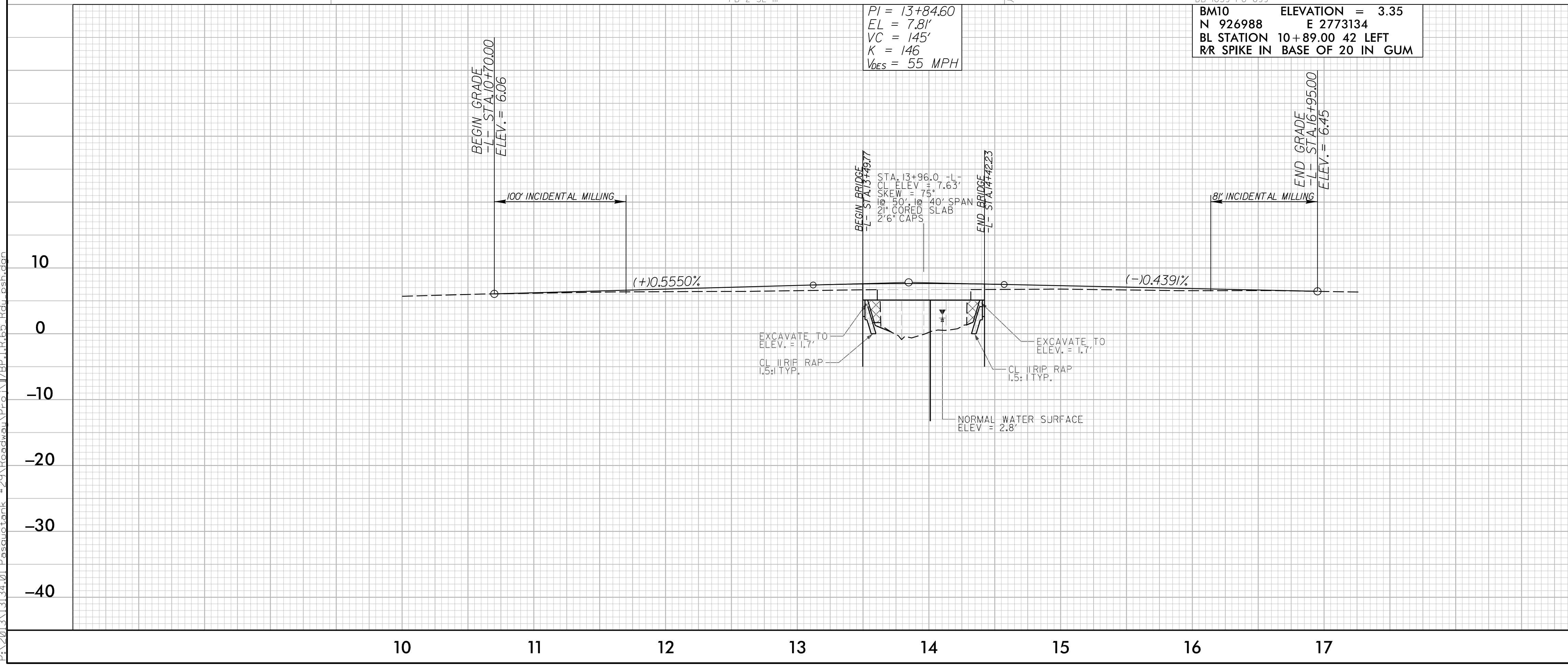
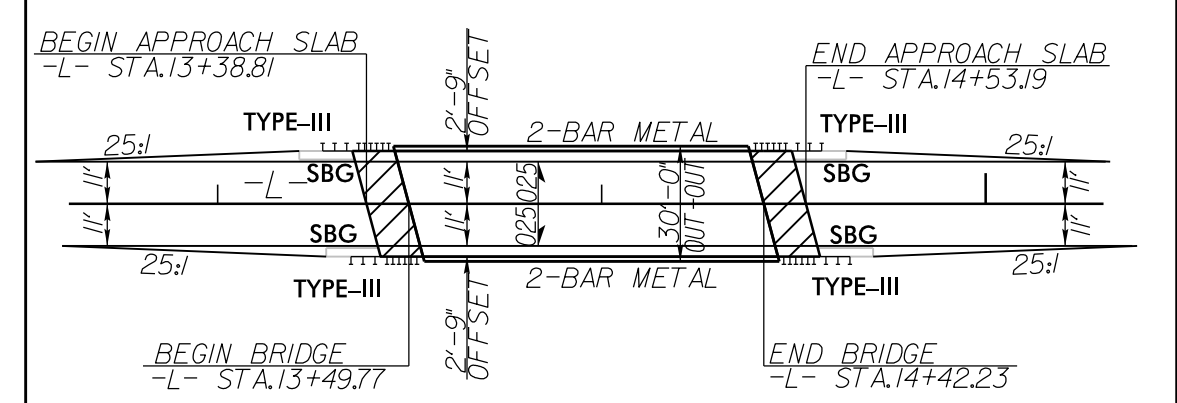


DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "PAS29-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 926981.710(ft) EASTING: 2773290.470(ft) ELEVATION: 4.47(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000035697
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "PAS29-2" TO -L- STATION 10+70.00 IS
 S 70° 39' 29.05 W 666.39'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

BEGIN TIP PROJECT 17BP.I.R.65
 -L- STA.10+70.00

END TIP PROJECT 17BP.I.R.65
 -L- STA.16+95.00

SEE SHEET S-1 THRU S-20 FOR STRUCTURE PLANS
 SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



BRIDGE HYDRAULIC DATA

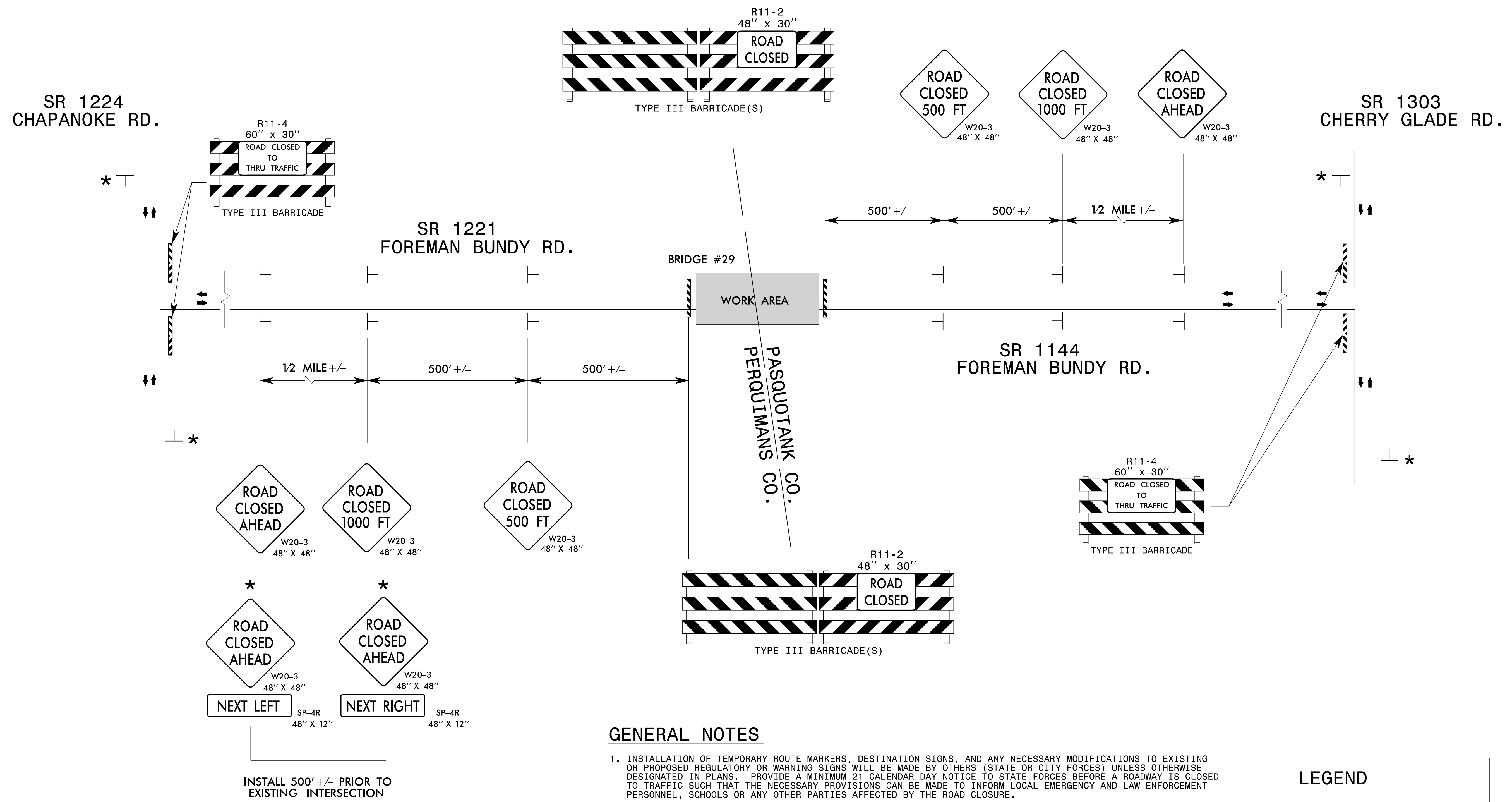
DESIGN DISCHARGE	= 950	CFS
DESIGN FREQUENCY	= 2+	YRS
DESIGN HW ELEVATION	= 5.6	FT
BASE DISCHARGE	= 2900	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 8.92	FT
OVERTOPPING DISCHARGE	= 950	CFS
OVERTOPPING FREQUENCY	= 2+	YRS
OVERTOPPING ELEVATION	= 5.6	FT

DATE OF SURVEY	= 1-15-2014
W.S. ELEVATION AT DATE OF SURVEY	= 2.8 FT

REVISIONS

12/10/2014 3:46:23 PM P:\2013\13134_01_Pasquotank_Proj\17BP.I.R.65_Rdw_esh.dgn

8/17/99



GENERAL NOTES

1. INSTALLATION OF TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN PLANS. PROVIDE A MINIMUM 21 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
2. INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
3. POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.
4. USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.
5. SEE STANDARD SPECIFICATION 1089-1 FOR WORK ZONE SIGNS.
6. SEE STANDARD SPECIFICATION 1089-2 FOR WORK ZONE SIGN SUPPORTS.

LEGEND

- DIRECTION OF TRAFFIC FLOW
- BARRICADE (TYPE III)
- STATIONARY MOUNTED SIGN

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 JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1145.01	BARRICADES
904.10	ORIENTATION OF GROUND MOUNTED SIGNS

ETHERILL ENGINEERING

559 Jones Franklin Rd. Suite 164
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

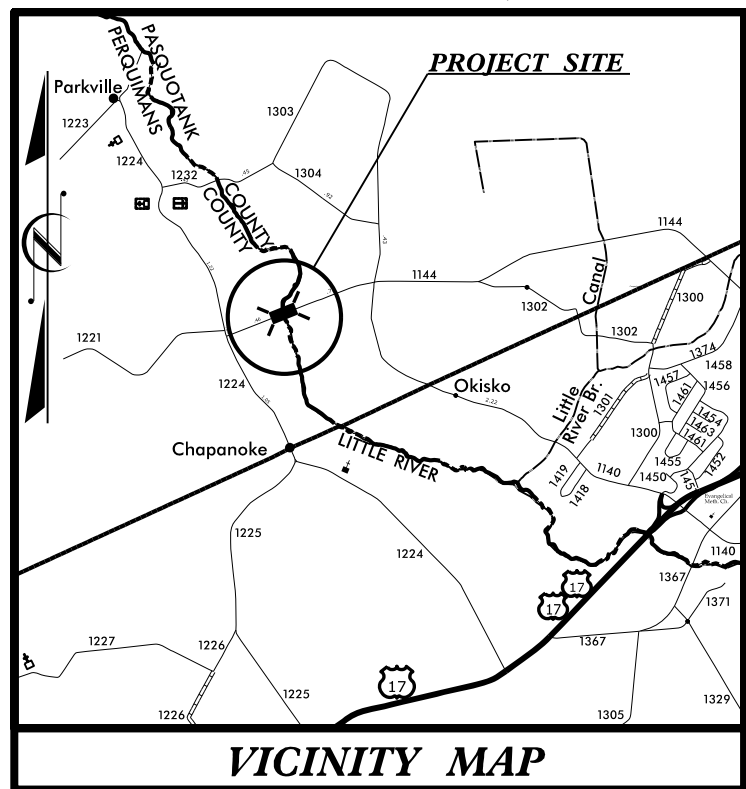
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: _____ DATE: _____			<p>ROAD CLOSURE FOREMAN BUNDY RD.</p>
SEAL			

12/31/2014 10:42:30 AM P:\2013\13134\01\Pasquotank #29\TrafficControl\TCP\17BP.1.R.65.TC.BTCP.dgn

TIP PROJECT: 17BP.I.R.65

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

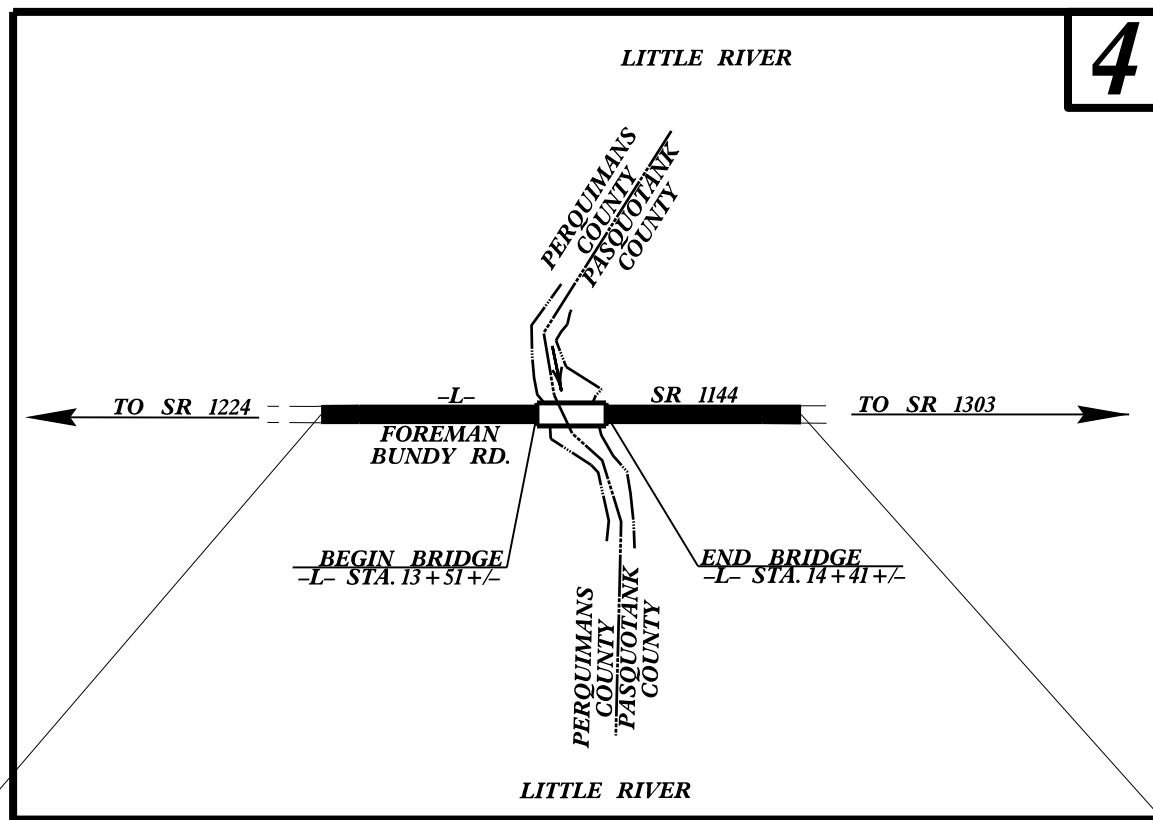


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

PASQUOTANK COUNTY

LOCATION: BRIDGE NO. 29 OVER LITTLE RIVER ON SR 1144
(FOREMAN BUNDY RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE



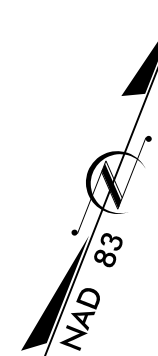
BEGIN TIP PROJECT 17BP.I.R.65
-L- STA. 10+70.00

END TIP PROJECT 17BP.I.R.65
-L- STA. 16+95.00

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.I.R.65	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.05	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	III III III
1622.01	Temporary Berms and Slope Drains	III III III
1630.02	Silt Basin Type B	III III III
1633.01	Temporary Rock Silt Check Type-A	III III III
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	III III III
1633.02	Temporary Rock Silt Check Type-B	III III III
	Wattle / Coir Fiber Wattle	III III III
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	III III III
1634.01	Temporary Rock Sediment Dam Type-A	III III III
1634.02	Temporary Rock Sediment Dam Type-B	III III III
1635.01	Rock Pipe Inlet Sediment Trap Type-A	III III III
1635.02	Rock Pipe Inlet Sediment Trap Type-B	III III III
1630.04	Stilling Basin	III III III
1630.06	Special Stilling Basin	III III III
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	III III III
	Tiered Skimmer Basin	III III III
	Infiltration Basin	III III III

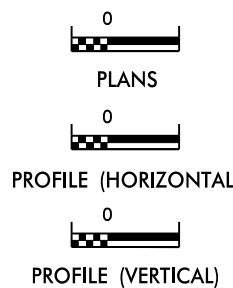


THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.

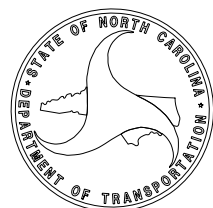
HARMINDER SINGH
LEVEL IIIA NAME

3519
LEVEL IIIA CERTIFICATION NO.

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.

WETHERILL ENGINEERING
Prepared for the North Carolina Department of Transportation in the Office of:
559 JONES FARMER ROAD, SUITE 104
RALEIGH, N.C. 27606
License No. 74-2377
P.O. Box 999 851 8007
Fax: 919 851 8107

2012 STANDARD SPECIFICATIONS	EDWARD G. WETHERILL, PE PROJECT ENGINEER
RIGHT OF WAY DATE:	
LETTING DATE:	BOB A. MAY, PE PROJECT DESIGN ENGINEER
NCDOT CONTACT:	JOHN S. ABEL, JR. DIVISION 1 BRIDGE PROGRAM MANAGER

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	

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (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.

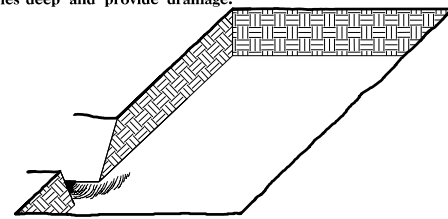
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.1.R.65	RF-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

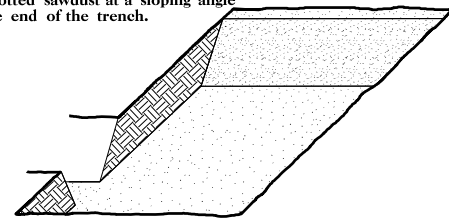
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

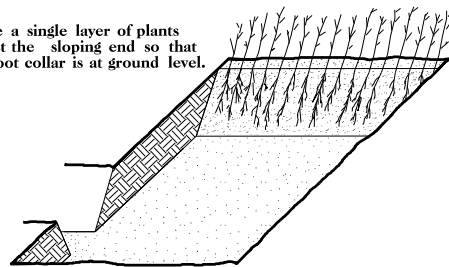
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



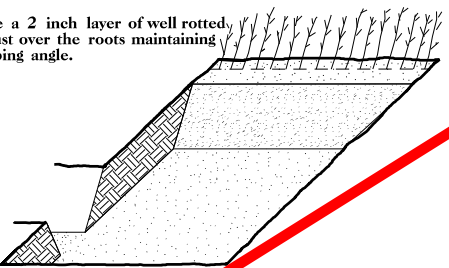
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

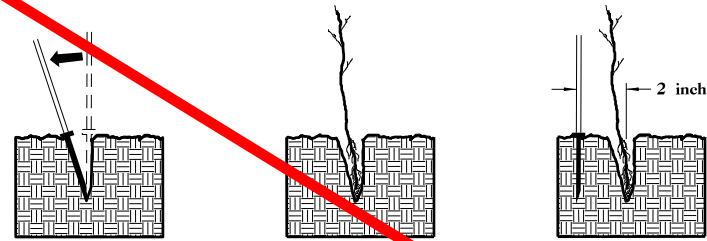


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

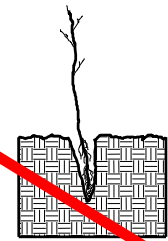


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

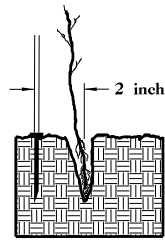
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



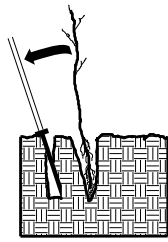
1. Insert planting bar as shown and pull handle toward planter.



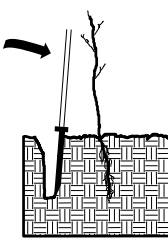
2. Remove planting bar and place seedling to correct depth.



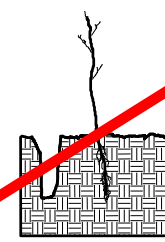
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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



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



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

REFORESTATION

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

REFORESTATION

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

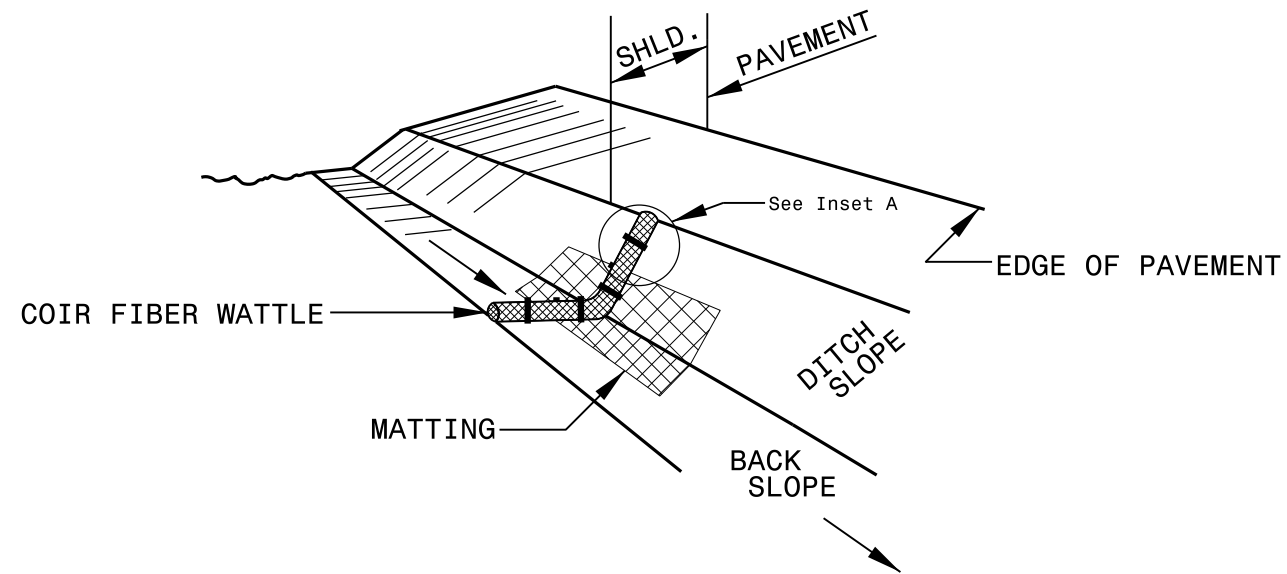
25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

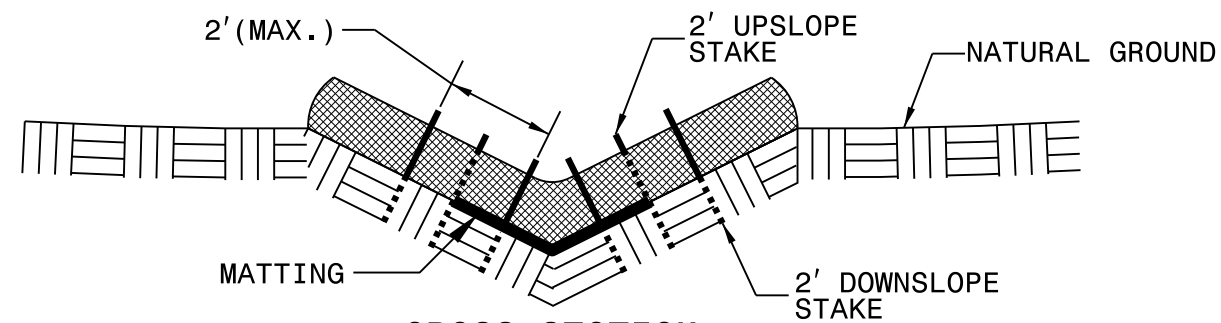
N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

PROJECT REFERENCE NO. 17BP.1.R.65	SHEET NO. EC-26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

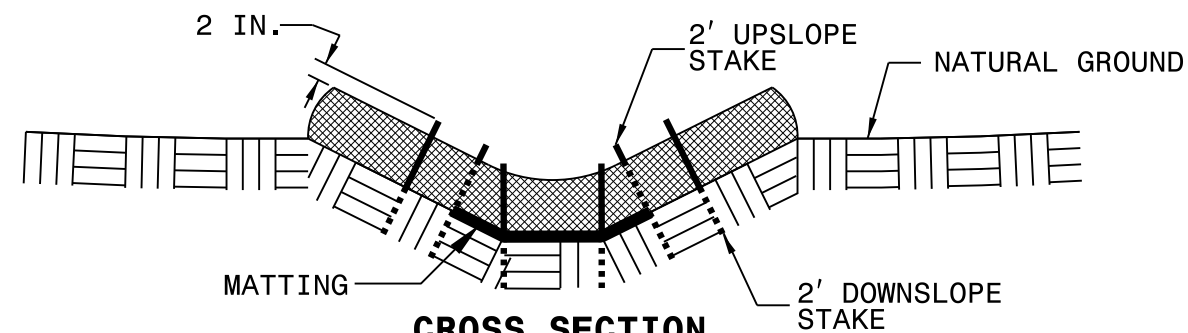
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



**CROSS SECTION
VEE DITCH**



**CROSS SECTION
TRAPEZOIDAL DITCH**

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.

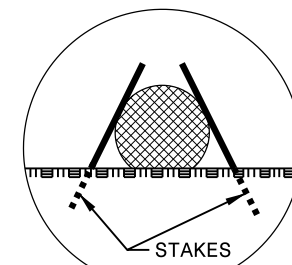
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

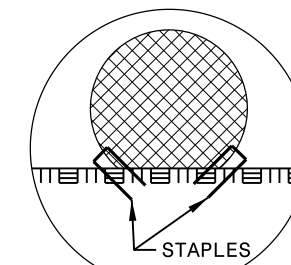
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

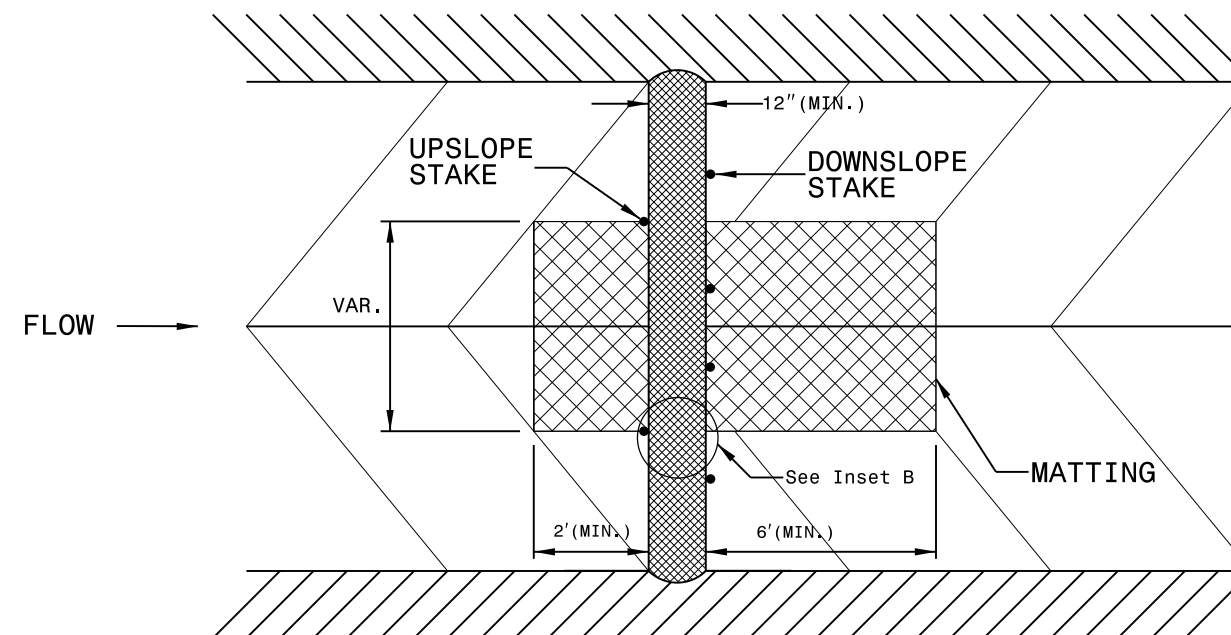
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



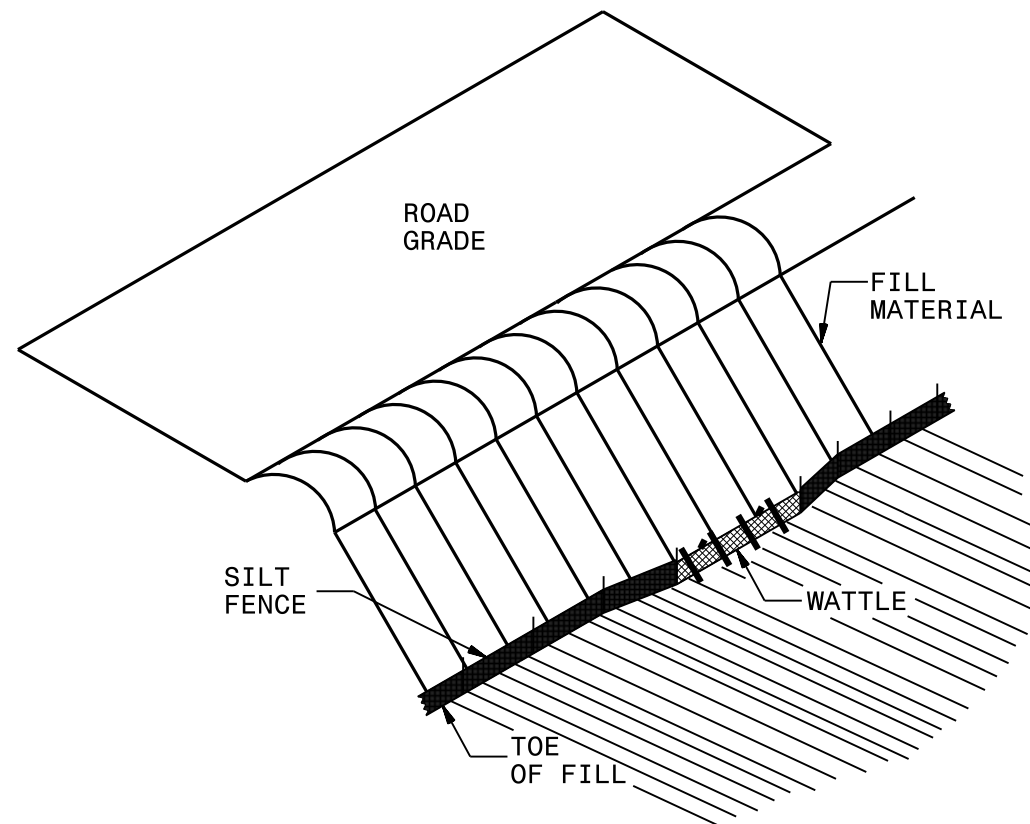
INSET B



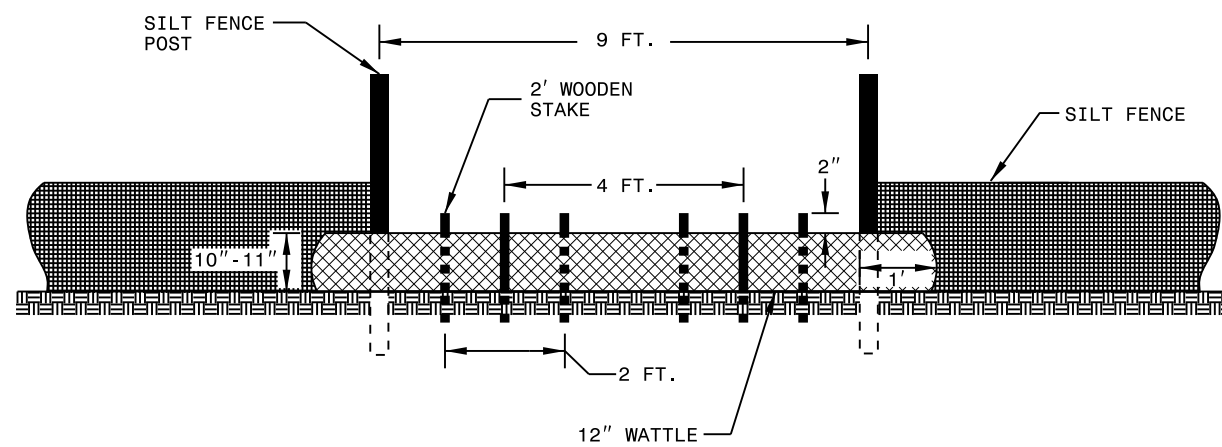
TOP VIEW

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO. 17BP.1.R.65	SHEET NO. EC-26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW

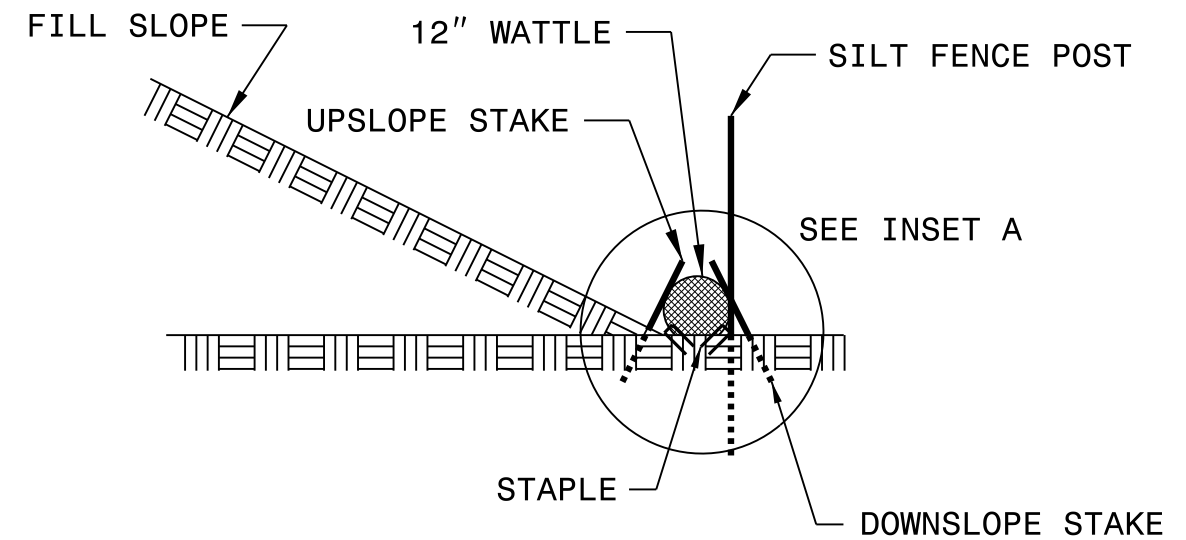
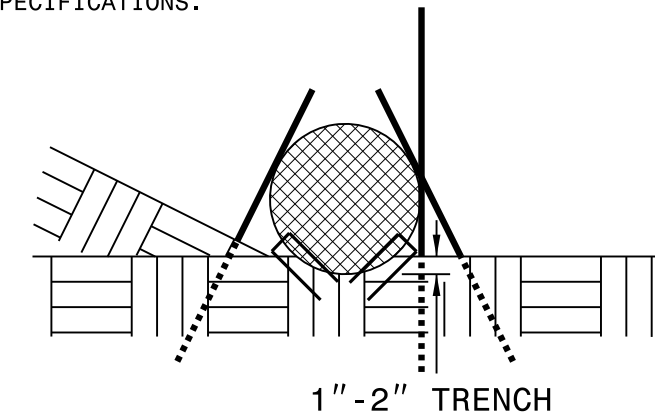


VIEW FROM SLOPE

NOTES:

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

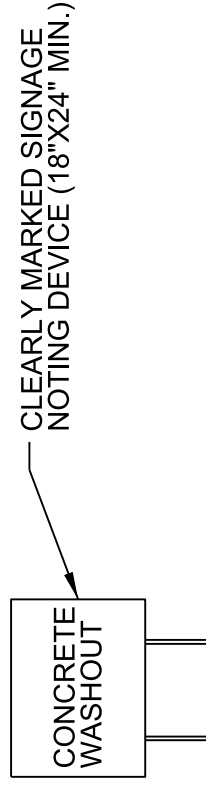
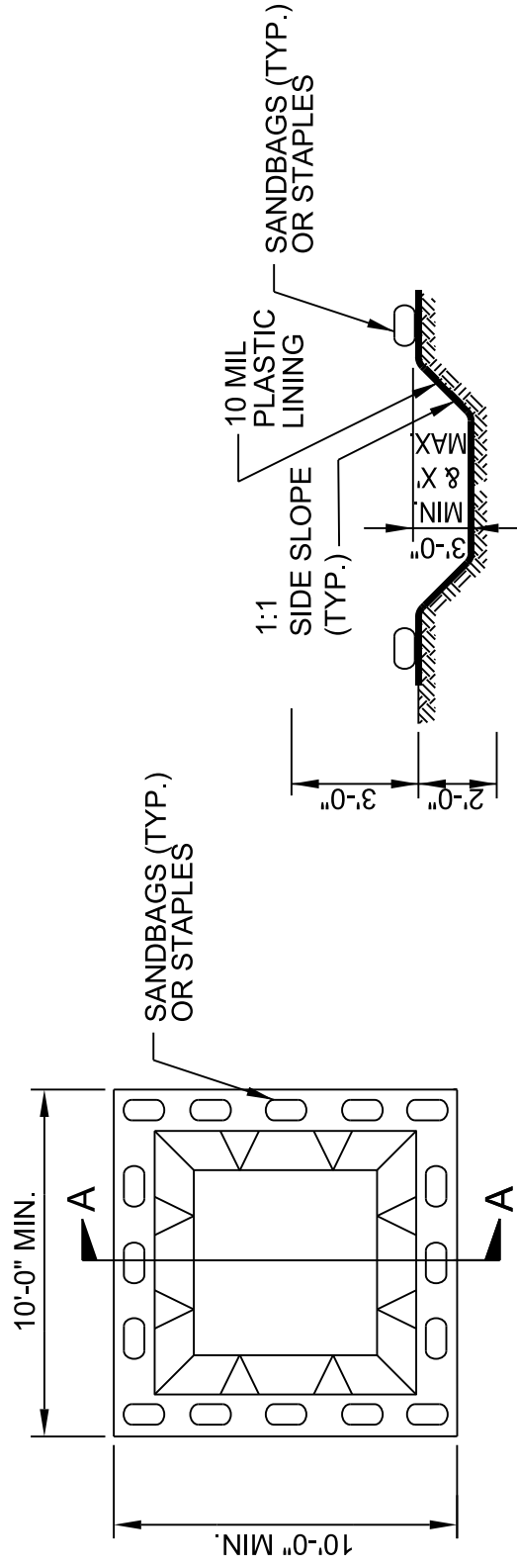
INSET A



