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TIP PROJECT: B-5300

CONTRACT: C203775

STATE OF NORTH CAROLINA

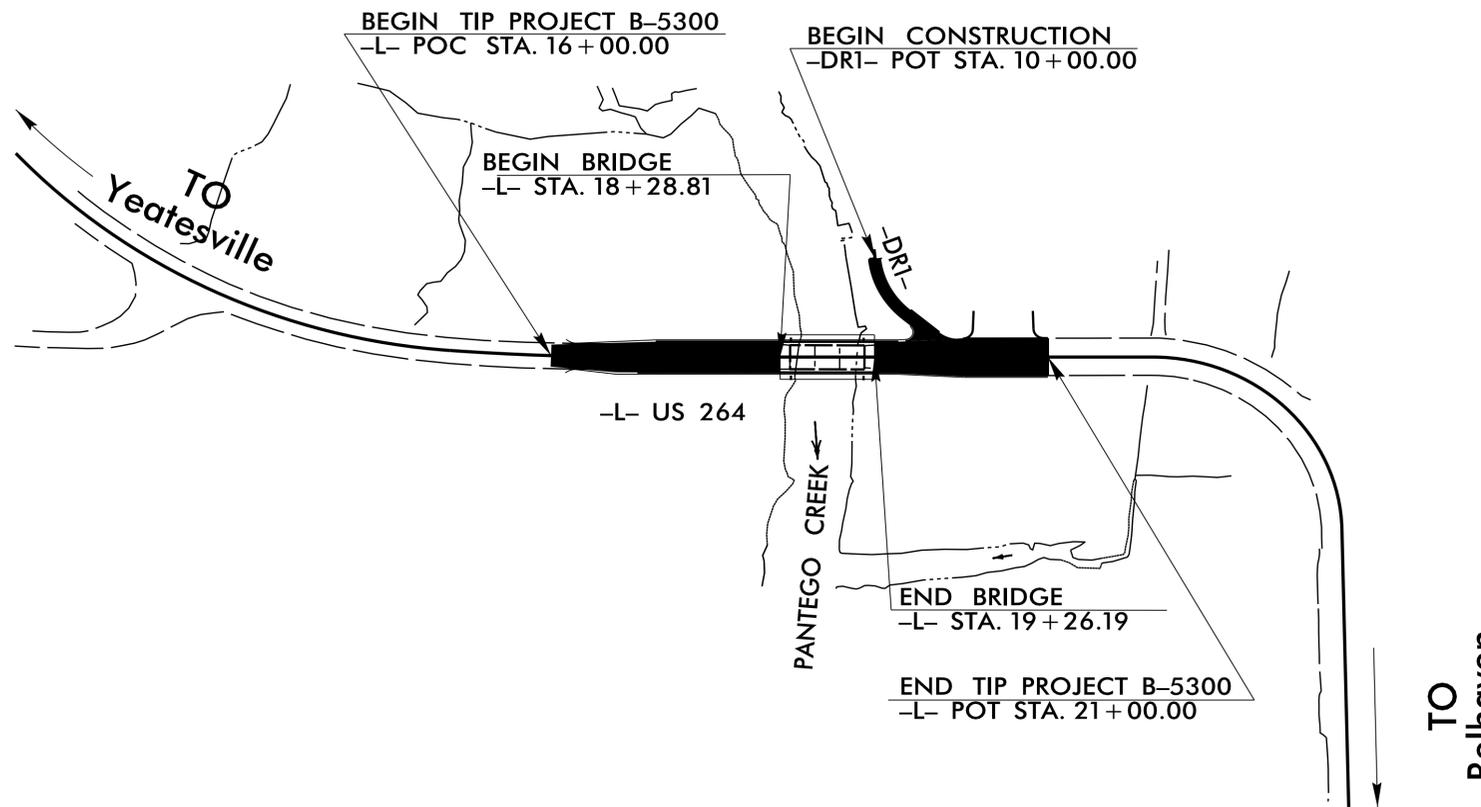
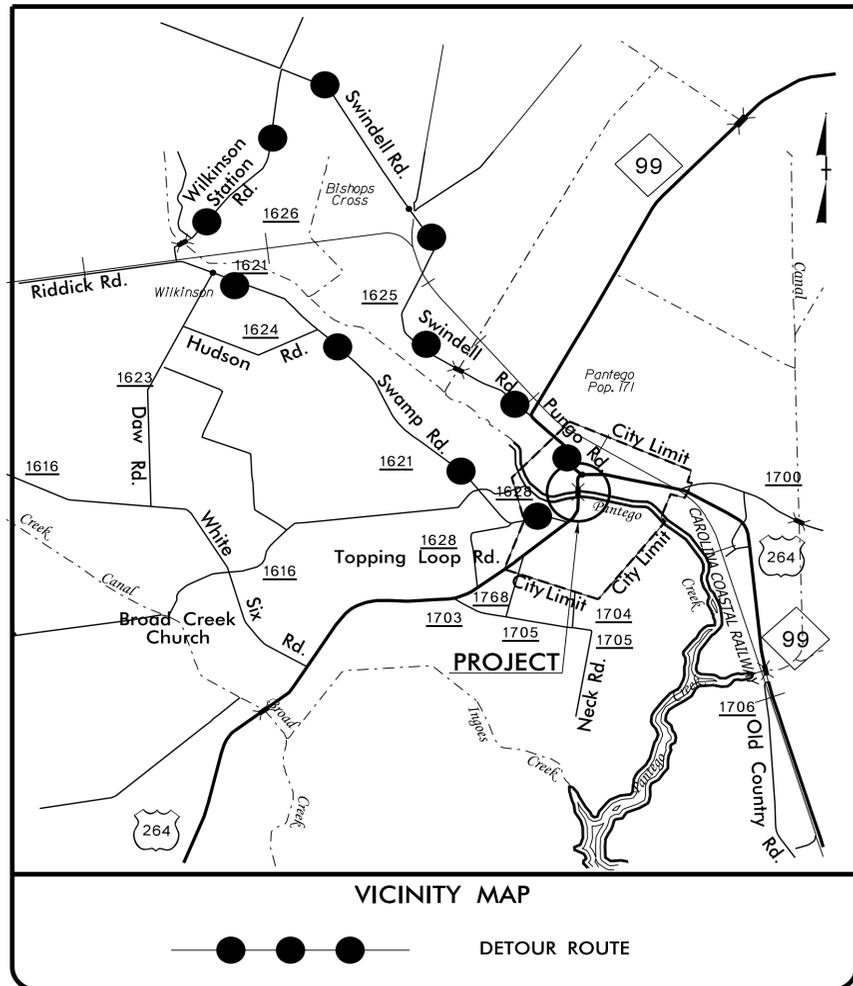
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

LOCATION: BRIDGE NO. 55 OVER PANTEGO CREEK ON US 264

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5300		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46000.1.1	BRSTP-0264(53)	P.E.	
46000.2.2		RW/UTIL	
46000.3.2		CONST.	
46000.3.3		CONST. (DETOUR)	



STRUCTURE



DESIGN DATA
 ADT 2016 = 4,339
 ADT 2036 = 7,035
 K = 10 %
 D = 60 %
 T = 14 % *
 V = 30 MPH
 * TTST = 8% DUAL = 6%
 FUNC CLASS = ARTERIAL
 SUBREGIONAL TIER

PROJECT LENGTH
 LENGTH ROADWAY TIP PROJECT B-5300 = 0.077 MILES
 LENGTH STRUCTURE TIP PROJECT B-5300 = 0.018 MILES
 TOTAL LENGTH TIP PROJECT B-5300 = 0.095 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
 STRUCTURES MANAGEMENT UNIT
 1000 BIRCH RIDGE DR.
 RALEIGH, N.C. 27610

2012 STANDARD SPECIFICATIONS

LETTING DATE :

MARCH 15, 2016

EMILY E. MURRAY, PE
 PROJECT ENGINEER

A. KEITH PASCHAL, PE
 PROJECT DESIGN ENGINEER

18+00

18+50

19+00

19+50

(+).1.2368% (-).1.1923%

PI = 18+70.00 -L-
EL = 6.95'
VC = 170'

SPAN A

SPAN B

FIXED

FIXED

FIXED

FIXED

UNCLASSIFIED
STRUCTURE
EXCAVATION

W.P. #1
FILL FACE @ END BENT 1
STA. 18+28.81 -L-
GRADE POINT EL. 6.30

BEGIN FRONT SLOPE
STA. 18+24.47 -L-
GRADE POINT EL. 6.28

LOW CHORD
EL. 3.71

16" PRESTRESSED
CONCRETE PILES
(TYP.)

1'-6" TO LIMITS
OF UNCLASSIFIED
STRUCTURE
EXCAVATION (TYP.)

1'-0" MIN. EARTH BERM (TYP.)

EL. 6.0±

EL. 2.0±

EXCAVATE
TO EL. 1.36
SLOPE TO
DRAIN

EL. 0.0±

16" PRESTRESSED
CONCRETE PILES

EL. -3.0±

EL. -9.0±

END BENT 1

BENT 1

SECTION ALONG -L-

1'-7" MIN. BERM (TYP.)

0100
EL. 5.28'

1/2:1 SLOPE
(TYP.)

EL. 6.0±

EL. 2.0±

EXCAVATE
TO EL. 1.36
SLOPE TO
DRAIN

EL. 0.0±

RIP RAP,
CLASS II WITH
GEOTEXTILE FOR
DRAINAGE (TYP.)

EL. -6.0±

EL. -5.0±

END BENT 2

W.P. #3
FILL FACE @ END BENT 2
STA. 19+26.19 -L-
GRADE POINT EL. 6.22

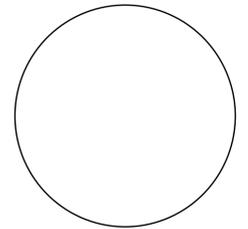
BEGIN FRONT SLOPE
STA. 19+30.89 -L-
GRADE POINT EL. 6.18

LOW CHORD
EL. 3.37

EL. 5.0±

APPROXIMATE
NATURAL
GROUND LINE

I HEREBY CERTIFY THAT THESE PLANS
ARE THE AS-BUILT PLANS.



1'-0" MIN. EARTH BERM
EL. 0.55 (LEVEL)

RIP RAP,
CLASS II WITH
GEOTEXTILE
FOR DRAINAGE
(TYP.)

1'-0" MIN. EARTH BERM
EL. 0.21 (LEVEL)

PANTEGO CREEK

BENT 1
CONTROL LINE

W.P. #2
C BENT 1
STA. 18+60.00 -L-

C BRIDGE I.D.
STA. 18+77.50 -L-

W.P. #3
FILL FACE @ END BENT 2
STA. 19+26.19 -L-

BEGIN FRONT SLOPE
STA. 19+30.89 -L-

TO NC 99

TO SR 1628

BEGIN APPROACH SLAB
STA. 18+04.81 -L-

W.P. #1
FILL FACE @ END BENT 1
STA. 18+28.81 -L-

BEGIN FRONT SLOPE
STA. 18+24.47 -L-

END APPROACH SLAB
STA. 19+50.19 -L-

PROJECT NO. B-5300
BEAUFORT COUNTY
STATION: 18+77.50 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 55

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE OVER PANTEGO
CREEK ON US 264 BETWEEN
SR 1628 (SWAMP RD.) AND
NC 99 (PUNGO RD.)

DocuSigned by:
Emily Murray
CAEB7AEDC8BAE0...

1/19/2016



DocuSigned by:
A. Keith Paschal
F8BBA2D08DFCAF...

1/19/2016



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-1
2			4			30

DRAWN BY: D. G. ELY DATE: 8/14/15
CHECKED BY: B. N. BARODAWALA DATE: 9/2/15
DESIGN ENGINEER OF RECORD: P. N. HOLDER DATE: 11/6/15

19-JAN-2016 13:24
R:\Structures\Plans\Final Plans\B-5300.SMU.GD.gdn
Kpaschal

PLAN
PILES NOT SHOWN FOR CLARITY

NOTES

FOR PILES, SEE GEOTECHNICAL SPECIAL PROVISIONS AND SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.

DRIVE PILES AT END BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

PILES AT END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 115 TONS PER PILE.

DRIVE PILES AT END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 195 TONS PER PILE.

PILES AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 155 TONS PER PILE.

DRIVE PILES AT BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 270 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION (-)11 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

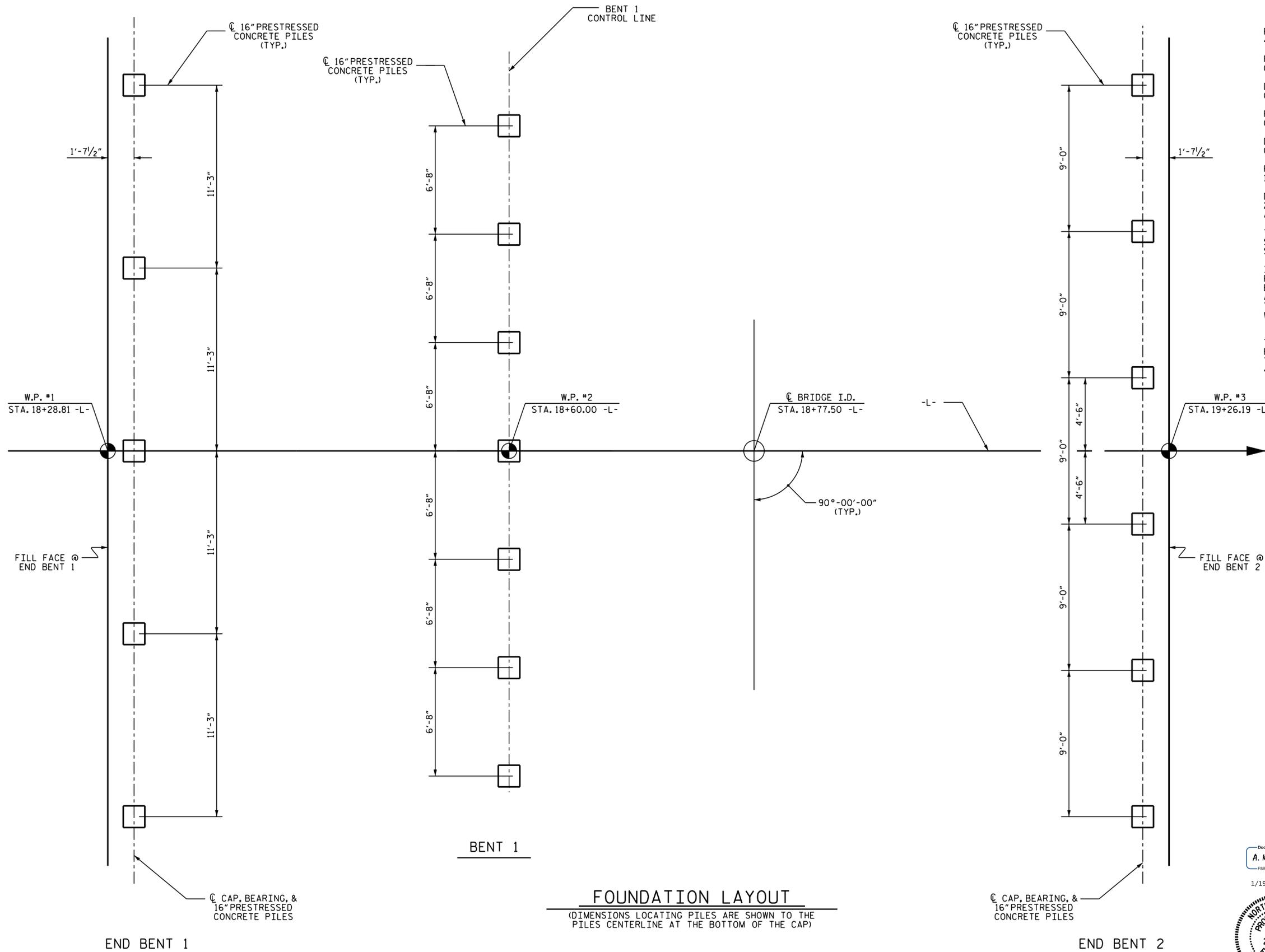
IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 55,000 TO 60,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT 1, END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3D(2) OF THE STANDARD SPECIFICATIONS.

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

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

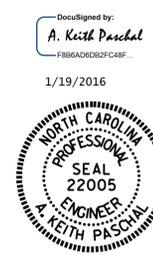
TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

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



PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE OVER PANTEGO
 CREEK ON US 264 BETWEEN
 SR 1628 (SWAMP RD.) AND
 NC 99 (PUNGO RD.)

DRAWN BY : D. G. ELY DATE : 8/17/15
 CHECKED BY : B. N. BARODAWALA DATE : 9/2/15
 DESIGN ENGINEER OF RECORD : P.N.HOLDER DATE : 11/6/15

REVISIONS						SHEET NO. 5-2
BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 30	
		3				
		4				

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	BRIDGE APPROACH SLABS	EPOXY COATED REINFORCING STEEL	16" PRESTRESSED CONCRETE PILES	PILE REDRIVES	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS	CLASSIC CONCRETE BRIDGE RAIL	ASBESTOS ASSESSMENT			
	LUMP SUM	EA.	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	EA.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.	NO.	LIN. FT.	LIN. FT.	LUMP SUM
SUPERSTRUCTURE				2711	3647	62.2		2364						LUMP SUM	14	420	14	910	290.59	
END BENT 1						19.3		3083	5	350	3	60	67							
BENT 1						14.3		3247	7	490	4									
END BENT 2						19.5		3102	6	420	3	57	64							
TOTAL	LUMP SUM	1	LUMP SUM	2711	3647	115.3	LUMP SUM	11796	18	1260	10	117	131	LUMP SUM	14	420	14	910	290.59	LUMP SUM

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.

THE EXISTING STRUCTURE CONSISTING OF 6 SPANS, 1 @ 12'-3", 2 @ 12'-9", 1 @ 12'-3", 1 @ 12'-8" AND 1 @ 12'-4" WITH A CLEAR ROADWAY WIDTH OF 26 FEET, AND A REINFORCED CONCRETE DECK ON I-BEAMS AND SUPPORTED BY A CONCRETE CAP AND TIMBER PILES AT THE END BENTS AND REINFORCED CONCRETE CAP AND TIMBER PILES AND 3 TIMBER CRUTCH BENTS AT MIDSPAN AT THE BENTS AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE, PLUS REMNANTS OF PRIOR STRUCTURES, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 18+77.50 -L-."

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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

THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

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

AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT AND BENT CAPS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE CONTRACTOR.

THIS STRUCTURE CONTAINS THE NECESSARY CORROSION PROTECTION REQUIRED FOR A CORROSIVE SITE.

CLASS AA CONCRETE SHALL BE USED IN ALL CAST-IN-PLACE BENT & END BENT CAPS, AND SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR.

FOR CALCIUM NITRITE CORROSION INHIBITOR, SEE SECTION 1000-4 (K) OF THE STANDARD SPECIFICATIONS.

ALL BAR SUPPORTS USED IN THE SIDEWALK, CLASSIC CONCRETE BRIDGE RAILS, BENT CAPS AND END BENT CAPS AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE CONCRETE IN THE PILES OF INTERIOR BENT 1 SHALL CONTAIN SILICA FUME. SILICA FUME SHALL BE SUBSTITUTED FOR 5% OF THE PORTLAND CEMENT BY WEIGHT. IF THE OPTION OF ARTICLE 1024-1 OF THE STANDARD SPECIFICATIONS TO PARTIALLY SUBSTITUTE CLASS F FLY ASH FOR PORTLAND CEMENT IS EXERCISED, THEN THE RATE OF FLY ASH SUBSTITUTION SHALL BE REDUCED TO 1.0 LB OF FLY ASH PER 1.0 LB OF CEMENT. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

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.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

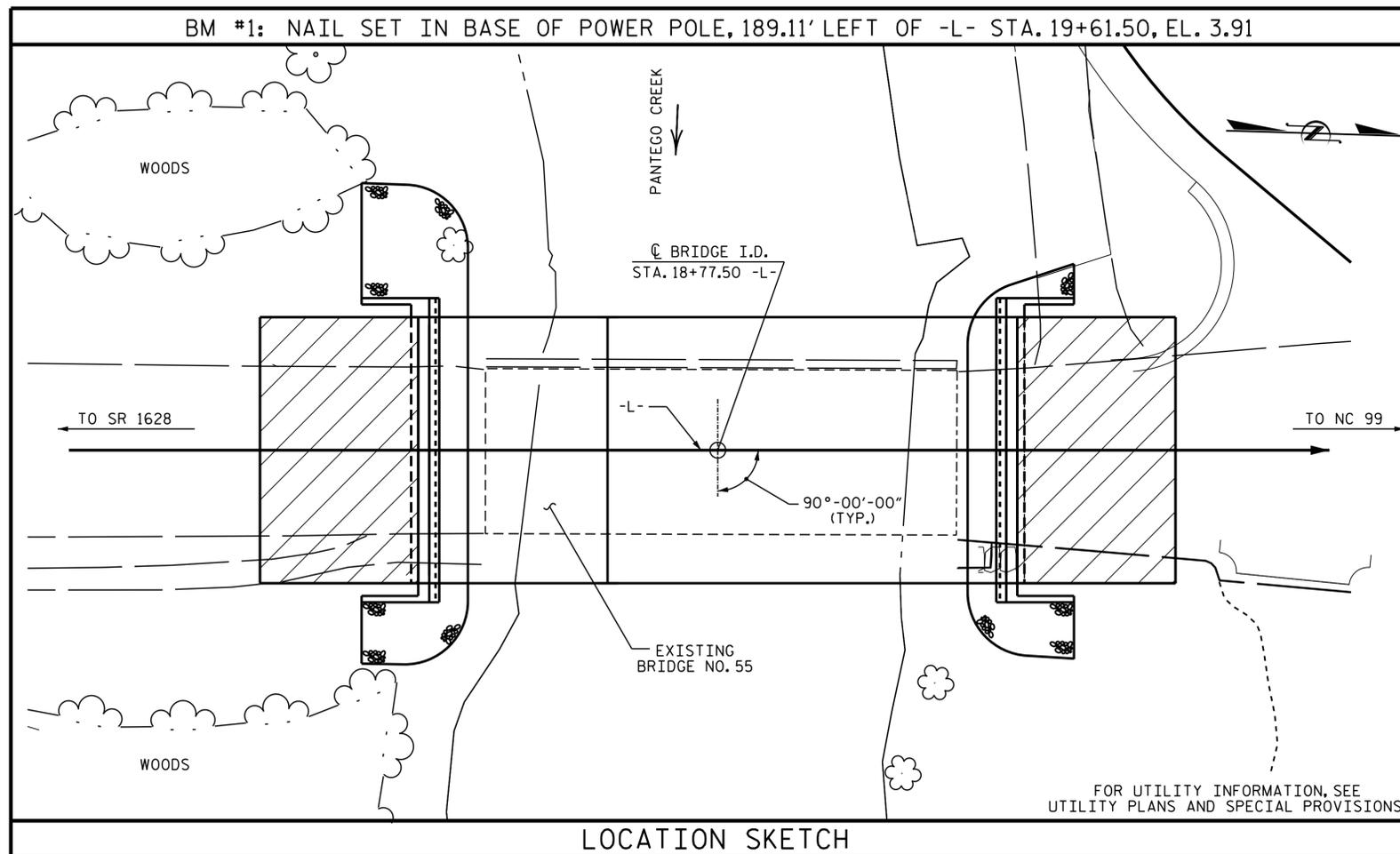
HYDRAULIC DATA

DESIGN DISCHARGE	=	2389 cfs
FREQUENCY OF DESIGN FLOOD	=	50 yrs
DESIGN HIGH WATER ELEVATION	=	4.50'
DRAINAGE AREA	=	23.0 sq. mi.
BASE DISCHARGE (Q100)	=	3050 cfs
BASE HIGH WATER ELEVATION	=	5.28'

*** OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE	=	2389 cfs
FREQUENCY OF OVERTOPPING FLOOD	=	50 yrs
OVERTOPPING FLOOD ELEVATION	=	4.50'

* -L- STA. 15+50.00



LOCATION SKETCH

DocuSigned by:
A. Keith Paschal
FBB9AD60BDFC48F...

2/2/2016



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE OVER PANTEGO
 CREEK ON US 264 BETWEEN
 SR 1628 (SWAMP RD.) AND
 NC 99 (PUNGO RD.)

REVISIONS						SHEET NO. S-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

DRAWN BY: D. G. ELY DATE: 8/17/15
 CHECKED BY: B. N. BARODAWALA DATE: 9/2/15
 DESIGN ENGINEER OF RECORD: P. N. HOLDER DATE: 11/6/15

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			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.03	--	1.75	0.256	1.05	B	I	32	0.480	1.41	A	EL	1.45	0.80	0.429	1.03	B	I	32.000		
	HL-93(0pr)	N/A	--	1.37	--	1.35	0.256	1.36	B	I	32	0.480	1.83	A	EL	1.45	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.42	51.133	1.75	0.256	1.46	B	I	32	0.480	1.65	A	EL	1.45	0.80	0.256	1.42	B	I	32.000		
	HS-20(0pr)	36.000	--	1.89	68.019	1.35	0.256	1.89	B	I	32	0.480	2.14	A	EL	1.45	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.12	42.117	1.40	0.256	4.00	B	I	32	0.480	4.04	A	EL	1.45	0.80	0.256	3.12	B	I	32.000	
		SNGARBS2	20.000	--	2.36	47.228	1.40	0.256	3.03	B	I	32	0.480	3.12	A	EL	1.45	0.80	0.256	2.36	B	I	32.000	
		SNAGRIS2	22.000	--	2.25	49.542	1.40	0.256	2.89	B	I	32	0.480	3.01	A	EL	1.45	0.80	0.256	2.25	B	I	32.000	
		SNCOTTS3	27.250	--	1.55	42.334	1.40	0.256	1.99	B	I	32	0.480	2.04	A	EL	1.45	0.80	0.256	1.55	B	I	32.000	
		SNAGGRS4	34.925	--	1.31	45.827	1.40	0.256	1.68	B	I	32	0.480	1.88	A	EL	1.45	0.80	0.256	1.31	B	I	32.000	
		SNS5A	35.550	--	1.28	45.583	1.40	0.256	1.64	B	I	32	0.480	1.99	A	EL	1.45	0.80	0.256	1.28	B	I	32.000	
		SNS6A	39.950	--	1.18	47.234	1.40	0.256	1.52	B	I	32	0.480	1.87	A	EL	1.45	0.80	0.256	1.18	B	I	32.000	
	SNS7B	42.000	--	1.13	47.299	1.40	0.256	1.44	B	I	32	0.480	1.91	A	EL	1.45	0.80	0.256	1.13	B	I	32.000		
	TTST	TNAGRIT3	33.000	--	1.44	47.637	1.40	0.256	1.85	B	I	32	0.480	2.22	A	EL	1.45	0.80	0.256	1.44	B	I	32.000	
		TNT4A	33.075	--	1.45	48.009	1.40	0.256	1.86	B	I	32	0.480	2.07	A	EL	1.45	0.80	0.256	1.45	B	I	32.000	
		TNT6A	41.600	--	1.19	49.609	1.40	0.256	1.53	B	I	32	0.480	2.00	A	EL	1.45	0.80	0.256	1.19	B	I	32.000	
		TNT7A	42.000	--	1.20	50.465	1.40	0.256	1.54	B	I	32	0.480	1.90	A	EL	1.45	0.80	0.256	1.20	B	I	32.000	
		TNT7B	42.000	--	1.25	52.529	1.40	0.256	1.60	B	I	32	0.480	1.86	A	EL	1.45	0.80	0.256	1.25	B	I	32.000	
		TNAGRIT4	43.000	--	1.18	50.916	1.40	0.256	1.52	B	I	32	0.480	1.79	A	EL	1.45	0.80	0.256	1.18	B	I	32.000	
TNAGT5A		45.000	--	1.11	50.121	1.40	0.256	1.43	B	I	32	0.480	1.93	A	EL	1.45	0.80	0.256	1.11	B	I	32.000		
TNAGT5B	45.000	3	1.10	49.410	1.40	0.256	1.41	B	I	32	0.480	1.69	A	EL	1.45	0.80	0.256	1.10	B	I	32.000			

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)

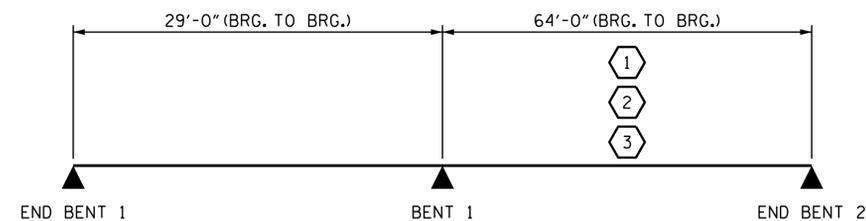
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

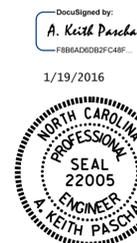
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-



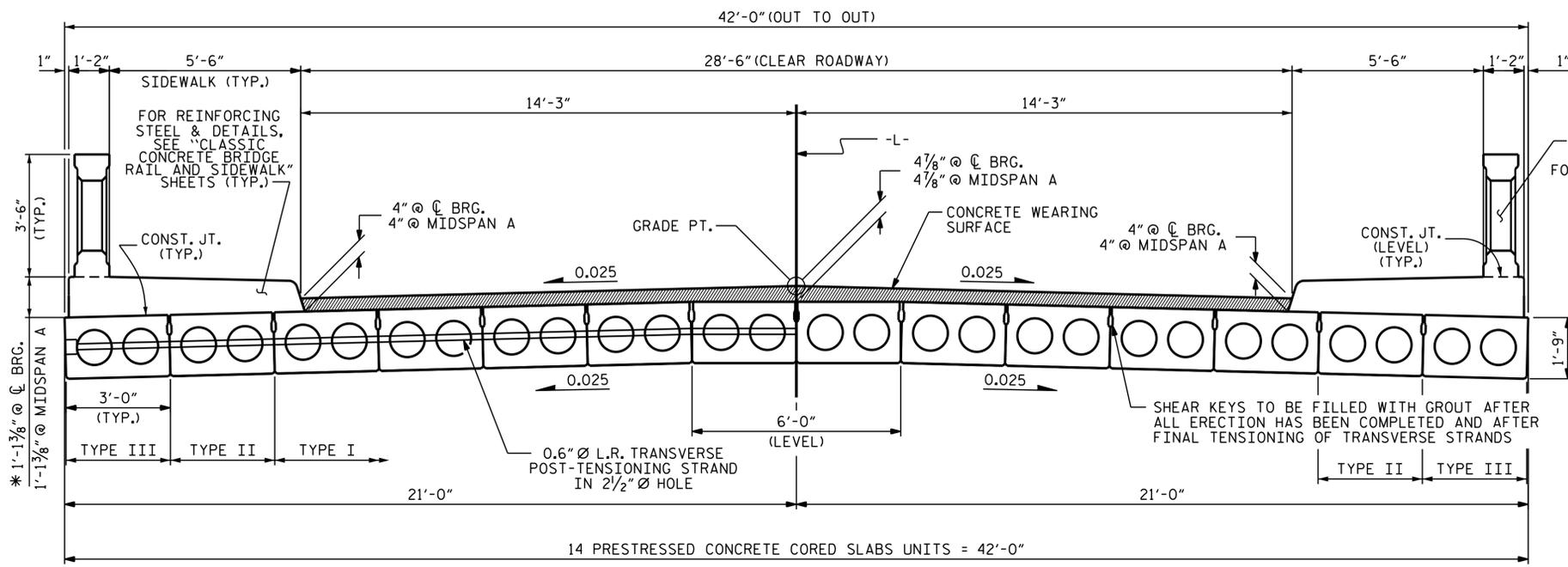
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR
PRESTRESSED
CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

ASSEMBLED BY : P.N.HOLDER DATE : 07/15
 CHECKED BY : K.P.SEDAI DATE : 08/15
 DESIGN ENGINEER OF RECORD : P.N.HOLDER DATE : 08/15

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

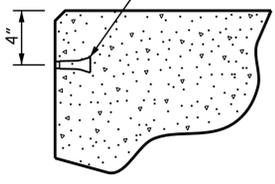
REVISIONS						SHEET NO. S-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



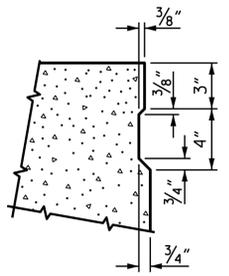
HALF SECTION AT INTERMEDIATE DIAPHRAGMS
 HALF SECTION THROUGH VOIDS
TYPICAL SECTION

* - THE MINIMUM & MAXIMUM CLASSIC RAIL HEIGHT AND CONCRETE WEARING SURFACE THICKNESS IS SHOWN. THE HEIGHT OF THE CLASSIC RAIL, SIDEWALK AND THE CONCRETE WEARING SURFACE THICKNESS VARIES WHILE THE TOP OF THE CLASSIC RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.

