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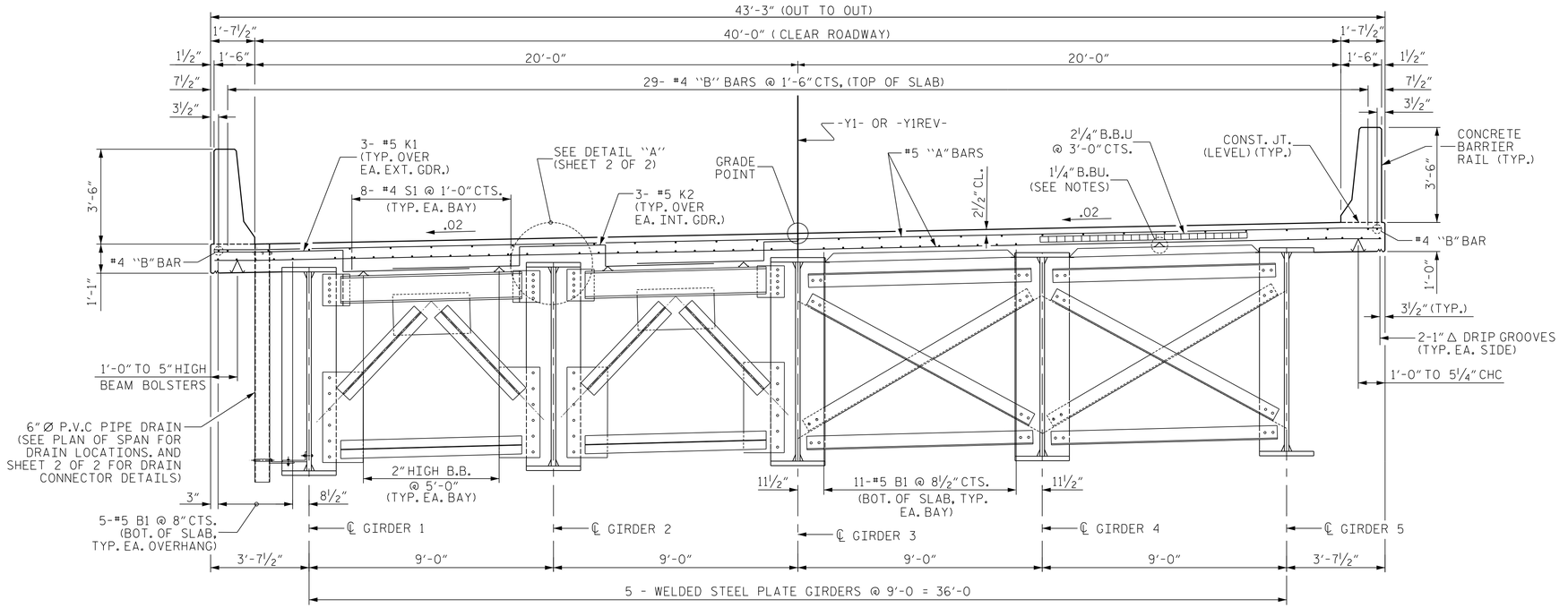
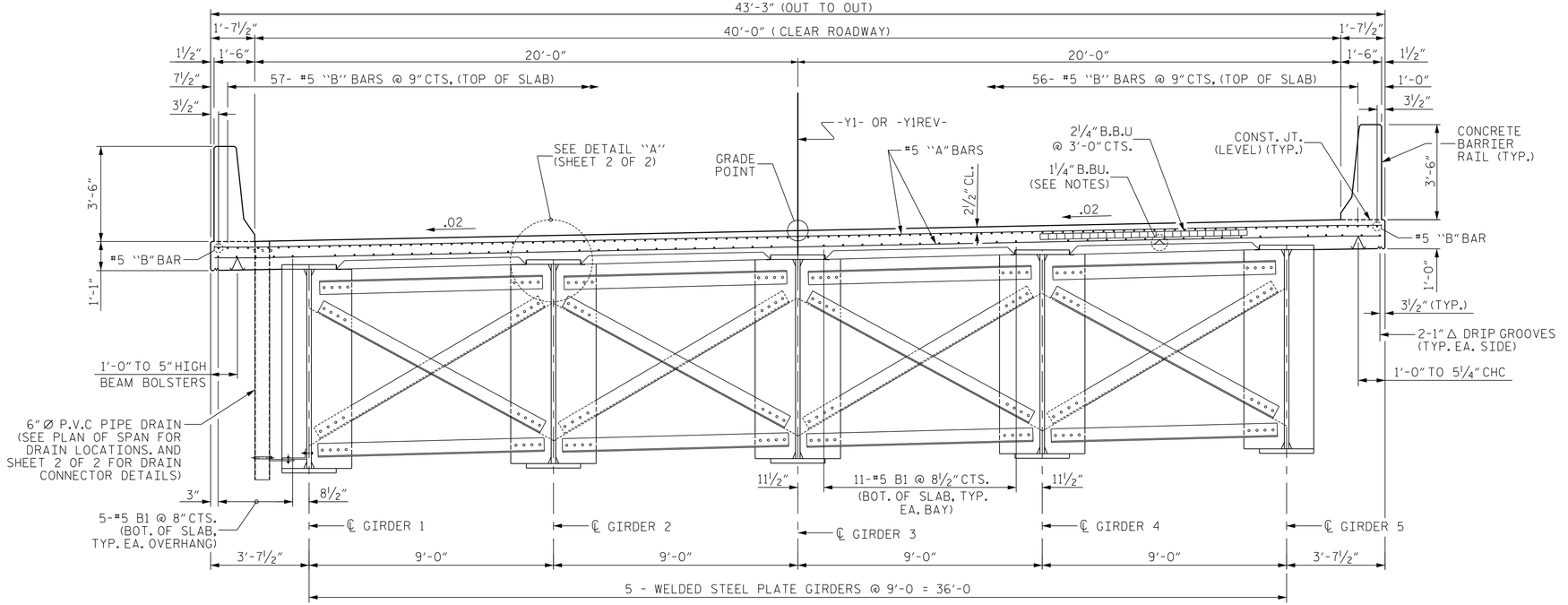


HALF-SECTION @ END BENT DIAPHRAGMS D1

HALF-SECTION @ INTERMEDIATE DIAPHRAGMS D2



TYPICAL SECTION @ BENT DIAPHRAGMS D3

NOTES:

PROVIDE 1¼" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE STAY-IN-PLACE METAL FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2½" ABOVE THE TOP OF THE REMOVABLE FORM.

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN STAY-IN-PLACE METAL FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE STAY-IN-PLACE METAL FORM WORKING DRAWINGS.

METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO BEAM OR GIRDER FLANGES IN THE ZONES REQUIRING CHARPY V-NOTCH TEST. SEE STRUCTURAL STEEL DETAIL SHEETS.

STRUCTURAL STEEL ERECTION SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

PVC DECK DRAINS SHALL BE PAINTED WITH TWO COATS OF BROWN PRIMER MEETING THE REQUIREMENTS OF ARTICLE 1080-09 OF THE STANDARD SPECIFICATIONS. EACH COAT SHALL BE 2 DRY MILS THICK. DECK DRAINS SHALL BE ROUGHENED PRIOR TO PAINTING. NO SEPARATE PAYMENT SHALL BE MADE FOR PAINTING PVC DECK DRAINS AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM FOR REINFORCED CONCRETE DECK SLAB.

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Digitally signed by Patrick R. Gallagher
DocuSigned by: 6/22/2022

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PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION

DWN. BY: WDC	DATE: 3/22
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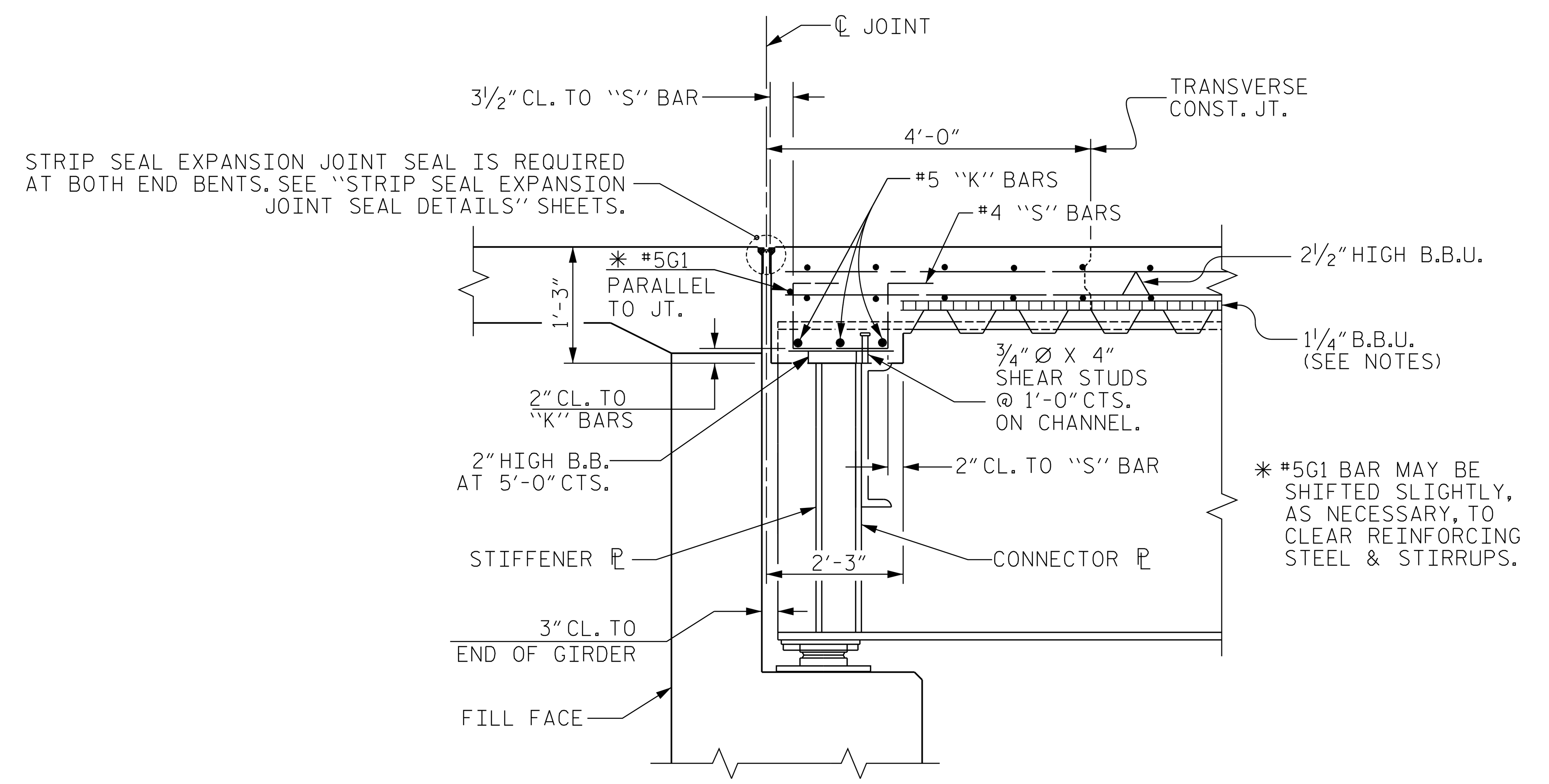
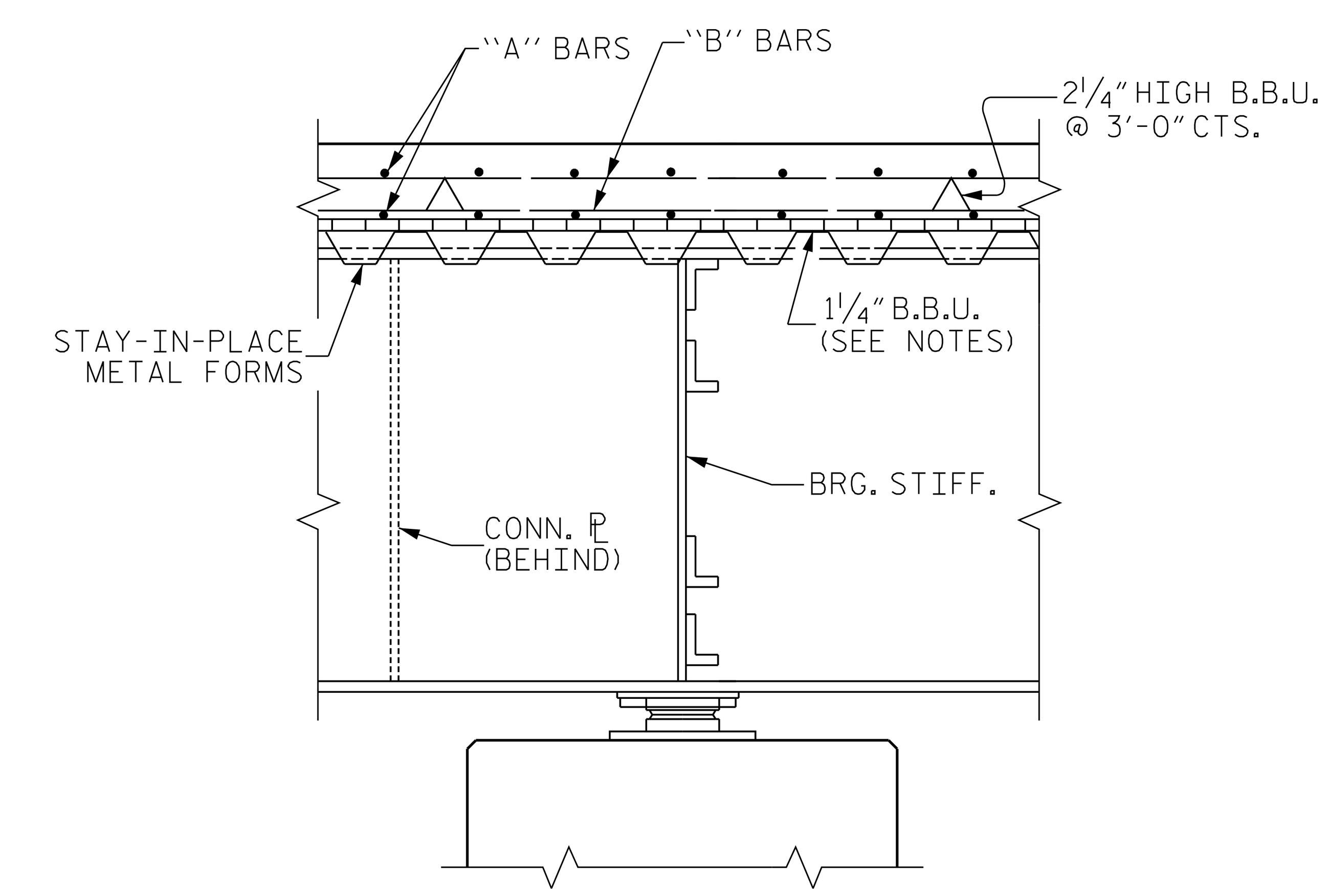
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-10
1			3			TOTAL SHEETS
2			4			50



END OF GIRDER DETAIL AT END BENT



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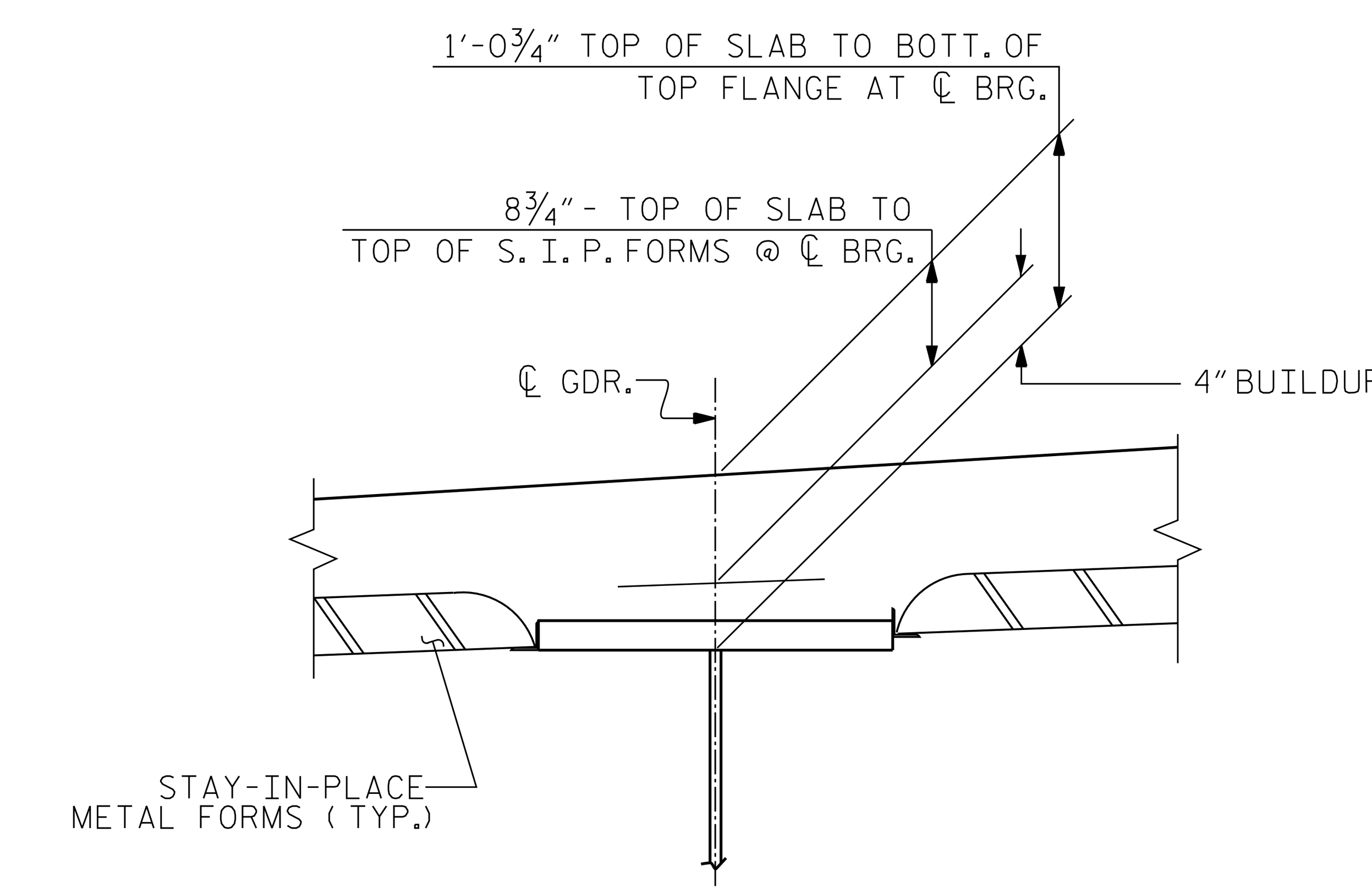
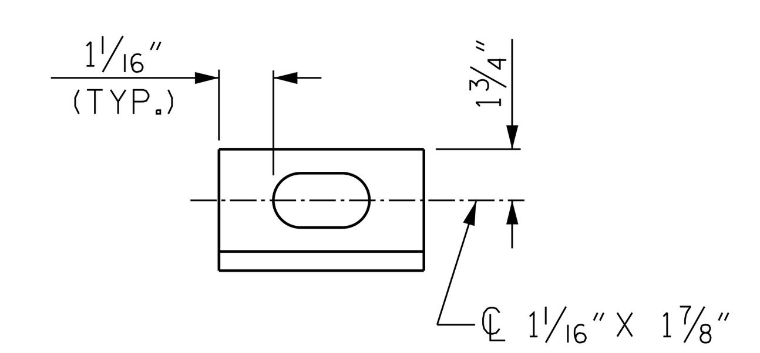
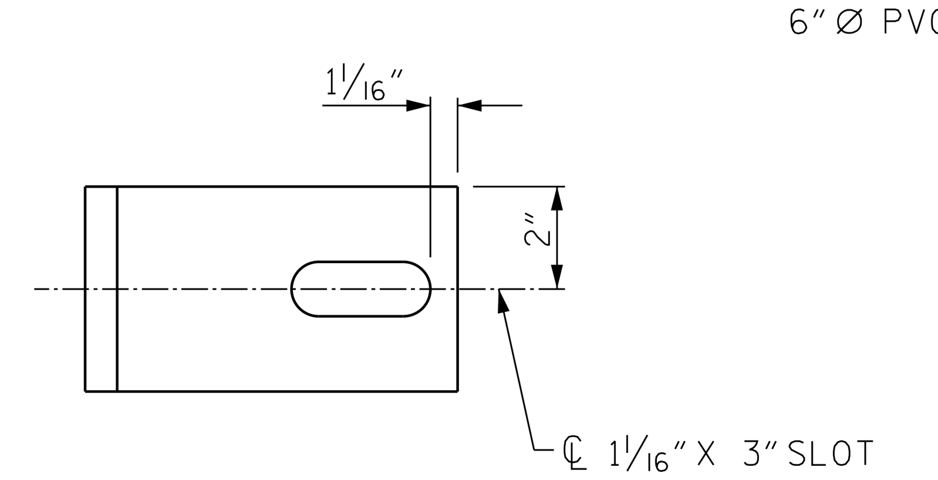


DETAIL "A"



SECTION B-B



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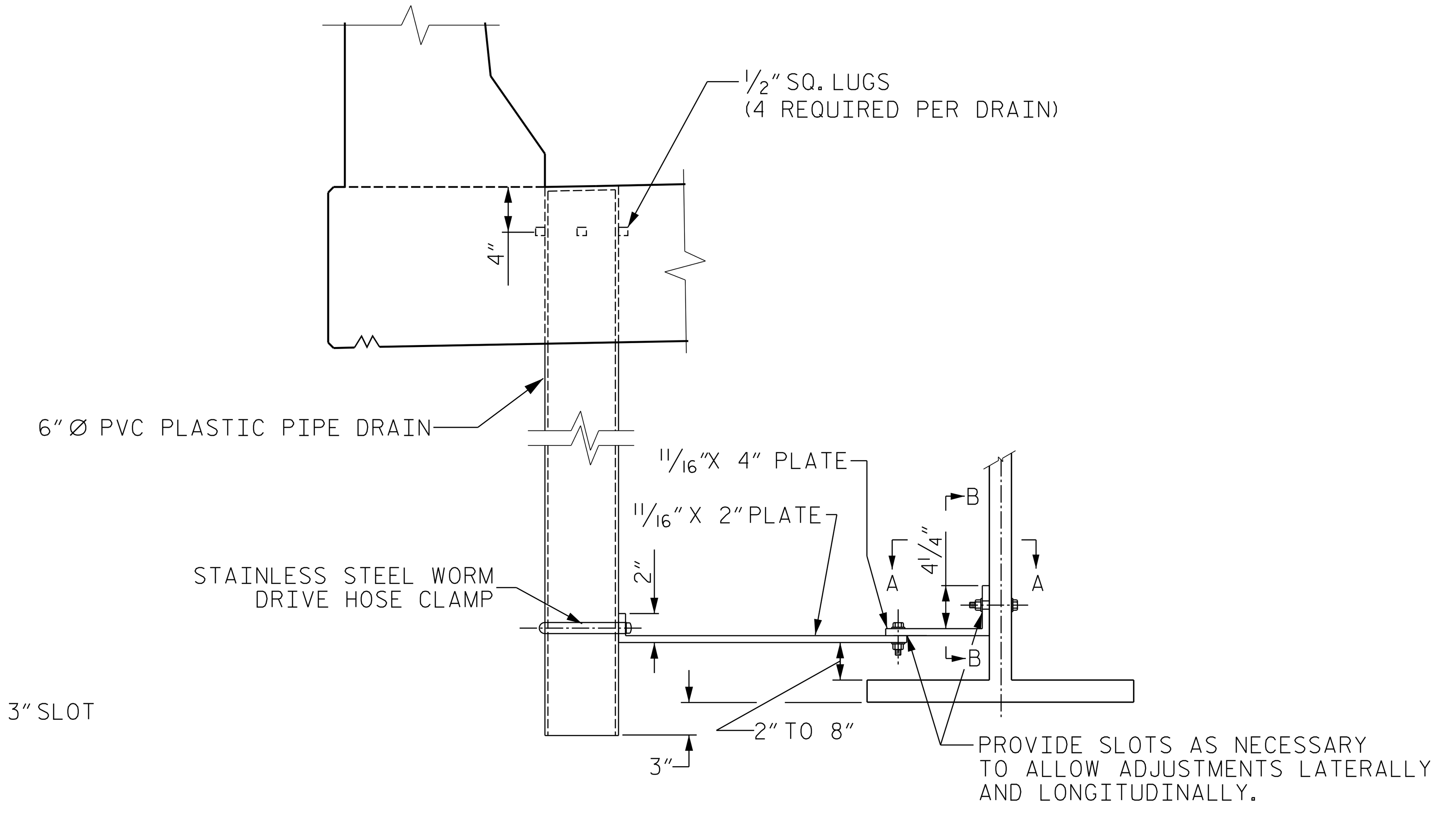

DRAIN CONNECTOR DETAIL

30 DRAINS REQUIRED.

COUPLING IN DRAIN PIPE WILL BE PERMITTED AS APPROVED BY THE ENGINEER.

TOP OF FLOOR DRAIN TO BE SET ⅜" BELOW SURFACE OF SLAB.

4 - ½" SQUARE LUGS TO BE GLUED TO THE PVC PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.

BOLT SIZE TO BE SAME AS DIAPHRAGM AND CROSSFRAME CONNECTIONS. STAINLESS STEEL WORM DRIVE HOSE CLAMP SHALL BE COMMERCIAL QUALITY.

THE 6" Ø PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.

PLATES SHALL BE GRADE 50 STEEL.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042890 PATRICK R. GALLAGHER
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TYPICAL SECTION DETAILS

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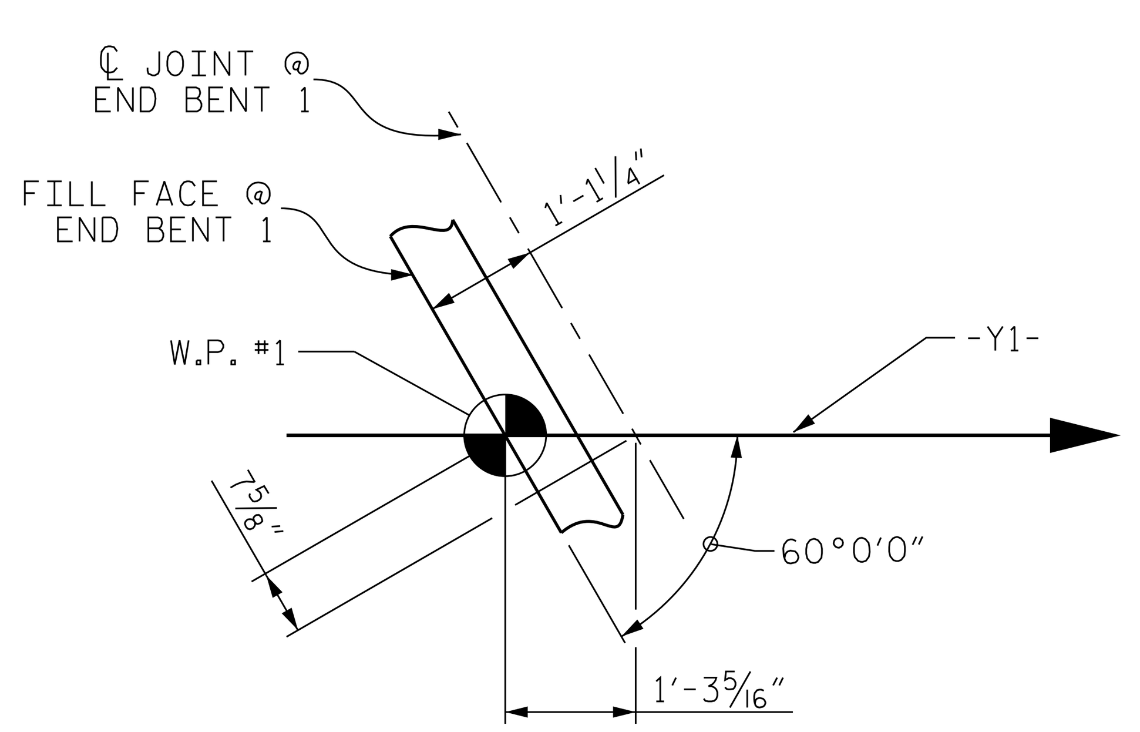
2			4				

SHEET NO. S4-11
TOTAL SHEETS 50

PLAN OF SPAN A



DETAIL "A"

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SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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SUPERSTRUCTURE

PLAN OF SPAN A

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NO.	BY:	DATE:	NO.	BY:	DATE:		TOTAL SHEETS 50
1			3				
2			4				

PLAN OF SPAN B

PROJECT NO. U-2579AA

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STATE OF NORTH CAROLINA
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PLAN OF SPAN B

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DocuSigned by: Patrick R. Gallagher
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DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS							SHEET NO.
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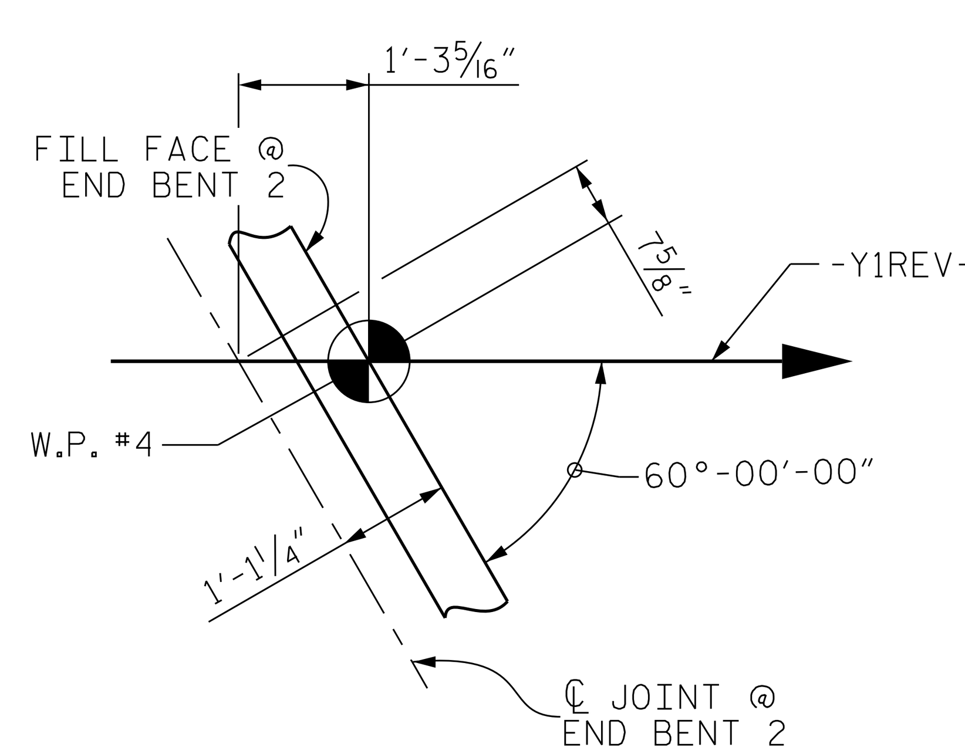
2			4				50

PLAN OF SPAN C



DETAIL "A"

PROJECT NO. U-2579AA

FORSYTH COUNTY

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STATE OF NORTH CAROLINA
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SUPERSTRUCTURE

PLAN OF SPAN C

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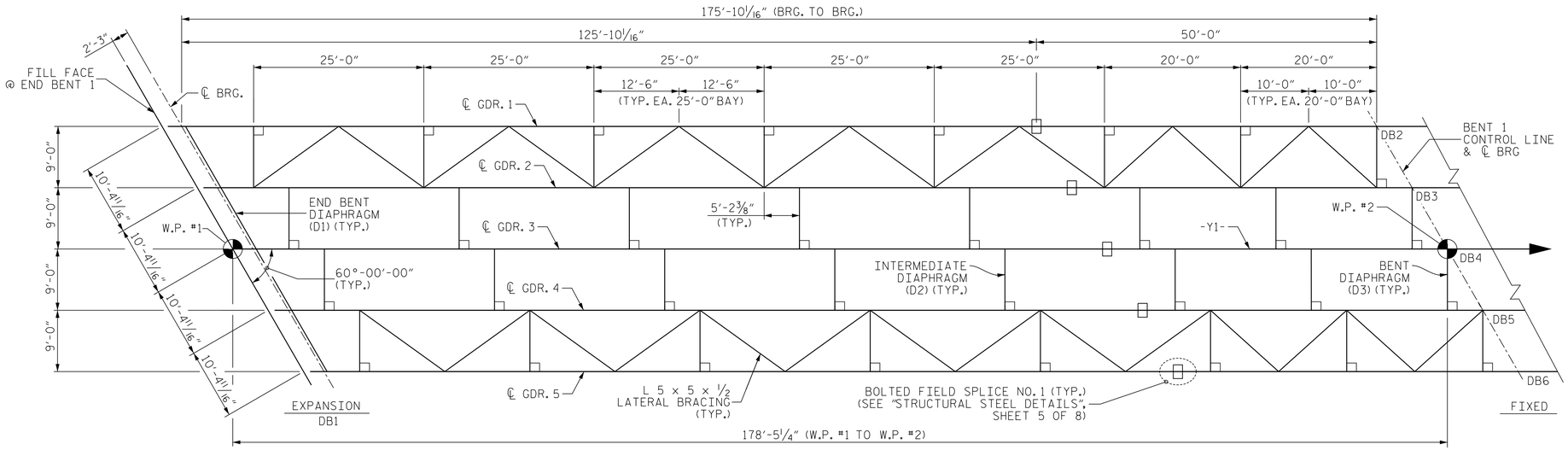
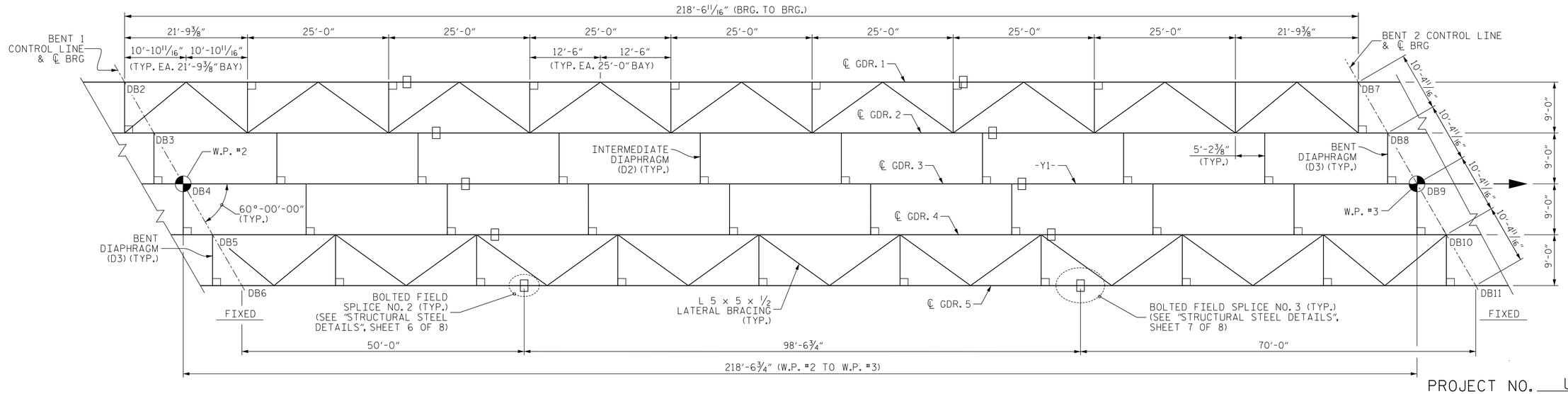


SPAN A



SPAN B

FRAMING PLAN

NOTE: ALL DIMENSIONS ARE HORIZONTAL.