SIDE VIEW

WITH LINER, NO GRAVEL APPROACH

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



SECTION A-A

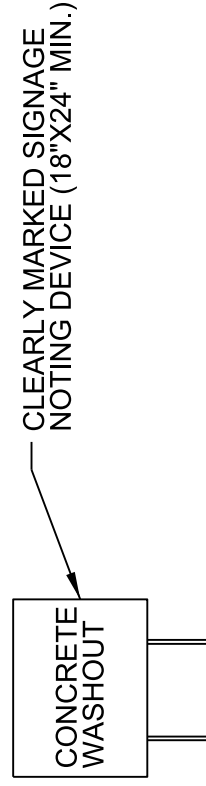
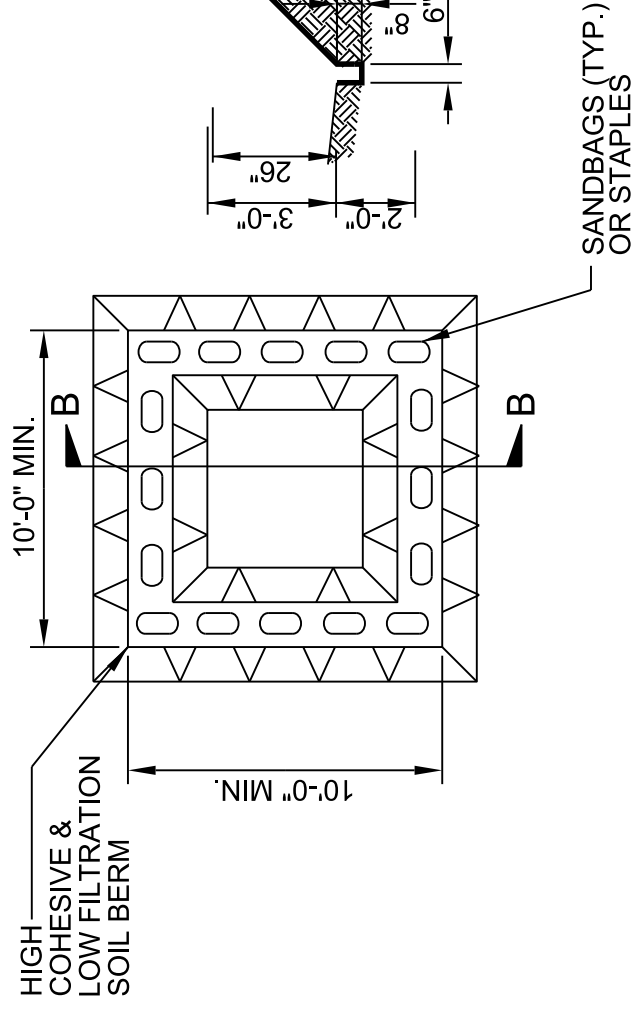
NOTES:

1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



NOTES:

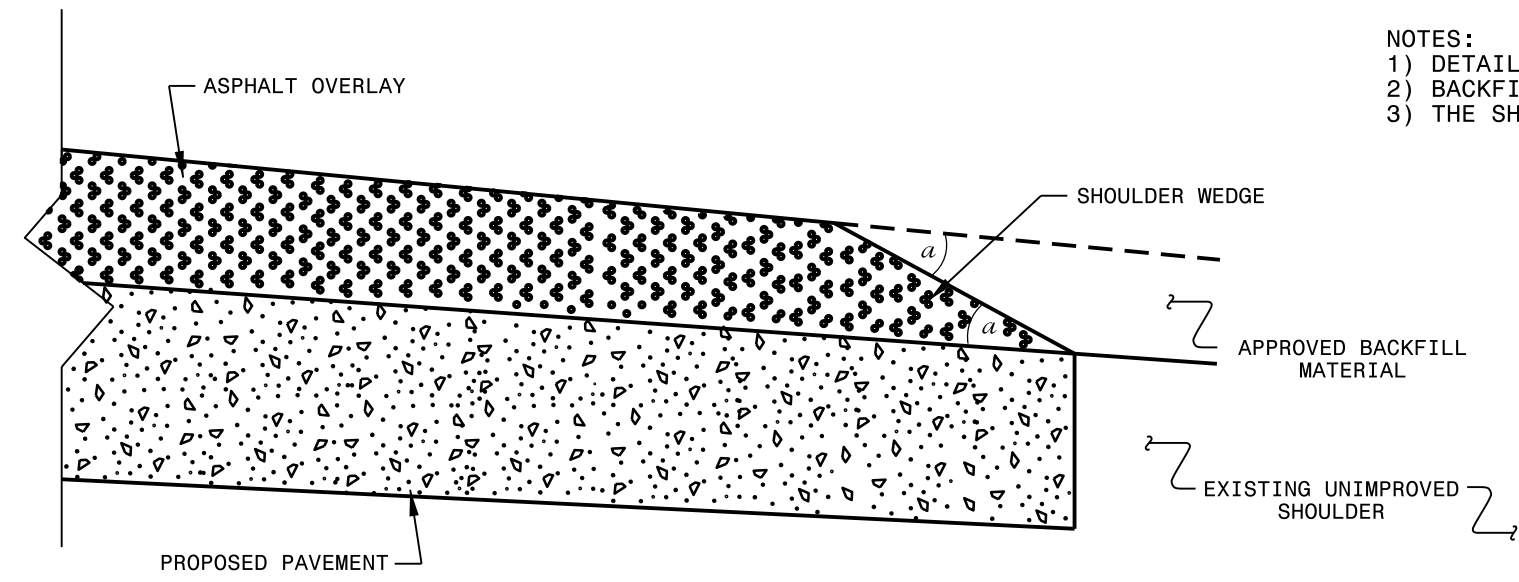
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

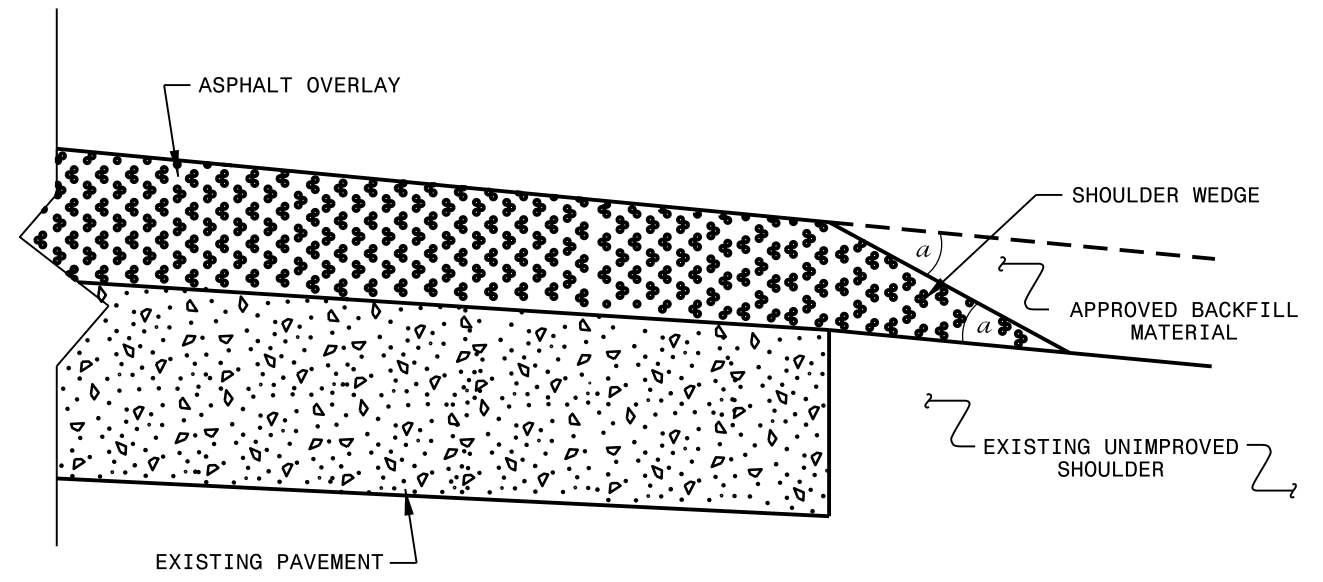
ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

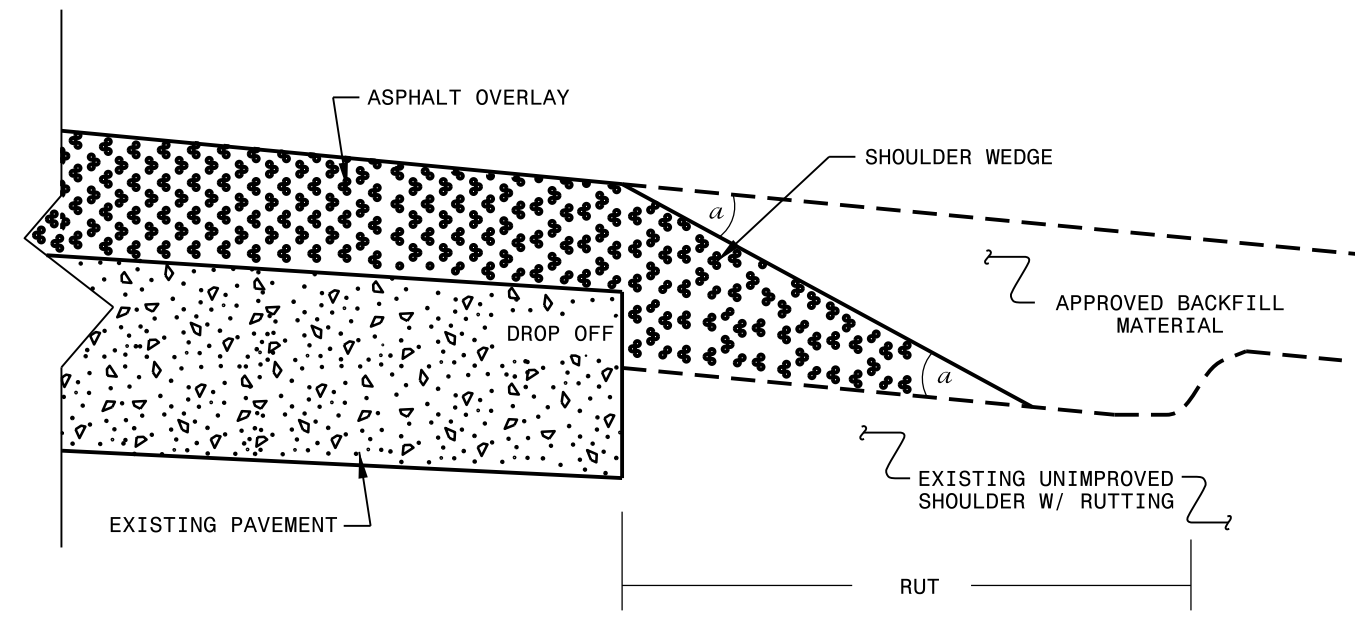
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFD AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ Widening or
 with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to
 Rutted Shoulder)

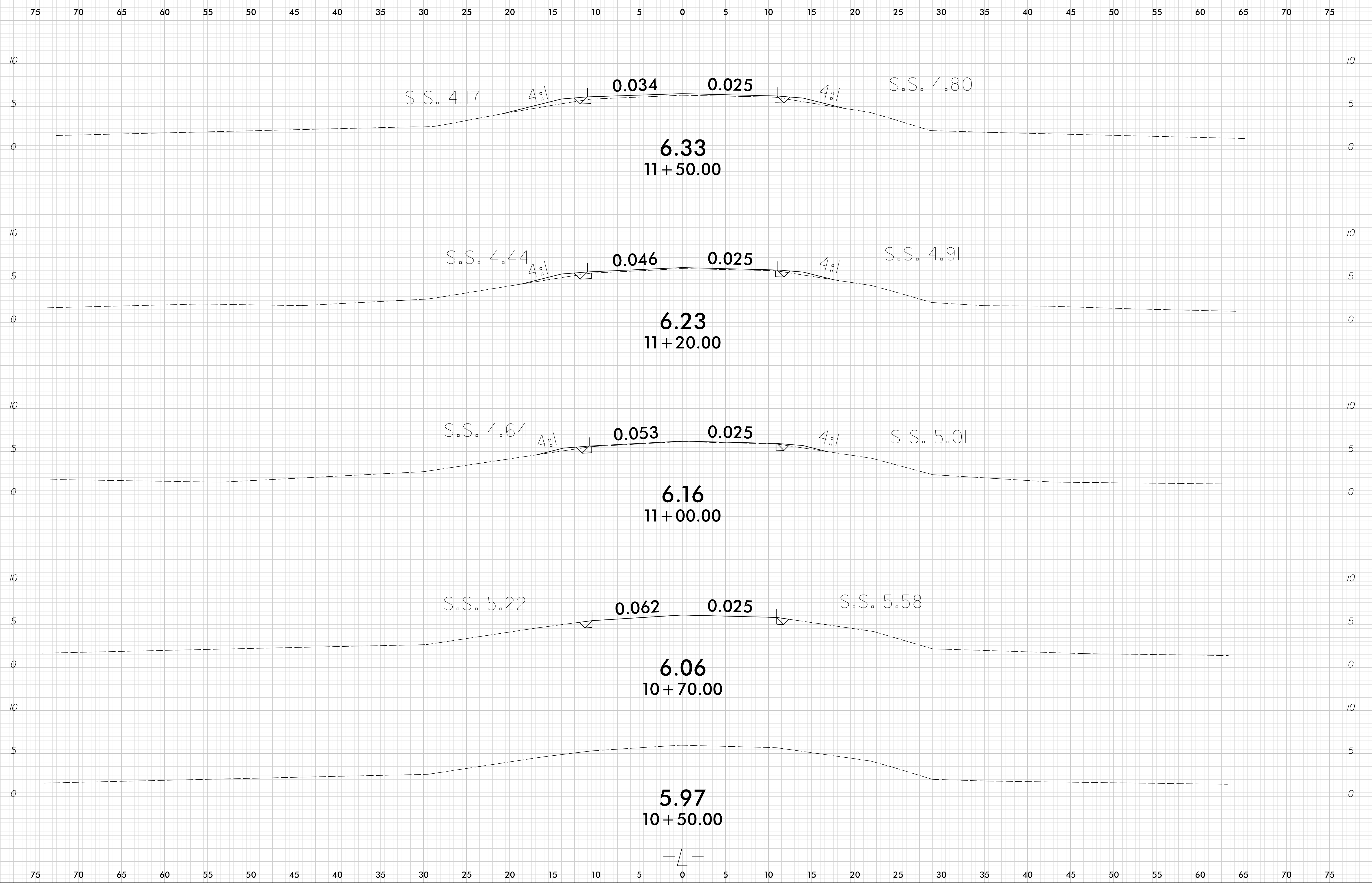
- SHOULDER WEDGE ANGLE = 30°

CONTRACT STANDARDS AND DEVELOPMENT UNIT			
Office 919-707-6950		FAX 919-250-4119	
SHOULDER WEDGE DETAILS			
ORIGINAL BY: T.SPELL	DATE: 7-19-11		
MODIFIED BY:	DATE: 10/16/12		
CHECKED BY:	DATE:		
FILE SPEC.: susr/details/stand/shoulderwedgedetail.dgn			

SYSTEMS DESIGN
 USER NAME

8/23/99

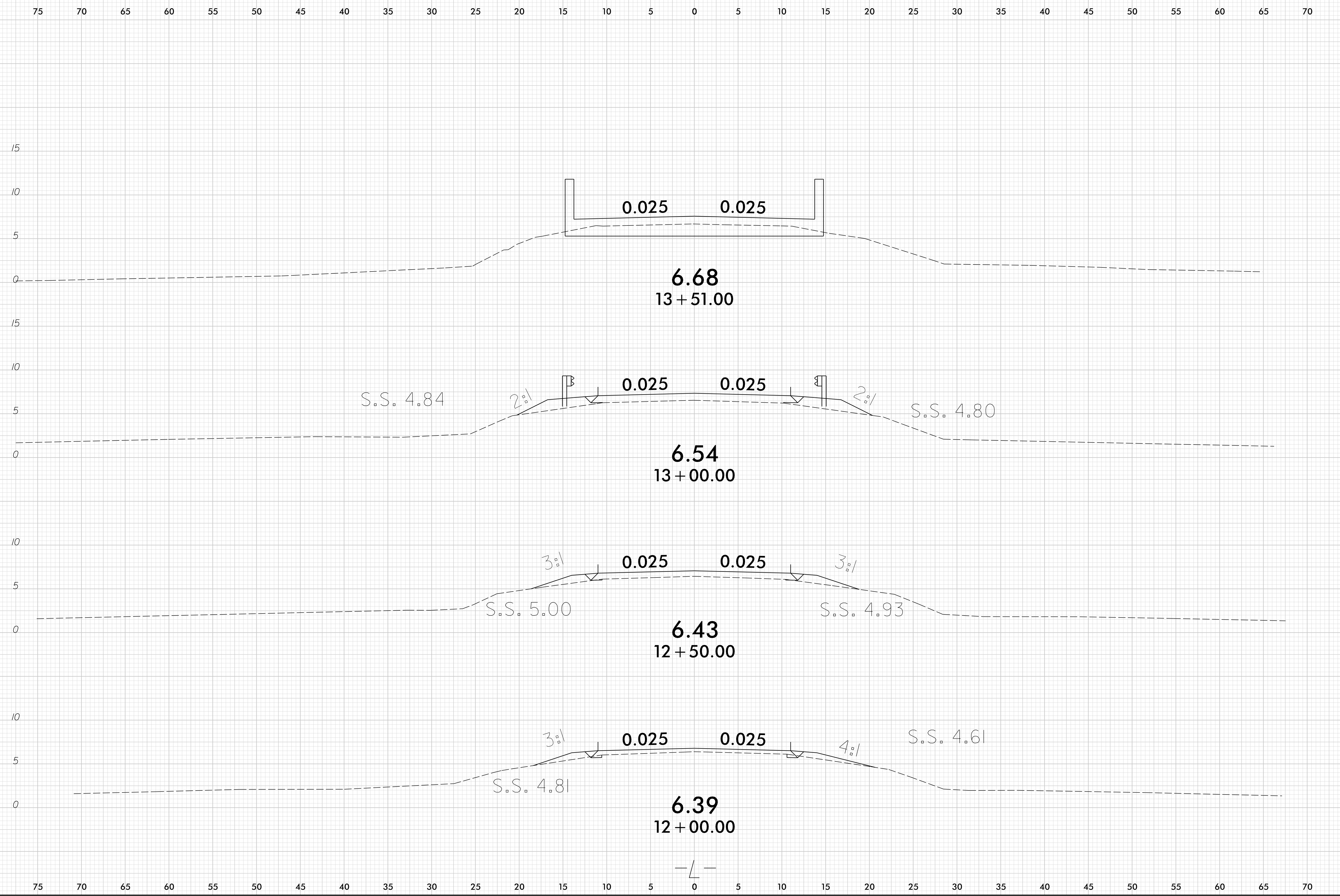
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.1.R.65	X-1



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291Roadway\Xsc\17BP.1.R.65_Rdt_xpl.dgn

8/23/99
12/3/2014 3:55:48 PM
F:\2013\13134\01_Pasquotank #29\Roadway\Xsc\17BP.LR.B5.Rdu_xpl.dgn

0	2.5	5	PROJ. REFERENCE NO.	SHEET NO.
█	█	█	17BP.1.R.65	X-2

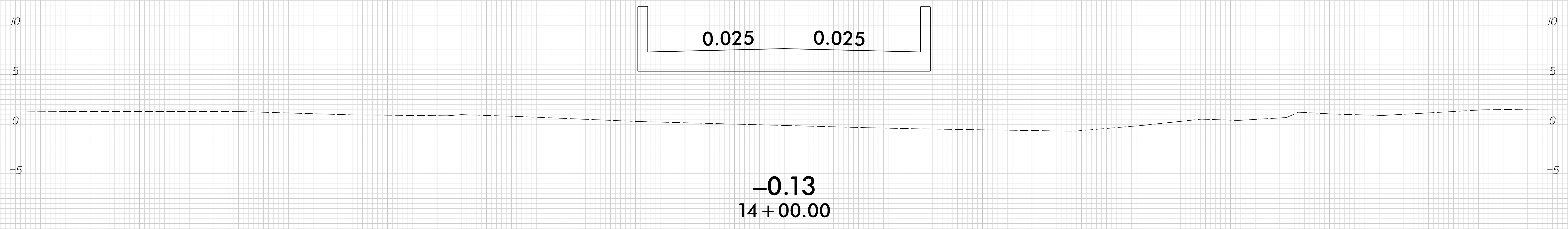
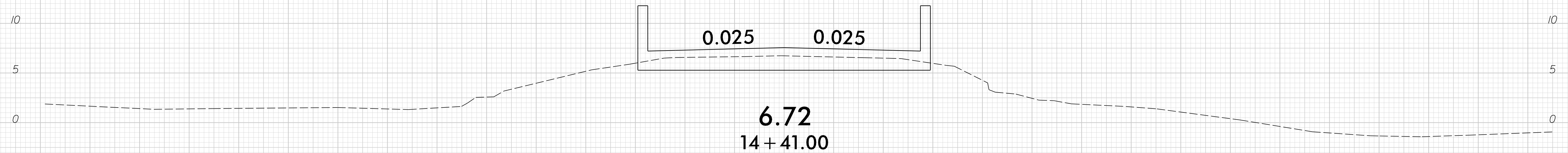
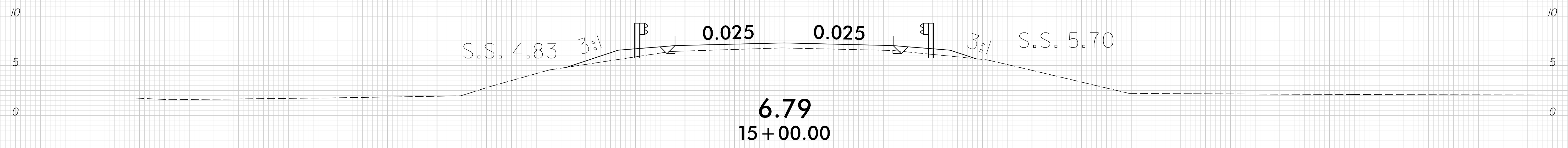
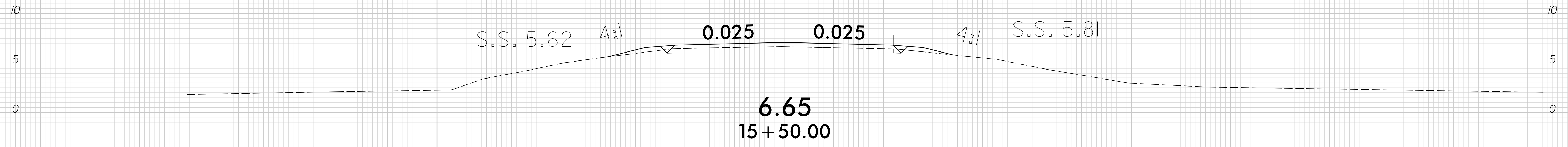


—/—

8/23/99

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	17BP.1.R.65	X-3

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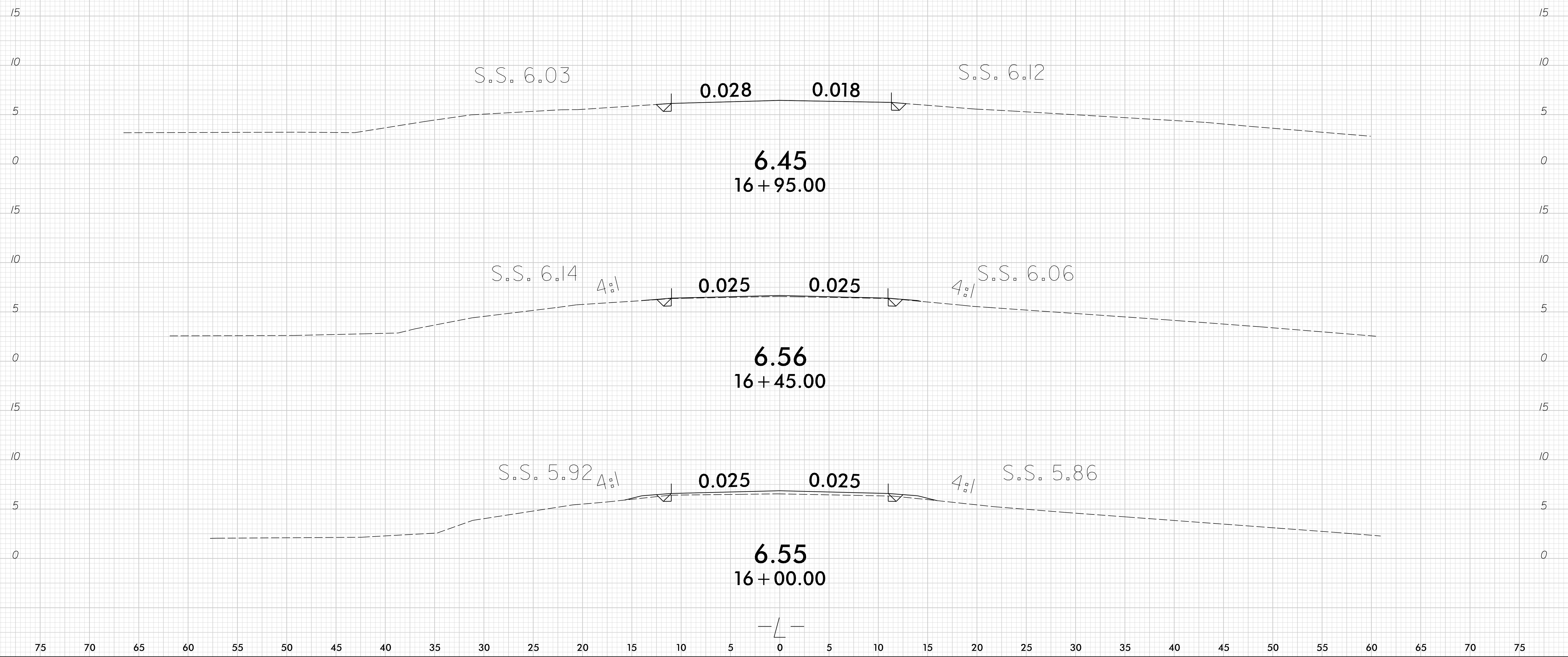
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8/23/99

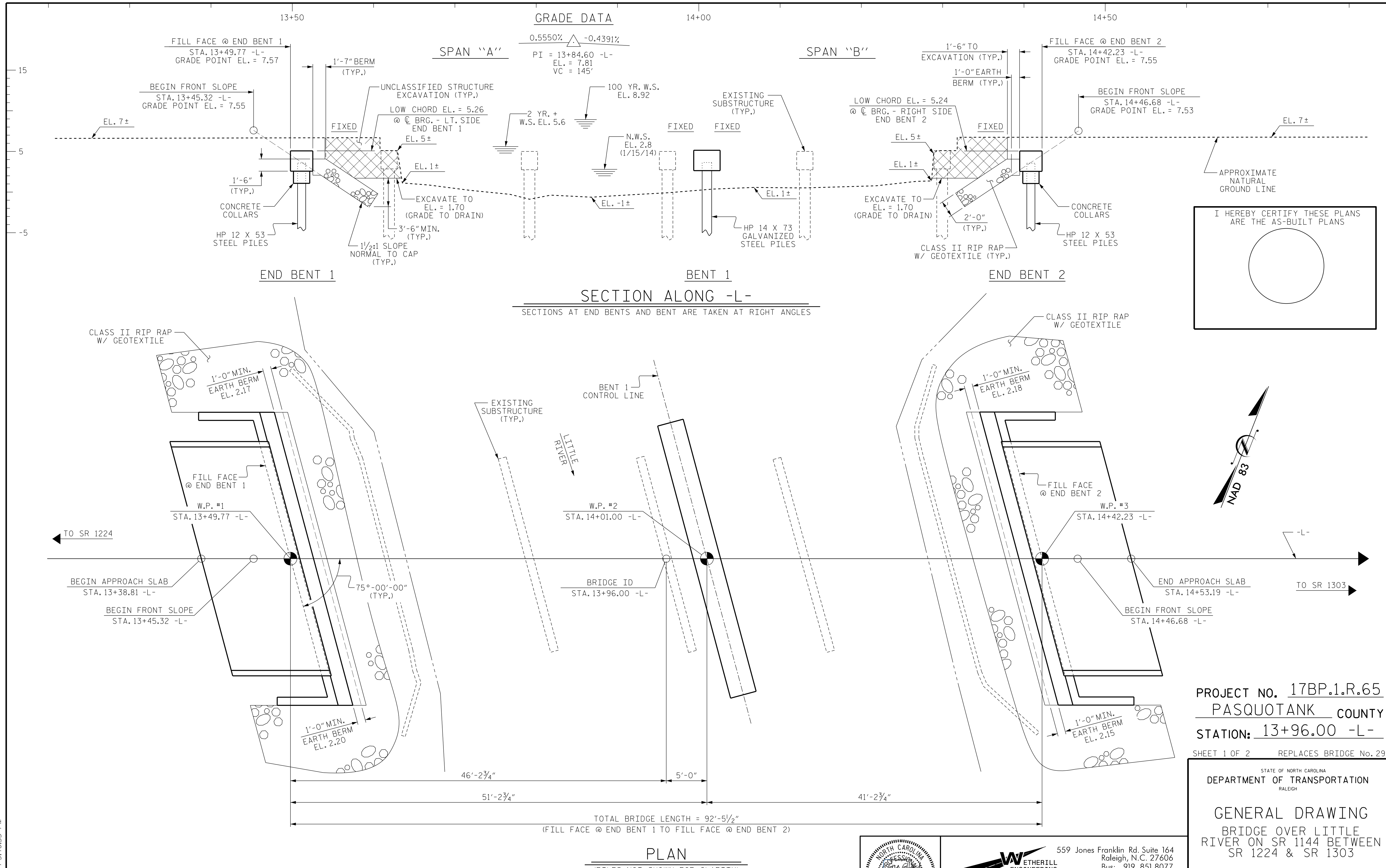
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	17BP.1.R.65	X-4

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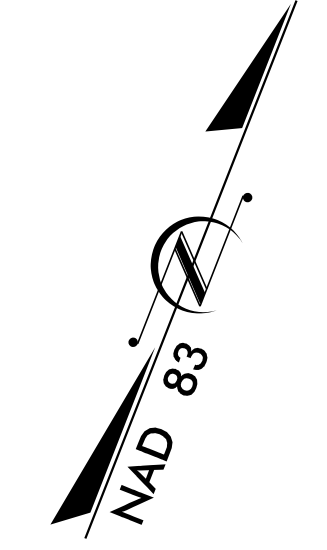


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 Pasquon tank

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



I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

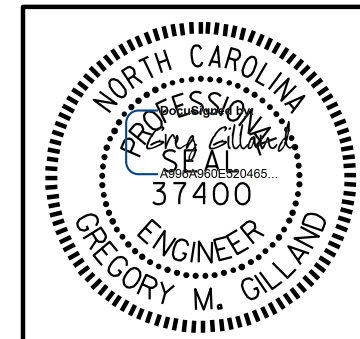


PROJECT NO. 17BP.1.R.65
 PASQUOTANK COUNTY
 STATION: 13+96.00 -L-
 SHEET 1 OF 2 REPLACES BRIDGE No. 29

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE OVER LITTLE
 RIVER ON SR 1144 BETWEEN
 SR 1224 & SR 1303

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

TOTAL SHEETS: 20



ETHERILL ENGINEERING
 559 Jones Franklin Rd. Suite 164
 Raleigh, N.C. 27606
 Bus: 919 851 8077
 Fax: 919 851 8107
 License: F-0377

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

DRAWN BY: G.M. GILLAND DATE: 12-10-14
 CHECKED BY: J.A. DILWORTH DATE: 12-11-14
 DESIGN ENGINEER OF RECORD: G.M. GILLAND DATE: 12-15-14

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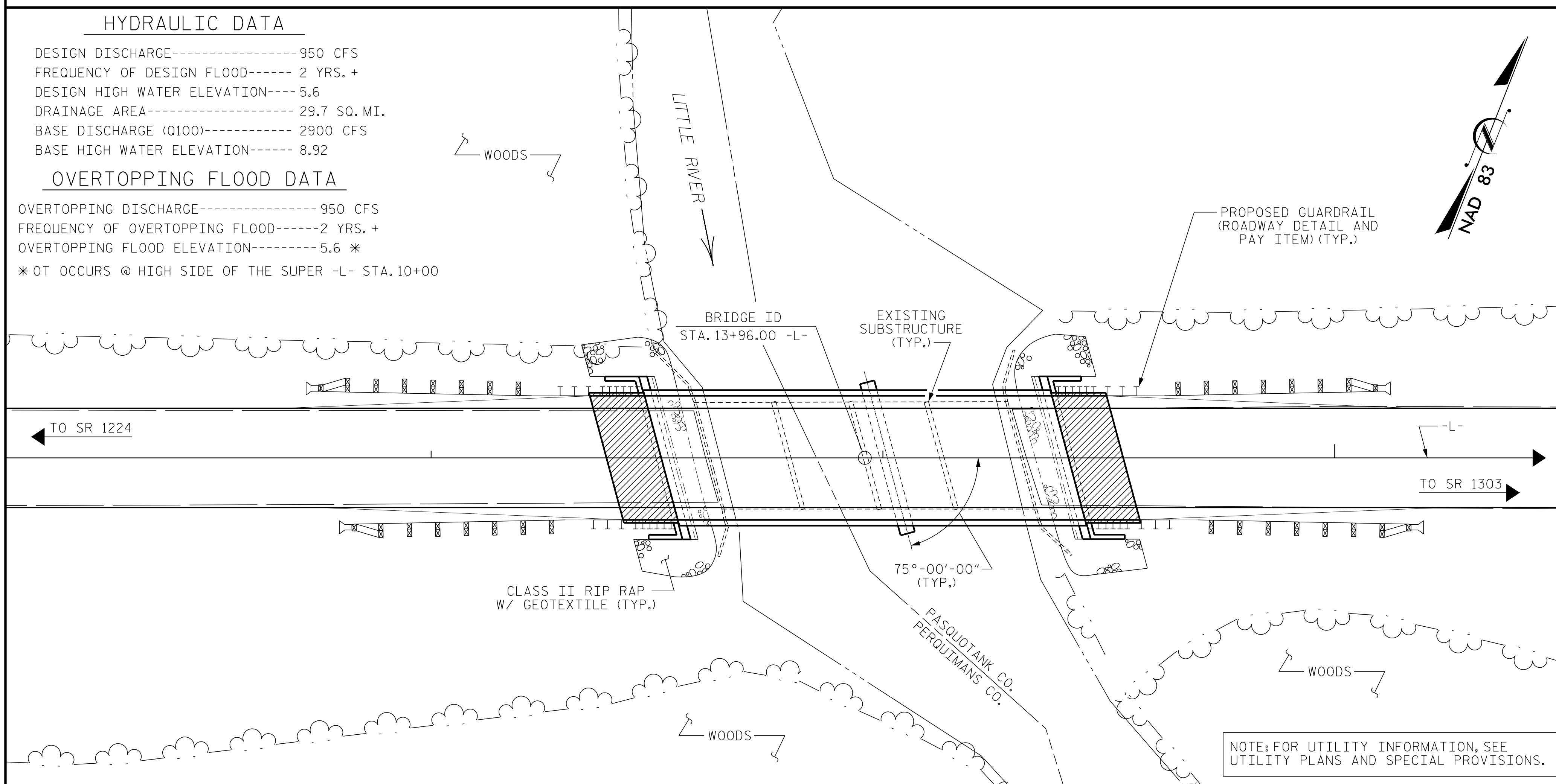
BM10 (RR SPIKE IN BASE OF 20" GUM) 39' LT OF STA. 15+93 -L-; EL. = 3.35 N 926988 E 2773134

HYDRAULIC DATA

DESIGN DISCHARGE-----950 CFS
 FREQUENCY OF DESIGN FLOOD----- 2 YRS. +
 DESIGN HIGH WATER ELEVATION----5.6
 DRAINAGE AREA----- 29.7 SQ. MI.
 BASE DISCHARGE (Q100)----- 2900 CFS
 BASE HIGH WATER ELEVATION---- 8.92

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE-----950 CFS
 FREQUENCY OF OVERTOPPING FLOOD-----2 YRS. +
 OVERTOPPING FLOOD ELEVATION----5.6 *
 *OT OCCURS @ HIGH SIDE OF THE SUPER -L- STA.10+00



NOTES :

- 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 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
- THE EXISTING STRUCTURE CONSISTING OF 4 SPANS 1 @ 18'-0", 2 @ 17'-0", 1 @ 18'-0" WITH A REINFORCED CONCRETE FLOOR ON TIMBER JOISTS AND A CLEAR ROADWAY WIDTH OF 24.2' ON A SUBSTRUCTURE CONSISTING OF REINFORCED CONCRETE CAPS ON TIMBER PILES LOCATED AT THE PROPOSED STRUCTURE LOCATION SHALL BE REMOVED.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY ENGINEER. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
- 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 DIFFERENCE BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES".
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

LOCATION SKETCH

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		PILE REDRIVES	TWO BAR METAL RAIL	1'-2" X 2'-8 1/2" CONCRETE PARAPET	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	TONS	SQ. YD.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE												164.63	180.26			LUMP SUM	20	900.00
END BENT 1			LUMP SUM	13.4		2027	5	350			5			81	91			
BENT 1				10.4		2073			7	490	7							
END BENT 2			LUMP SUM	13.4		2027	5	350			5			81	91			
TOTAL	LUMP SUM	2	LUMP SUM	37.2	LUMP SUM	6127	10	700	7	490	17	164.63	180.26	162	182	LUMP SUM	20	900.00

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO.1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.

PILES AT INTERIOR BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 120 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.

INSTALL PILES AT INTERIOR BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN -37.5.