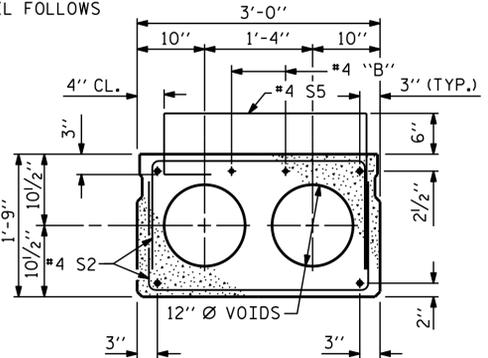
PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/8" SIZE TO BE DETERMINED BY CONTRACTOR.



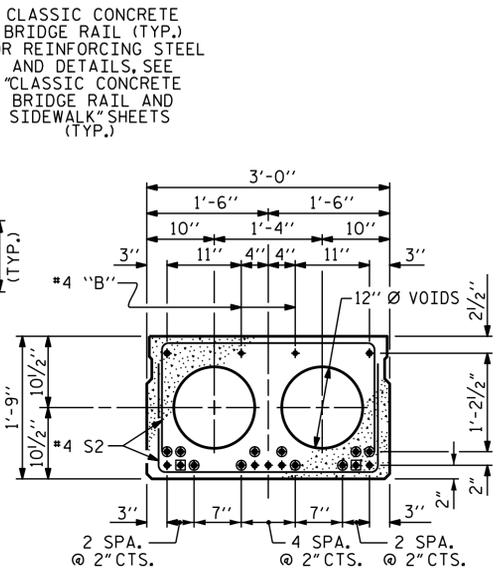
THREADED INSERT DETAIL



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



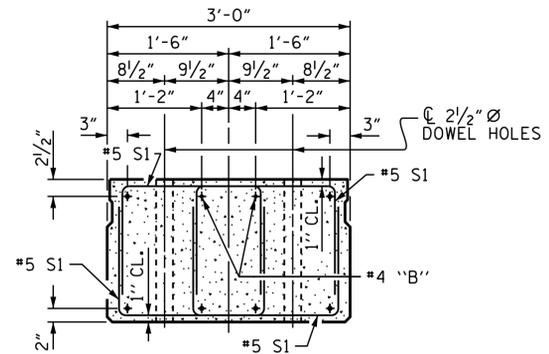
TYPE II SLAB SECTION
 (FOR PRESTRESSED STRAND LAYOUT, SEE TYPE I (SPAN A) SLAB SECTION.)



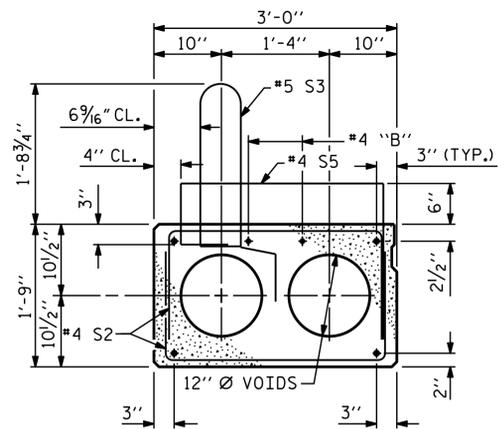
TYPE I SLAB SECTION (30' UNIT) (SPAN A)
 (9 STRANDS REQUIRED)

- 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.

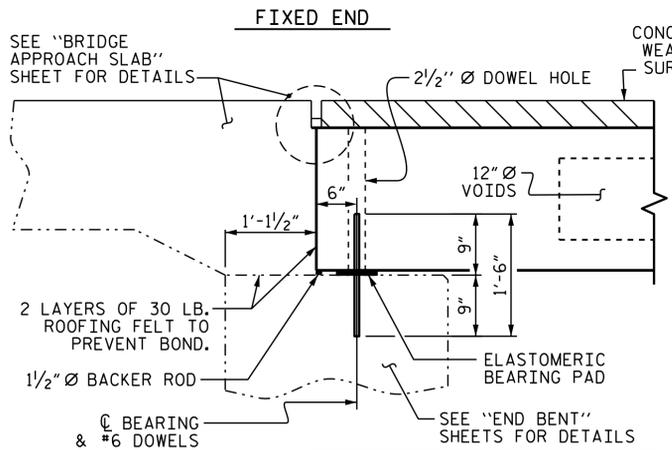
DEBONDING LEGEND
 0.6" Ø LOW RELAXATION STRAND LAYOUT



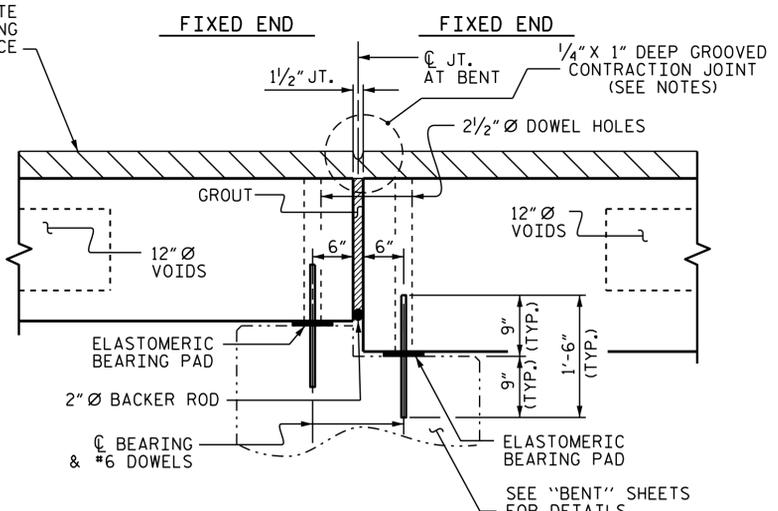
END ELEVATION
 SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN). INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



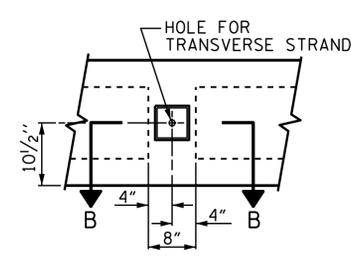
TYPE III SLAB SECTION
 (FOR PRESTRESSED STRAND LAYOUT, SEE TYPE I (SPAN A) SLAB SECTION.)



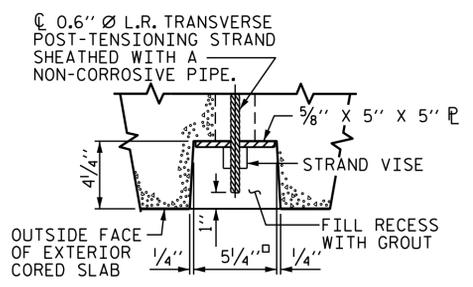
SECTION AT END BENT 1



SECTION AT BENT 1



ELEVATION VIEW



SECTION B-B

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

PROJECT NO. B-5300
 BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 1 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

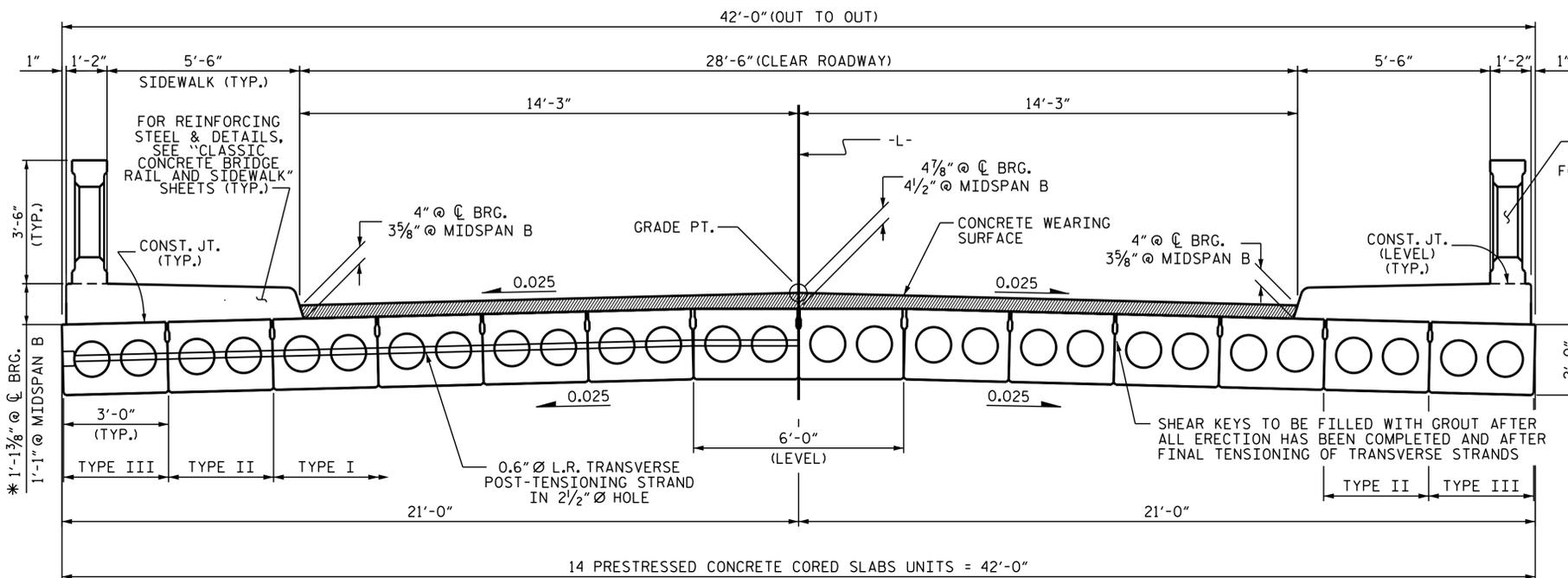
3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 SPAN A

ASSEMBLED BY :	P.N.HOLDER	DATE :	07/15
CHECKED BY :	K.P.SEDAI	DATE :	8/14/15
DESIGN ENGINEER OF RECORD:	P.N.HOLDER	DATE :	11/5/15



REVISIONS						SHEET NO. S-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

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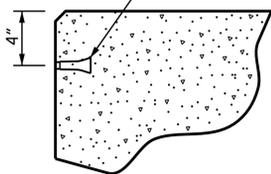
HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

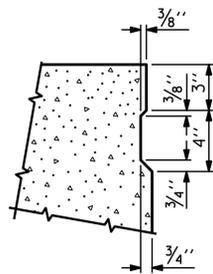
HALF SECTION
THROUGH VOIDS

* - THE MINIMUM & MAXIMUM CLASSIC RAIL HEIGHT AND CONCRETE WEARING SURFACE THICKNESS IS SHOWN. THE HEIGHT OF THE CLASSIC RAIL, SIDEWALK AND THE CONCRETE WEARING SURFACE THICKNESS VARIES WHILE THE TOP OF THE CLASSIC RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.

PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED $\frac{3}{8}$ " SIZE TO BE DETERMINED BY CONTRACTOR.

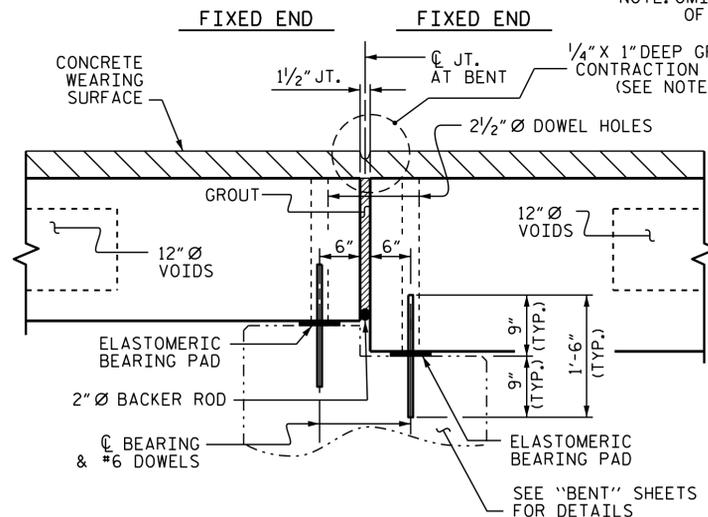


THREADED INSERT DETAIL

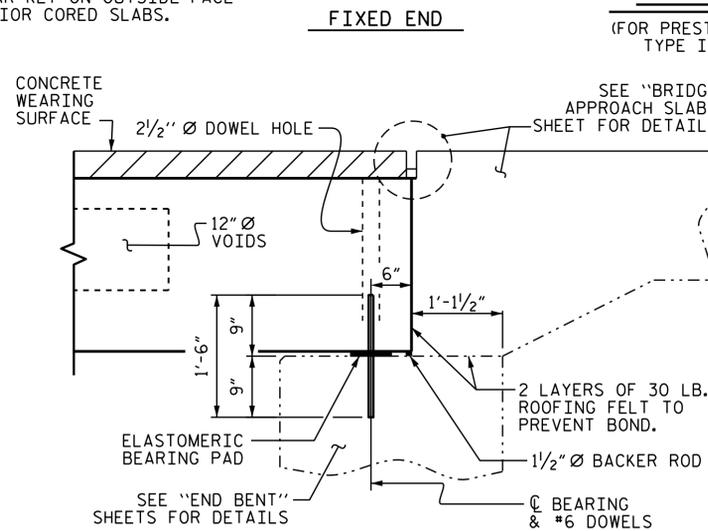


SHEAR KEY DETAIL

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

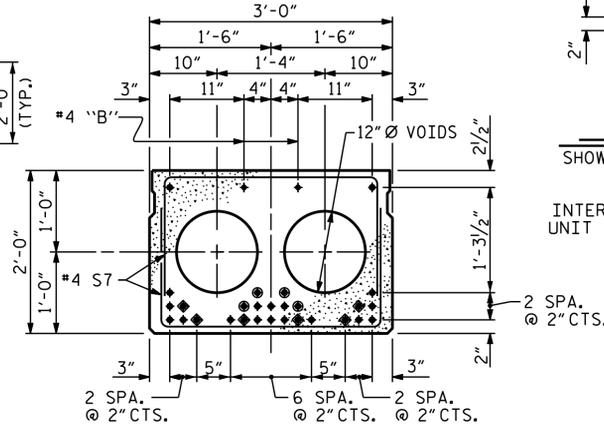


SECTION AT BENT 1



SECTION AT END BENT 2

CLASSIC CONCRETE BRIDGE RAIL (TYP.) FOR REINFORCING STEEL AND DETAILS, SEE "CLASSIC CONCRETE BRIDGE RAIL AND SIDEWALK" SHEETS (TYP.)



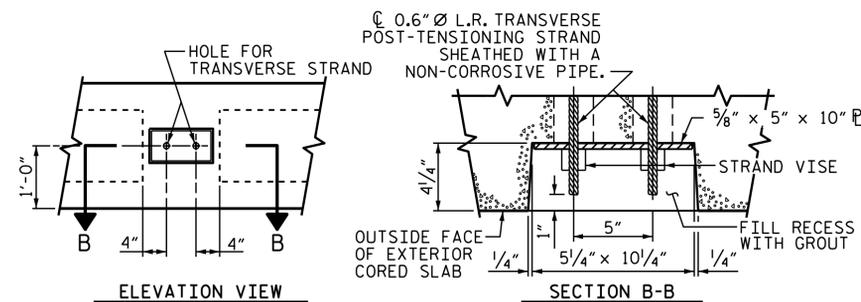
TYPE I SLAB SECTION
(65' UNIT) (SPAN B)

0.6" Ø LOW RELAXATION STRAND LAYOUT

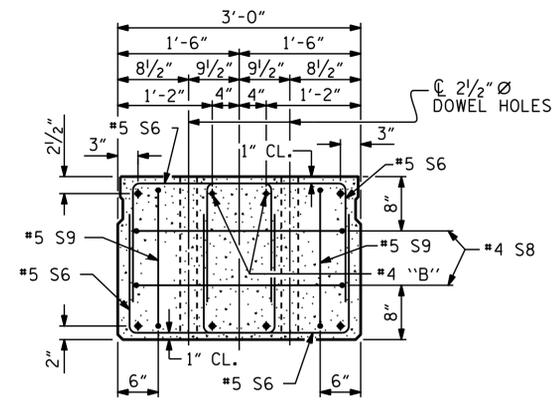
◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

● 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

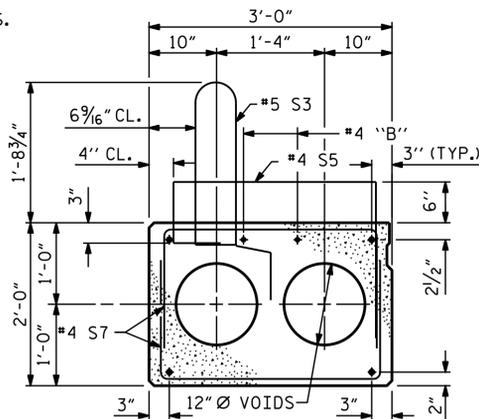


GROUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



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.



TYPE III SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE TYPE I (SPAN B) SLAB SECTION.)

ASSEMBLED BY : P.N.HOLDER DATE : 07/15
CHECKED BY : K.P.SEDAI DATE : 8/14/15
DESIGN ENGINEER OF RECORD: P.N.HOLDER DATE : 8/26/15

19-JAN-2016 13:24
RA:Structures\Plans\Final Plans\B-5300.SMU.CS.dgn
kpaschal

DocuSigned by:
A. Keith Paschal
F8B8AD02F2CF4F

1/19/2016



PROJECT NO. B-5300
BEAUFORT COUNTY
STATION: 18+77.50 -L-

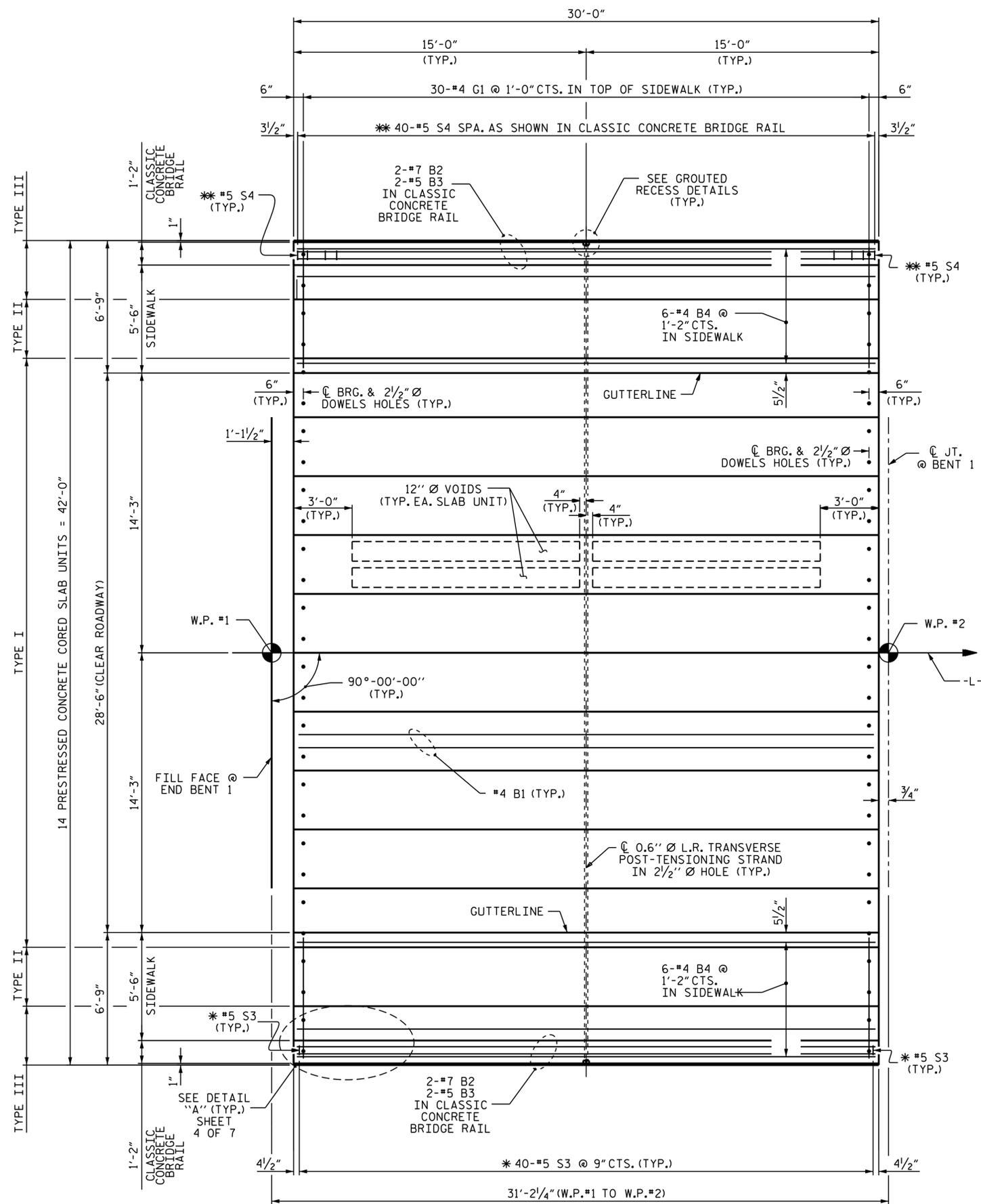
SHEET 2 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

REVISIONS						SHEET NO. S-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

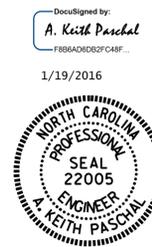


PLAN OF SPAN "A"

* - TYP. EACH "TYPE III CORED SLAB UNIT"
 ** - TYP. EACH "CLASSIC CONCRETE BRIDGE RAIL"

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 3 OF 7

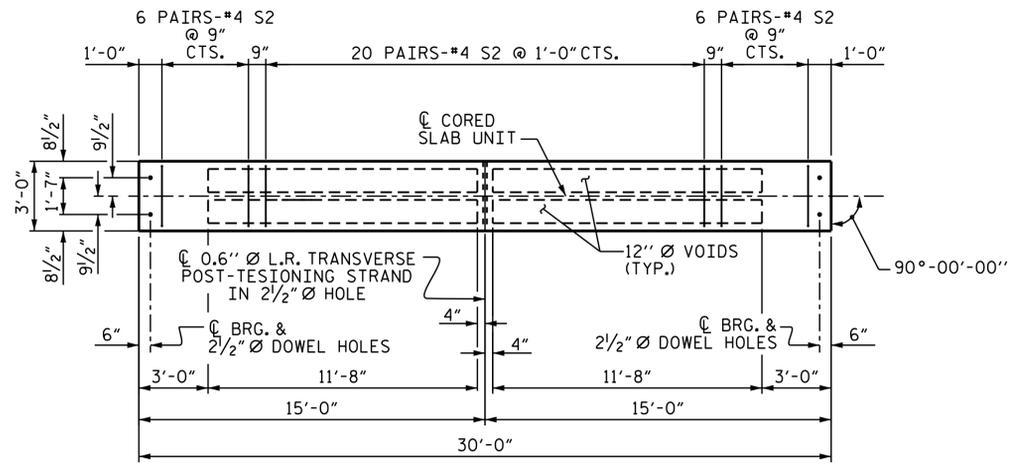


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN OF 30' UNIT
 28'-6" CLEAR ROADWAY
 SPAN "A"**

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7	
1			3			TOTAL SHEETS	
2			4			30	

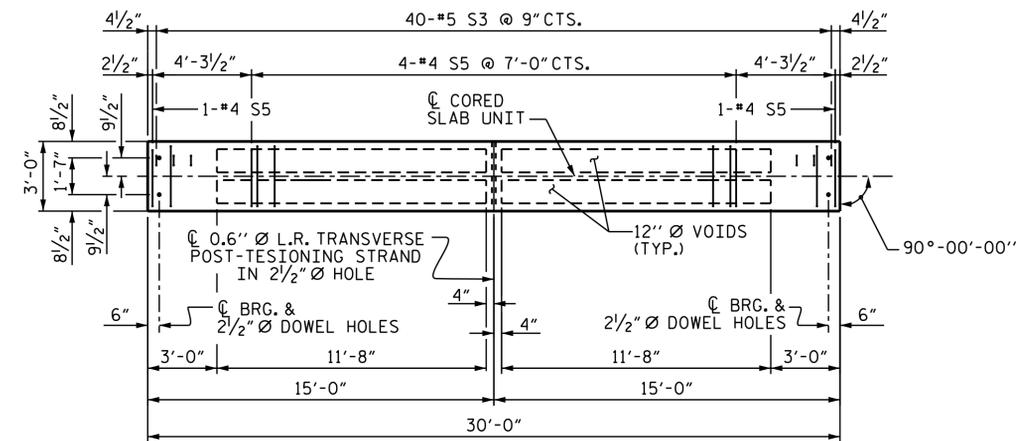
ASSEMBLED BY : P.N.HOLDER DATE : 07/15
 CHECKED BY : K.P.SEDAI DATE : 08/17/15
 DESIGN ENGINEER OF RECORD : P.N.HOLDER DATE : 08/26/15

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
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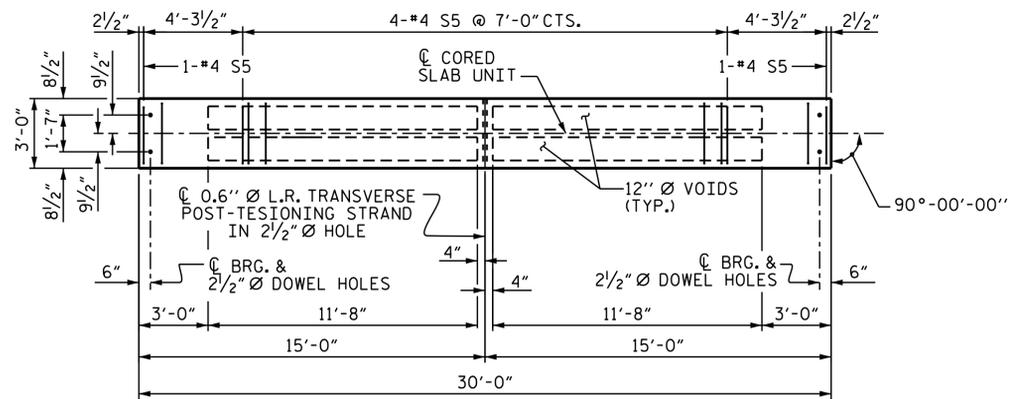
PLAN OF TYPE I CORED SLAB UNIT

FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "DETAIL A"
SEE "TYPE I SLAB SECTION (30' UNIT) (SPAN A)" SHEET 1 OF 7



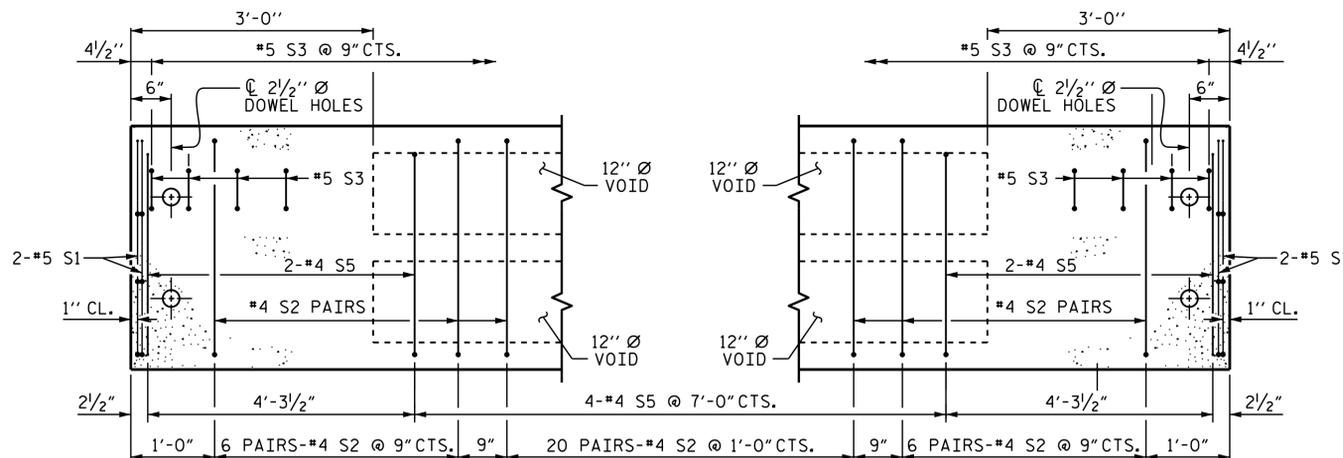
PLAN OF TYPE III CORED SLAB UNIT

FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "DETAIL A"
FOR LOCATION OF S2 BARS, SEE "PLAN OF TYPE I CORED SLAB UNIT"



PLAN OF TYPE II CORED SLAB UNIT

FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "DETAIL A"
FOR LOCATION OF S2 BARS, SEE "PLAN OF TYPE I CORED SLAB UNIT"



TYPE III @ END BENT

TYPE II SIMILAR EXCEPT OMIT S3 BARS
TYPE I SIMILAR EXCEPT OMIT S3 & S5 BARS
SEE "PLAN OF TYPE III CORED SLAB UNIT"

TYPE III @ BENT

TYPE II SIMILAR EXCEPT OMIT S3 BARS
TYPE I SIMILAR EXCEPT OMIT S3 & S5 BARS
SEE "PLAN OF TYPE III CORED SLAB UNIT"

DETAIL "A"

PROJECT NO. B-5300
BEAUFORT COUNTY
STATION: 18+77.50 -L-

SHEET 4 OF 7

DocuSigned by:
A. Keith Paschal
F88A4ED82FC4BF...