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SHEET 1 OF 2

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SUPERSTRUCTURE
FRAMING PLAN

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-15
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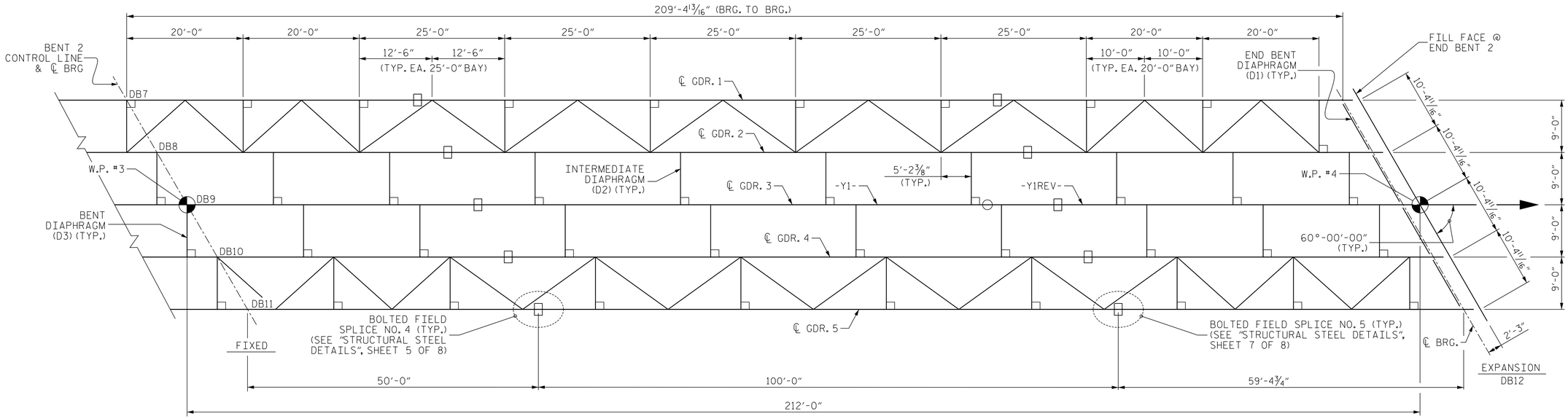

SPAN C

FRAMING PLAN

NOTE: ALL DIMENSIONS ARE HORIZONTAL.

PROJECT NO. U-2579AA

FORSYTH COUNTY

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SHEET 2 OF 2

STATE OF NORTH CAROLINA
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SUPERSTRUCTURE

FRAMING PLAN

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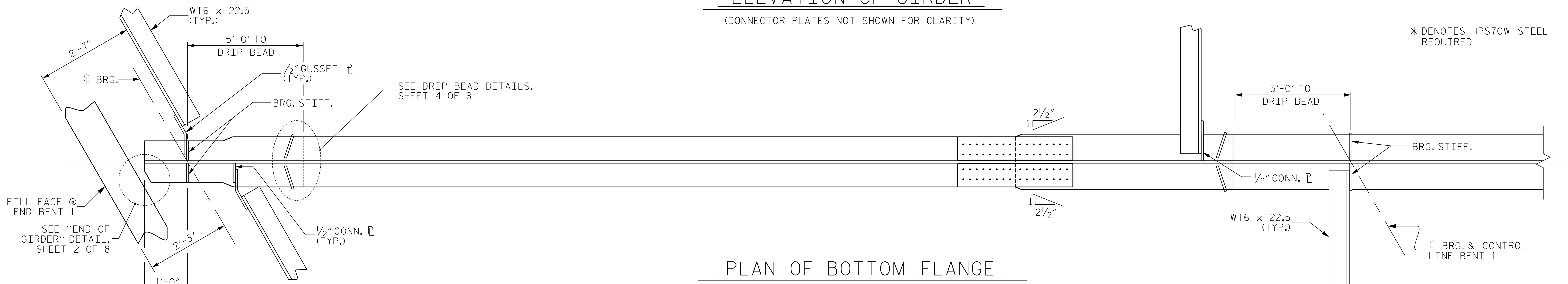
1			3			TOTAL SHEETS
2			4			50

ELEVATION OF GIRDER

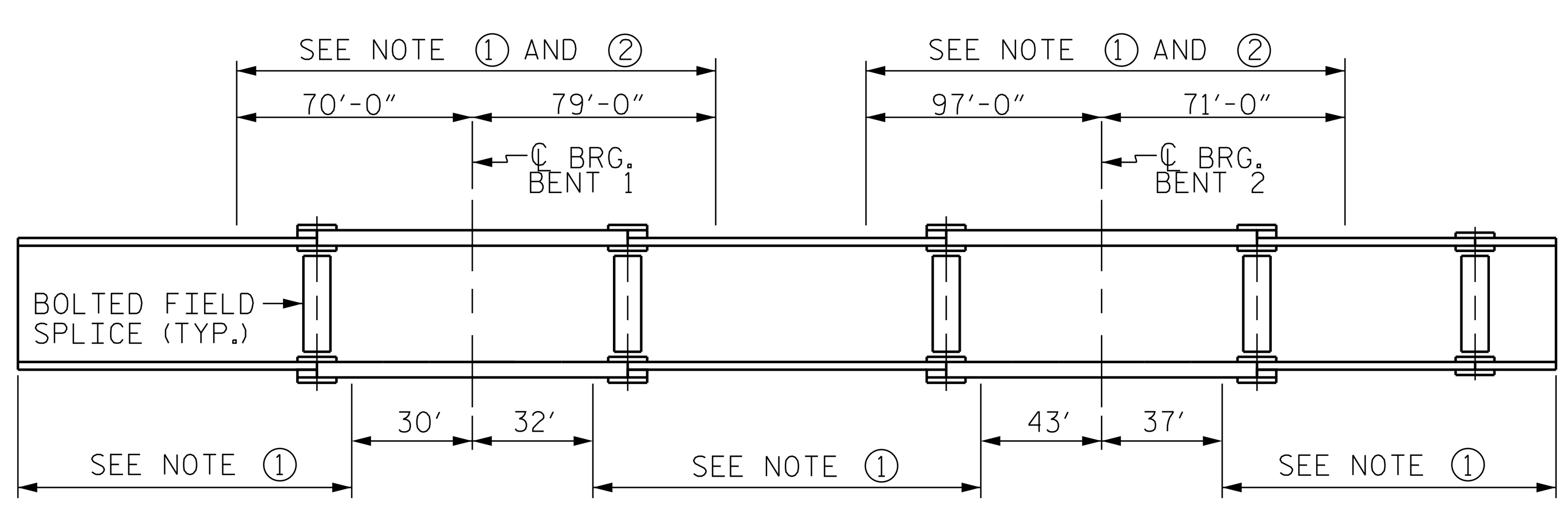
(CONNECTOR PLATES NOT SHOWN FOR CLARITY)

* DENOTES HPS70W STEEL REQUIRED



PLAN OF BOTTOM FLANGE

OMIT CONNECTOR PLATES ON OUTSIDE OF EXTERIOR GIRDERS INTERMEDIATE CROSSFRAMES NOT SHOWN.



GIRDER MAKE UP

NOTE ①: CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM FLANGE PLATES WHICH FALL WITHIN THESE LIMITS, ALL WEB PLATE, AND ALL SPLICE PLATES. IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TESTS, SEE ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.

NOTE ②: NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.

CHARPY V-NOTCH TESTS FOR CONTINUOUS PLATE GIRDERS

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SHEET 1 OF 8

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STRUCTURAL STEEL DETAILS

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REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S4-17
1			3				TOTAL SHEETS
2			4				50

gwpowell
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TIME: 6/20/2022 11:47:03 AM

SPAN B

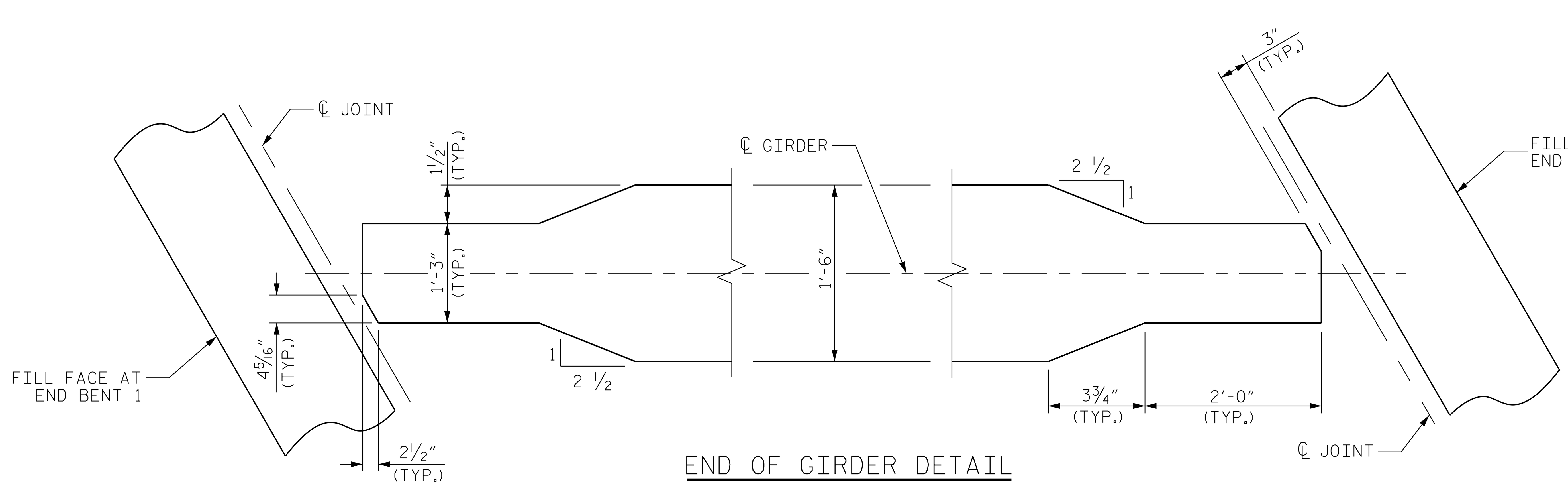
✱ DENOTES HPS70W STEEL REQUIRED.

ELEVATION OF GIRDER

(CONNECTOR PLATES NOT SHOWN FOR CLARITY)

PLAN OF BOTTOM FLANGE

OMIT CONNECTOR PLATES ON OUTSIDE OF EXTERIOR GIRDERS
INTERMEDIATE CROSSFRAMES NOT SHOWN.



END OF GIRDER DETAIL

BOTTOM FLANGE SHOWN,
CLIP IS TYPICAL TOP & BOTTOM FLANGE

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 30+69.44 -Y1-
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SHEET 2 OF 8

STATE OF NORTH CAROLINA
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STRUCTURAL STEEL DETAILS

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Patrick R. Gallagher 6/22/2022

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

SHEET NO. S4-18
TOTAL SHEETS 50

SPAN C

* DENOTES HPS70W STEEL REQUIRED

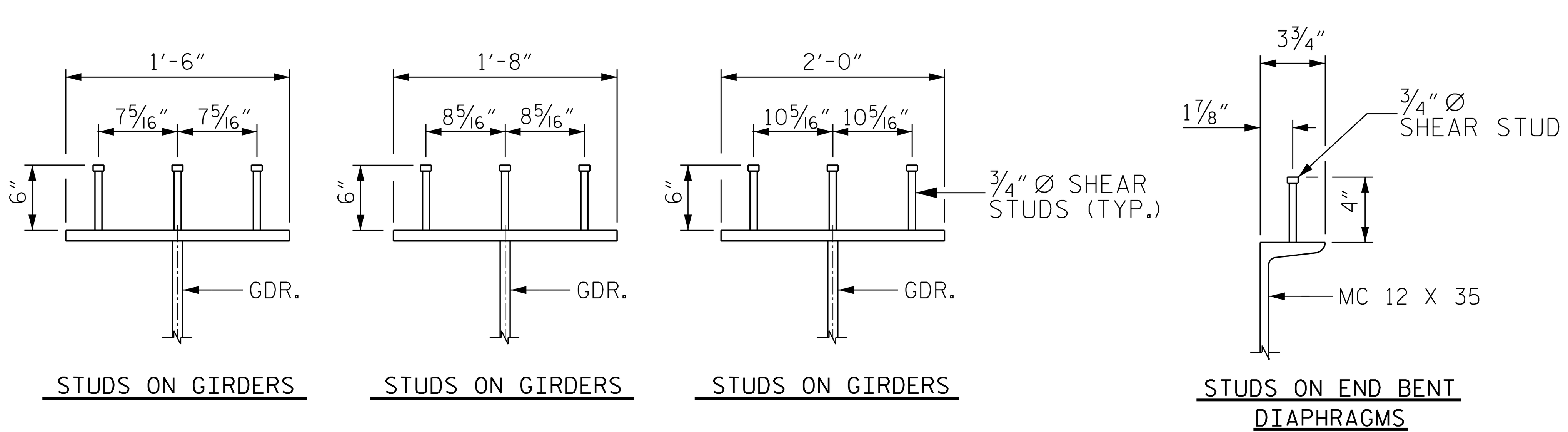
NOTE:
BOLTED FIELD SPLICE #5 SHALL BE ASSEMBLED PRIOR TO ERECTION.

ELEVATION OF GIRDER

(CONNECTOR PLATES NOT SHOWN FOR CLARITY)

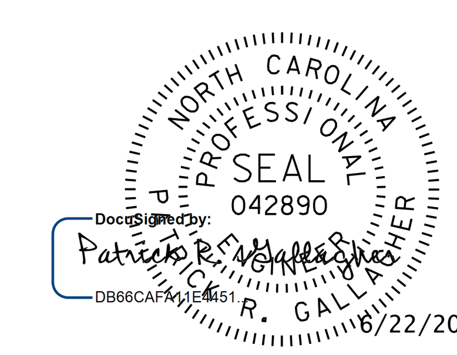
PLAN OF BOTTOM FLANGE

OMIT CONNECTOR PLATES ON OUTSIDE OF EXTERIOR GIRDERS
INTERMEDIATE CROSSFRAMES NOT SHOWN.



SHEAR STUD DETAILS

SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF GIRDER PLATE BEFORE FIELD ASSEMBLY



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SUPERSTRUCTURE
STRUCTURAL STEEL DETAILS

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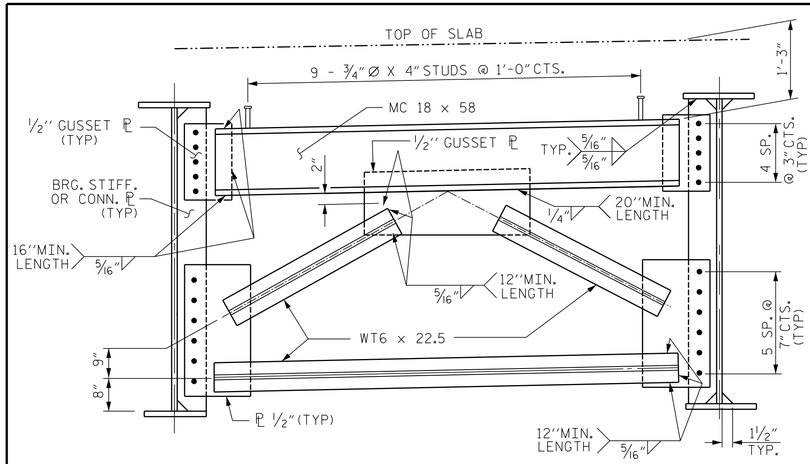
SHEET NO. S1-19
TOTAL SHEETS 50



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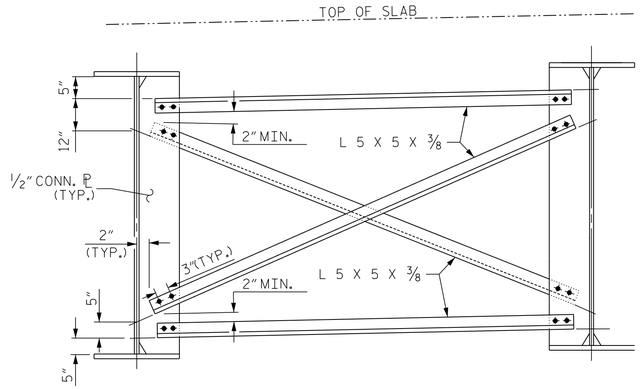
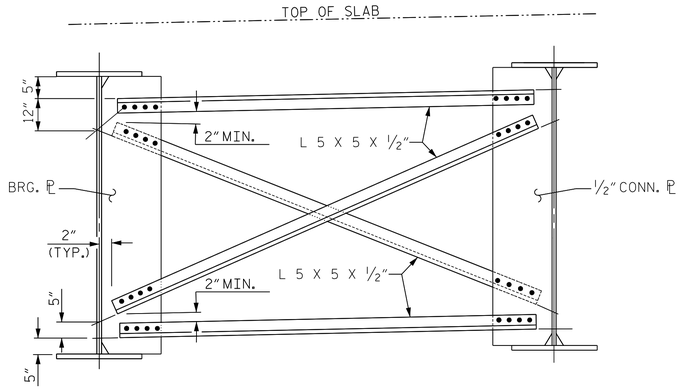
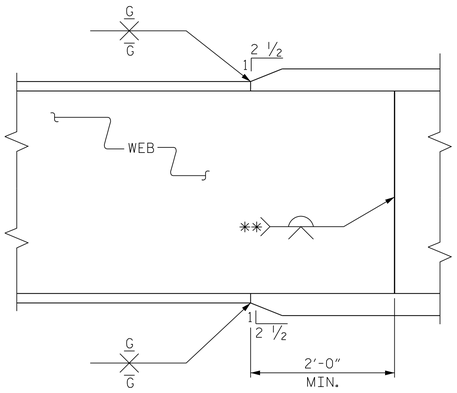


INTERMEDIATE DIAPHRAGM (D2)



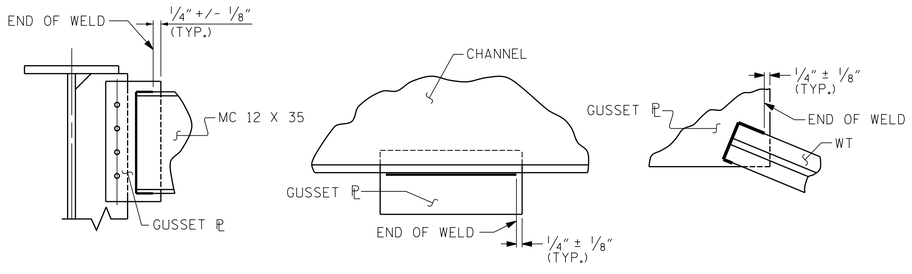
BENT DIAPHRAGM (D3)



ELEVATION

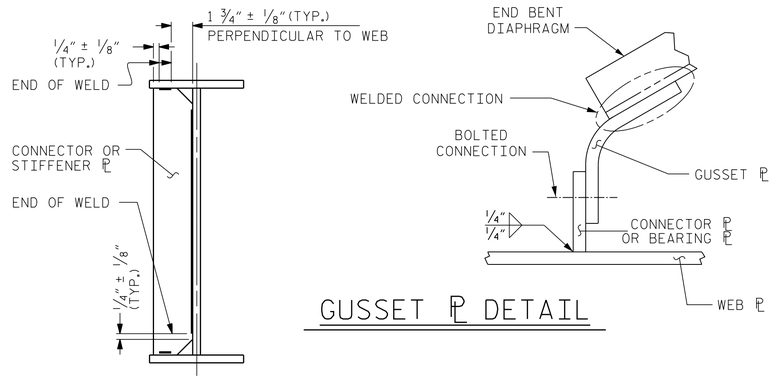
TYPICAL FLANGE & WEB BUTT JOINT

** GRIND SMOOTH AND FLUSH ON OUTER FACE OF EXTERIOR GIRDERS



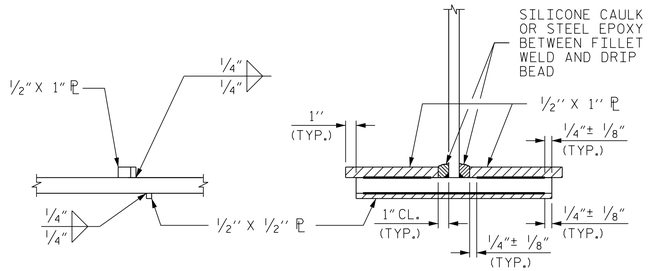
TYPICAL GUSSET PLATE CONNECTIONS

WELD TERMINATION DETAILS



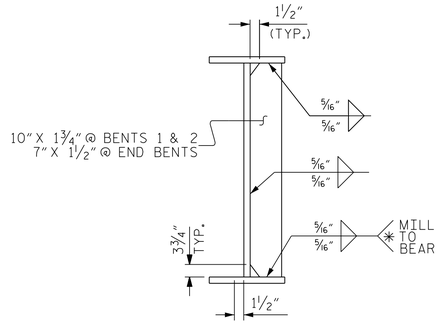
GUSSET PL DETAIL

WELD TERMINATION DETAIL
AT STIFFENER OR CONNECTOR PLATE



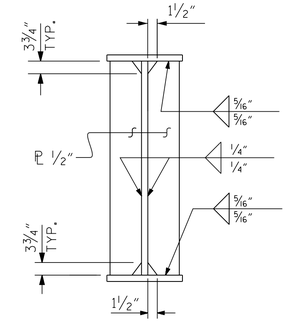
SIDE VIEW SECTION

DRIP BEAD DETAILS



BEARING STIFFENER/
CONNECTOR PLATE

✳ WELD TO BOTTOM FLANGE IS ONLY REQUIRED WHEN BEARING STIFFENER IS ALSO CONNECTOR PLATE



CONNECTOR PLATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 4 OF 8

V&M
Vaughn & Melton
Consulting Engineers
Raleigh, North Carolina
919-977-9455
Asheville, NC 828-253-2796
New Bern, NC 252-631-5115
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509

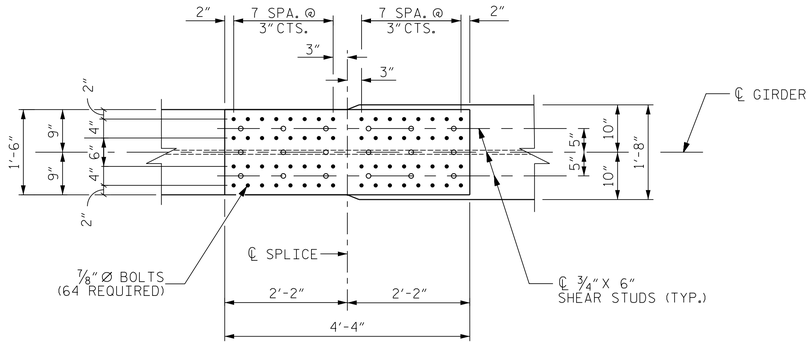
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

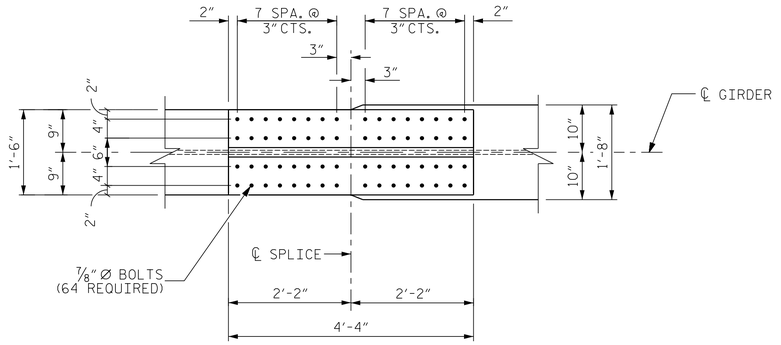
STRUCTURAL STEEL DETAILS

DWN. BY: AW	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

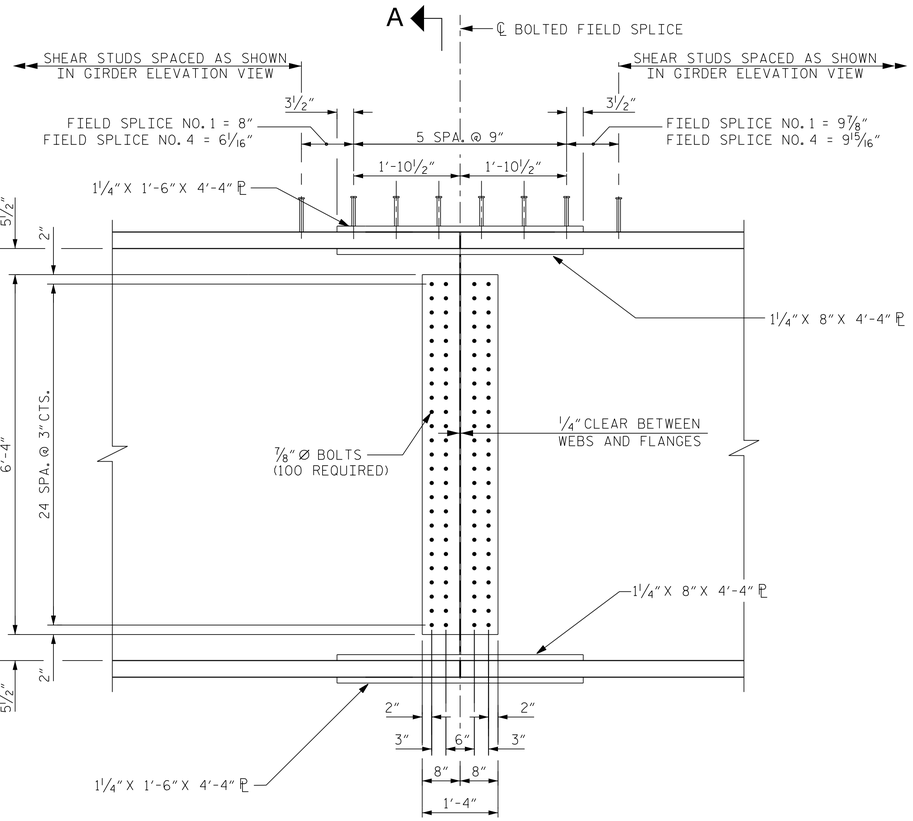
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-20
1			3			TOTAL SHEETS
2			4			50



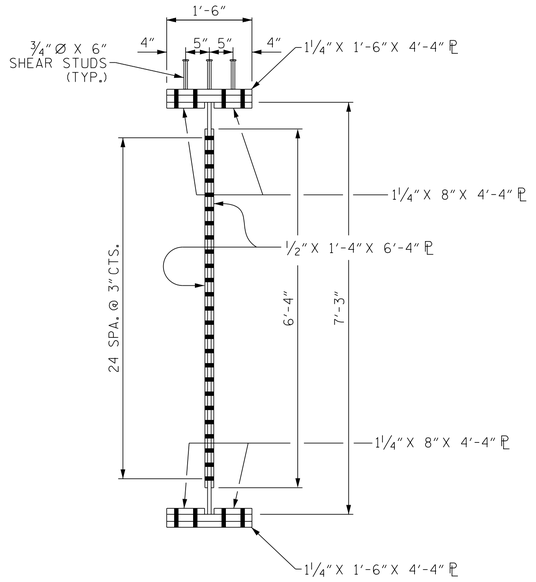
PLAN (TOP OF TOP FLANGE)



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A

A

BOLTED FIELD SPLICE NOS. 1 & 4 DETAILS

FIELD SPLICE NO. 1 SHOWN,
FIELD SPLICE NO. 4 SIMILAR

STRUCTURAL STEEL NOTES

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W, UNLESS OTHERWISE NOTED, AND PAINTED IN ACCORDANCE WITH SYSTEM 5 OR 6 OF THE STRUCTURAL STEEL SHOP COATINGS PROGRAM AND SECTION 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS SHALL BE 7/8"Ø HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

A CHARPY V-NOTCH TEST IS REQUIRED FOR WEB PLATES, BOTTOM FLANGE PLATES, BOTTOM FLANGE SPLICE PLATES, AND WEB SPLICE PLATES FOR ALL GIRDERS AND IN ACCORDANCE WITH ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.

PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 15 FEET OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6 INCHES MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

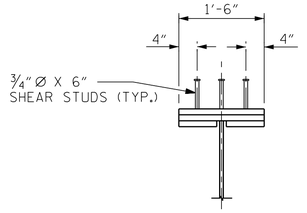
TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

END OF GIRDERS SHALL BE PLUMB.

BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE.

FABRICATORS SHALL DETAIL DIAPHRAGM MEMBERS AND CONNECTIONS FOR FULL DEAD LOAD FIT UP. GIRDERS SHALL BE PLUMB AFTER THE FULL AMOUNT OF DEAD LOAD IS APPLIED.

STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY.

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Patrick R. Gallagher
6/22/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 5 OF 8

V&M Vaughn & Melton Consulting Engineers
Raleigh, North Carolina 919 977 9455
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Asheville, NC 828-253-2796
New Bern, NC 252-63-565

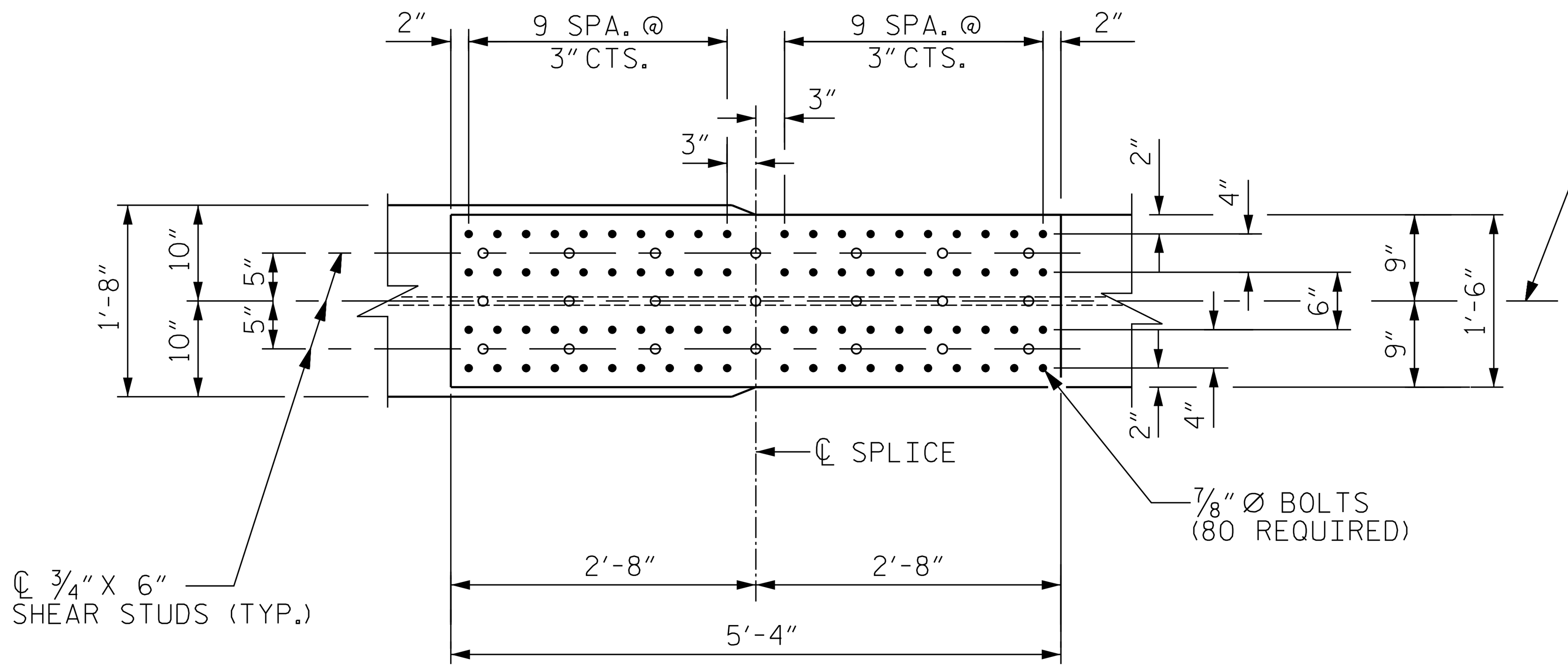
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

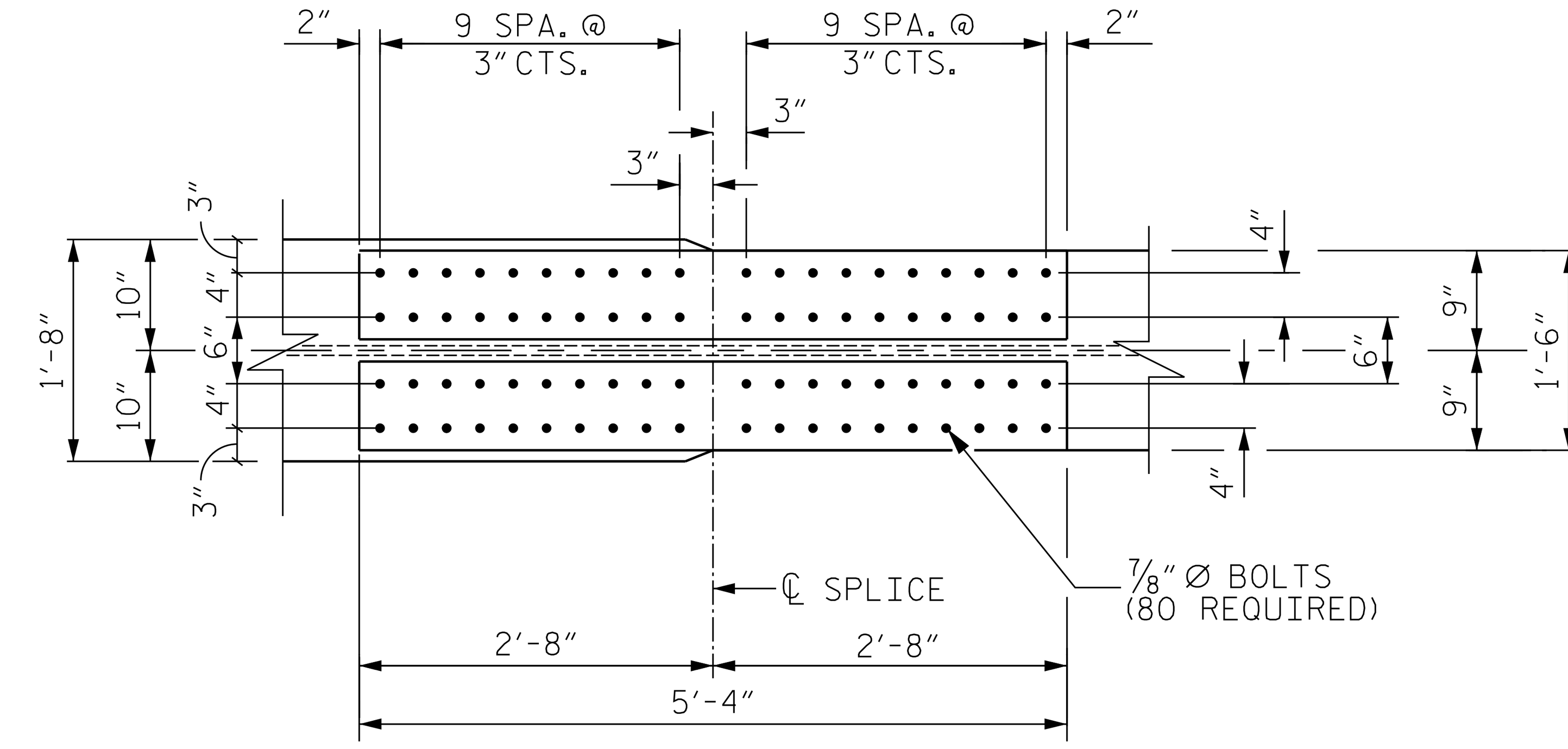
STRUCTURAL STEEL DETAILS

DWN. BY: NCW	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-21
1			3			TOTAL SHEETS
2			4			50



PLAN (TOP OF TOP FLANGE)