THE SCOUR CRITICAL ELEVATION FOR INTERIOR BENT NO.1 IS ELEVATION -15.0. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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

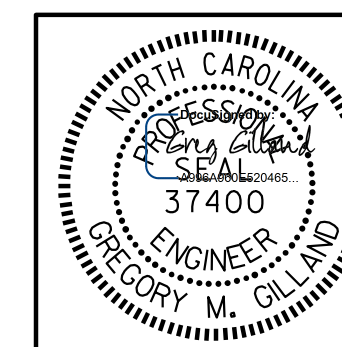
PROJECT NO. 17BP.1.R.65
 PASQUOTANK COUNTY
 STATION: 13+96.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE OVER LITTLE RIVER ON SR 1144 BETWEEN SR 1224 & SR 1303

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			20



559 Jones Franklin Rd. Suite 164
 Raleigh, N.C. 27606
 Bus: 919 851 8077
 Fax: 919 851 8107
 License: F-0377

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

DRAWN BY : G.M. GILLAND DATE : 12-10-14
 CHECKED BY : J.A. DILWORTH DATE : 12-11-14
 DESIGN ENGINEER OF RECORD: G.M. GILLAND DATE : 12-15-14

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LOAD FACTORS:

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

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								
						LIVE-LOAD FACTORS (γ_{LL})	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)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	①	1.22	--	1.75	0.271	1.60	A	EL	24.483	0.612	1.22	A	EL	4.897	0.80	0.271	1.47	A	EL	24.483		
	HL-93(0pr)	N/A	--	1.58	--	1.35	0.271	2.07	A	EL	24.483	0.612	1.58	A	EL	4.897	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	②	1.45	52.207	1.75	0.271	1.98	A	EL	24.483	0.612	1.45	A	EL	4.897	0.80	0.271	1.82	A	EL	24.483		
	HS-20(0pr)	36.000	--	1.88	67.676	1.35	0.271	2.57	A	EL	24.483	0.612	1.88	A	EL	4.897	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE SV	SNSH	13.500	--	3.68	49.660	1.40	0.271	5.04	A	EL	24.483	0.612	4.05	A	EL	4.897	0.80	0.274	3.68	B	EL	19.483	
		SNGARBS2	20.000	--	2.92	58.482	1.40	0.271	3.98	A	EL	24.483	0.612	2.96	A	EL	4.897	0.80	0.271	2.92	A	EL	24.483	
		SNAGRIS2	22.000	--	2.78	61.151	1.40	0.271	3.85	A	EL	19.586	0.612	2.78	A	EL	4.897	0.80	0.271	2.83	A	EL	24.483	
		SNCOTTS3	27.250	--	1.84	50.106	1.40	0.271	2.51	A	EL	24.483	0.612	2.03	A	EL	4.897	0.80	0.274	1.84	B	EL	19.483	
		SNAGGRS4	34.925	--	1.61	56.079	1.40	0.271	2.19	A	EL	24.483	0.612	1.74	A	EL	4.897	0.80	0.271	1.61	A	EL	24.483	
		SNS5A	35.550	--	1.57	55.666	1.40	0.271	2.13	A	EL	24.483	0.612	1.80	A	EL	4.897	0.80	0.271	1.57	A	EL	24.483	
		SNS6A	39.950	--	1.46	58.493	1.40	0.271	1.99	A	EL	24.483	0.612	1.66	A	EL	4.897	0.80	0.271	1.46	A	EL	24.483	
	TRUCK TRACTOR SEMI-TRAILER TTST	SNS7B	42.000	--	1.40	58.605	1.40	0.271	1.90	A	EL	24.483	0.612	1.67	A	EL	4.897	0.80	0.271	1.40	A	EL	24.483	
		TNAGRIT3	33.000	--	1.79	59.194	1.40	0.271	2.44	A	EL	24.483	0.612	1.96	A	EL	4.897	0.80	0.271	1.79	A	EL	24.483	
		TNT4A	33.075	--	1.81	59.847	1.40	0.271	2.46	A	EL	24.483	0.612	1.88	A	EL	4.897	0.80	0.271	1.81	A	EL	24.483	
		TNT6A	41.600	--	1.51	62.701	1.40	0.271	2.05	A	EL	24.483	0.612	1.82	A	EL	4.897	0.80	0.271	1.51	A	EL	24.483	
		TNT7A	42.000	--	1.53	64.260	1.40	0.271	2.08	A	EL	24.483	0.612	1.69	A	EL	4.897	0.80	0.271	1.53	A	EL	24.483	
		TNT7B	42.000	--	1.60	66.995	1.40	0.271	2.17	A	EL	24.483	0.612	1.60	A	EL	4.897	0.80	0.271	1.60	A	EL	24.483	
		TNAGRIT4	43.000	--	1.51	65.091	1.40	0.271	2.06	A	EL	24.483	0.612	1.54	A	EL	4.897	0.80	0.271	1.51	A	EL	24.483	
TNAGT5A	45.000	--	1.41	63.631	1.40	0.271	1.92	A	EL	24.483	0.612	1.57	A	EL	4.897	0.80	0.271	1.41	A	EL	24.483			
TNAGT5B	45.000	③	1.39	62.342	1.40	0.271	1.89	A	EL	24.483	0.612	1.46	A	EL	4.897	0.80	0.271	1.39	A	EL	24.483			

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)

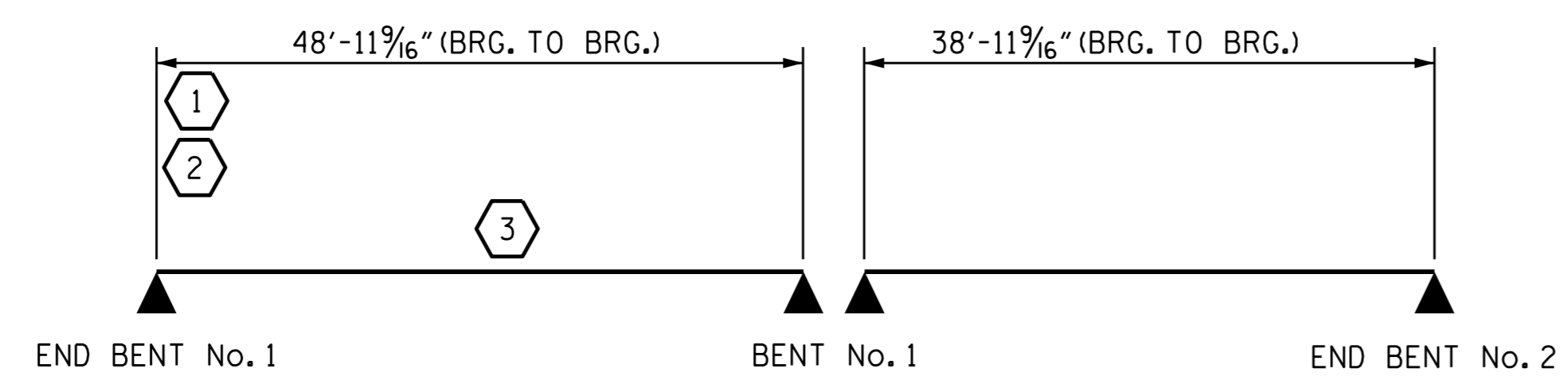
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

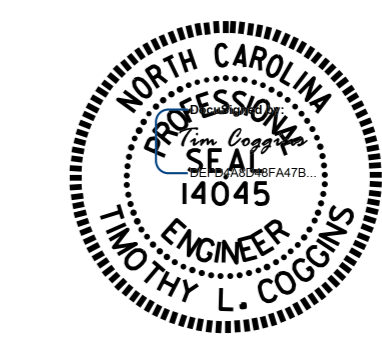
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
 STATION: 13+96.00 -L-

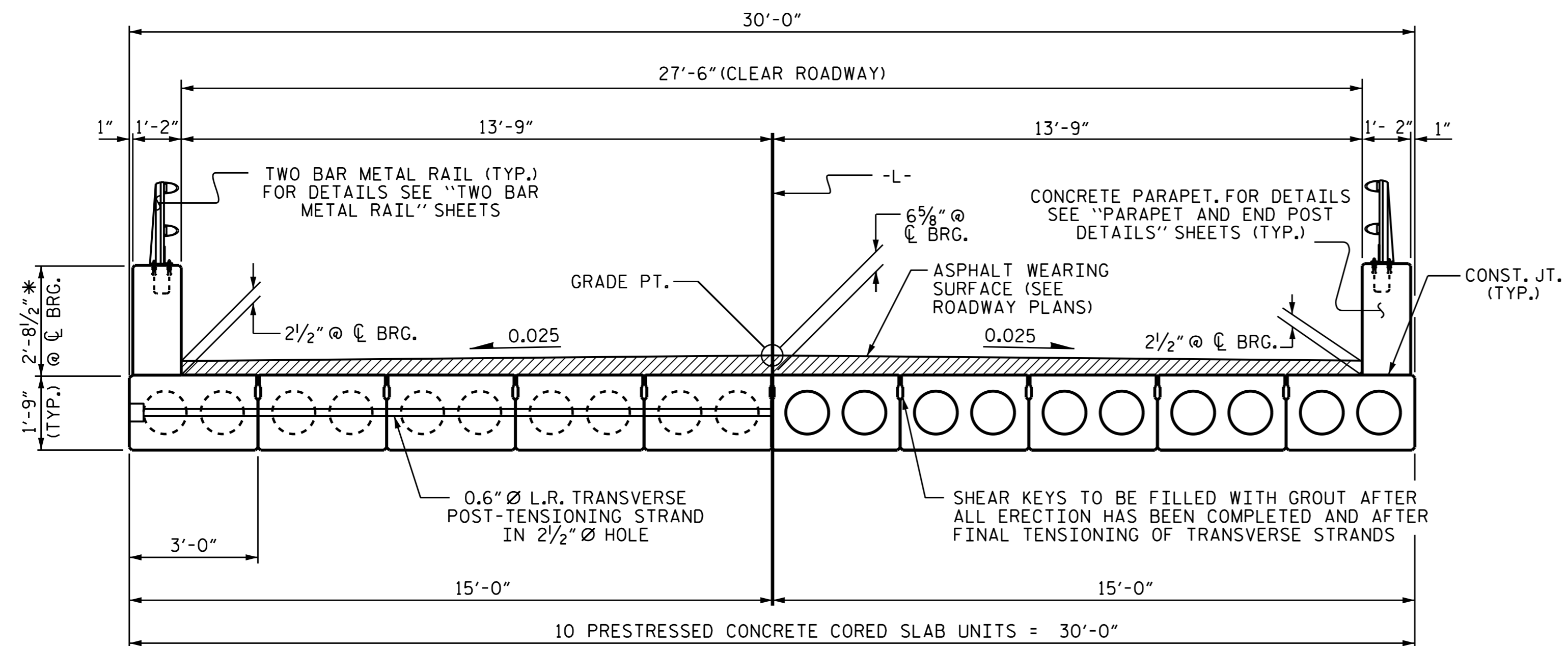


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 50' & 40' CORED
 SLAB UNIT 75° SKEW
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3	
1			3			TOTAL SHEETS	20
2			4				

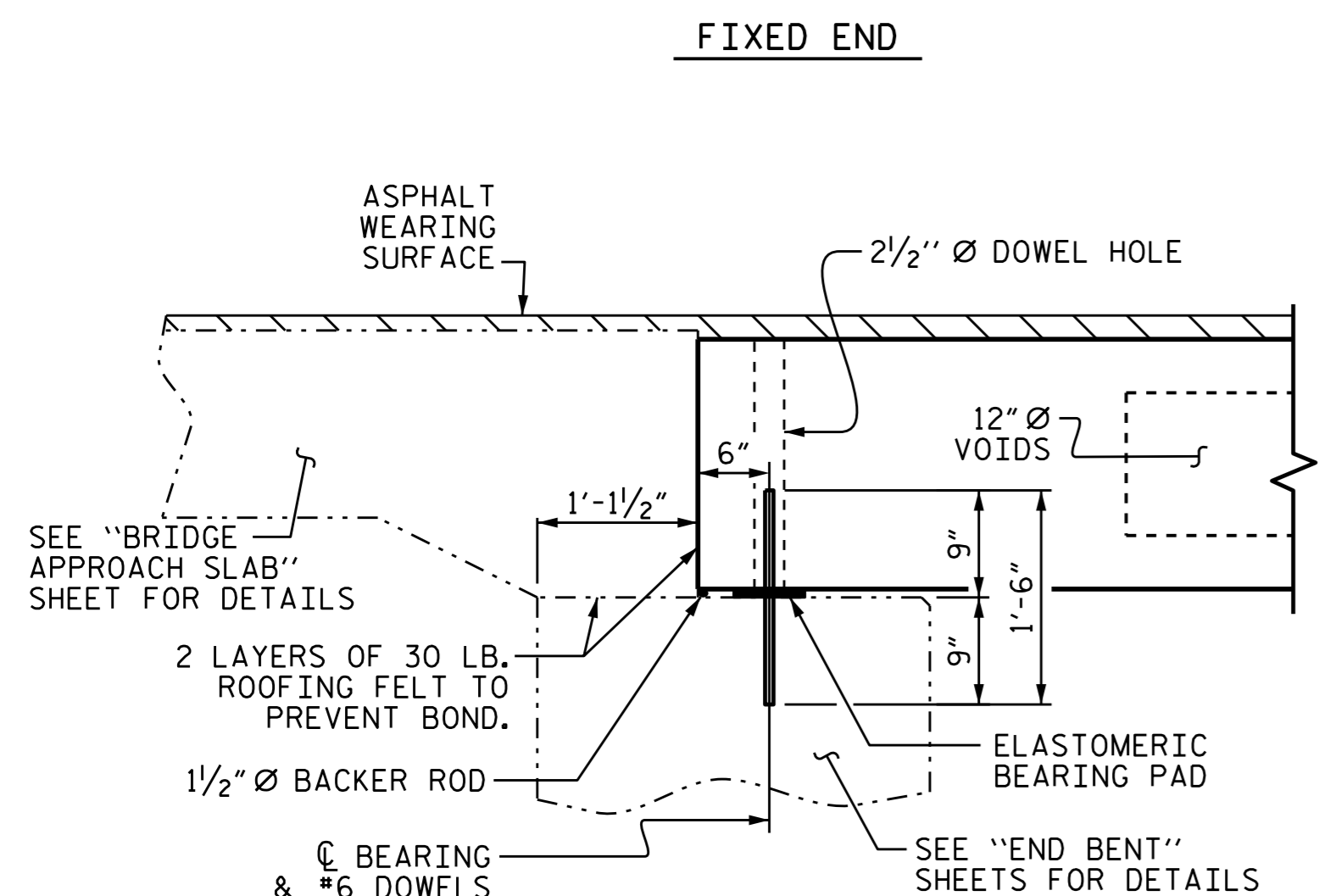
ASSEMBLED BY : REZA KOUICHEKI DATE : 10/30/14
 CHECKED BY : K.P. SEDA DATE : 11/18/14
 DRAWN BY : MAA 1/08
 CHECKED BY : GM/DI 2/08

REV. 11/12/08RR MAA/GM
 REV. 10/1/11 MAA/GM

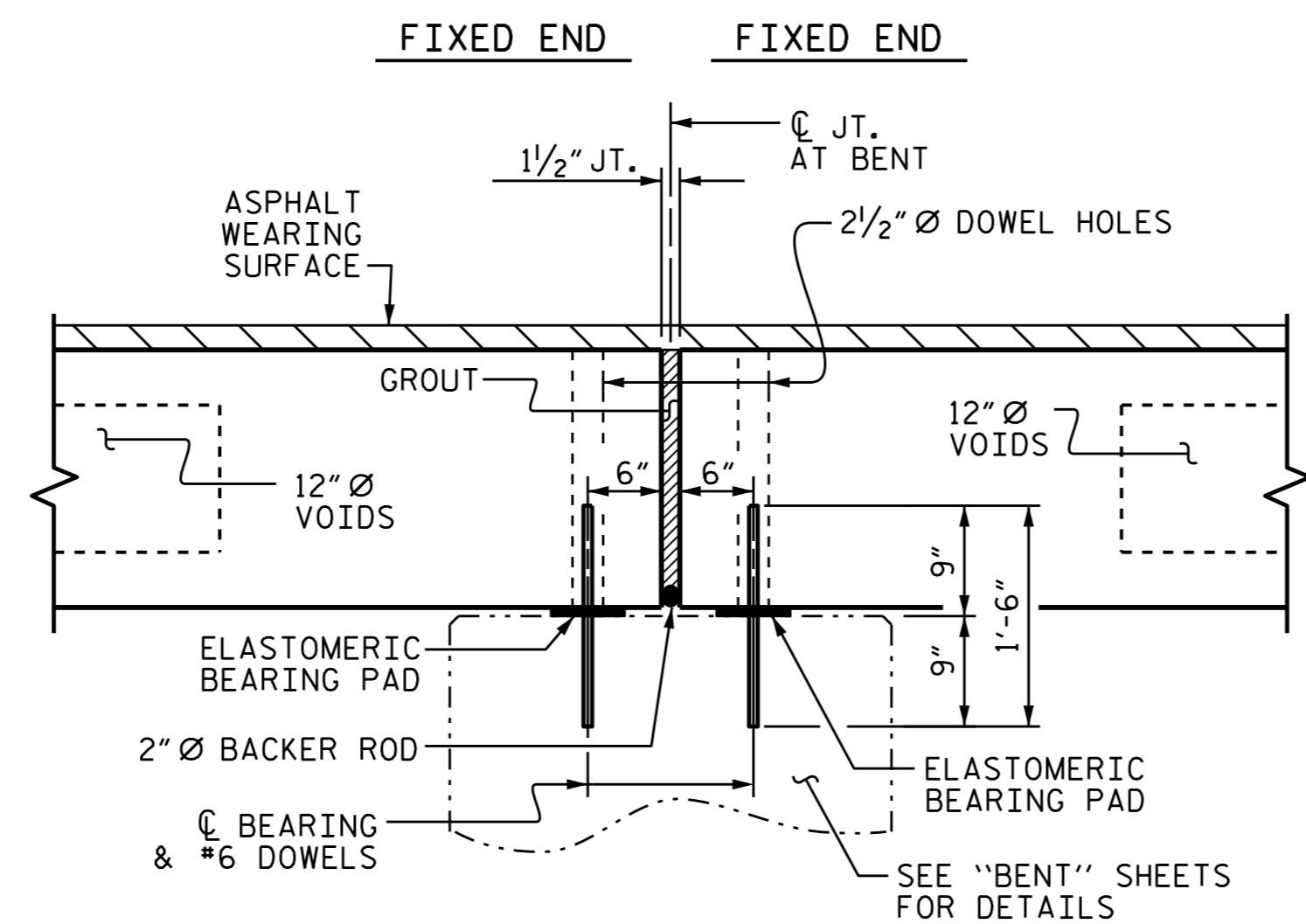


HALF SECTION AT INTERMEDIATE DIAPHRAGMS
 HALF SECTION THROUGH VOIDS
TYPICAL SECTION

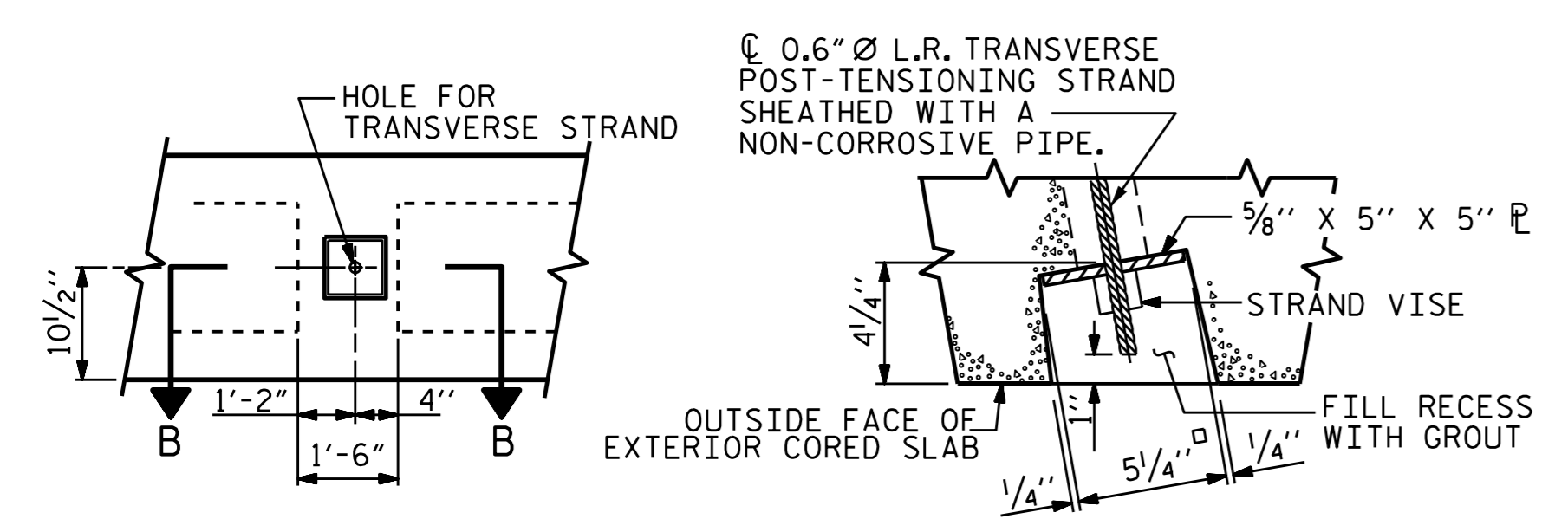
* - THE MAXIMUM PARAPET HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE PARAPET AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE PARAPET FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR PARAPET HEIGHT DETAILS AND ASPHALT THICKNESS, SEE SHEET 4 OF 5.



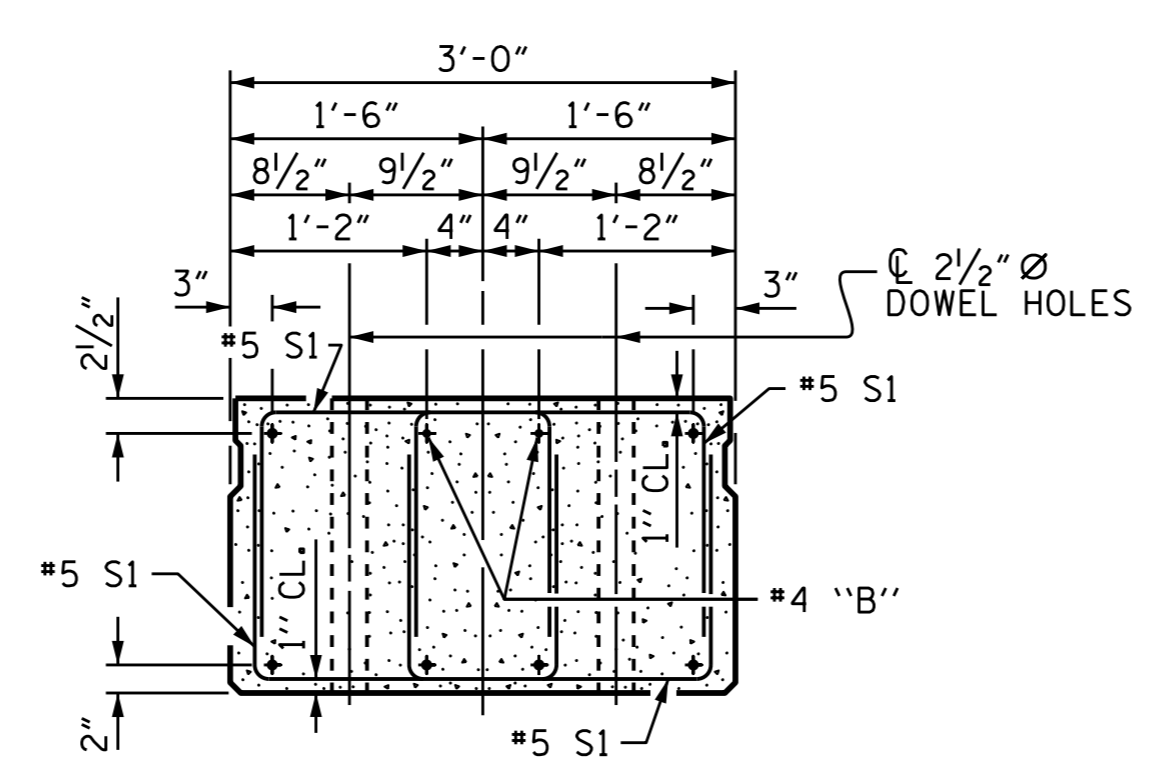
SECTION AT END BENT



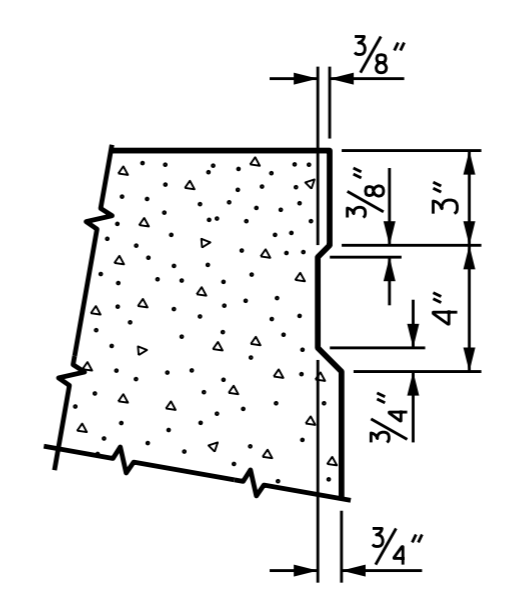
SECTION AT BENT



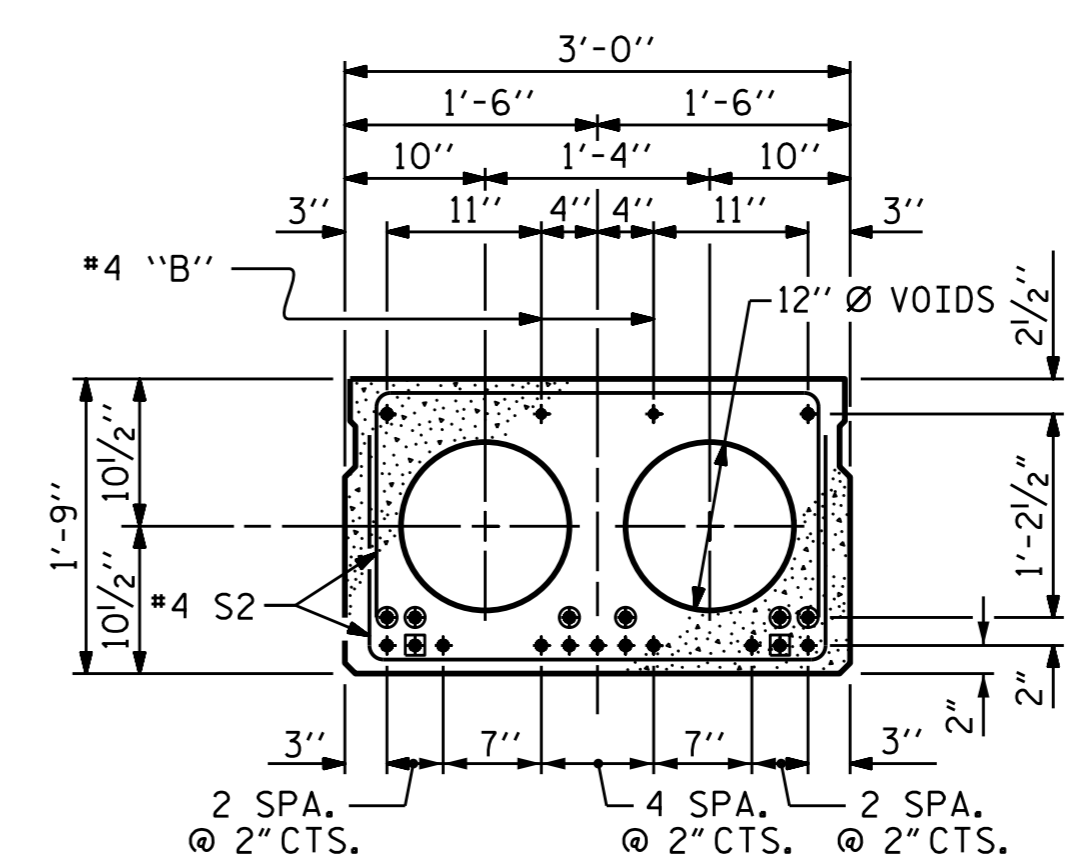
ELEVATION VIEW
SECTION B-B
GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS



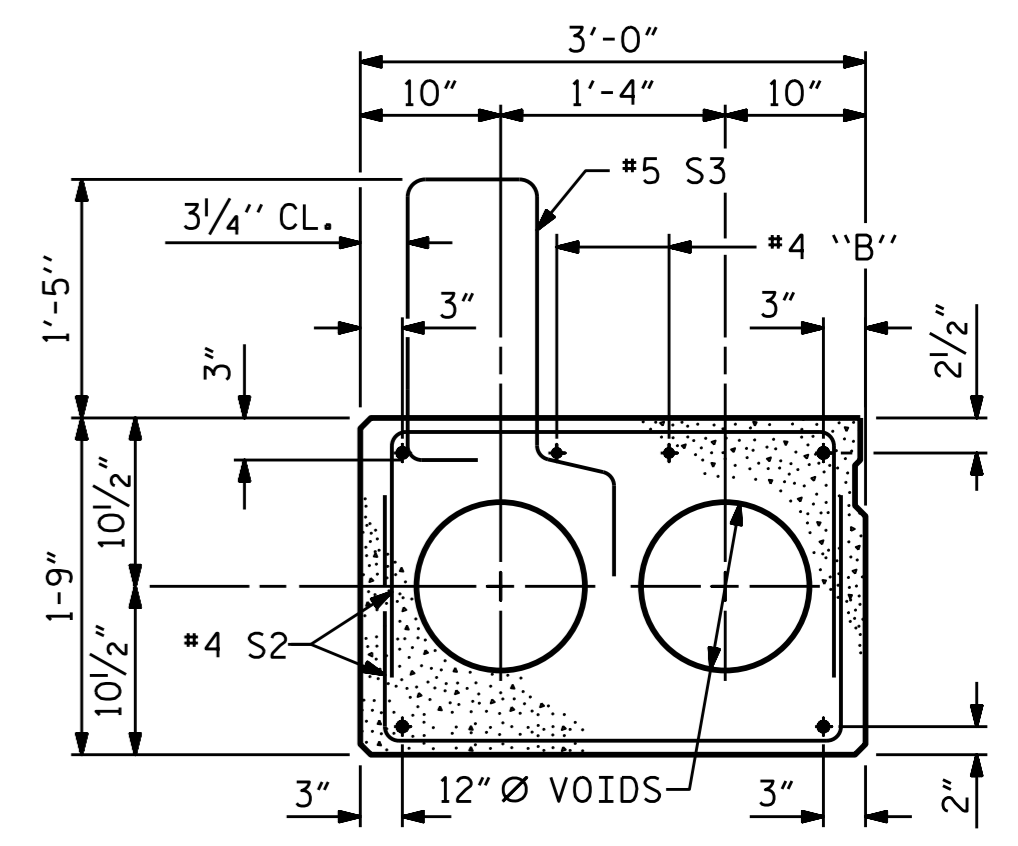
END ELEVATION
 SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.)
 INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



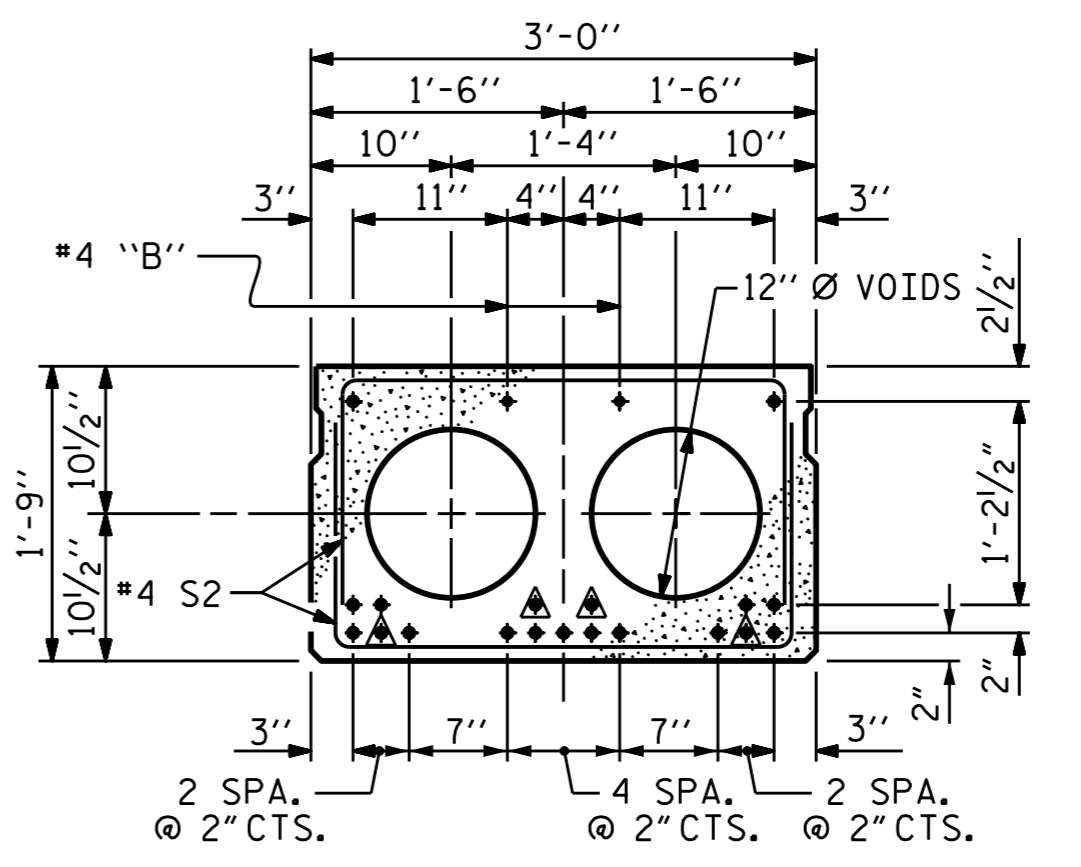
SHEAR KEY DETAIL
 NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



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



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



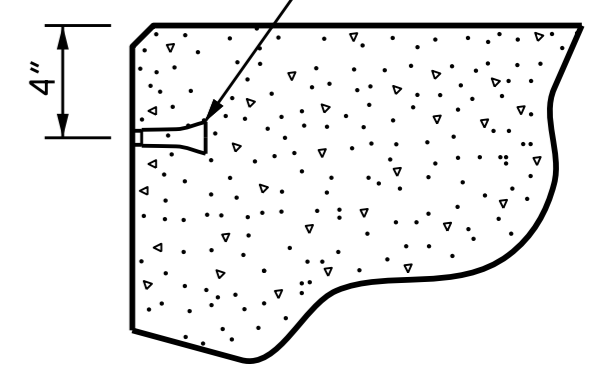
INTERIOR SLAB SECTION (50' UNIT)
 (19 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

- ▲ 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.1.R.65
PASQUOTANK COUNTY
STATION: 13+96.00 -L-

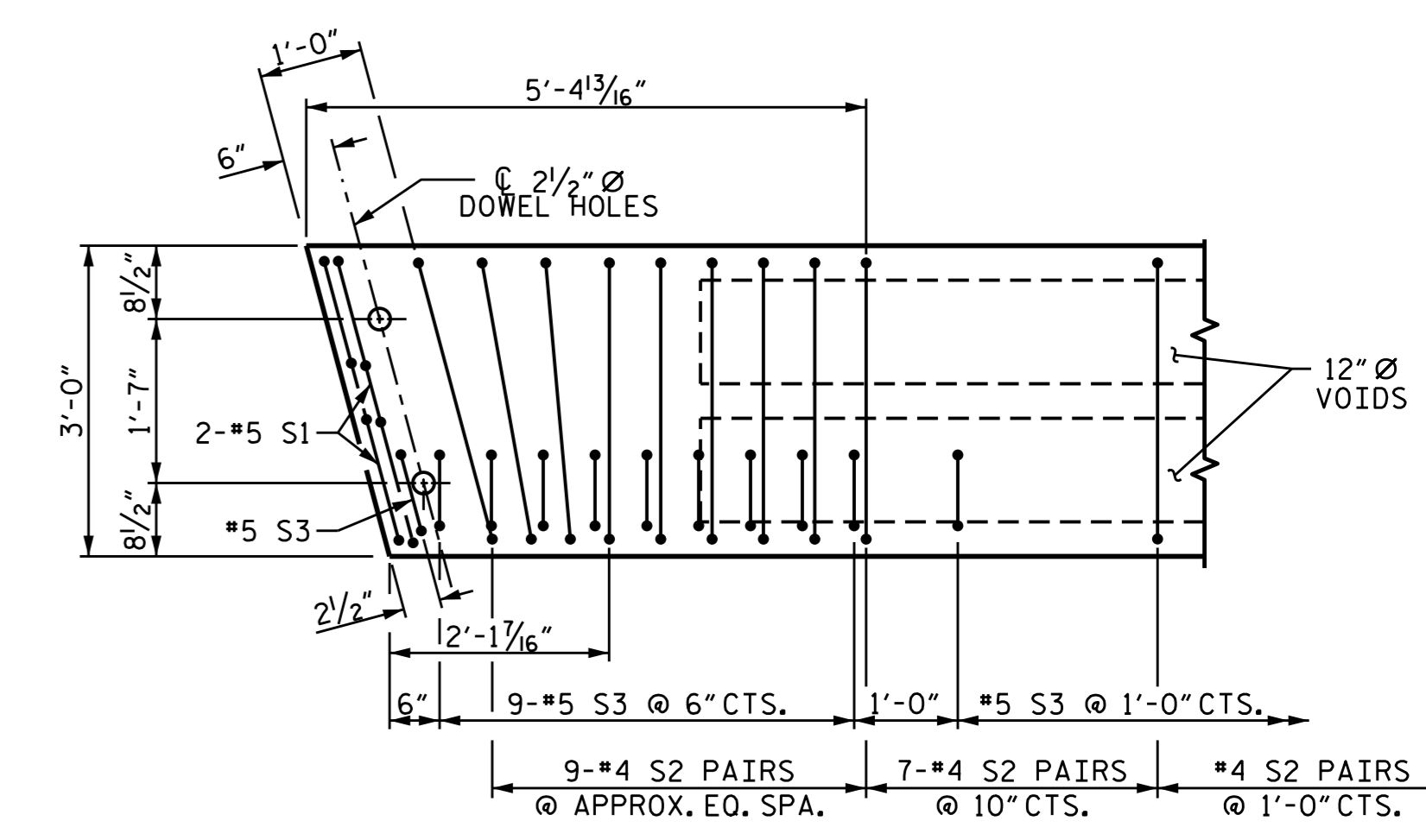
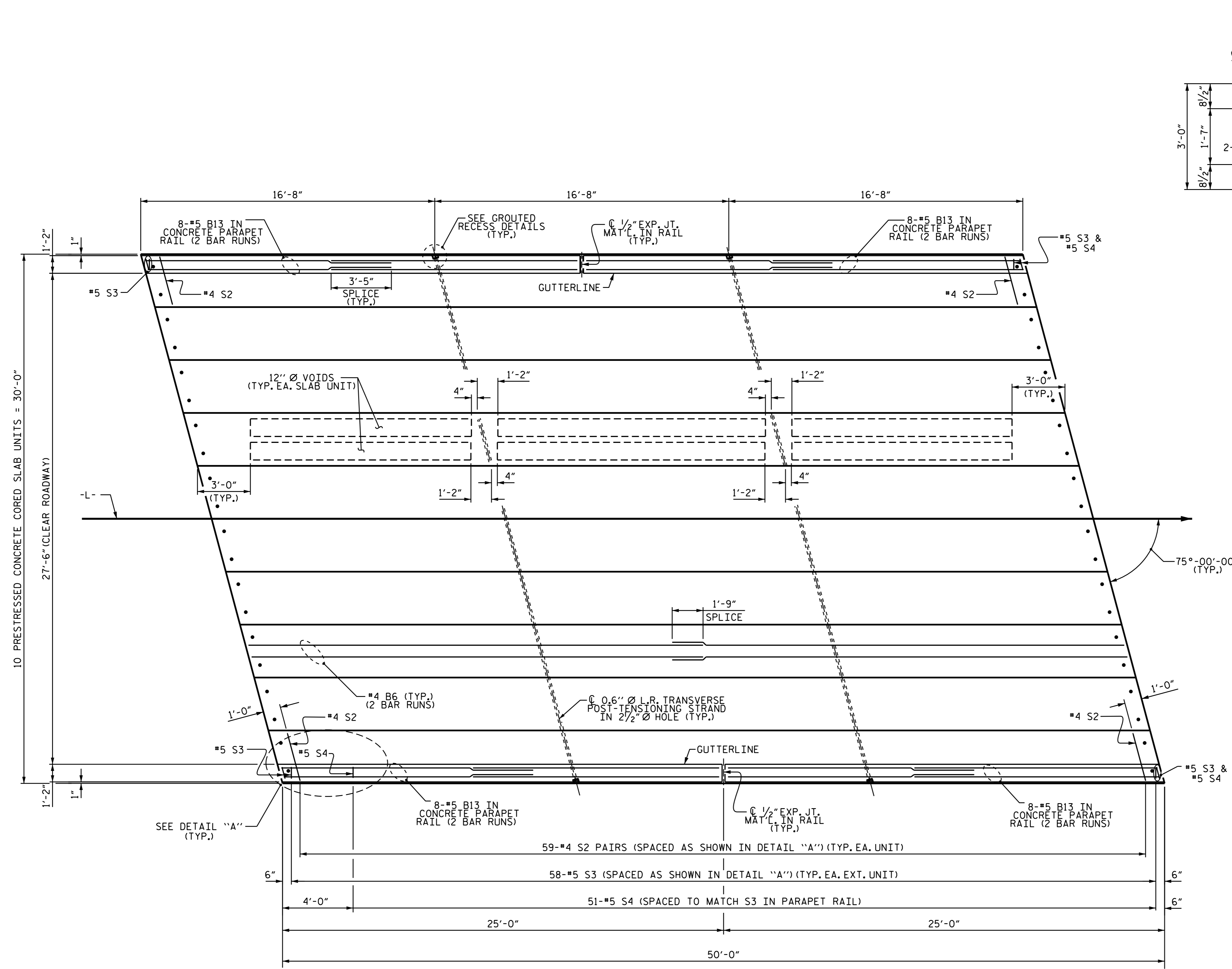
SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
75° SKEW



ASSEMBLED BY :	REZA KOUCHEKI	DATE :	10/30/14
CHECKED BY :	K.P. SEDA	DATE :	11/18/14
DRAWN BY :	DGE	5/09	MAA/AAC
CHECKED BY :	BCH	6/09	MAA/TMG
REV. 12/11		REV. 8/14	

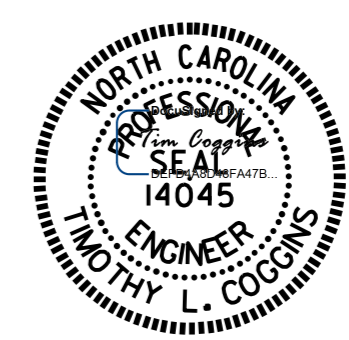
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-4
2			4			TOTAL SHEETS 20