1/19/2016



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

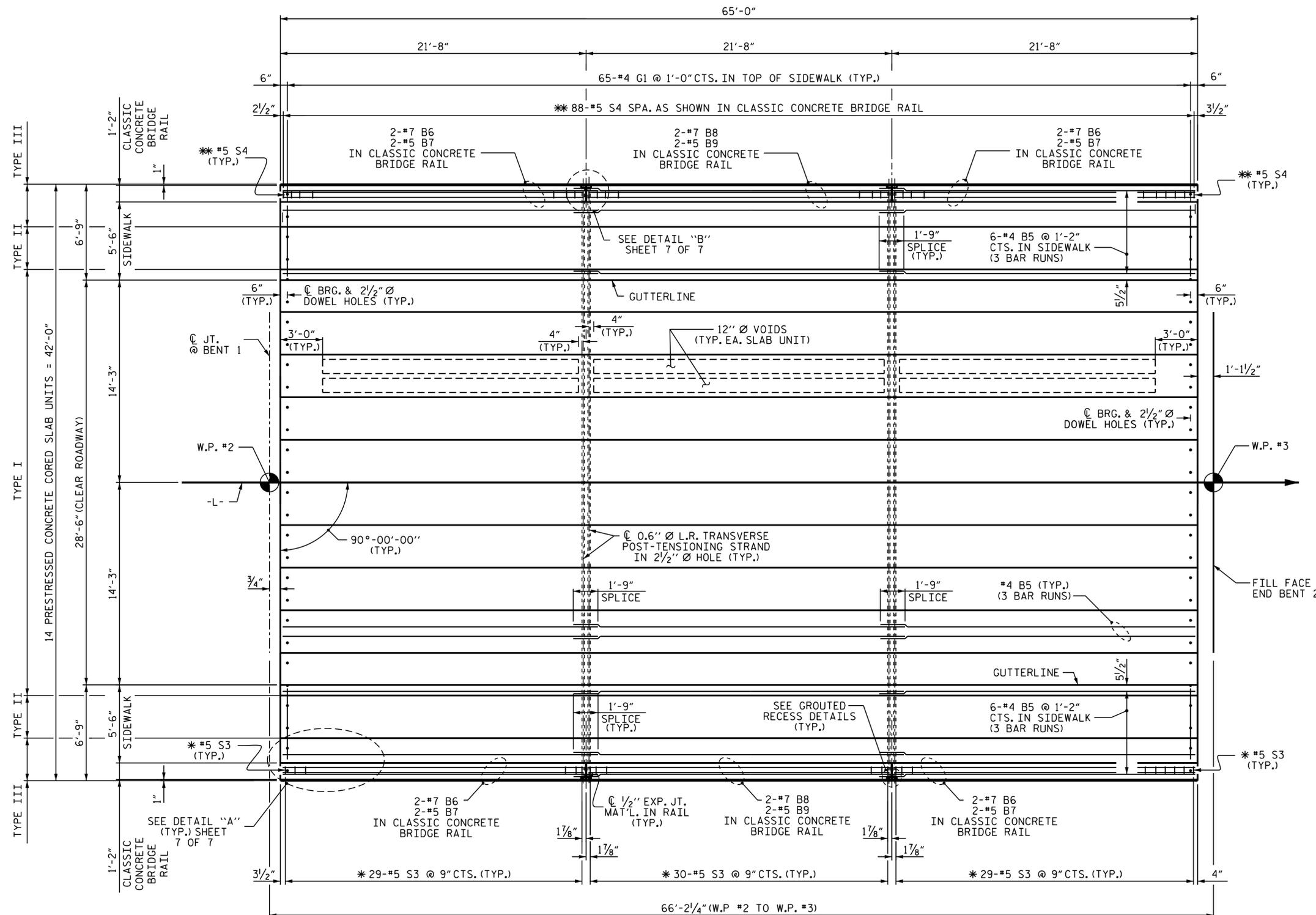
PLAN OF 30' UNIT
SPAN "A" DETAILS

DRAWN BY : P.N.HOLDER DATE : 07/15
CHECKED BY : K.P.SEDAI DATE : 08/17/15
DESIGN ENGINEER OF RECORD : P.N.HOLDER DATE : 08/26/15

19-JAN-2016 13:24
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Kpaschal

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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			30



PLAN OF SPAN B

* - TYP. EACH "TYPE III CORED SLAB UNIT"
 ** - TYP. EACH "CLASSIC CONCRETE BRIDGE RAIL"

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 5 OF 7

DocuSigned by:
A. Keith Paschal
 F886A0E02FC48F...

1/19/2016



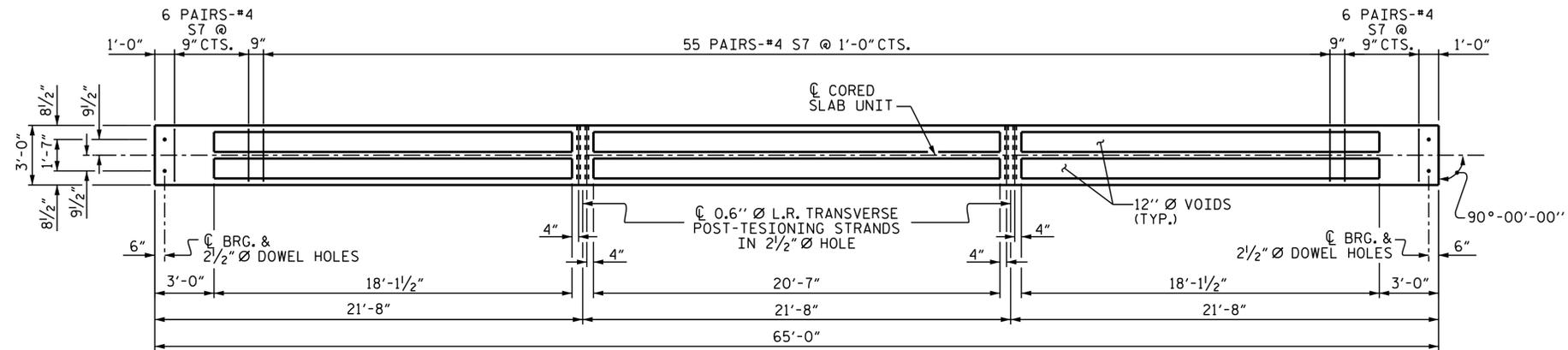
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**PLAN OF 65' UNIT
 28'-6" CLEAR ROADWAY
 SPAN "B"**

DRAWN BY : P.N.HOLDER DATE : 07/15
 CHECKED BY : K.P.SEDAI DATE : 08/17/15
 DESIGN ENGINEER OF RECORD : P.N.HOLDER DATE : 08/27/15

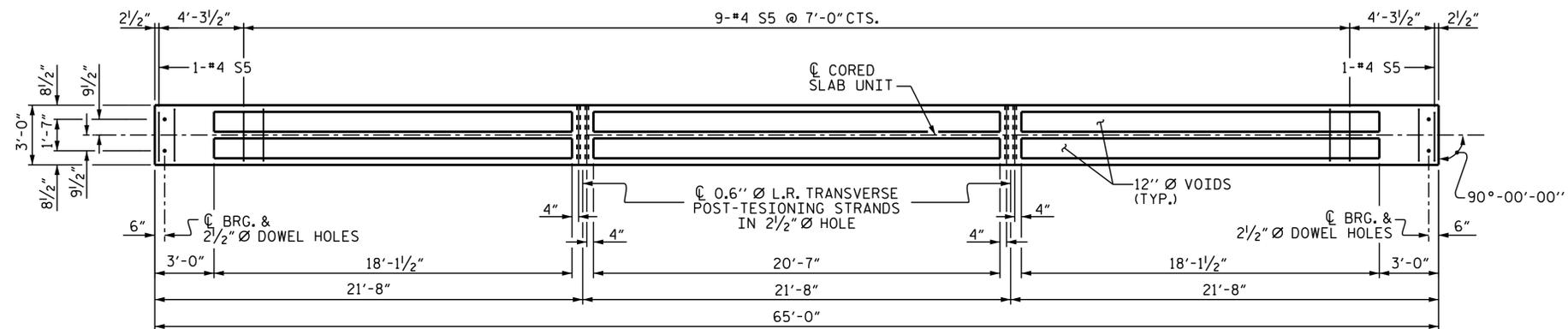
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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			30



PLAN OF TYPE I CORED SLAB UNIT

FOR LOCATION OF S6 BARS AT ENDS OF SLAB, SEE "DETAIL A" SHEET 7 OF 7
SEE "TYPE I SLAB SECTION (65' UNIT) (SPAN B)" SHEET 2 OF 7



PLAN OF TYPE II CORED SLAB UNIT

FOR LOCATION OF S6 BARS AT ENDS OF SLAB, SEE "DETAIL A" SHEET 7 OF 7
FOR LOCATION OF S7 BARS, SEE "PLAN OF TYPE I CORED SLAB UNIT"

PROJECT NO. B-5300
BEAUFORT COUNTY
STATION: 18+77.50 -L-

SHEET 6 OF 7

DocuSigned by:
A. Keith Paschal
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1/19/2016



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

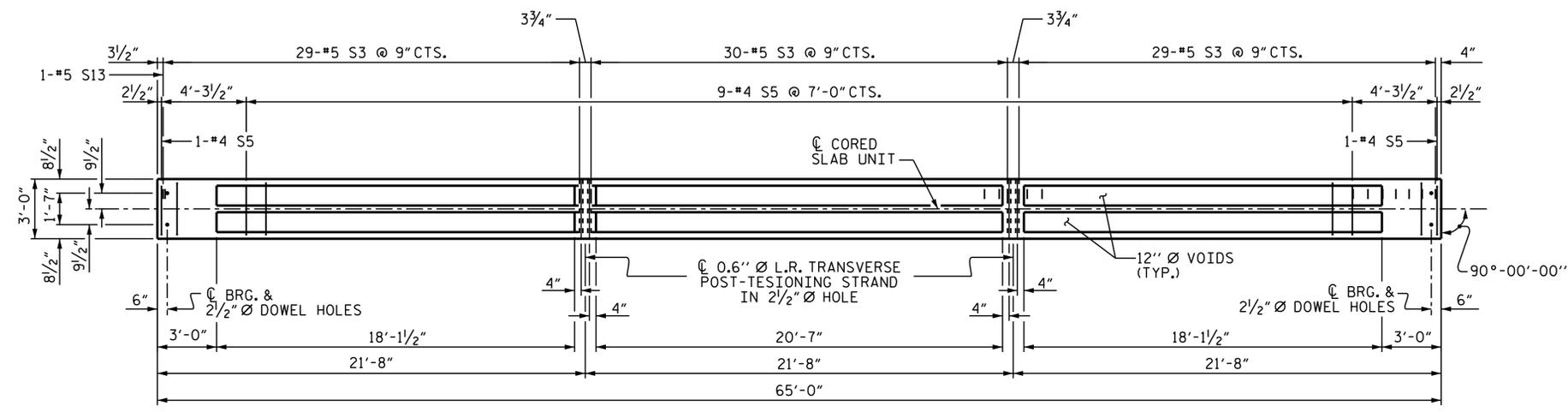
SUPERSTRUCTURE

PLAN OF 65' UNIT
SPAN "B" DETAILS

DRAWN BY : P.N.HOLDER DATE : 07/15
CHECKED BY : K.P.SEDAI DATE : 08/17/15
DESIGN ENGINEER OF RECORD : P.N.HOLDER DATE : 08/28/15

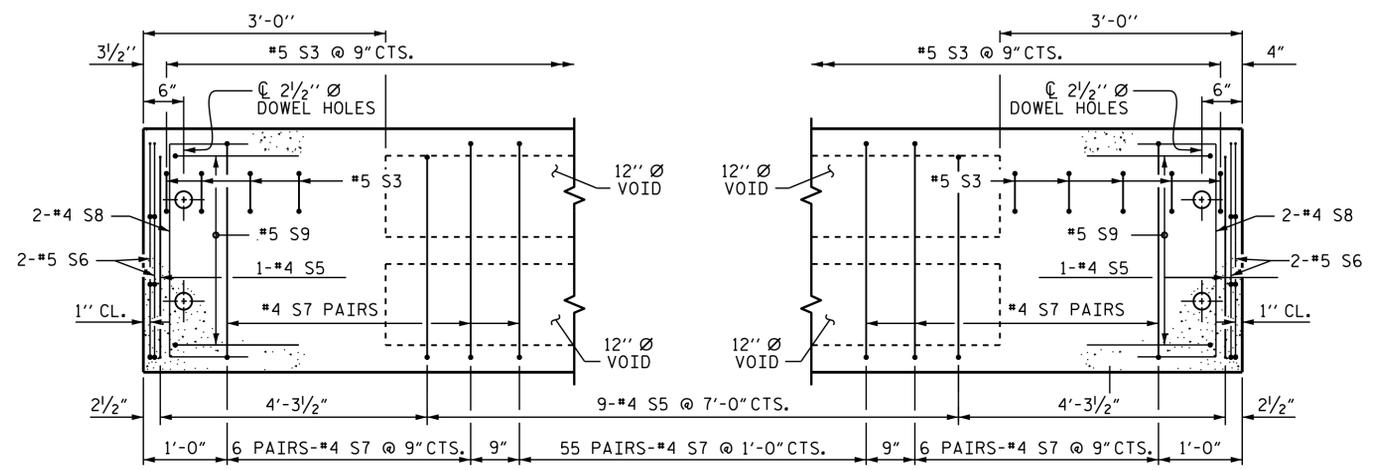
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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			30



PLAN OF TYPE III CORED SLAB UNIT

FOR LOCATION OF S6 BARS AT ENDS OF SLAB, SEE "DETAIL A"
 FOR LOCATION OF S7 BARS, SEE "PLAN OF TYPE I CORED SLAB UNIT" SHEET 6 OF 7



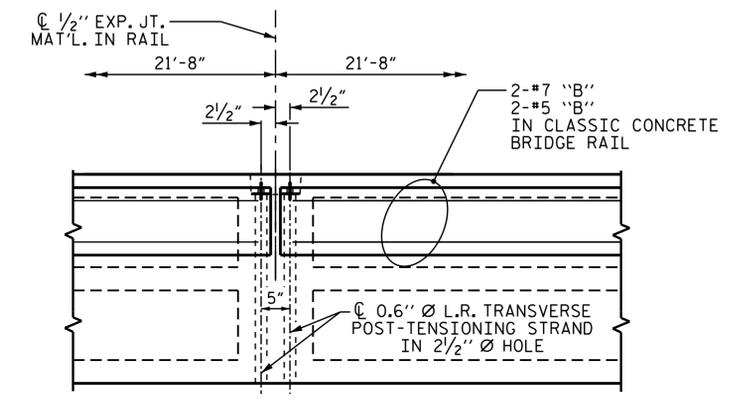
TYPE III @ BENT

TYPE II SIMILAR EXCEPT OMIT S3 BARS
 TYPE I SIMILAR EXCEPT OMIT S3 & S5 BARS

TYPE III @ END BENT

TYPE II SIMILAR EXCEPT OMIT S3 BARS
 TYPE I SIMILAR EXCEPT OMIT S3 & S5 BARS

DETAIL "A"



DETAIL "B"

*4 S7 BARS MAY BE SHIFTED AS NECESSARY
 TO MAINTAIN 1" CLEAR TO GROUTED RECESS AND
 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 7 OF 7

Designed by:
A. Keith Paschal
 F886ADK02FCABF...
 1/19/2016



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

PLAN OF 65' UNIT
 SPAN "B" DETAILS

DRAWN BY :	P.N.HOLDER	DATE :	07/15
CHECKED BY :	K.P.SEDAI	DATE :	08/17/15
DESIGN ENGINEER OF RECORD :	P.N.HOLDER	DATE :	09/01/15

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-11
2			4			TOTAL SHEETS 30

NOTES

ALL REINFORCING STEEL IN THE CLASSIC CONCRETE BRIDGE RAIL SHALL BE EPOXY COATED.

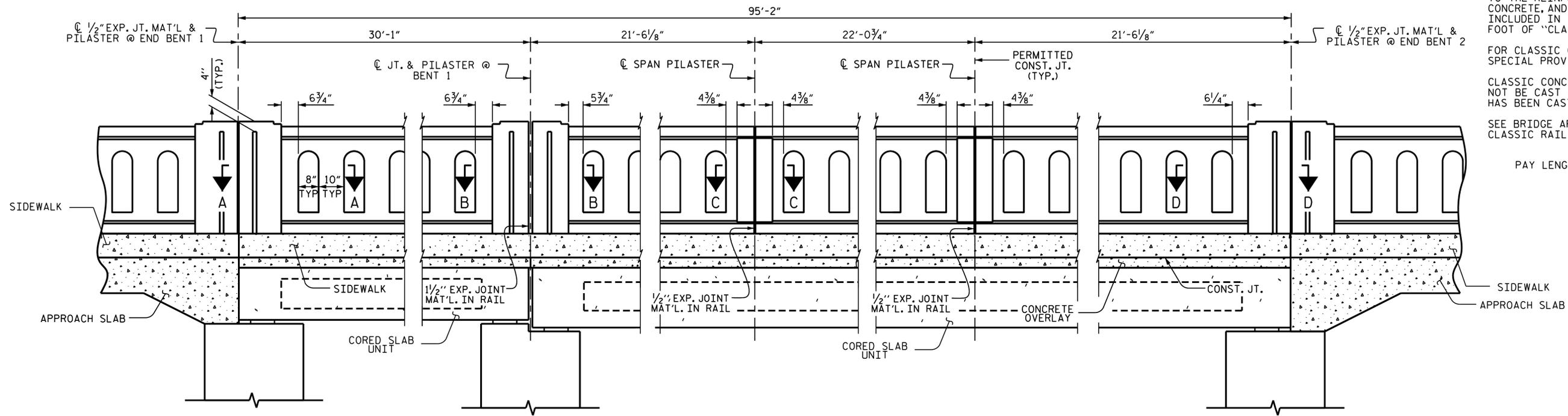
ALL PARTS OF THE CLASSIC CONCRETE BRIDGE RAIL INCLUDING BUT NOT LIMITED TO THE REINFORCING STEEL, CLASS AA CONCRETE, AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT OF "CLASSIC CONCRETE BRIDGE RAIL".

FOR CLASSIC CONCRETE BRIDGE RAIL, SEE SPECIAL PROVISIONS.

CLASSIC CONCRETE BRIDGE RAILS SHALL NOT BE CAST UNTIL THE SIDEWALK CONCRETE HAS BEEN CAST AND CURED.

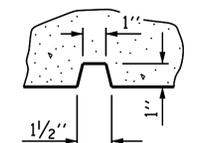
SEE BRIDGE APPROACH SLAB SHEETS, FOR CLASSIC RAIL ON APPROACH SLABS.

PAY LENGTH = 190.25 LIN. FT.

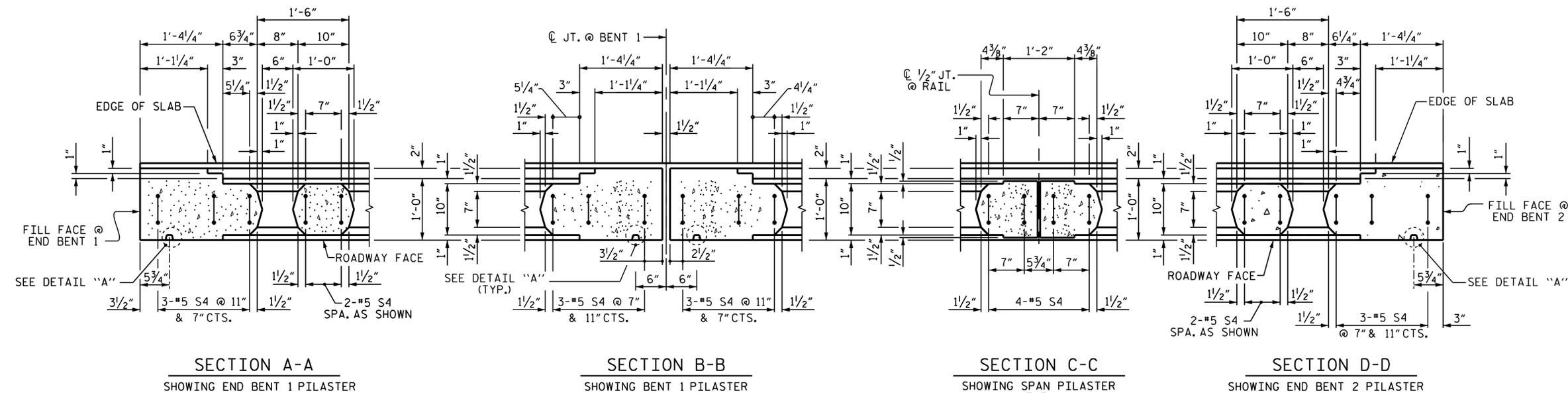


ROADWAY ELEVATION OF RAIL

CHAMFERS NOT SHOWN FOR CLARITY



DETAIL "A"



PARTIAL PLAN

LEFT SIDE SHOWN, RIGHT SIDE SIMILAR

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 1 OF 4

DocuSigned by:
 A. Keith Paschal
 F8B9AD0823CAF...
 1/19/2016



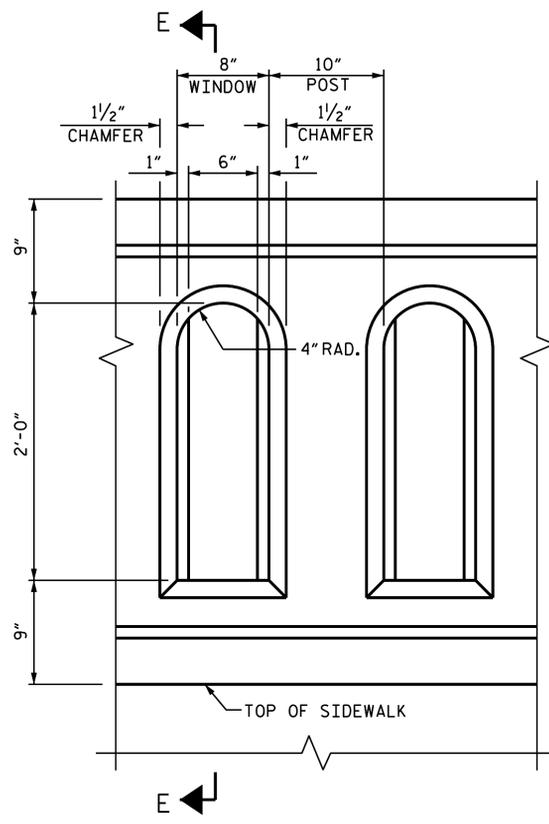
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**CLASSIC CONCRETE
 BRIDGE RAIL AND
 SIDEWALK**

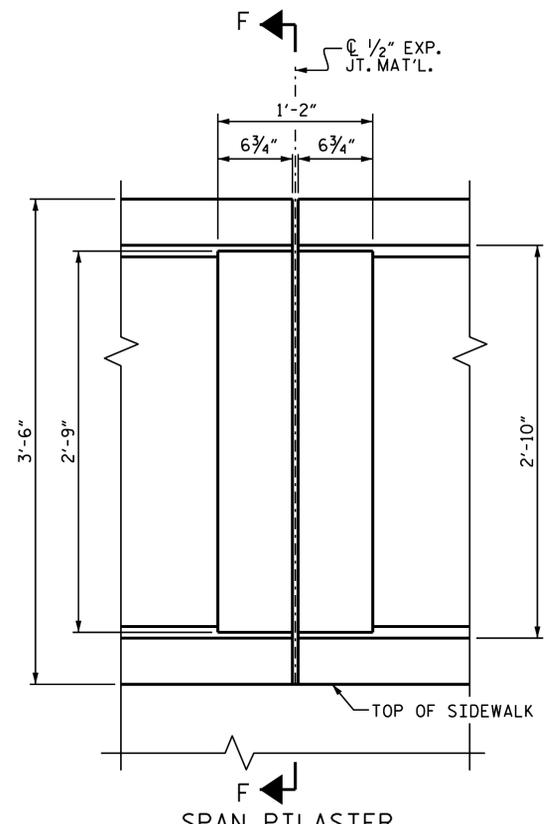
DRAWN BY: P.N.HOLDER DATE: 08/15
 CHECKED BY: K.P.SEDAI DATE: 08/15
 DESIGN ENGINEER OF RECORD: P.N.HOLDER DATE: 09/15

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
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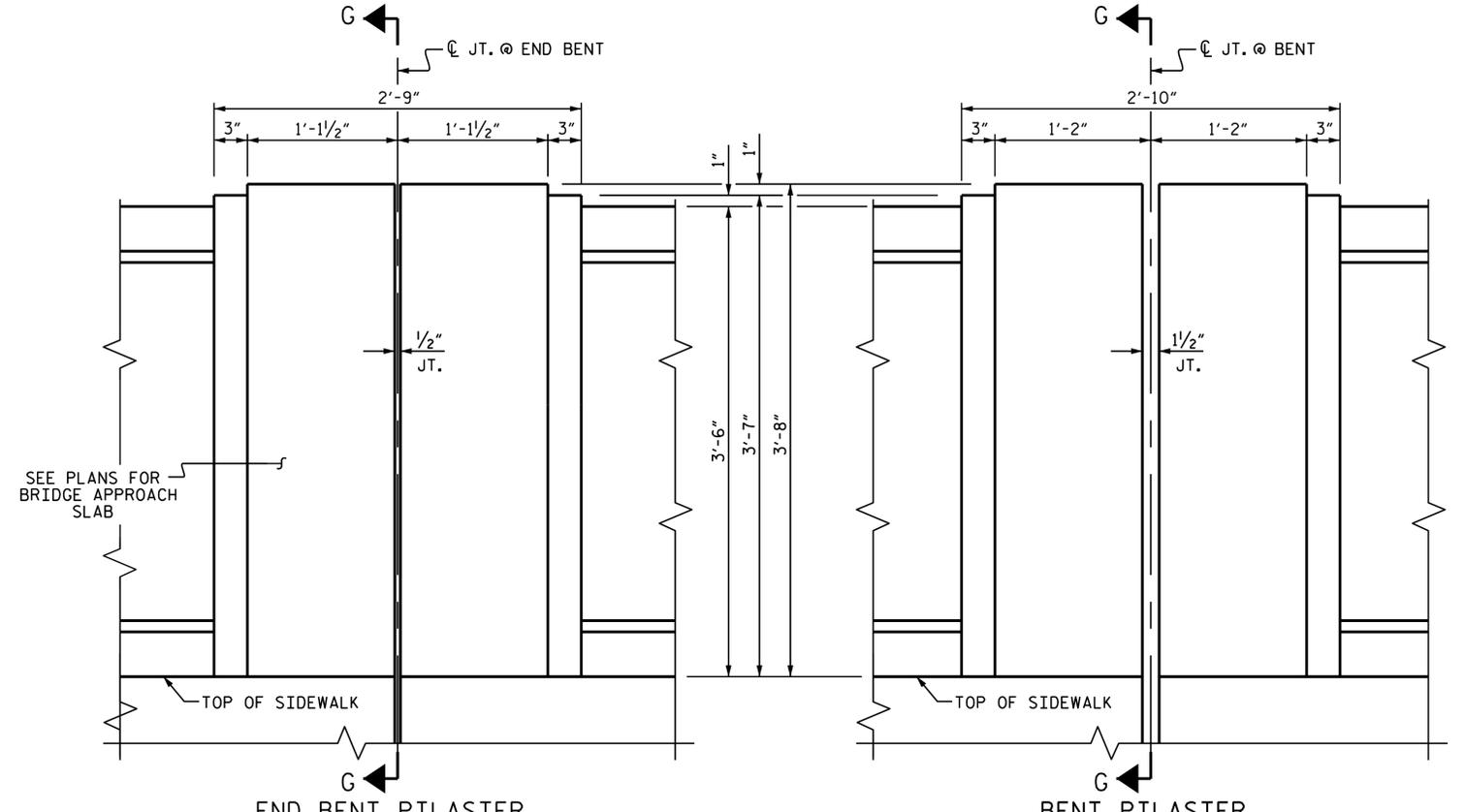
REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