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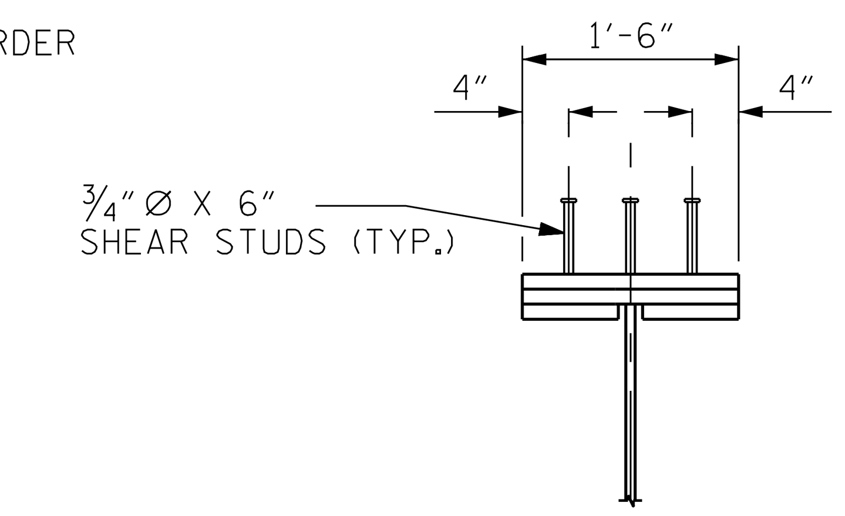
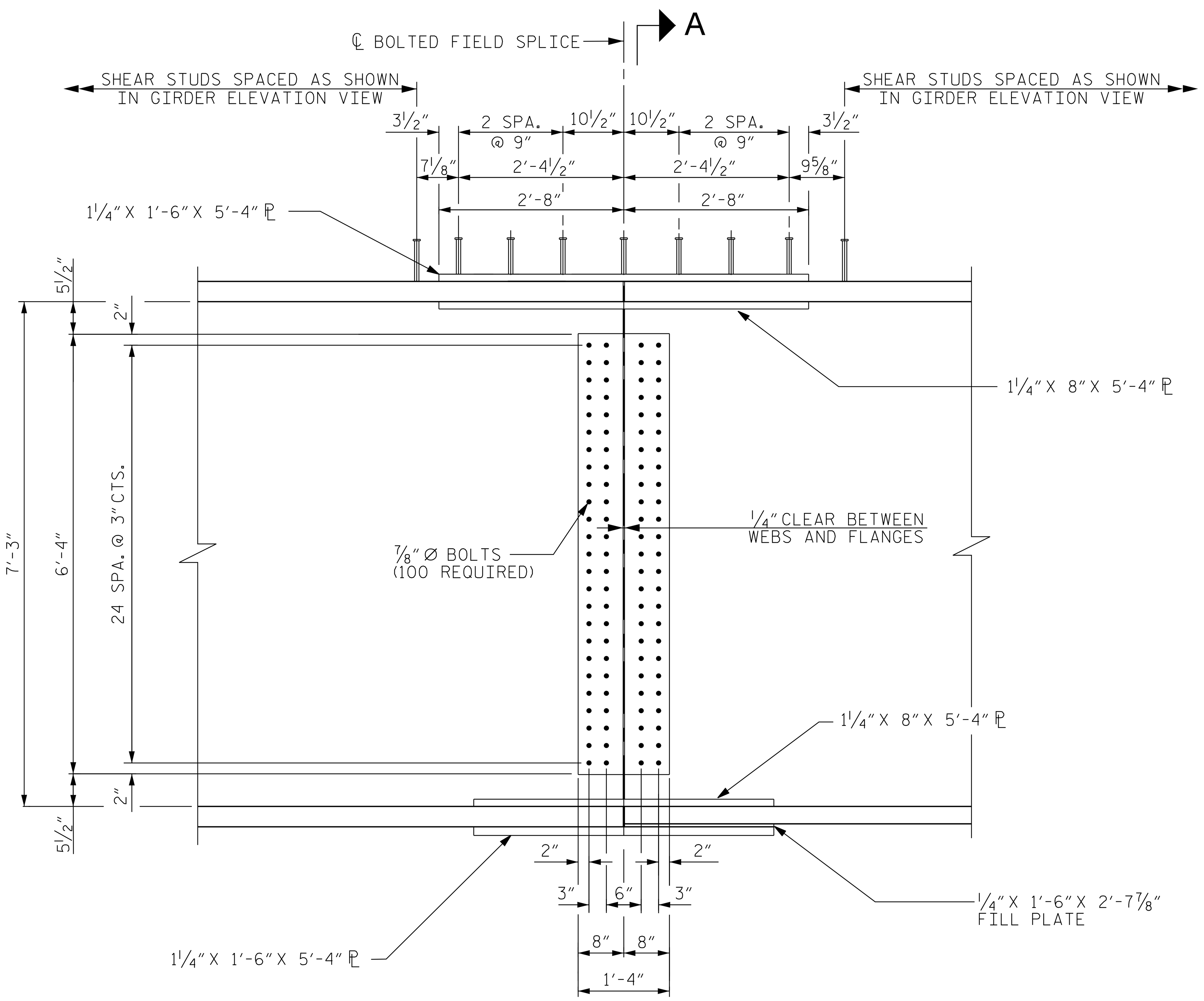
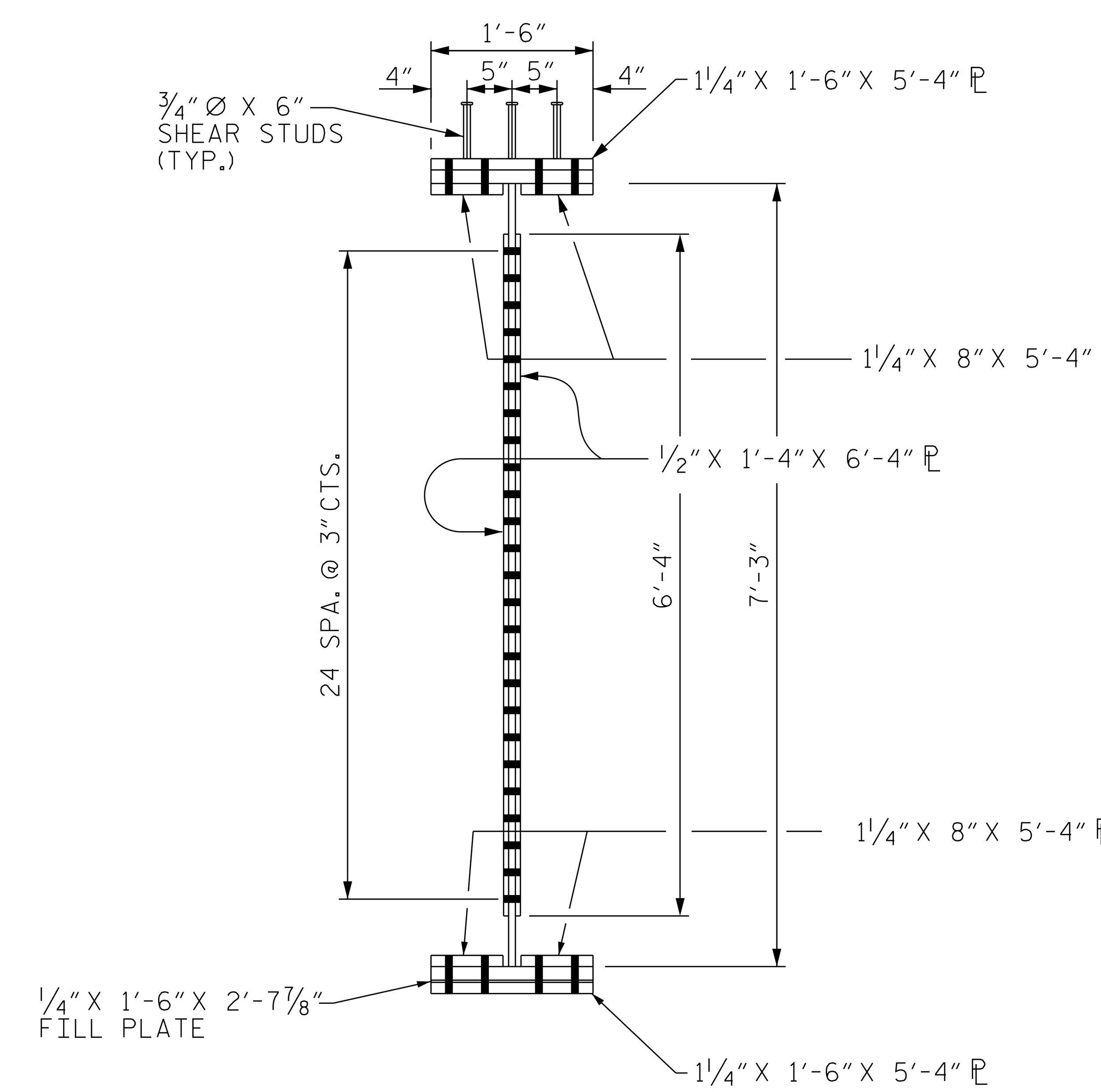


SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY.



ELEVATION



SECTION A-A

BOLTED FIELD SPLICE NO. 2 DETAILS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042890 PATRICK R. GALLAGHER 6/22/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1- 31+06.88 -L-

SHEET 6 OF 8

Vaughn & Melton Consulting Engineers

Raleigh, North Carolina 919-977-9455

Boone, NC 828-355-9933 | Tri-Cities, TN 423-467-8401 | Knoxville, TN 865-546-5800 | Spartanburg, SC 864-574-4775 | Charleston, SC 843-974-5650 | Middlesboro, KY 606-248-6600 | Atlanta, GA 770-627-3509 | Asheville, NC 828-253-2796 | New Bern, NC 252-631-5115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

STRUCTURAL STEEL DETAILS

DWN. BY: NCW	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS

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

SHEET NO. S4-22

TOTAL SHEETS 50

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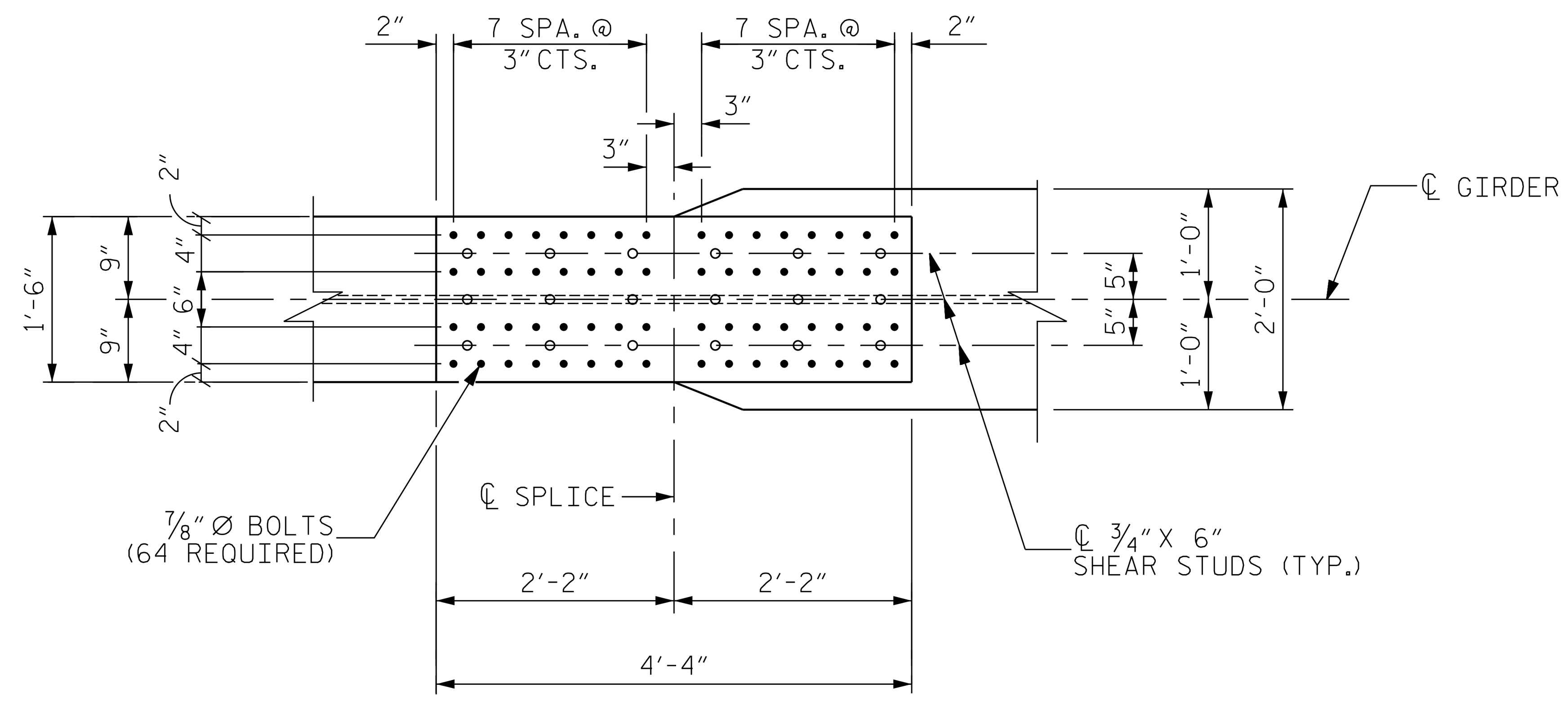
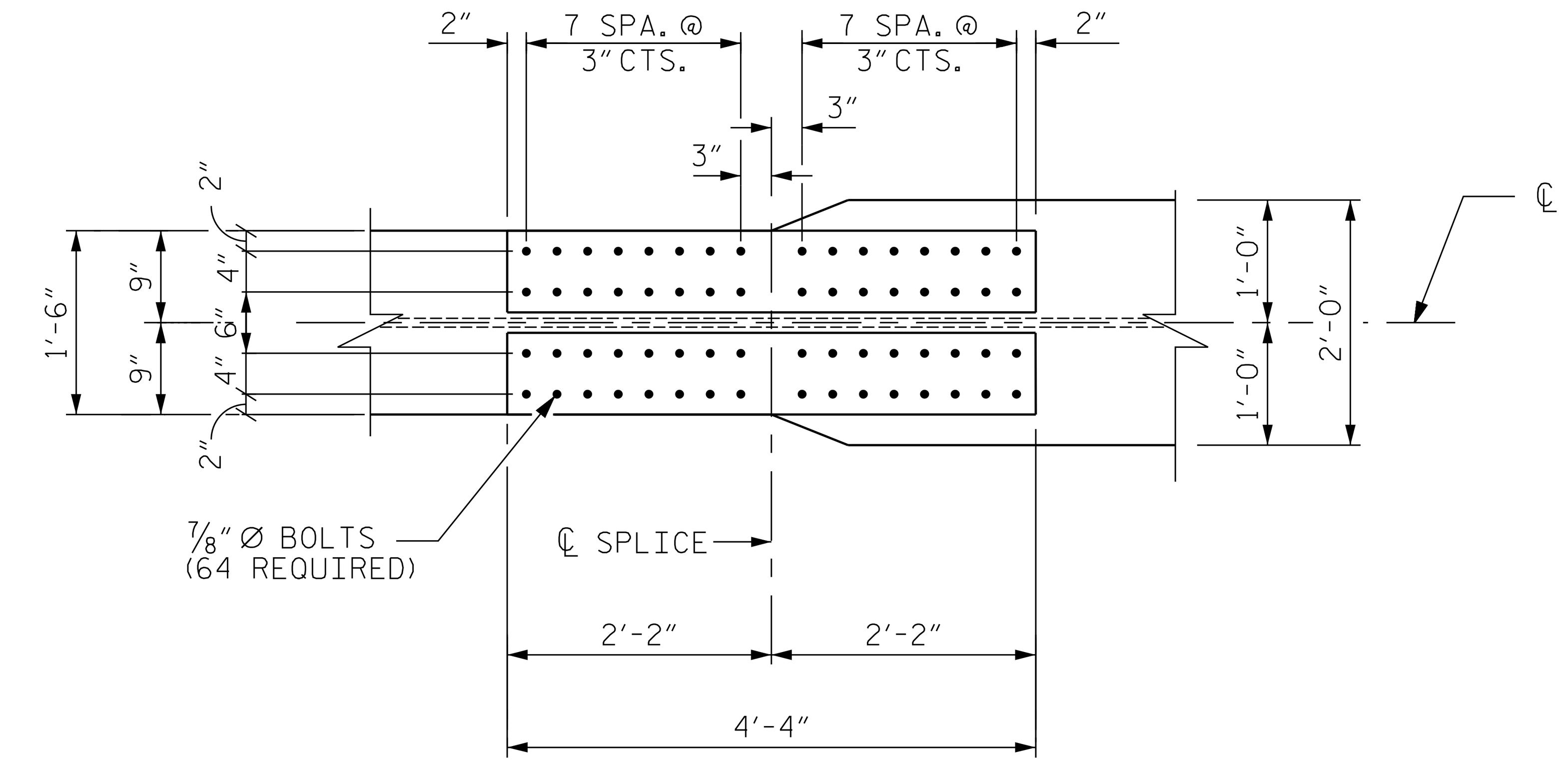


PLAN (TOP OF TOP FLANGE)



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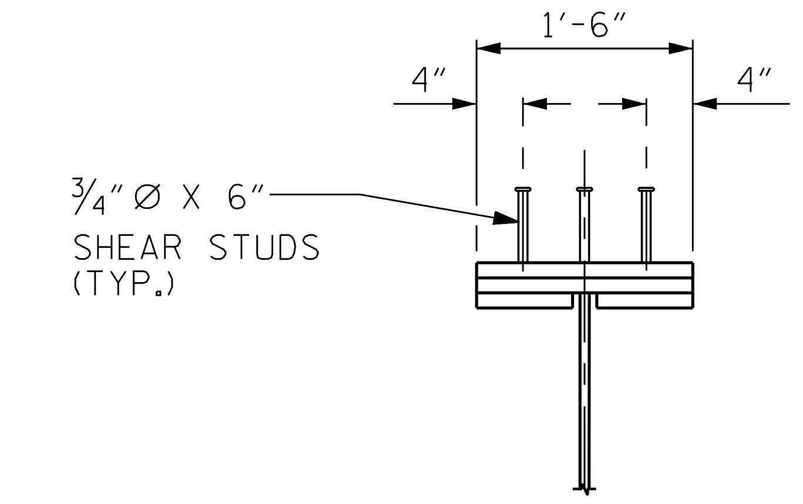
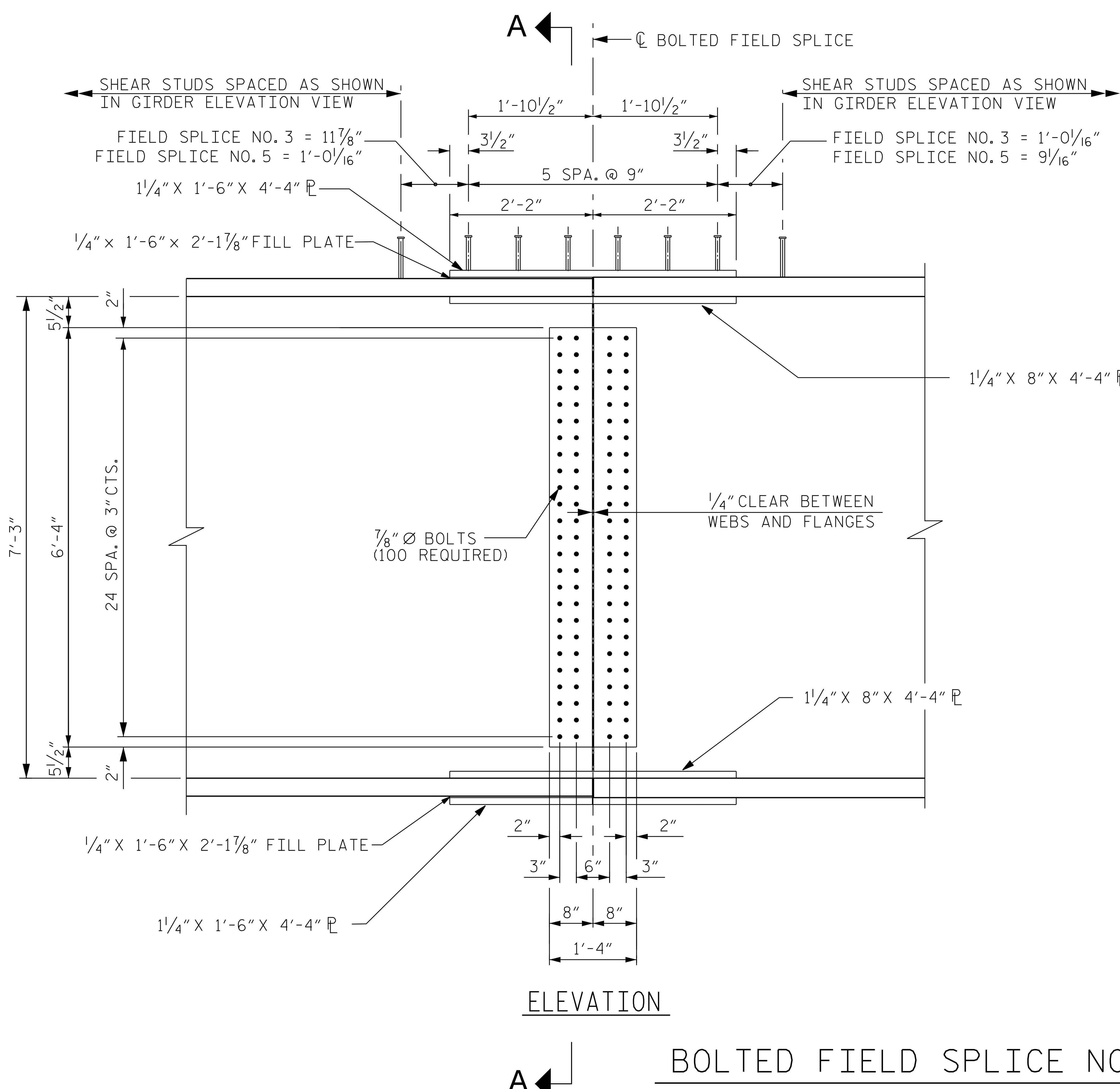


SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY.



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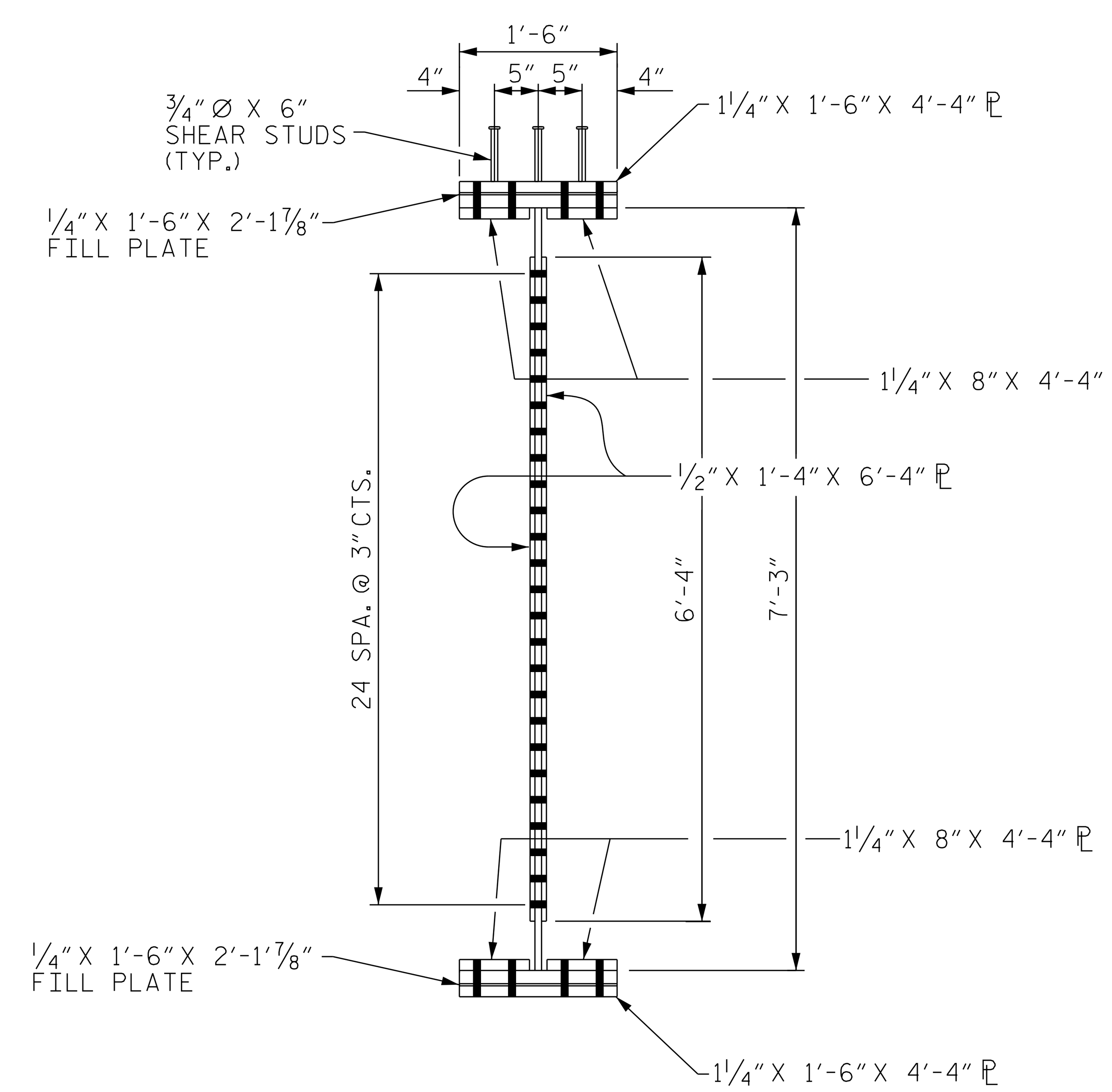
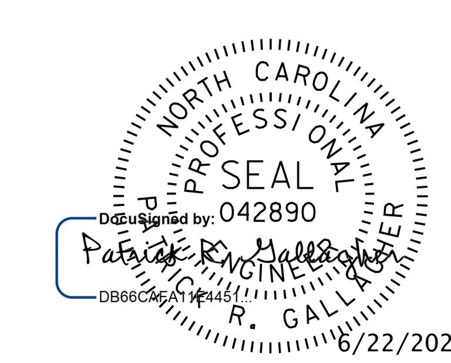


SECTION A-A

NOTE:
BOLTED FIELD SPLICE #5 SHALL BE ASSEMBLED PRIOR TO ERECTION.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BOLTED FIELD SPLICE NOS. 3 & 5 DETAILS

FIELD SPLICE NO. 3 SHOWN, FIELD SPLICE NO. 5 SIMILAR WITH UNIFORM FLANGE WIDTH

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1- 31+06.88 -L-

SHEET 7 OF 8

Vaughn & Melton Consulting Engineers
Raleigh, North Carolina 919-977-9455
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Asheville, NC 828-253-2796
New Bern, NC 252-631-5115

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

STRUCTURAL STEEL DETAILS

DWN. BY: NCW	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS

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

SHEET NO. S4-23

TOTAL SHEETS 50

pgallaher
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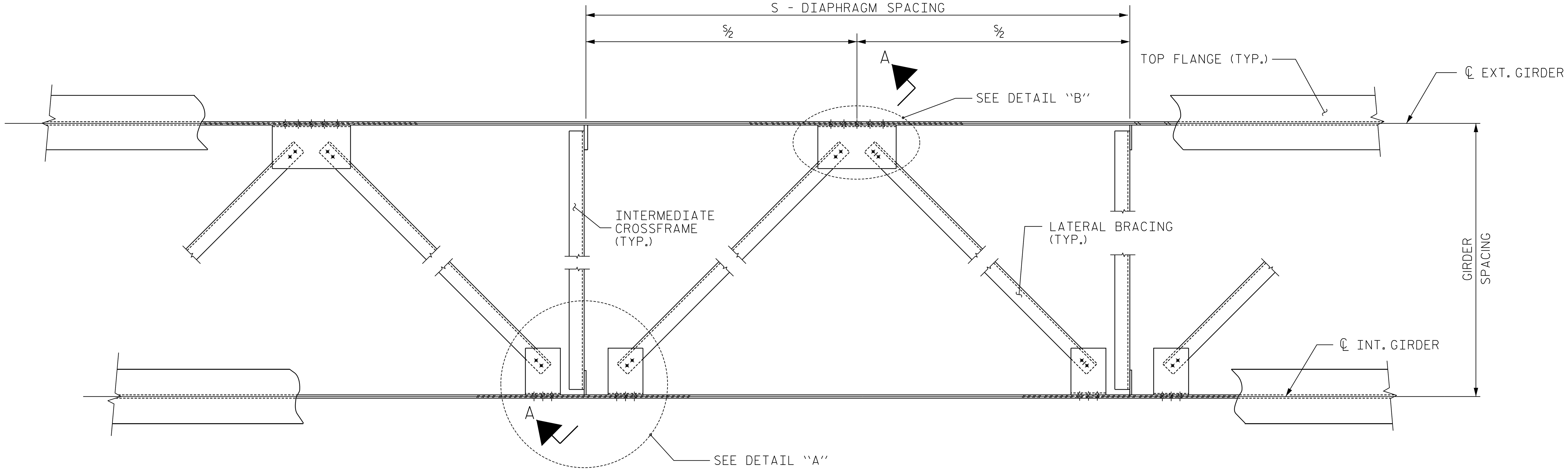


PART PLAN - NEAR TOP FLANGE LATERAL BRACING

(THROUGHOUT EXTERIOR BAYS ONLY)

NOTES

LATERAL BRACING ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

ALL STRUCTURAL STEEL FOR THE LATERAL BRACING SHALL BE AASHTO M270 GRADE 50W OR APPROVED EQUAL.

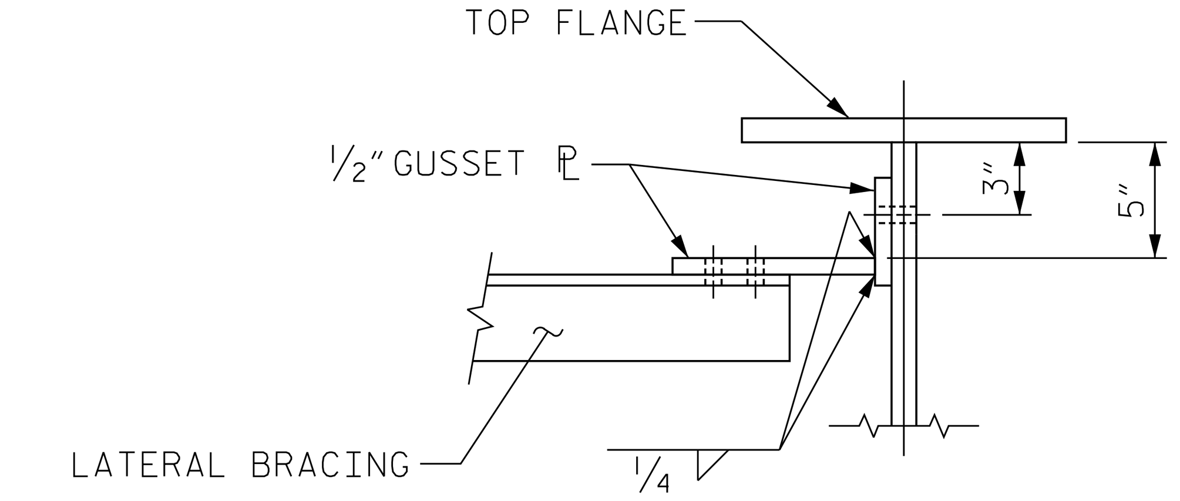
TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL BOLTED CONNECTIONS SHALL BE 7/8"Ø HIGH STRENGTH BOLTS.

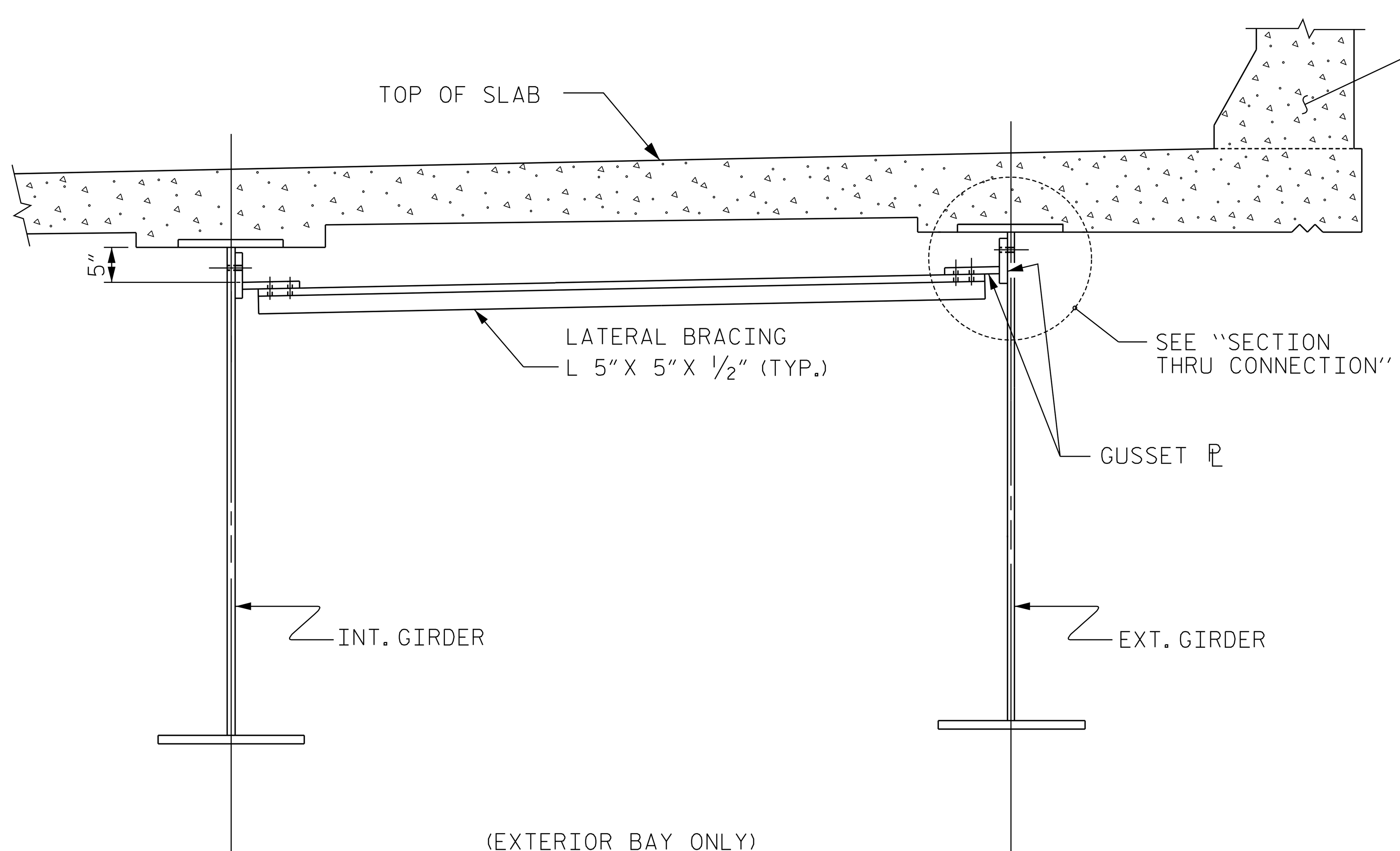
THE CONTRACTOR HAS THE OPTION TO CLIP THE PROTRUDING CORNERS OF THE GUSSET PLATES, AT NO ADDITIONAL COST TO THE DEPARTMENT.

BENT GUSSET PLATES OR ROLLED ANGLE SHAPES MAY BE SUBSTITUTED FOR THE WELDED GUSSET PLATES DETAILED IF APPROVED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE DEPARTMENT.

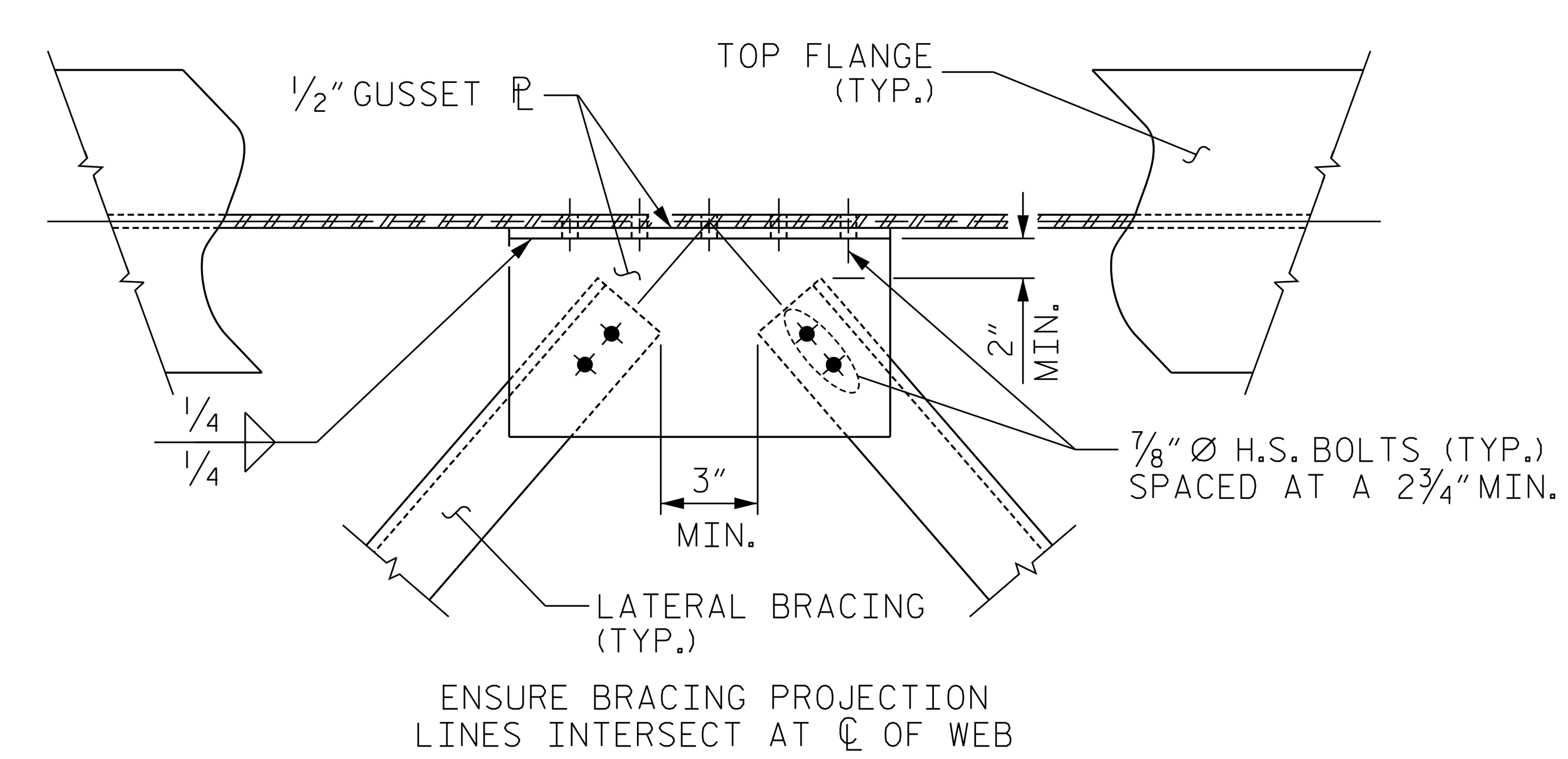
INSTALL THE LATERAL BRACING AFTER ERECTING THE EXTERIOR GIRDER AND THE ADJACENT INTERIOR GIRDER AND INSTALLING THE INTERMEDIATE DIAPHRAGMS.