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

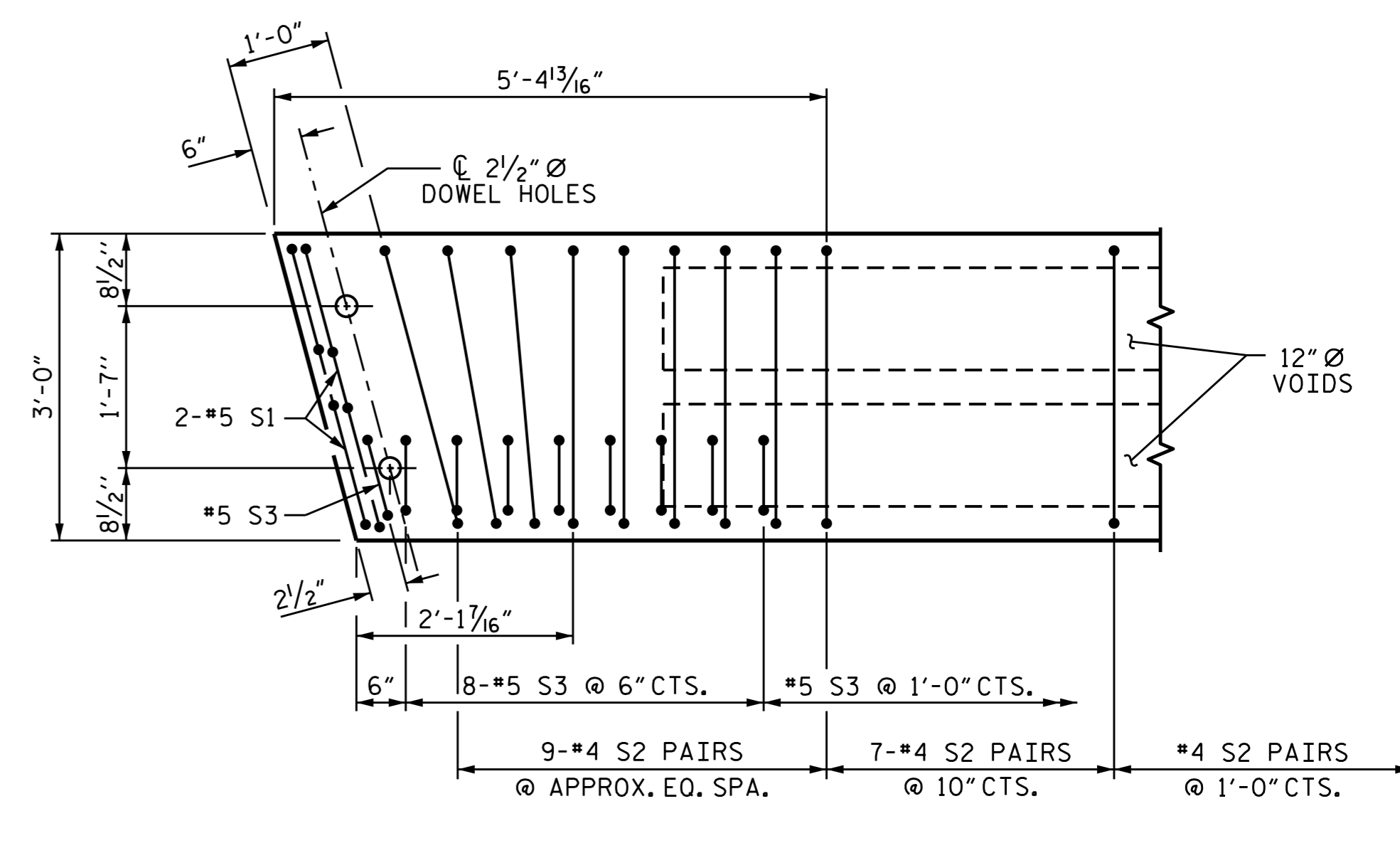
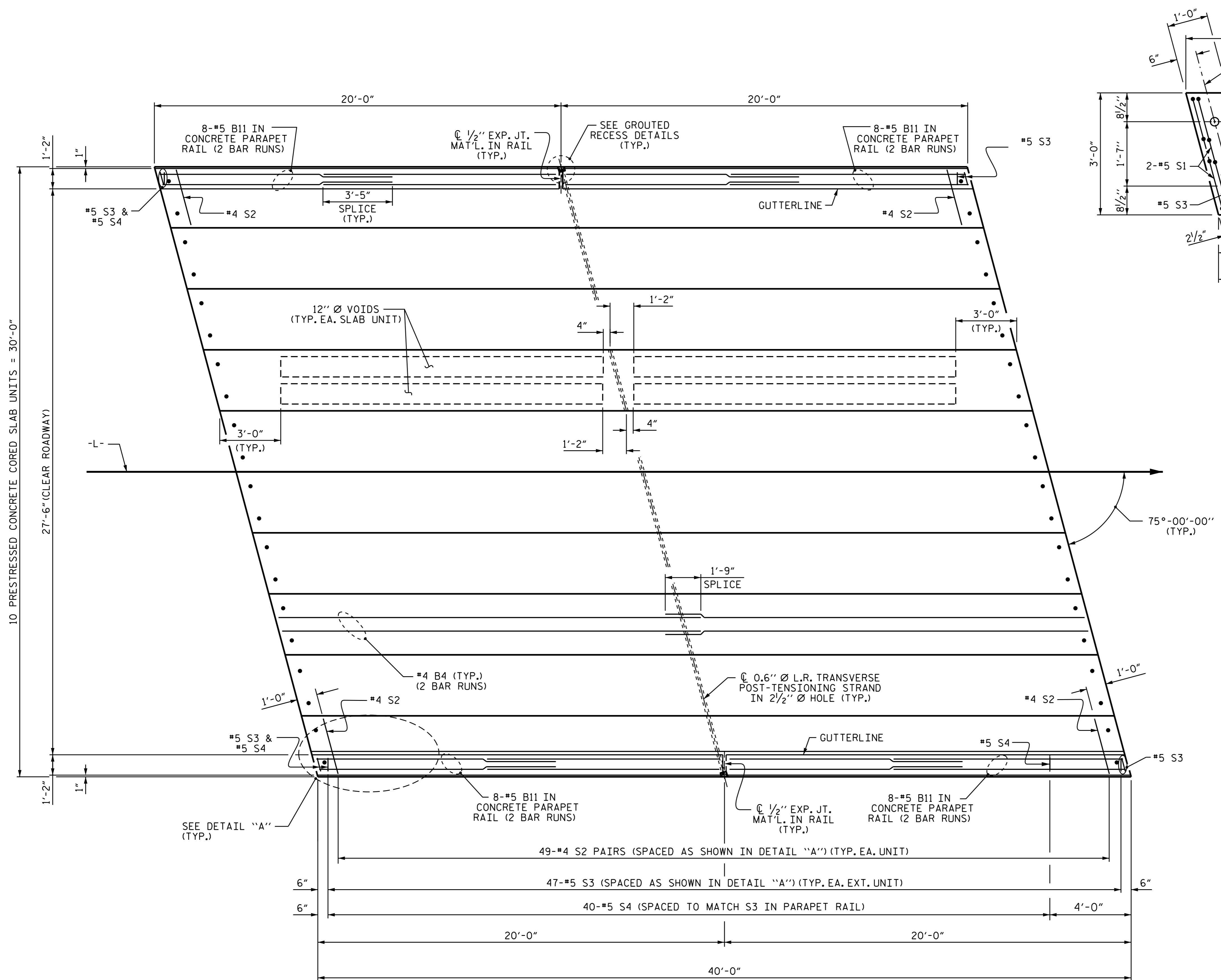
PLAN OF UNIT

PROJECT NO. 17BP.1.R.65
 PASQUOTANK COUNTY
 STATION: 13+96.00 -L-
 SHEET 2 OF 5



STATE OF NORTH CAROLINA						SHEET NO.
DEPARTMENT OF TRANSPORTATION						
RALEIGH						TOTAL SHEETS
PLAN OF 50' UNIT						20
27'-6" CLEAR ROADWAY						
75° SKEW						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

ASSEMBLED BY :	REZA KOUCHEKI	DATE :	11/20/14
CHECKED BY :	K.P. SEDAI	DATE :	11/20/14
DRAWN BY :	DGE	5/09	MAA/AAC
CHECKED BY :	BCH	6/09	MAA/TMG

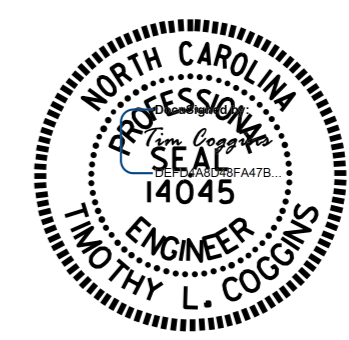


DETAIL "A"
 (SIMILAR EACH END OF UNIT)
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
 STATION: 13+96.00 -L-

SHEET 3 OF 5



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF 40' UNIT 27'-6" CLEAR ROADWAY 75° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-6
TOTAL SHEETS					20

ASSEMBLED BY :	REZA KOUCHEKI	DATE :	11/20/14
CHECKED BY :	K.P. SEDA	DATE :	11/20/14
DRAWN BY :	DGE	3/09	REV. 12/5/11 MAA/AAC
CHECKED BY :	BCH	3/09	REV. 8/14 MAA/TMG

NOTES

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

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

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

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

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

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

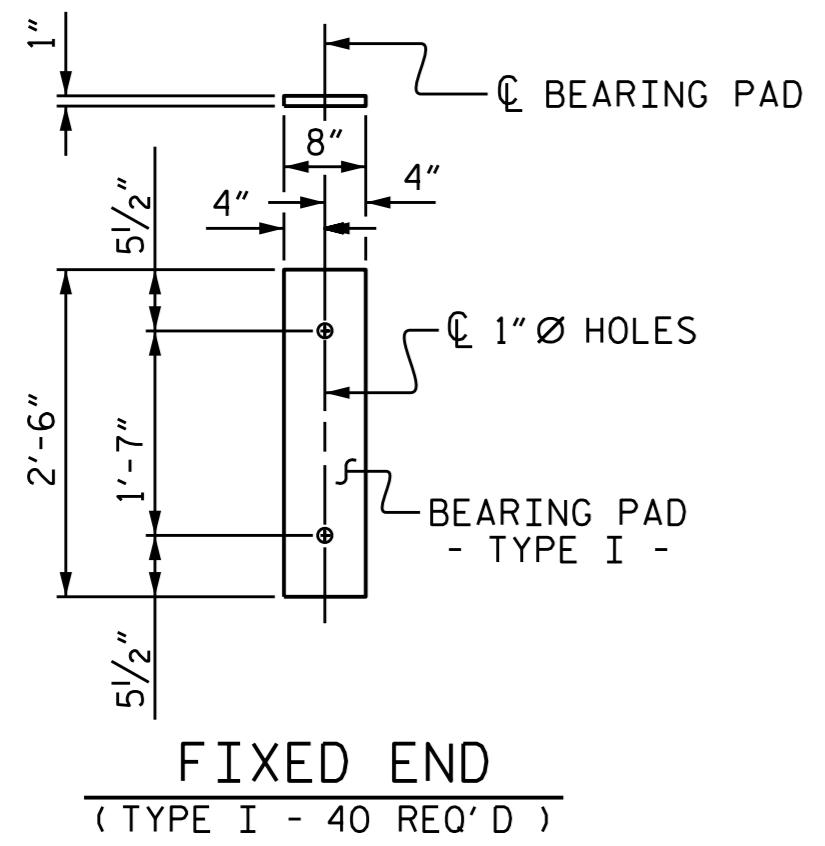
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

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

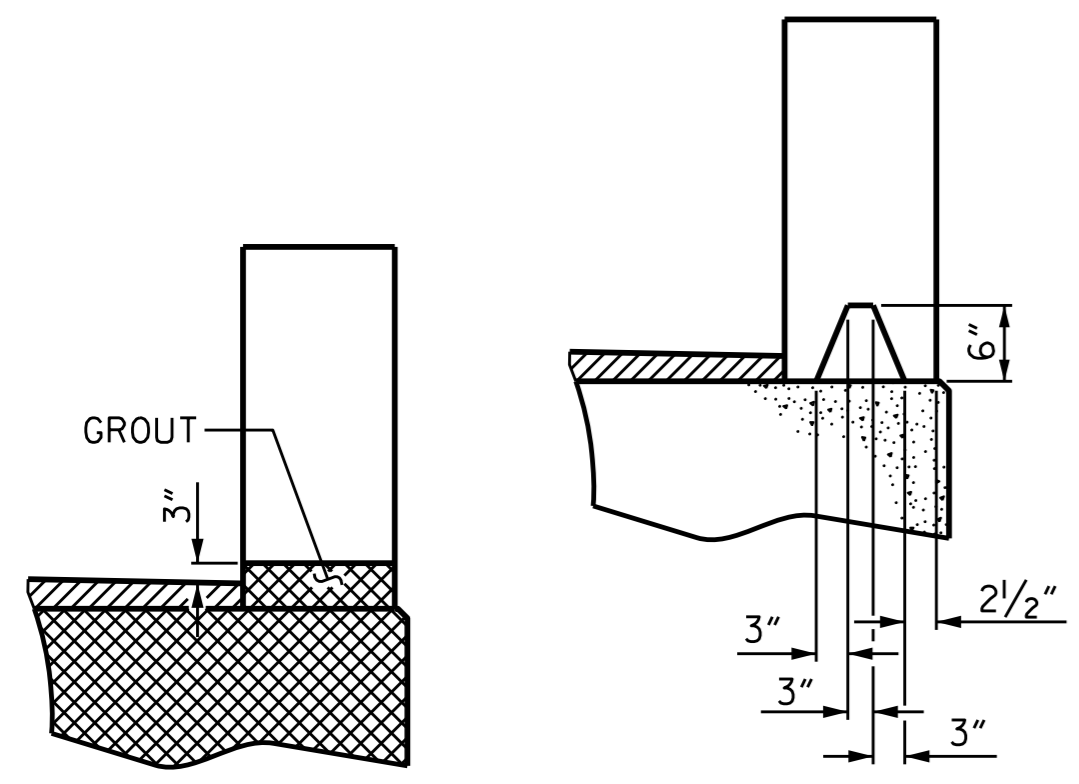
THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.



FIXED END
(TYPE I - 40 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.



SECTION T-T

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

SECTION S-S

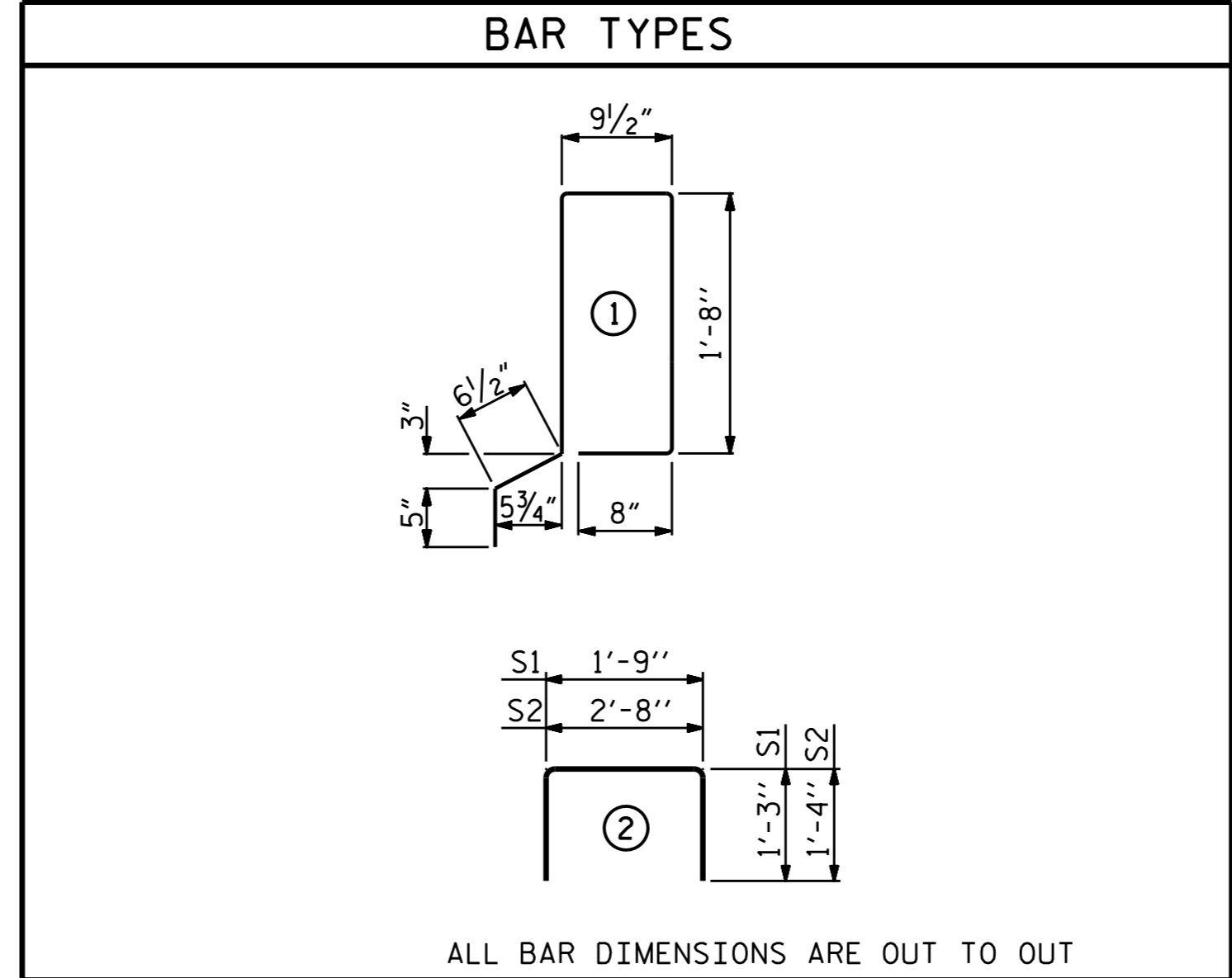
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)

BILL OF MATERIAL FOR ONE 40' CORED SLAB UNIT

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B4	4	#4	STR	20'-9"	55	20'-9"	55
S1	8	#5	2	4'-3"	35	4'-3"	35
S2	98	#4	2	5'-4"	349	5'-4"	349
* S3	49	#5	1	5'-9"	294		
REINFORCING STEEL				LBS.	439		439
* EPOXY COATED REINFORCING STEEL				LBS.	294		
5000 P.S.I. CONCRETE				CU. YDS.	5.8		5.8
0.6" Ø L.R. STRANDS				No.	13		13

BILL OF MATERIAL FOR ONE 50' CORED SLAB SECTION

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B6	4	#4	STR	25'-9"	69	25'-9"	69
S1	8	#5	2	4'-3"	35	4'-3"	35
S2	118	#4	2	5'-4"	420	5'-4"	420
* S3	60	#5	1	5'-9"	360		
REINFORCING STEEL				LBS.	524		524
* EPOXY COATED REINFORCING STEEL				LBS.	360		
6500 P.S.I. CONCRETE				CU. YDS.	7.3		7.3
0.6" Ø L.R. STRANDS				No.	19		19



DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-9"
50' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 1/2" ↓
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	5/16" ↓
FINAL CAMBER	1 3/16" ↓

** INCLUDES FUTURE WEARING SURFACE

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-9"
40' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 3/16" ↓
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓
FINAL CAMBER	1 1/16" ↓

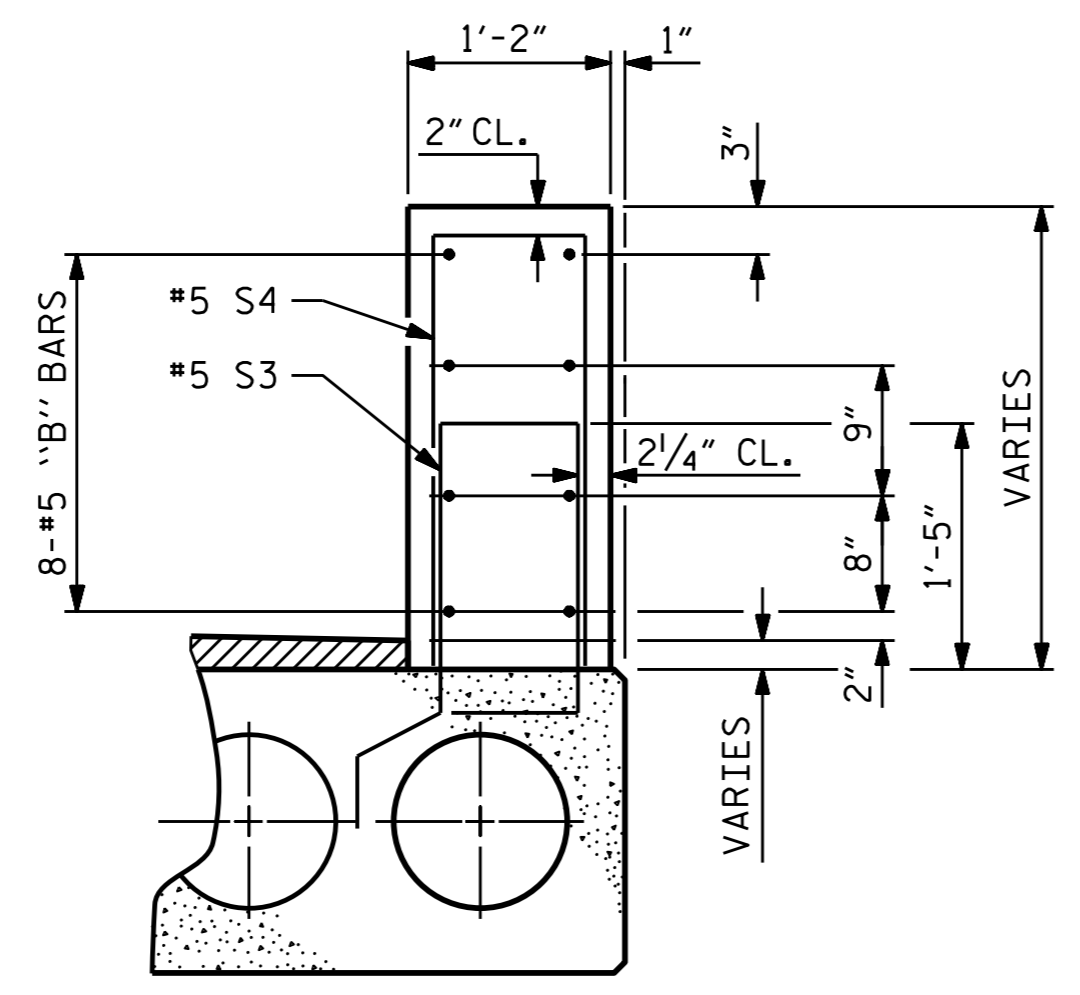
** INCLUDES FUTURE WEARING SURFACE

GUTTERLINE ASPHALT THICKNESS & PARAPET HEIGHT

	ASPHALT OVERLAY THICKNESS	PARAPET HEIGHT
	@ MID-SPAN	@ MID-SPAN
50' UNITS	1 7/16"	2'-7 7/16"
40' UNITS	1 5/16"	2'-7 15/16"

CONCRETE RELEASE STRENGTH

UNIT	PSI
40' UNITS	4000
50' UNITS	4900



PARAPET SECTION

PARAPET HEIGHT

	PARAPET HEIGHT @ BEARING	PARAPET HEIGHT @ MID-SPAN
SPAN A (50')	2'-8 1/2"	2'-7 7/16"
SPAN B (40')	2'-8 1/2"	2'-7 15/16"

CORED SLABS REQUIRED

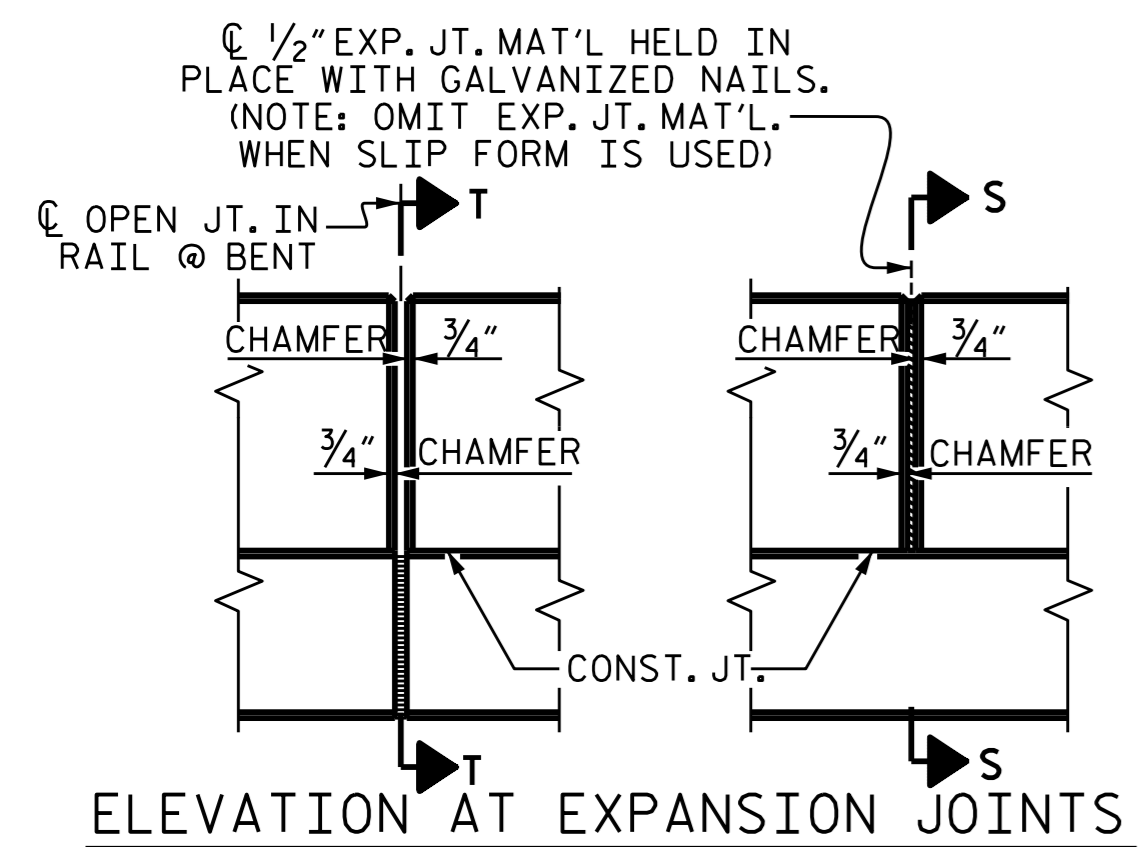
	NUMBER	LENGTH	TOTAL LENGTH
50' UNIT			
EXTERIOR C.S.	2	50'-0"	100'-0"
INTERIOR C.S.	8	50'-0"	400'-0"
TOTAL	10		500'-0"

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

CORED SLABS REQUIRED

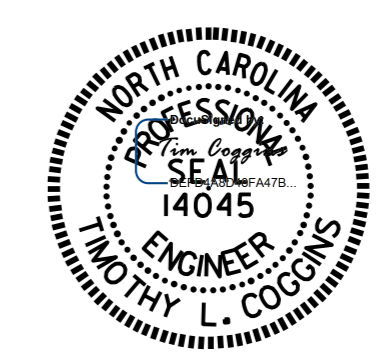
	NUMBER	LENGTH	TOTAL LENGTH
40' UNIT			
EXTERIOR C.S.	2	40'-0"	80'-0"
INTERIOR C.S.	8	40'-0"	320'-0"
TOTAL	10		400'-0"



ELEVATION AT EXPANSION JOINTS

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
STATION: 13+96.00 -L-

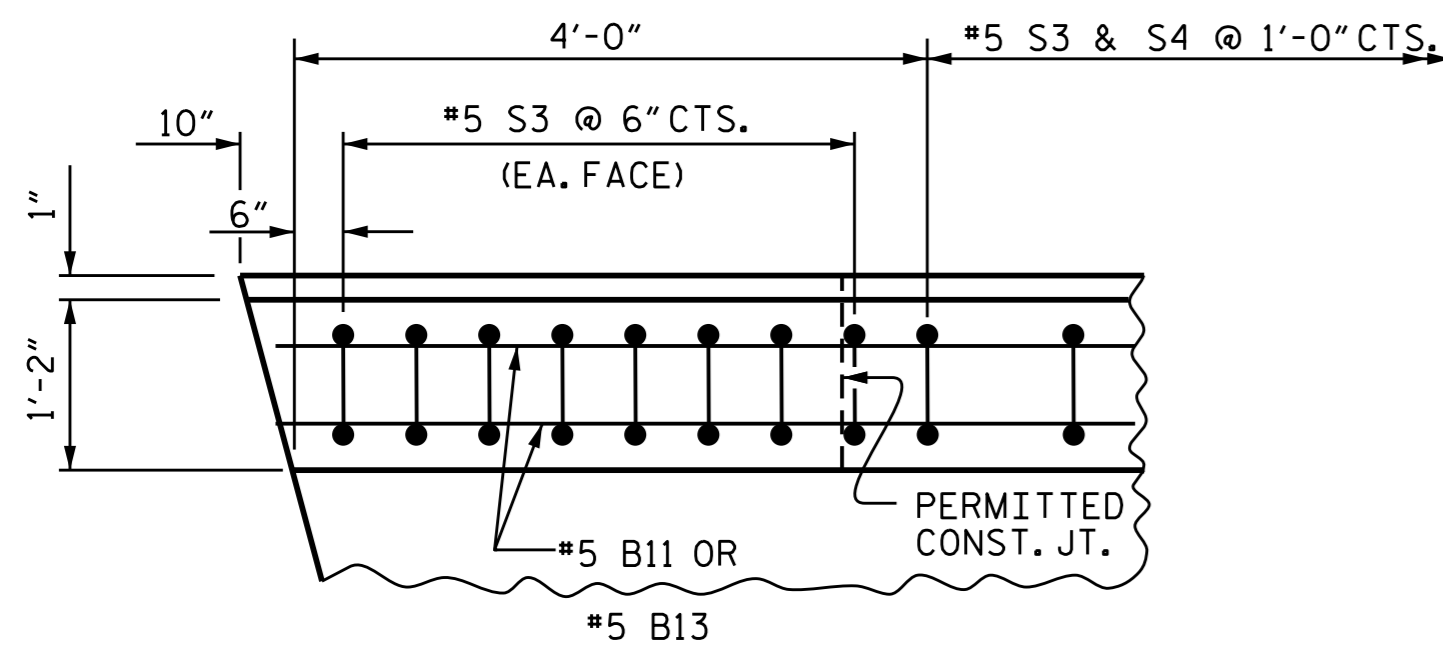
SHEET 4 OF 5



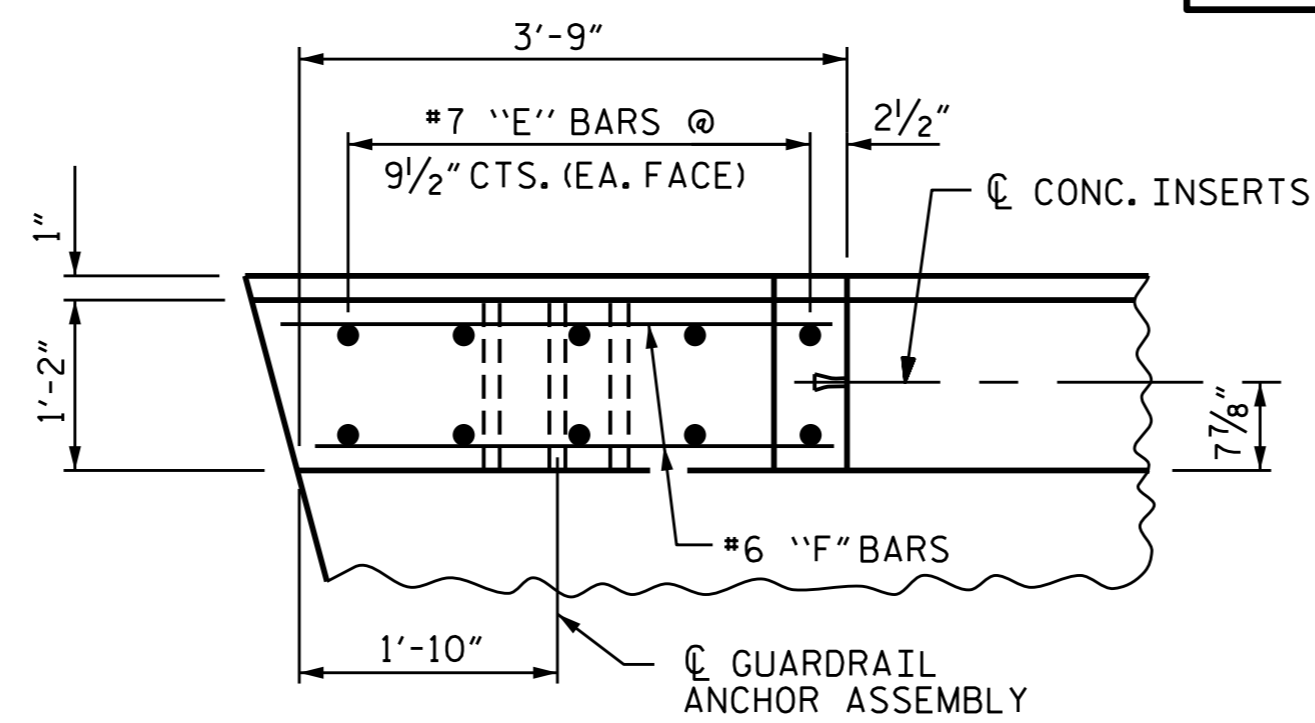
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			20

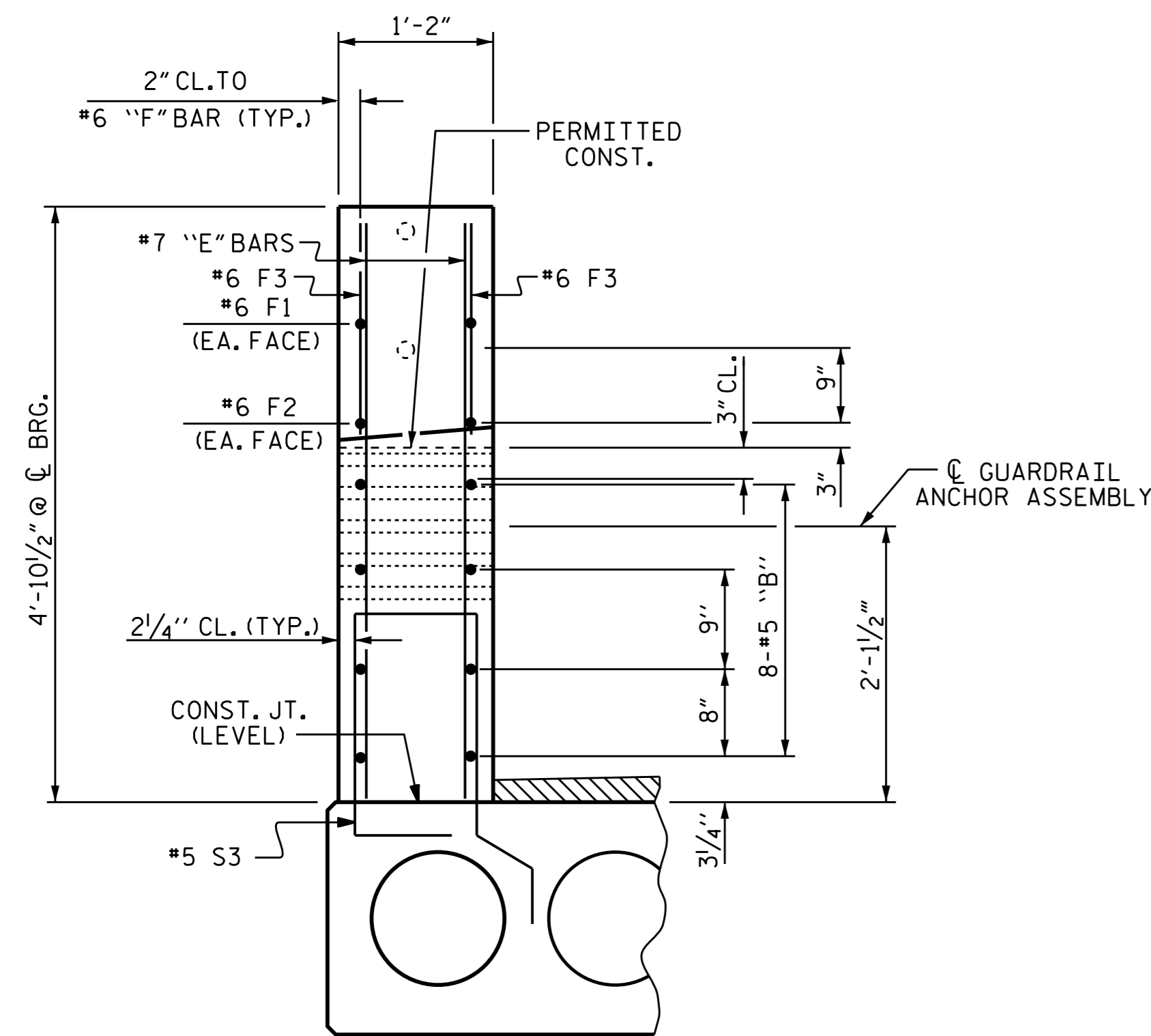
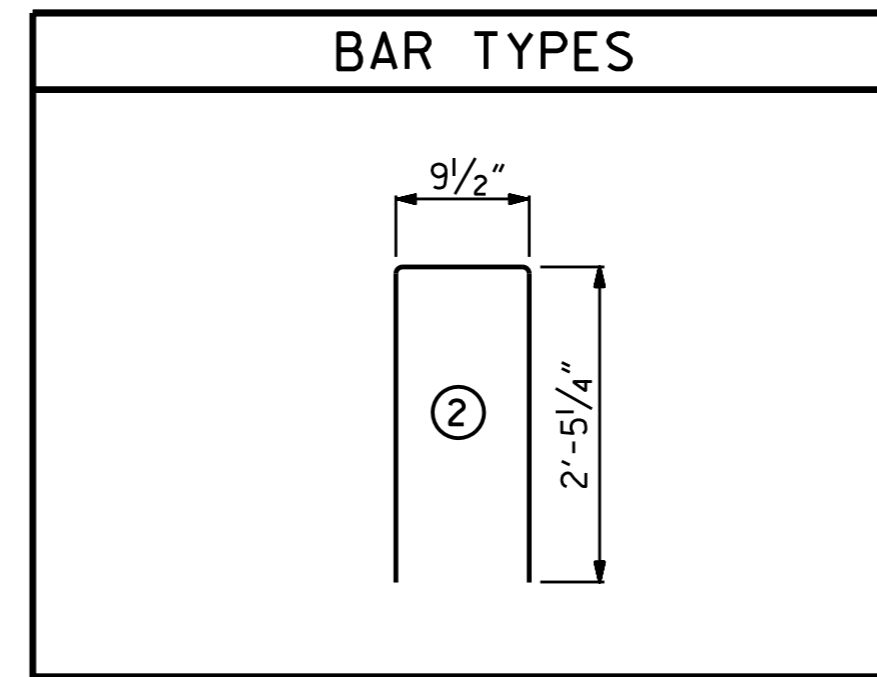
ASSEMBLED BY : REZA KOUCHEK DATE : 10-30-14
CHECKED BY : K.P. SEDAI DATE : 11-18-14
DRAWN BY : WJH 4/89 REV. 8/14 RWW/TMG
CHECKED BY : FCJ 5/89 REV. 10/12 MAA/GM
REV. 6/13 MAA/GM