WINDOW DETAIL



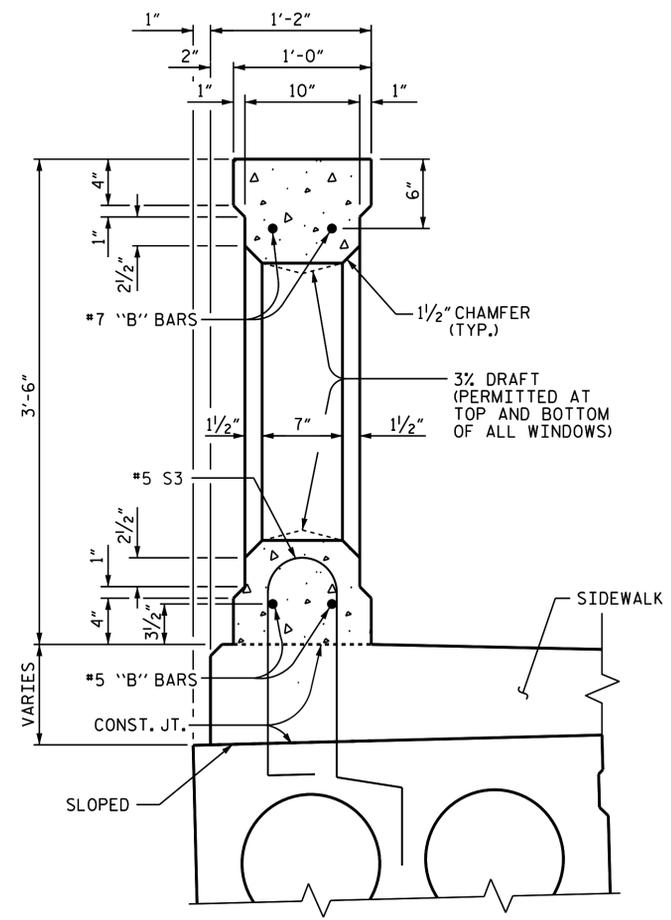
SPAN PILASTER



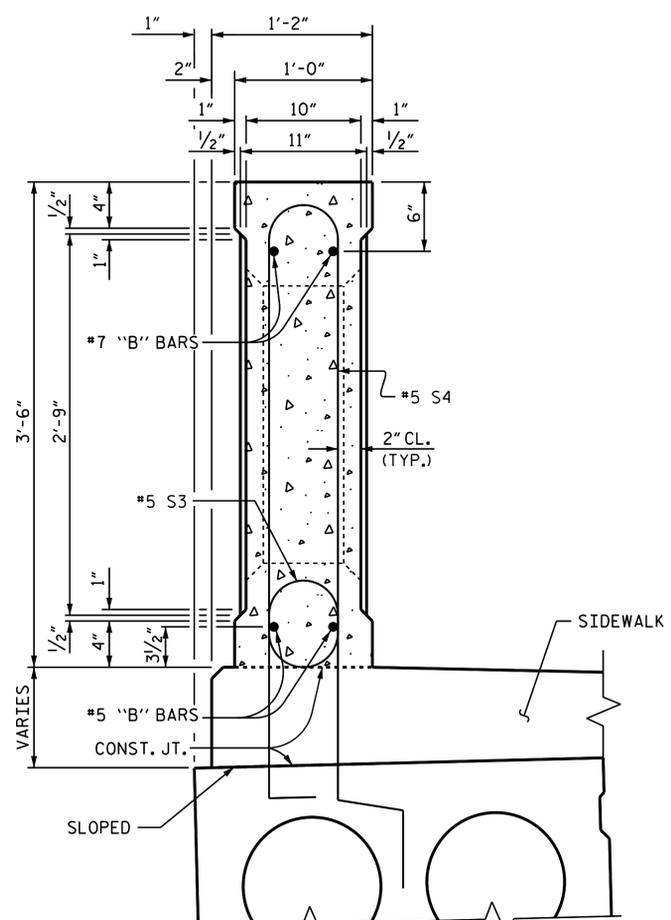
END BENT PILASTER

BENT PILASTER

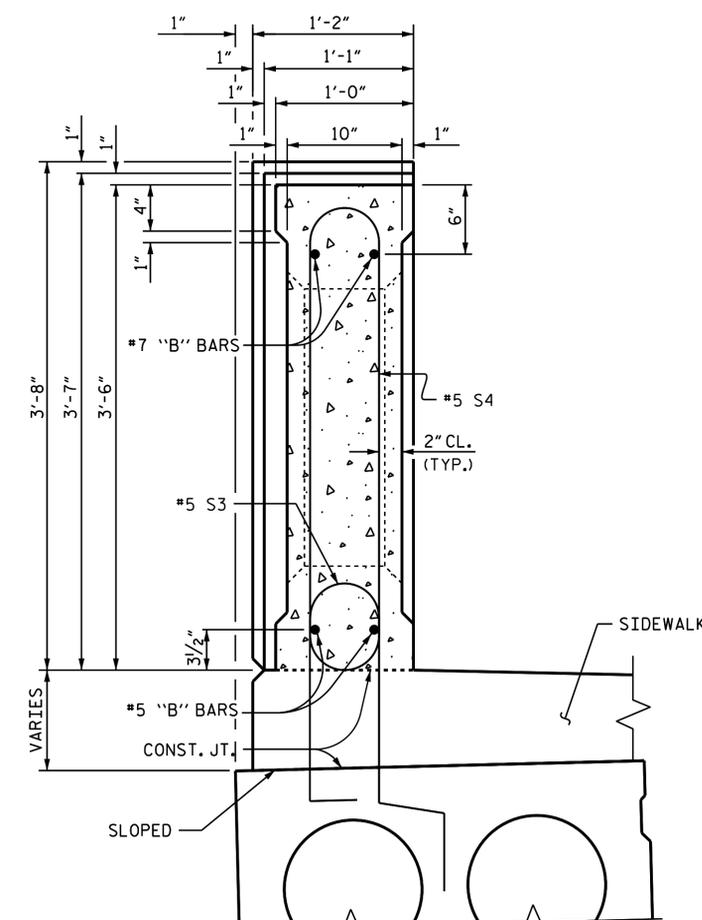
EXTERIOR PILASTER ELEVATIONS



SECTION E-E
(SHOWING WINDOW OF RAIL)



SECTION F-F
(SHOWING SPAN PILASTER)



SECTION G-G
(SHOWING END BENT & BENT PILASTER)

DocuSigned by:
A. Keith Paschal
F8BA0DE82FC48F...

1/19/2016



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

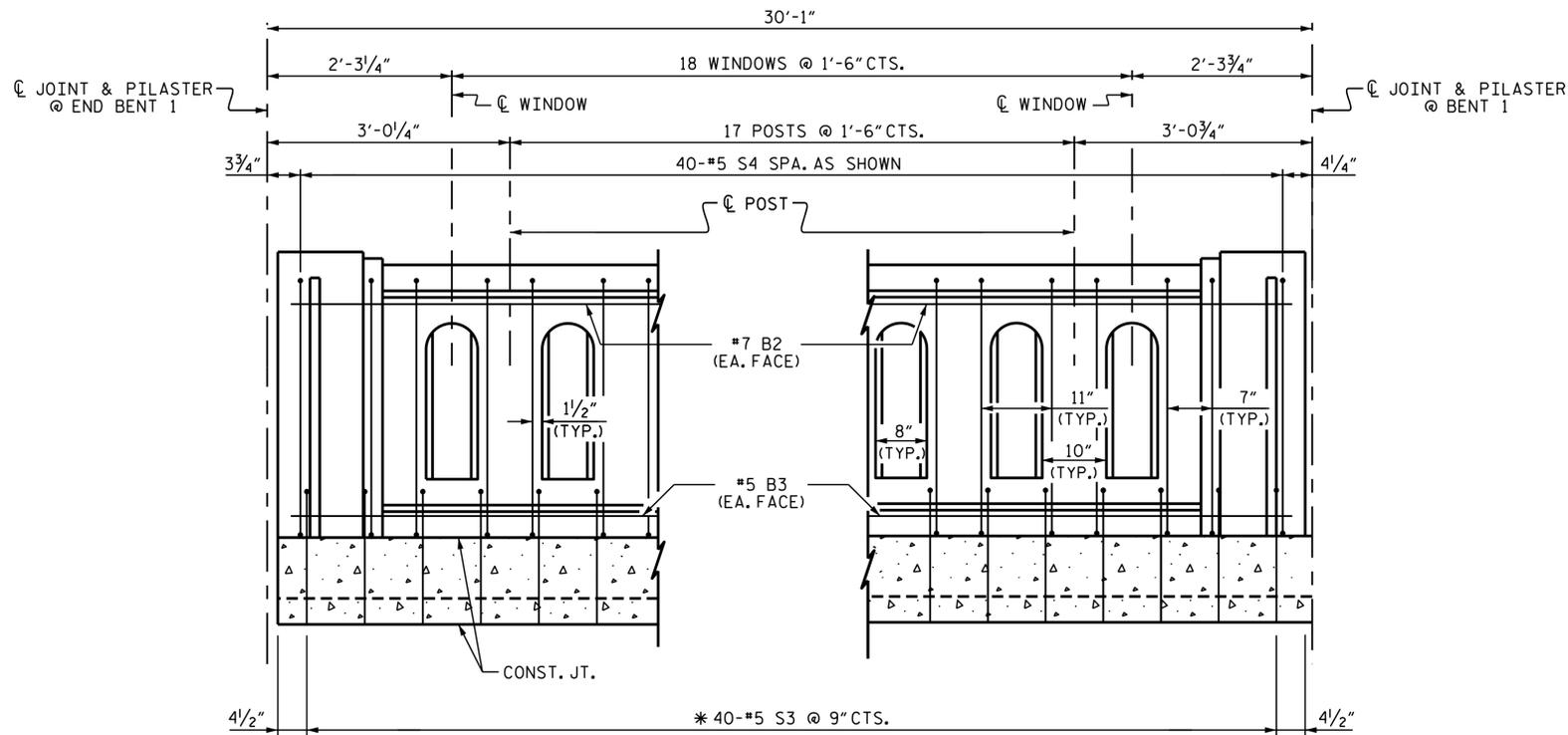
PROJECT NO. B-5300
BEAUFORT COUNTY
STATION: 18+77.50 -L-

SHEET 2 OF 4

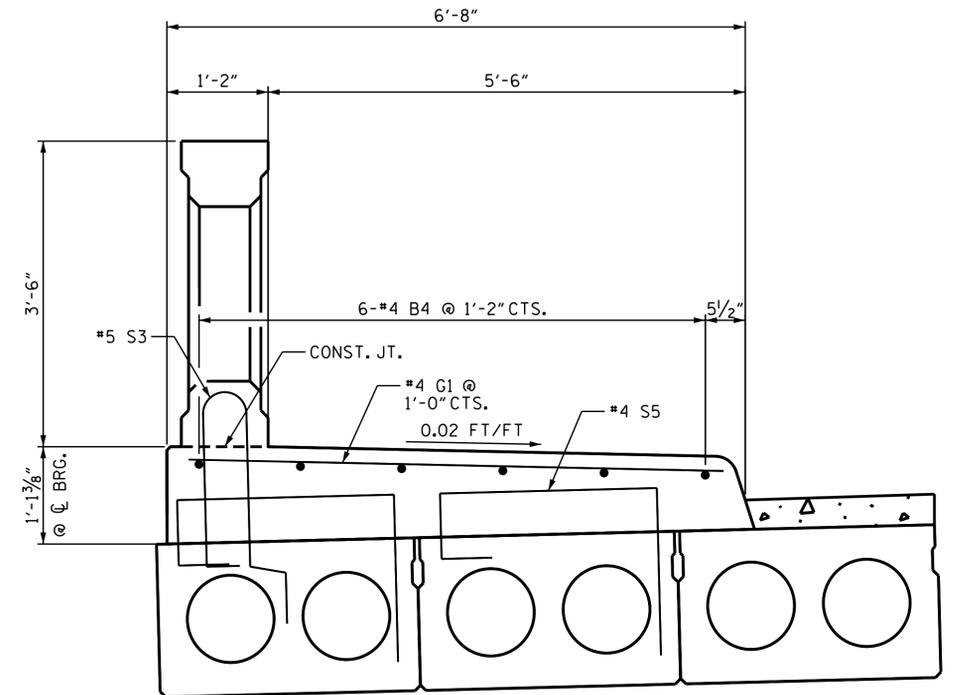
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**CLASSIC CONCRETE
BRIDGE RAIL AND
SIDEWALK**

DRAWN BY: P.N.HOLDER DATE: 08/15
CHECKED BY: K.P.SEDAI DATE: 08/15
DESIGN ENGINEER OF RECORD: P.N.HOLDER DATE: 09/15

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13	
1			3			TOTAL SHEETS 30	
2			4				

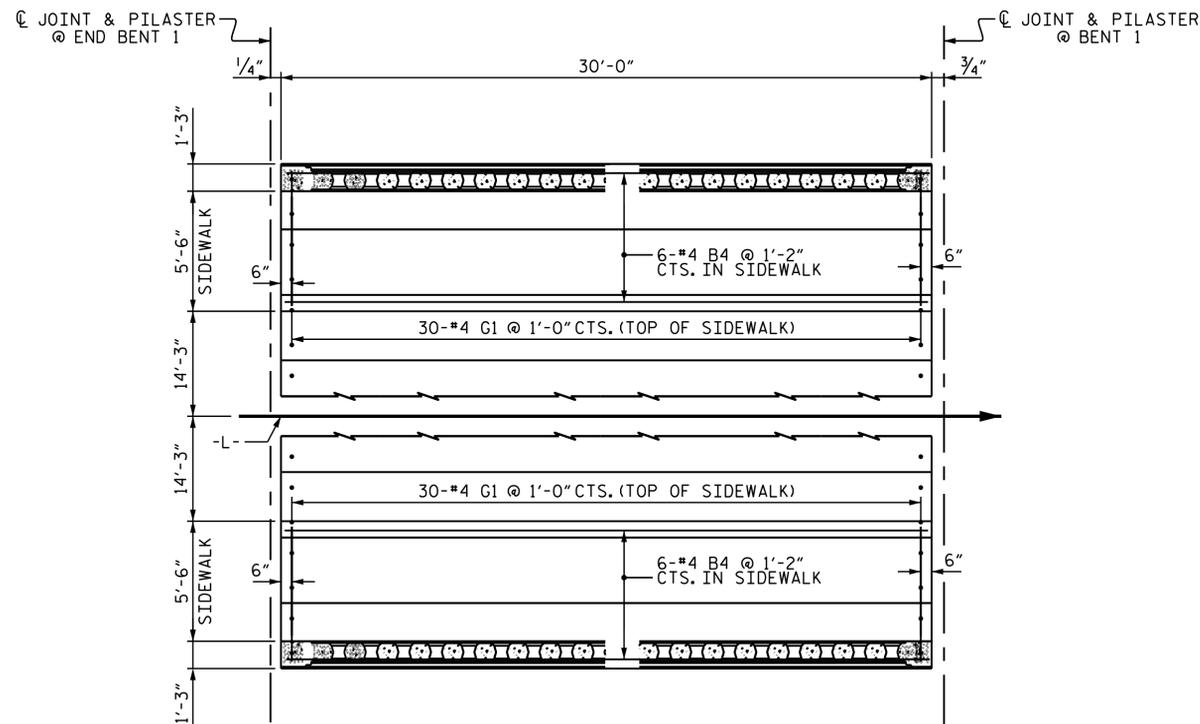


REINFORCING PLACEMENT- SPAN "A"



SIDEWALK DETAIL

(TYP. EACH SPAN)
(LEFT SIDE SHOWN)



PLAN - SPAN "A"

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 3 OF 4

DocuSigned by:
 A. Keith Paschal
 F886A0E0B2FC48F...
 1/19/2016



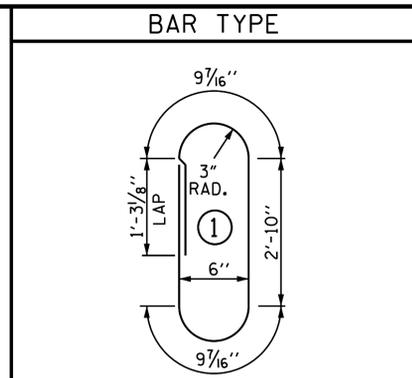
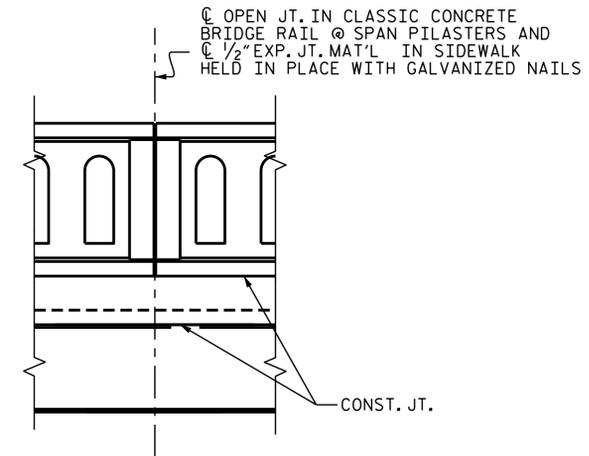
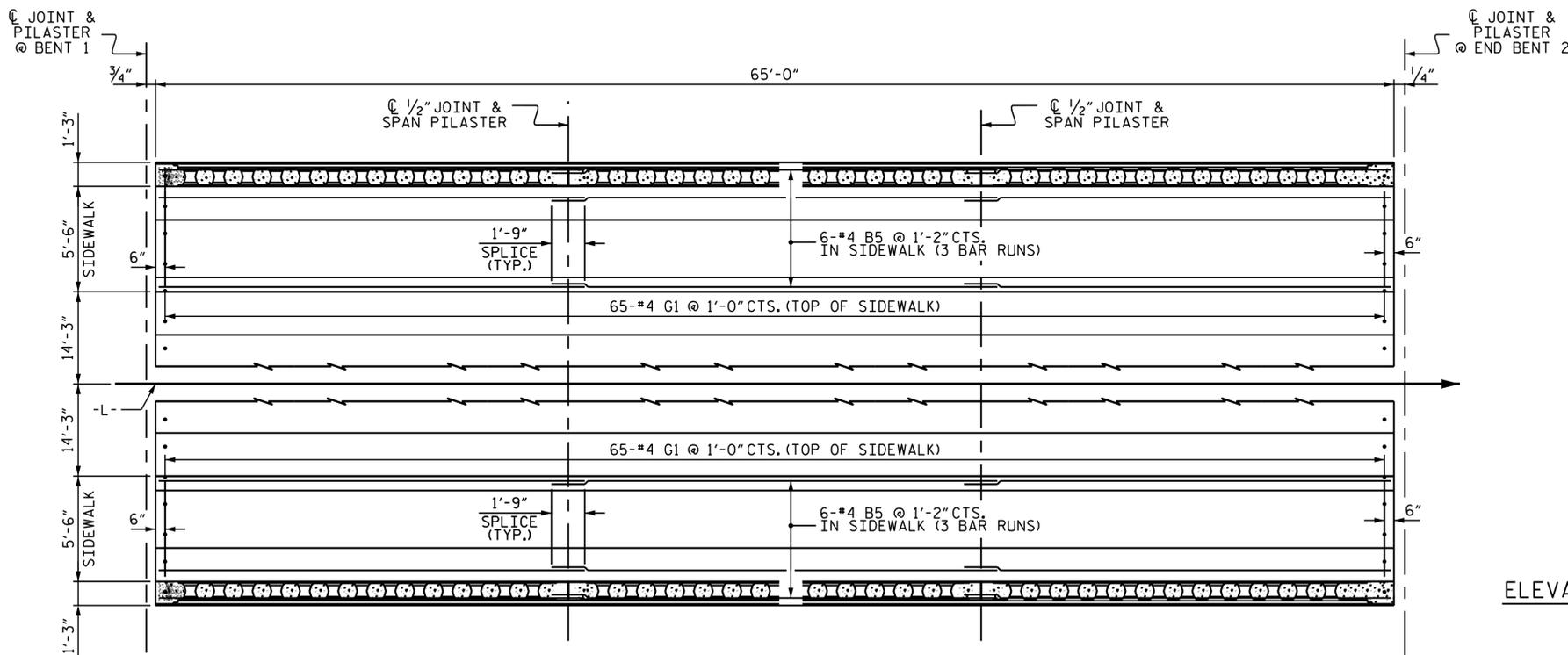
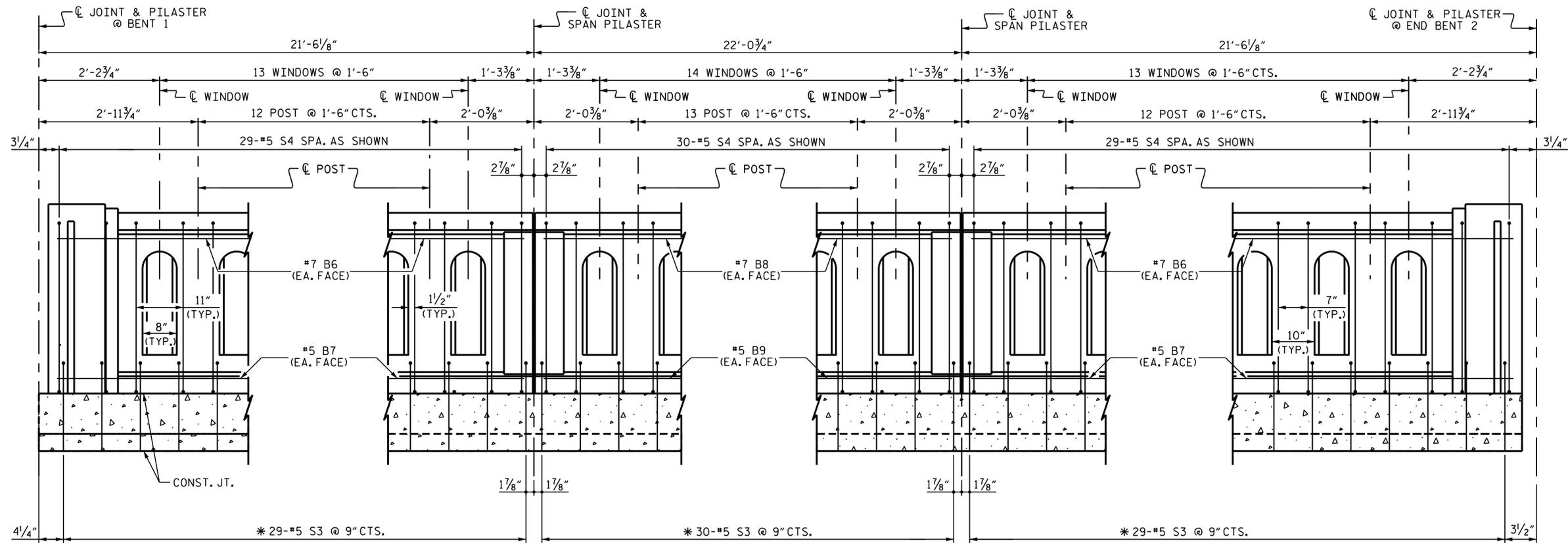
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CLASSIC CONCRETE
 BRIDGE RAIL AND
 SIDEWALK

DRAWN BY : P.N.HOLDER DATE : 08/15
 CHECKED BY : K.P.SEDAI DATE : 08/15
 DESIGN ENGINEER OF RECORD: P.N.HOLDER DATE : 09/15

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REVISIONS						SHEET NO. S-14 TOTAL SHEETS 30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL
FOR CLASSIC BRIDGE RAILING ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B2	4	#7	STR	29'-8"	243
*B3	4	#5	STR	29'-8"	124
*B6	8	#7	STR	21'-1"	345
*B7	8	#5	STR	21'-1"	176
*B8	4	#7	STR	21'-8"	177
*B9	4	#5	STR	21'-8"	90
*S4	256	#5	1	8'-6"	2270

* EPOXY COATED REINFORCING STEEL 3425 LBS.
CLASS AA CONCRETE 17.8 CU. YDS.
CLASSIC CONCRETE BRIDGE RAIL 190.25 LIN. FT.

BILL OF MATERIAL
FOR SIDEWALK ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B4	12	#4	STR	29'-8"	238
*B5	36	#4	STR	22'-9"	547
*G1	190	#4	STR	6'-2"	783

* EPOXY COATED REINFORCING STEEL 1568 LBS.
CLASS AA CONCRETE 46.4 CU. YDS.

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 4 OF 4



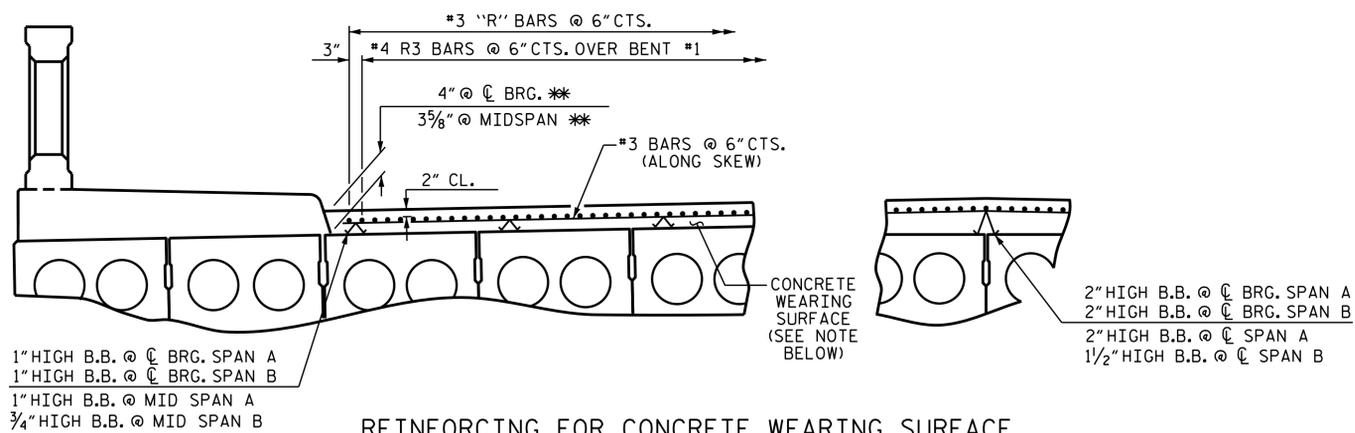
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CLASSIC CONCRETE
 BRIDGE RAIL AND
 SIDEWALK

DRAWN BY: P.N.HOLDER DATE: 08/15
 CHECKED BY: K.P.SEDAI DATE: 08/15
 DESIGN ENGINEER OF RECORD: P.N.HOLDER DATE: 09/15

REVISIONS						SHEET NO. 5-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

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REINFORCING FOR CONCRETE WEARING SURFACE

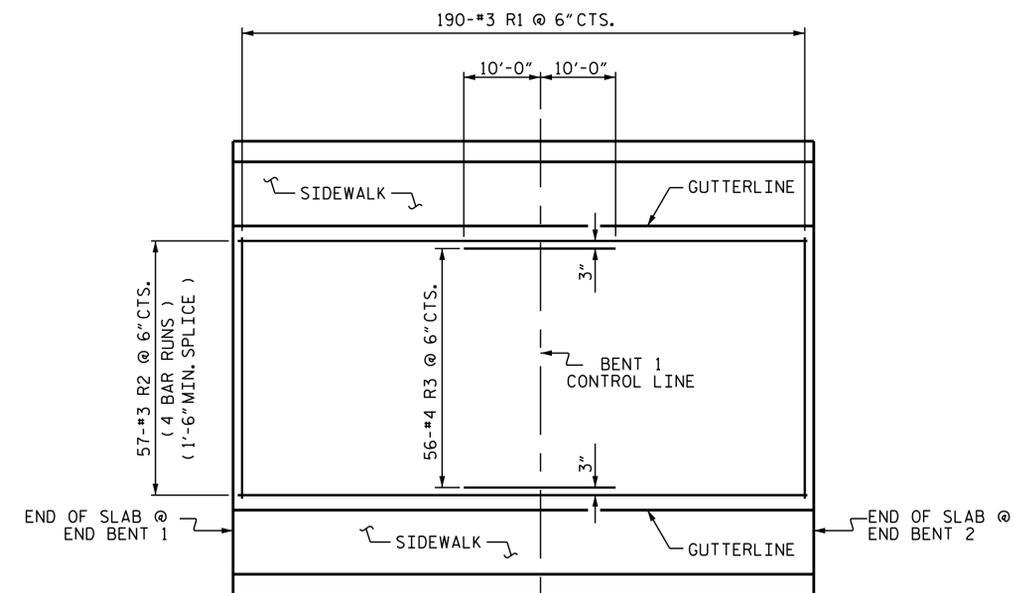
* THICKNESS IS BASED ON PREDICTED FINAL CAMBER & THEORETICAL GRADE LINE ELEVATIONS AND VARIES BETWEEN CL BEARING AND MID-SPAN FOR ALL SPANS.

** BEAM BOLSTERS (B.B.) SHALL BE SPACED AT 2'-0" MAX. CENTERS SET 1'-0" FROM GUTTERLINE.

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CLASSIC BRIDGE RAIL AND SIDEWALKS. THE COST OF THE #3 BARS CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL FOR CONCRETE WEARING SURFACE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*R1	190	#3	STR	28'-2"	2012
*R2	228	#3	STR	25'-0"	2143
*R3	56	#4	STR	20'-0"	748
* EPOXY COATED REINFORCING STEEL				4903 LBS.	
CONCRETE WEARING SURFACE				2711 SQ.FT.	

GROOVING BRIDGE FLOORS	
APPROACH SLABS	1230 SQ.FT.
BRIDGE DECK	2417 SQ.FT.
TOTAL	3647 SQ.FT.



PLAN SHOWING CONCRETE WEARING SURFACE REINFORCING STEEL

GROOVED CONTRACTION JOINTS, 1/4" IN DEPTH, SHALL BE TOOLED IN THE TOP OF WEARING SURFACE AT INTERIOR BENTS WITH CONTINUOUS CONCRETE WEARING SURFACE IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS.

ASSEMBLED BY : P.N.HOLDER DATE : 07/15
 CHECKED BY : K.P.SEDAI DATE : 08/17/15
 DESIGN ENGINEER OF RECORD : P.N.HOLDER DATE : 09/01/15

DocuSigned by:
 A. Keith Paschal
 F88AD6D62FC48F...