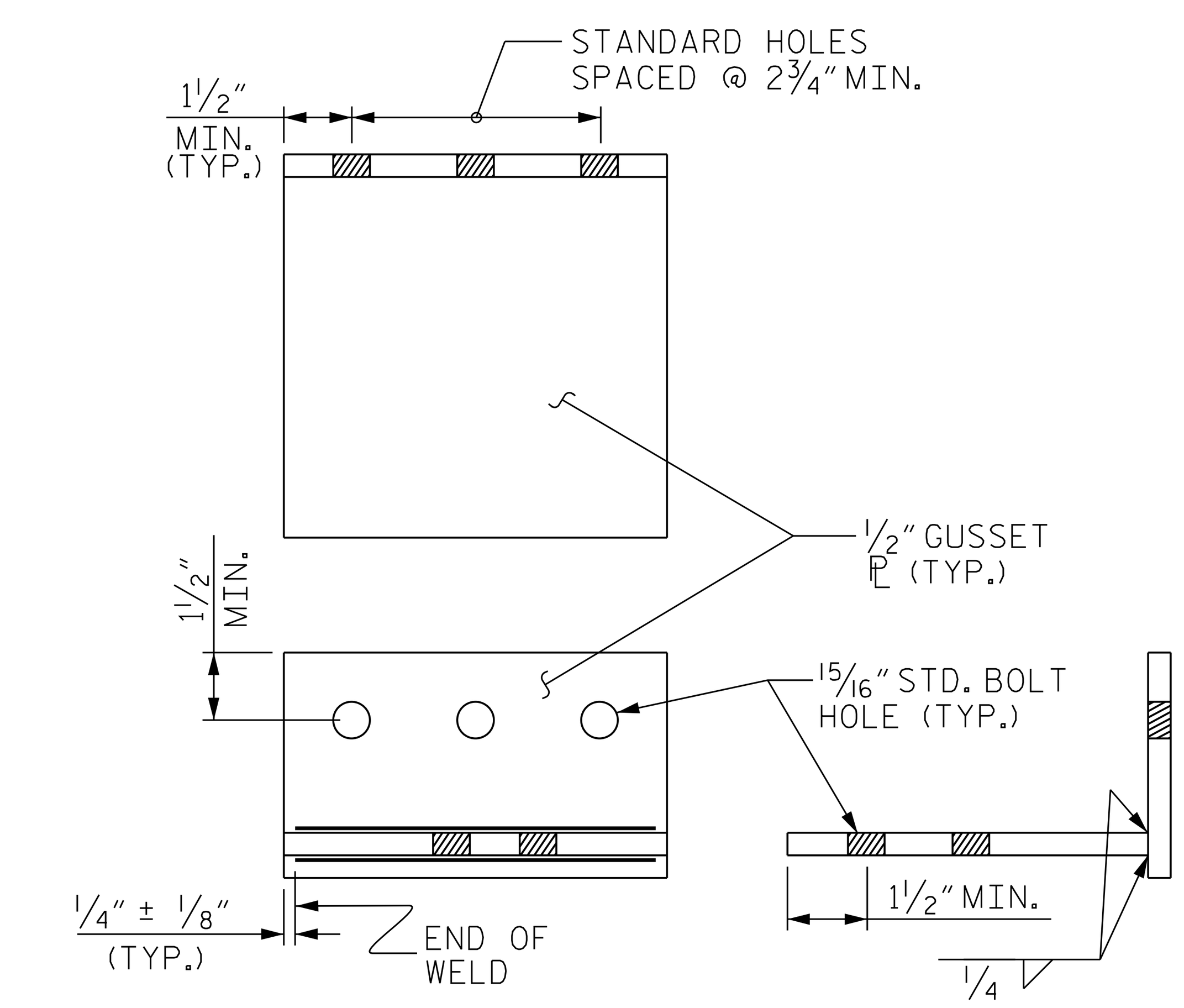
SECTION THRU CONNECTION



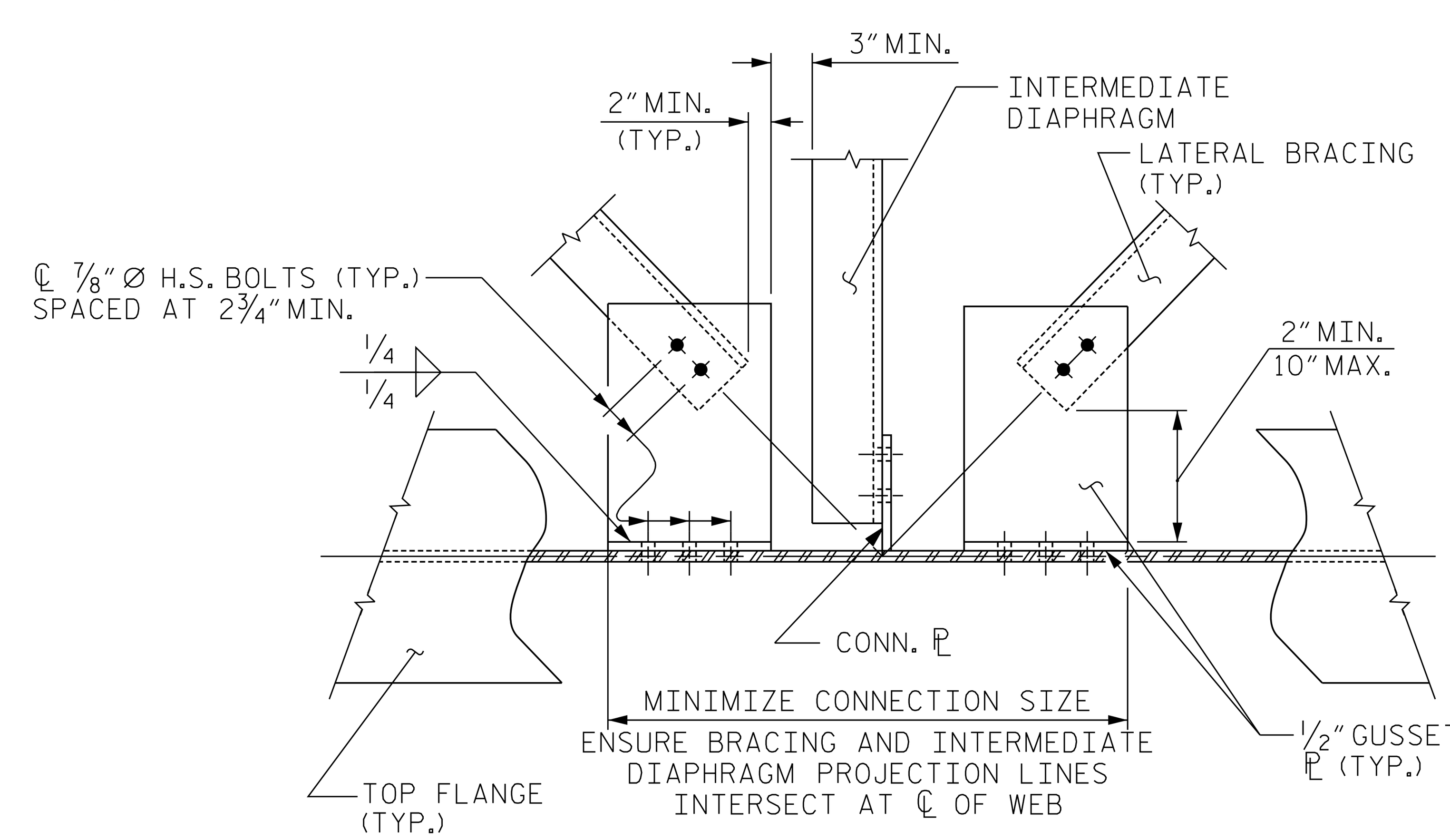
SECTION A-A



DETAIL "B"



CONNECTION DETAIL



DETAIL "A"

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 8 OF 8

Vaughn & Melton
Consulting Engineers
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Tri-Cities, TN 423-467-8401
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New Bern, NC 252-631-5115

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER
6/22/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LATERAL BRACING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY :	WMC	6/11	REV. 12/17 MAA/THC
CHECKED BY :	GM	6/11	

DWN. BY: AW	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S4-24
1			3				TOTAL SHEETS
2			4				50

STD. NO. LB1

DEAD LOAD DEFLECTION AND CAMBER

SPAN A

GIRDER 1 AND 5

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60	18/60	19/60	20/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.005	0.010	0.015	0.021	0.025	0.030	0.035	0.039	0.044	0.048	0.052	0.056	0.060	0.063	0.066	0.068	0.071	0.074	0.075	0.077
DEFLECTION DUE TO WT. OF SLAB * ↓	0.000	0.015	0.029	0.044	0.058	0.072	0.086	0.099	0.111	0.124	0.136	0.147	0.158	0.168	0.178	0.185	0.193	0.200	0.208	0.212	0.217
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.002	0.004	0.006	0.007	0.009	0.011	0.013	0.014	0.016	0.017	0.019	0.020	0.021	0.023	0.023	0.024	0.025	0.026	0.027	0.028
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.022	0.043	0.065	0.086	0.106	0.127	0.146	0.165	0.202	0.202	0.218	0.235	0.249	0.263	0.275	0.286	0.297	0.308	0.315	0.321
VERTICAL CURVE ORDINATE ↑	0.000	0.016	0.031	0.046	0.060	0.074	0.087	0.100	0.112	0.123	0.135	0.145	0.155	0.164	0.173	0.181	0.189	0.196	0.203	0.209	0.215
REQUIRED CAMBER ↑	0″	7/16″	7/8″	1 5/16″	1 3/4″	2 3/16″	2 9/16″	2 15/16″	3 5/16″	3 11/16″	4 1/16″	4 7/16″	4 11/16″	4 15/16″	5 1/4″	5 1/2″	5 11/16″	5 15/16″	6 1/8″	6 5/16″	6 7/16″

SIXTIETH POINTS	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60	36/60	37/60	38/60	39/60	40/60	41/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.078	0.080	0.081	0.082	0.082	0.082	0.081	0.080	0.080	0.079	0.077	0.075	0.073	0.071	0.069	0.067	0.064	0.061	0.058	0.055	0.052
DEFLECTION DUE TO WT. OF SLAB * ↓	0.221	0.225	0.227	0.230	0.230	0.230	0.228	0.227	0.225	0.223	0.218	0.213	0.208	0.202	0.196	0.190	0.182	0.174	0.165	0.157	0.147
DEFLECTION DUE TO WT. OF RAIL ↓	0.028	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.028	0.028	0.027	0.026	0.026	0.025	0.024	0.023	0.022	0.021	0.020	0.019
TOTAL DEAD LOAD DEFLECTION ↓	0.327	0.333	0.337	0.340	0.340	0.341	0.338	0.336	0.333	0.330	0.323	0.316	0.307	0.299	0.290	0.281	0.269	0.257	0.244	0.232	0.218
VERTICAL CURVE ORDINATE ↑	0.220	0.225	0.229	0.232	0.235	0.238	0.239	0.241	0.242	0.242	0.242	0.241	0.239	0.238	0.235	0.232	0.229	0.225	0.220	0.215	0.209
REQUIRED CAMBER ↑	6 9/16″	6 11/16″	6 13/16″	6 7/8″	6 15/16″	6 15/16″	6 15/16″	6 15/16″	6 7/8″	6 7/8″	6 3/4″	6 11/16″	6 9/16″	6 7/16″	6 5/16″	6 3/16″	6″	5 11/16″	5 9/16″	5 3/8″	5 1/8″

SIXTIETH POINTS	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60	54/60	55/60	56/60	57/60	58/60	59/60	60/60		
DEFLECTION DUE TO WT. OF STEEL ↓	0.049	0.045	0.042	0.038	0.035	0.031	0.028	0.025	0.021	0.018	0.015	0.013	0.010	0.008	0.006	0.004	0.003	0.001	0.000		
DEFLECTION DUE TO WT. OF SLAB * ↓	0.138	0.128	0.119	0.109	0.099	0.089	0.080	0.070	0.061	0.053	0.045	0.037	0.029	0.023	0.017	0.012	0.008	0.004	0.000		
DEFLECTION DUE TO WT. OF RAIL ↓	0.018	0.016	0.015	0.014	0.013	0.011	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001	0.000	0.000		
TOTAL DEAD LOAD DEFLECTION ↓	0.204	0.190	0.175	0.161	0.146	0.132	0.117	0.104	0.090	0.078	0.066	0.054	0.042	0.034	0.025	0.018	0.011	0.006	0.000		
VERTICAL CURVE ORDINATE ↑	0.203	0.196	0.189	0.181	0.173	0.164	0.155	0.145	0.135	0.123	0.112	0.100	0.087	0.074	0.060	0046	0.031	0.016	0.000		
REQUIRED CAMBER ↑	4 7/8″	4 5/8″	4 3/8″	4 1/8″	3 13/16″	3 9/16″	3 1/4″	3″	2 11/16″	2 7/16″	2″	1 13/16″	1 9/16″	1 5/16″	1 3/16″	3/4″	1/2″	1/4″	0″		

DEAD LOAD DEFLECTION AND CAMBER

SPAN B

GIRDER 1 AND 5

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.000	-0.001	0.000	0.000	0.001	0.002	0.004	0.006	0.008	0.010	0.013	0.015	0.018	0.021	0.023	0.026	0.028
DEFLECTION DUE TO WT. OF SLAB * ↓	0.000	-0.001	-0.002	-0.002	-0.002	0.001	0.004	0.009	0.013	0.019	0.025	0.032	0.039	0.046	0.053	0.060	0.067	0.073
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011
TOTAL DEAD LOAD DEFLECTION ↑	0.000	-0.001	-0.003	-0.002	-0.001	0.003	0.007	0.014	0.021	0.031	0.040	0.050	0.060	0.071	0.081	0.092	0.102	0.112
VERTICAL CURVE ORDINATE ↓	0.000	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
REQUIRED CAMBER ↑	0″	0″	0″	0″	0″	1/16″	1/8″	3/16″	5/16″	3/8″	1/2″	5/8″	3/4″	7/8″	1″	1 1/8″	1 1/4″	1 3/8″

SIXTIETH POINTS	18/60	19/60	20/60	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.031	0.033	0.035	0.037	0.038	0.040	0.041	0.042	0.042	0.042	0.043	0.042	0.042	0.041	0.040	0.039	0.037	0.036
DEFLECTION DUE TO WT. OF SLAB * ↓	0.080	0.086	0.092	0.096	0.101	0.105	0.109	0.110	0.112	0.113	0.113	0.113	0.112	0.109	0.106	0.103	0.099	0.094
DEFLECTION DUE TO WT. OF RAIL ↓	0.012	0.013	0.013	0.014	0.015	0.015	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.015	0.015	0.014	0.014
TOTAL DEAD LOAD DEFLECTION ↓	0.123	0.131	0.140	0.147	0.153	0.159	0.165	0.168	0.171	0.171	0.171	0.171	0.171	0.166	0.162	0.156	0.151	0.144
VERTICAL CURVE ORDINATE ↑	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
REQUIRED CAMBER ↑	1 1/2″	1 5/8″	1 11/16″	1 3/4″	1 13/16″	1 15/16″	2″	2 1/16″	2 1/16″	2 1/16″	2 1/16″	2 1/16″	2 1/16″	2″	2″	1 7/8″	1 13/16″	1 3/4″

SIXTIETH POINTS	36/60	37/60	38/60	39/60	40/60	41/60	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.034	0.031	0.029	0.026	0.024	0.021	0.018	0.016	0.013	0.010	0.008	0.005	0.002	0.000	-0.001	-0.003	-0.005	-0.006
DEFLECTION DUE TO WT. OF SLAB * ↓	0.089	0.083	0.076	0.070	0.063	0.055	0.048	0.041	0.033	0.026	0.019	0.012	0.006	0.001	-0.004	-0.009	-0.013	-0.015
DEFLECTION DUE TO WT. OF RAIL ↓	0.013	0.012	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001	0.000	0.000	-0.001	-0.001
TOTAL DEAD LOAD DEFLECTION ↓	0.136	0.126	0.117	0.106	0.096	0.085	0.074	0.063	0.052	0.041	0.030	0.020	0.010	0.002	-0.006	-0.012	-0.019	-0.022
VERTICAL CURVE ORDINATE ↑	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	1 11/16″	1 1/2″	1 7/16″	1 5/16″	1 3/16″	1″	7/8″	3/4″	5/8″	1/2″	3/8″	1/4″	1/8″	0″	-1/16″	-1/8″	-1/4″	-1/4″

SIXTIETH POINTS	54/60	55/60	56/60	57/60	58/60	59/60	60/60											
DEFLECTION DUE TO WT. OF STEEL ↓	-0.006	-0.006	-0.006	-0.005	-0.004	-0.002	0.000											
DEFLECTION DUE TO WT. OF SLAB * ↓	-0.017	-0.016	-0.015	-0.013	-0.010	-0.005	0.000											
DEFLECTION DUE TO WT. OF RAIL ↓	-0.002	-0.002	-0.002	-0.001	-0.001	-0.001	0.000											
TOTAL DEAD LOAD DEFLECTION ↓	-0.025	-0.024	-0.023	-0.019	-0.015	-0.007	0.000											
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000											
REQUIRED CAMBER ↑	-5/16″	-5/16″	-1/4″	-1/4″	-3/16″	-1/16″	0″											

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

NOTES

SLOPE FOR THE ZERO CAMBER LINE VARIES.

VALUES ARE AT THE SIXTIETH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER R. GALLAGHER
DocuSigned by: Patrick R. Gallagher
6/22/2022

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Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Asheville, NC 828-253-2796
New Bern, NC 252-631-515

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
DEAD LOAD DEFLECTION
AND CAMBER ORDINATES
SPAN A & B
GIRDER 1 & 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

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

SHEET NO. S4-25

TOTAL SHEETS 50

DEAD LOAD DEFLECTION AND CAMBER

SPAN C

GIRDER 1 AND 5

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60	18/60	19/60	20/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.004	0.007	0.011	0.016	0.020	0.025	0.031	0.037	0.043	0.049	0.055	0.062	0.069	0.075	0.082	0.089	0.096	0.102	0.108	0.115
DEFLECTION DUE TO WT. OF SLAB * ↓	0.000	0.009	0.018	0.029	0.040	0.052	0.065	0.080	0.094	0.110	0.126	0.143	0.160	0.177	0.195	0.212	0.230	0.248	0.265	0.281	0.298
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.001	0.002	0.004	0.005	0.007	0.009	0.011	0.013	0.015	0.017	0.019	0.022	0.024	0.026	0.029	0.031	0.033	0.036	0.038	0.040
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.014	0.028	0.044	0.061	0.080	0.099	0.121	0.144	0.168	0.192	0.218	0.243	0.270	0.296	0.323	0.350	0.377	0.403	0.428	0.452
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	0"	3/16"	5/16"	1/2"	3/4"	15/16"	1 3/16"	1 7/16"	1 3/4"	2"	2 5/16"	2 5/8"	2 15/16"	3 1/4"	3 9/16"	3 7/8"	4 3/16"	4 1/2"	4 13/16"	5 1/8"	5 7/16"

SIXTIETH POINTS	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60	36/60	37/60	38/60	39/60	40/60	41/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.121	0.127	0.132	0.137	0.142	0.147	0.150	0.153	0.156	0.160	0.161	0.163	0.163	0.164	0.164	0.164	0.162	0.160	0.158	0.156	0.152
DEFLECTION DUE TO WT. OF SLAB * ↓	0.314	0.330	0344	0.358	0.370	0.382	0.391	0.400	0.409	0.417	0.421	0.426	0.428	0.430	0.430	0.430	0.425	0.420	0.415	0.410	0.400
DEFLECTION DUE TO WT. OF RAIL ↓	0.042	0.044	0.046	0.048	0.049	0.051	0.052	0.053	0.054	0.055	0.056	0.056	0.057	0.057	0.057	0.057	0.056	0.056	0.055	0.054	0.053
TOTAL DEAD LOAD DEFLECTION ↓	0.476	0.500	0.522	0.543	0.561	0.579	0.593	0.607	0.619	0.632	0.638	0.645	0.647	0.650	0.650	0.651	0.643	0.636	0.628	0.619	0.605
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	5 11/16"	6"	6 1/4"	6 1/2"	6 3/4"	6 15/16"	7 1/16"	7 5/16"	7 7/16"	7 9/16"	7 11/16"	7 3/4"	7 3/4"	7 13/16"	7 13/16"	7 13/16"	7 3/4"	7 5/8"	7 1/2"	7 7/16"	7 1/4"

SIXTIETH POINTS	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60	54/60	55/60	56/60	57/60	58/60	59/60	60/60		
DEFLECTION DUE TO WT. OF STEEL ↓	0.149	0.144	0.139	0.133	0.127	0.120	0.144	0.106	0.098	0.089	0.080	0.071	0.062	0.052	0.042	0.031	0.021	0.011	0.000		
DEFLECTION DUE TO WT. OF SLAB * ↓	0.391	0.378	0.366	0.350	0.344	0.317	0.300	0.279	0.258	0.235	0.212	0.188	0.163	0.137	0.110	0.083	0.056	0.028	0.000		
DEFLECTION DUE TO WT. OF RAIL ↓	0.051	0.050	0.048	0.046	0.044	0.042	0.039	0.037	0.034	0.031	0.028	0.025	0.021	0.018	0.014	0.011	0.007	0.004	0.000		
TOTAL DEAD LOAD DEFLECTION ↓	0.591	0.572	0.552	0.529	0.505	0.479	0.453	0.421	0.389	0.355	0.320	0.283	0.247	0.206	0.166	0.125	0.084	0.042	0.000		
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
REQUIRED CAMBER ↑	7 1/16"	6 7/8"	6 5/8"	6 5/16"	6 1/16"	5 3/4"	5 7/16"	5 1/16"	4 11/16"	4 1/4"	3 13/16"	3 3/8"	2 5/8"	2 1/2"	2"	1 1/2"	1"	1/2"	0"		

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

NOTES

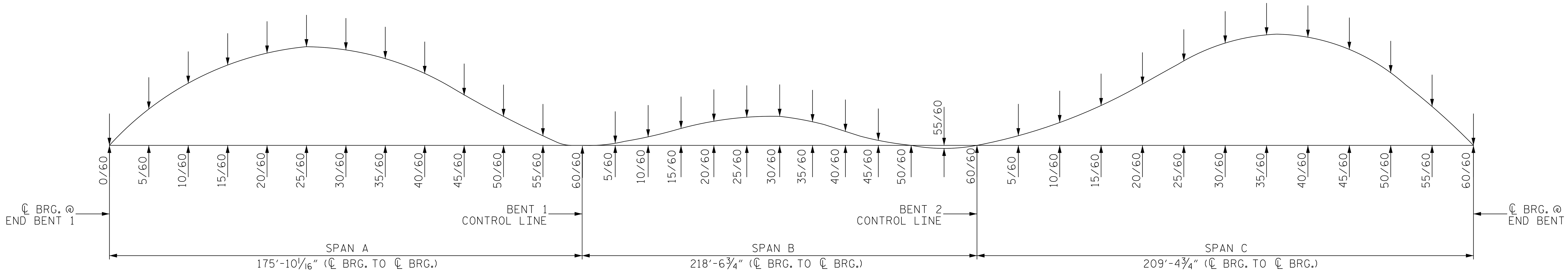
SLOPE FOR THE ZERO CAMBER LINE VARIES.

VALUES ARE AT THE SIXTIETH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL.



SCHEMATIC OF CAMBER ORDINATES

FOR CAMBER VALUES AT EACH GIDER SIXTIETH POINTS, SEE TABLE ABOVE.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 2 OF 6

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
DocuSigned by: Patrick R. Gallagher
6/22/2022

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Asheville, NC 828-253-2796; New Bern, NC 252-631-5115; Boone, NC 828-355-9933; Tri-Cities, TN 423-467-8401; Knoxville, TN 865-546-5800; Spartanburg, SC 864-574-4775; Charleston, SC 843-974-5650; Middlesboro, KY 606-248-6600; Atlanta, GA 770-627-3509

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
DEAD LOAD DEFLECTION
AND CAMBER ORDINATES
SPAN C
GIRDER 1 & 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS

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

SHEET NO. S4-26
TOTAL SHEETS 50

pgsowell
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DEAD LOAD DEFLECTION AND CAMBER

SPAN A

GIRDER 2 AND 4

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60	18/60	19/60	20/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.005	0.011	0.016	0.021	0.026	0.031	0.036	0.041	0.045	0.050	0.054	0.058	0.061	0.065	0.068	0.071	0.073	0.076	0.078	0.079
DEFLECTION DUE TO WT. OF SLAB * ↓	0.000	0.015	0.029	0.044	0.058	0.072	0.086	0.099	0.112	0.124	0.136	0.147	0.158	0.168	0.178	0.186	0.193	0.201	0.208	0.213	0.218
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.002	0.004	0.005	0.007	0.009	0.011	0.012	0.014	0.015	0.017	0.018	0.020	0.021	0.022	0.023	0.024	0.025	0.026	0.026	0.027
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.022	0.044	0.065	0.087	0.107	0.128	0.147	0.166	0.184	0.202	0.219	0.236	0.250	0.265	0.276	0.288	0.299	0.310	0.317	0.324
VERTICAL CURVE ORDINATE ↑	0.000	0.016	0.031	0.046	0.060	0.074	0.087	0.100	0.112	0.123	0.135	0.145	0.155	0.164	0.173	0.181	0.189	0.196	0.203	0.209	0.215
REQUIRED CAMBER ↑	0"	7/16"	7/8"	1 5/16"	1 3/4"	2 3/16"	2 9/16"	2 15/16"	3 5/16"	3 11/16"	4 1/16"	4 3/8"	4 11/16"	5"	5 1/4"	5 1/2"	5 3/4"	5 15/16"	6 1/8"	6 5/16"	6 1/2"

SIXTIETH POINTS	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60	36/60	37/60	38/60	39/60	40/60	41/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.081	0.082	0.083	0.084	0.084	0.084	0.083	0.083	0.082	0.081	0.079	0.078	0.076	0.074	0.071	0.069	0.066	0.063	0.060	0.057	0.054
DEFLECTION DUE TO WT. OF SLAB * ↓	0.222	0.226	0.228	0.230	0.230	0.231	0.229	0.227	0.225	0.223	0.218	0.213	0.208	0.203	0.196	0.190	0.182	0.174	0.165	0.157	0.147
DEFLECTION DUE TO WT. OF RAIL ↓	0.027	0.028	0.028	0.028	0.028	0.029	0.028	0.028	0.028	0.028	0.027	0.026	0.026	0.025	0.024	0.024	0.023	0.022	0.020	0.019	0.018
TOTAL DEAD LOAD DEFLECTION ↓	0.330	0.336	0.339	0.343	0.343	0.343	0.341	0.338	0.335	0.331	0.325	0.318	0.310	0.302	0.292	0.282	0.271	0.259	0.246	0.233	0.219
VERTICAL CURVE ORDINATE ↑	0.220	0.225	0.229	0.235	0.235	0.238	0.239	0.241	0.242	0.242	0.242	0.241	0.239	0.238	0.235	0.232	0.229	0.225	0.220	0.215	0.209
REQUIRED CAMBER ↑	6 5/8"	6 3/4"	6 13/16"	6 7/8"	6 15/16"	7"	6 15/16"	6 15/16"	6 15/16"	6 7/8"	6 13/16"	6 11/16"	6 9/16"	6 1/2"	6 5/16"	6 1/16"	6"	5 13/16"	5 9/16"	5 1/2"	5 1/8"

SIXTIETH POINTS	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60	54/60	55/60	56/60	57/60	58/60	59/60	60/60		
DEFLECTION DUE TO WT. OF STEEL ↓	0.050	0.047	0.043	0.039	0.036	0.032	0.029	0.025	0.022	0.019	0.016	0.013	0.010	0.008	0.006	0.004	0.002	0.001	0.000		
DEFLECTION DUE TO WT. OF SLAB * ↓	0.138	0.128	0.119	0.109	0.099	0.089	0.080	0.070	0.061	0.053	0.044	0.036	0.029	0.023	0.017	0.012	0.007	0.004	0.000		
DEFLECTION DUE TO WT. OF RAIL ↓	0.017	0.016	0.015	0.013	0.012	0.011	0.010	0.009	0.008	0.006	0.005	0.004	0.004	0.003	0.002	0.001	0.001	0.000	0.000		
TOTAL DEAD LOAD DEFLECTION ↓	0.206	0.191	0.176	0.162	0.147	0.133	0.118	0.105	0.091	0.078	0.065	0.054	0.043	0.034	0.025	0.018	0.011	0.005	0.000		
VERTICAL CURVE ORDINATE ↑	0.203	0.196	0.189	0.181	0.173	0.164	0.155	0.145	0.135	0.123	0.112	0.100	0.087	0.074	0.060	0.046	0.031	0.016	0.000		
REQUIRED CAMBER ↑	4 15/16"	4 5/8"	4 3/8"	4 1/8"	3 7/8"	3 9/16"	3 1/4"	3"	2 11/16"	2 7/16"	2 1/8"	1 13/16"	1 9/16"	1 5/16"	1"	3/4"	1/2"	1/4"	0"		

NOTES

SLOPE FOR THE ZERO CAMBER LINE VARIES.

VALUES ARE AT THE SIXTIETH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION AND CAMBER

SPAN B

GIRDER 2 AND 4

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.000	-0.001	0.000	0.000	0.001	0.002	0.004	0.006	0.008	0.010	0.013	0.016	0.018	0.021	0.024	0.026	0.029
DEFLECTION DUE TO WT. OF SLAB * ↓	0.000	-0.001	-0.003	-0.002	-0.002	0.001	0.004	0.009	0.013	0.019	0.025	0.032	0.039	0.046	0.053	0.060	0.067	0.074
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011
TOTAL DEAD LOAD DEFLECTION ↑	0.000	-0.002	-0.004	-0.003	-0.002	0.003	0.007	0.014	0.022	0.031	0.039	0.050	0.060	0.071	0.082	0.092	0.103	0.113
VERTICAL CURVE ORDINATE ↓	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	0"	0"	-1/16"	-1/16"	0"	1/16"	1/16"	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"

SIXTIETH POINTS	18/60	19/60	20/60	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.032	0.034	0.036	0.038	0.040	0.041	0.042	0.043	0.044	0.044	0.044	0.044	0.044	0.043	0.042	0.040	0.039	0.037
DEFLECTION DUE TO WT. OF SLAB * ↓	0.080	0.086	0.091	0.096	0.101	0.105	0.109	0.111	0.113	0.113	0.113	0.112	0.112	0.109	0.107	0.103	0.099	0.094
DEFLECTION DUE TO WT. OF RAIL ↓	0.012	0.012	0.013	0.014	0.014	0.015	0.015	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.015	0.015	0.014	0.014
TOTAL DEAD LOAD DEFLECTION ↓	0.123	0.132	0.140	0.147	0.156	0.161	0.166	0.169	0.173	0.174	0.173	0.173	0.172	0.167	0.163	0.158	0.152	0.144
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	1 1/2"	1 9/16"	1 11/16"	1 3/4"	1 7/8"	1 15/16"	2"	2 1/16"	2 1/16"	2 1/16"	2 1/16"	2 1/16"	2 1/16"	2"	1 15/16"	1 13/16"	1 7/8"	1 3/4"

SIXTIETH POINTS	36/60	37/60	38/60	39/60	40/60	41/60	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.035	0.032	0.030	0.027	0.025	0.022	0.019	0.016	0.013	0.011	0.008	0.005	0.002	0.001	-0.001	-0.003	-0.005	-0.006
DEFLECTION DUE TO WT. OF SLAB * ↓	0.089	0.083	0.077	0.070	0.063	0.055	0.048	0.041	0.033	0.026	0.019	0.012	0.006	0.001	-0.005	-0.009	-0.012	-0.015
DEFLECTION DUE TO WT. OF RAIL ↓	0.013	0.012	0.011	0.010	0.009	0.008	0.008	0.006	0.005	0.005	0.004	0.003	0.002	0.001	0.000	0.000	-0.001	-0.001
TOTAL DEAD LOAD DEFLECTION ↓	0.137	0.127	0.118	0.107	0.097	0.086	0.075	0.063	0.052	0.041	0.030	0.020	0.010	0.002	-0.006	-0.012	-0.018	-0.022
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	1 5/8"	1 1/2"	1 7/16"	1 5/16"	1 3/16"	1 1/16"	7/8"	3/4"	5/8"	1/2"	3/8"	1/4"	1/8"	0"	-1/16"	-1/8"	-3/16"	-1/4"

SIXTIETH POINTS	54/60	55/60	56/60	57/60	58/60	59/60	60/60
DEFLECTION DUE TO WT. OF STEEL ↓	-0.007	-0.006	-0.006	-0.005	-0.004	-0.002	0.000
DEFLECTION DUE TO WT. OF SLAB * ↓	-0.017	-0.016	-0.015	-0.013	-0.010	-0.005	0.000
DEFLECTION DUE TO WT. OF RAIL ↓	-0.002	-0.002	-0.002	-0.001	-0.001	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION ↓	-0.025	-0.024	-0.023	-0.019	-0.015	-0.008	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	-5/16"	-5/16"	-5/16"	-1/4"	-3/16"	-1/8"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

NORTH CAROLINA PROFESSIONAL SEAL 042890 PATRICK R. GALLAGHER
DocuSigned by: Patrick Gallagher
6/22/2022

V&M Vaughn & Melton Consulting Engineers
Raleigh, North Carolina 919-977-9455
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Asheville, NC 828-253-2796
New Bern, NC 252-631-5115

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
DEAD LOAD DEFLECTION
AND CAMBER ORDINATES
SPAN A and B
GIRDER 2 & 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

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

SHEET NO. S4-27
TOTAL SHEETS 50

DEAD LOAD DEFLECTION AND CAMBER

SPAN C

GIRDER 2 AND 4

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60	18/60	19/60	20/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.003	0.007	0.011	0.016	0.021	0.026	0.032	0.037	0.044	0.050	0.057	0.063	0.070	0.077	0.084	0.091	0.098	0.105	0.111	0.118
DEFLECTION DUE TO WT. OF SLAB ✳ ↓	0.000	0.009	0.017	0.028	0.039	0.052	0.065	79	0.094	0.110	0.126	0.143	0.160	0.177	0.195	0.213	0.230	0.248	0.265	0.282	0.298
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.001	0.002	0.004	0.005	0.007	0.009	0.010	0.012	0.014	0.017	0.019	0.021	0.023	0.026	0.028	0.030	0.032	0.035	0.037	0.039
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.013	0.026	0.043	0.060	0.080	0.099	0.122	0.144	0.168	0.192	0.218	0.244	0.271	0.298	0.352	0.352	0.378	0.405	0.430	0.455
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	0"	3/16"	5/16"	1/2"	11/16"	15/16"	1 3/16"	1 7/16"	1 3/4"	2"	2 5/16"	2 5/8"	2 15/16"	3 1/4"	3 9/16"	3 7/8"	4 1/4"	4 9/16"	4 7/8"	5 3/16"	5 7/16"

SIXTIETH POINTS	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60	36/60	37/60	38/60	39/60	40/60	41/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.124	0.130	0.135	0.141	0.145	0.150	0.154	0.158	0.161	0.164	0.165	0.167	0.168	0.168	0.168	0.168	0.166	0.165	0.162	0.160	0.156
DEFLECTION DUE TO WT. OF SLAB ✳ ↓	0.314	0.330	0344	0.358	0.370	0.382	0.392	0.401	0.409	0.417	0.422	0.427	0.428	0.430	0.430	0.430	0.426	0.422	0.416	0.410	0.401
DEFLECTION DUE TO WT. OF RAIL ↓	0.041	0.043	0.045	0.047	0.048	0.050	0.051	0.052	0.053	0.054	0.055	0.055	0.055	0.056	0.056	0.056	0.055	0.054	0.054	0.053	0.051
TOTAL DEAD LOAD DEFLECTION ↓	0.479	0.502	0.524	0.545	0.563	0.581	0.596	0.611	0.623	0.635	0.642	0.649	0.652	0.654	0.654	0.654	0.647	0.641	0.632	0.623	0.608
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	5 3/4"	6"	6 5/16"	6 9/16"	6 3/4"	7"	7 1/8"	7 5/16"	7 1/2"	7 5/8"	7 11/16"	7 13/16"	7 13/16"	7 13/16"	7 7/8"	7 7/8"	7 3/4"	7 11/16"	7 9/16"	7 1/2"	7 5/16"

SIXTIETH POINTS	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60	54/60	55/60	56/60	57/60	58/60	59/60	60/60		
DEFLECTION DUE TO WT. OF STEEL ↓	0.153	0.147	0.142	0.137	0.131	0.124	0.117	0.109	0.100	0.091	0.082	0.073	0.064	0.053	0.043	0.032	0.022	0.011	0.000		
DEFLECTION DUE TO WT. OF SLAB ✳ ↓	0.391	0.378	0.365	0.351	0.336	0.318	0.300	0.280	0.259	0.236	0.212	0.188	0.164	0.137	0.110	0.083	0.056	0.028	0.000		
DEFLECTION DUE TO WT. OF RAIL ↓	0.050	0.049	0.047	0.045	0.043	0.041	0.038	0.036	0.033	0.030	0.027	0.024	0.021	0.017	0.014	0.011	0.007	0.004	0.000		
TOTAL DEAD LOAD DEFLECTION ↓	0.594	0.574	0.554	0.532	0.510	0.483	0.455	0.424	0.392	0.357	0.322	0.285	0.248	0.208	0.167	0.126	0.084	0.042	0.000		
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
REQUIRED CAMBER ↑	7 1/8"	6 7/8"	6 5/8"	6 3/8"	6 1/8"	5 13/16"	5 7/16"	5 1/16"	4 11/16"	4 5/16"	3 7/8"	3 7/16"	3"	3 1/2"	2"	2 1/2"	1"	1/2"	0"		

✳ INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

NOTES

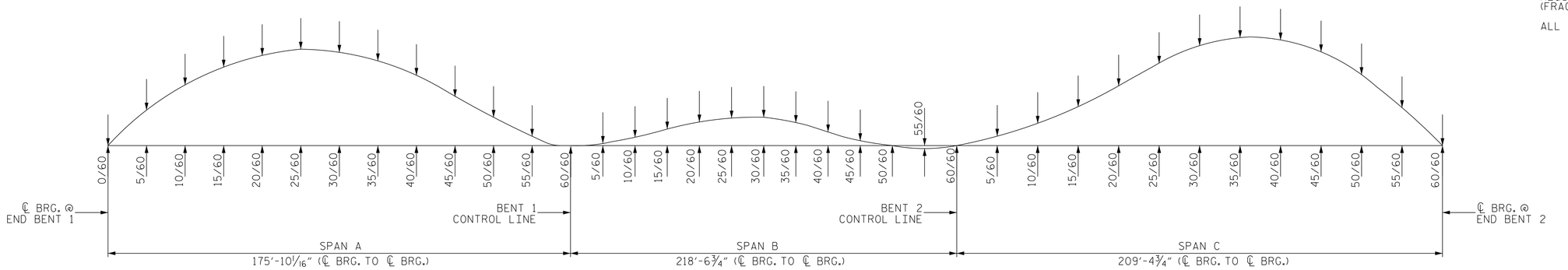
SLOPE FOR THE ZERO CAMBER LINE VARIES.