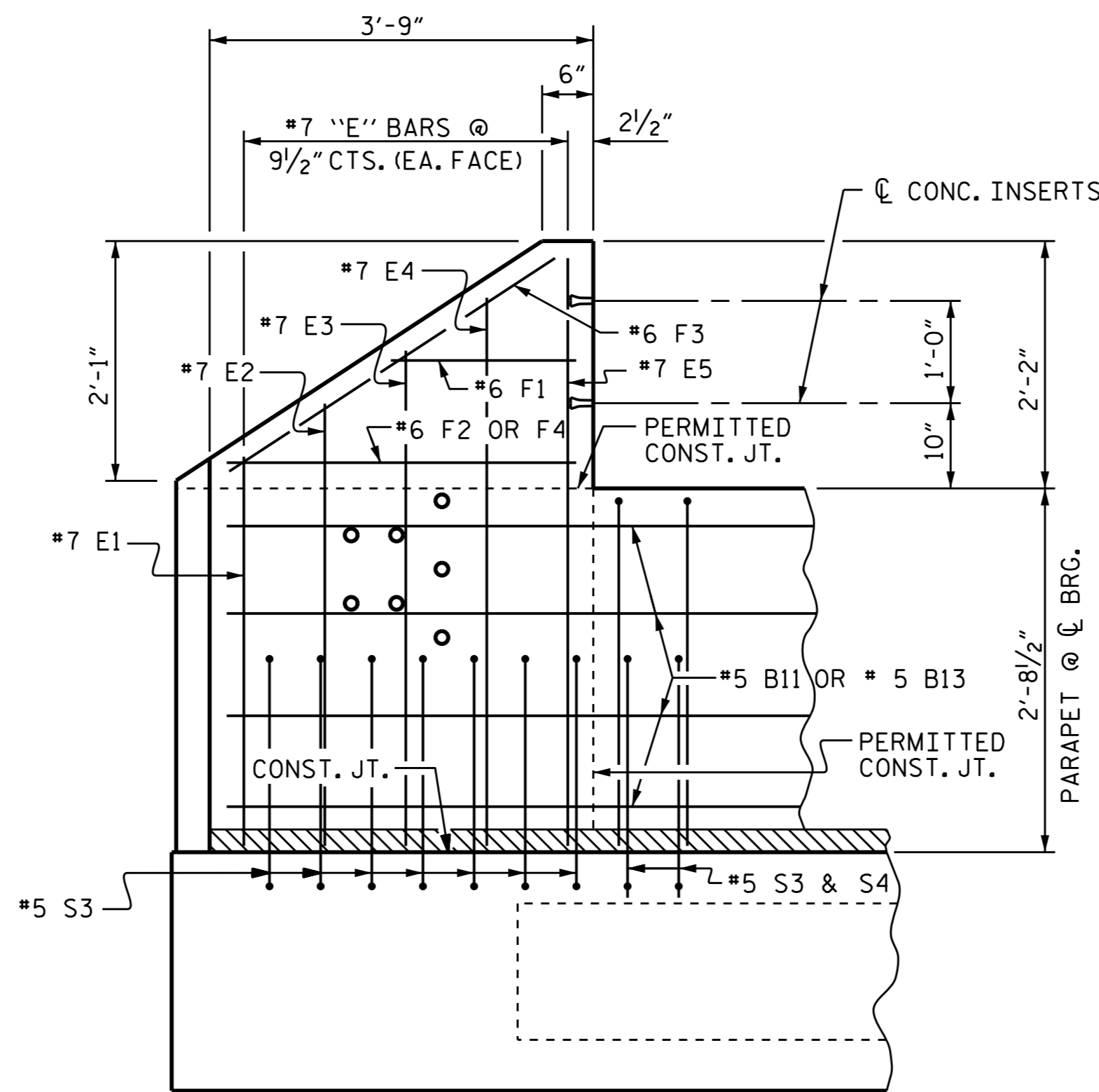
PLAN OF PARAPET



PLAN OF END POST



END VIEW



ELEVATION

PARAPET AND END POST FOR TWO BAR RAIL

NOTES

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

BILL OF MATERIAL FOR PARAPET & END POSTS					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B11	64	# 5	STR	11'-8"	779
* B13	64	# 5	STR	14'-2"	946
* E1	8	# 7	STR	2'-8"	44
* E2	8	# 7	STR	3'-2"	52
* E3	8	# 7	STR	3'-8"	60
* E4	8	# 7	STR	4'-2"	68
* E5	8	# 7	STR	4'-7"	75
* F1	8	# 6	STR	1'-9"	21
* F2	4	# 6	STR	3'-3"	20
* F3	8	# 6	STR	3'-6"	42
* F4	4	# 6	STR	3'-7"	22
* S4	182	# 5	2	5'-8"	1076
* EPOXY COATED REINFORCING STEEL				LBS.	3205
CLASS AA CONCRETE				CU.YDS.	21.6
TOTAL LIN. FT. OF CONCRETE PARAPET					180.26

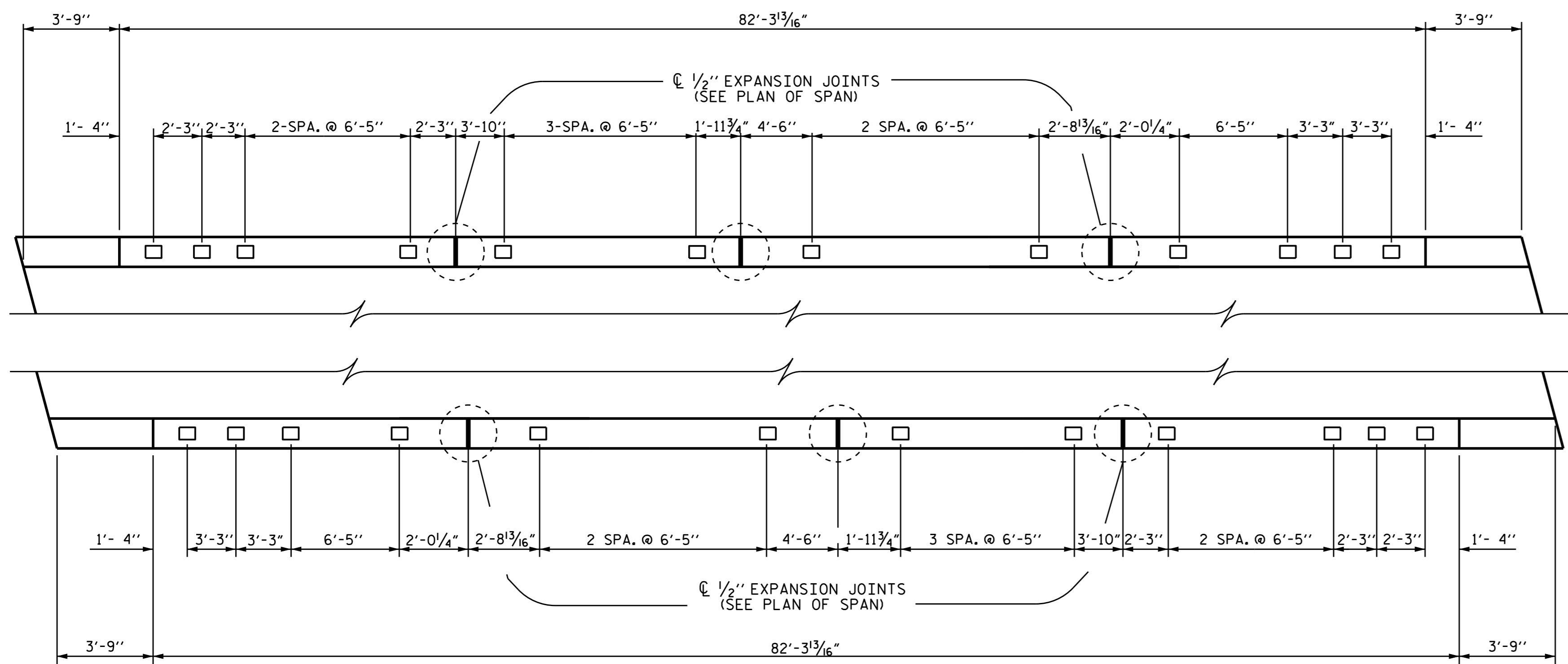
PROJECT NO. 17BP.1.R.65
 PASQUOTANK COUNTY
 STATION: 13+96.00 -L-

SHEET 5 OF 5

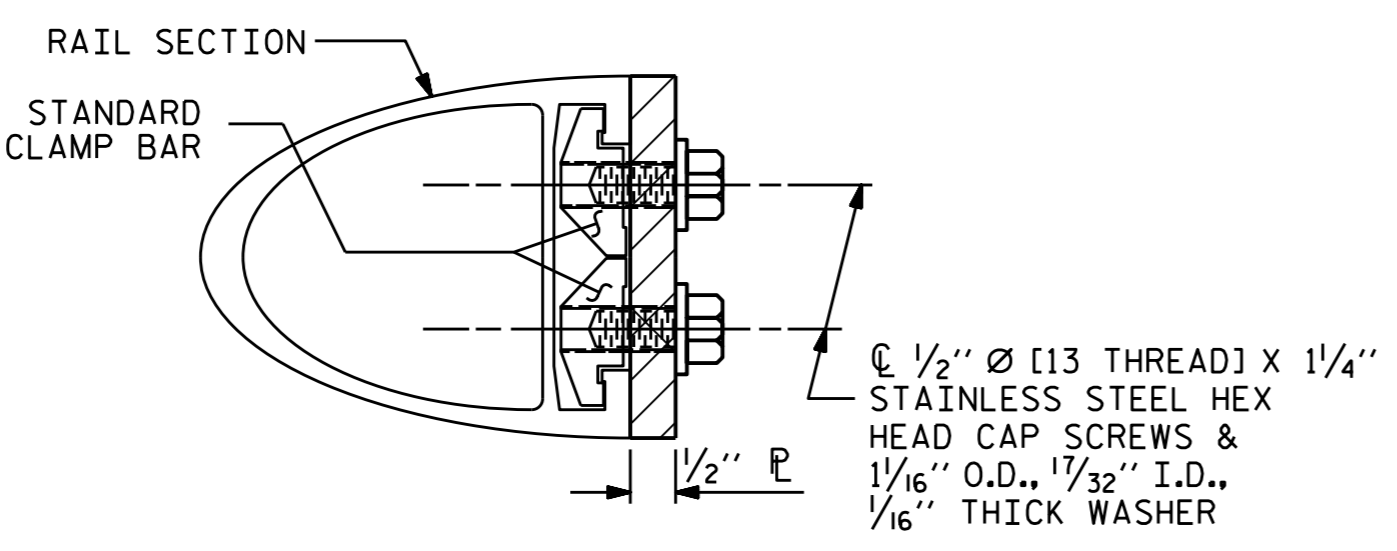
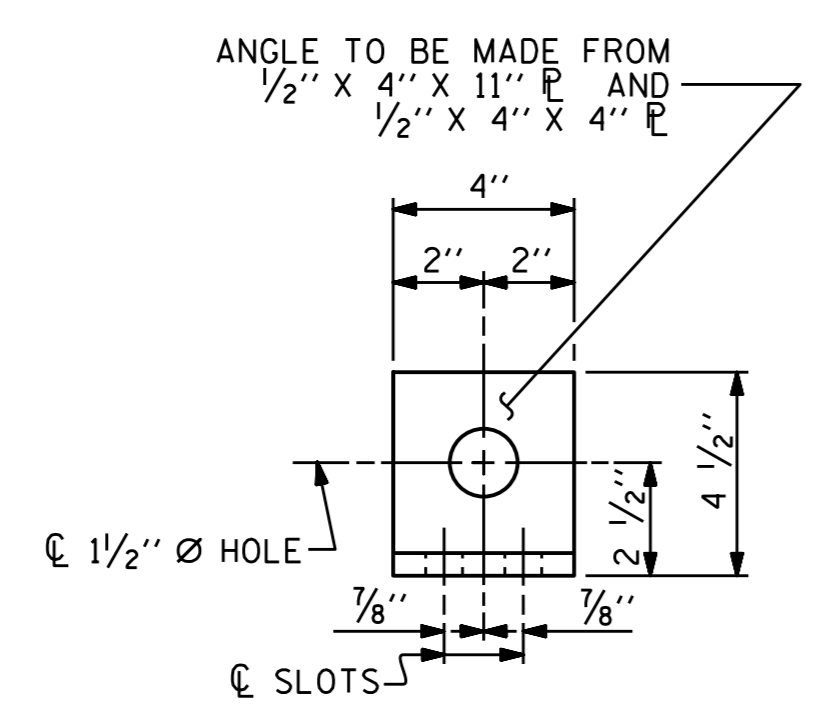
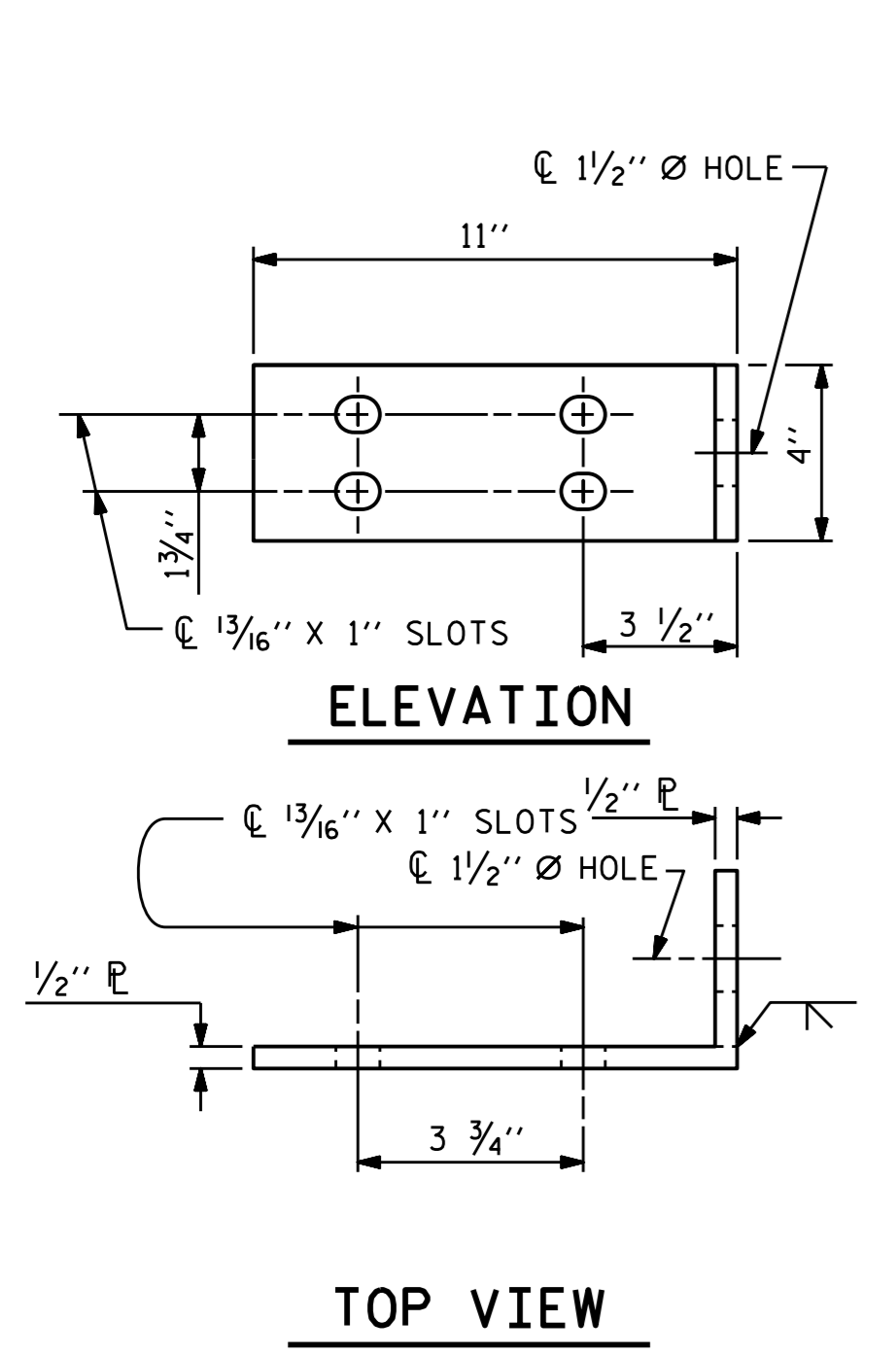


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONCRETE PARAPET AND END POST DETAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-8
TOTAL SHEETS					20

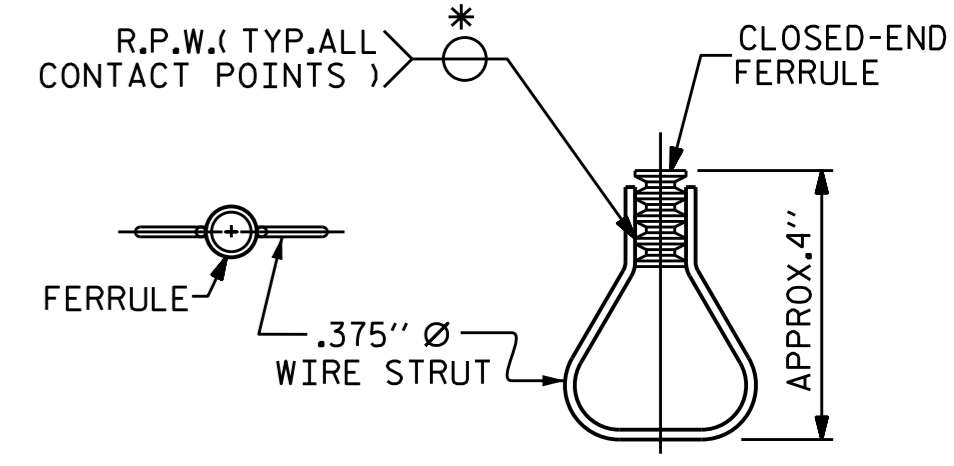
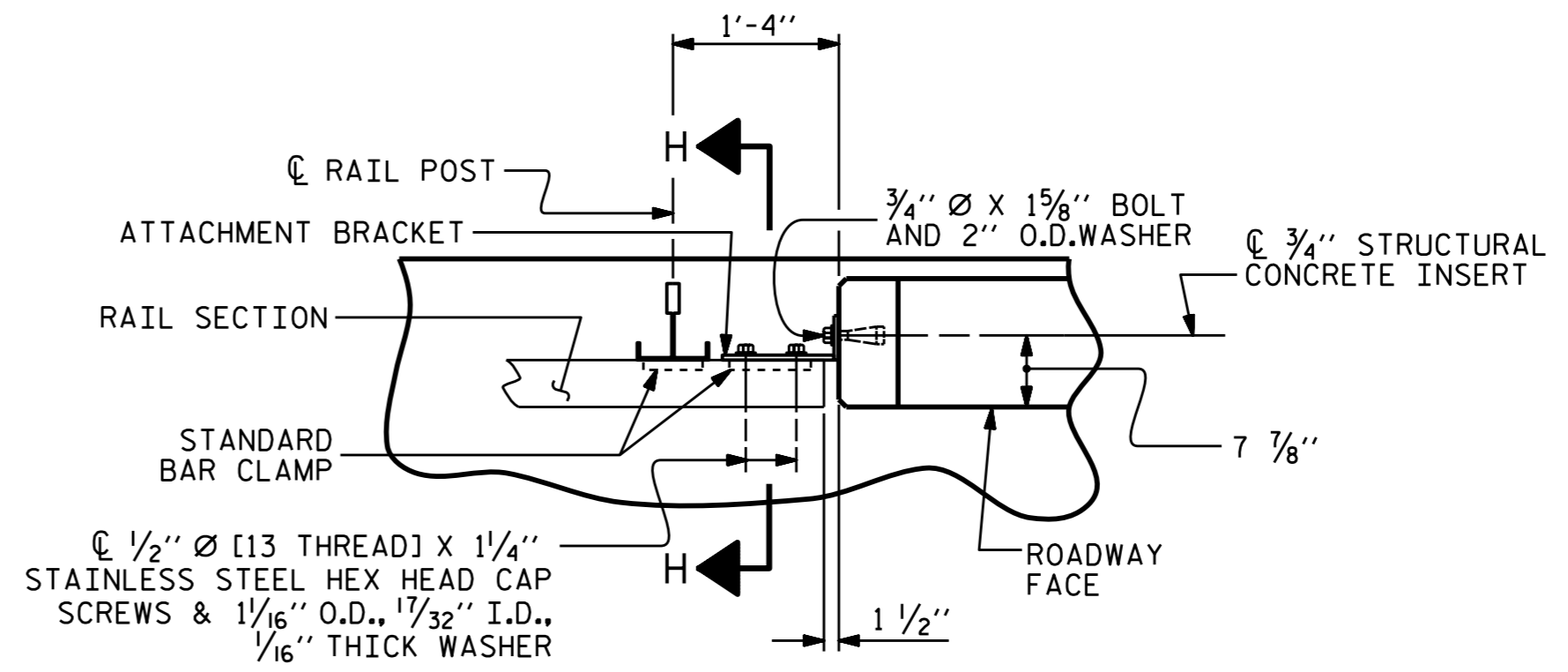
ASSEMBLED BY: REZA KOUCHEK	DATE: 11-20-14
CHECKED BY: K.P. SEDAI	DATE: 11-20-14
DRAWN BY: WJH	4/89
CHECKED BY: FCJ	5/89
REV. 10/1/11	MAA/GM
REV. 10/12	MAA/GM
REV. 6/13	MAA/GM



PLAN OF RAIL POST SPACINGS
TOTAL NUMBER OF POST = 32



DETAILS FOR ATTACHING METAL RAIL TO END POST



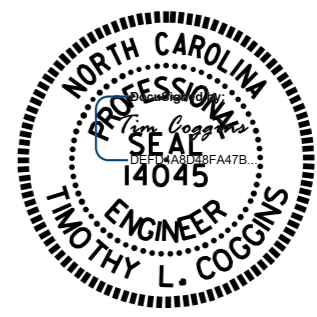
STRUCTURAL CONCRETE INSERT

* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
STATION: 13+96.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
RAIL POST SPACINGS
AND
END OF RAIL DETAILS
FOR TWO BAR METAL RAILS



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9	
1			3			TOTAL SHEETS	
2			4			20	

ASSEMBLED BY : REZA KOUCHEKI	DATE : 10-30-14
CHECKED BY : K.P. SEDAI	DATE : 11-18-14
DRAWN BY : FCJ	1/88
CHECKED BY : CRK	3/89
REV. 5/7/03	RWW/JTE
REV. 5/1/06	TLA/GM
REV. 10/1/11	MAA/GM

NOTES

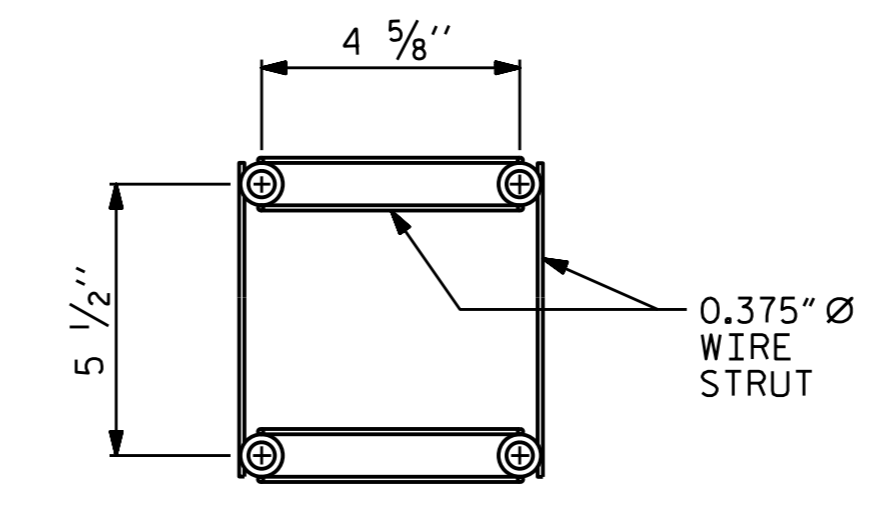
STRUCTURAL CONCRETE ANCHOR ASSEMBLY

THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS :

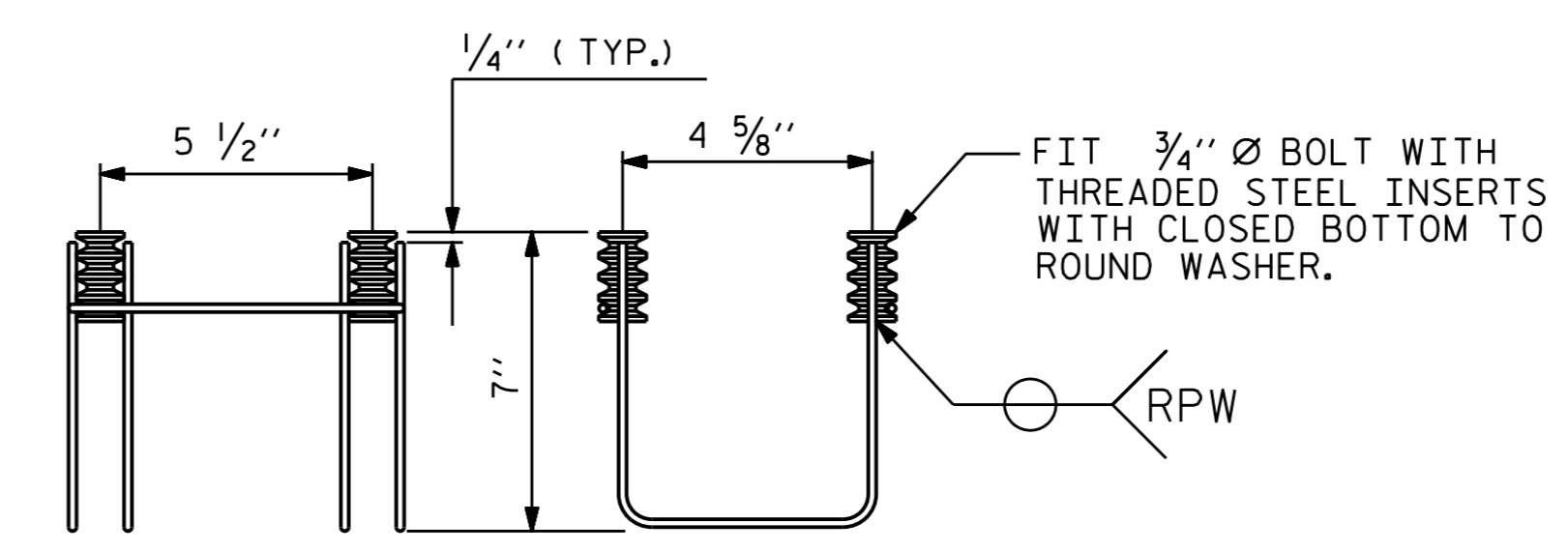
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES.
- B. 4 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 2 1/2" GALVANIZED BOLTS 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.
- C. WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- D. THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.
- E. THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
- F. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF THE METAL RAIL ANCHOR ASSEMBLY. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE THE STANDARD SPECIFICATIONS.

WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH, NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.



PLAN

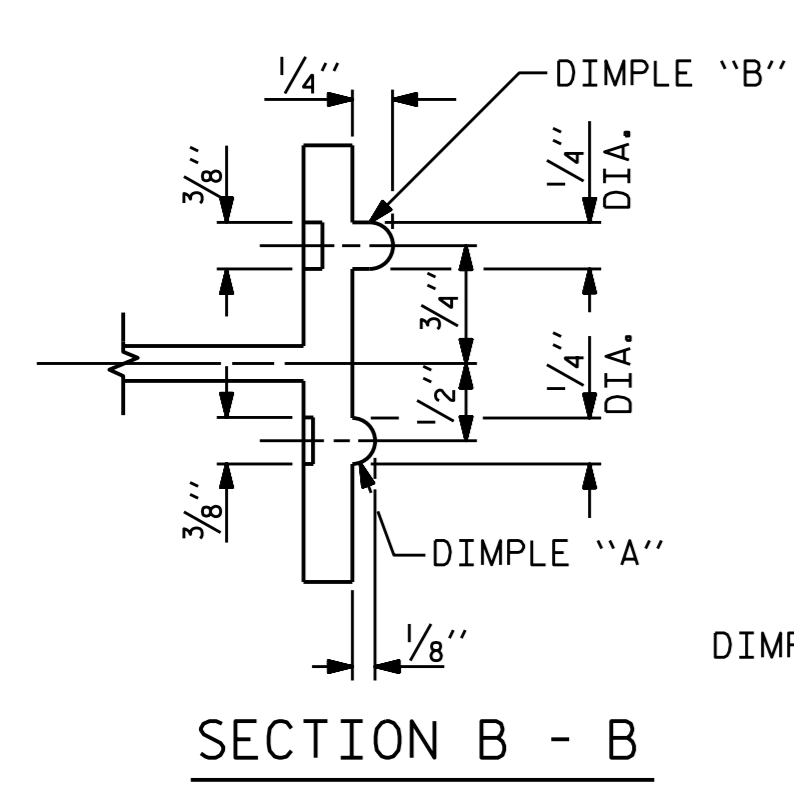


SIDE VIEW

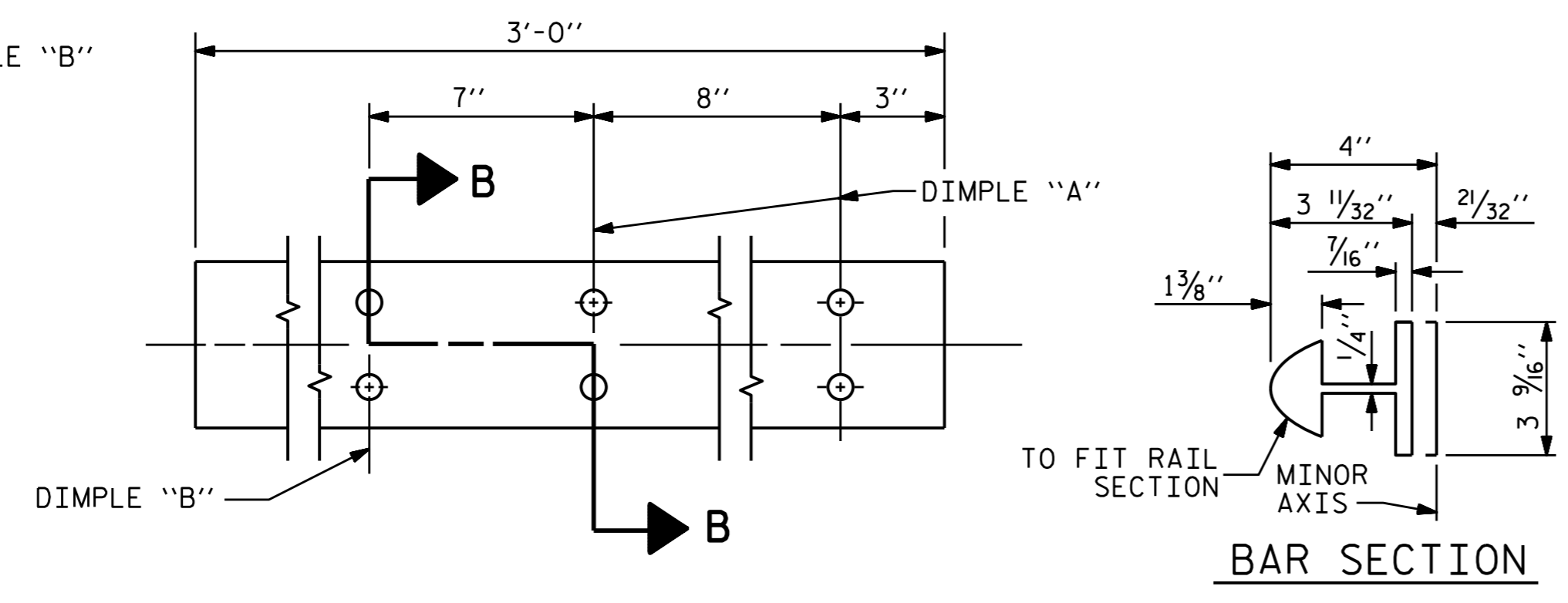
ELEVATION

4-BOLT METAL RAIL ANCHOR ASSEMBLY

(32 ASSEMBLIES REQUIRED)



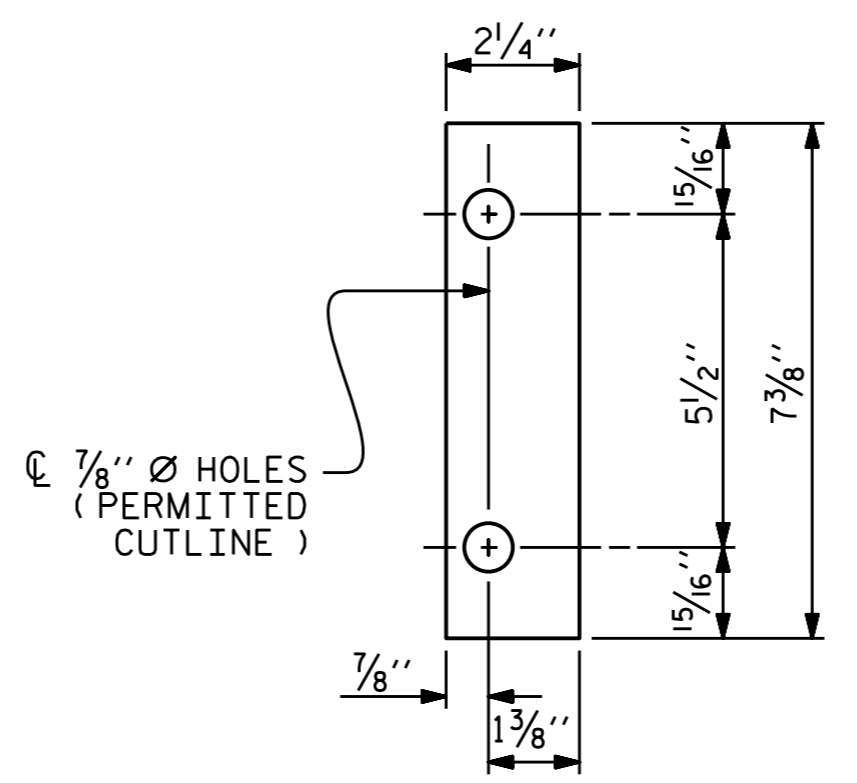
SECTION B - B



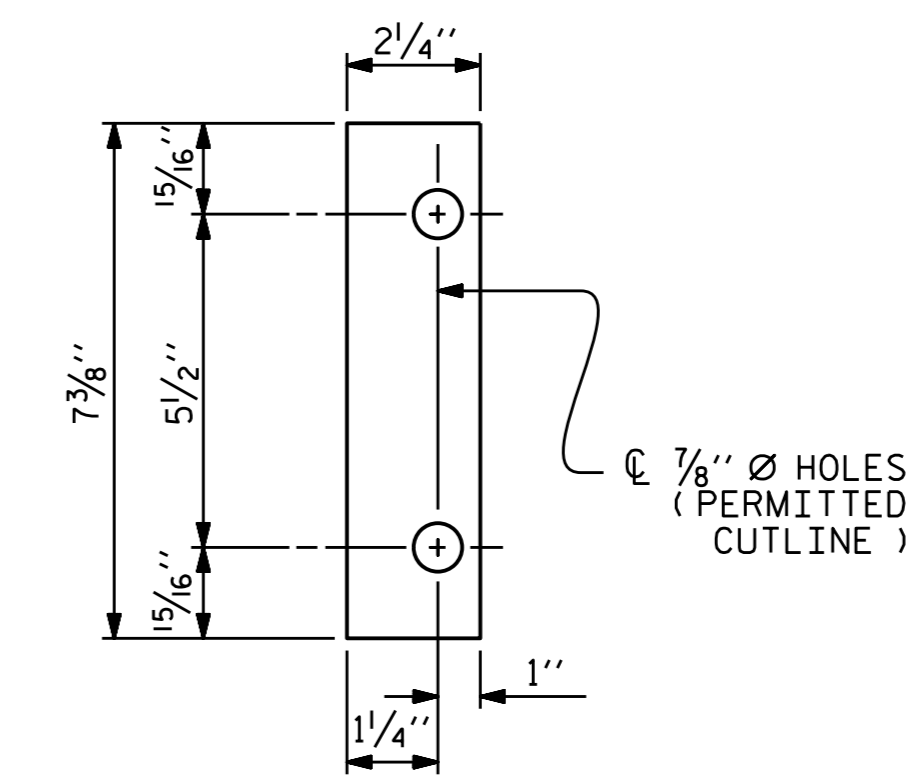
EXPANSION BAR DETAILS



BAR SECTION



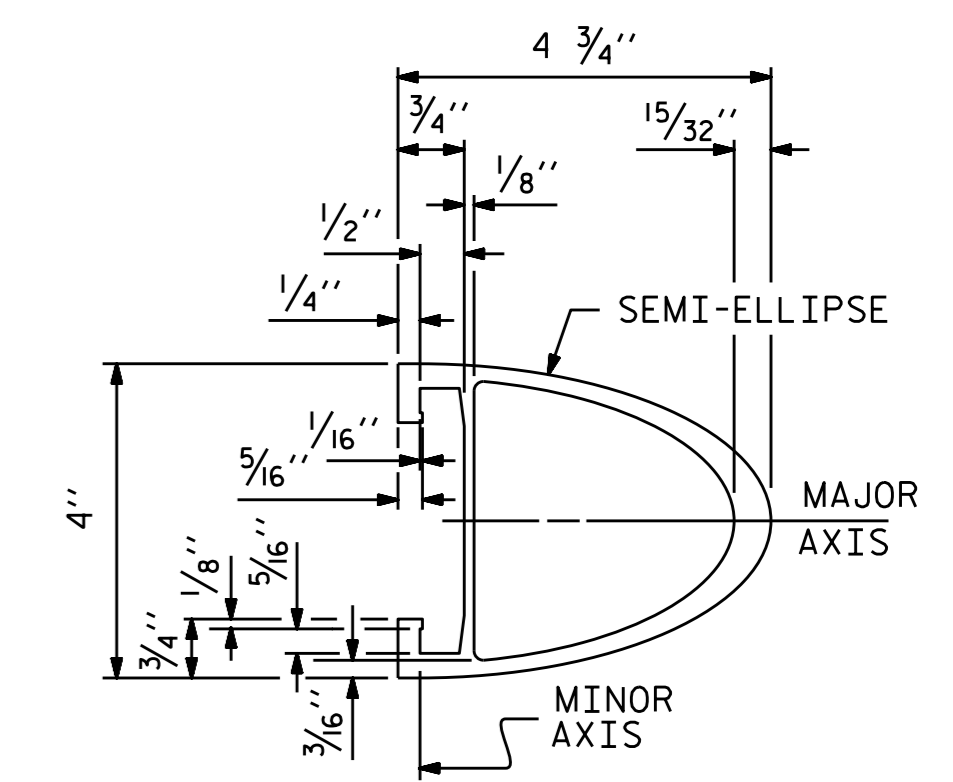
FRONT PLATE



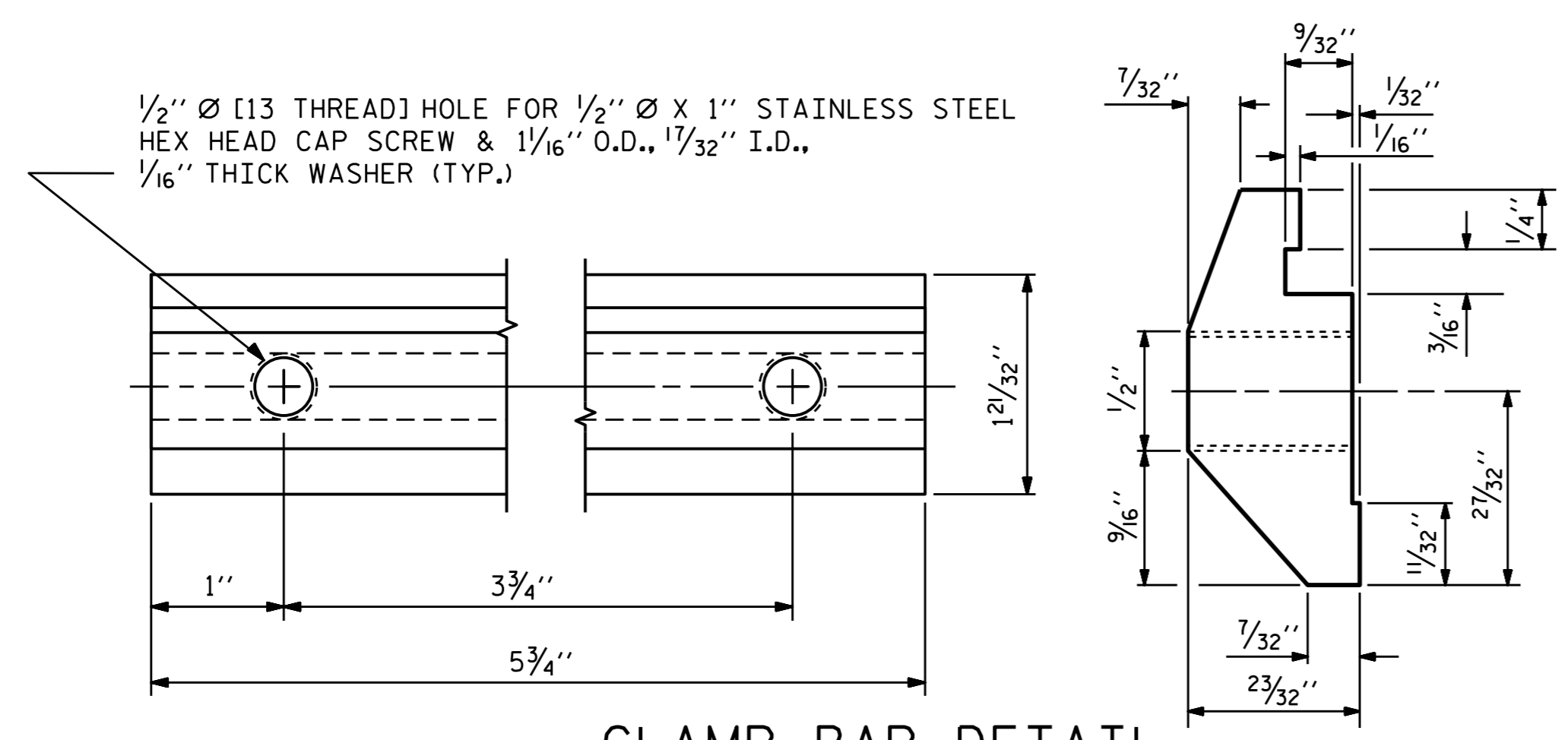
REAR PLATE

SHIM DETAILS

NOTE : SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.