1/19/2016



PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE WEARING SURFACE

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-16
2			4			TOTAL SHEETS 30

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.

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

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

ALL REINFORCING STEEL IN CLASSIC CONCRETE BRIDGE RAILS, SIDEWALK, AND CONCRETE WEARING SURFACE SHALL BE EPOXY COATED.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

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

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

THE #4 S2 & #4 S7 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

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

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

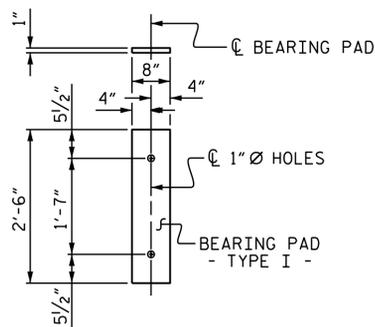
WHEN A CONCRETE WEARING SURFACE IS DETAILED ON THE CORED SLAB BRIDGE TYPICAL SECTION, THE TOP SURFACE OF THE CORED SLAB UNITS SHALL HAVE A 3/8" RAKED FINISH.

GROUT THE SHEAR KEYS BETWEEN THE LEVEL AND SLOPED CORED SLAB UNITS (I.E. SHEAR KEYS AT BREAK POINTS IN THE CAP) PRIOR TO TENSIONING THE TRANSVERSE STRANDS.

PAYMENT FOR SIDEWALK SHALL BE INCLUDED IN THE PAY ITEMS FOR CLASS AA CONCRETE AND EPOXY COATED REINFORCING STEEL.

PRESTRESSED CONCRETE CORED SLAB UNITS ARE DESIGNED FOR 0 PSI TENSION IN THE PRECOMPRESSED TENSILE ZONE UNDER ALL LOADING CONDITIONS.

PRESTRESSED CONCRETE CORED SLAB UNITS SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



FIXED END
(SPAN A - 28 REQ'D)
(SPAN B - 28 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMERIC BEARINGS FOR SPAN A AND SPAN B SHALL BE 60 DUROMETER HARDNESS.

BILL OF MATERIAL FOR ONE 30' CORED SLAB UNIT

BAR	NUMBER	SIZE	TYPE	TYPE I		TYPE II		TYPE III	
				LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	2	#4	STR	29'-8"	40	29'-8"	40	29'-8"	40
S1	8	#5	3	4'-3"	35	4'-3"	35	4'-3"	35
S2	64	#4	3	5'-4"	228	5'-4"	228	5'-4"	228
* S3	40	#5	1			5'-8"	236		
* S5	6	#4	2			5'-9"	23		
REINFORCING STEEL				LBS.	303	303	303		
* EPOXY COATED REINFORCING STEEL				LBS.		23	259		
5000 P.S.I. CONCRETE				CU. YDS.	4.4	4.4	4.4		
0.6" Ø L.R. STRANDS				No.	9	9	9		

BILL OF MATERIAL FOR ONE 65' CORED SLAB UNIT

BAR	NUMBER	SIZE	TYPE	TYPE I		TYPE II		TYPE III	
				LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
B5	6	#4	STR	22'-9"	91	22'-9"	91	22'-9"	91
S6	8	#5	4	4'-9"	40	4'-9"	40	4'-9"	40
S7	134	#4	4	5'-10"	522	5'-10"	522	5'-10"	522
* S3	90	#5	1			5'-8"	532		
* S5	11	#4	2			5'-9"	42		
S8	4	#4	4	5'-7"	15	5'-7"	15	5'-7"	15
S9	4	#5	4	7'-1"	30	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.	698	698	698		
* EPOXY COATED REINFORCING STEEL				LBS.		42	574		
6000 P.S.I. CONCRETE				CU. YDS.	11.0	11.0	11.0		
0.6" Ø L.R. STRANDS				No.	24	24	24		

CORED SLABS REQUIRED

		NUMBER	LENGTH	TOTAL LENGTH
SPAN A 30' UNIT	TYPE I	10	30'-0"	300
	TYPE II	2	30'-0"	60
	TYPE III	2	30'-0"	60
TOTAL		14	—	420
		NUMBER	LENGTH	TOTAL LENGTH
SPAN B 65' UNIT	TYPE I	10	65'-0"	650
	TYPE II	2	65'-0"	130
	TYPE III	2	65'-0"	130
TOTAL		14	—	910

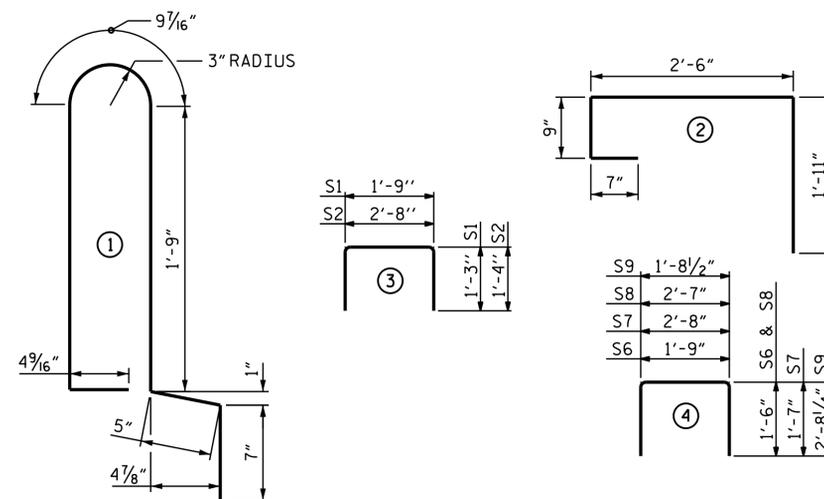
DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-9"
30' CORED SLAB UNIT (SPAN A)	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1/4" ↑
DEFLECTION DUE TO CONCRETE WEARING SURFACE	1/16" ↓
FINAL CAMBER	3/16" ↑

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 2'-0"
65' CORED SLAB UNIT (SPAN B)	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 1/16" ↑
DEFLECTION DUE TO CONCRETE WEARING SURFACE	3/16" ↓
FINAL CAMBER	1 5/8" ↑

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

CONCRETE RELEASE STRENGTH

UNIT	PSI
30' UNITS	4000
65' UNITS	4800

GRADE 270 STRANDS

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

PROJECT NO. B-5300
BEAUFORT COUNTY
STATION: 18+77.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE BILL OF MATERIAL

DocuSigned by:
A. Keith Paschal
F18BA0D62FC48F...

1/19/2016



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-17
2			4			TOTAL SHEETS 30

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ASSEMBLED BY : P.N.HOLDER DATE : 07/15
CHECKED BY : K.P.SEDAI DATE : 08/17/15
DESIGN ENGINEER OF RECORD : P.N.HOLDER DATE : 09/01/15

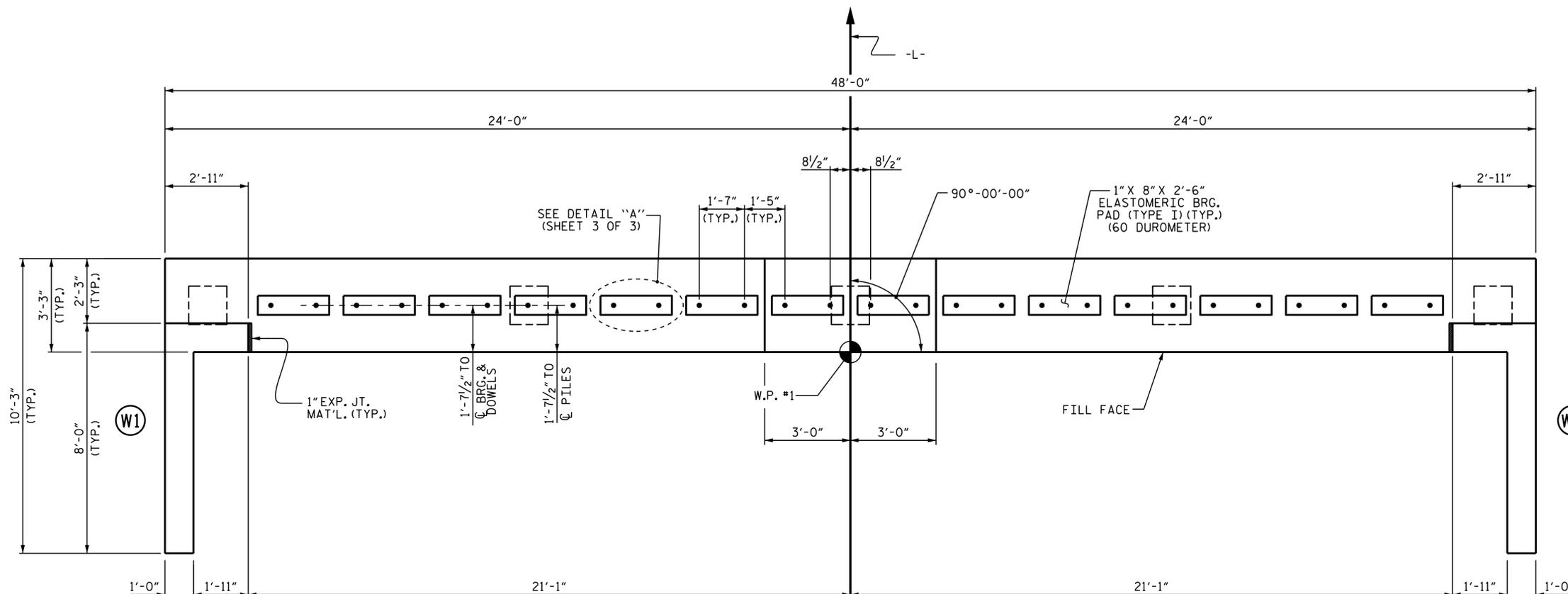
NOTES

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

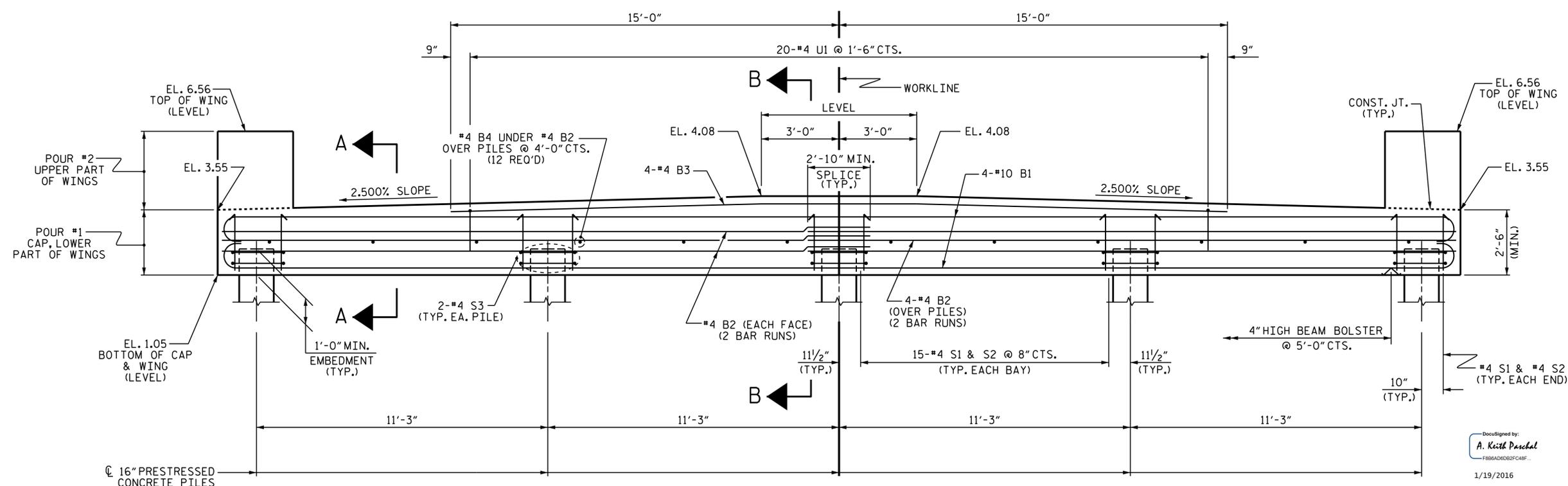
INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED. FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

FOR WING DETAILS, SEE SHEET 2 OF 3.

FIELD BEND #4 B3 AS NECESSARY TO MAINTAIN REQUIRED CONCRETE COVER.



PLAN



ELEVATION

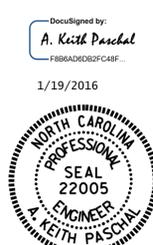
WINGS NOT SHOWN FOR CLARITY. FOR SECTION A-A & B-B, SEE SHEET 3 OF 3.

PROJECT NO. B-5300
 BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

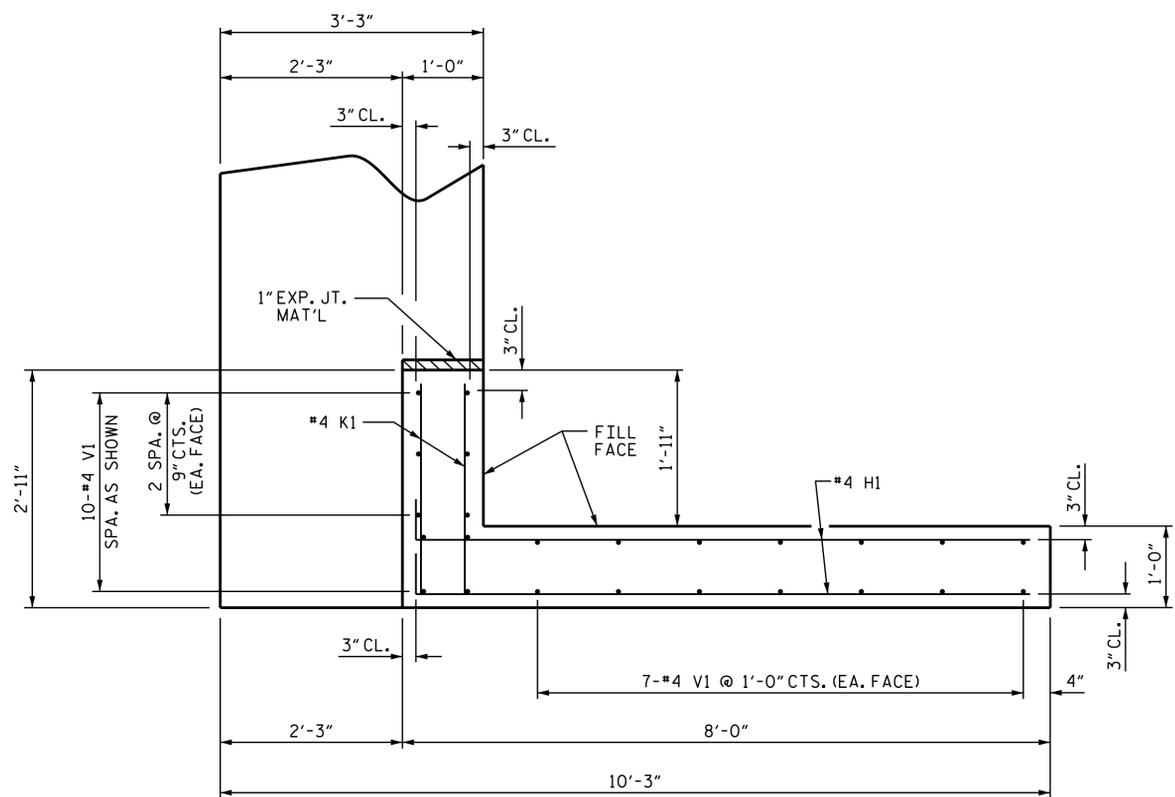
**SUBSTRUCTURE
 END BENT 1**



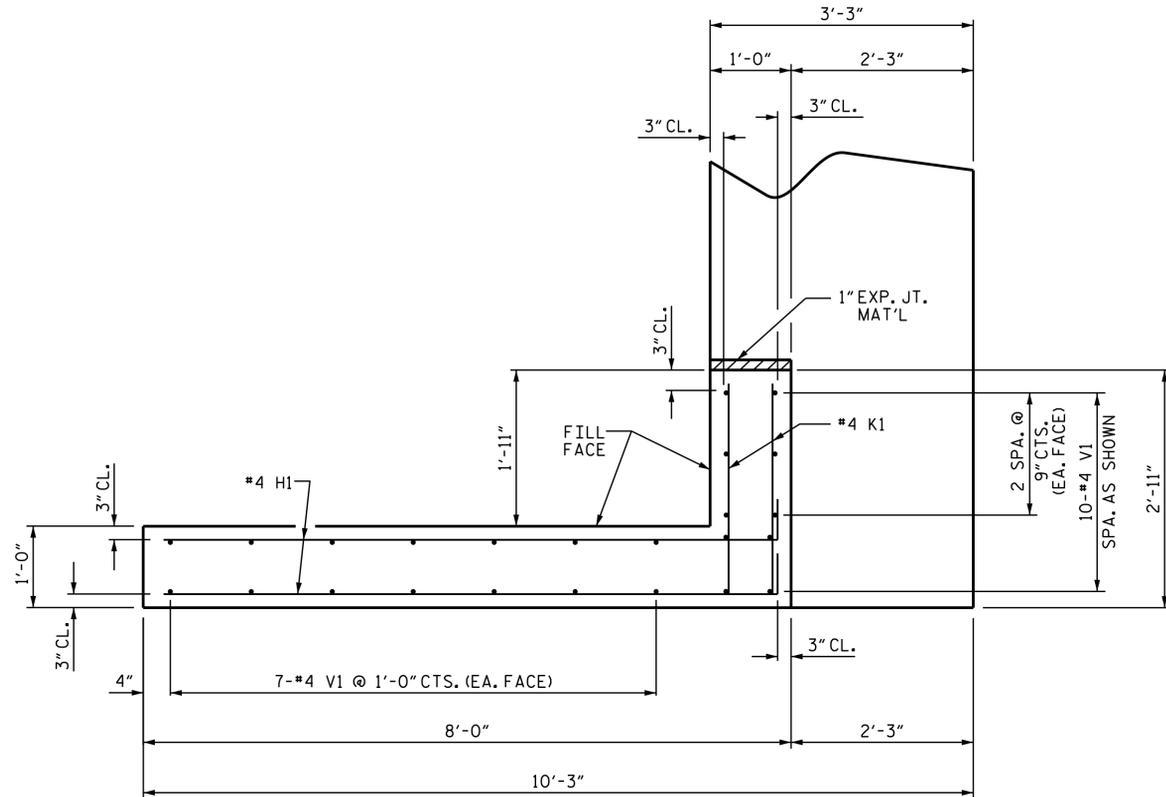
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 CHECKED BY: P. N. HOLDER DATE: 9/4/15
 DESIGN ENGINEER OF RECORD: P. N. HOLDER DATE: 9/4/15

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2			4			30

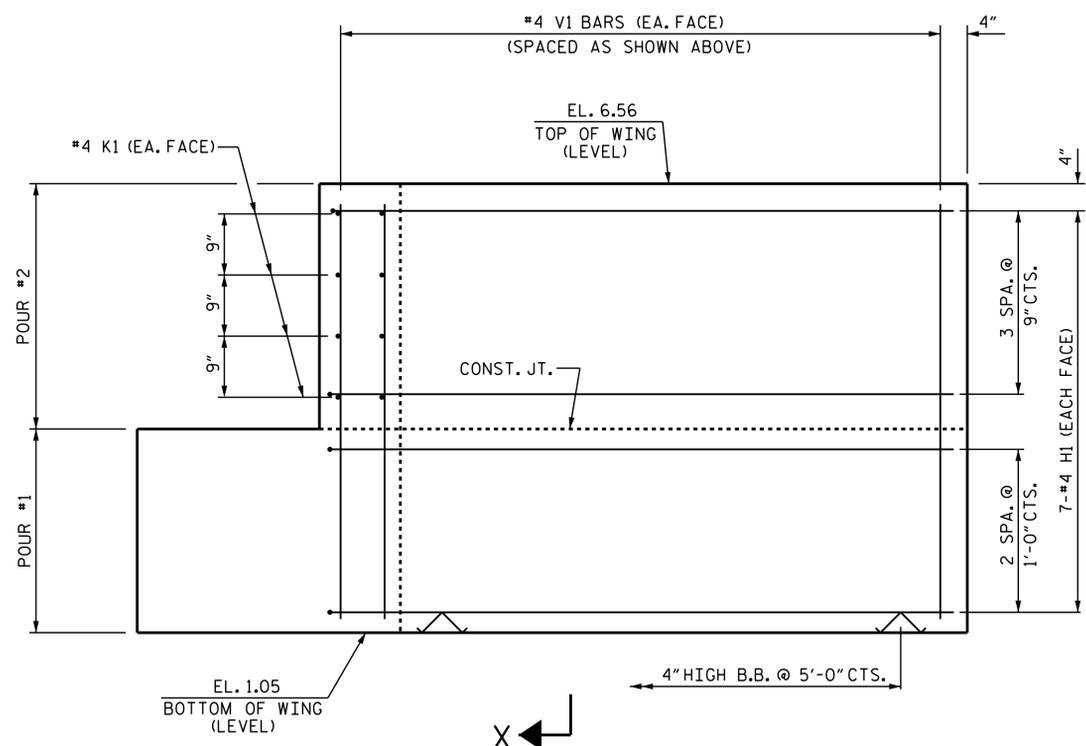
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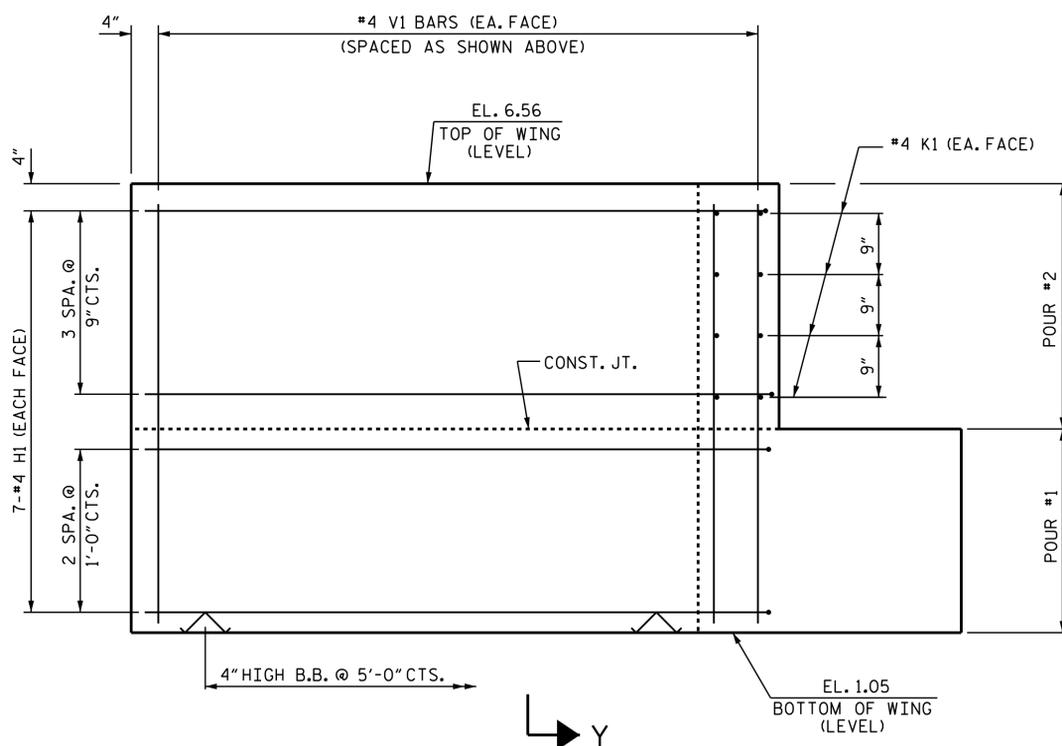
PLAN OF WING (W1)



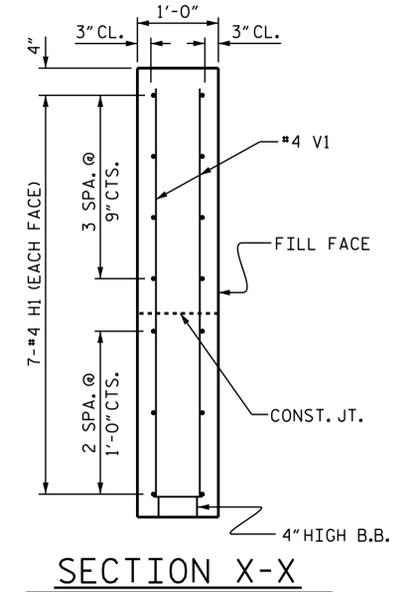
PLAN OF WING (W2)



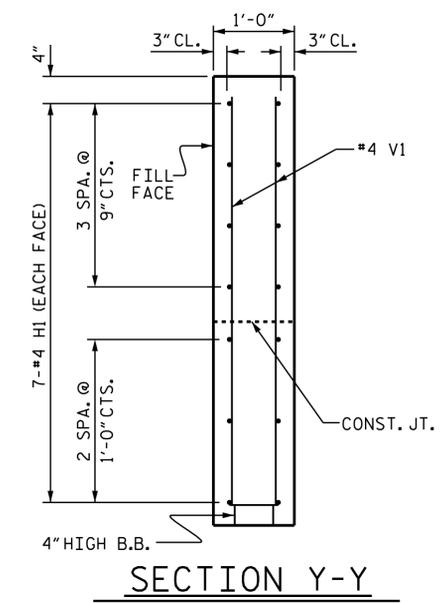
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

WING DETAILS

DRAWN BY: K. P. SEDA I DATE: 7/8/15
 CHECKED BY: P. N. HOLDER DATE: 9/4/15
 DESIGN ENGINEER OF RECORD: P. N. HOLDER DATE: 9/4/15

DocuSigned by:
 A. Keith Paschal
 1/19/2016
 NORTH CAROLINA
 PROFESSIONAL
 SEAL
 22005
 ENGINEER
 A. KEITH PASCHAL

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PROJECT NO. B-5300
 BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 2 OF 3

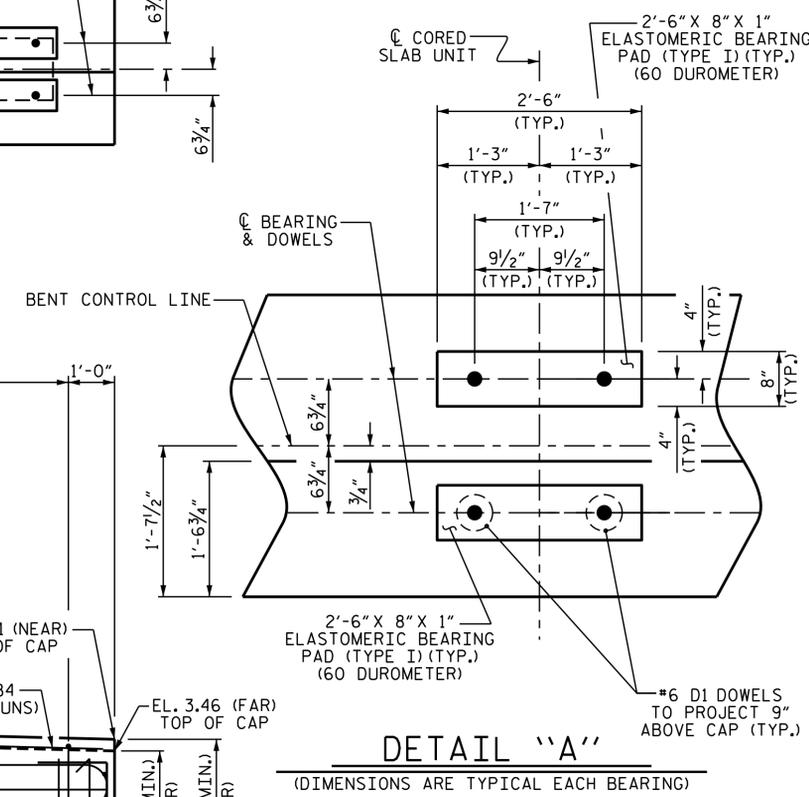
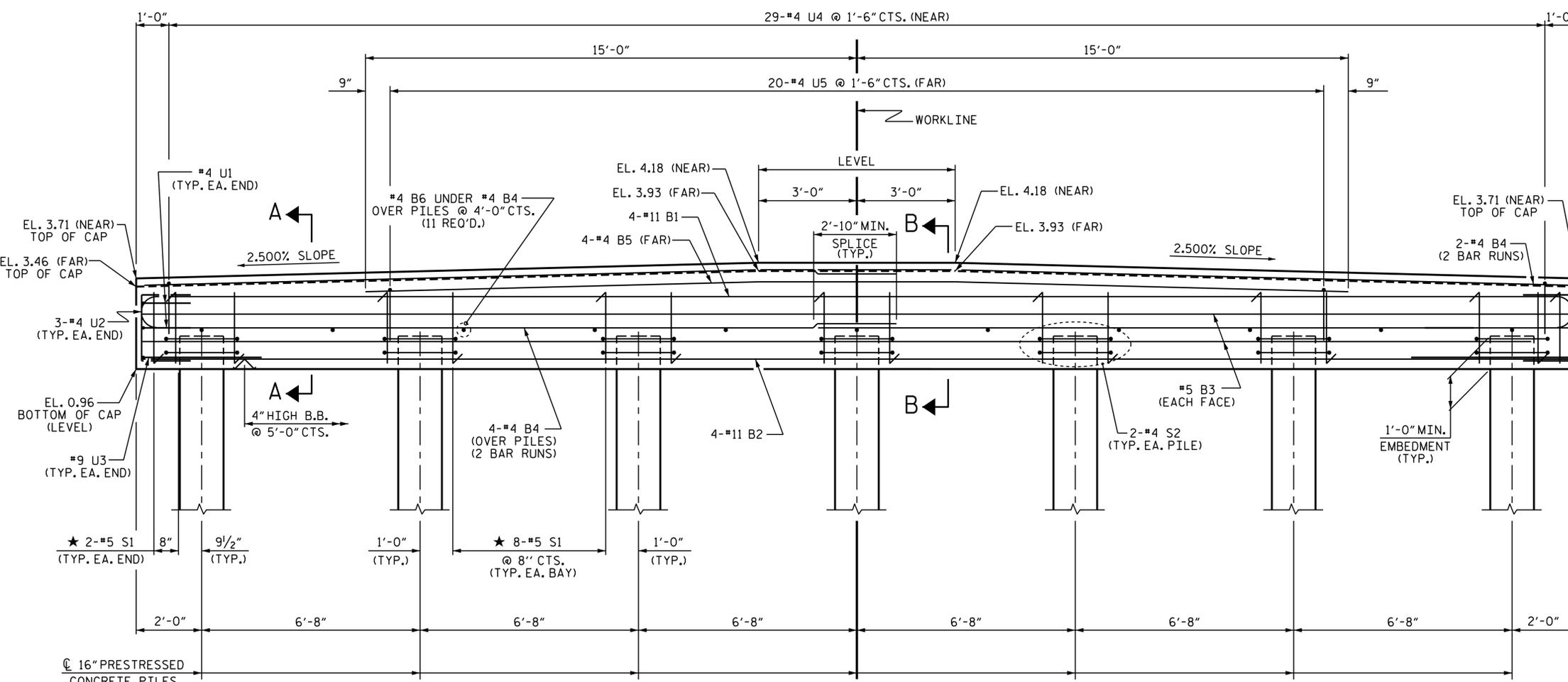
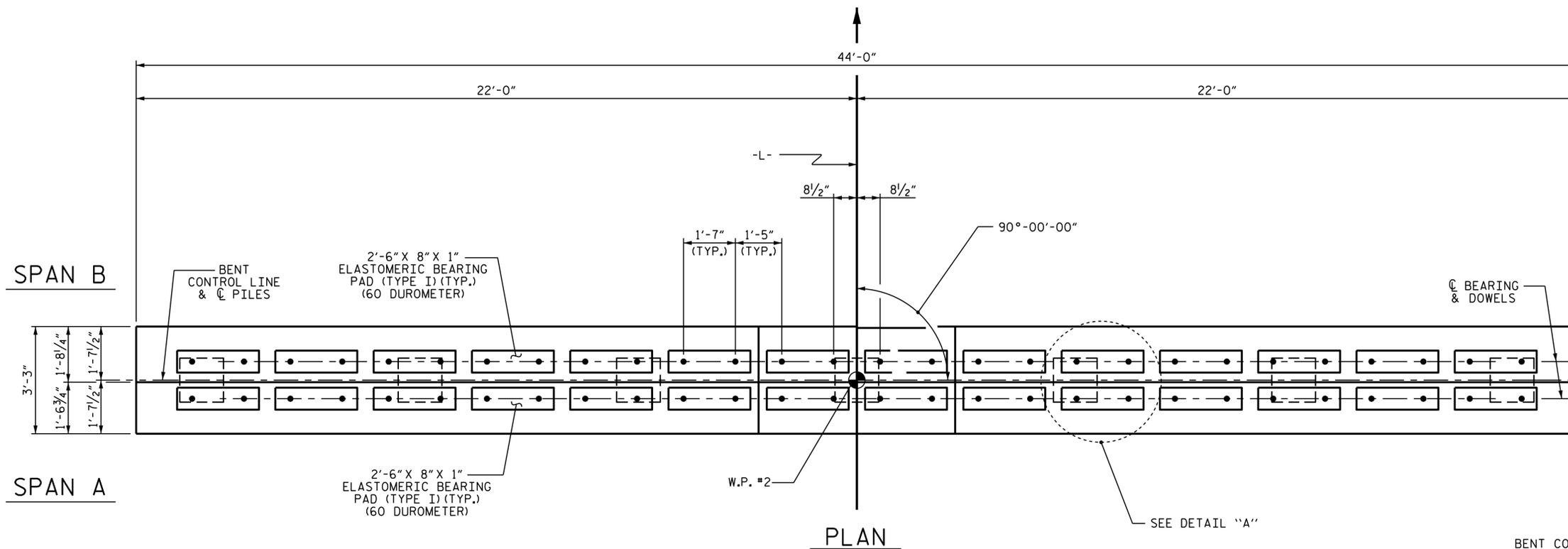
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19	
1			3			TOTAL SHEETS	
2			4			30	

NOTES

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

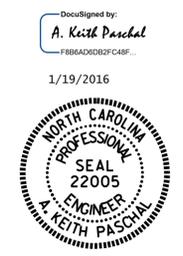
FIELD BEND #4 B4 & #4 B5 AS NECESSARY TO MAINTAIN REQUIRED CONCRETE COVER.