VALUES ARE AT THE SIXTIETH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL.



SCHEMATIC OF CAMBER ORDINATES

FOR CAMBER VALUES AT EACH GIDER SIXTIETH POINTS, SEE TABLE ABOVE.

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Digitally signed by: Patrick R. Gallagher
DocuSigned by: 8/22/2022

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 4 OF 6

Vaughn & Melton
Consulting Engineers
Raleigh, North Carolina
919-977-9455
Asheville, NC 828-253-2796
New Bern, NC 252-631-515
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
DEAD LOAD DEFLECTION
AND CAMBER ORDINATES
SPAN C
GIRDER 2 & 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-28
1			3			TOTAL SHEETS
2			4			50

DEAD LOAD DEFLECTION AND CAMBER

SPAN A

GIRDER 3

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60	18/60	19/60	20/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.005	0.010	0.015	0.020	0.025	0.030	0.034	0.039	0.043	0.047	0.051	0.055	0.058	0.062	0.065	0.067	0.070	0.072	0.074	0.076
DEFLECTION DUE TO WT. OF SLAB * ↓	0.000	0.015	0.029	0.044	0.058	0.072	0.086	0.099	0.112	0.124	0.136	0.147	0.158	0.168	0.178	0.186	0.193	0.201	0.208	0.213	0.218
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.002	0.004	0.005	0.007	0.009	0.011	0.012	0.014	0.015	0.017	0.018	0.020	0.021	0.022	0.023	0.024	0.025	0.026	0.026	0.027
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.022	0.043	0.064	0.086	0.106	0.126	0.145	0.164	0.182	0.200	0.216	0.233	0.247	0.262	0.273	0.284	0.295	0.306	0.313	0.320
VERTICAL CURVE ORDINATE ↑	0.000	0.016	0.031	0.046	0.060	0.074	0.087	0.100	0.112	0.123	0.135	0.145	0.155	0.164	0.173	0.181	0.189	0.196	0.203	0.209	0.215
REQUIRED CAMBER ↑	0"	7/16"	7/8"	1 5/16"	1 3/4"	2 1/8"	2 3/16"	2 15/16"	3 5/16"	3 11/16"	4"	4 5/16"	4 11/16"	4 15/16"	5 1/4"	5 7/16"	5 11/16"	5 7/8"	6 1/8"	6 1/4"	6 1/2"

SIXTIETH POINTS	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60	36/60	37/60	38/60	39/60	40/60	41/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.077	0.078	0.079	0.080	0.080	0.080	0.079	0.079	0.078	0.077	0.076	0.074	0.072	0.070	0.068	0.066	0.063	0.060	0.057	0.054	0.051
DEFLECTION DUE TO WT. OF SLAB * ↓	0.222	0.226	0.228	0.230	0.230	0.231	0.229	0.227	0.225	0.223	0.218	0.213	0.208	0.203	0.196	0.190	0.182	0.174	0.165	0.157	0.147
DEFLECTION DUE TO WT. OF RAIL ↓	0.027	0.028	0.028	0.028	0.028	0.029	0.028	0.028	0.028	0.028	0.027	0.026	0.026	0.025	0.024	0.024	0.023	0.022	0.020	0.019	0.018
TOTAL DEAD LOAD DEFLECTION ↓	0.326	0.332	0.335	0.338	0.339	0.339	0.337	0.334	0.331	0.328	0.321	0.314	0.306	0.298	0.288	0.279	0.267	0.256	0.243	0.230	0.217
VERTICAL CURVE ORDINATE ↑	0.220	0.225	0.229	0.232	0.235	0.238	0.239	0.241	0.242	0.242	0.242	0.241	0.239	0.238	0.235	0.232	0.229	0.225	0.220	0.215	0.209
REQUIRED CAMBER ↑	6 9/16"	6 11/16"	6 3/4"	6 7/8"	6 7/8"	6 15/16"	6 15/16"	6 7/8"	6 7/8"	6 13/16"	6 3/4"	6 11/16"	6 9/16"	6 7/16"	6 5/16"	6 1/8"	5 15/16"	5 3/4"	5 9/16"	5 3/8"	5 1/8"

SIXTIETH POINTS	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60	54/60	55/60	56/60	57/60	58/60	59/60	60/60		
DEFLECTION DUE TO WT. OF STEEL ↓	0.048	0.044	0.041	0.038	0.034	0.031	0.027	0.024	0.021	0.018	0.015	0.012	0.010	0.008	0.006	0.004	0.002	0.001	0.000		
DEFLECTION DUE TO WT. OF SLAB * ↓	0.138	0.128	0.119	0.109	0.099	0.089	0.080	0.070	0.061	0.053	0.044	0.036	0.029	0.023	0.017	0.012	0.007	0.004	0.000		
DEFLECTION DUE TO WT. OF RAIL ↓	0.017	0.016	0.015	0.013	0.012	0.011	0.010	0.009	0.008	0.006	0.005	0.004	0.004	0.003	0.002	0.001	0.001	0.000	0.000		
TOTAL DEAD LOAD DEFLECTION ↓	0.203	0.189	0.174	0.160	0.145	0.131	0.117	0.103	0.090	0.077	0.064	0.053	0.042	0.033	0.024	0.017	0.010	0.005	0.000		
VERTICAL CURVE ORDINATE ↑	0.203	0.196	0.189	0.181	0.173	0.164	0.155	0.145	0.134	0.123	0.112	0.099	0.087	0.074	0.060	0.046	0.031	0.016	0.000		
REQUIRED CAMBER ↑	4 7/8"	4 5/8"	4 3/8"	4 1/16"	3 13/16"	3 9/16"	3 1/4"	3"	2 11/16"	2 3/8"	2 1/8"	1 13/16"	1 9/16"	1 5/16"	1"	3/4"	1/2"	1/4"	0"		

DEAD LOAD DEFLECTION AND CAMBER

SPAN B

GIRDER 3

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.000	-0.001	0.000	0.000	0.001	0.002	0.004	0.006	0.008	0.010	0.013	0.015	0.018	0.020	0.023	0.025	0.028
DEFLECTION DUE TO WT. OF SLAB * ↓	0.000	-0.001	-0.003	-0.002	-0.002	0.001	0.004	0.009	0.013	0.019	0.025	0.032	0.039	0.046	0.053	0.060	0.067	0.074
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011
TOTAL DEAD LOAD DEFLECTION ↓	0.000	-0.002	-0.004	-0.003	-0.002	0.003	0.007	0.014	0.022	0.030	0.039	0.049	0.060	0.070	0.081	0.091	0.102	0.112
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	0"	0"	-1/16"	-1/16"	0"	1/16"	1/16"	3/16"	1/4"	3/8"	1/2"	9/16"	11/16"	13/16"	1"	1 1/8"	1 1/4"	1 5/16"

SIXTIETH POINTS	18/60	19/60	20/60	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.030	0.032	0.034	0.036	0.038	0.039	0.040	0.041	0.042	0.042	0.042	0.042	0.042	0.041	0.040	0.038	0.037	0.035
DEFLECTION DUE TO WT. OF SLAB * ↓	0.080	0.086	0.092	0.097	0.101	0.105	0.109	0.111	0.113	0.113	0.113	0.113	0.112	0.109	0.107	0.103	0.099	0.094
DEFLECTION DUE TO WT. OF RAIL ↓	0.012	0.012	0.013	0.014	0.014	0.015	0.015	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.015	0.015	0.014	0.014
TOTAL DEAD LOAD DEFLECTION ↓	0.122	0.130	0.139	0.146	0.154	0.159	0.164	0.167	0.171	0.171	0.172	0.171	0.170	0.166	0.162	0.156	0.150	0.143
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	1 1/16"	1 9/16"	1 11/16"	1 3/4"	1 7/8"	1 7/8"	2"	2"	2 1/16"	2 1/16"	2 1/16"	2 1/16"	2 1/16"	2"	1 15/16"	1 7/8"	1 13/16"	1 11/16"

SIXTIETH POINTS	36/60	37/60	38/60	39/60	40/60	41/60	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.033	0.031	0.029	0.026	0.024	0.021	0.018	0.016	0.013	0.010	0.007	0.005	0.003	0.001	-0.001	-0.003	-0.004	-0.005
DEFLECTION DUE TO WT. OF SLAB * ↓	0.089	0.083	0.077	0.070	0.063	0.055	0.048	0.041	0.033	0.026	0.019	0.012	0.006	0.001	-0.005	-0.009	-0.012	-0.015
DEFLECTION DUE TO WT. OF RAIL ↓	0.013	0.012	0.011	0.010	0.009	0.008	0.008	0.006	0.005	0.005	0.004	0.003	0.002	0.001	0.000	0.000	-0.001	-0.001
TOTAL DEAD LOAD DEFLECTION ↓	0.136	0.126	0.116	0.106	0.096	0.085	0.074	0.063	0.052	0.041	0.030	0.020	0.010	0.002	-0.006	-0.012	-0.018	-0.021
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	1 5/8"	1 1/2"	1 3/8"	1 1/4"	1 1/8"	1"	7/8"	3/4"	5/8"	1/2"	3/8"	1/4"	1/8"	0"	-1/16"	-1/8"	-3/16"	-1/4"

SIXTIETH POINTS	54/60	55/60	56/60	57/60	58/60	59/60	60/60
DEFLECTION DUE TO WT. OF STEEL ↓	-0.006	-0.006	-0.006	-0.005	-0.004	-0.002	0.000
DEFLECTION DUE TO WT. OF SLAB * ↓	-0.017	-0.016	-0.016	-0.013	-0.010	-0.005	0.000
DEFLECTION DUE TO WT. OF RAIL ↓	-0.002	-0.002	-0.002	-0.002	-0.001	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION ↓	-0.025	-0.024	-0.023	-0.019	-0.015	-0.008	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	-5/16"	-5/16"	-1/4"	-1/4"	-3/16"	-1/16"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

NOTES

SLOPE FOR THE ZERO CAMBER LINE VARIES.

VALUES ARE AT THE SIXTIETH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Digitally signed by PATRICK R. GALLAGHER
6/22/2022

V&M Vaughn & Melton Consulting Engineers
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Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Asheville, NC 828-253-2796
New Bern, NC 252-631-5115

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
DEAD LOAD DEFLECTION
AND CAMBER ORDINATES
SPAN A and B
GIRDER 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-29
1			3			TOTAL SHEETS
2			4			50

DEAD LOAD DEFLECTION AND CAMBER

SPAN C

GIRDER 3

SIXTIETH POINTS	0/60	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	13/60	14/60	15/60	16/60	17/60	18/60	19/60	20/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.000	0.003	0.007	0.011	0.015	0.020	0.025	0.030	0.036	0.042	0.048	0.054	0.061	0.067	0.074	0.081	0.087	0.094	0.100	0.106	0.113
DEFLECTION DUE TO WT. OF SLAB * ↓	0.000	0.009	0.017	0.028	0.039	0.052	0.065	0.079	0.094	0.110	0.126	0.143	0.160	0.177	0.195	0.213	0.230	0.248	0.265	0.282	0.298
DEFLECTION DUE TO WT. OF RAIL ↓	0.000	0.001	0.002	0.004	0.005	0.007	0.009	0.010	0.012	0.014	0.017	0.019	0.021	0.023	0.026	0.028	0.030	0.032	0.035	0.037	0.039
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.013	0.026	0.043	0.059	0.079	0.098	0.120	0.142	0.166	0.190	0.216	0.241	0.268	0.294	0.321	0.348	0.374	0.400	0.425	0.450
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	0"	3/16"	5/16"	1/2"	11/16"	15/16"	1 3/16"	1 7/16"	1 11/16"	2"	2 5/16"	2 9/16"	2 7/8"	3 1/16"	3 9/16"	3 7/8"	4 3/16"	4 1/2"	4 13/16"	5 1/8"	5 3/8"

SIXTIETH POINTS	21/60	22/60	23/60	24/60	25/60	26/60	27/60	28/60	29/60	30/60	31/60	32/60	33/60	34/60	35/60	36/60	37/60	38/60	39/60	40/60	41/60
DEFLECTION DUE TO WT. OF STEEL ↓	0.118	0.124	0.129	0.135	0.139	0.143	0.147	0.151	0.153	0.156	0.158	0.160	0.160	0.161	0.161	0.161	0.159	0.158	0.155	0.153	0.149
DEFLECTION DUE TO WT. OF SLAB * ↓	0.314	0.330	0344	0.358	0.370	0.382	0.392	0.401	0.409	0.417	0.422	0.427	0.428	0.430	0.430	0.430	0.426	0.422	0.416	0.410	0.401
DEFLECTION DUE TO WT. OF RAIL ↓	0.041	0.043	0.045	0.047	0.048	0.050	0.051	0.052	0.053	0.054	0.055	0.055	0.055	0.056	0.056	0.056	0.055	0.054	0.054	0.053	0.051
TOTAL DEAD LOAD DEFLECTION ↓	0.473	0.497	0.518	0.539	0.557	0.575	0.589	0.604	0.616	0.628	0.635	0.642	0.644	0.646	0.646	0.646	0.640	0.634	0.625	0.615	0.601
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER ↑	5 11/16"	5 15/16"	6 3/16"	6 1/2"	6 11/16"	6 7/8"	7 1/16"	7 1/4"	7 3/8"	7 1/2"	7 5/8"	7 11/16"	7 3/4"	7 3/4"	7 3/4"	7 3/4"	7 11/16"	7 5/8"	7 1/2"	7 3/8"	7 3/16"

SIXTIETH POINTS	42/60	43/60	44/60	45/60	46/60	47/60	48/60	49/60	50/60	51/60	52/60	53/60	54/60	55/60	56/60	57/60	58/60	59/60	60/60		
DEFLECTION DUE TO WT. OF STEEL ↓	0.146	0.141	0.136	0.131	0.125	0.118	0.112	0.104	0.096	0.087	0.079	0.070	0.061	0.051	0.041	0.031	0.021	0.010	0.000		
DEFLECTION DUE TO WT. OF SLAB * ↓	0.391	0.378	0.365	0.351	0.336	0.318	0.300	0.280	0.259	0.236	0.212	0.188	0.164	0.137	0.110	0.083	0.056	0.028	0.000		
DEFLECTION DUE TO WT. OF RAIL ↓	0.050	0.049	0.047	0.045	0.043	0.041	0.038	0.036	0.033	0.030	0.027	0.024	0.021	0.017	0.014	0.011	0.007	0.004	0.000		
TOTAL DEAD LOAD DEFLECTION ↓	0.587	0.568	0.548	0.526	0.504	0.477	0.455	0.419	0.388	0.353	0.318	0.282	0.245	0.205	0.165	0.124	0.084	0.042	0.000		
VERTICAL CURVE ORDINATE ↑	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
REQUIRED CAMBER ↑	7 1/16"	6 13/16"	6 9/16"	6 5/16"	6 1/16"	5 3/4"	5 3/8"	5"	4 5/8"	4 1/4"	3 13/16"	3 3/8"	2 15/16"	2 7/16"	2"	1 1/2"	1"	1/2"	0"		

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

NOTES

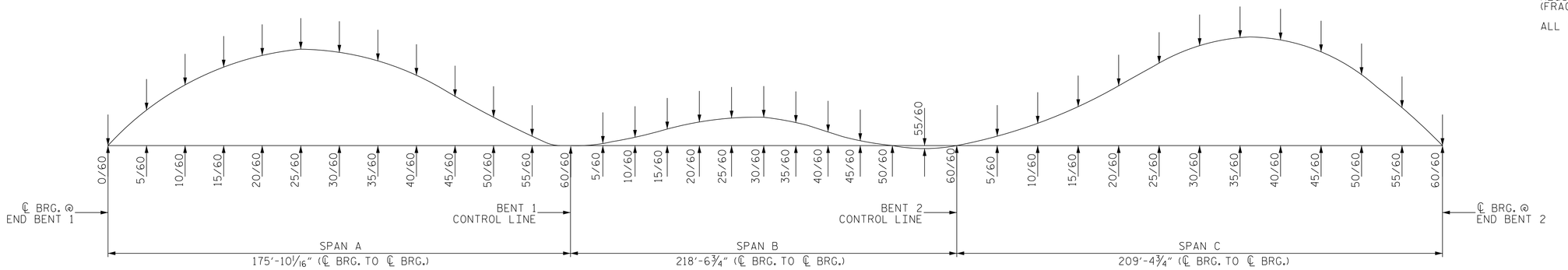
SLOPE FOR THE ZERO CAMBER LINE VARIES.

VALUES ARE AT THE SIXTIETH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL.



SCHEMATIC OF CAMBER ORDINATES

FOR CAMBER VALUES AT EACH GIDER SIXTIETH POINTS, SEE TABLE ABOVE.

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
DocuSigned by: Patrick R. Gallagher
6/22/2022

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 6 OF 6

Vaughn & Melton
Consulting Engineers
Raleigh, North Carolina 919-977-9455
Asheville, NC 828-253-2796
Boone, NC 828-355-9933
New Bern, NC 252-631-515
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509

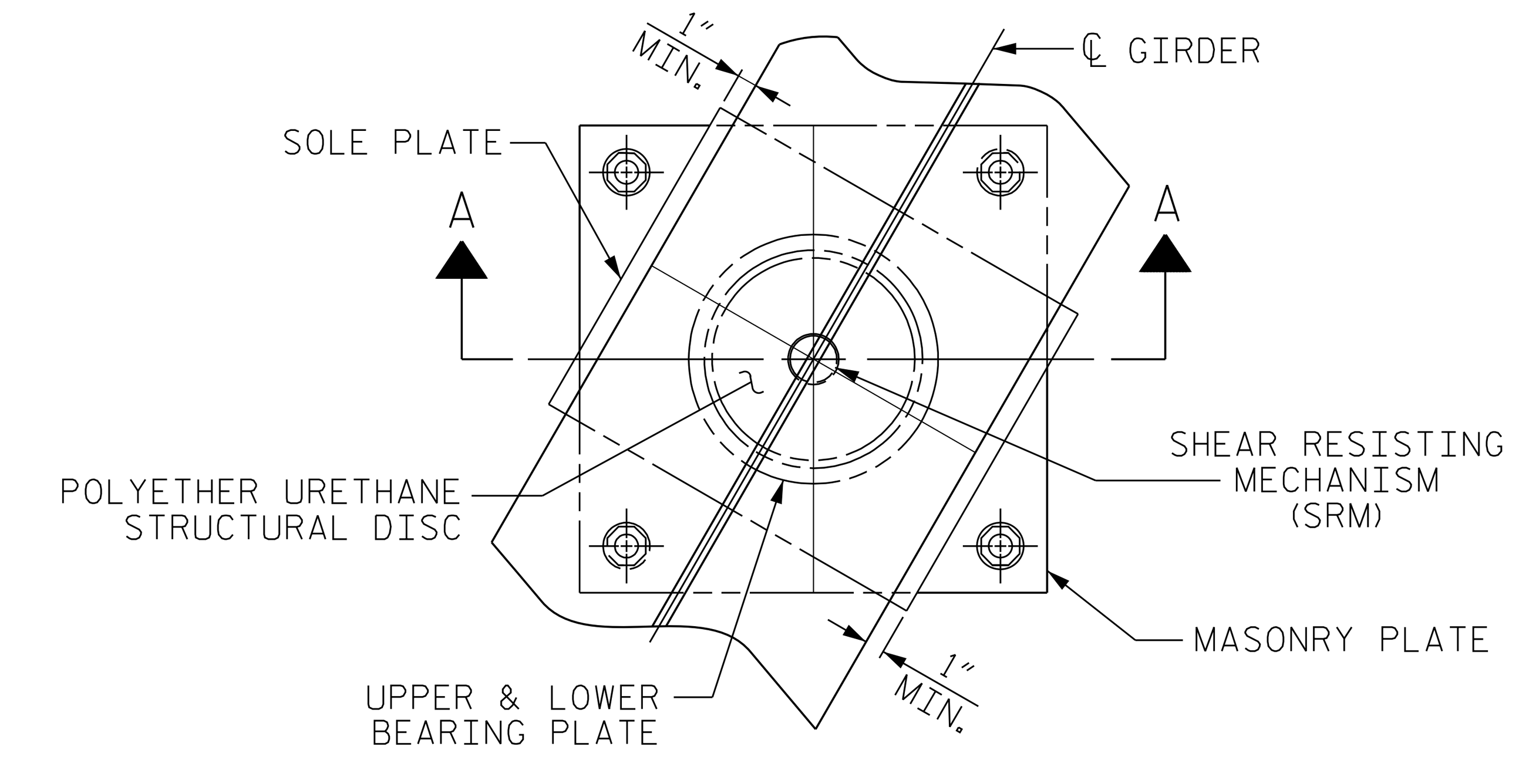
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

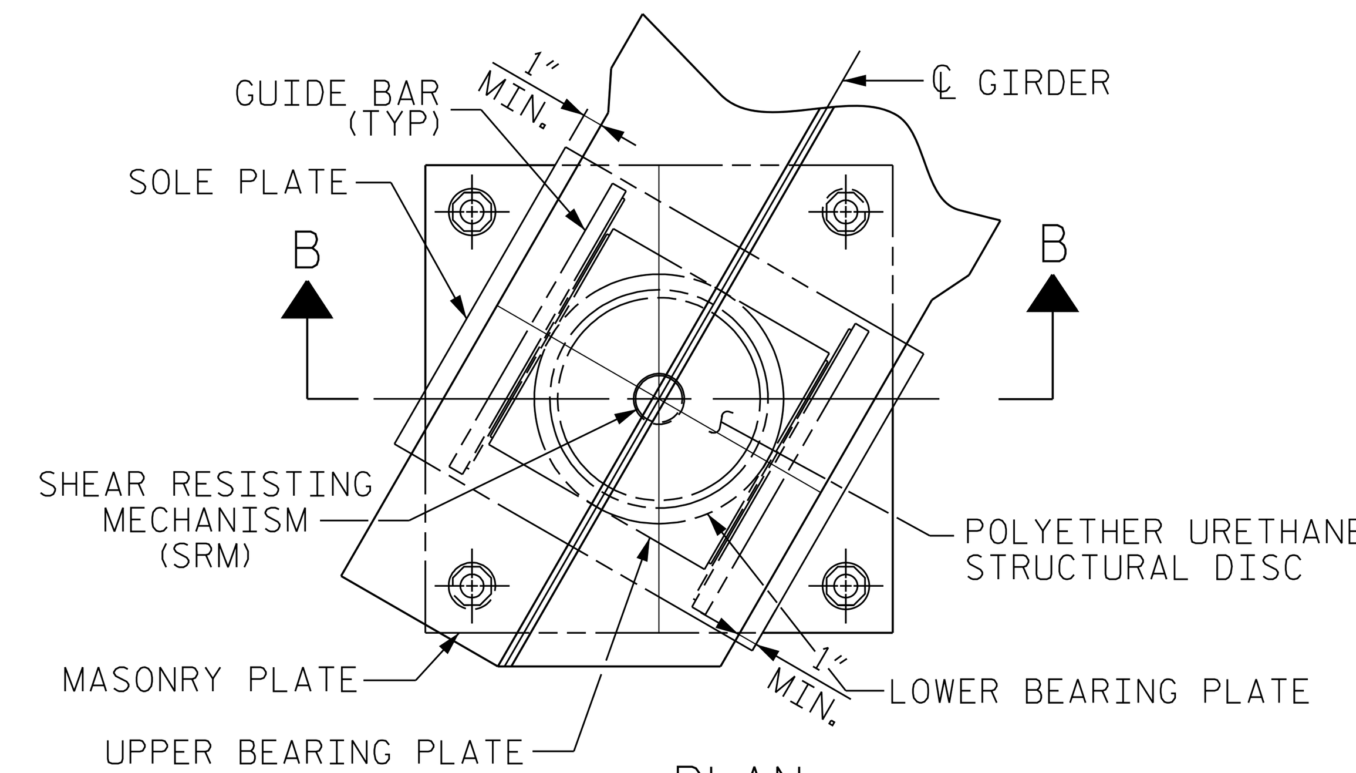
SUPERSTRUCTURE
DEAD LOAD DEFLECTION
AND CAMBER ORDINATES
SPAN C
GIRDER 3

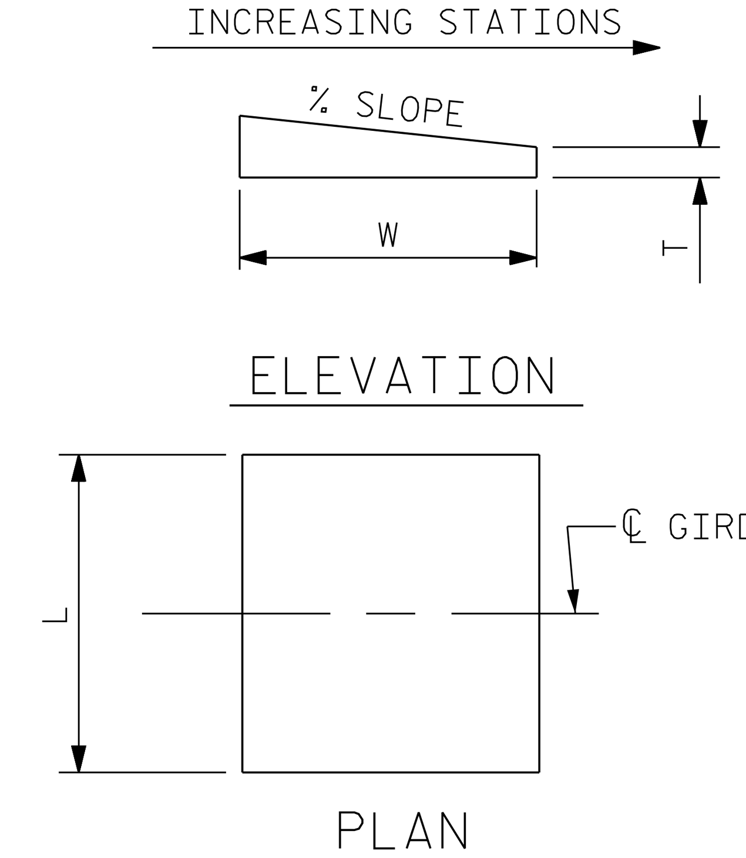
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-30
1			3			TOTAL SHEETS
2			4			50

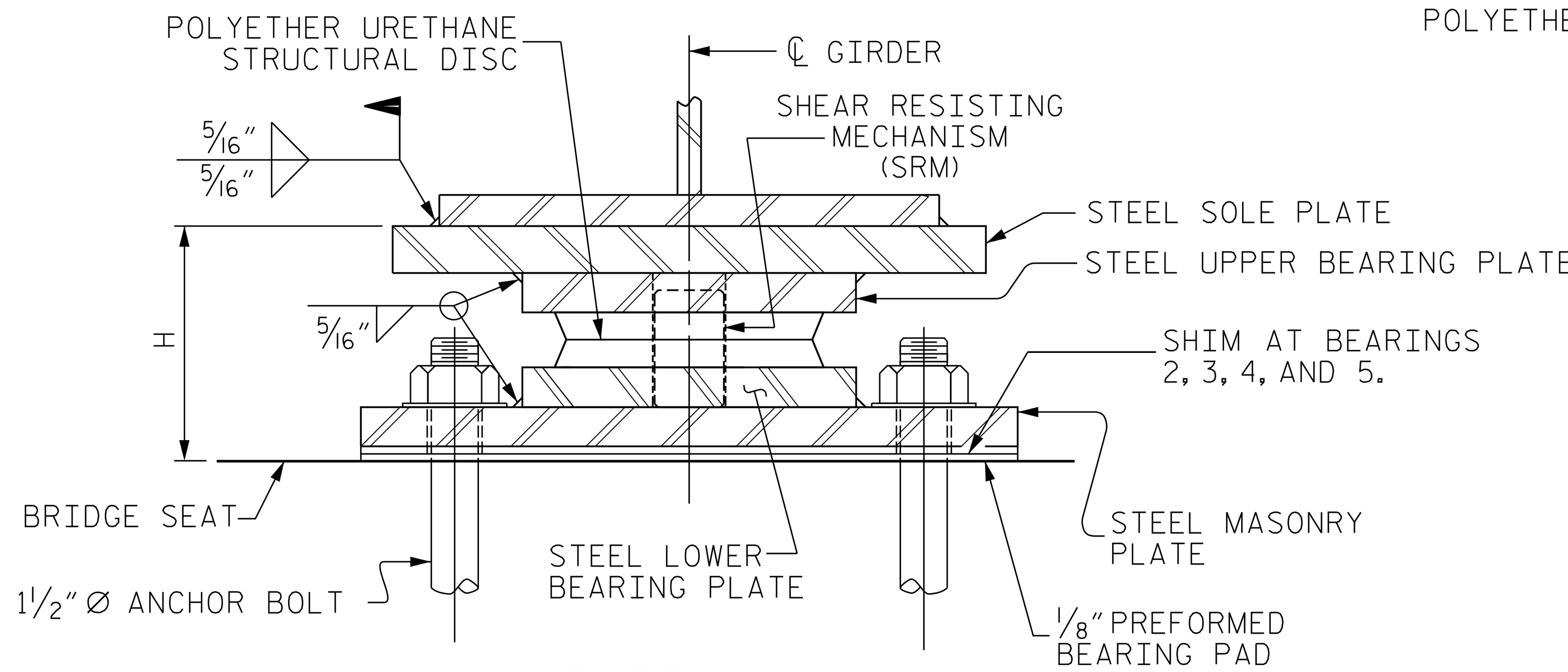




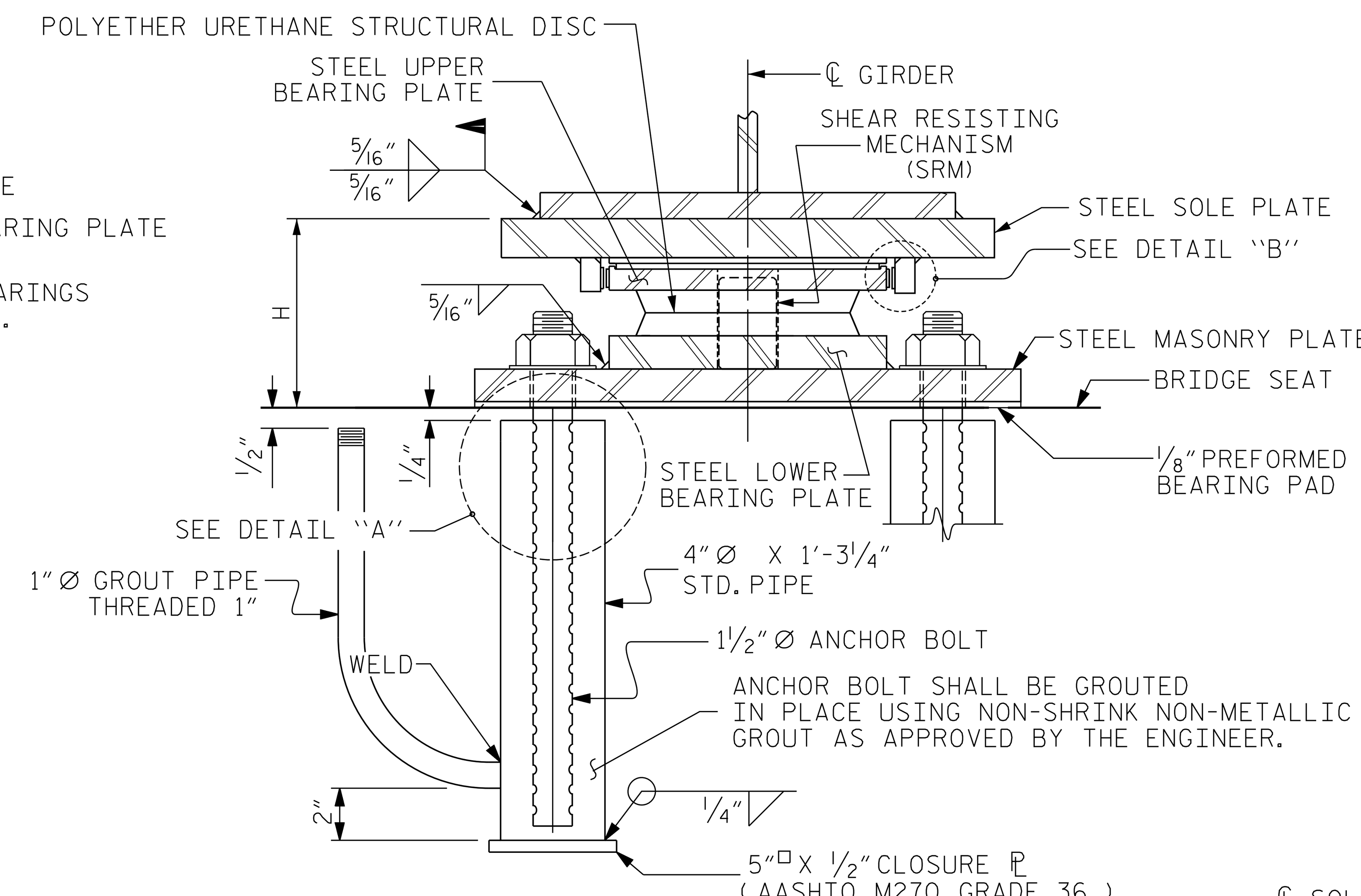


NOTE:
DIMENSIONS "W" AND "T" SHALL BE DETERMINED BY THE BEARING MANUFACTURER.