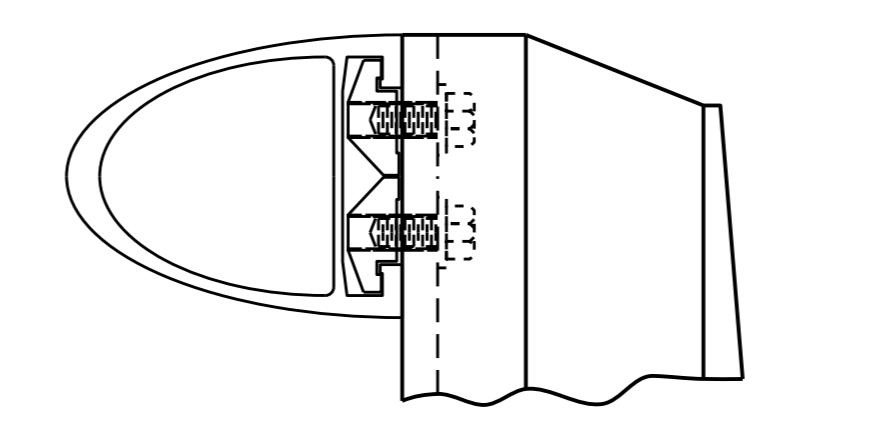


RAIL SECTION

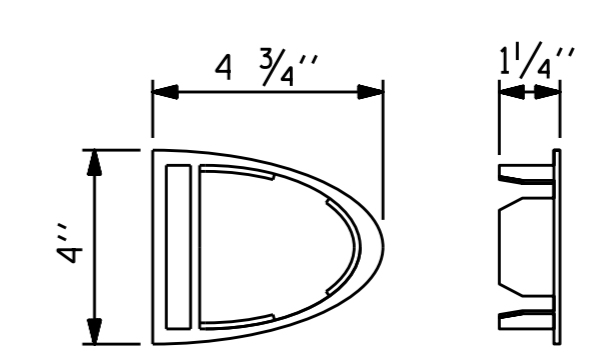


CLAMP BAR DETAIL

(4 REQUIRED PER POST)



CLAMP ASSEMBLY



RAIL CAP



PROJECT NO. 17BP.1.R.65
 PERQUIMANS COUNTY
 STATION: 15+95.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
STANDARD						S-11
2 BAR METAL RAIL						TOTAL SHEETS
REVISIONS						20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

ASSEMBLED BY : REZA KOUCHEKI	DATE : 10/30/14
CHECKED BY : K.P. SEDAII	DATE : 11/18/14
DRAWN BY : EEM	6/94
CHECKED BY : RCW	6/94
REV. 8/16/99	MAB/LES
REV. 5/1/06R	KMM/GM
REV. 10/1/11	MAA/GM

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.

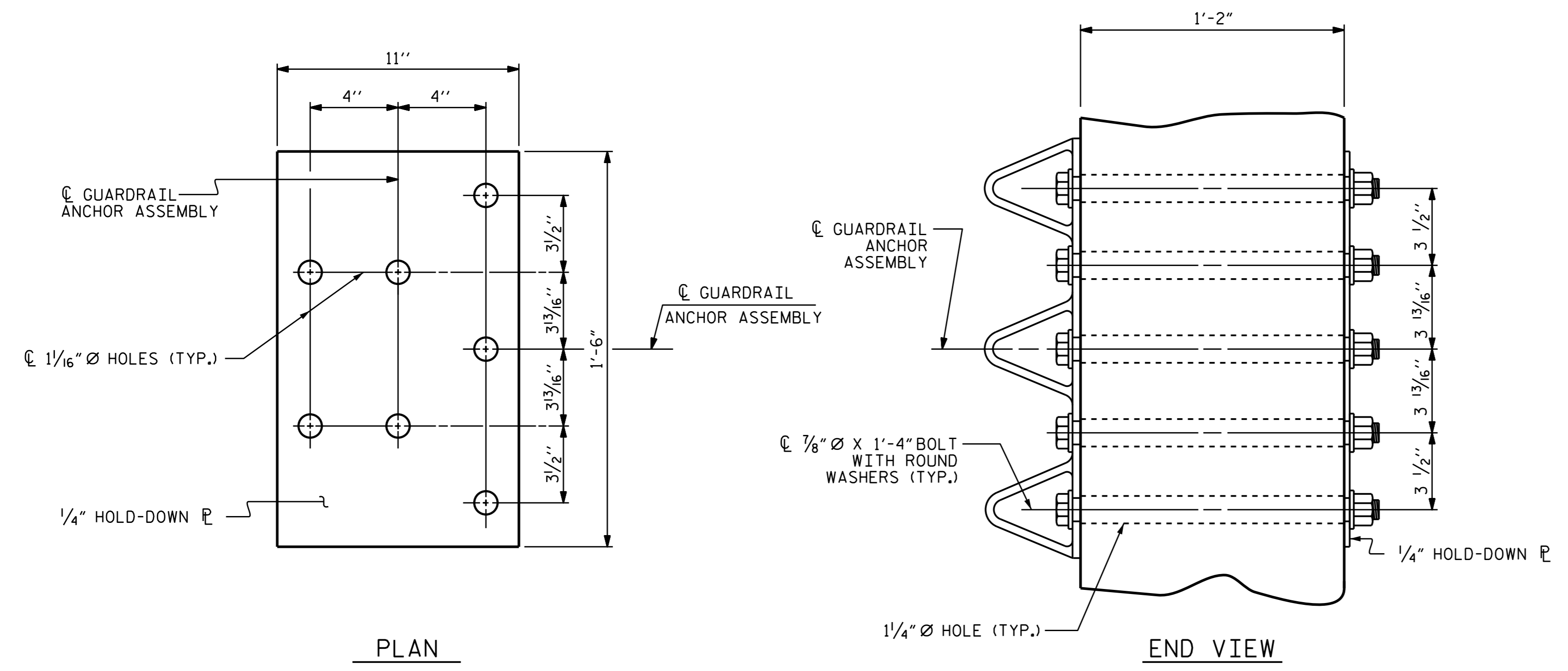
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF THE PARAPET. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

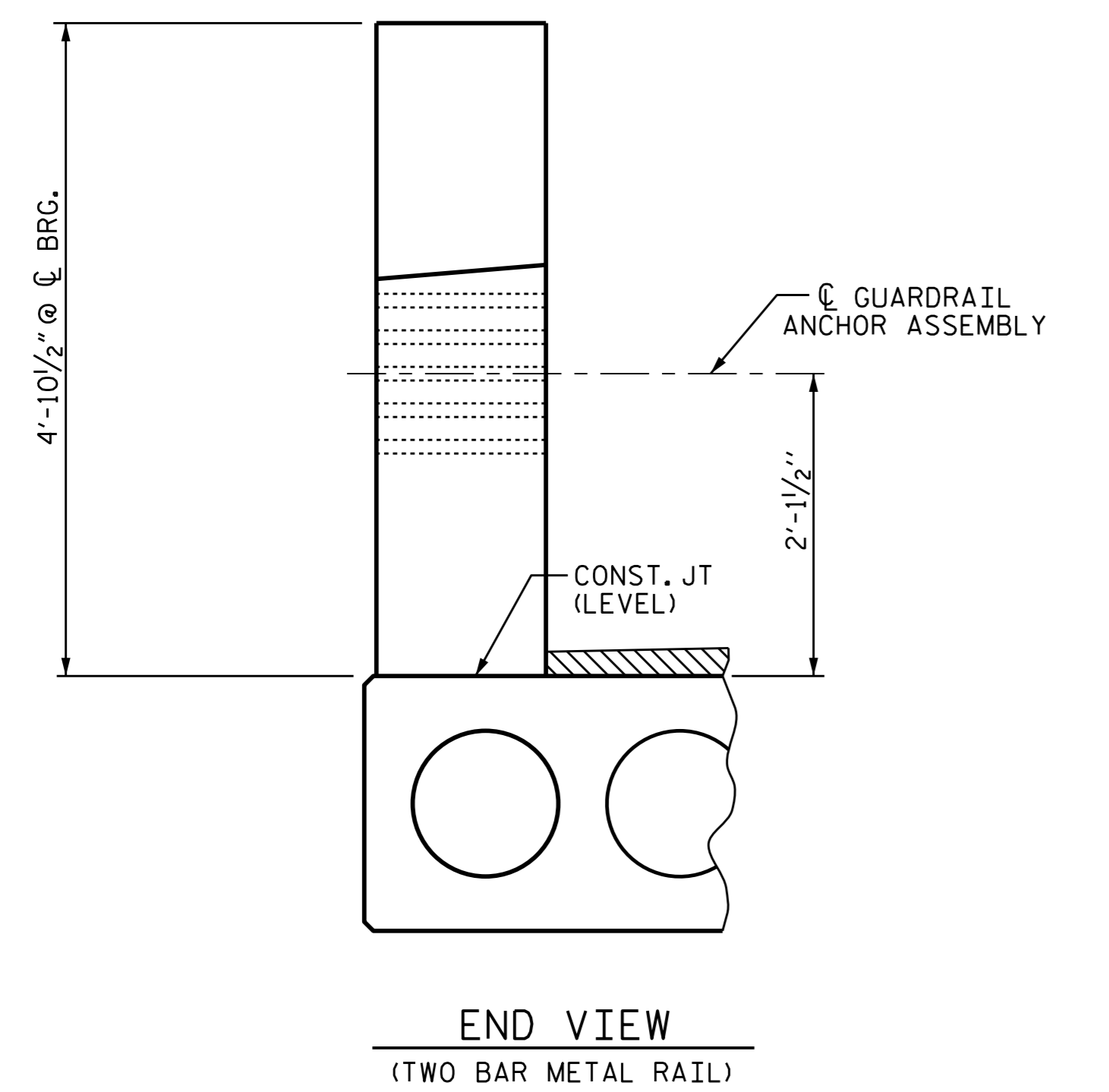
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

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

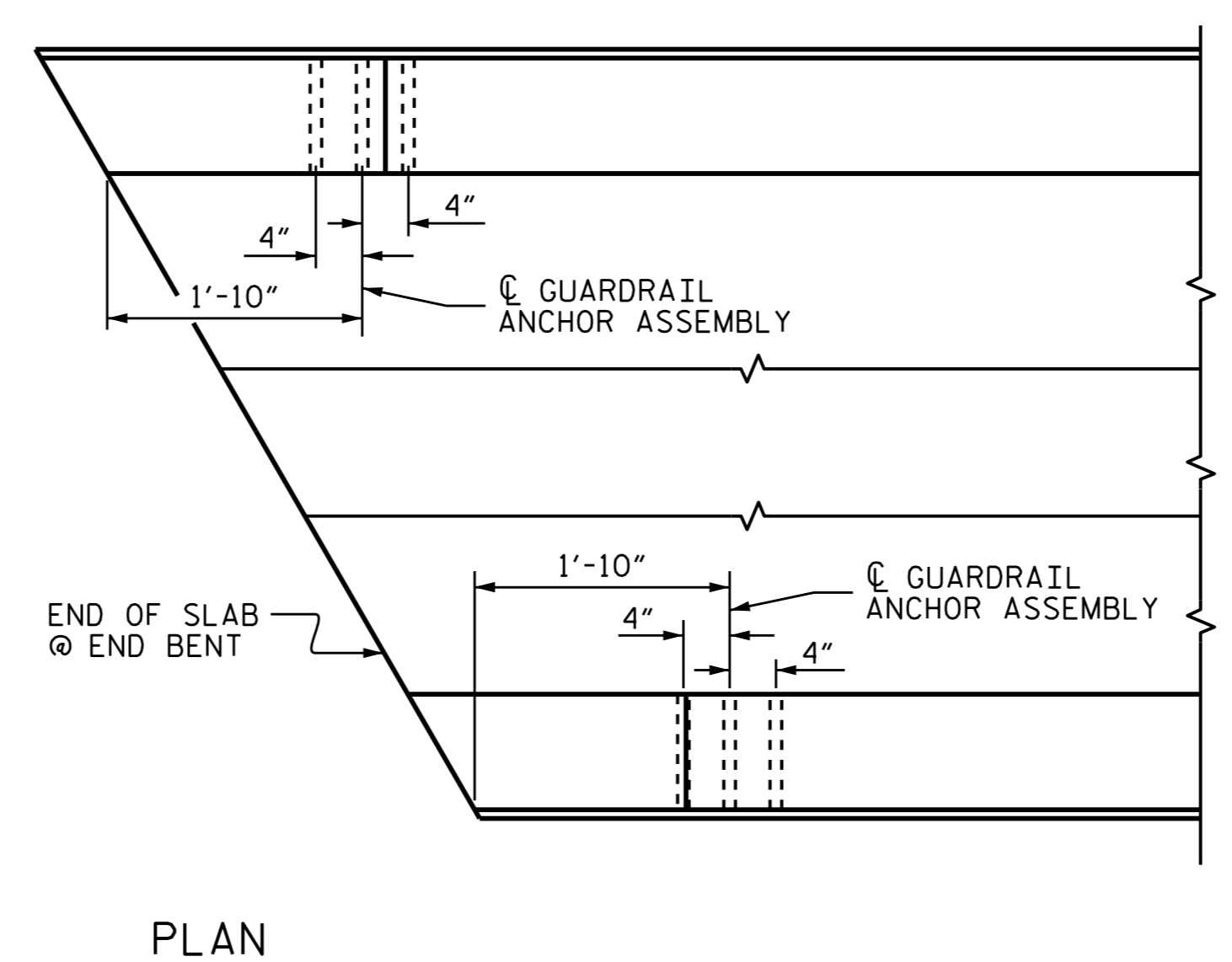


GUARDRAIL ANCHOR ASSEMBLY DETAILS



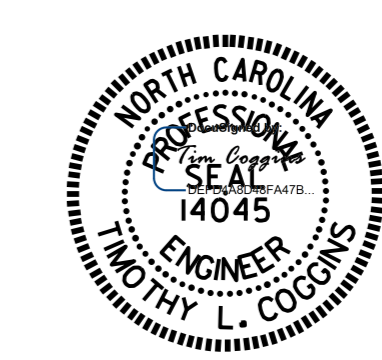
SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT



LOCATION OF GUARDRAIL ANCHOR AT END POST

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
STATION: 13+96.00 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
GUARDRAIL ANCHORAGE
DETAILS
FOR METAL RAILS

REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

ASSEMBLED BY : REZA KOUCHEKI	DATE : 11-5-14
CHECKED BY : K.P. SEDAII	DATE : 11-18-14
DRAWN BY : MAA	5/10
CHECKED BY : GM	5/10
REV. 10/1/11	MAA/GM
REV. 12/5/11	MAA/GM
REV. 6/13	MAA/GM

NOTES

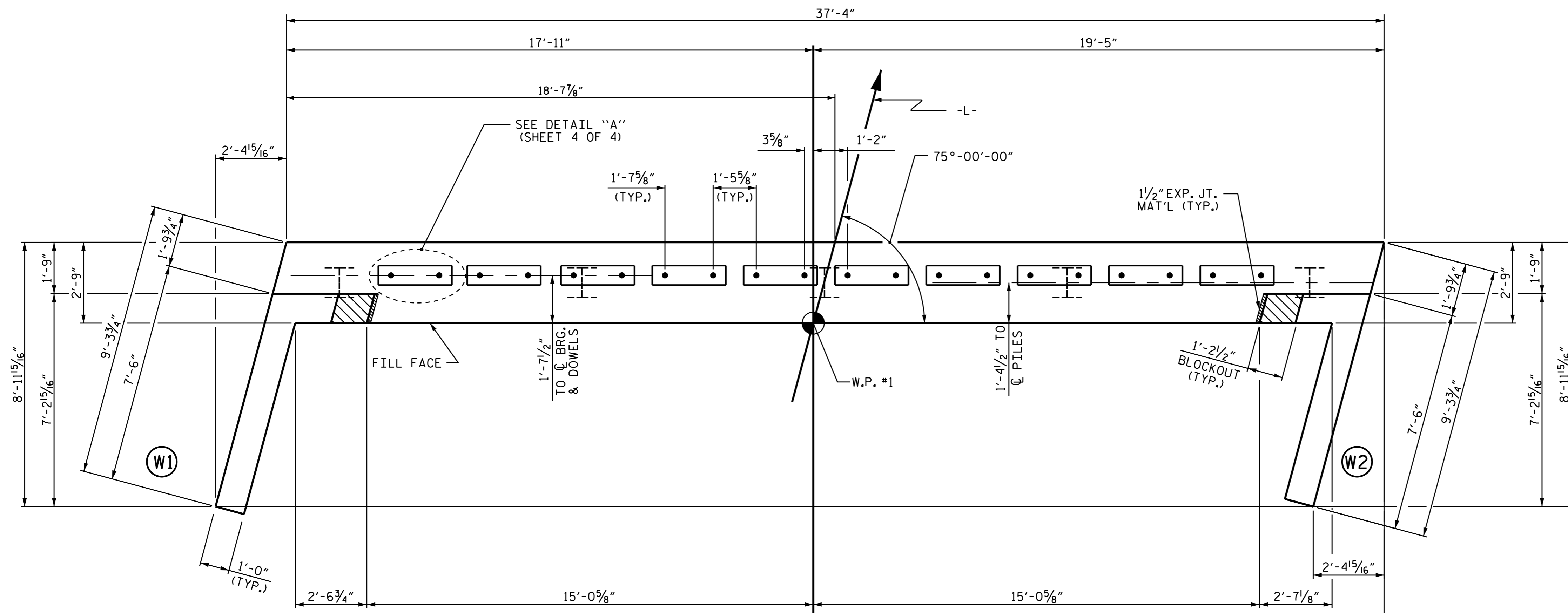
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

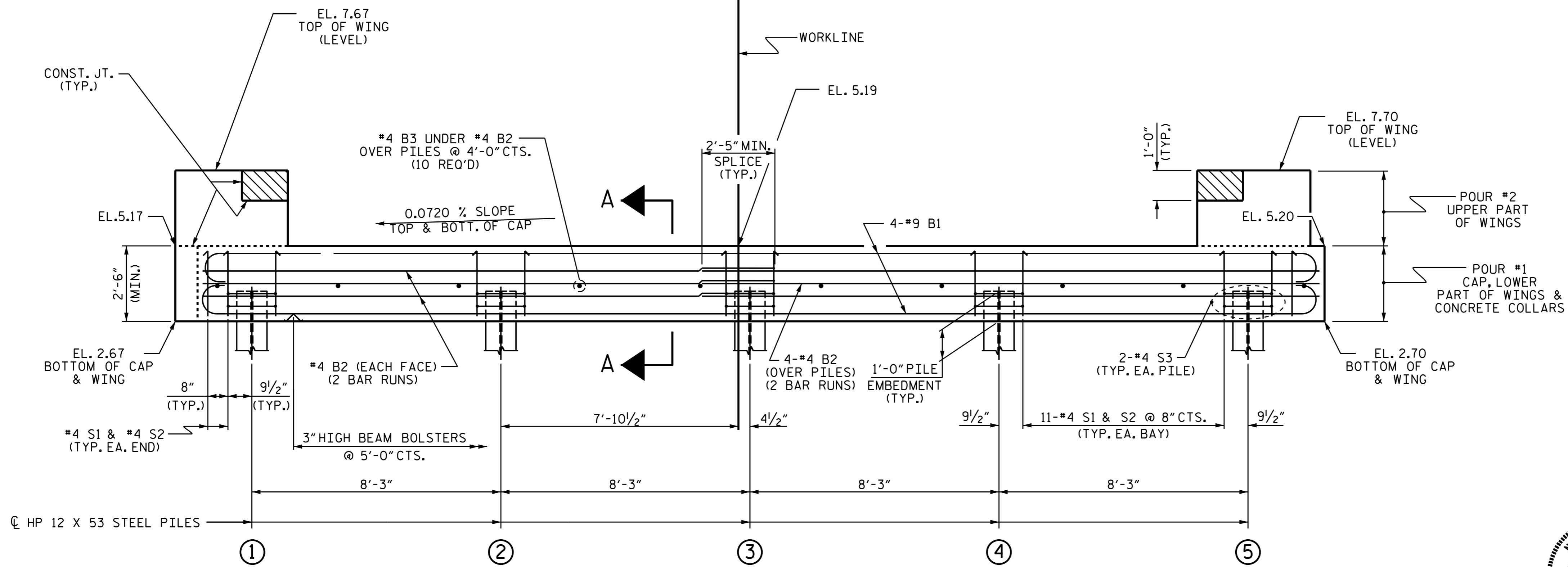
FOR WING DETAILS, SEE SHEET 3 OF 4.

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



PLAN

TOP OF PILE ELEVATIONS	
① THRU ⑤	3.70



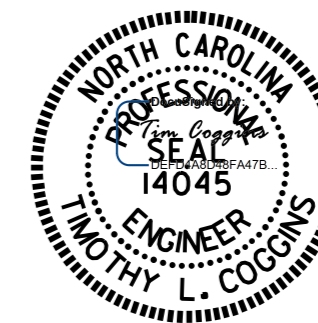
ELEVATION

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
 STATION: 13+96.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1



ASSEMBLED BY : REZA KOUCHEKI DATE : 11/7/14
 CHECKED BY : K.P. SEDAI DATE : 11/18/14
 DRAWN BY : DGE 01/10
 CHECKED BY : MKT 01/10

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.

REVISIONS						SHEET NO. S-13
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

NOTES

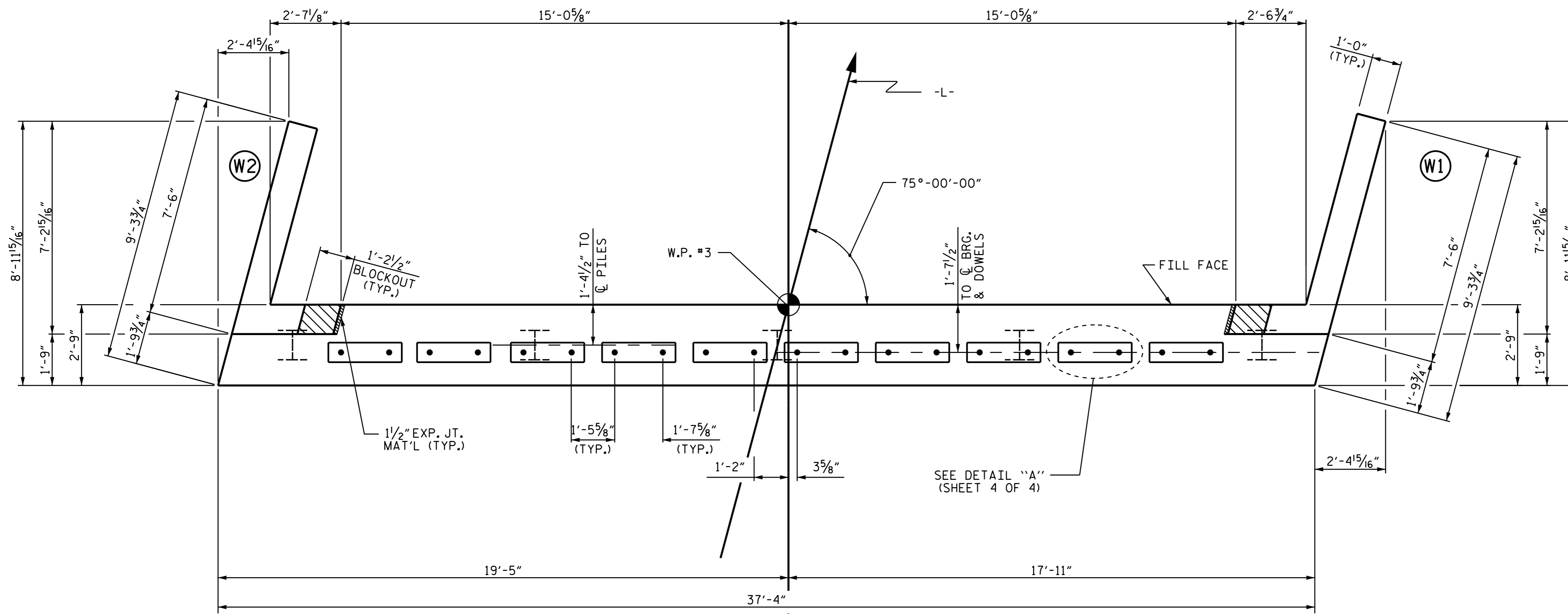
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

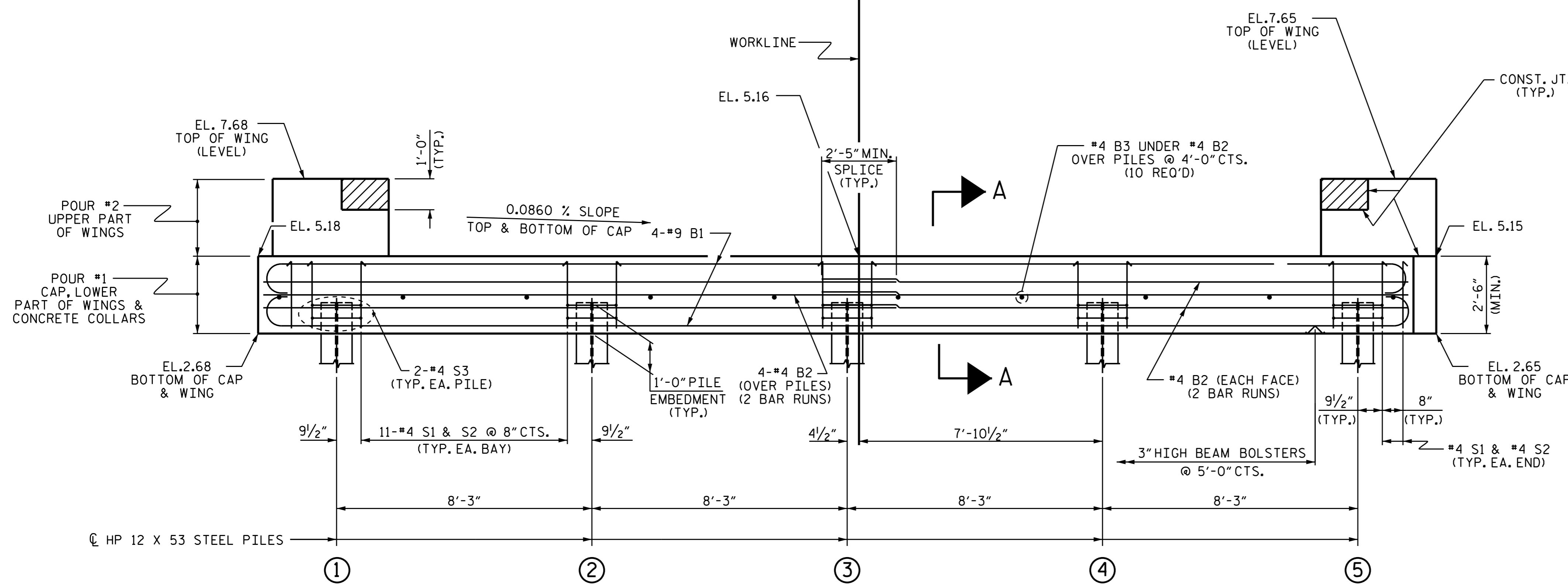
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

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



PLAN



ELEVATION

TOP OF PILE ELEVATIONS	
① THRU ⑤	3.68

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
 STATION: 13+96.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

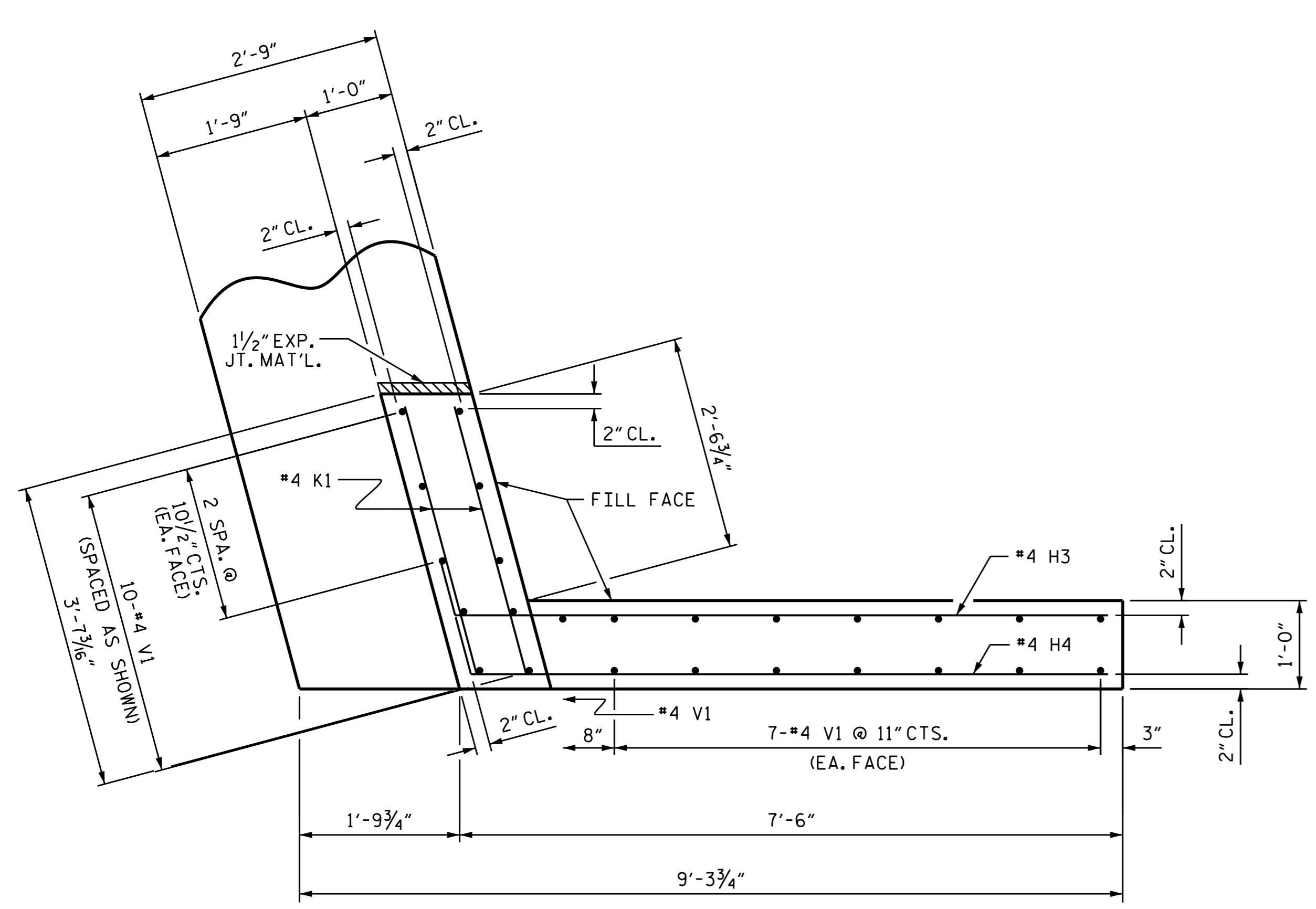
**SUBSTRUCTURE
 END BENT No. 2**



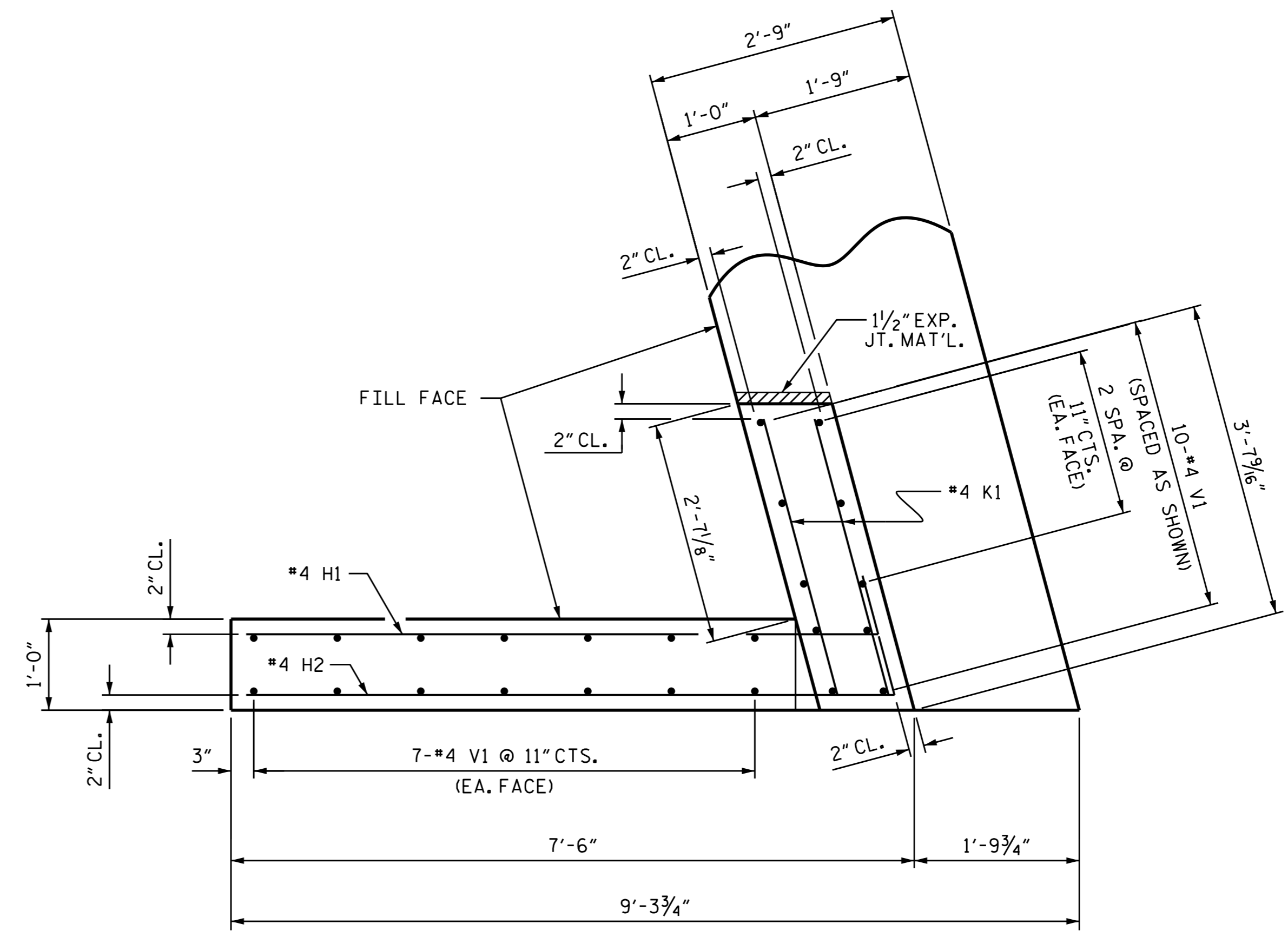
ASSEMBLED BY : REZA KOUCHEKI	DATE : 11/7/14
CHECKED BY : K.P. SEDAII	DATE : 11/18/14
DRAWN BY : DGE	01/10
CHECKED BY : MKT	01/10

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.