★ INVERT ALTERNATE STIRRUPS.



PROJECT NO. B-5300
 BEAUFORT COUNTY
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SHEET 1 OF 2



STATE OF NORTH CAROLINA
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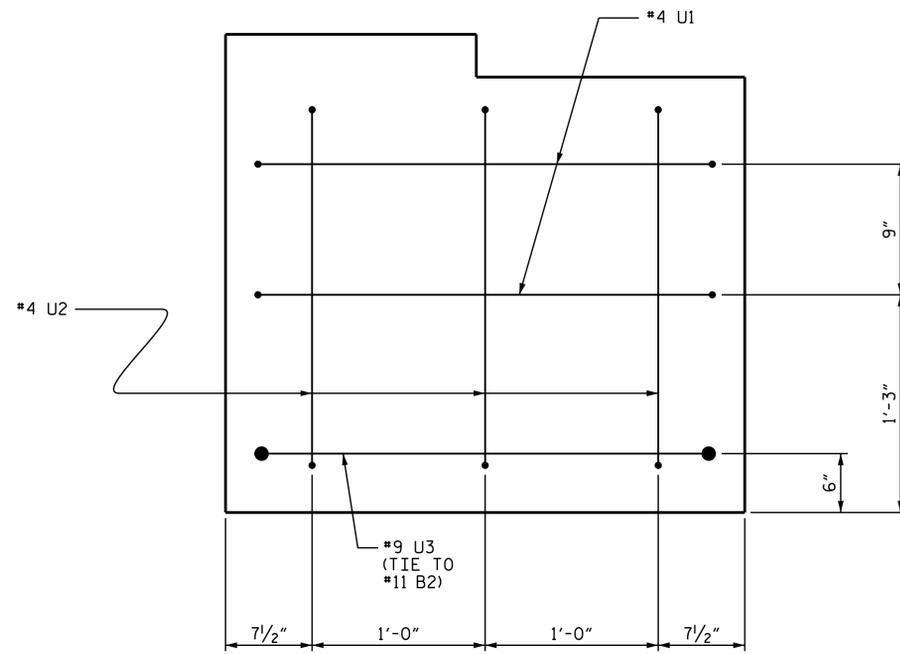
SUBSTRUCTURE BENT 1

DRAWN BY: K. P. SEDAI DATE: 7/13/15
 CHECKED BY: P. N. HOLDER DATE: 9/8/15
 DESIGN ENGINEER OF RECORD: P. N. HOLDER DATE: 9/8/15

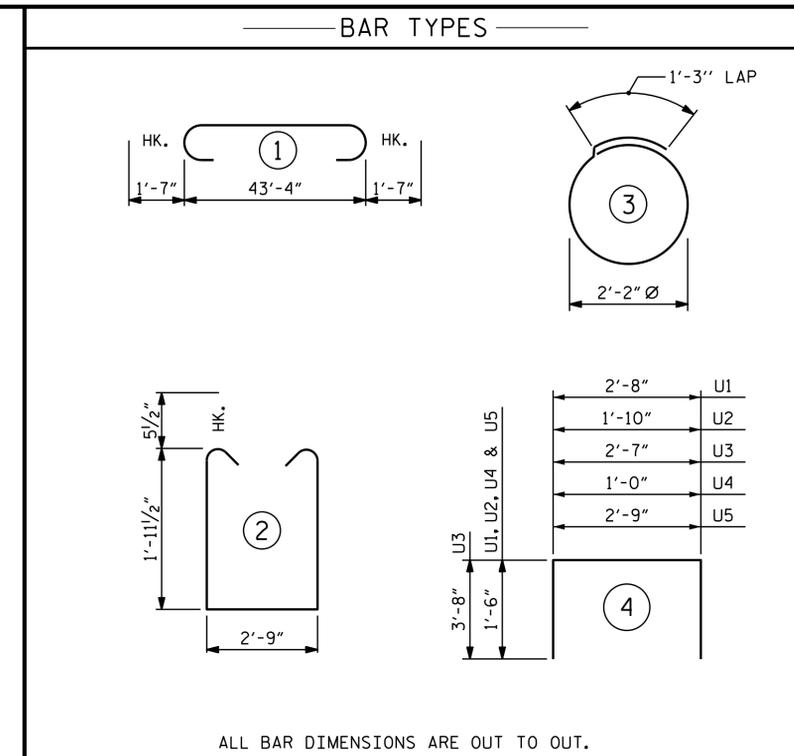
ELEVATION
 FOR SECTION A-A & B-B SEE SHEET 2 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO. S-21 TOTAL SHEETS 30
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

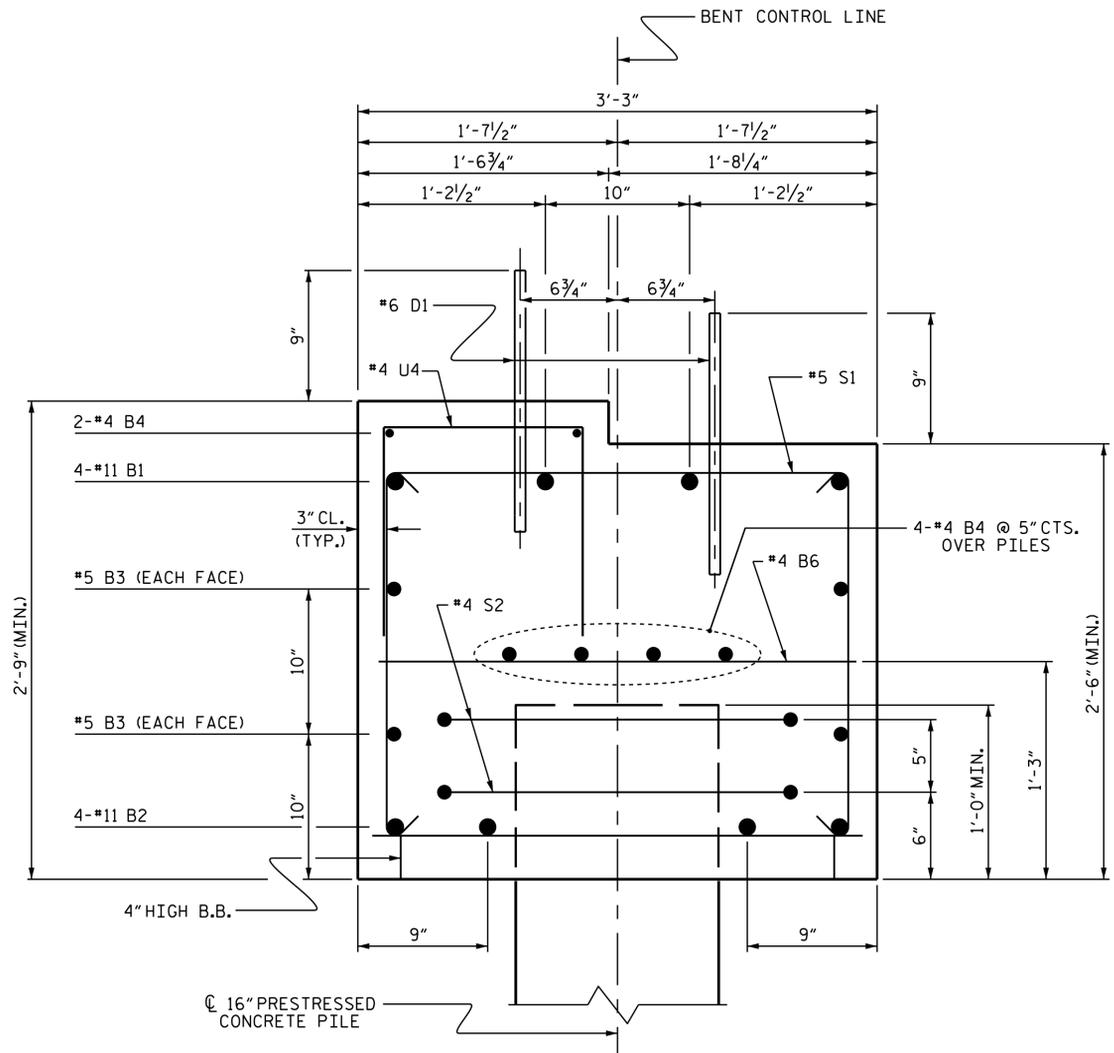


END OF CAP VIEW
(TYPICAL BOTH ENDS)

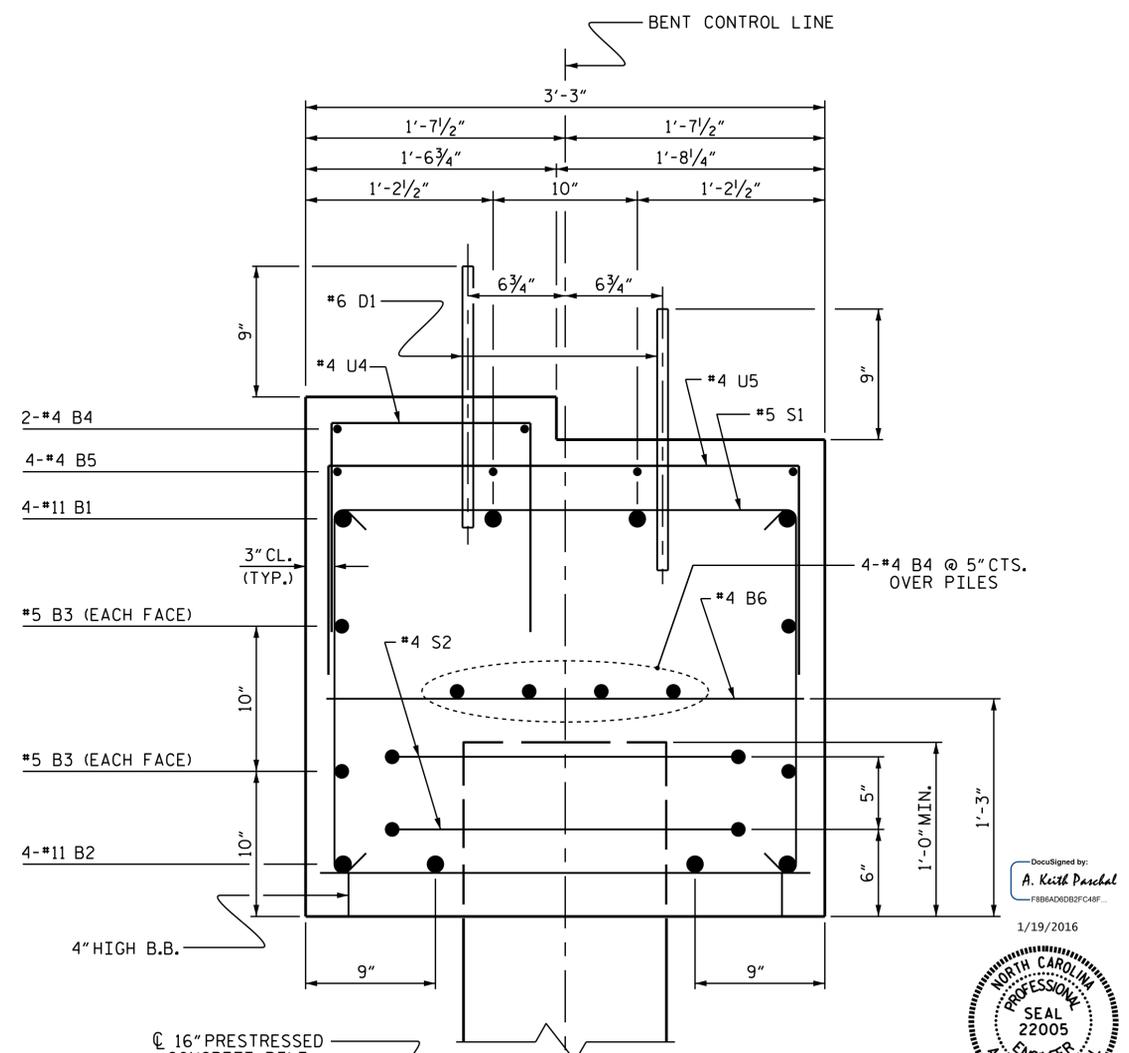


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	4	#11	1	46'-6"	988
* B2	4	#11	STR	43'-6"	924
* B3	4	#5	STR	43'-6"	181
* B4	12	#4	STR	23'-2"	186
* B5	4	#4	STR	30'-0"	80
* B6	11	#4	STR	2'-9"	20
* D1	56	#6	STR	1'-6"	126
* S1	52	#5	2	7'-7"	411
* S2	14	#4	3	8'-1"	76
* U1	4	#4	4	5'-8"	15
* U2	6	#4	4	4'-10"	19
* U3	2	#9	4	9'-11"	67
* U4	29	#4	4	4'-0"	77
* U5	20	#4	4	5'-9"	77
* EPOXY CONCRETE REINFORCING STEEL					3247 LBS.
CLASS AA CONCRETE					14.3 C.Y. ▲
▲ CONCRETE DISPLACED BY THE 16" PRESTRESSED CONCRETE PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.					
16" PRESTRESSED CONCRETE PILES					
No. = 7			LIN. FT. = 490		
PILE REDRIVES EA.		NO. = 4			



SECTION A-A



SECTION B-B

DRAWN BY : K. P. SEDAİ DATE : 7/14/15
 CHECKED BY : P. N. HOLDER DATE : 9/8/15
 DESIGN ENGINEER OF RECORD : P. N. HOLDER DATE : 9/8/15

19-JAN-2016 13:24
 R:\S\Structures\Plans\Final Plans\B-5300_SMU.BT1.dgn
 kpaschal

DocuSigned by:
A. Keith Paschal
 F3B8A0D83FC48F...
 1/19/2016

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SHEET NO. S-22
TOTAL SHEETS 30

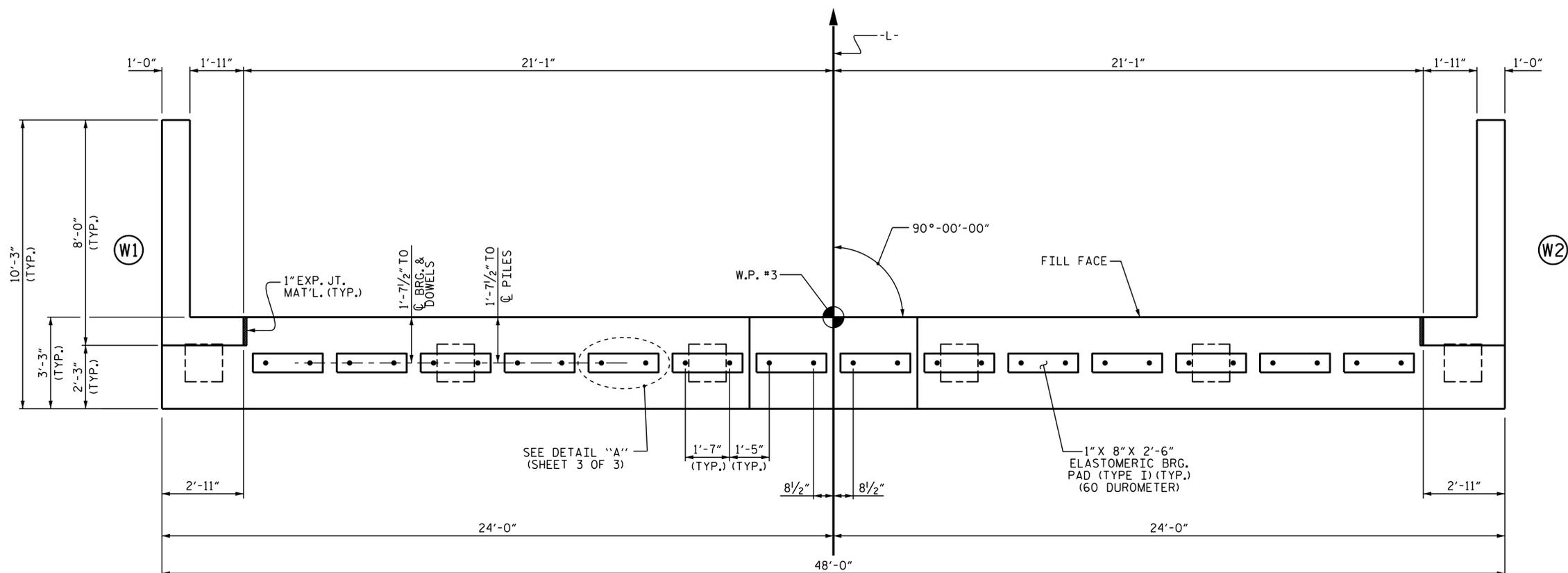
NOTES

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

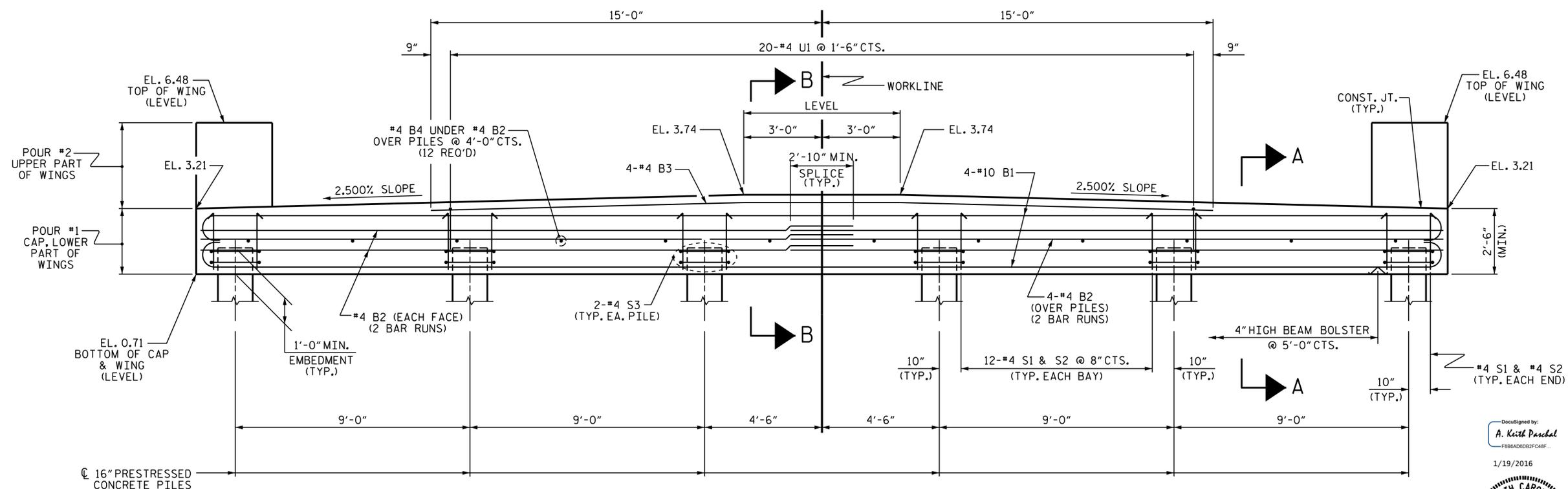
INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED. FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

FOR WING DETAILS, SEE SHEET 2 OF 3.

FIELD BEND #4 B3 AS NECESSARY TO MAINTAIN REQUIRED CONCRETE COVER.



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY. FOR SECTION A-A & B-B, SEE SHEET 3 OF 3.

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 2

Designed by:
 A. Keith Paschal
 1/19/2016

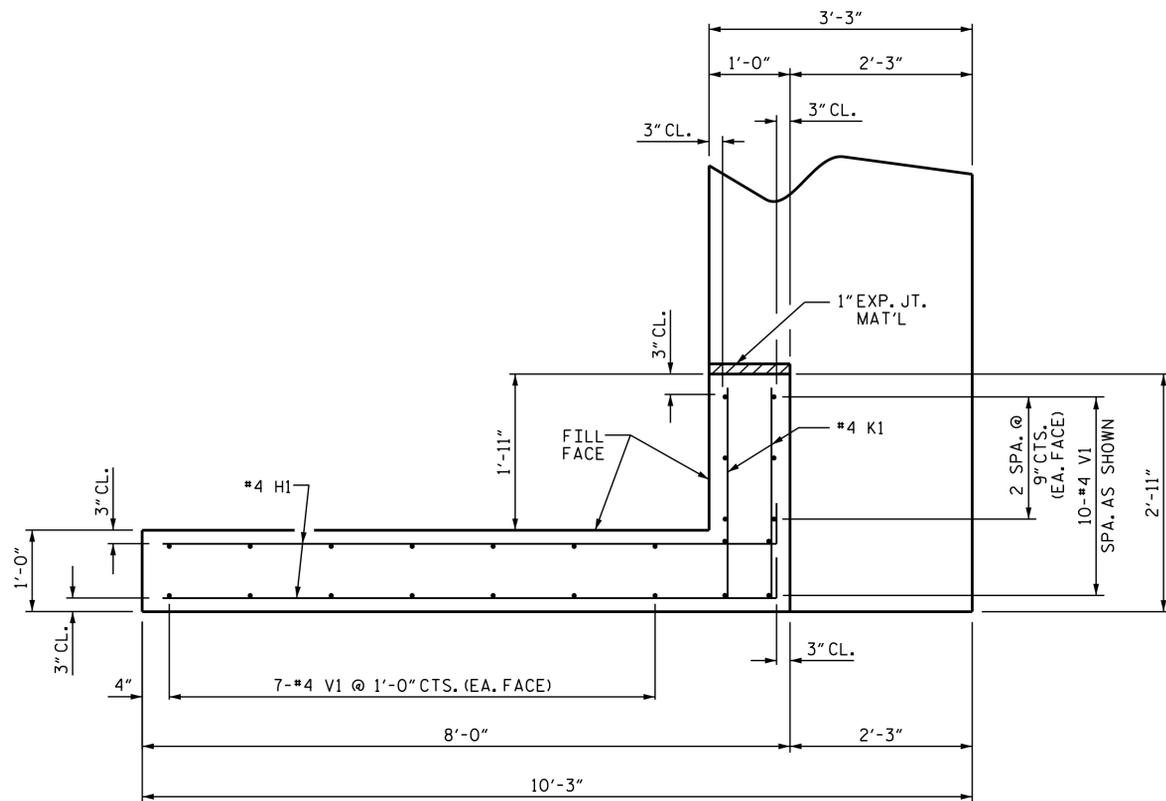


DRAWN BY: K. P. SEDAI DATE: 7/7/15
 CHECKED BY: P. N. HOLDER DATE: 9/4/15
 DESIGN ENGINEER OF RECORD: P. N. HOLDER DATE: 9/4/15

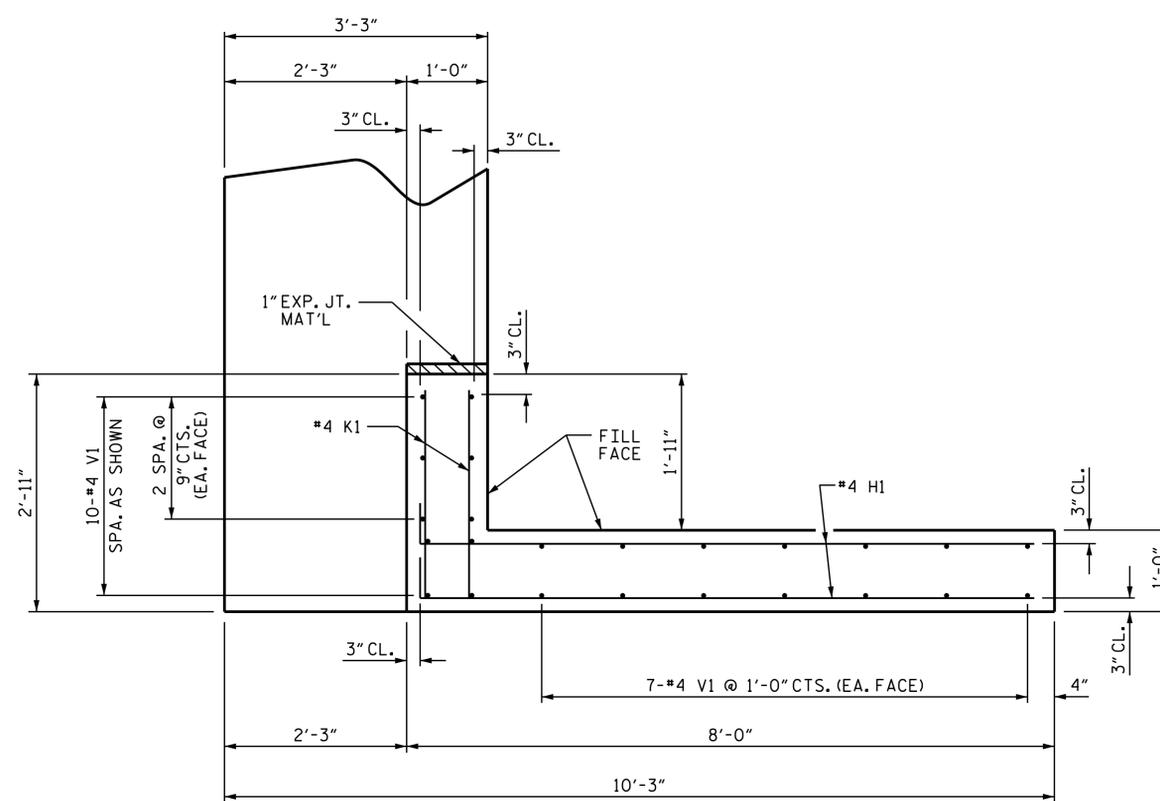
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 R:\Structures\Plans\Final Plans\B-5300_SMU.EB2.dgn
 Kpaschal