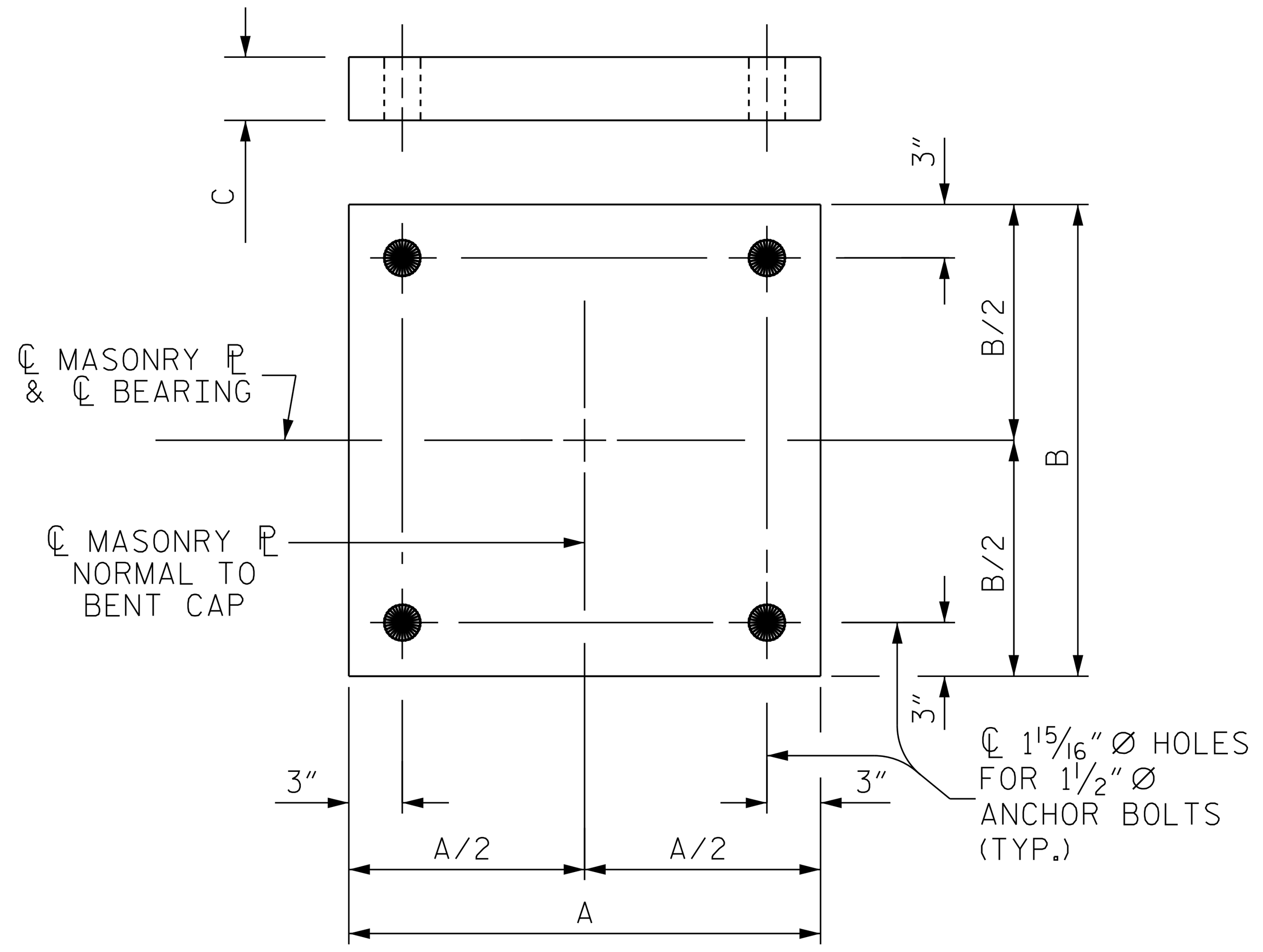
SOLE PLATE DETAILS



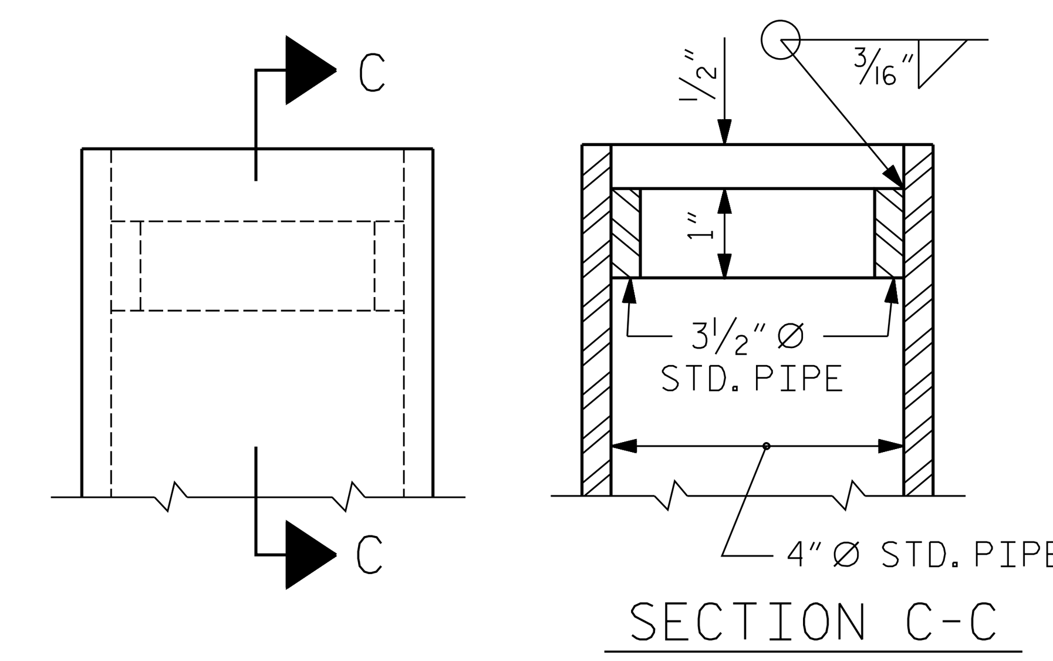
SECTION A-A
DB2 THRU DB11, FIXED



SECTION B-B
DB1 & DB12, EXP.



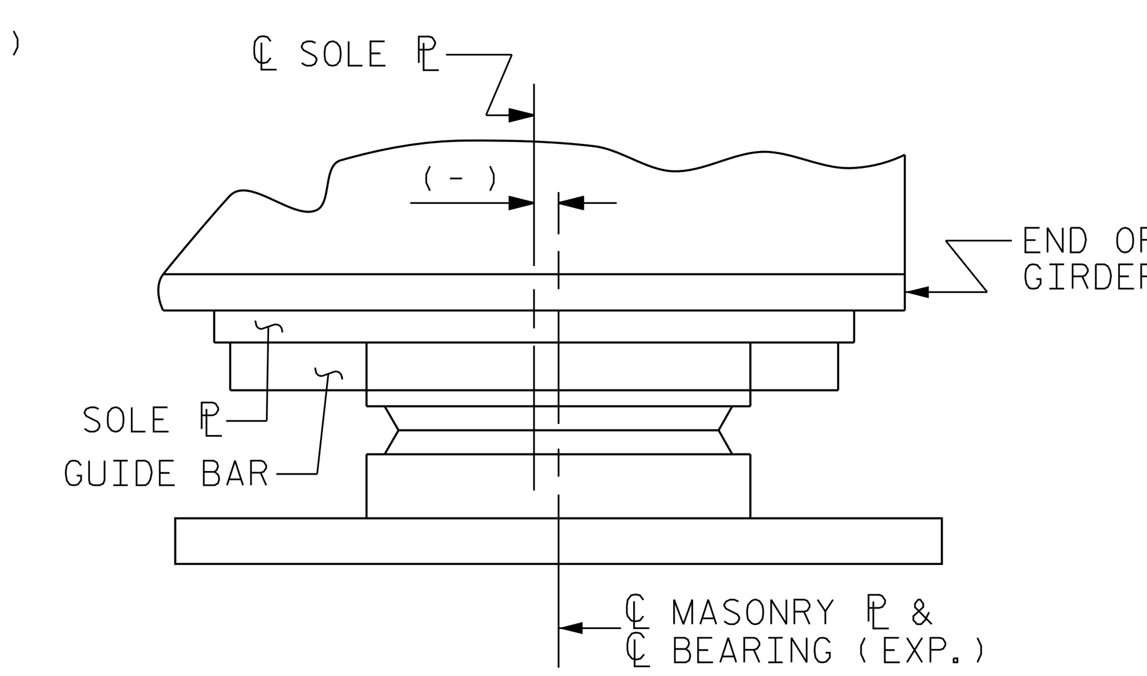
MASONRY PLATE DETAILS



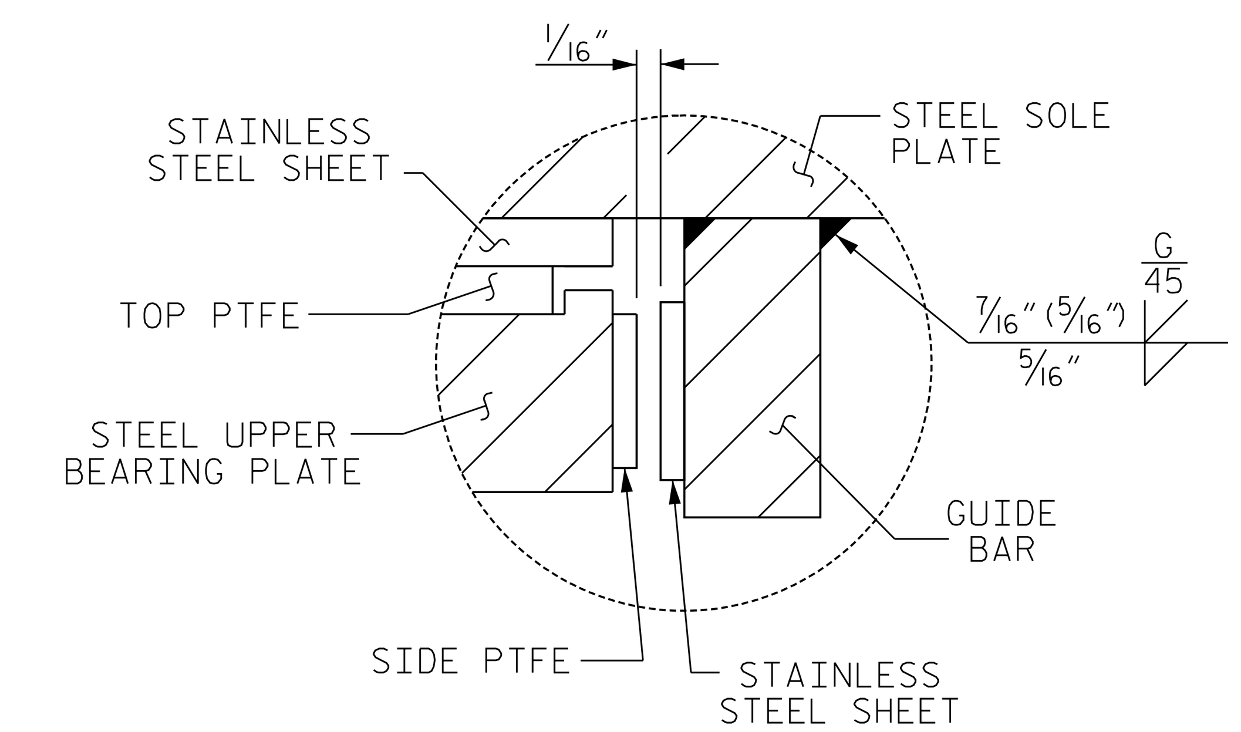
DETAIL "A"

PLATE SETTING DATA (EXPANSION DISC BEARINGS)				
LOCATION	TEMPERATURE AT TIME OF SETTING			*
	45° F	60° F	90° F	
END BENT 1	3/8"	0"	-11/16"	1/8"
END BENT 2	3/8"	0"	-11/16"	1/8"

* CORRECTION FOR END ROTATION DUE TO WEIGHT OF SLAB AND COMPOSITE DEAD LOAD.



TEMPERATURE SETTING DETAIL



DETAIL "B"

NOTES

FOR DISC BEARINGS, SEE SPECIAL PROVISIONS.

ALL BEARING PLATES SHALL BE AASHTO M270 GRADE 50W OR GRADE 50.

AT ALL POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS SHALL BE FINGER-TIGHTENED PLUS AN ADDITIONAL ¼ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

WHEN WELDING THE SOLE PLATE TO THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE BEARING DOES NOT EXCEED 250°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE TFE OR URETHANE DISC.

AFTER BEARING ASSEMBLY IS IN PLACE AND ANCHOR BOLTS HAVE BEEN FINALLY POSITIONED, THEY SHALL BE GROUTED IN PLACE AS SHOWN.

THE CLOSURE PLATE, GROUT PIPE, AND STANDARD PIPE FOR THIS ASSEMBLY NEED NOT BE GALVANIZED.

SOLE PLATES SHOULD BE WELDED TO GIRDER FLANGES AND ANCHOR BOLTS SHOULD BE GROUTED BEFORE FALSEWORK IS PLACED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

FOR ATTACHMENT OF THE STAINLESS STEEL SHEETS TO THE STEEL SOLE PLATE AND GUIDE BARS, AS WELL AS THE TOP AND SIDE PTFE SHEETS TO THE STEEL UPPER BEARING PLATE, SEE SPECIAL PROVISIONS.

FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

THE MINIMUM ROTATIONAL CAPACITY FOR ALL BEARINGS SHALL BE 0.02 RADIANS.

AT THE CONTRACTORS OPTION, THE SHIM PLATE AND MASONRY PLATE MAY BE REPLACED WITH A SINGLE PLATE WITH A TOTAL THICKNESS OF THE SUM OF THE REQUIRED MASONRY AND SHIM PLATES SHOWN.

DESIGNATIONS		LOCATION	NUMBER OF BEARINGS	DIMENSIONS: BEARING	DIMENSIONS: MASONRY PLATE			DIMENSIONS: SOLE PLATE		LOADS AND MOVEMENT: UNFACTORED VERTICAL LOAD (KIPS)			FACTORED HORIZONTAL LOAD (KIPS)	ONE-WAY MOVEMENT (IN.)
										DEAD		LIVE		
BEARINGS	MASONRY ℘			H (IN.)	A (IN.)	B (IN.)	C (IN.)	TOP SLOPE (%)	L (IN.)	DC	DW	LL+IM		
DB1 (EXP)	M1	EB 1	5	5½	25½	25½	¾	2.05	17	121	16	136	51	2⅜
DB2 (FIX)	M2	BENT 1	1	7	28½	28½	1	3.16	22	392	51	287	147	0
DB3 (FIX)	M3	BENT 1	1	7 3/16	28½	28½	1	3.16	22	392	51	287	147	0
DB4 (FIX)	M4	BENT 1	1	7 5/16	28½	28½	1	3.16	22	392	51	287	147	0
DB5 (FIX)	M5	BENT 1	1	7 9/16	28½	28½	1	2.05	22	392	51	287	147	0
DB6 (FIX)	M6	BENT 1	1	7¾	28½	28½	1	3.16	22	392	51	287	147	0
DB7 (FIX)	M7	BENT 2	1	7¼	30	30	1	3.16	26	468	59	303	170	0
DB8 (FIX)	M8	BENT 2	1	7 7/16	30	30	1	3.16	26	468	59	303	170	0
DB9 (FIX)	M9	BENT 2	1	7 9/16	30	30	1	3.16	26	468	59	303	170	0
DB10 (FIX)	M10	BENT 2	1	7 13/16	30	30	1	3.16	26	468	59	303	170	0
DB11 (FIX)	M11	BENT 2	1	8	30	30	1	3.16	26	468	59	303	170	0
DB12 (EXP)	M12	EB 2	5	5⅞	27	25½	¾	3.16	17	145	19	149	60	2⅜

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042890 PATRICK R. GALLAGHER
6/22/2022

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Vaughn & Melton
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Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Raleigh, NC 919-977-9455
New Bern, NC 252-631-5115

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 30+69.44 -Y1-
31+06.88 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
DISC BEARING DETAILS

DRAWN BY : TMG 08/13
CHECKED BY : EKP 10/13
REV. 12/17 MAA/THC

DWN. BY: AW DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

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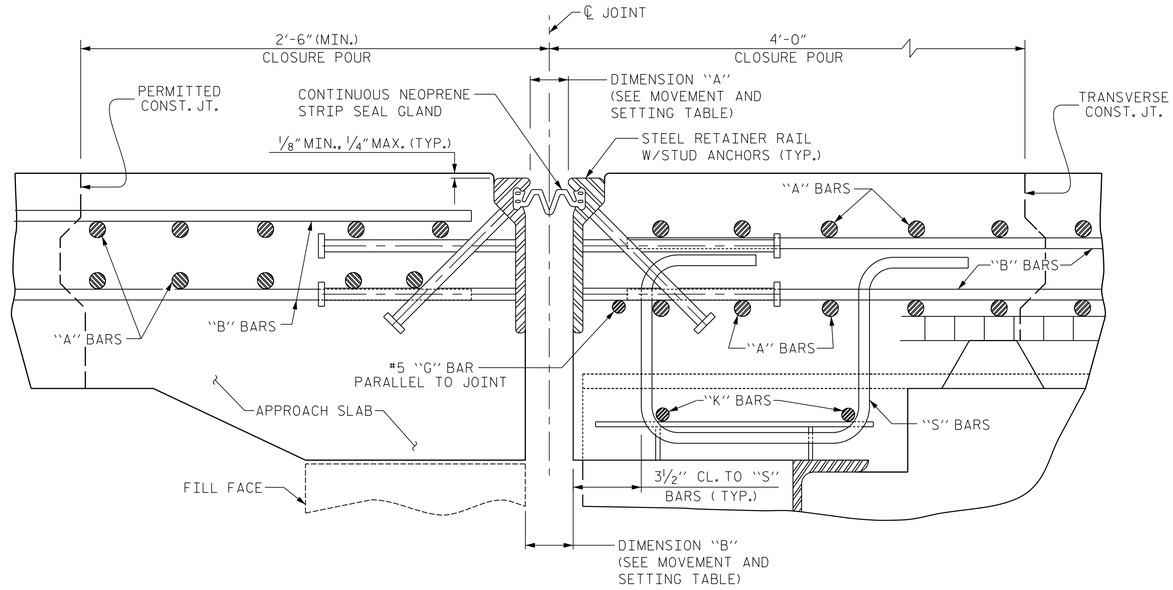
NO.	BY:	DATE:		NO.	BY:	DATE:		S4-31
1				3				TOTAL SHEETS
2				4				50

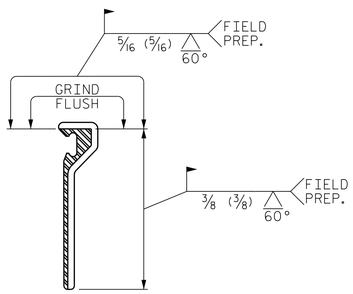
STD. NO. DB1 (SHT 1)



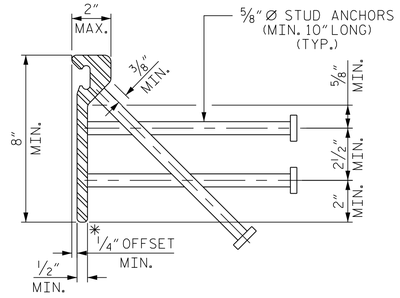
STRIP SEAL EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE

MOVEMENT AND SETTING AT JOINT								
LOCATION	SKEW ANGLE	TOTAL MOVEMENT (ALONG ℄ RDWY)	DIMENSION "A"			DIMENSION "B"		
			PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
EB1	60°	2 3/8"	2 5/16"	2"	1 7/16"	2 13/16"	2 1/2"	1 15/16"
EB2	60°	2 3/8"	2 5/16"	2"	1 7/16"	2 13/16"	2 1/2"	1 15/16"

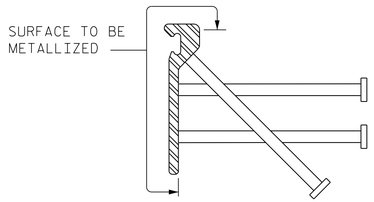


STEEL RETAINER RAIL (FIELD SPLICE DETAIL)



TYPICAL SECTION STEEL RETAINER RAIL

*DIMENSION "B" BASED ON STEEL RETAINER RAIL TOP OFFSET TO FACE OF RAIL OF 1/4" MINIMUM. IF ACTUAL OFFSET IS GREATER ADJUST DIMENSION "B" AS REQUIRED.



METALLIZING DETAIL

JOINT INSTALLATION PROCEDURE:

1. INSTALL THE STRIP SEAL EXPANSION JOINT AS RECOMMENDED BY THE MANUFACTURER.
2. A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING INSTALLATION OF THE JOINT.
3. PLACE STEEL RETAINER RAILS IN JOINT OPENING. PROPERLY ALIGN THE RAILS BOTH HORIZONTALLY AND VERTICALLY. DO NOT WELD SUPPORT SYSTEM TO THE METALLIZED SURFACES OF THE STEEL RETAINER RAILS.
4. CONFLICTING REINFORCING STEEL MAY BE SHIFTED SLIGHTLY WHEN NECESSARY.
5. DECK SLAB CONCRETE PLACEMENT OPERATIONS SHALL COMMENCE PER THE POURING SEQUENCE AFTER FINAL JOINT ALIGNMENT IS SET.
6. PROTECT THE STEEL RETAINER RAILS FROM BEING FOULED BY CONCRETE SPILLOVER DURING THE DECK POUR.
7. LOOSEN THE STEEL RETAINER RAIL SUPPORT SYSTEM TO ALLOW MOVEMENT WHILE CONCRETE CURES.
8. RE-LEVEL AND RE-ALIGN STEEL RETAINER RAIL AS REQUIRED ON OPPOSITE SIDE OF JOINT.
9. PLACE APPROACH SLAB CONCRETE.
10. ONCE THE CONCRETE HAS HARDENED SUFFICIENTLY ON BOTH SIDES OF JOINT, STEEL RETAINER RAILS SHALL BE CLEANED THOROUGHLY AND SEAL CHANNELS SHALL BE INSPECTED TO ASCERTAIN THE ABSENCE OF CONCRETE AND DEBRIS.
11. COAT THE STRIP SEAL LUGS WITH LUBRICANT-ADHESIVE AND INSTALL THE NEOPRENE STRIP SEAL GLAND AS RECOMMENDED BY THE STRIP SEAL EXPANSION JOINT MANUFACTURER.

GENERAL NOTES

FOR STRIP SEAL EXPANSION JOINTS, SEE SPECIAL PROVISIONS.

STEEL RETAINER RAILS AND COVER PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR GRADE 50 STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MIN.

ONLY STEEL RETAINER RAILS OF ONE-PIECE CONSTRUCTION ARE PERMITTED. STEEL RETAINER RAILS CONSISTING OF TWO OR MORE COMPONENTS WELDED TOGETHER TO OBTAIN THEIR FINAL CROSS-SECTIONAL SHAPE ARE NOT PERMITTED.

STUD ANCHORS SHALL BE SHOP WELDED AND SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.

SURFACES COMING IN CONTACT WITH STRIP SEAL GLAND SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.

UPON COMPLETION OF SHOP FABRICATION, THE STEEL RETAINER RAILS SHALL BE METALLIZED AS SHOWN IN THE "METALLIZING DETAIL". SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

INSTALLED STEEL RETAINER RAILS SHALL FOLLOW THE ROADWAY SLOPE.

FIELD SPLICES OF THE RETAINER RAILS SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. FINISHED WELDS SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).

NEOPRENE STRIP SEAL GLAND SHALL BE CONTINUOUS THROUGHOUT THE JOINT AND SHALL BE COMPATIBLE WITH THE STEEL RETAINER RAILS. FIELD SPLICING THE GLAND IS NOT PERMITTED.

NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.

THE COVER PLATES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Digitally signed by Patrick Gallagher DocuSigned by: 6/22/2022

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SHEET 1 OF 2

STATE OF NORTH CAROLINA
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STANDARD

STRIP SEAL EXPANSION JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-32
1			3			TOTAL SHEETS
2			4			50

DRAWN BY : MAA	6/20
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CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

STD. NO. SSEJ1

gwpowell
DGN: V:\NCS\Structures\037748-44 U-2579AA STRS\Structures\SITE 4 - Y1 over LV\Final Plans\404_063_U2579AA_SWJ_SS01_032.dgn
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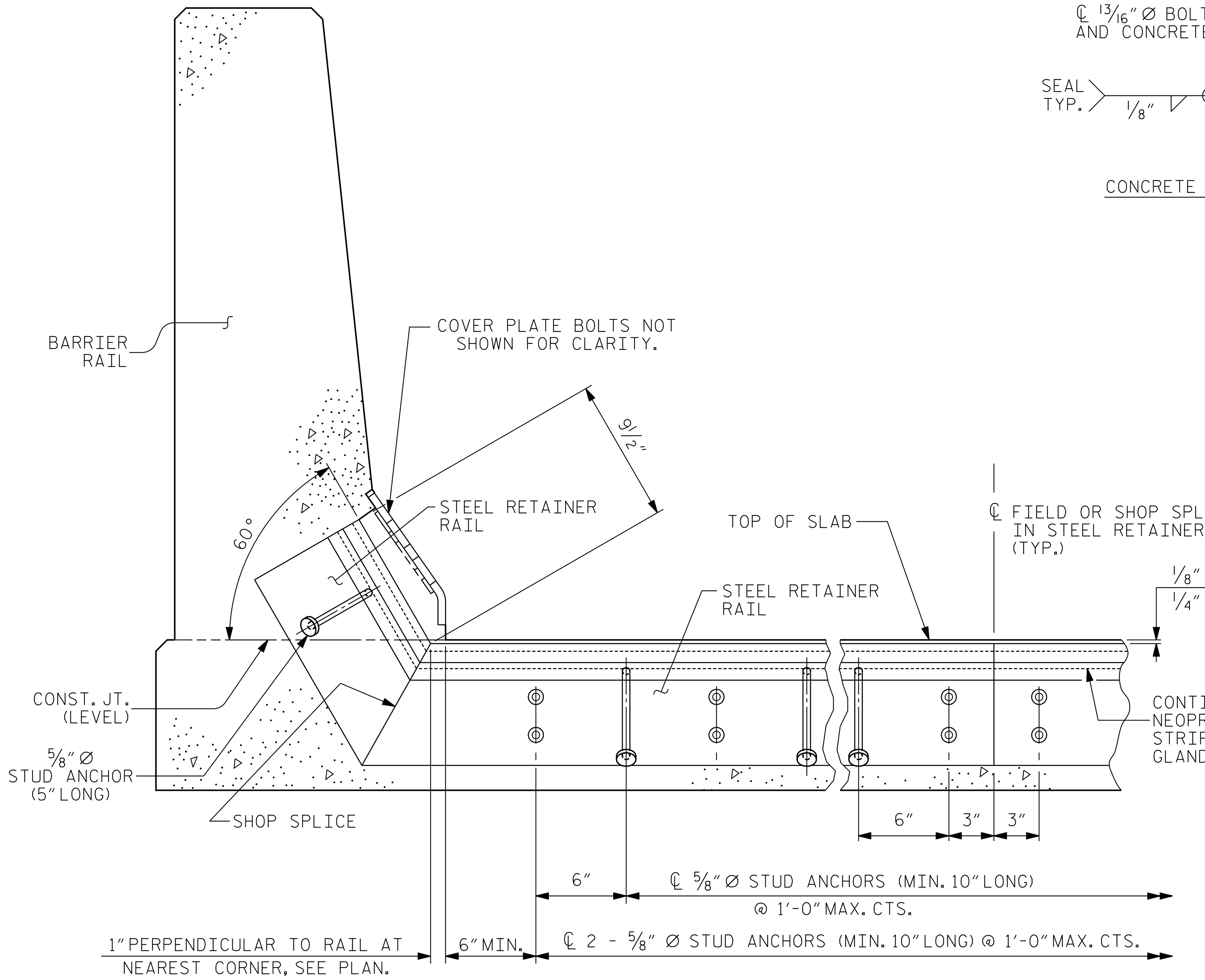
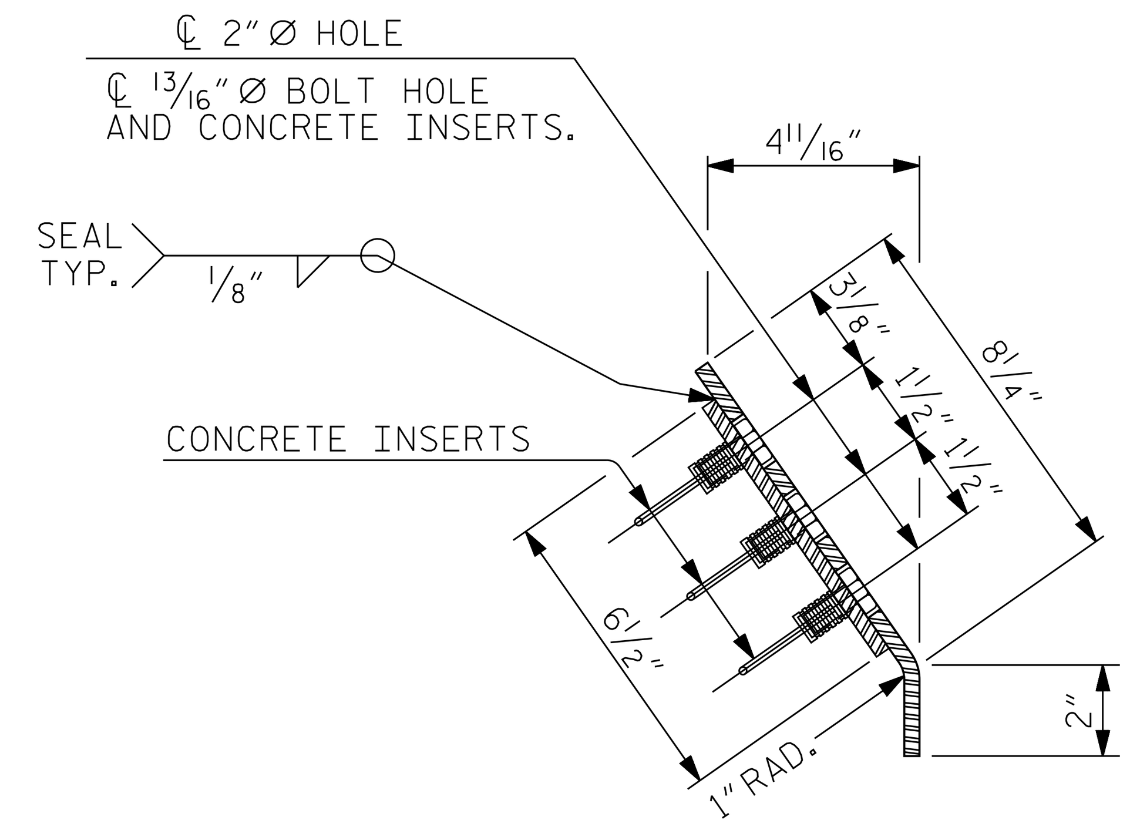
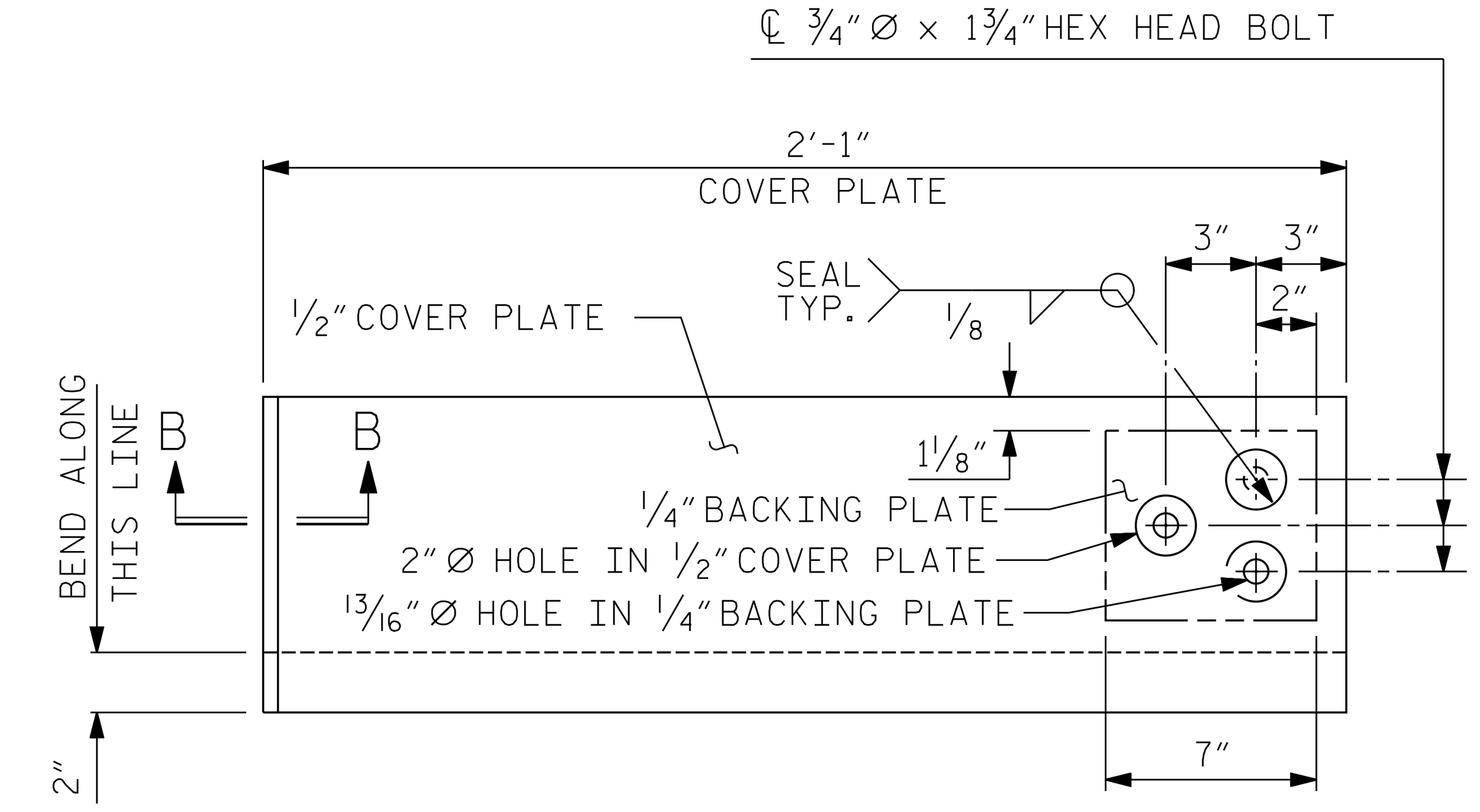