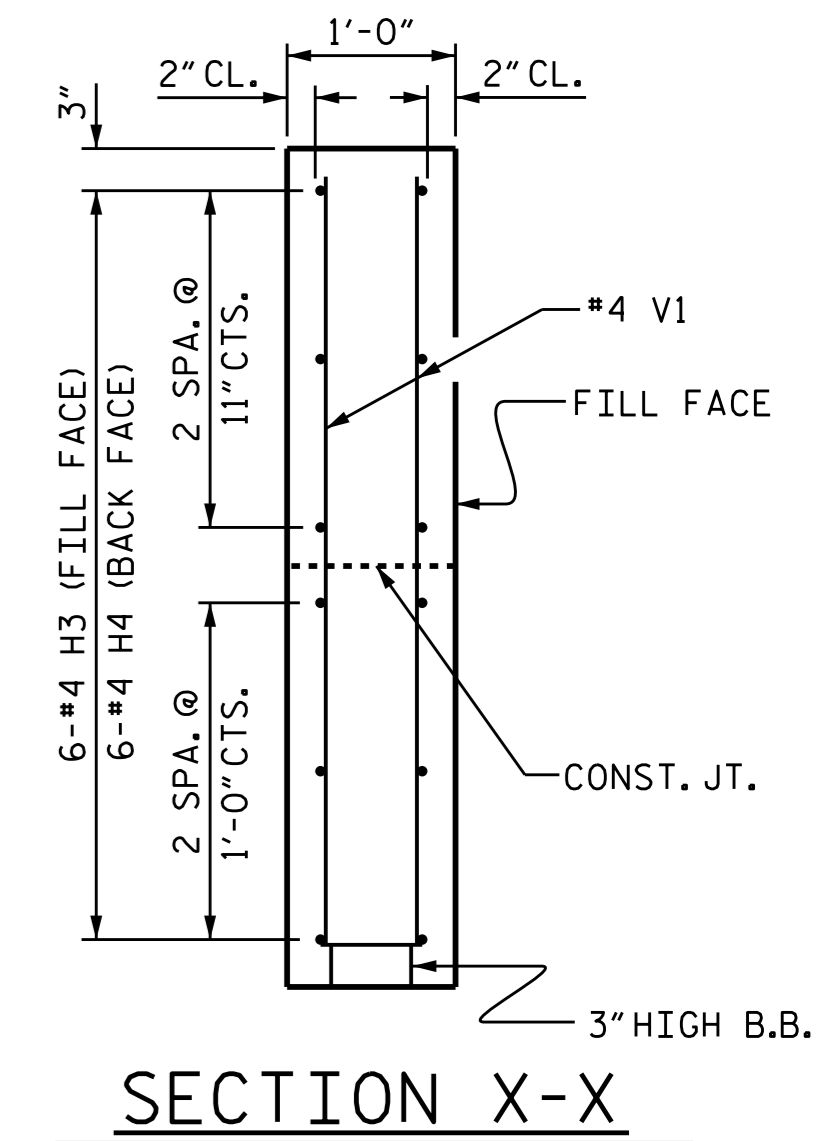
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			20



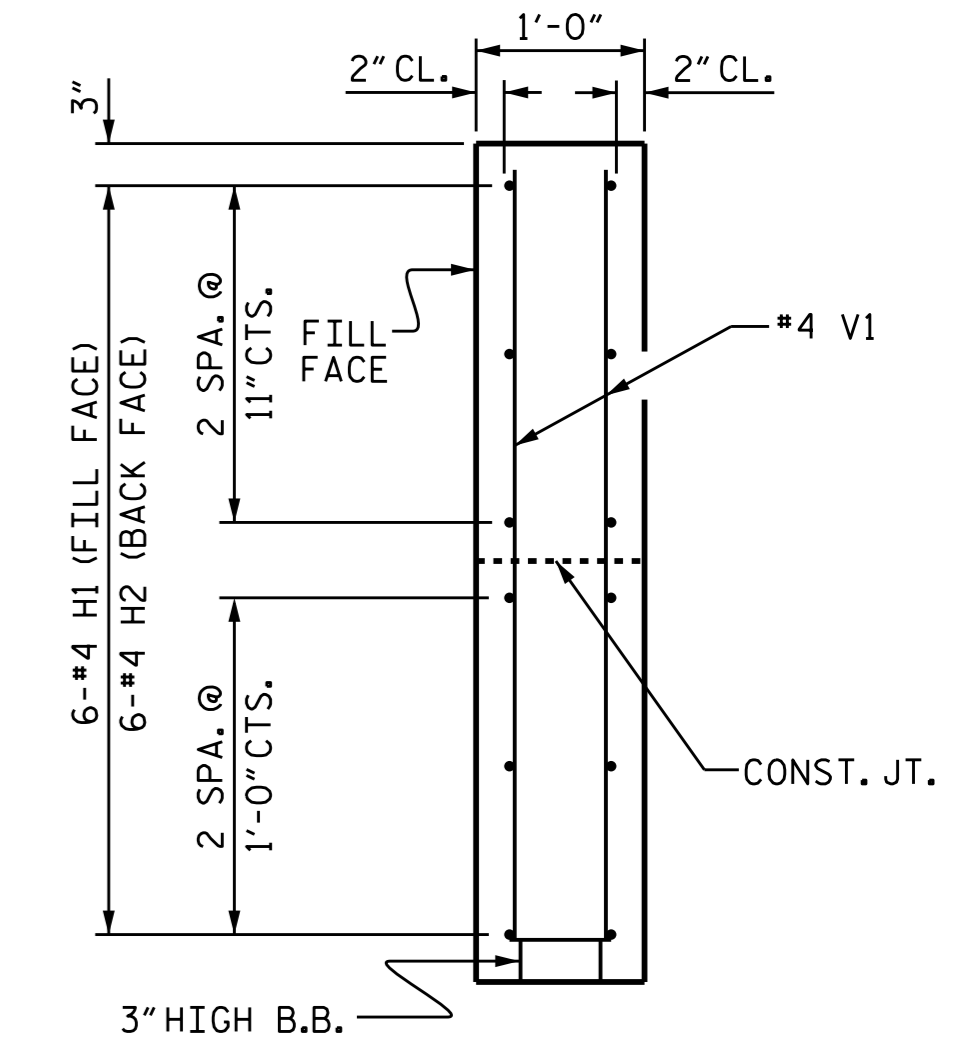
PLAN OF WING (W1)



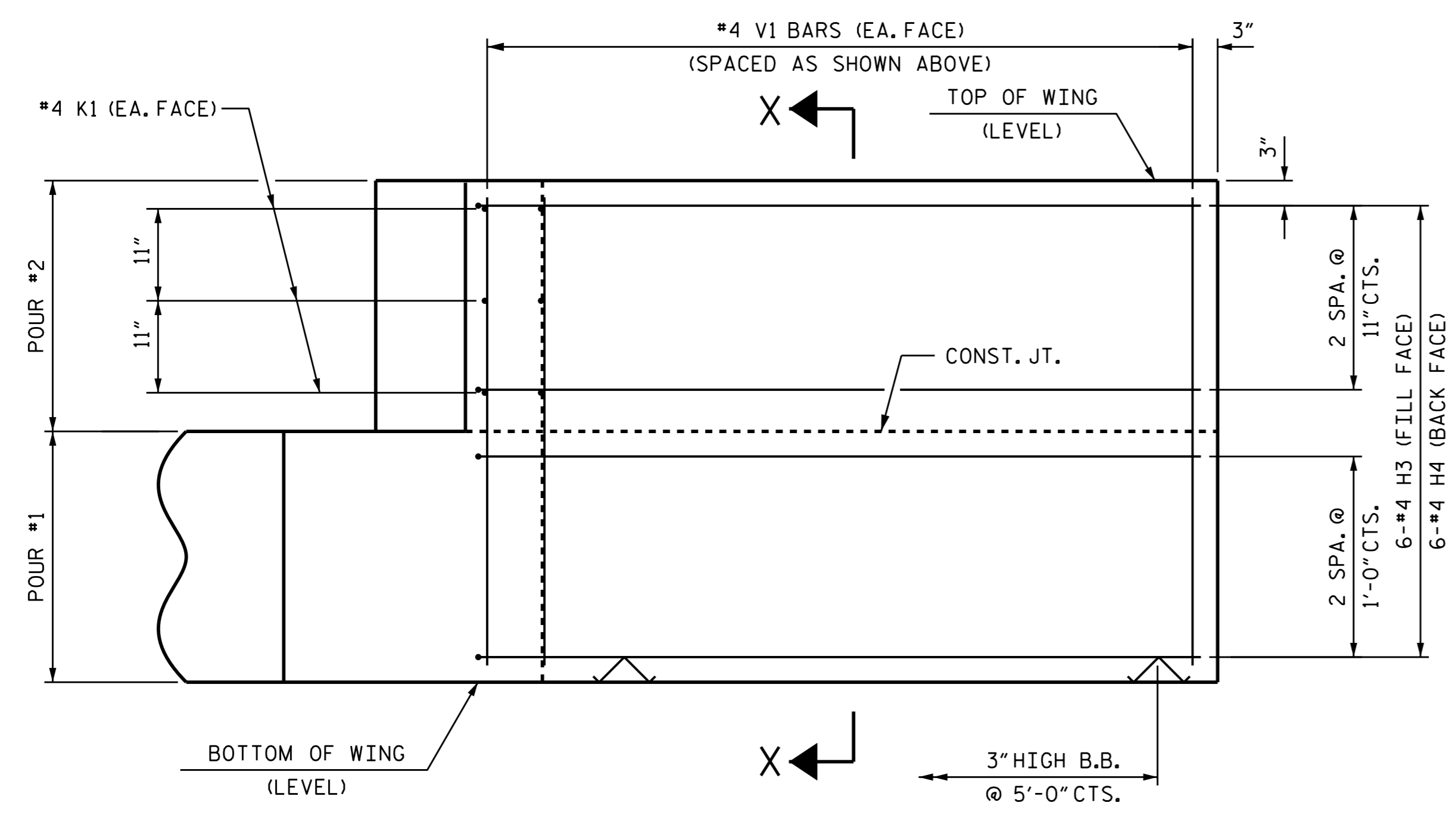
PLAN OF WING (W2)



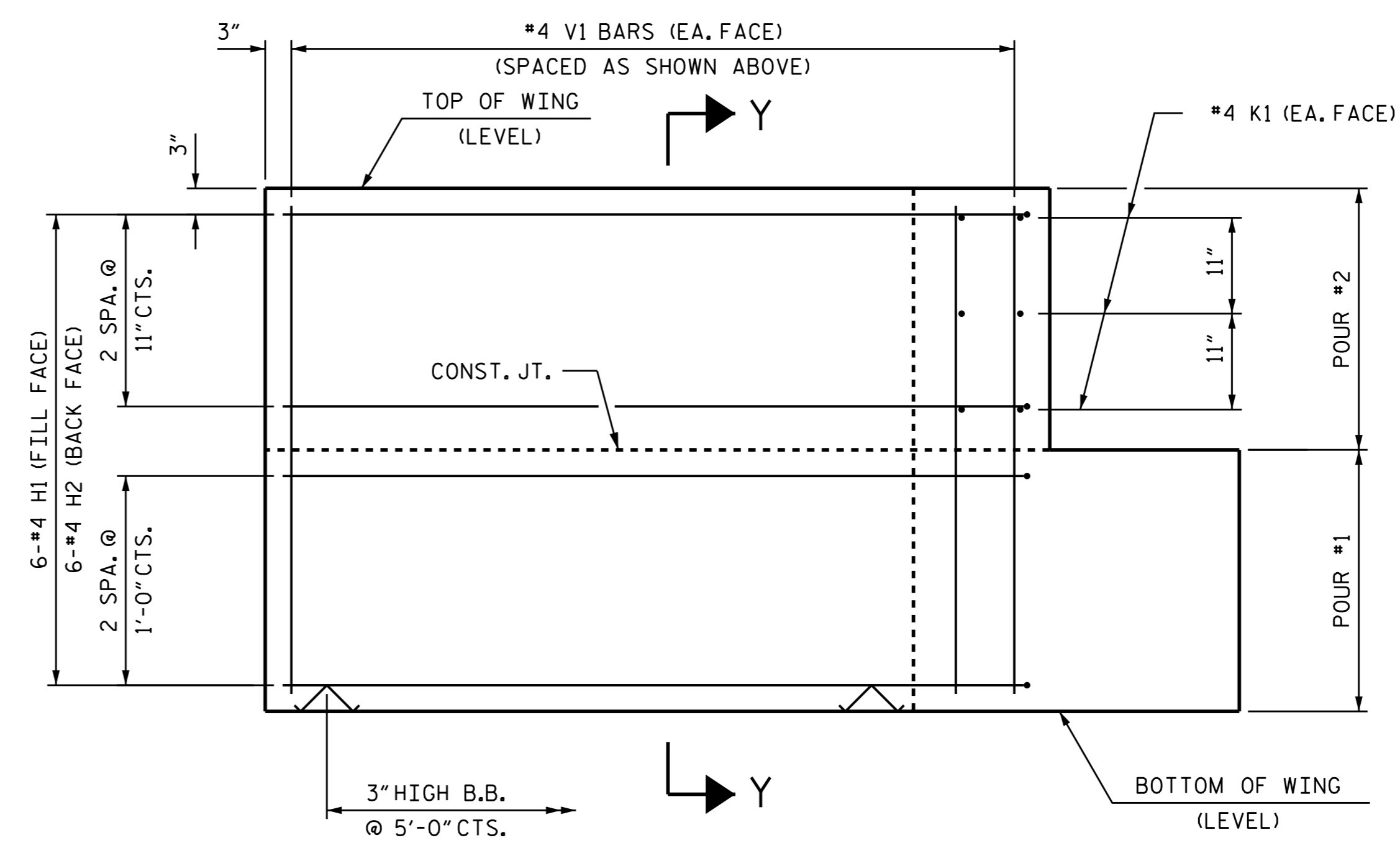
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

PROJECT NO. 17BP.1.R.65
 PASQUOTANK COUNTY
 STATION: 13+96.00 -L-

SHEET 3 OF 4

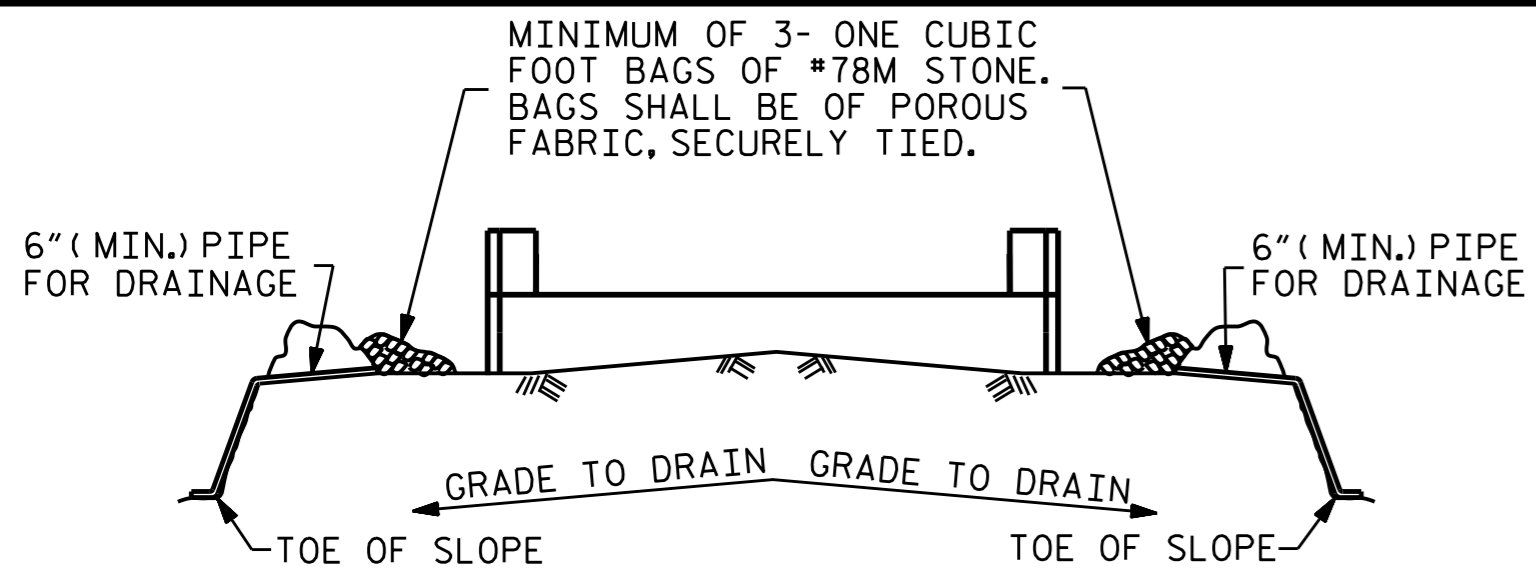
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS



ASSEMBLED BY : REZA KOUCHEKI	DATE : 11/7/14
CHECKED BY : K.P. SEDAI	DATE : 11/19/14
DRAWN BY : DGE	03/10
CHECKED BY : MKT	03/10

REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

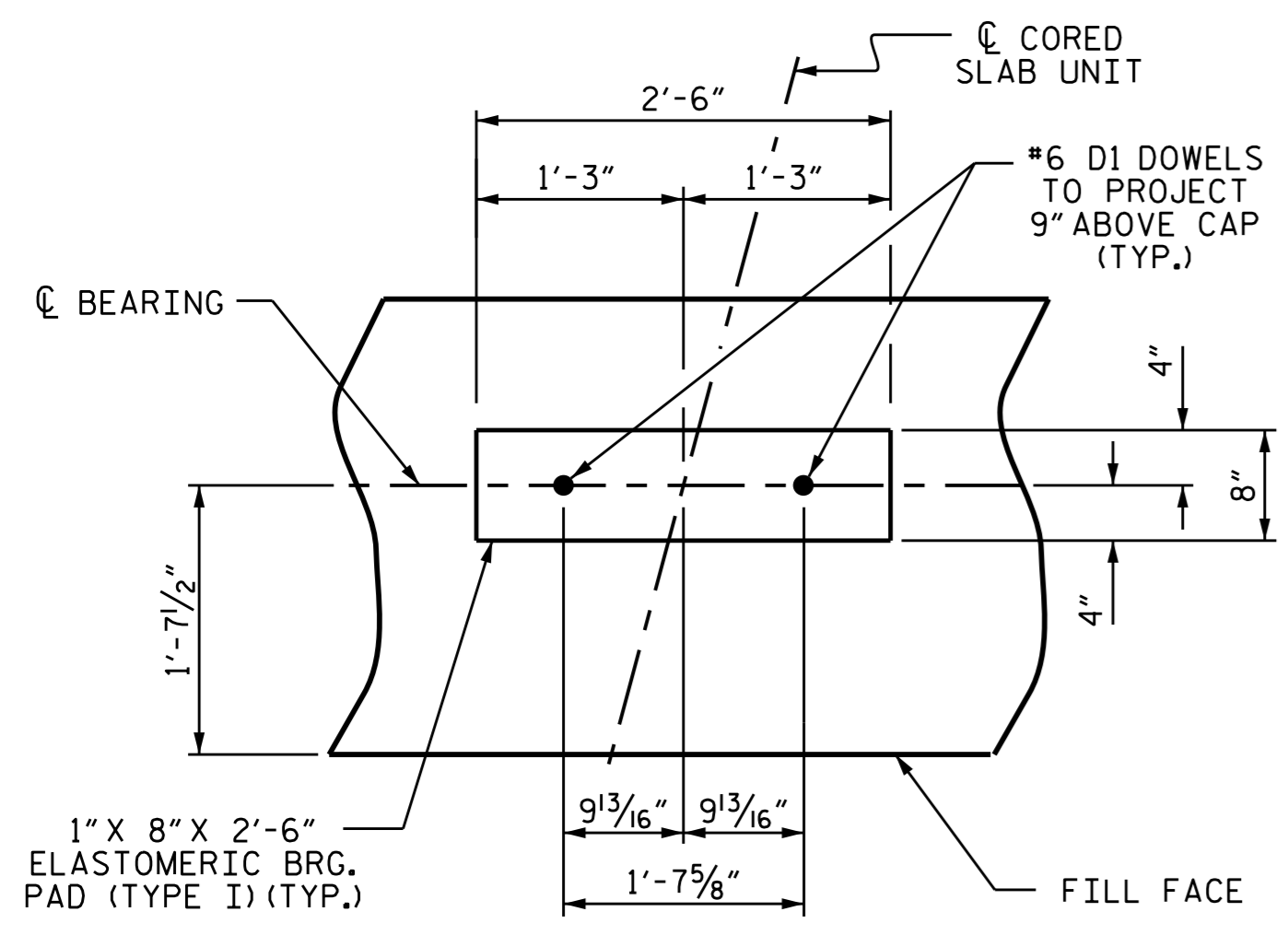


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

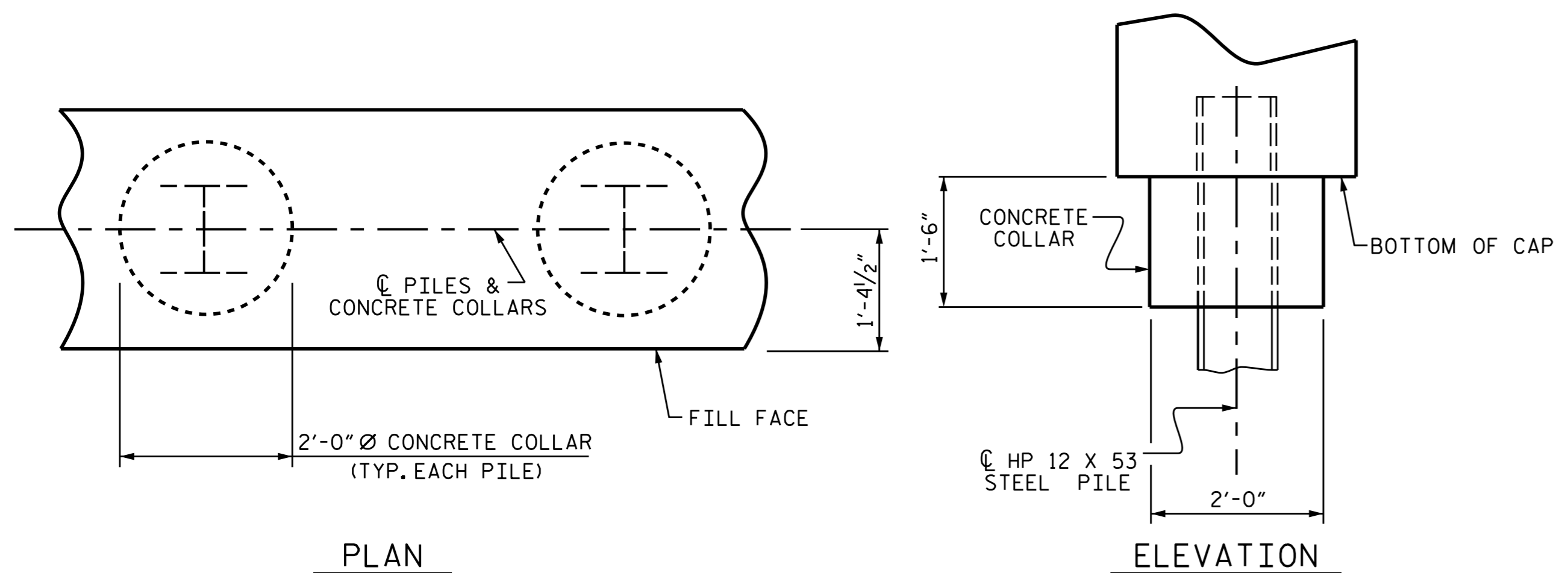
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



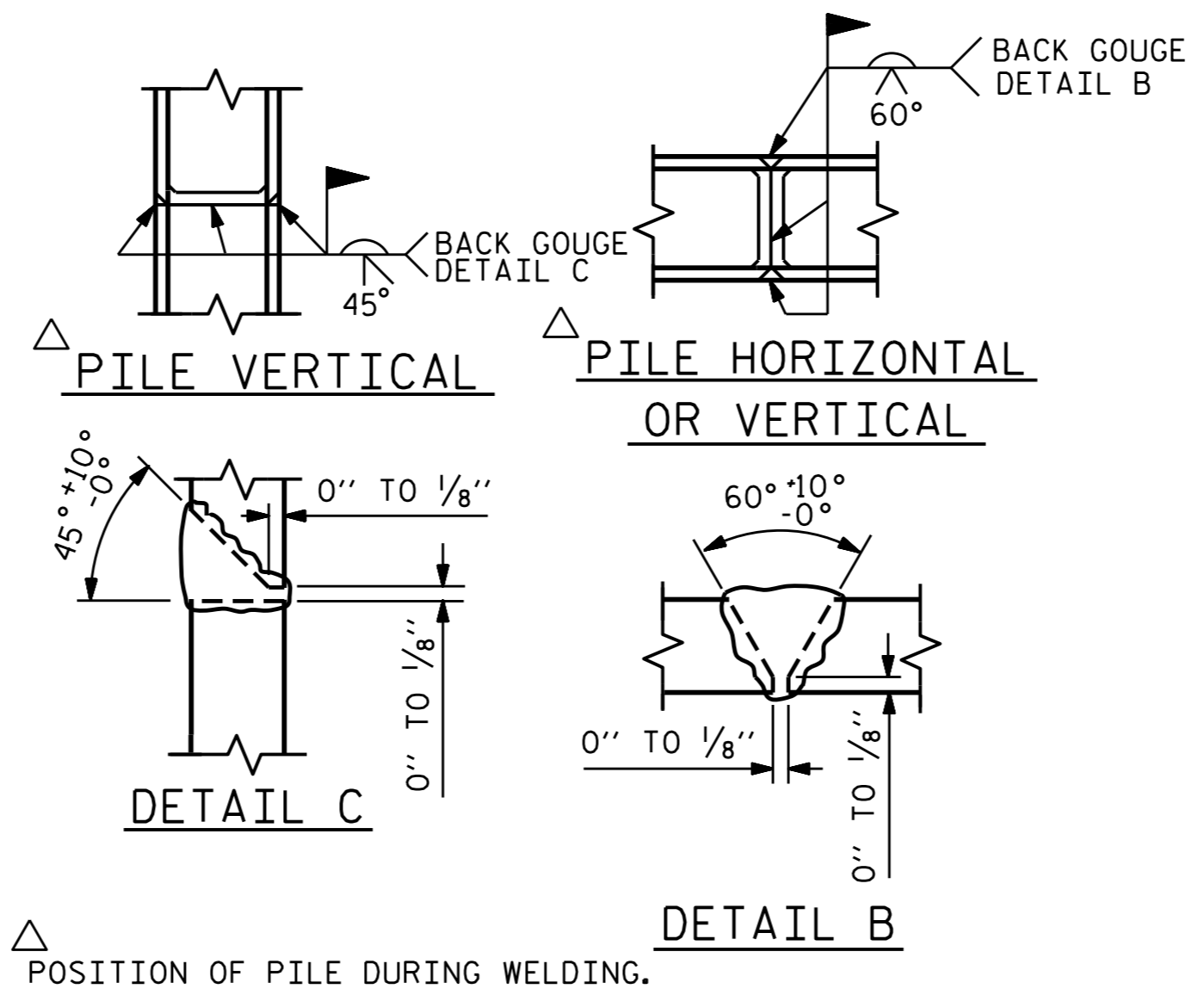
DETAIL "A"

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



CORROSION PROTECTION FOR STEEL PILES DETAIL

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



PILE SPLICE DETAILS

BAR TYPES

1 2 3 4 5 6 7

HK. 1'-3" 36'-10" 1'-3"

2 1/16"

8"

6'-11"

7'-1"

7'-4" H3

7'-2" H4

4 1/2" 2'-5" 4 1/2"

HK. 5 HK.

1'-3" LAP

6 1'-8" Ø

4 1/2" 2'-1 1/2" HK.

2'-5"

1'-5"

1'-6"

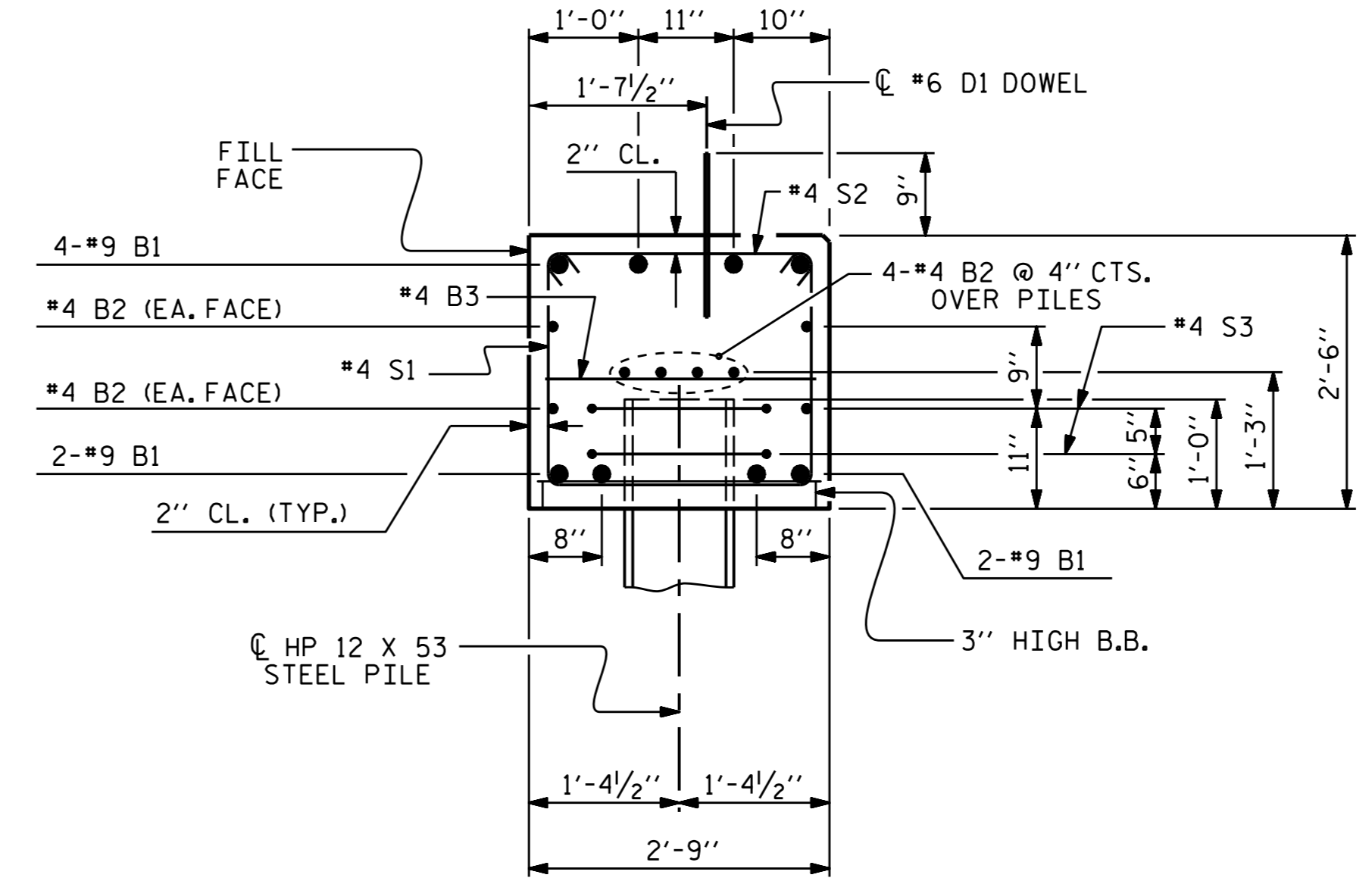
7

ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1		END BENT No. 2	
HP 12 X 53 STEEL PILES		HP 12 X 53 STEEL PILES	
NO: 5 LIN. FT.= 350		NO: 5 LIN. FT.= 350	
PILE REDRIVES	5 EA.	PILE REDRIVES	5 EA.

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
V1	49	#4	STR	4'-8"	153
REINFORCING STEEL (FOR ONE END BENT)					2027 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					1.8 C.Y.
TOTAL CLASS A CONCRETE					13.4 C.Y.



SECTION A-A

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

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
STATION: 13+96.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1 & 2
DETAILS

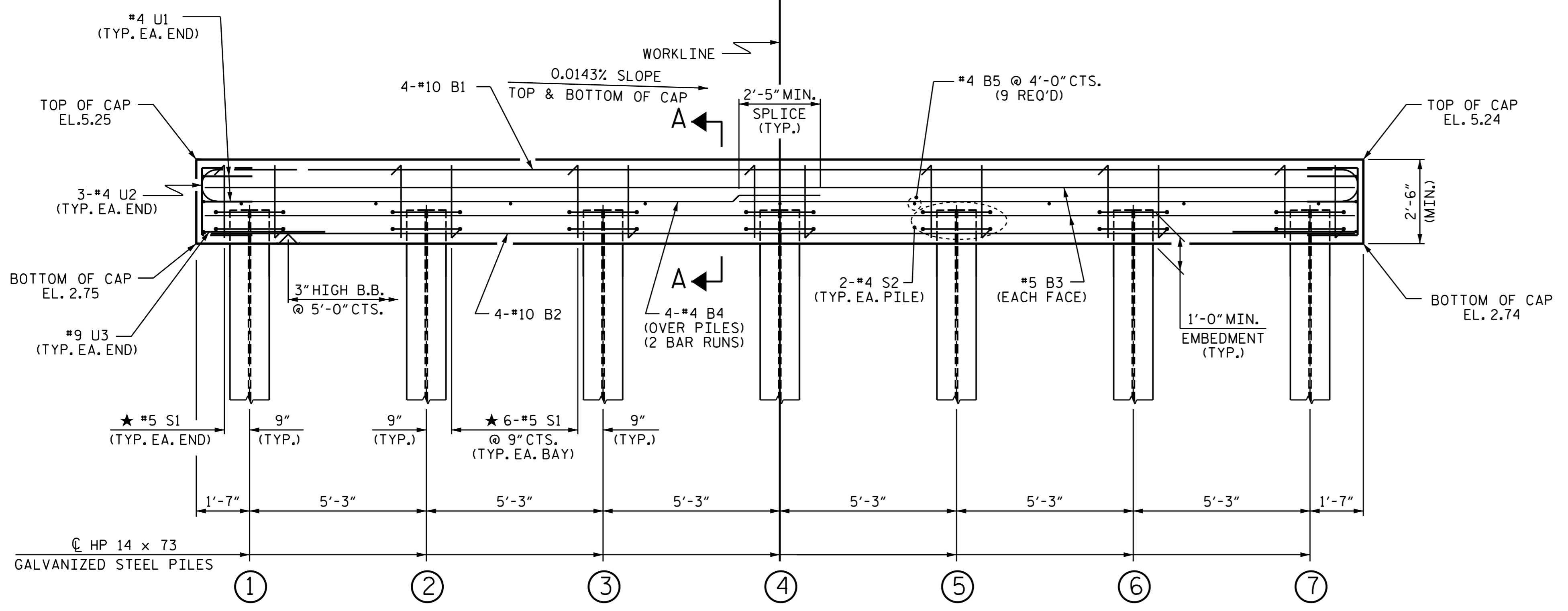
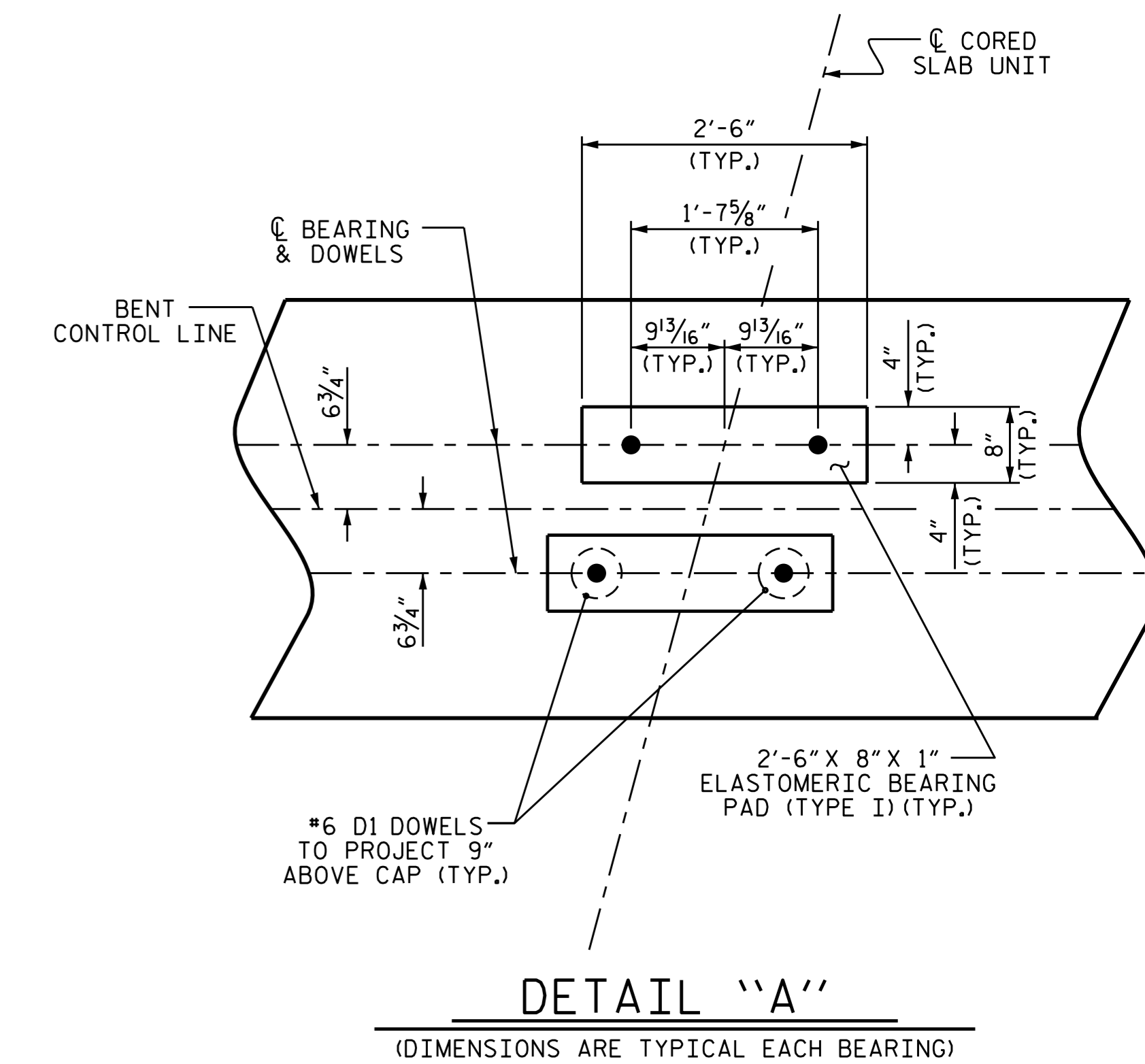
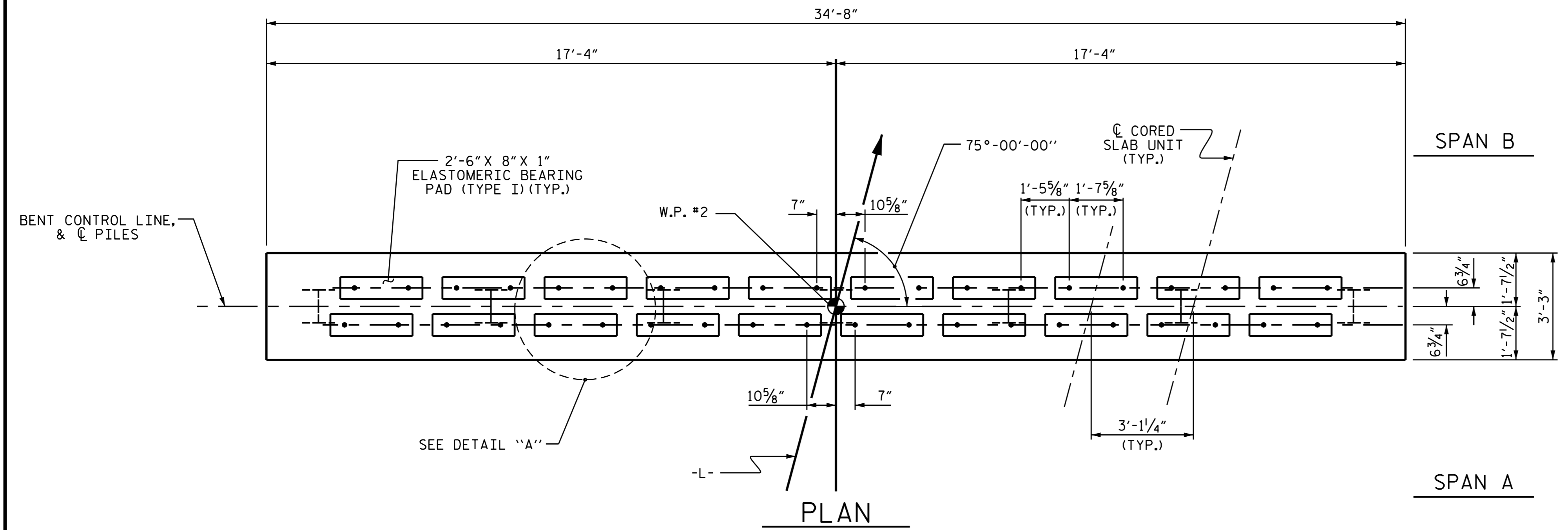
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			20



ASSEMBLED BY : REZA KOUCHEKI DATE : 11/7/14
CHECKED BY : K.P. SEDAİ DATE : 11/19/14
DRAWN BY : DGE 12/09
CHECKED BY : MKT 01/10

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 25.00 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