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

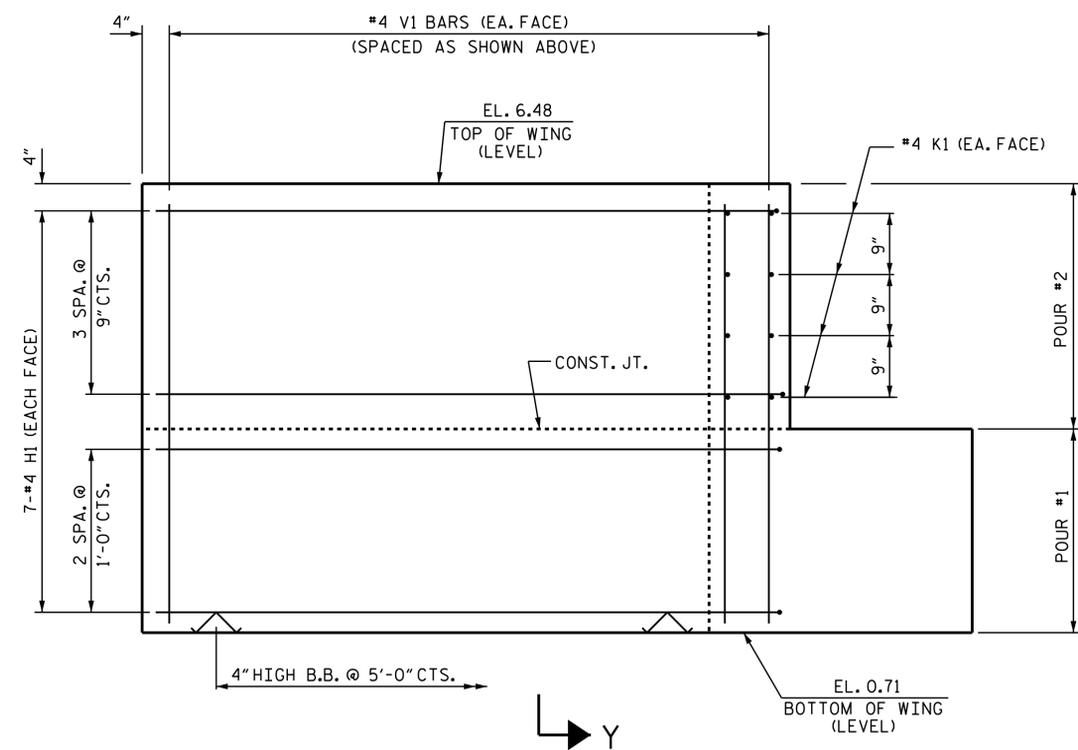
REVISIONS						SHEET NO. S-23
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



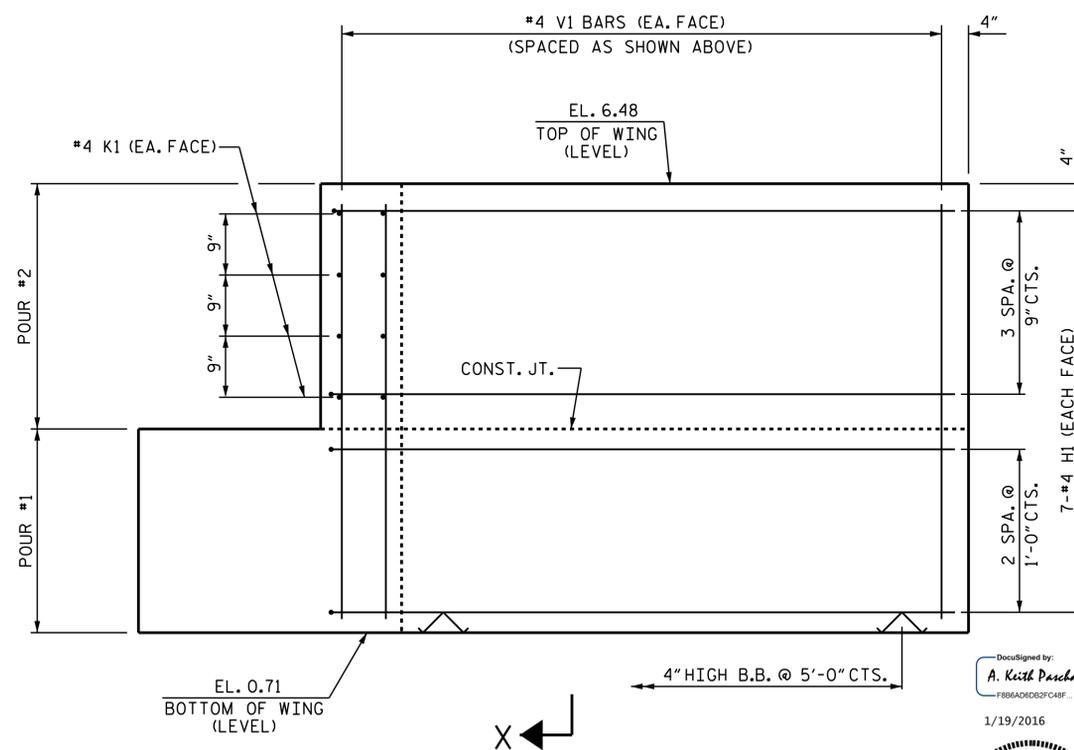
PLAN OF WING (W1)



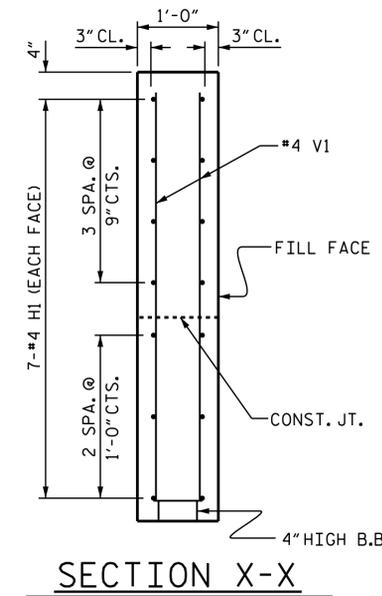
PLAN OF WING (W2)



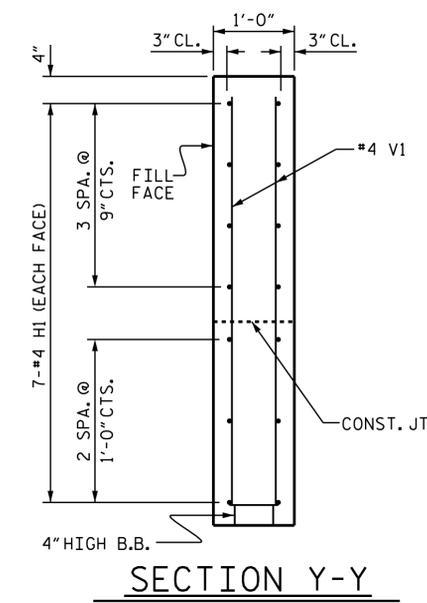
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X

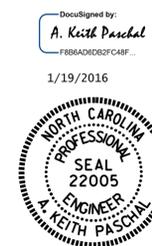


SECTION Y-Y

WING DETAILS

DRAWN BY: K. P. SEDAİ DATE: 7/8/15
 CHECKED BY: P. N. HOLDER DATE: 9/4/15
 DESIGN ENGINEER OF RECORD: P. N. HOLDER DATE: 9/4/15

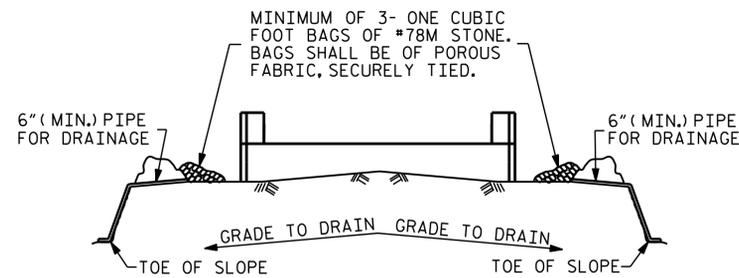
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED



PROJECT NO. B-5300
 BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 2 OF 3

REVISIONS						SHEET NO. S-24
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

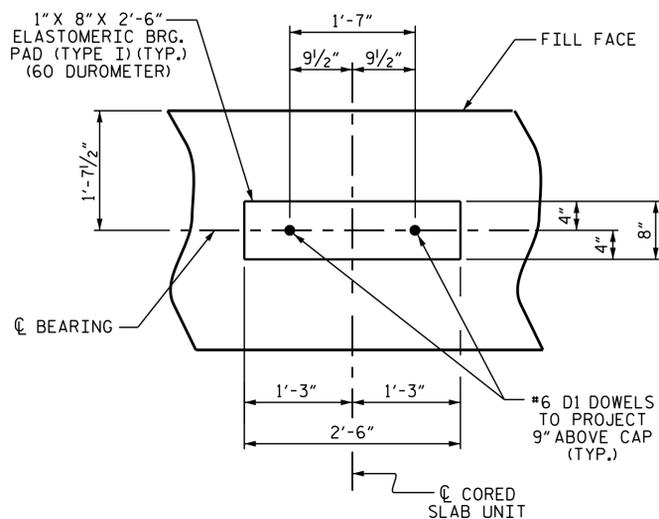


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

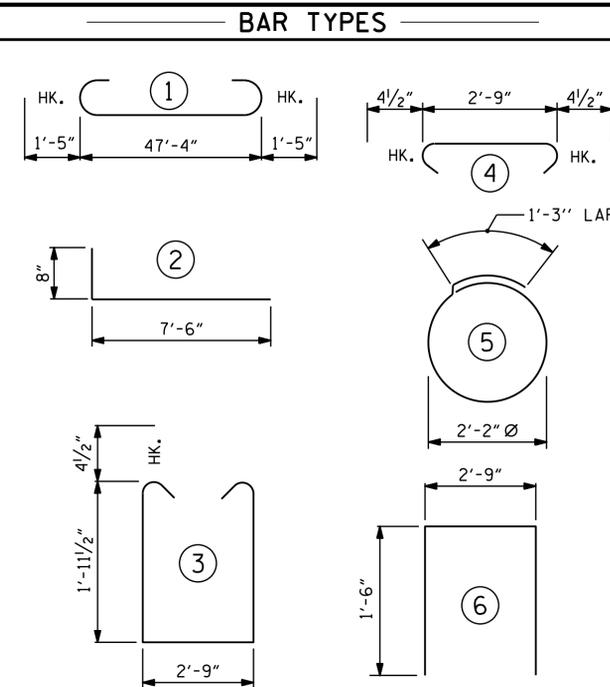
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

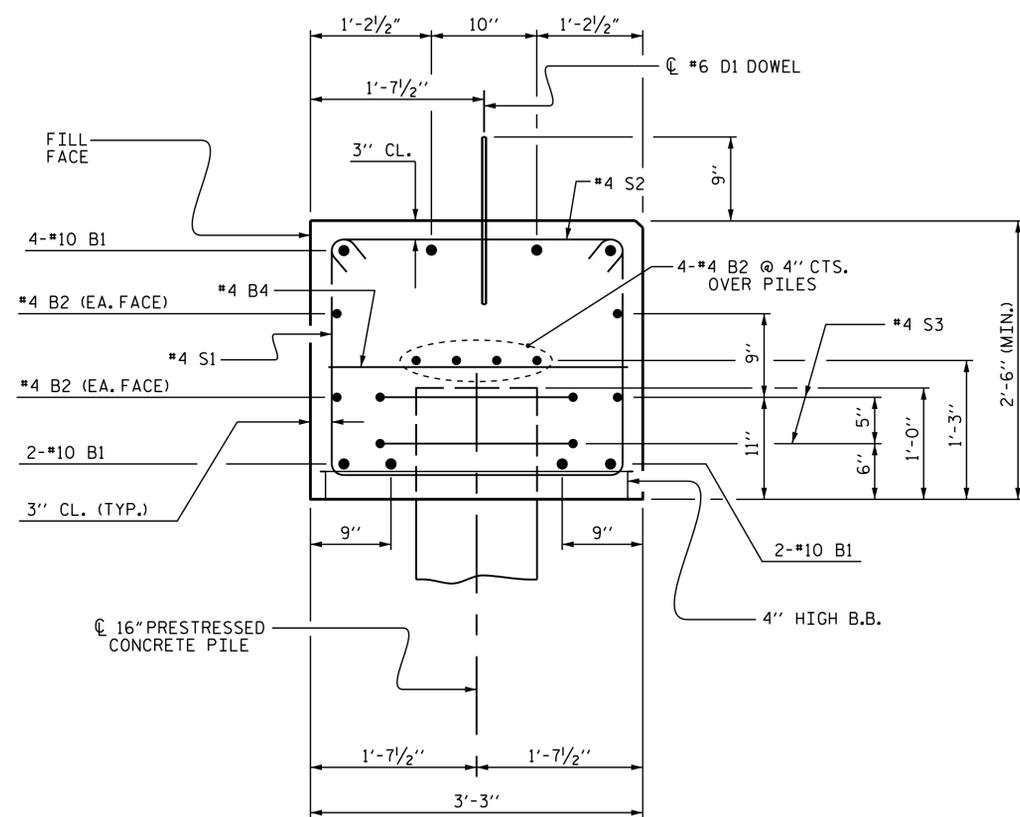


DETAIL "A"

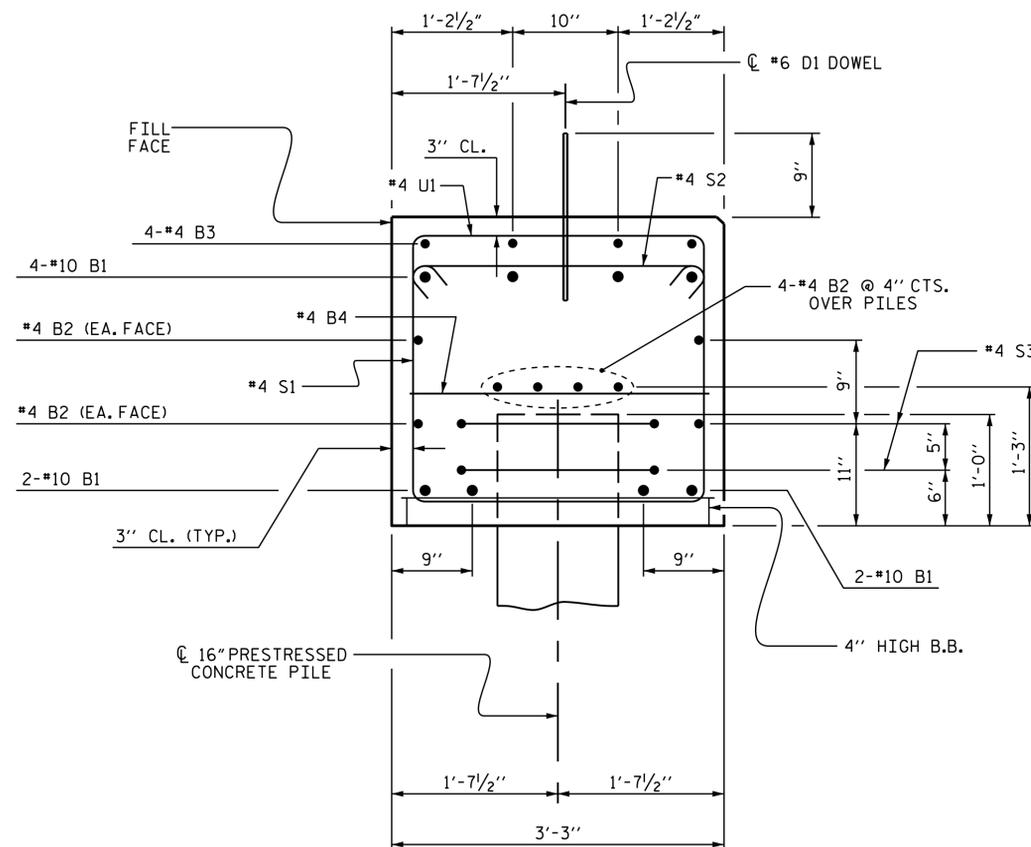


ALL BAR DIMENSIONS ARE OUT TO OUT.
 END BENT 2
 16" PRESTRESSED CONCRETE PILES
 NO. = 6 LIN. FT. = 420
 PILE REDRIVES EA. NO. = 3

BILL OF MATERIAL					
END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	8	#10	1	50'-2"	1727
* B2	16	#4	STR	25'-2"	269
* B3	4	#4	STR	30'-0"	80
* B4	12	#4	STR	2'-9"	22
* D1	28	#6	STR	1'-6"	63
* H1	28	#4	2	8'-2"	153
* K1	16	#4	STR	2'-5"	26
* S1	62	#4	3	7'-5"	307
* S2	62	#4	4	3'-6"	145
* S3	12	#4	5	8'-1"	65
* U1	20	#4	6	5'-9"	77
* V1	48	#4	STR	5'-3"	168
* EPOXY COATED REINFORCING STEEL					3102 LBS.
CLASS AA CONCRETE BREAKDOWN					
POUR #1 CAP & LOWER PART OF WINGS					★ 17.1 C.Y.
POUR #2 UPPER PART OF WINGS					2.4 C.Y.
TOTAL CLASS AA CONCRETE					★ 19.5 C.Y.
★ CONCRETE DISPLACED BY THE 16" PRESTRESSED CONCRETE PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.					



SECTION A-A



SECTION B-B

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 3 OF 3

DocuSigned by:
 A. Keith Paschal
 F886AD6D82FC48F...

1/19/2016



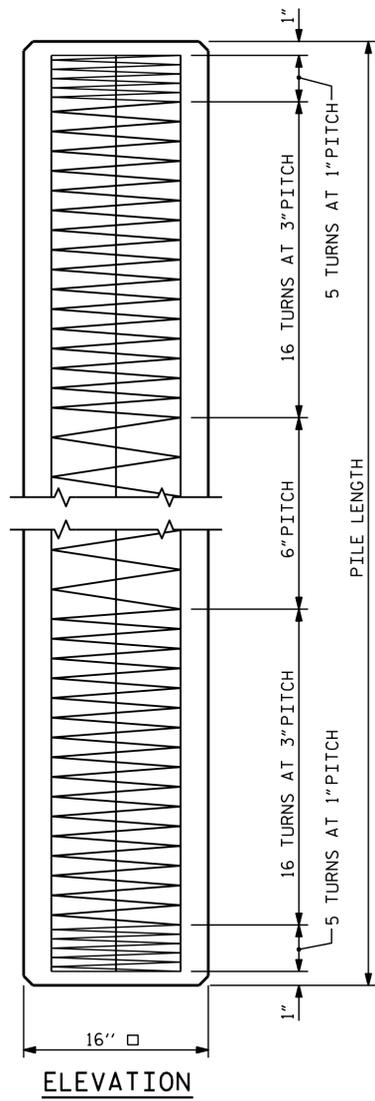
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE END BENT 2

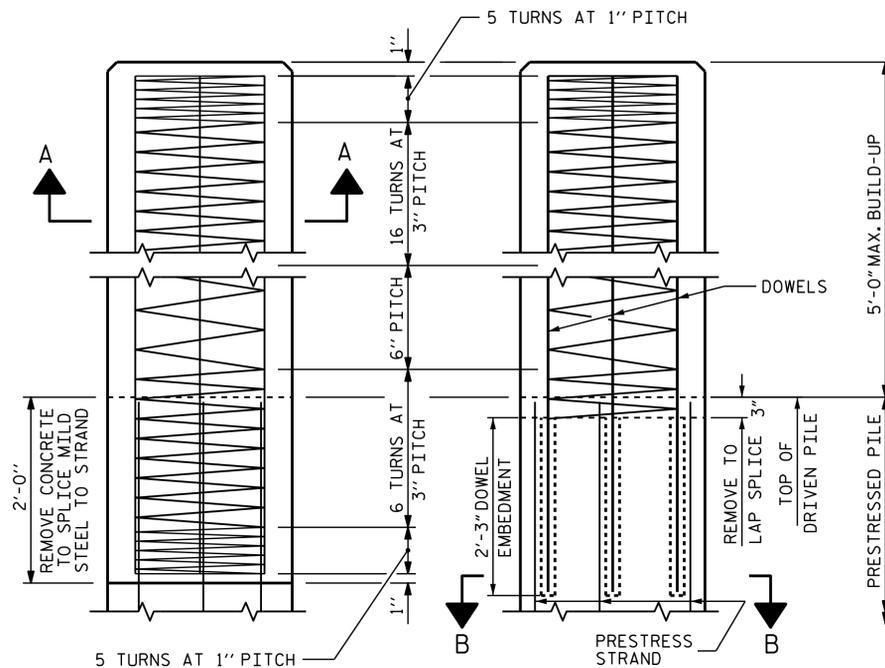
DRAWN BY: K. P. SEDAI DATE: 7/10/15
 CHECKED BY: P. N. HOLDER DATE: 9/4/15
 DESIGN ENGINEER OF RECORD: P. N. HOLDER DATE: 9/4/15

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO. S-25
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

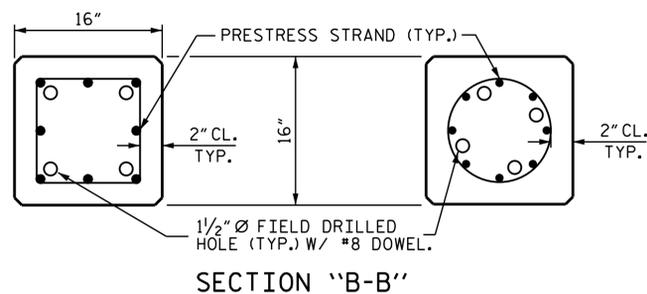


ELEVATION



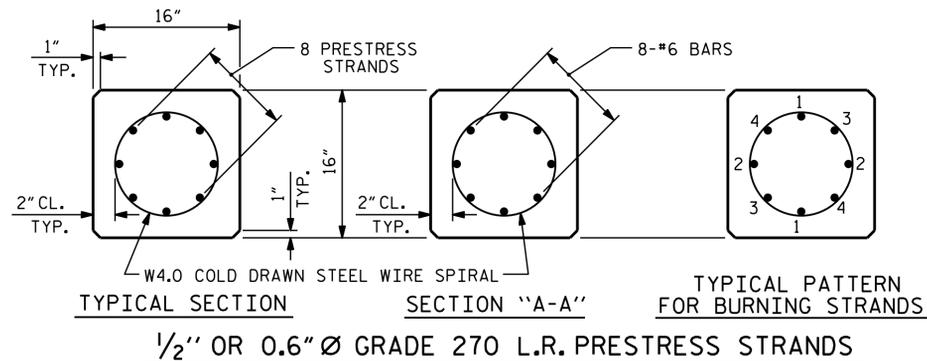
BUILD-UP AND SPIRAL REINFORCING

OPTIONAL BUILD-UP WITH DOWELS



SECTION "B-B"

(AT THE CONTRACTOR'S OPTION, PILE BUILD-UP MAY BE CONSTRUCTED WITH DOWELS.)

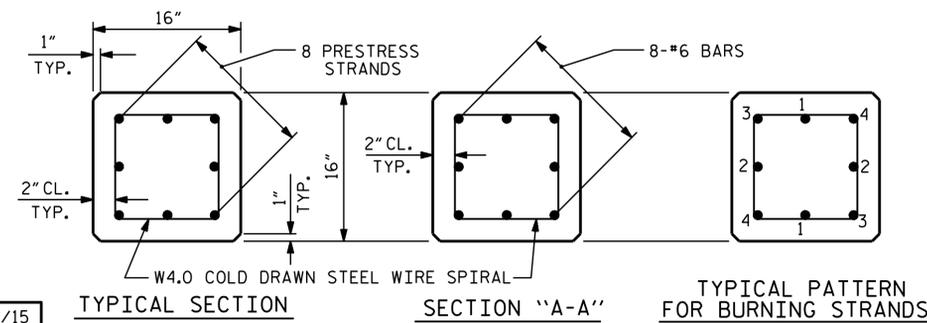


TYPICAL SECTION

SECTION "A-A"

TYPICAL PATTERN FOR BURNING STRANDS

1/2" OR 0.6" Ø GRADE 270 L.R. PRESTRESS STRANDS

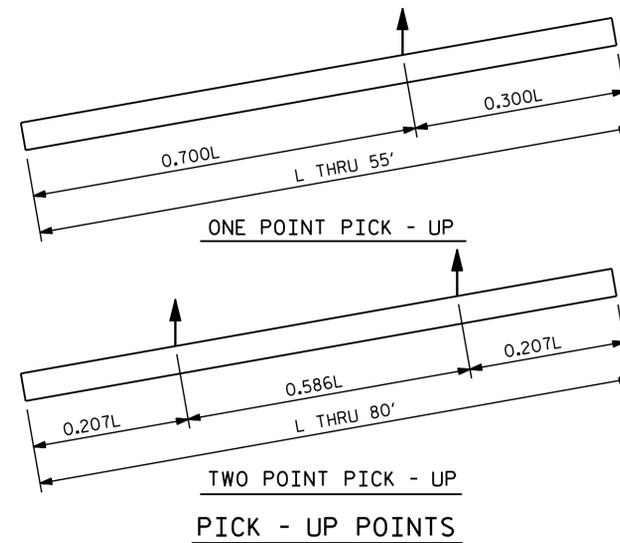


TYPICAL SECTION

SECTION "A-A"

TYPICAL PATTERN FOR BURNING STRANDS

1/2" OR 0.6" Ø GRADE 270 L.R. PRESTRESS STRANDS



PICK - UP POINTS

QUANTITIES FOR ONE 16" PRESTRESSED PILE						
LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE POINT PICK-UP		TWO POINT PICK-UP	
			0.300L	0.700L	0.207L	0.586L
25'-0"	1.63	3.31	7'-6"	17'-6"	5'-2"	14'-8"
30'-0"	1.96	3.97	9'-0"	21'-0"	6'-2 1/2"	17'-7"
35'-0"	2.29	4.63	10'-6"	24'-6"	7'-3"	20'-6"
40'-0"	2.61	5.29	12'-0"	28'-0"	8'-3 1/2"	23'-5"
45'-0"	2.94	5.95	13'-6"	31'-6"	9'-4"	26'-4"
50'-0"	3.27	6.61	15'-0"	35'-0"	10'-4"	29'-4"
55'-0"	3.59	7.28	16'-6"	38'-6"	11'-4 1/2"	32'-3"
60'-0"	3.92	7.94			12'-5"	35'-2"
65'-0"	4.25	8.60			13'-5 1/2"	38'-1"
70'-0"	4.57	9.26			14'-6"	41'-0"
75'-0"	4.90	9.92			15'-6 1/2"	43'-11"
80'-0"	5.23	10.58			16'-7"	46'-10"

STRAND DATA:

SIZE	GRADE	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
1/2"	270 L.R.	0.153	41,300# PER STRAND	30,980# PER STRAND
0.6"	270 L.R.	0.217	58,600# PER STRAND	43,940# PER STRAND

DOWEL INSTALLATION FOR OPTIONAL BUILD-UP

GROUT COMPRESSIVE STRENGTH: f'c= 5,000 PSI

BEFORE DRILLING DOWEL HOLES, REMOVE THE UPPER 3" OF CONCRETE FROM THE TOP OF THE PILE WITHOUT DAMAGE TO THE REINFORCING STEEL. THE REMOVAL PLANE SHOULD BE NORMAL TO THE EDGE OF THE PILE.

DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN 1/2" CLEAR TO ALL EXISTING PRESTRESSING STRANDS IN THE CONCRETE PILE.

FIELD DRILLED HOLES SHALL BE CLEAN AND FREE OF ANY OBSTRUCTIONS BEFORE GROUTING OF DOWELS. DOWEL BARS SHALL BE INSTALLED AND GROUTED WITH AN APPROVED NON-SHRINK GROUT.

THE SPIRAL REINFORCING IN ALL BUILD-UPS SHALL BE W4.0 COLD DRAWN STEEL WIRE WHICH SHALL BE SECURED TO THE LONGITUDINAL REINFORCEMENT TO MAINTAIN PITCH.

THE SPIRAL REINFORCING IN THE BUILD-UP AND THE PRESTRESSED CONCRETE PILE SHALL BE SPLICED BY OVERLAPPING A MIN. OF ONE TURN.

NOTES

PRESTRESSED CONCRETE STRENGTH : f'c= 7,500 PSI

BUILD-UP CONCRETE STRENGTH : f'c= 7,500 PSI

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS CONFORMING TO AASHTO M203. STRAND SAMPLING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT THE CONTRACTOR'S OPTION, 1/2" OR 0.6" STRANDS MAY BE USED IN EITHER STRAND CONFIGURATION SHOWN IN THE TYPICAL SECTION DETAIL. MIXING OF STRAND SIZE IS NOT ALLOWED.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

TRANSFER THE LOAD FROM THE ANCHORAGES TO THE PILE AFTER THE CONCRETE HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF STRANDS, BURN IN OPPOSITE PAIRS AND SYMMETRICALLY ABOUT BOTH THE VERTICAL AND HORIZONTAL AXES. STRANDS 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 STRANDS, SAY 3-3 AND 4-4, MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS ARE TO BE INDICATED WITH A 2" WIDE BLACK MARK.

DRIVE PILES USING A METHOD APPROVED BY THE ENGINEER, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

DRIVING OF THE BUILT-UP PILE WILL NOT BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 5,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

THE WATER/CEMENT RATIO FOR CONCRETE PILES SHALL NOT EXCEED 0.40.