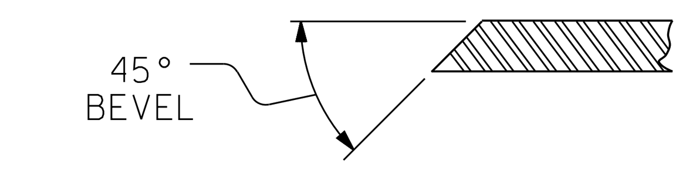
SECTION THRU RAIL NORMAL TO JOINT



END VIEW

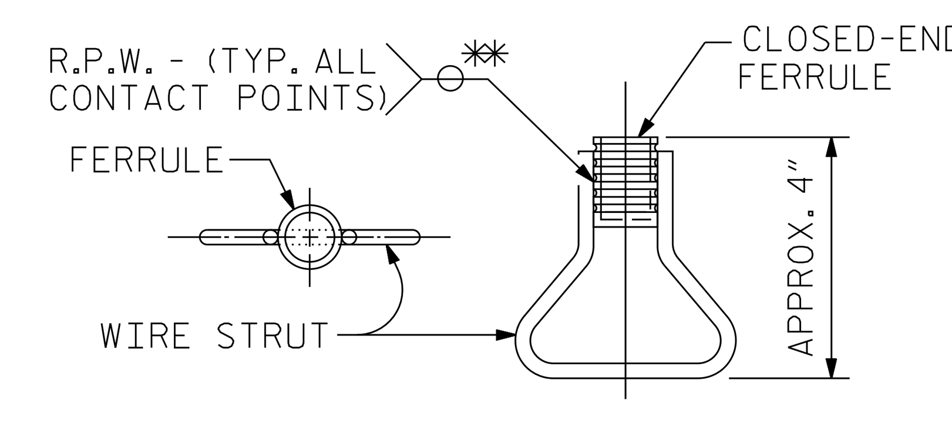


TYPE II - ELEVATION VIEW



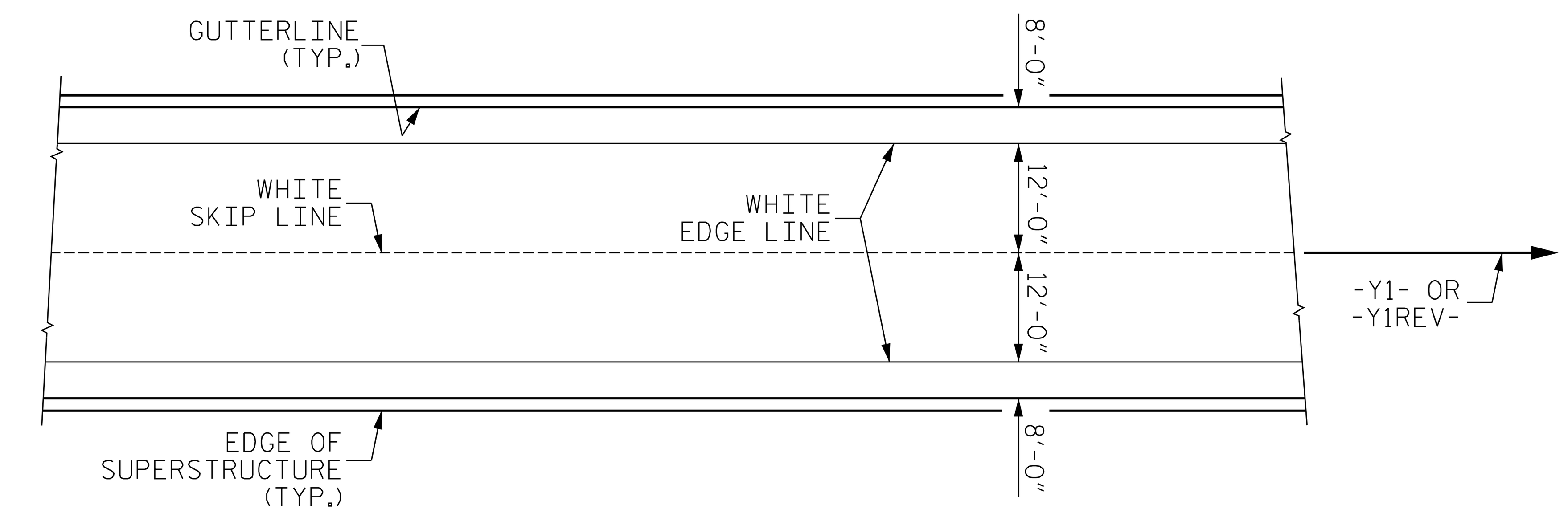
SECTION B-B

COVER PLATE DETAILS

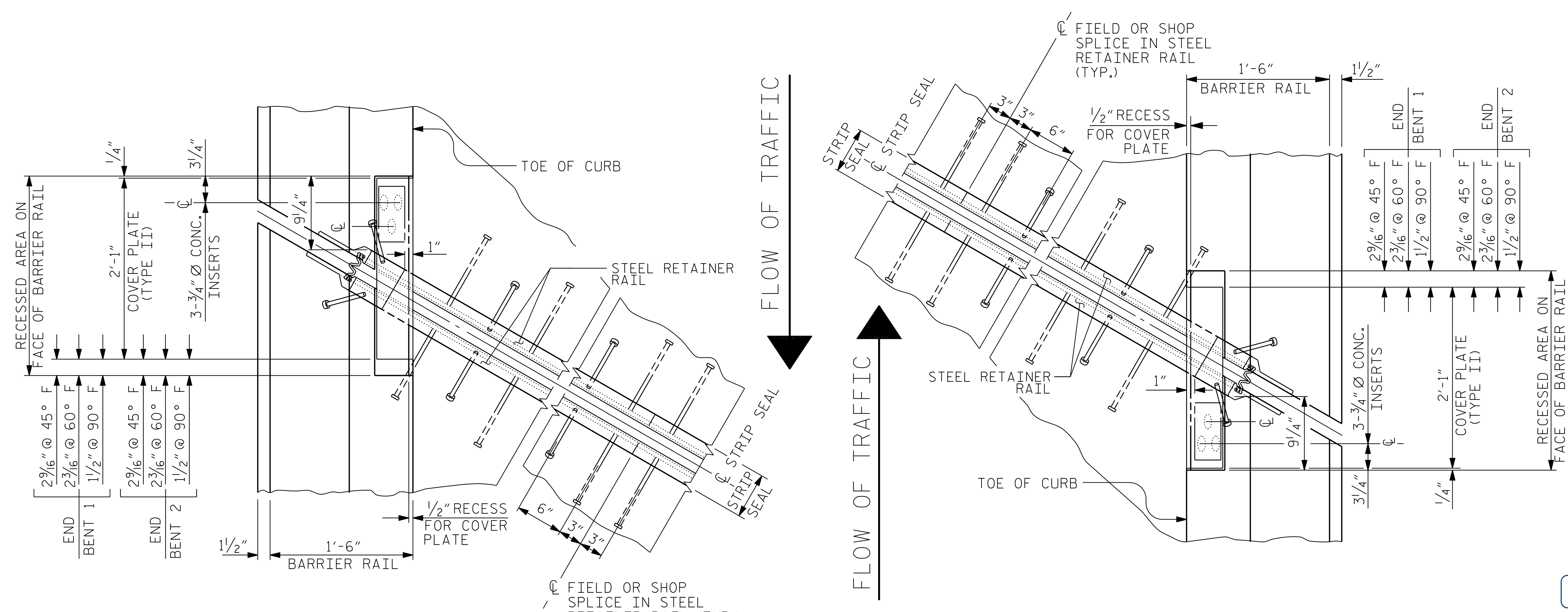


CONCRETE INSERT

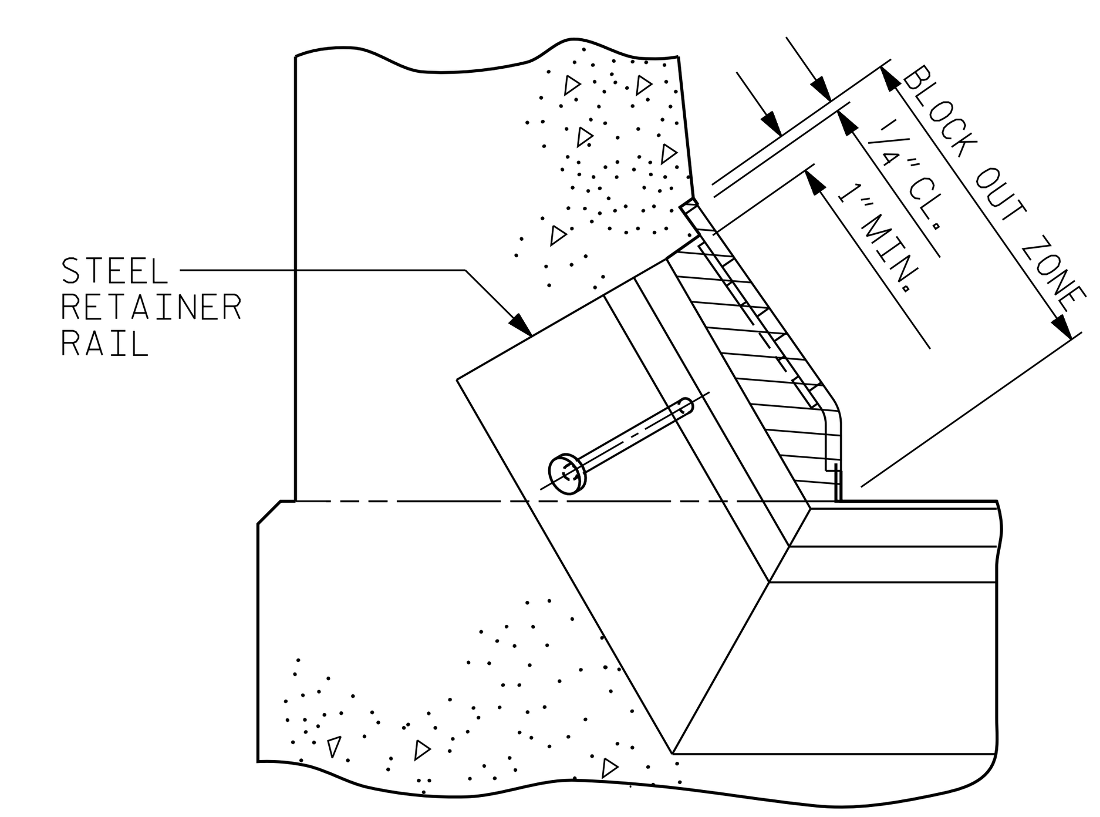
** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



PAVEMENT MARKING ALIGNMENT



PLAN OF STRIP SEAL EXPANSION JOINT



BLOCK OUT DETAIL

PROJECT NO. U-2579AA

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SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

STRIP SEAL EXPANSION JOINT DETAILS FOR BARRIER RAIL

Vaughn & Melton Consulting Engineers, Asheville, North Carolina 828-253-2796. Boone, NC 828-355-9933; Tri-Cities, TN 423-467-8401; Knoxville, TN 865-546-5800; Spartanburg, SC 864-574-4775; Charleston, SC 843-974-5650; Middlesboro, KY 606-248-6600; Atlanta, GA 770-627-3509; Raleigh, NC 919-977-9455; New Bern, NC 252-631-5115

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER — DocuSigned by: Patrick R. Gallagher 6/22/2022

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CHECKED BY : BNB	6/20	CHKD. BY: PRG	DATE: 3/22
		DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS

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

SHEET NO. S4-33

TOTAL SHEETS 50

STD. NO. SSEJ2

DocuSign Envelope ID: 37792A52-4693-4575-94E1-50941F99B54D

PLAN OF RAIL

(INFORMATION SHOWN IS TYPICAL FOR BOTH LEFT AND RIGHT RAILS)

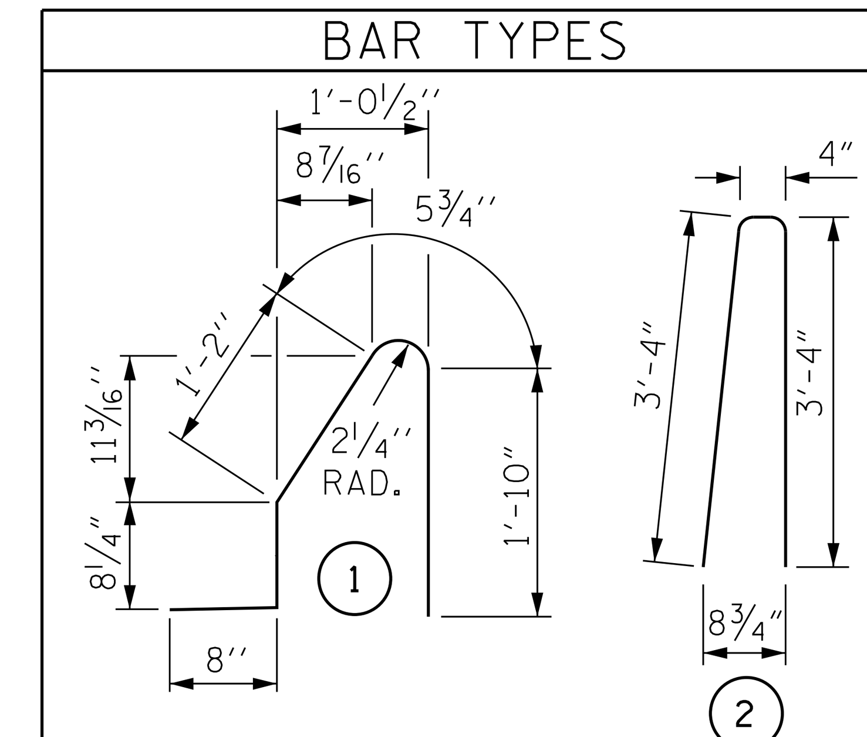
NOTES

THE BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

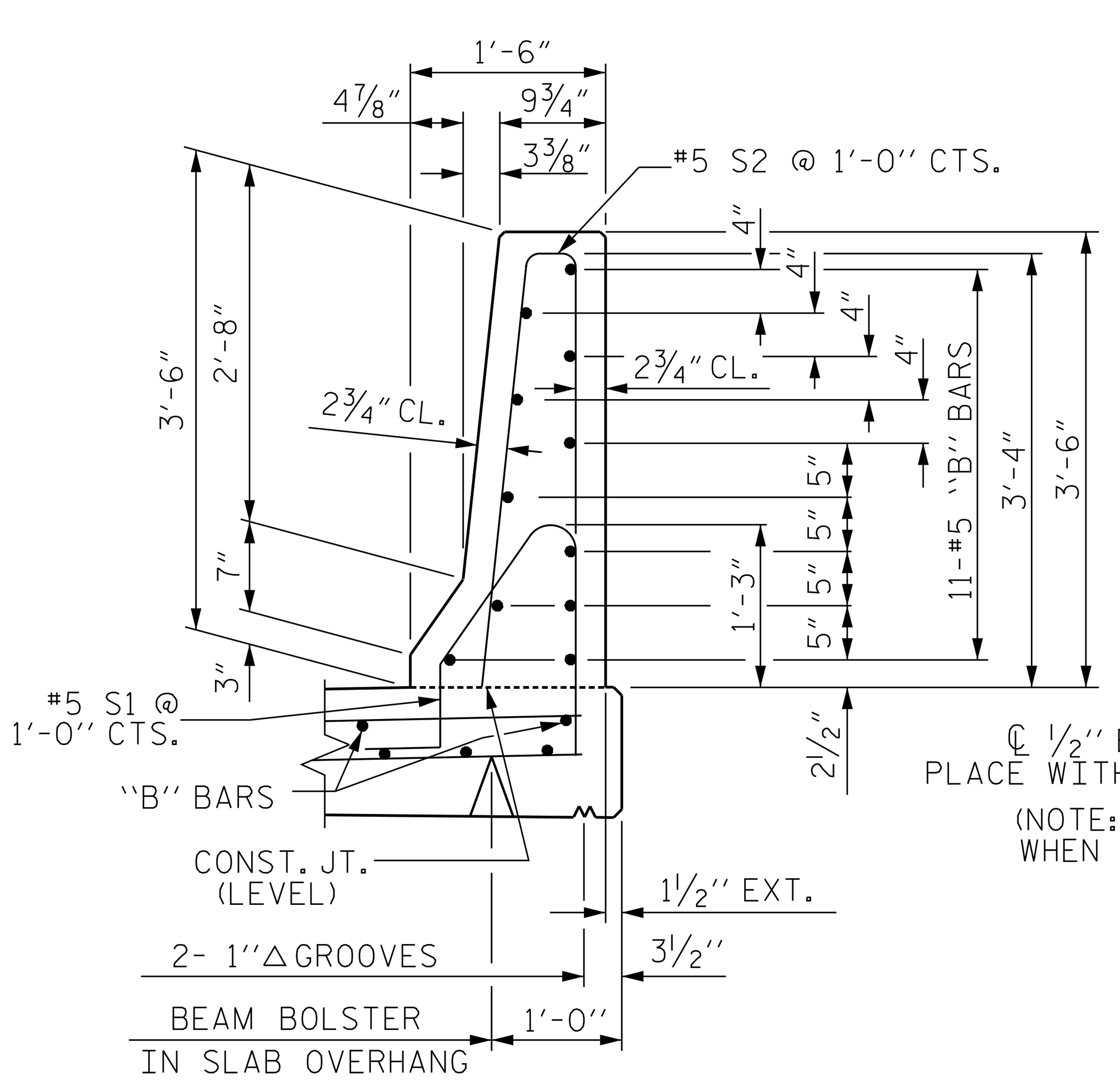
BAR TYPES



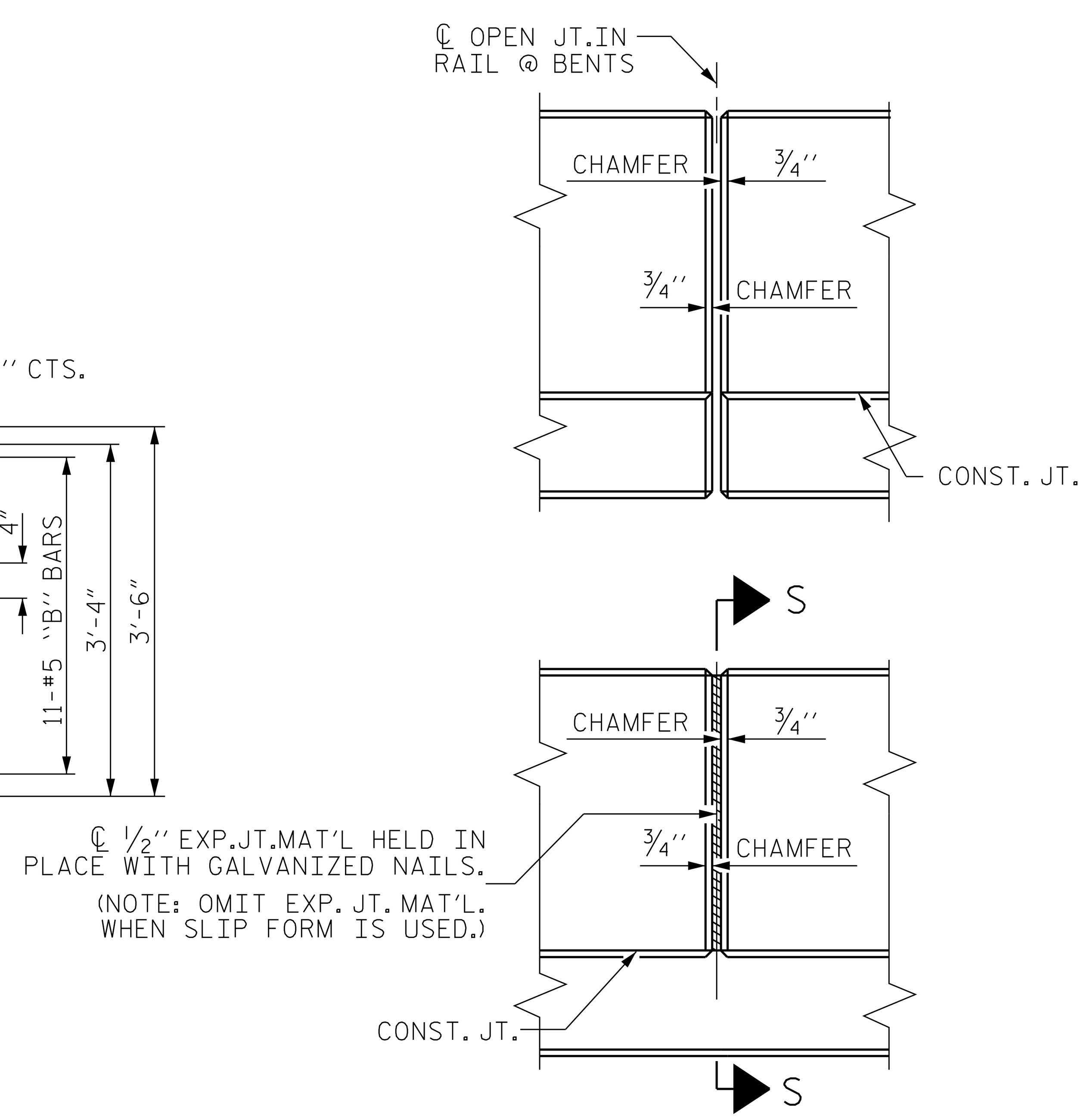
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

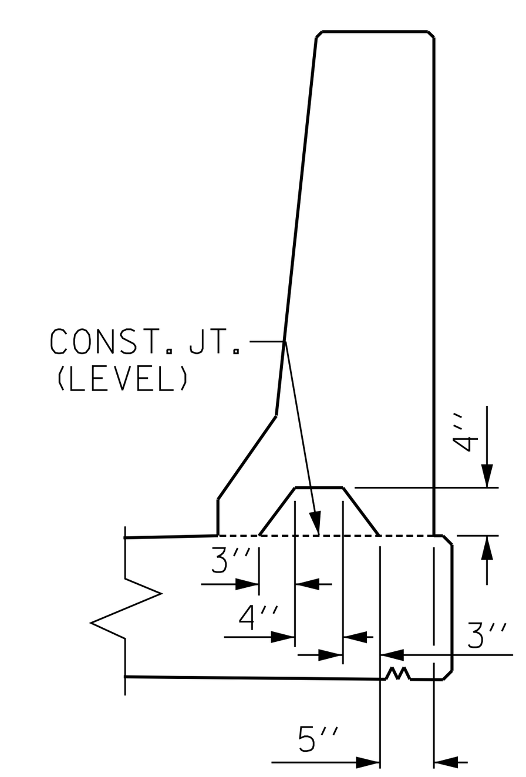
FOR CONCRETE BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	22	#5	STR	14'-10"	340
* B2	374	#5	STR	29'-7"	11,540
* B3	44	#5	STR	18'-10"	864
* B4	22	#5	STR	17'-1"	392
* B5	22	#5	STR	15'-4"	352
* B6	22	#5	STR	16'-7"	381
* S1	1210	#5	1	4'-10"	6,100
* S2	1210	#5	2	7'-0"	8,834
* EPOXY COATED REINFORCING STEEL					28,803 LBS.
CLASS AA CONCRETE					164.8 CU. YDS.
CONCRETE BARRIER RAIL					1,213.2 LIN. FT.



SECTION THRU RAIL



ELEVATION AT EXPANSION JOINTS



SECTION S-S

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

BARRIER RAIL DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER R. GALLAGHER
DocuSigned by: Patrick R. Gallagher
6/22/2022

V&M Vaughn & Melton Consulting Engineers
Asheville, North Carolina 828-253-2796
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STATE OF NORTH CAROLINA
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SUPERSTRUCTURE

CONCRETE BARRIER RAIL

DWN. BY: AW	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

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

SHEET NO. S4-34
TOTAL SHEETS 50

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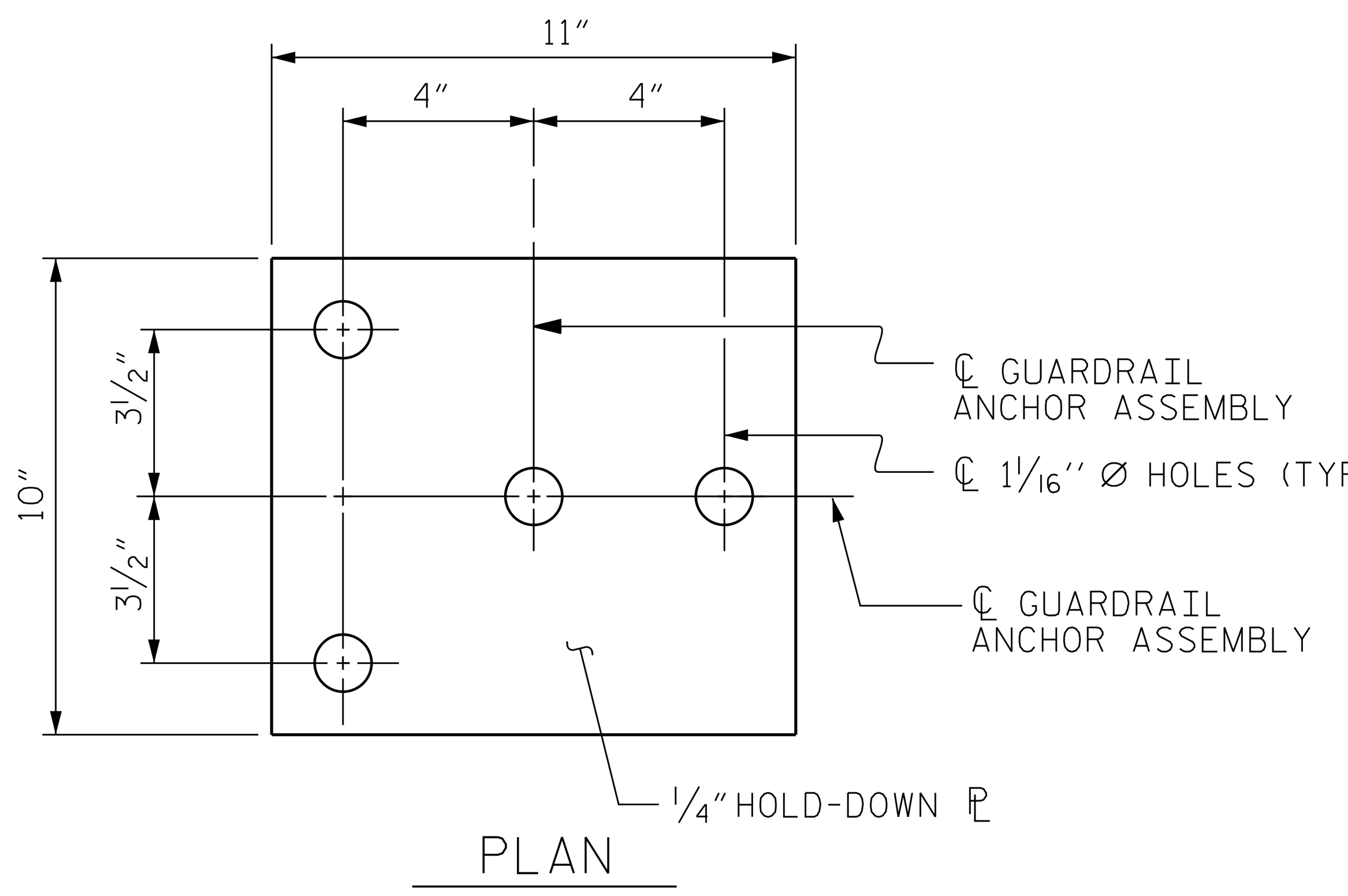
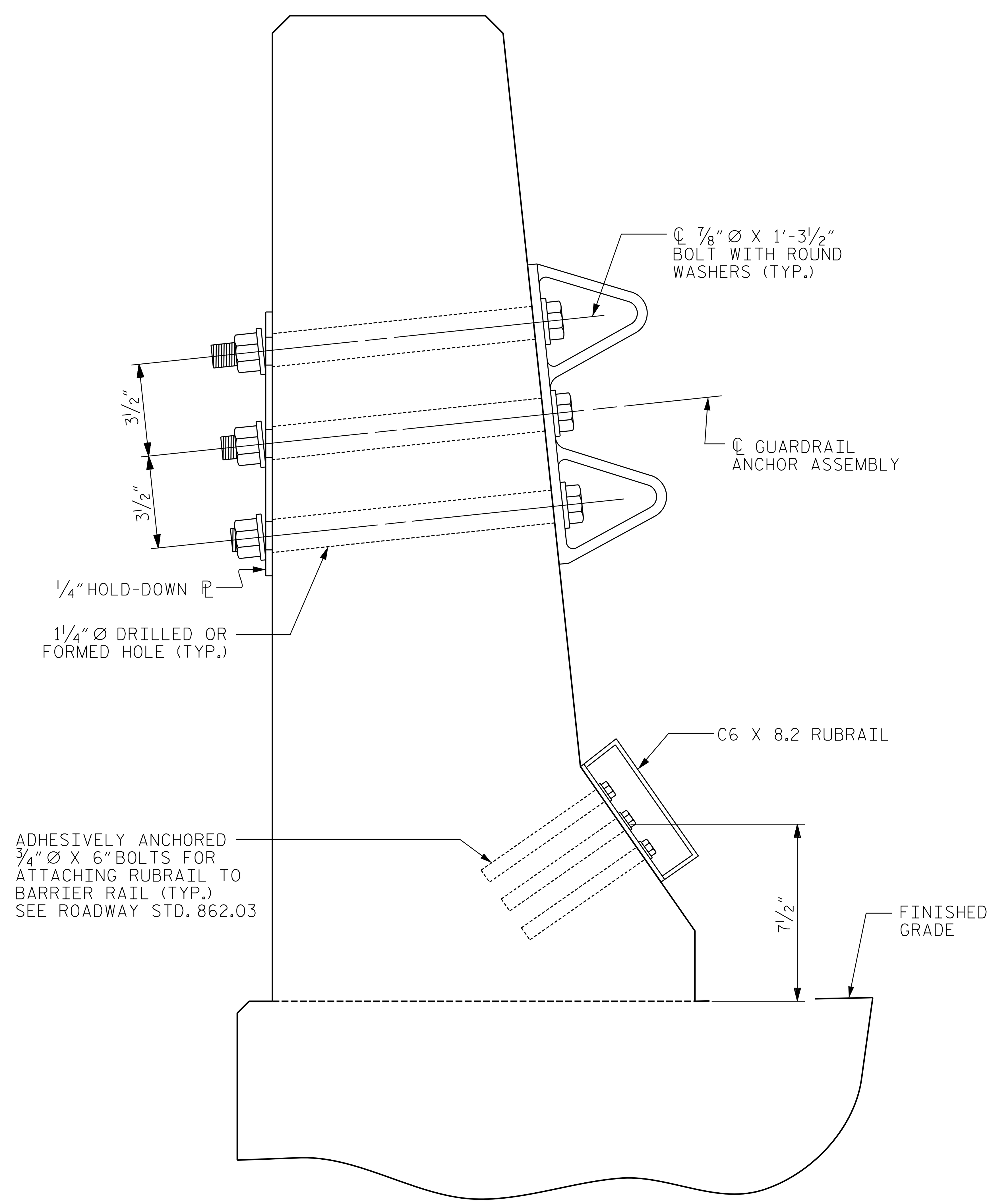
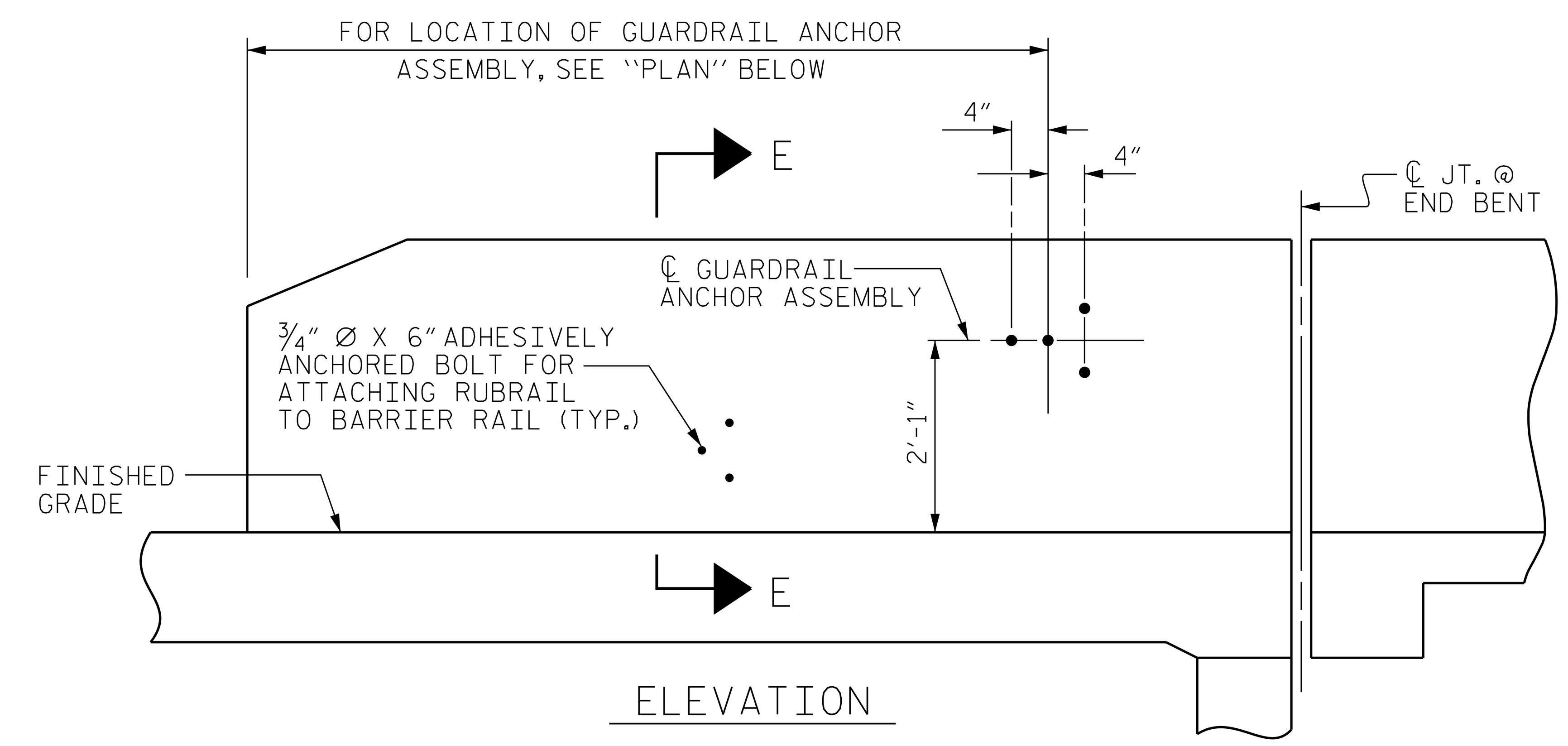


PLAN

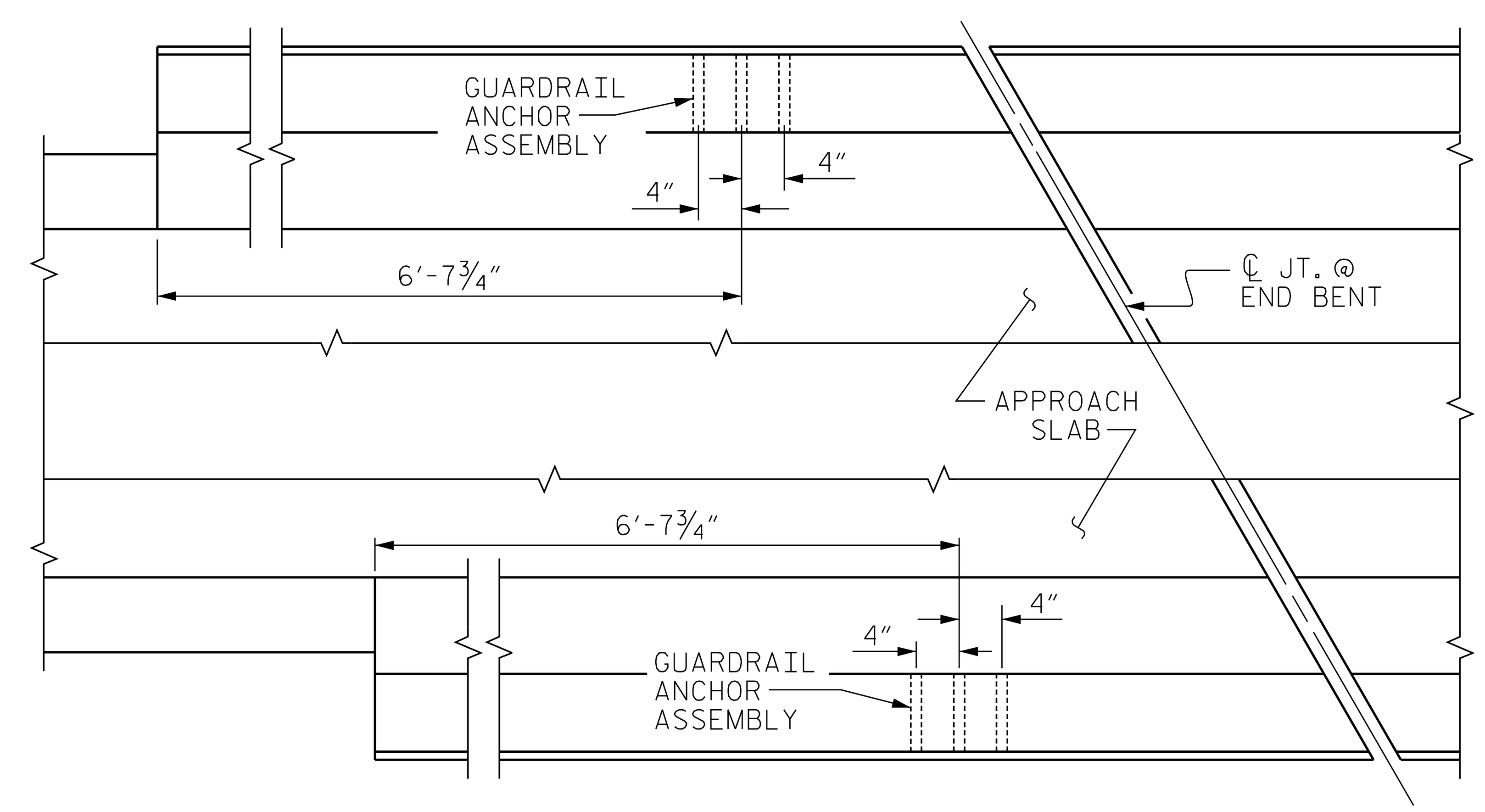


SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



ELEVATION



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼″ HOLD-DOWN PLATE AND 4 - ⅞″ Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