TOP OF PILE ELEVATIONS	
① THRU ⑤	3.75

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
 STATION: 13+96.00 -L-

SHEET 1 OF 2

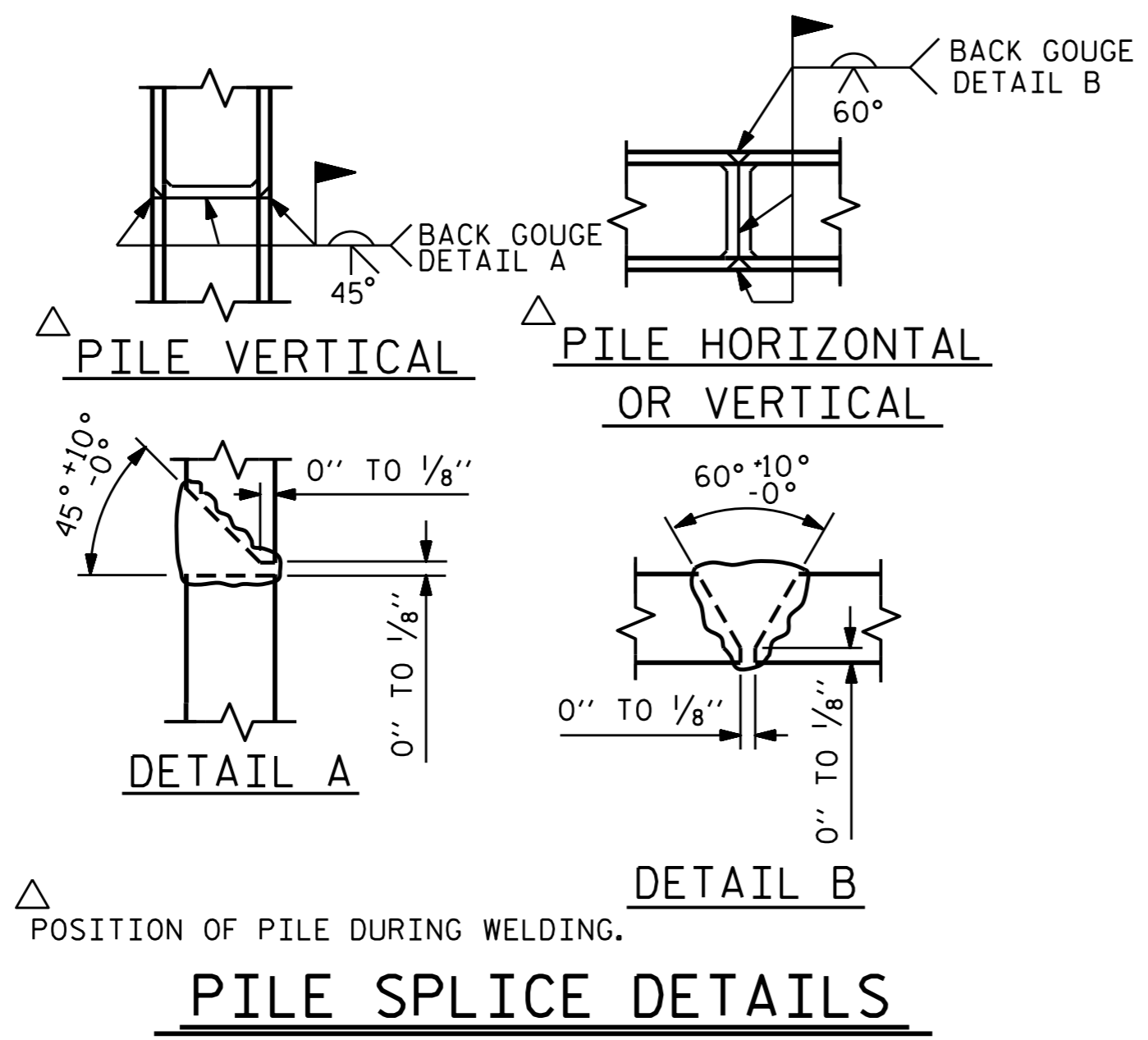


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 1

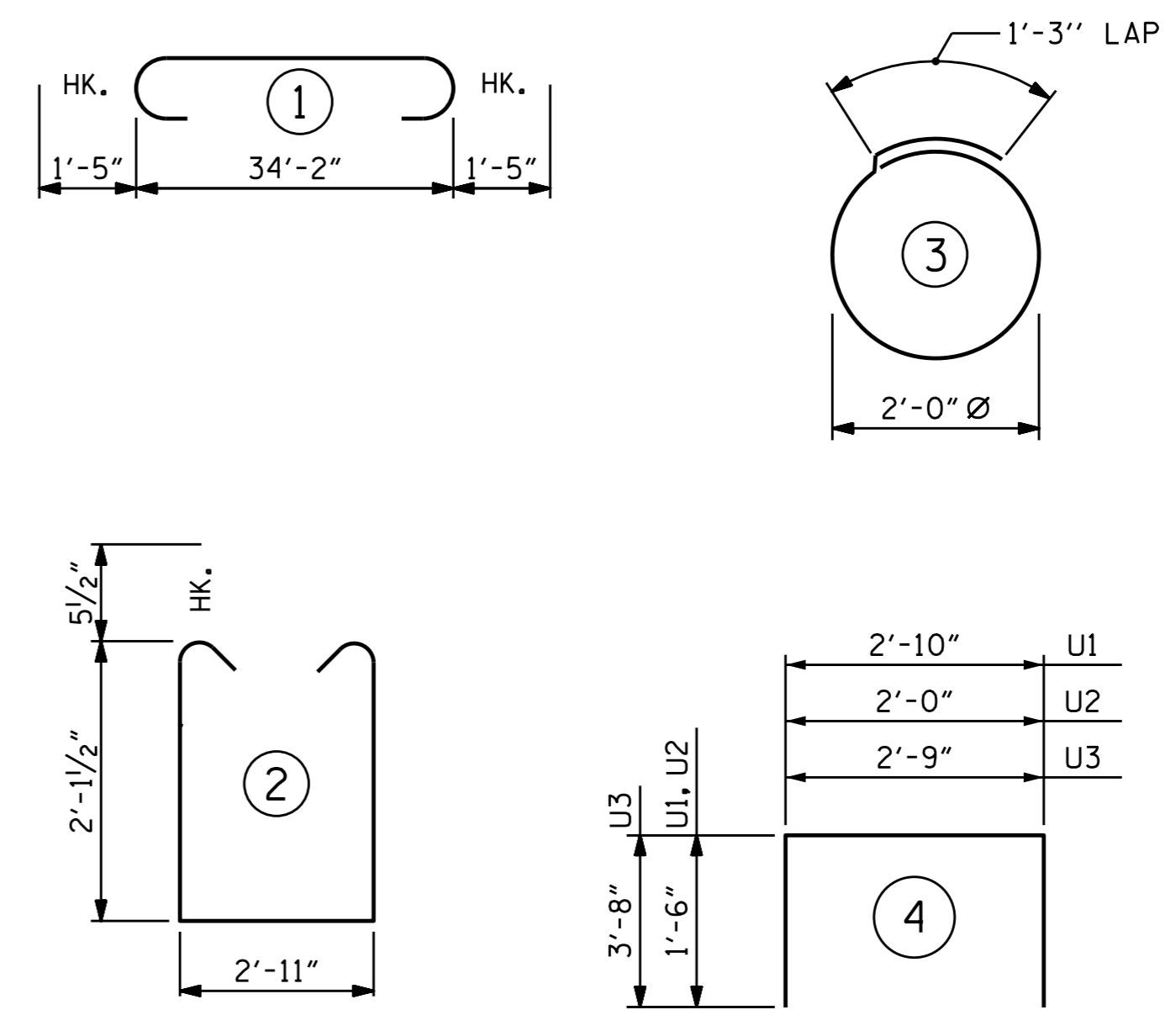
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-17
2			4			TOTAL SHEETS 20

ASSEMBLED BY : REZA KOUCHEKI DATE : 11/7/14
 CHECKED BY : K.P. SEDAİ DATE : 11/19/14
 DRAWN BY : DGE 5/10
 CHECKED BY : MKT 5/10



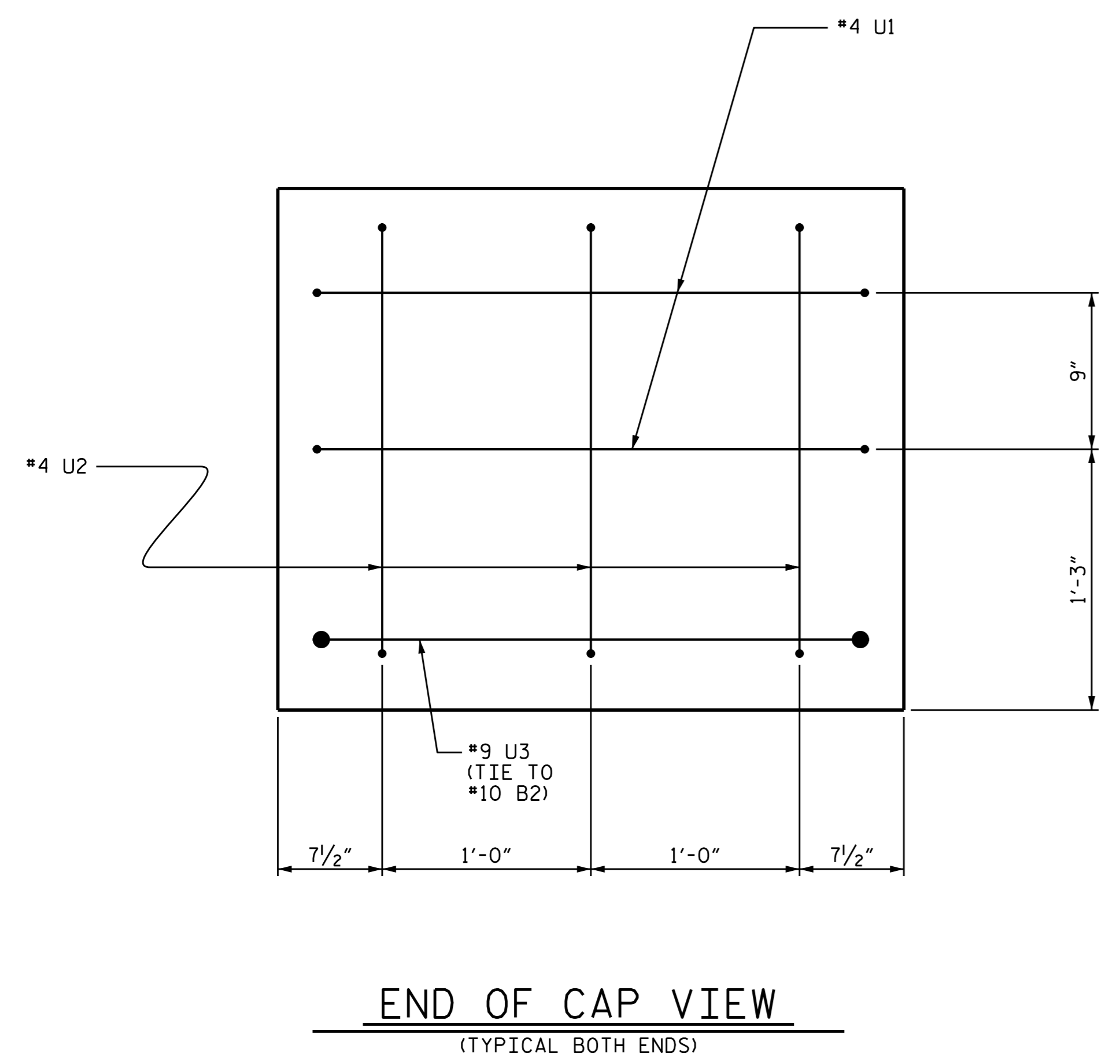
PILE SPLICE DETAILS

BAR TYPES

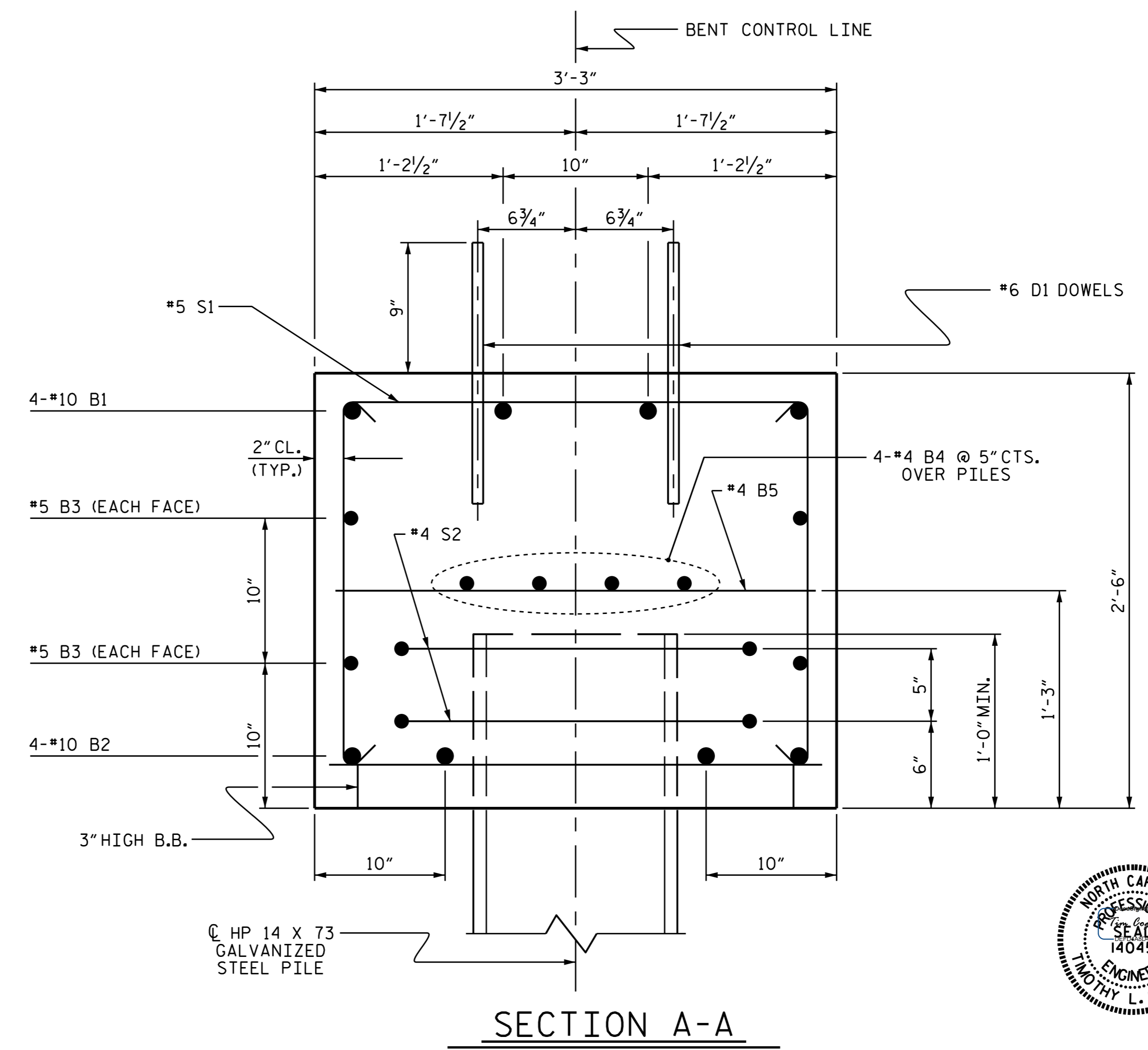


ALL BAR DIMENSIONS ARE OUT TO OUT.

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	9	#4	STR	2'-11"	18
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
REINFORCING STEEL (FOR ONE BENT)					2073 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
TOTAL CLASS A CONCRETE					10.4 C.Y.
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 7					LIN. FT. 490
PILE REDRIVES					7 EA.



END OF CAP VIEW
(TYPICAL BOTH ENDS)



SECTION A-A

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
 STATION: 13+96.00 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

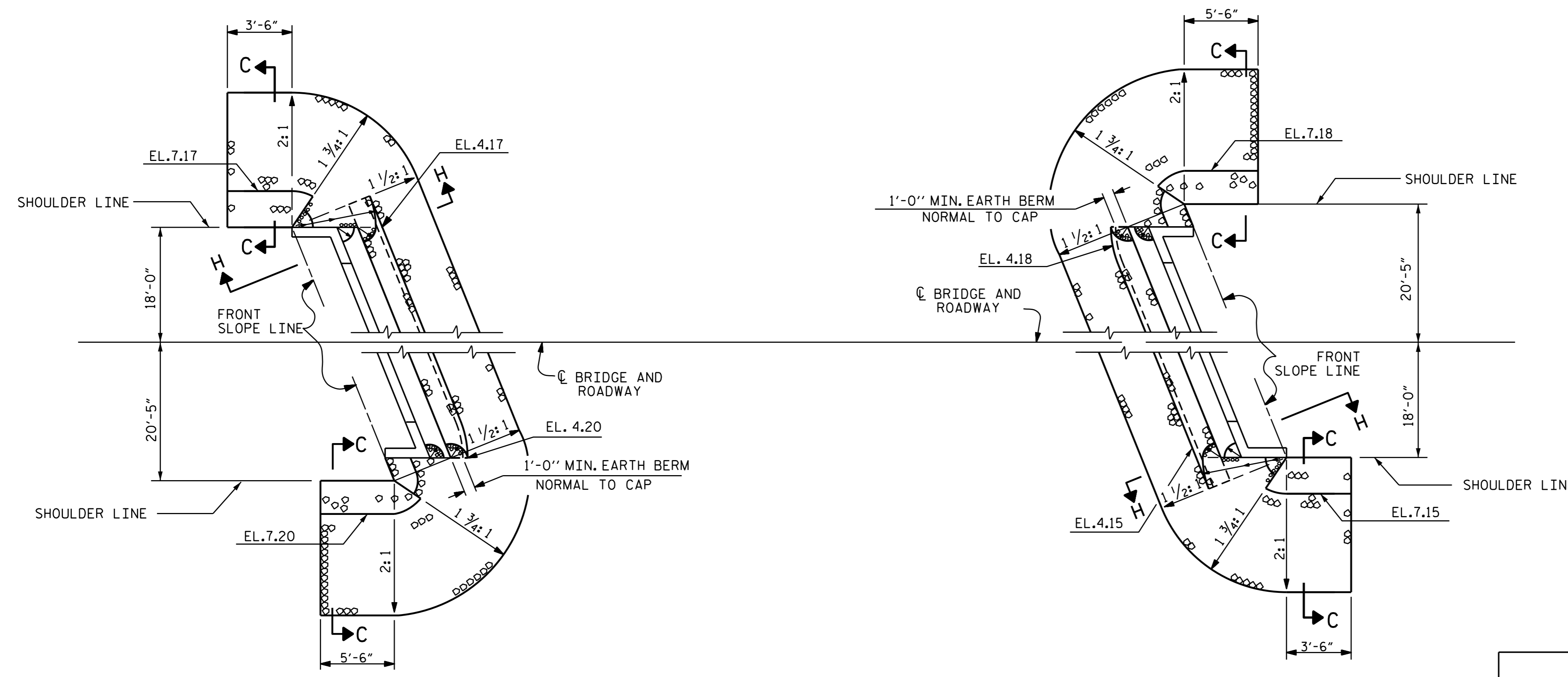
SUBSTRUCTURE
 BENT No. 1



DRAWN BY : REZA KOUCHEKI	DATE : 11/7/14
CHECKED BY : K.P. SEDAII	DATE : 11/19/14
DRAWN BY : DGE 05/10	
CHECKED BY : MKT 05/10	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			20

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

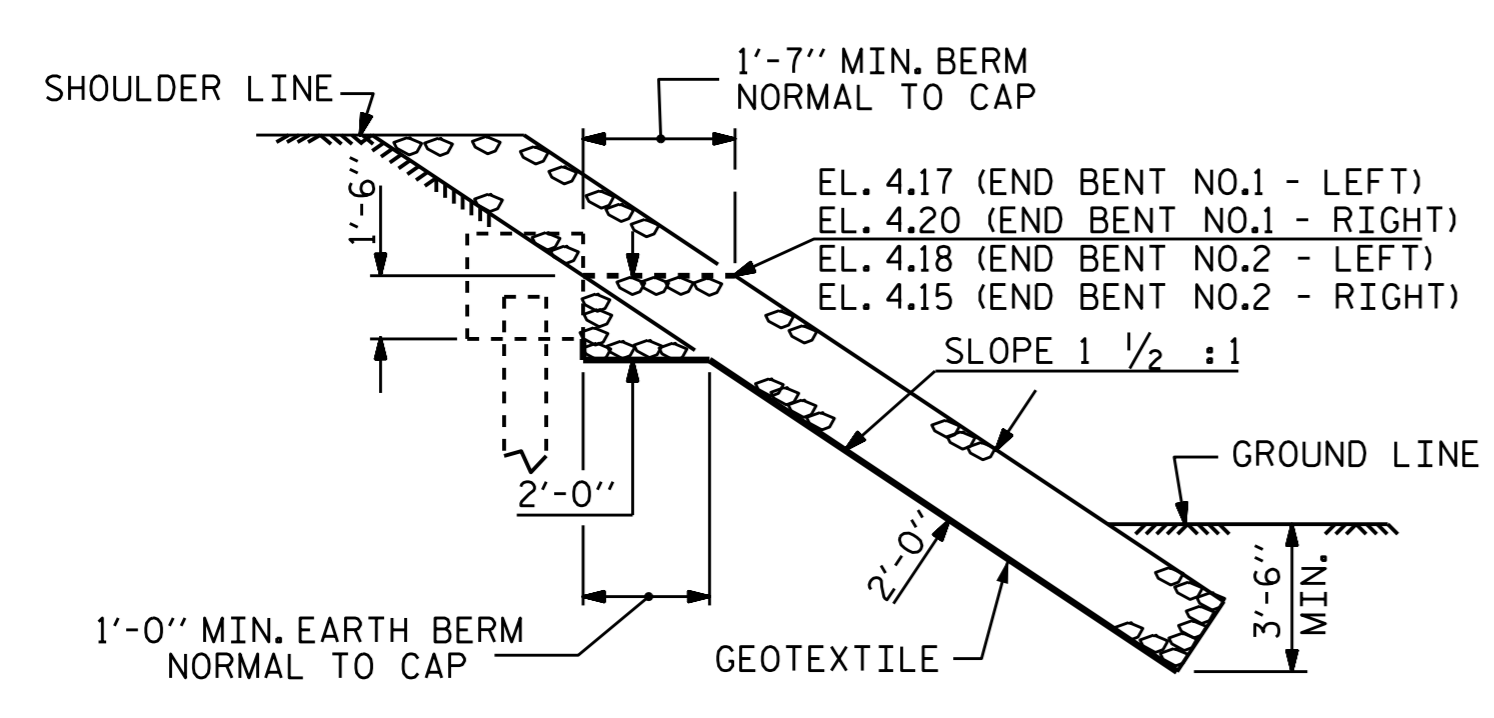


END BENT NO.1

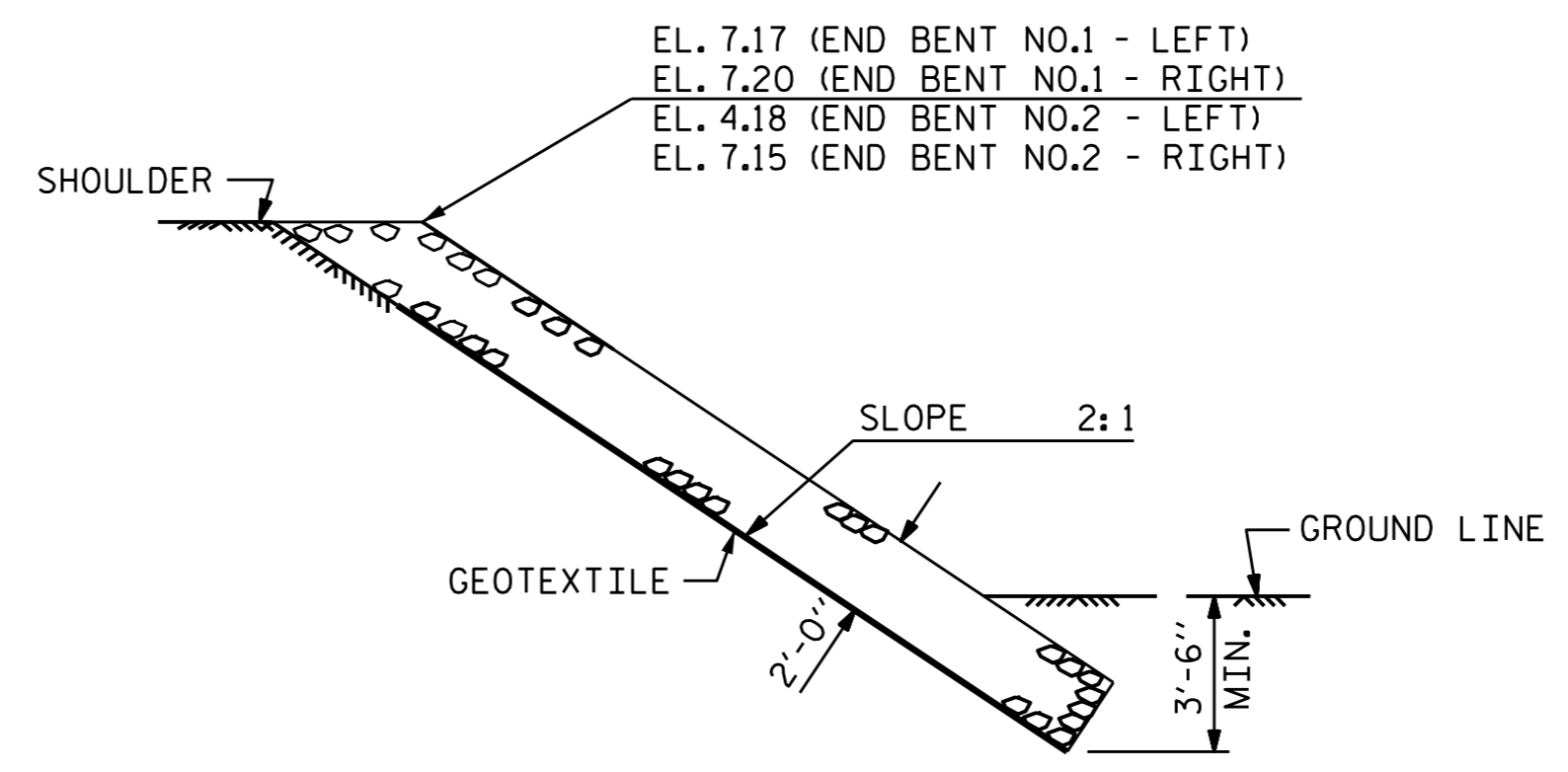
END BENT NO.2

PLAN OF RIP RAP

ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+96.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT NO.1	81	91
END BENT NO.2	81	91



SECTION H-H



SECTION C-C

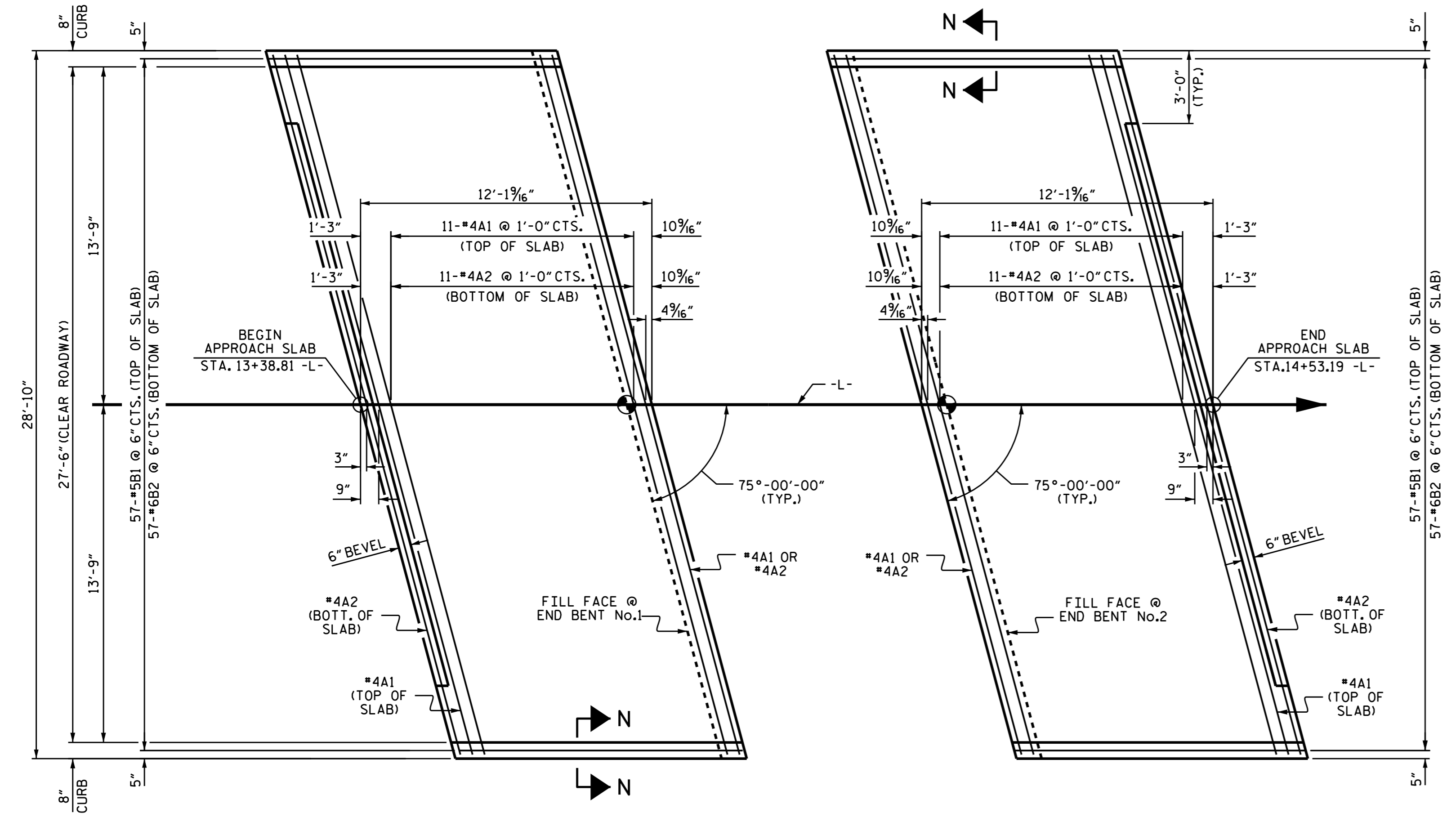
PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
STATION: 13+96.00 -L-



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

ASSEMBLED BY : REZA KOUICHEKI	DATE : 11/10/14
CHECKED BY : K.P. SEDAI	DATE : 11/19/14
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

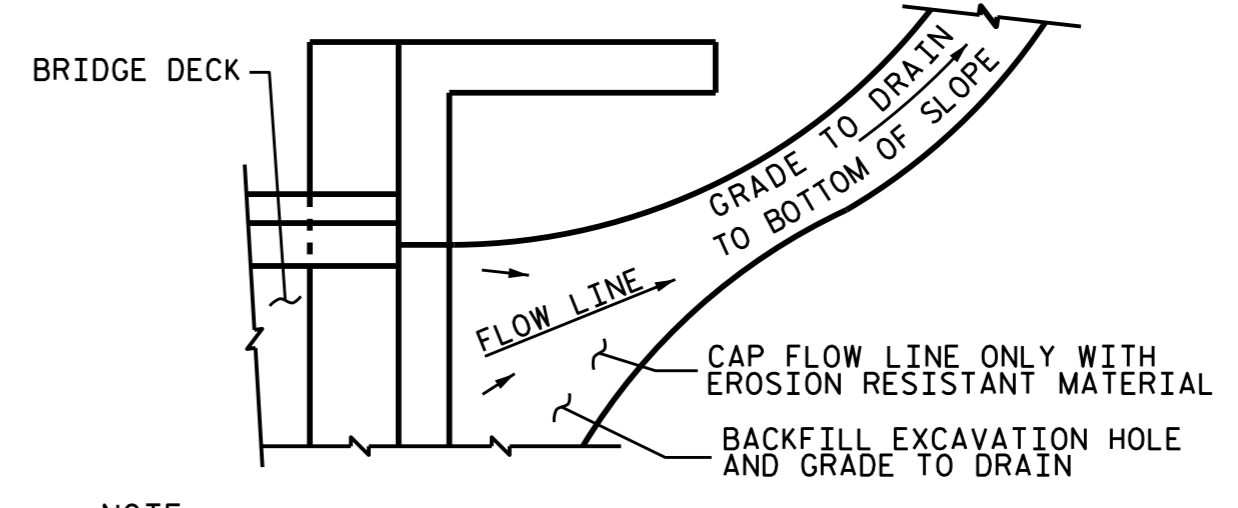
REVISIONS						SHEET NO. S-19
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			



PLAN @ END BENT No.1 PLAN @ END BENT No.2
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

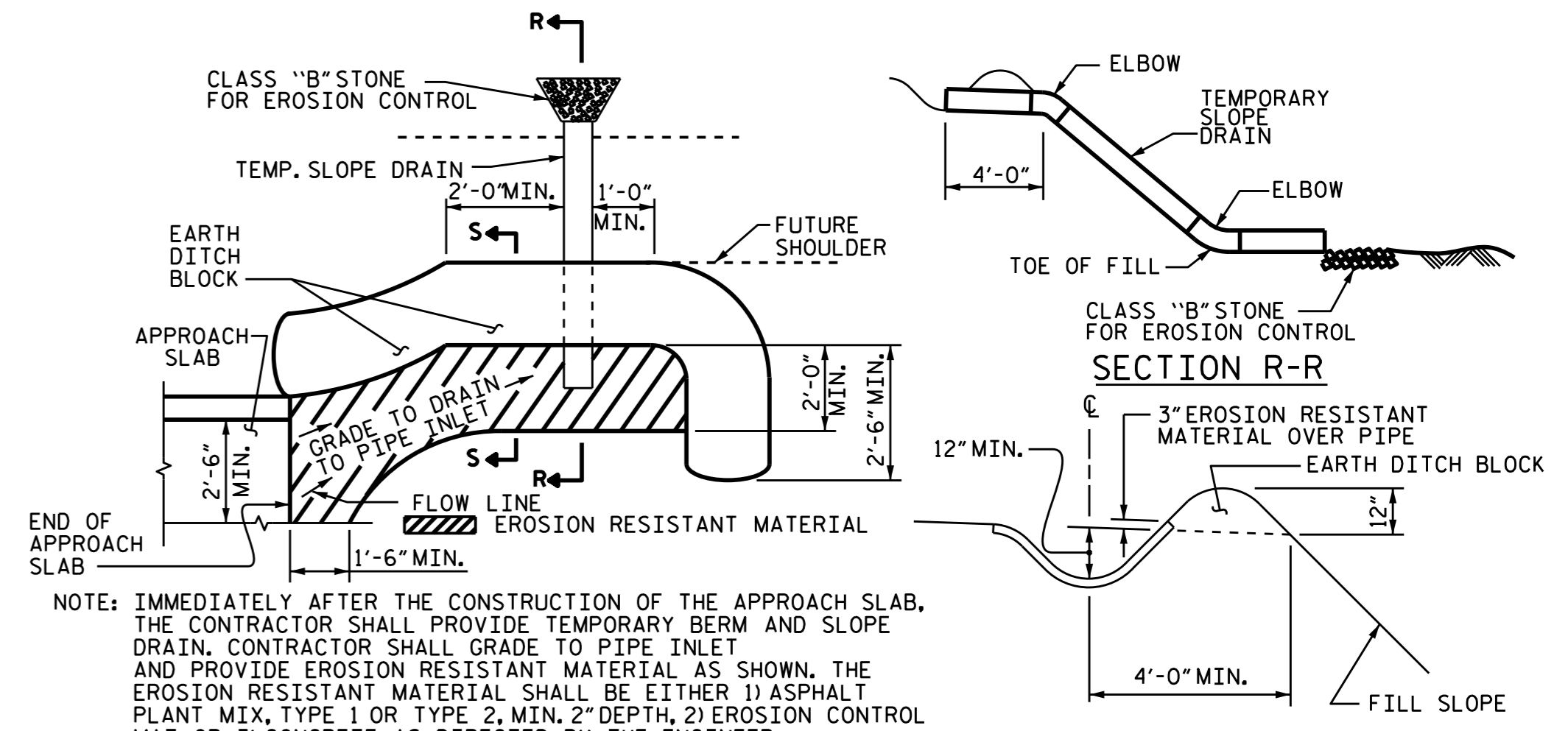
NOTES
FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.
APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL					
APPROACH SLAB AT EB No.1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	29'-6"	256
A2	26	#4	STR	29'-6"	256
*B1	57	#5	STR	11'-1"	659
B2	57	#6	STR	11'-7"	992
REINFORCING STEEL					LBS. 1248
* EPOXY COATED REINFORCING STEEL					LBS. 915
CLASS AA CONCRETE					C. Y. 16.7
APPROACH SLAB AT EB No.2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	29'-6"	256
A2	13	#4	STR	29'-6"	256
*B1	57	#5	STR	11'-1"	659
B2	57	#6	STR	11'-7"	992
REINFORCING STEEL					LBS. 1248
* EPOXY COATED REINFORCING STEEL					LBS. 915
CLASS AA CONCRETE					C. Y. 16.7



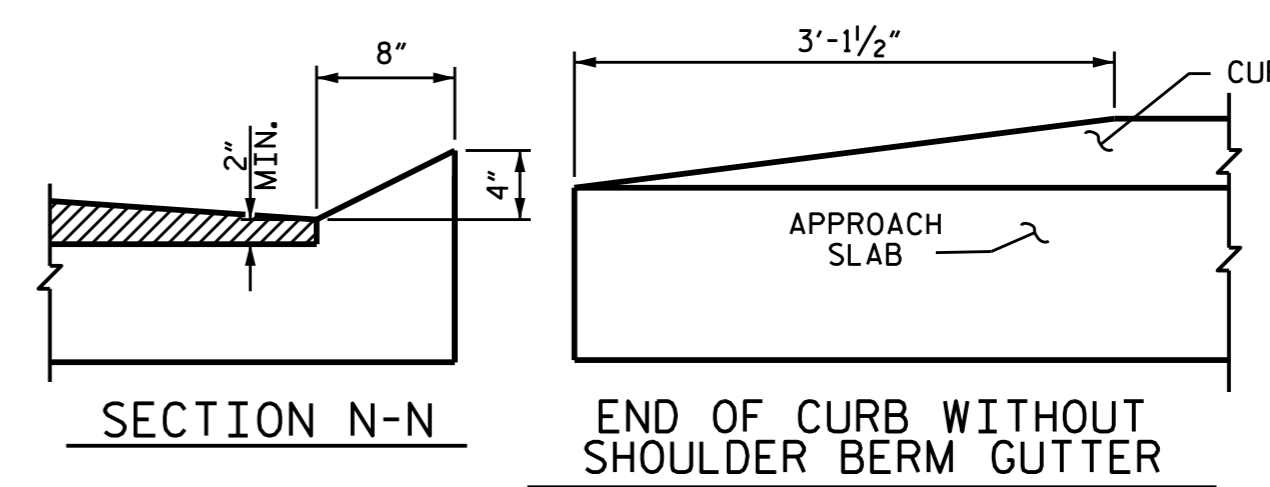
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



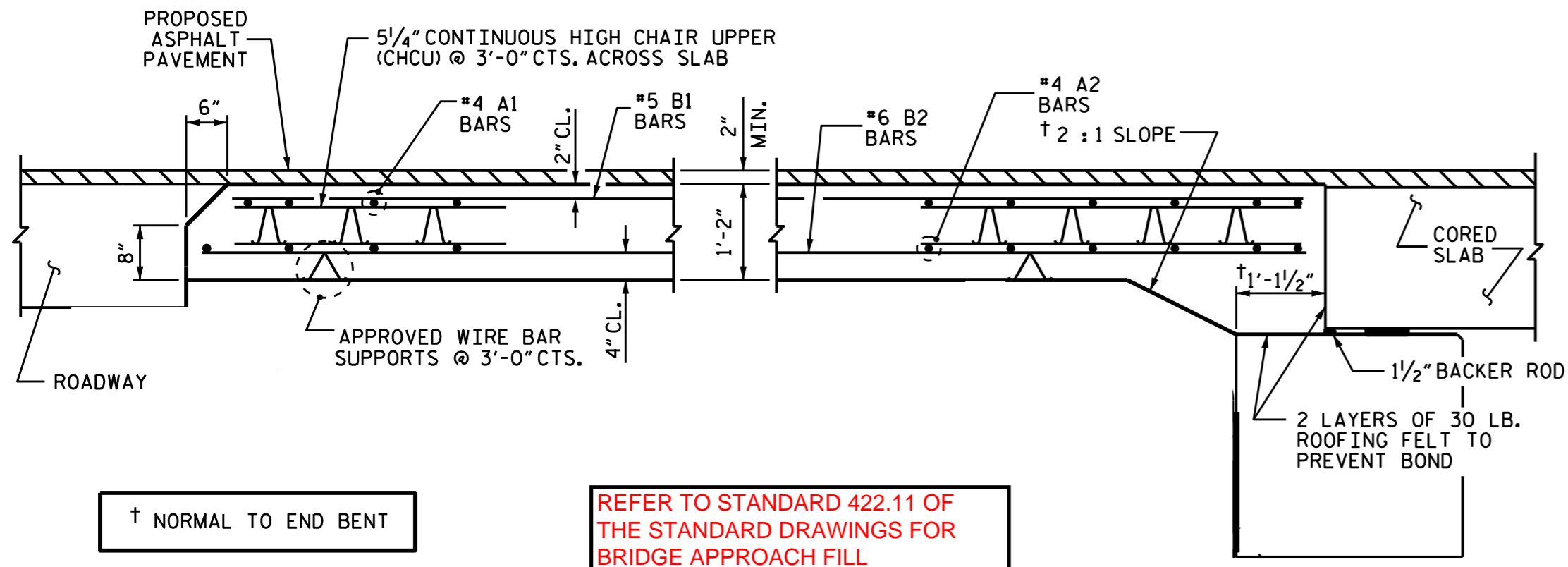
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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



CURB DETAILS

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



SECTION THRU SLAB

PROJECT NO. 17BP.1.R.65
PASQUOTANK COUNTY
STATION: 13+96.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
75° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-20
2			4			TOTAL SHEETS 20

ASSEMBLED BY : REZA KOUCHEKI DATE : 11/6/14
CHECKED BY : K.P. SEDAI DATE : 11/20/14
DRAWN BY : SHS/MAA 5-09 REV. 12-11 MAA/AAC
CHECKED BY : BCH 5-09 REV. 8-14 MAA/TMG

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990