PRESTRESSED PILES SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE CONCRETE IN THE PILES OF INTERIOR BENT NO.1 ONLY SHALL CONTAIN SILICA FUME. SILICA FUME SHALL BE SUBSTITUTED FOR 5% OF THE PORTLAND CEMENT BY WEIGHT. IF THE OPTION OF ARTICLE 1024-1 OF THE STANDARD SPECIFICATIONS TO PARTIALLY SUBSTITUTE CLASS F FLY ASH FOR PORTLAND CEMENT IS EXERCISED, THEN THE RATE OF FLY ASH SUBSTITUTION SHALL BE REDUCED TO 1.0 LB OF FLY ASH PER 1.0 LB. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

DocuSigned by:
A. Keith Paschal

1/19/2016



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD

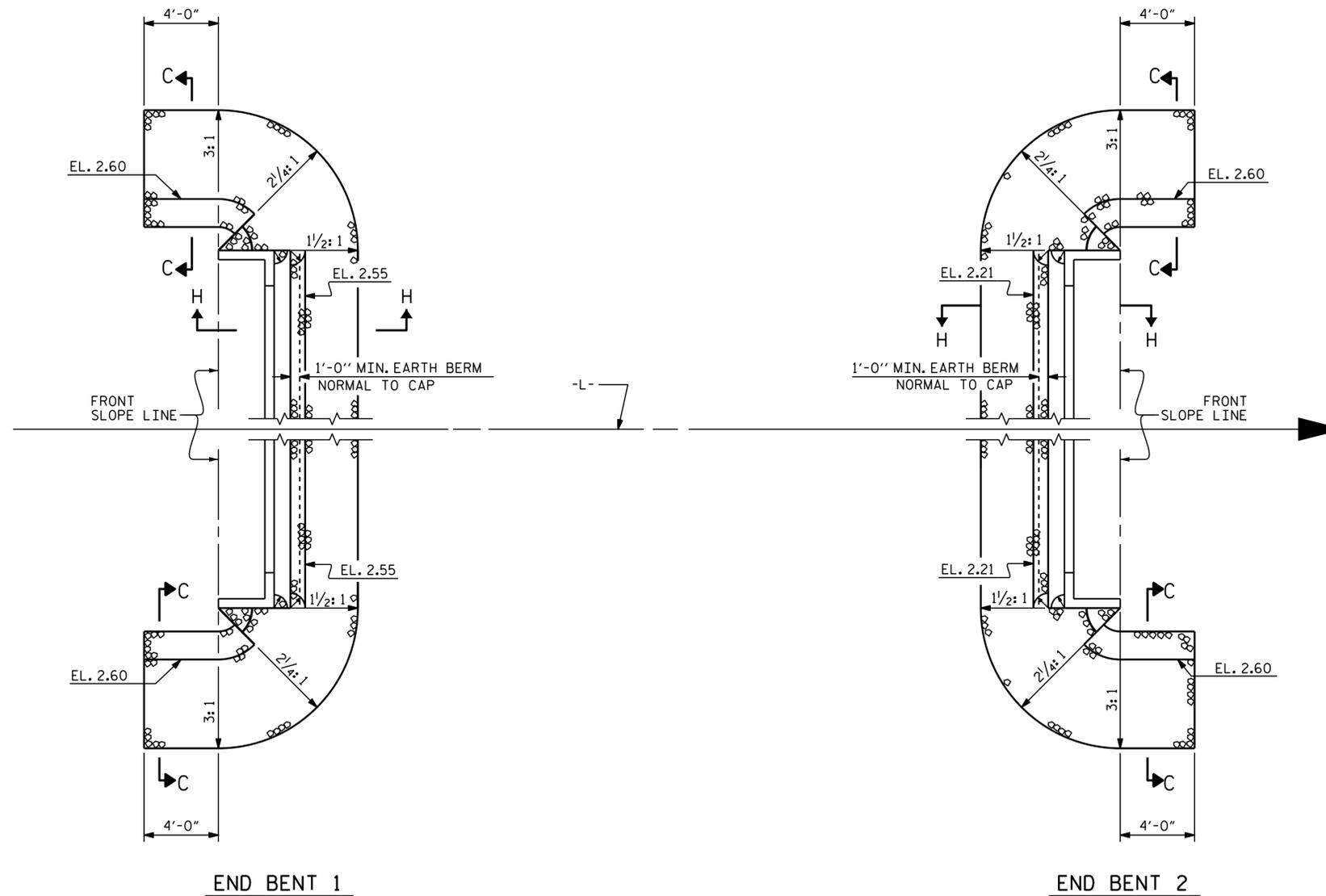
16" PRESTRESSED
 CONCRETE PILE

ASSEMBLED BY : K. P. SEDAI	DATE : 7/13/15
CHECKED BY : P. N. HOLDER	DATE : 9/8/15
DRAWN BY : RH 9/98	REV. 11/30/10 WMC/GM
CHECKED BY : LES 10/98	REV. 10/1/11 MAA/GM
	REV. 12/14 MAA/TMG

REVISIONS						SHEET NO. S-26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

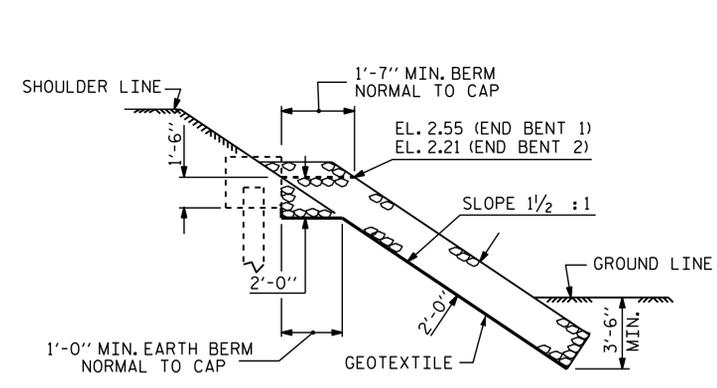
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

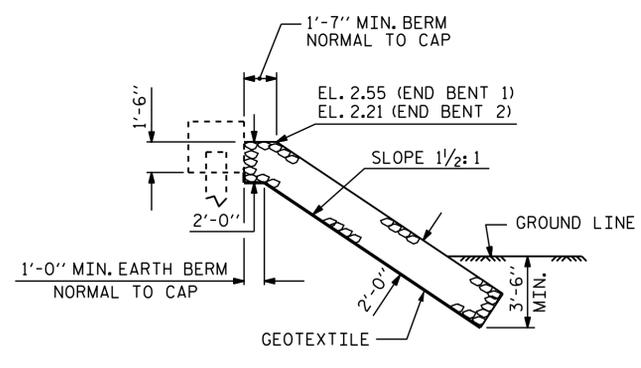


PLAN

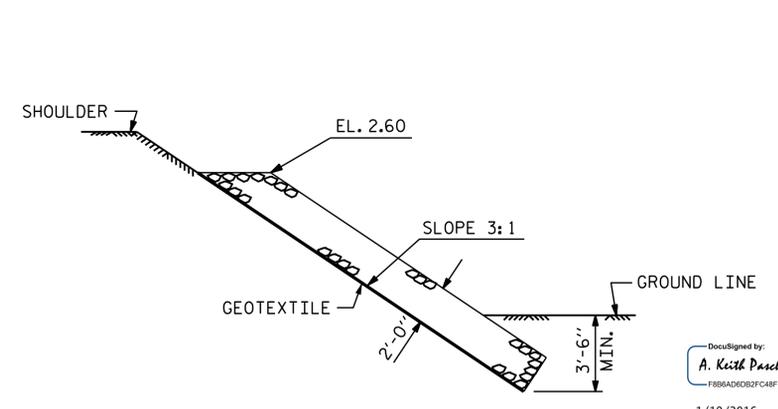
ESTIMATED QUANTITIES		
BRIDGE @ STA. 18+77.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	60	67
END BENT 2	57	64



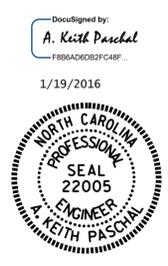
SECTION H-H



SECTION C-C
BERM RIP RAPPED



SECTION C-C



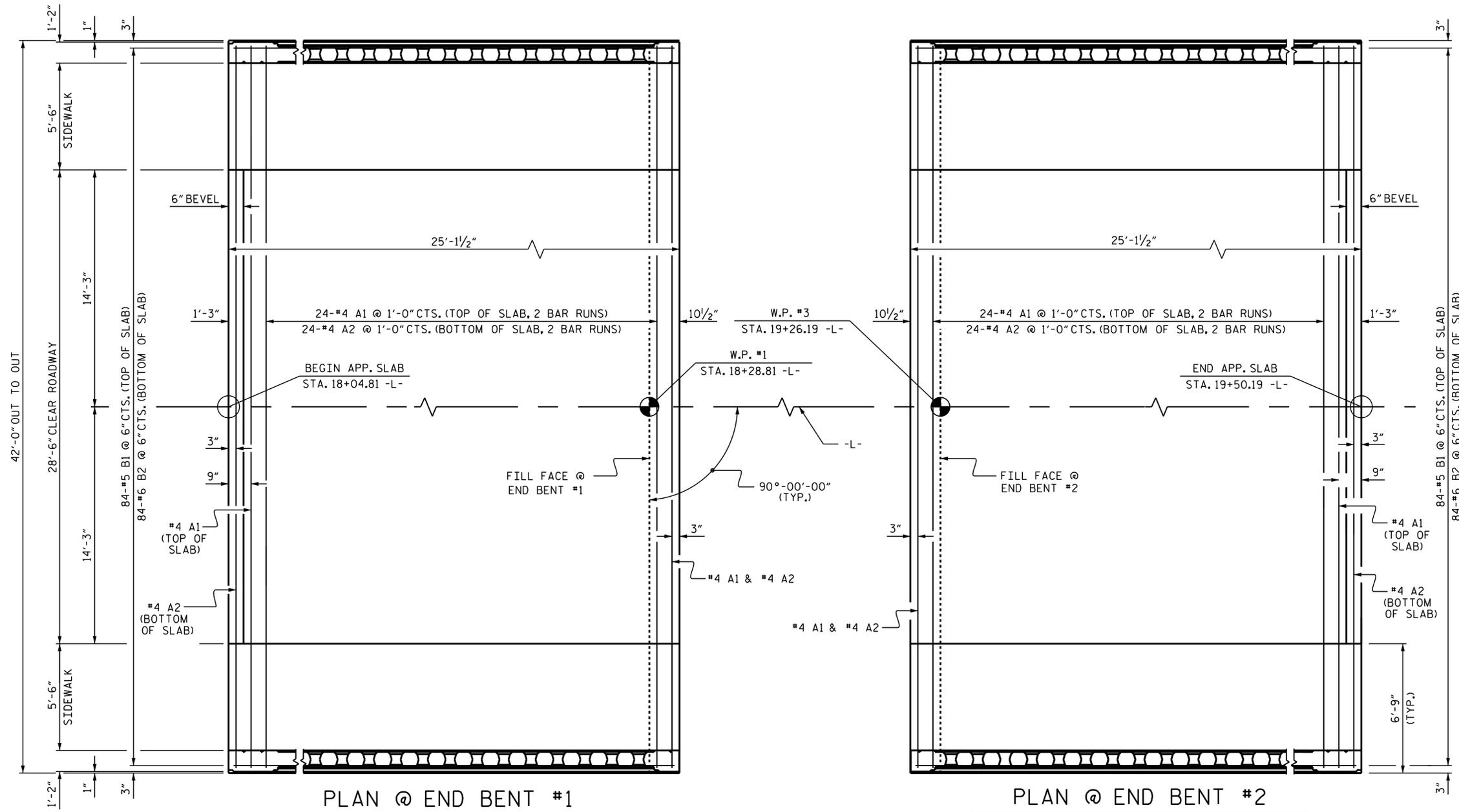
PROJECT NO. B-5300
BEAUFORT COUNTY
STATION: 18+77.50 -L-

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

ASSEMBLED BY : K. P. SEDAI	DATE : 7/15/15
CHECKED BY : P. N. HOLDER	DATE : 10/9/15
DRAWN BY : REK 1/84	REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84	REV. 10/1/11 MAA/GM
	REV. 12/21/11 MAA/GM

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

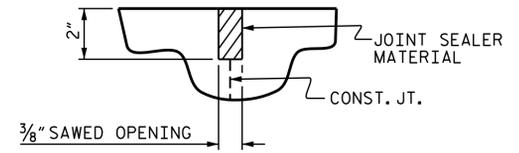
REVISIONS						SHEET NO. S-27
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



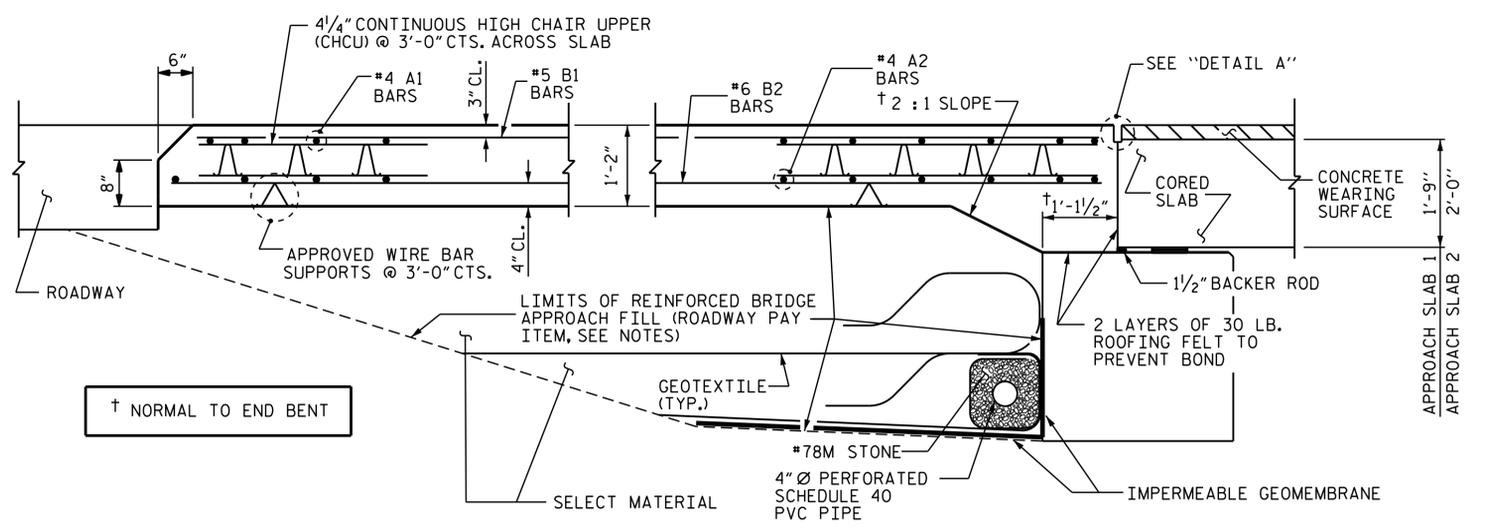
PLAN @ END BENT #1
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

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

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



DETAIL A



SECTION THRU SLAB

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 1 OF 3

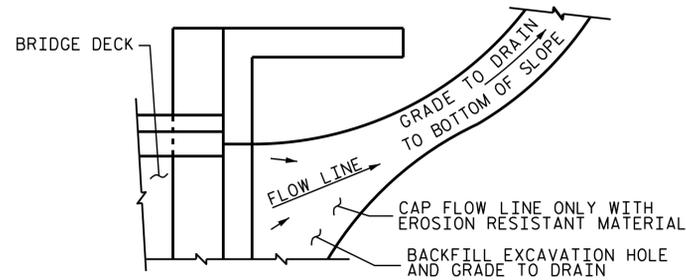
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT



ASSEMBLED BY : P.N.HOLDER DATE : 09/15
 CHECKED BY : K.P.SEDAI DATE : 10/12
 DESIGN ENGINEER OF RECORD: P.N.HOLDER DATE : 10/12

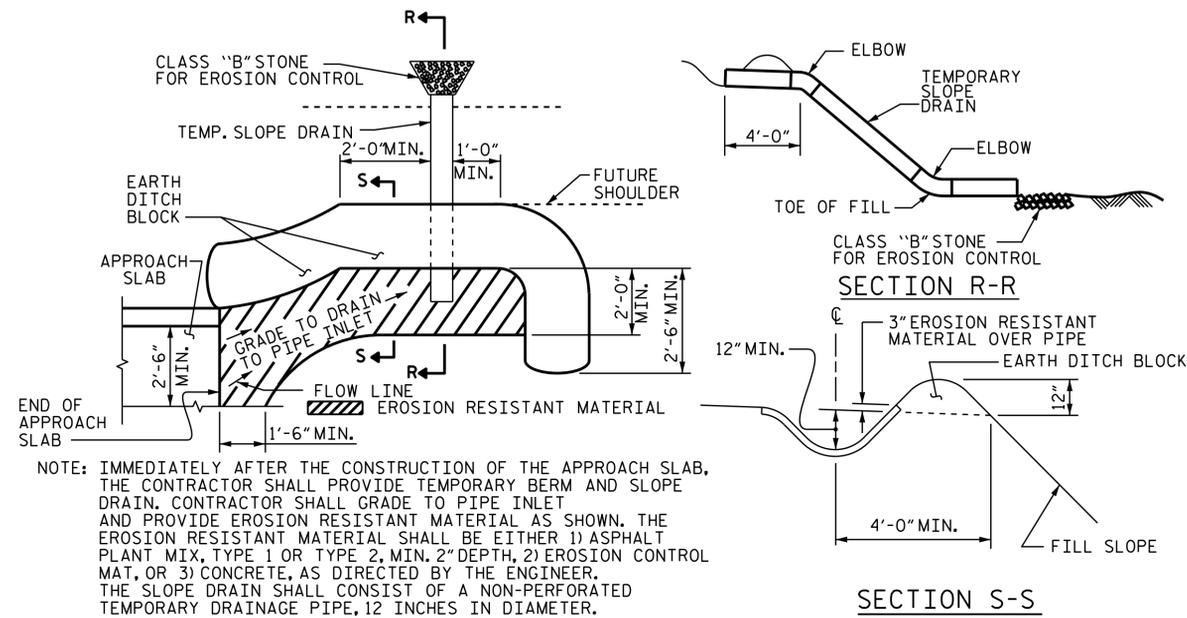
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO. S-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



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

TEMPORARY DRAINAGE DETAIL

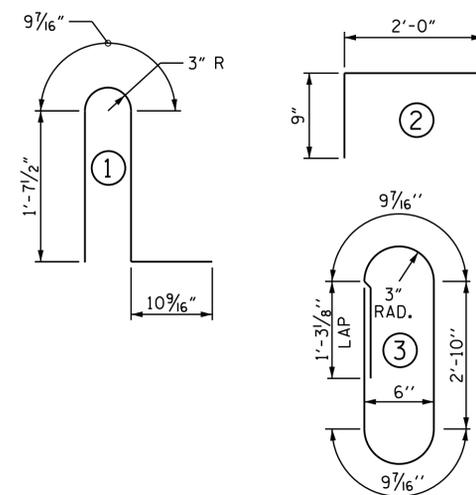


PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

APPROACH SLAB AT EB #1						APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	52	#4	STR	21'-10"	758	* A1	52	#4	STR	21'-10"	758
* A2	52	#4	STR	21'-10"	758	* A2	52	#4	STR	21'-10"	758
* B1	84	#5	STR	24'-3"	2125	* B1	84	#5	STR	24'-3"	2125
* B2	84	#6	STR	24'-9"	3123	* B2	84	#6	STR	24'-9"	3123
* S1	68	#5	1	4'-11"	349	* S1	68	#5	1	4'-11"	349
* U1	20	#4	2	3'-6"	47	* U1	20	#4	2	3'-6"	47
* EPOXY COATED REINFORCING STEEL LBS. 7160						* EPOXY COATED REINFORCING STEEL LBS. 7160					
CLASS AA CONCRETE C. Y. 48.8						CLASS AA CONCRETE C. Y. 48.8					
CLASSIC CONCRETE BRIDGE RAIL						CLASSIC CONCRETE BRIDGE RAIL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B3	4	#5	STR	24'-9"	103	* B3	4	#5	STR	24'-9"	103
* B4	4	#7	STR	24'-9"	202	* B4	4	#7	STR	24'-9"	202
* S2	68	#5	3	8'-6"	603	* S2	68	#5	3	8'-6"	603
* EPOXY COATED REINFORCING STEEL LBS. 908						* EPOXY COATED REINFORCING STEEL LBS. 908					
CLASS AA CONCRETE C. Y. 5.5						CLASS AA CONCRETE C. Y. 5.5					
CLASSIC CONCRETE BRIDGE RAIL 50.17 LIN. FT.						CLASSIC CONCRETE BRIDGE RAIL 50.17 LIN. FT.					
SIDEWALK						SIDEWALK					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B5	12	#4	STR	24'-9"	198	* B5	12	#4	STR	24'-9"	198
* G1	50	#4	STR	6'-0"	200	* G1	50	#4	STR	6'-0"	200
* EPOXY COATED REINFORCING STEEL LBS. 398						* EPOXY COATED REINFORCING STEEL LBS. 398					
CLASS AA CONCRETE C. Y. 7.9						CLASS AA CONCRETE C. Y. 7.9					

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.

CLASSIC CONCRETE BRIDGE RAIL SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL PARTS OF THE CLASSIC CONCRETE BRIDGE RAIL INCLUDING BUT NOT LIMITED TO THE REINFORCING STEEL, CLASS AA CONCRETE, AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT OF "CLASSIC CONCRETE BRIDGE RAIL".

ALL REINFORCING STEEL IN APPROACH SLAB SHALL BE EPOXY COATED.

APPROACH SLAB GROOVING IS REQUIRED.

PROJECT NO. B-5300
BEAUFORT COUNTY
 STATION: 18+77.50 -L-

SHEET 2 OF 3

DocuSigned by:
 A. Keith Paschal
 F886AD0B2FC48F...

1/19/2016



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT

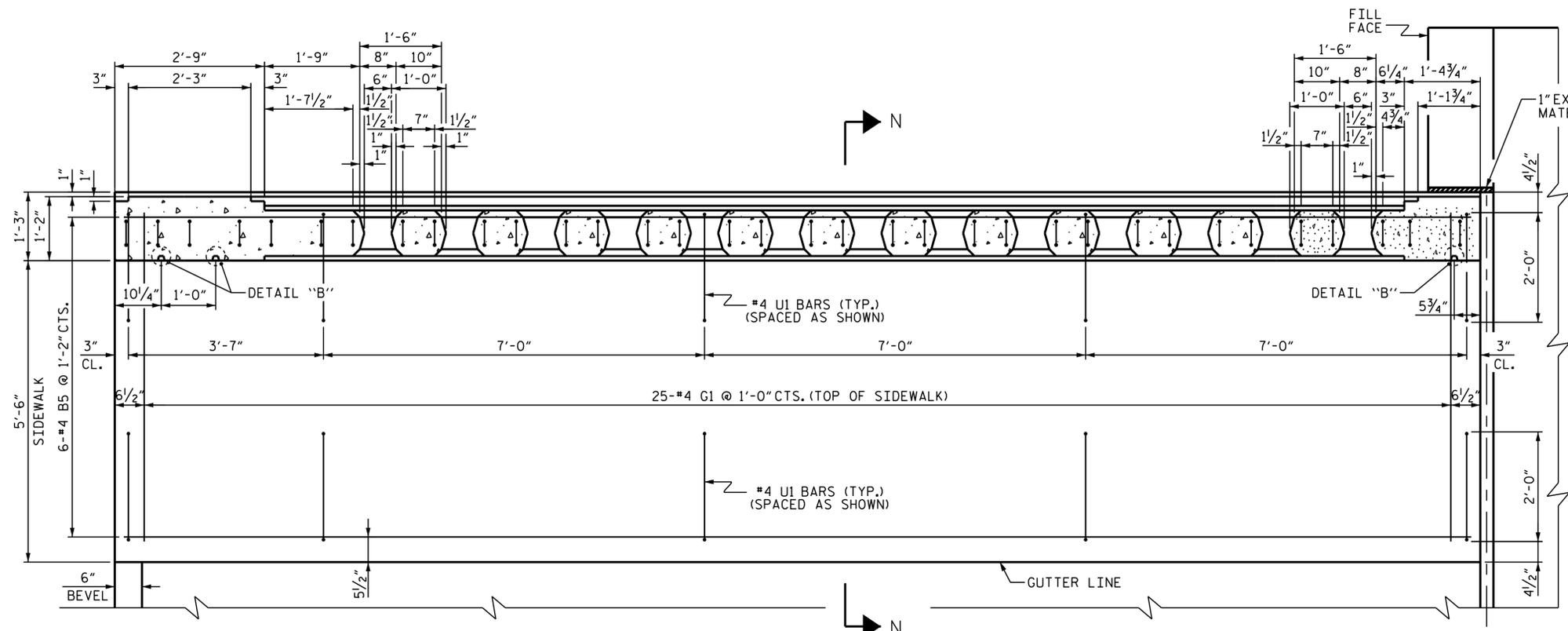
REVISIONS

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

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

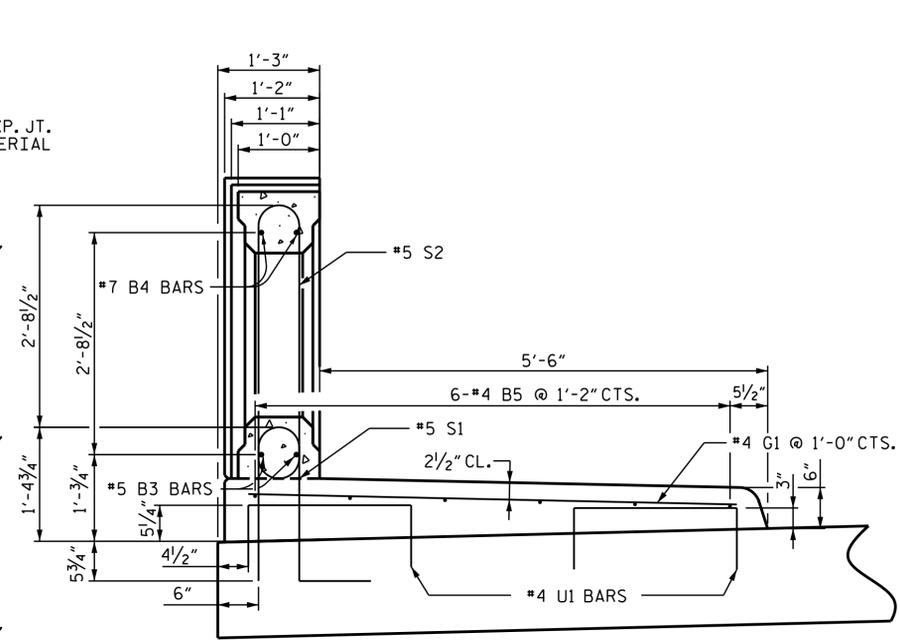
SHEET NO.
 S-29
 TOTAL SHEETS
 30

ASSEMBLED BY : P.N.HOLDER DATE : 09/15
 CHECKED BY : K.P.SEDAI DATE : 10/12
 DESIGN ENGINEER OF RECORD: P.N.HOLDER DATE : 10/12



PLAN

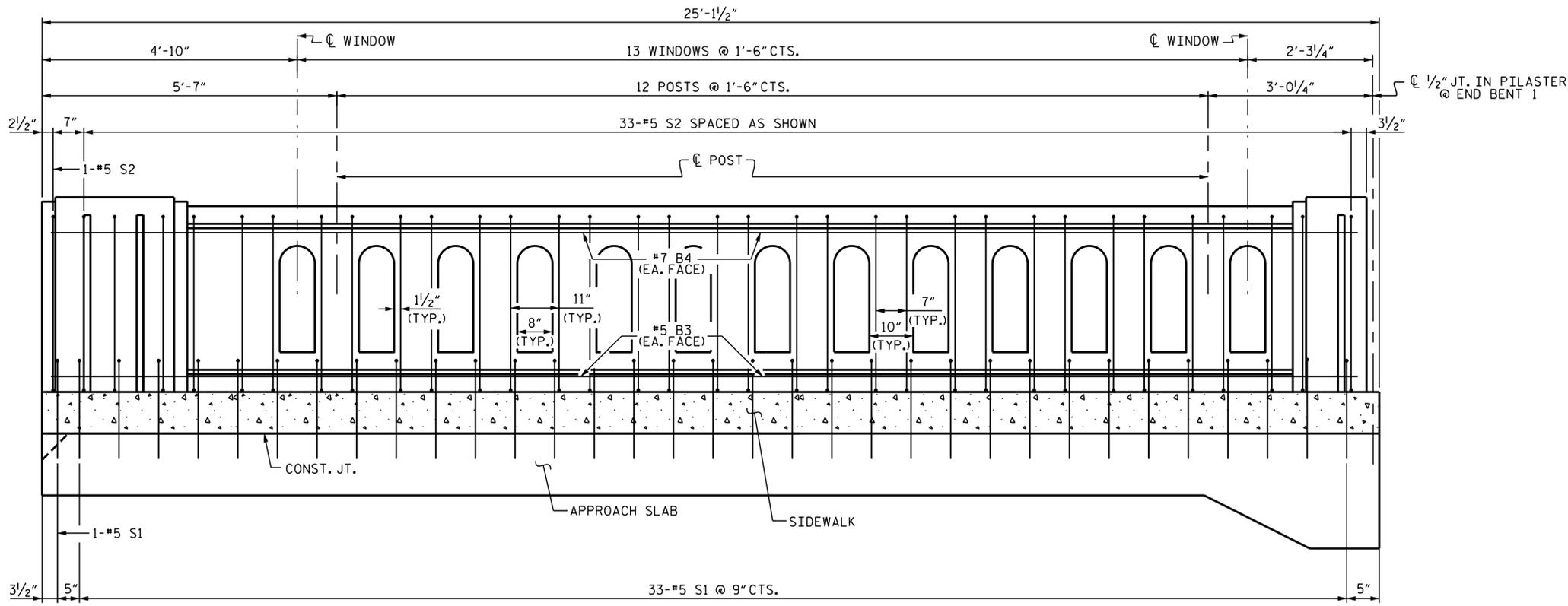
APPROACH SLAB 1, LEFT SIDE SHOWN, RIGHT SIDE SIMILAR.
APPROACH SLAB 2 SIMILAR BY ROTATION.



SECTION N-N

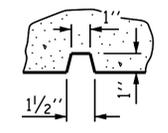
SIDEWALK DETAILS

FOR CLASSIC RAIL DIMENSIONS, SEE
"SECTION G-G" SHEET 2 OF 4
"CLASSIC CONCRETE BRIDGE RAIL
AND SIDEWALK ON 21" & 24" CORED SLAB"



ELEVATION

APPROACH SLAB 1, LEFT SIDE SHOWN, RIGHT SIDE SIMILAR.
APPROACH SLAB 2 SIMILAR BY ROTATION.



DETAIL "B"

PROJECT NO. B-5300
BEAUFORT COUNTY
STATION: 18+77.50 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**BRIDGE APPROACH SLAB
FOR PRESTRESSED
CONCRETE CORED SLAB UNIT
CLASSIC CONCRETE BRIDGE
RAIL & SIDEWALK DEATILS**

DRAWN BY: P.N.HOLDER DATE: 09/15
CHECKED BY: K.P.SEDAT DATE: 09/15
DESIGN ENGINEER OF RECORD: P.N.HOLDER DATE: 09/15

REVISIONS						SHEET NO. S-30 TOTAL SHEETS 30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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