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 ⅞″ Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

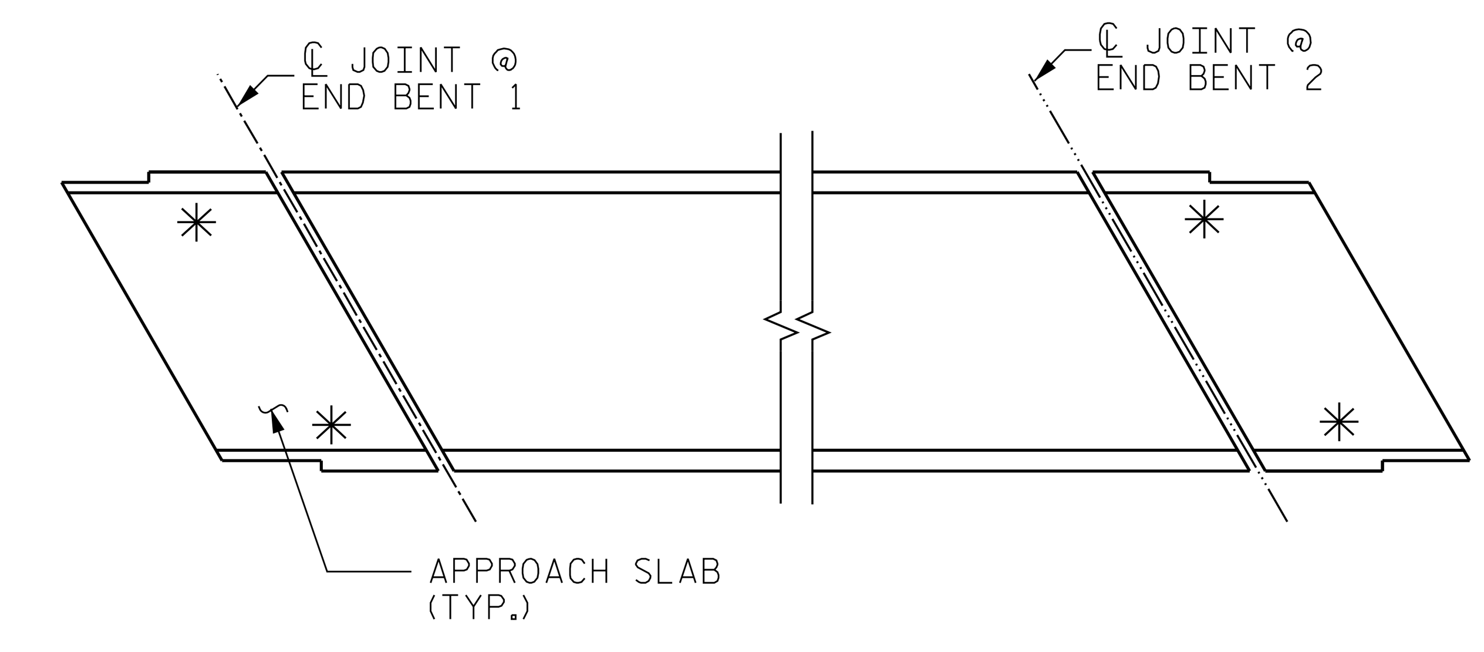
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

THE 1¼″ 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.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE ¾″Ø X 6″BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ¾″Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

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FORSYTH COUNTY

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Vaughn & Melton Consulting Engineers, Asheville, North Carolina 828-253-2796. Raleigh, NC 919-977-9455; New Bern, NC 252-631-5115; Boone, NC 828-355-9933; Tri-Cities, TN 423-467-8401; Knoxville, TN 865-546-5800; Spartanburg, SC 864-574-4775; Charleston, SC 843-974-5650; Middlesboro, KY 606-248-6600; Atlanta, GA 770-627-3509

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042890 P. R. GALLAGHER 6/22/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

GUARDRAIL ANCHORAGE FOR BARRIER RAIL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : TLA 5/06	REV. 7/12	MAA/GM
CHECKED BY : GM 5/06	REV. 6/13	MAA/GM
	REV. 12/17	MAA/THC

DWN. BY: AW DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S4-35
1			3					TOTAL SHEETS
2			4					50

(SHT 1a) STD. NO. GRA2

pdowell
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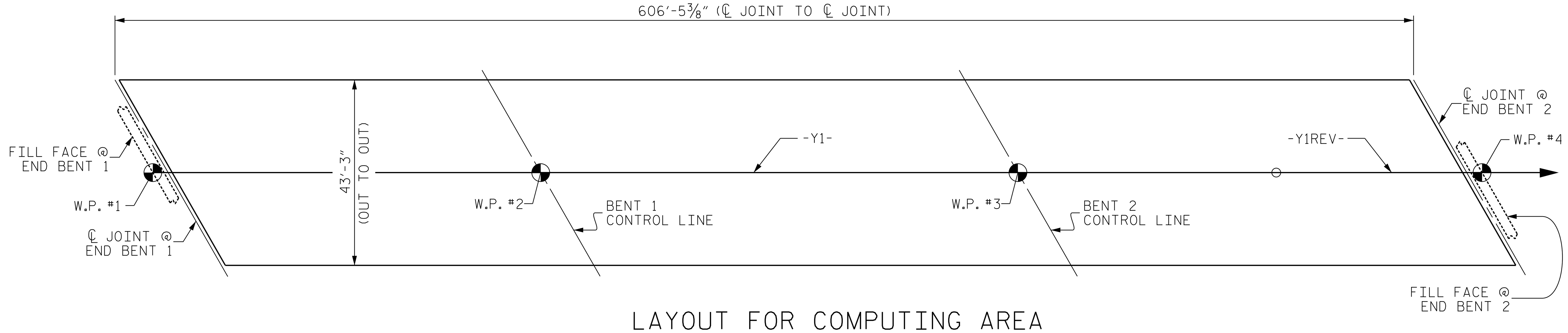
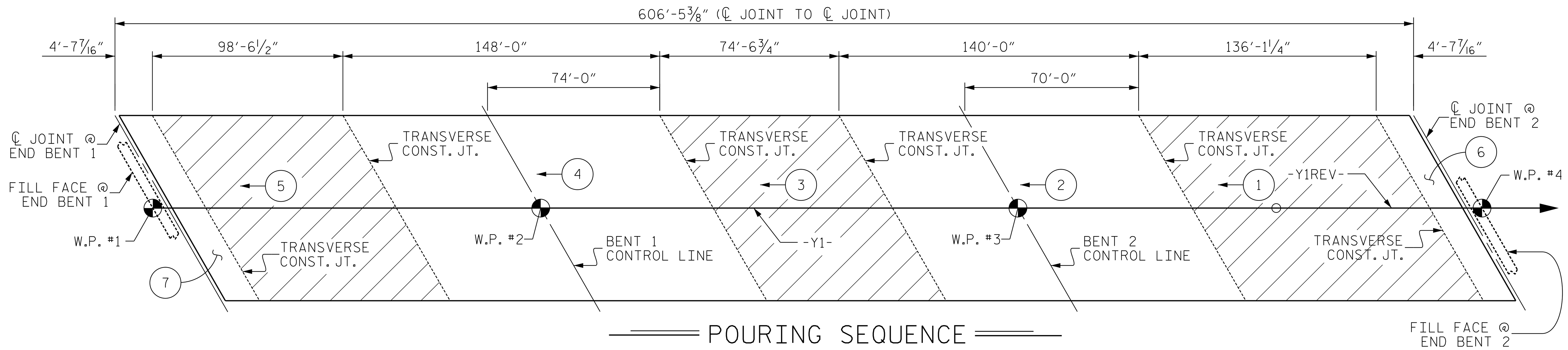
TIME: 6/20/2022 11:47 AM



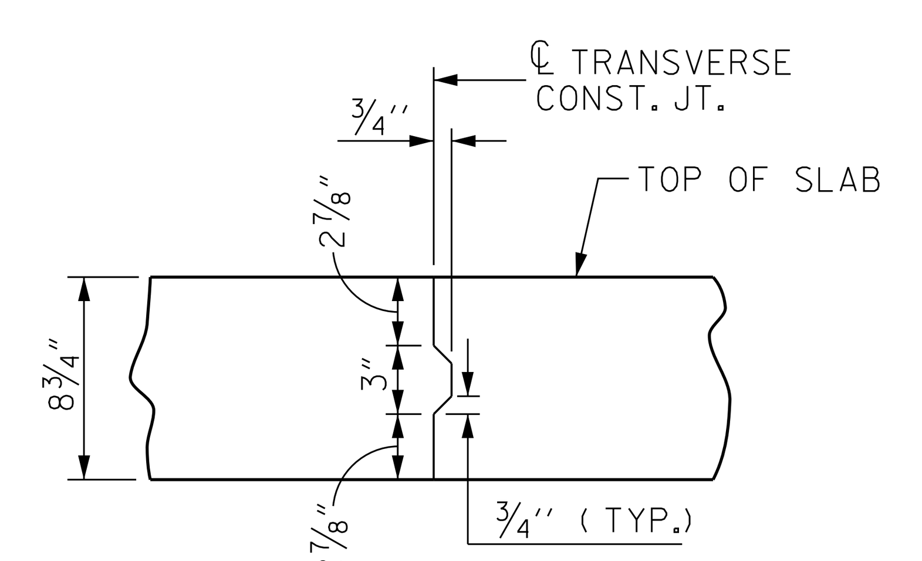
LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB

TOTAL = 26,229 SQ. FT.



POURING SEQUENCE

IF THE CONTRACTOR CHOOSES TO REVERSE THE DIRECTION OF POUR #1, A CONSTRUCTION JOINT WILL BE REQUIRED 4′-0″ FROM THE JOINT SEAL.



TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT

SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
POUR 1	175.7	——	——
POUR 2	196.7	——	——
POUR 3	117.6	——	——
POUR 4	208.0	——	——
POUR 5	141.0	——	——
POUR 6	6.5	——	——
POUR 7	6.5	——	——
TOTALS**	852.0	89,670	86,937

** QUANTITIES FOR BARRIER RAILS ARE NOT INCLUDED.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1′-11″	1′-7″	1′-11″	1′-7″	2′-6″
#5	2′-5″	2′-0″	2′-5″	2′-0″	3′-1″
#6	2′-10″	2′-5″	3′-7″	2′-5″	3′-8″
#7	4′-2″	2′-9″			
#8	4′-9″	3′-2″			

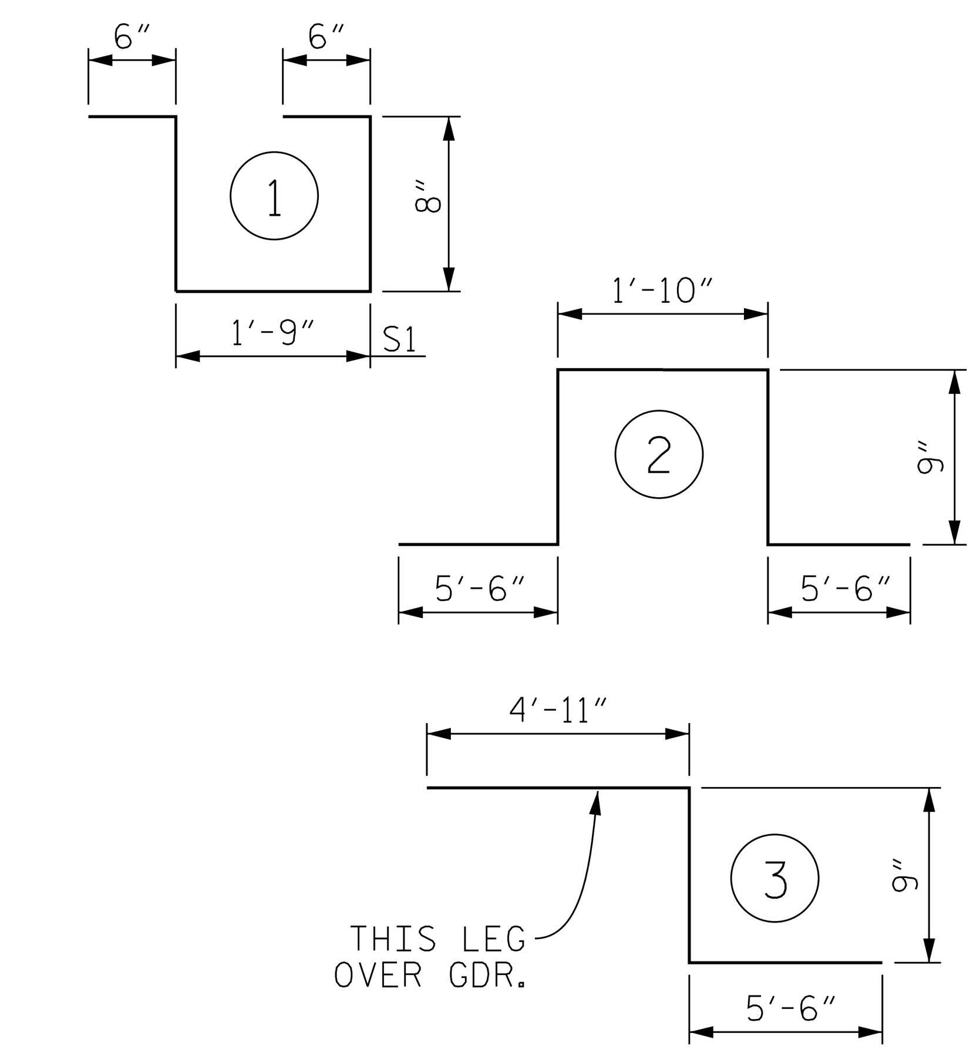
GROOVING BRIDGE FLOORS

APPROACH SLABS	1,036	SQ.FT.
BRIDGE DECK	22,402	SQ.FT.
TOTAL	23,438	SQ.FT.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	1163	#5	STR	42′-11″	52,058
A2	1163	#5	STR	42′-11″	52,058
* A101	6	#5	STR	40′-4″	252
* A102	6	#5	STR	37′-9″	236
* A103	6	#5	STR	35′-2″	220
* A104	6	#5	STR	32′-6″	203
* A105	6	#5	STR	29′-11″	187
* A106	6	#5	STR	27′-4″	171
* A107	6	#5	STR	24′-9″	155
* A108	6	#5	STR	22′-2″	139
* A109	6	#5	STR	19′-6″	122
* A110	6	#5	STR	16′-11″	106
* A111	6	#5	STR	14′-4″	90
* A112	6	#5	STR	11′-9″	74
* A113	6	#5	STR	9′-2″	57
* A114	6	#5	STR	6′-7″	41
* A115	6	#5	STR	3′-11″	25
* A116	2	#5	STR	3′-1″	6
* A117	2	#5	STR	2′-3″	5
* A118	2	#5	STR	1′-4″	3
A201	6	#5	STR	40′-4″	252
A202	6	#5	STR	37′-9″	236
A203	6	#5	STR	35′-2″	220
A204	6	#5	STR	32′-6″	203
A205	6	#5	STR	29′-11″	187
A206	6	#5	STR	27′-4″	171
A207	6	#5	STR	24′-9″	155
A208	6	#5	STR	22′-2″	139
A209	6	#5	STR	19′-6″	122
A210	6	#5	STR	16′-11″	106
A211	6	#5	STR	14′-4″	90
A212	6	#5	STR	11′-9″	74
A213	6	#5	STR	9′-2″	57
A214	6	#5	STR	6′-7″	41
A215	6	#5	STR	3′-11″	25
A216	2	#5	STR	3′-1″	6
A217	2	#5	STR	2′-3″	5
A218	2	#5	STR	1′-4″	3
B1	594	#5	STR	57′-4″	35,520
* B2	124	#4	STR	31′-8″	2,706
* B3	177	#5	STR	44′-8″	8,246
* B4	56	#5	STR	59′-8″	3,485
* B5	93	#4	STR	28′-5″	1,765
* B6	177	#5	STR	48′-1″	8,877
* B7	112	#5	STR	33′-7″	3,923
* B8	124	#4	STR	37′-5″	3,099
* G1	2	#5	STR	49′-6″	103
* K1	12	#5	3	11′-2″	140
* K2	18	#5	2	14′-3″	268
* S1	64	#4	1	4′-1″	175
REINFORCING STEEL					89,670 LBS.
* EPOXY COATED REINF. STEEL					86,937 LBS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER R. GALLAGHER 6/22/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Vaughn & Melton Consulting Engineers
Asheville, North Carolina 828-253-2796
Boone, NC 828-355-9933; Tri-Cities, TN 423-467-8401; Knoxville, TN 865-546-5800; Spartanburg, SC 864-574-4775; Charleston, SC 843-974-5650; Middlesboro, KY 606-248-6600; Atlanta, GA 770-627-3509; Raleigh, NC 919-977-9455; New Bern, NC 252-631-5115

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1- 31+06.88 -L-

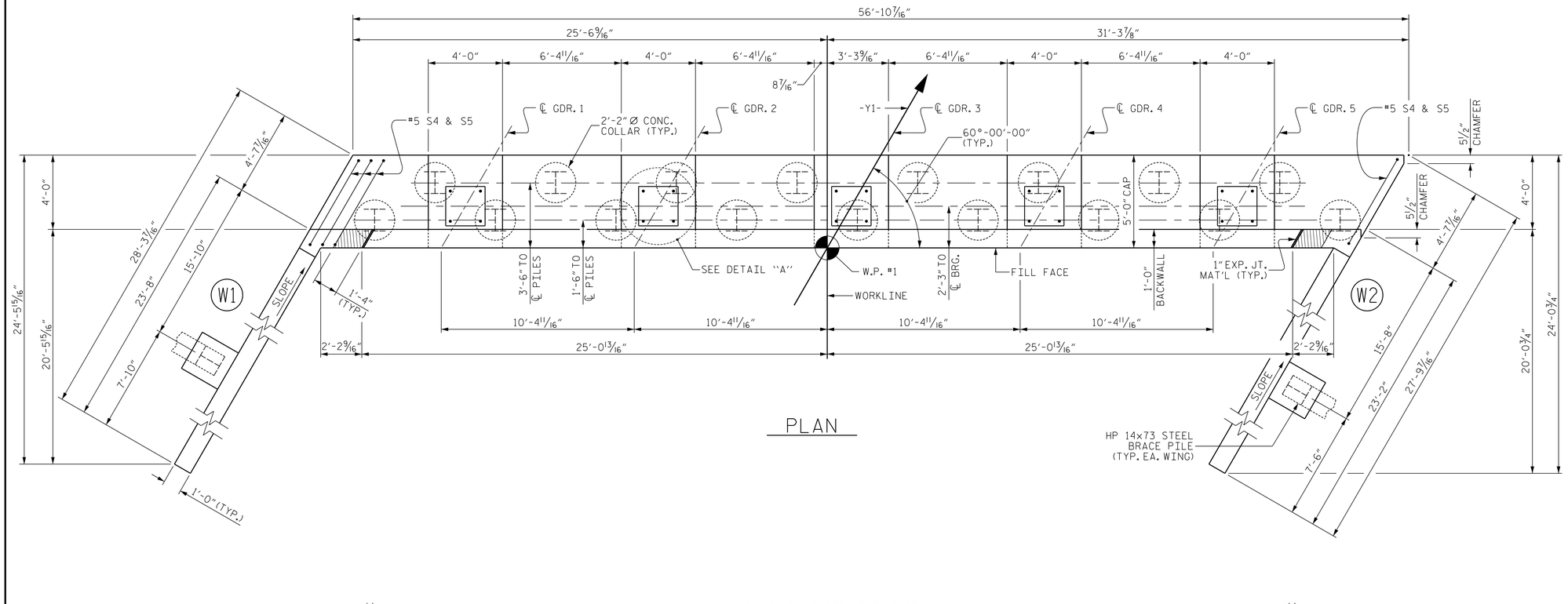
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL

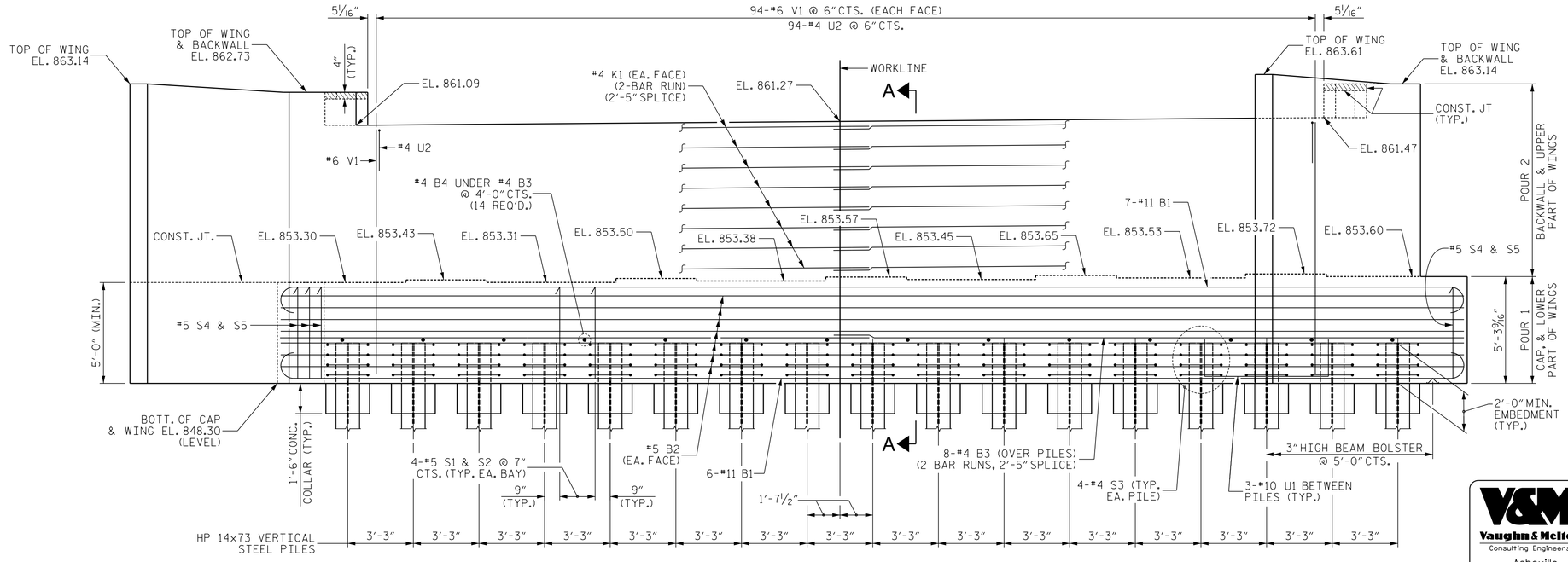
DWN. BY: AW DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

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

SHEET NO. S4-36
TOTAL SHEETS 50

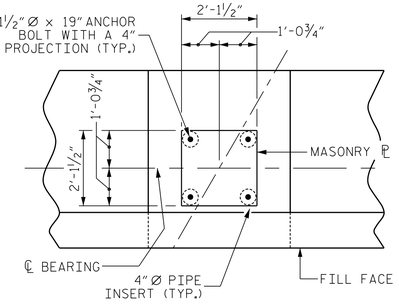


PLAN



ELEVATION

(WING BRACE PILE BLOCKS NOT SHOWN FOR CLARITY)



DETAIL A

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

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

THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING METHOD SHALL NOT BE USED.

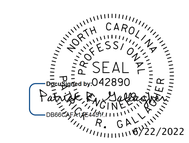
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

FOR PIPE INSERT, DETAILS, SEE BEARING SHEET.

FOR WING DETAILS, SEE SHEET 2 OF 3.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 1 OF 3

Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
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Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
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Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488
Atlanta, GA 770-627-3590

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT NO. 1

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-37
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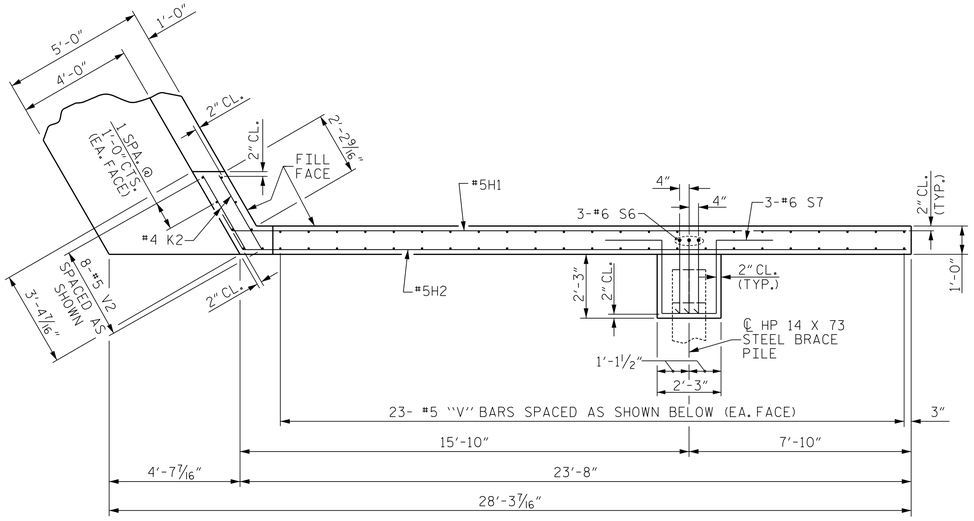
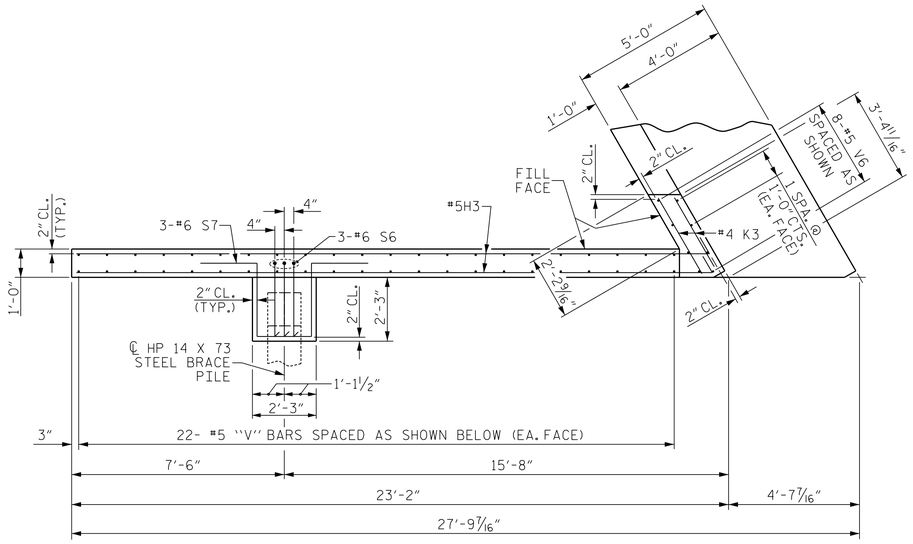
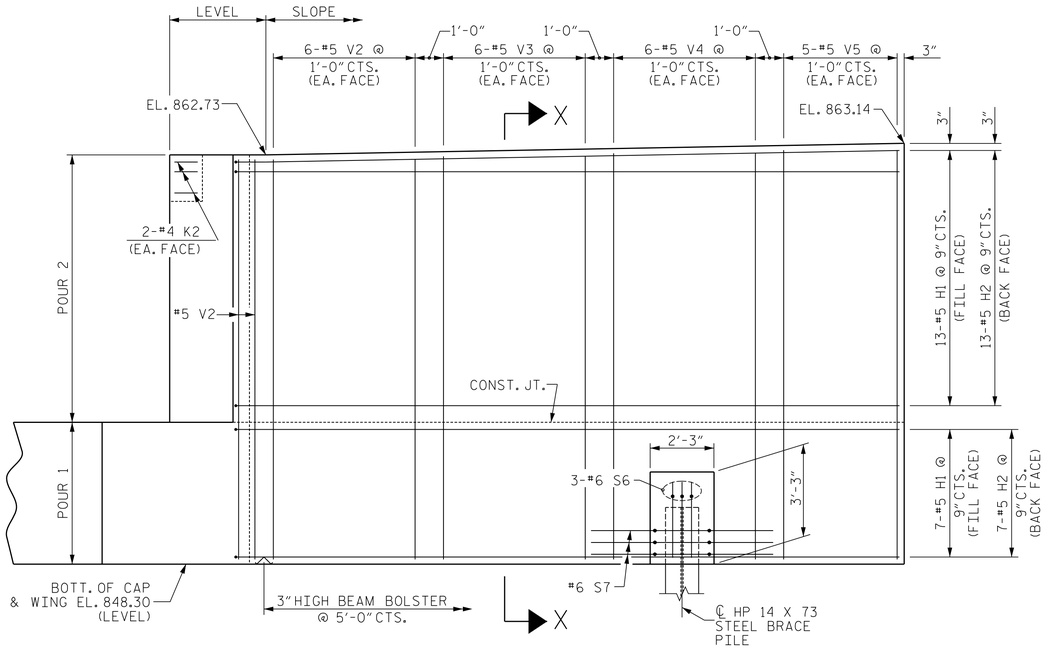


PLAN OF WING (W1)

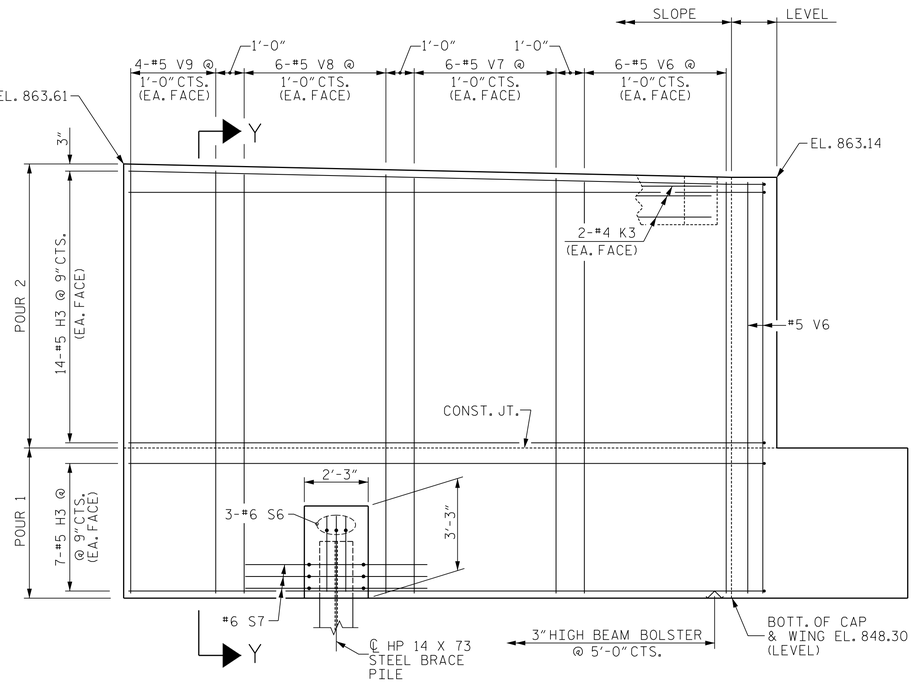


PLAN OF WING (W2)

NOTE:
FOR SECTION X-X AND Y-Y, SEE SHEET 3 OF 3.



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 30+69.44 -Y1-
31+06.88 -L-
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT NO. 1

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-38
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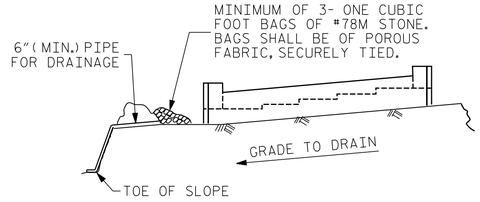
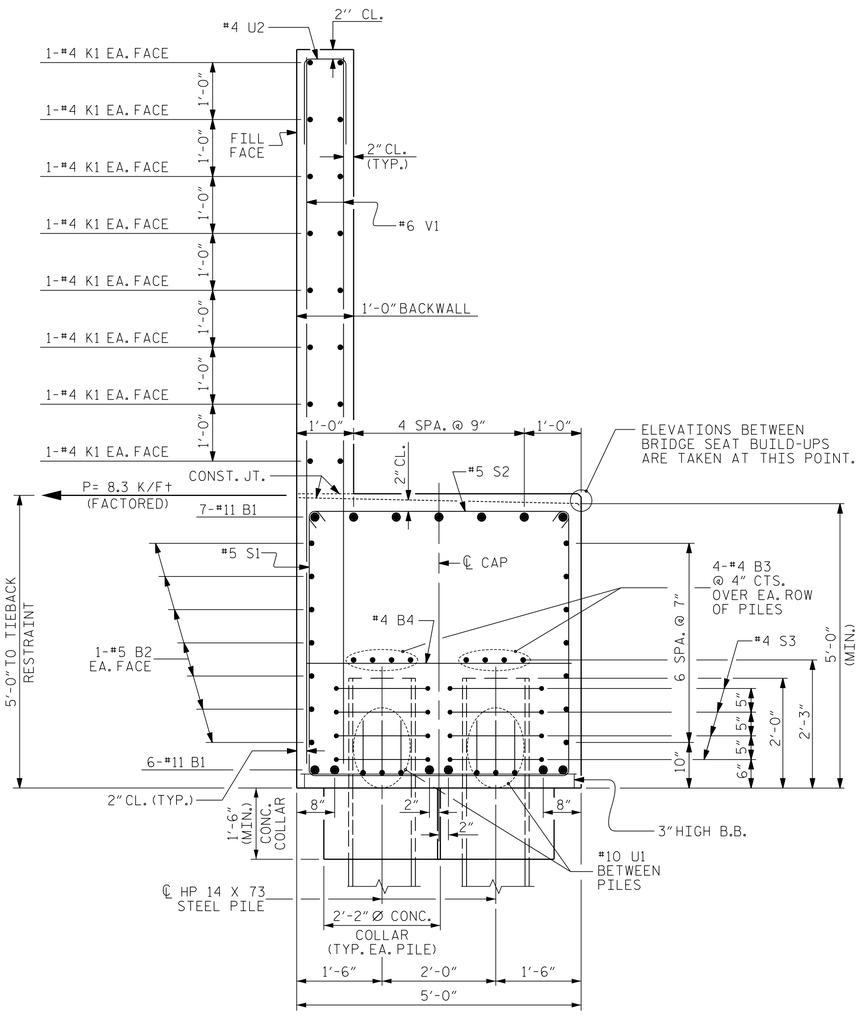


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

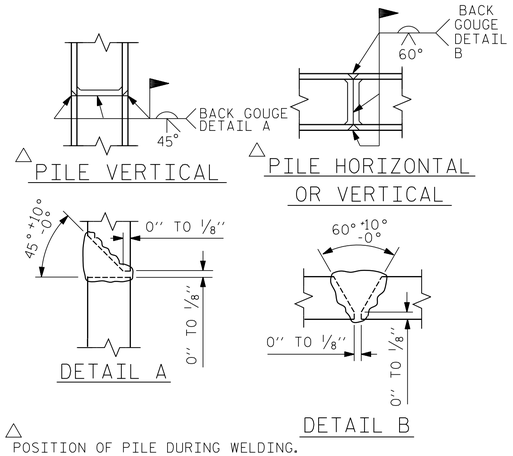
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

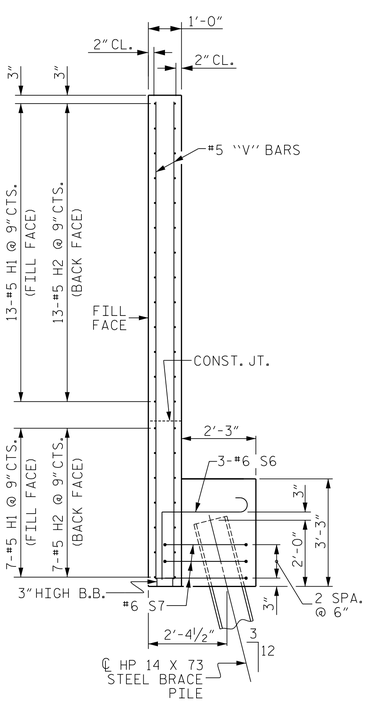


SECTION A-A

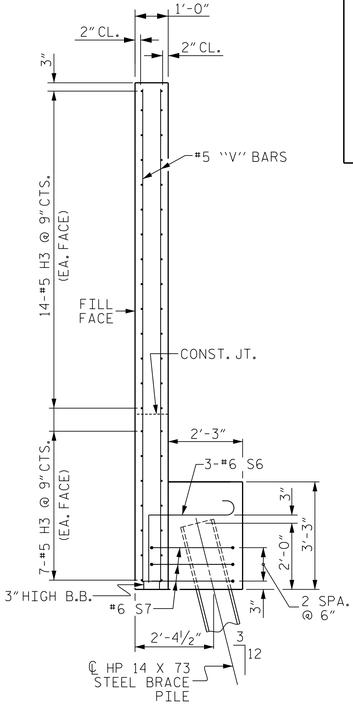


△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

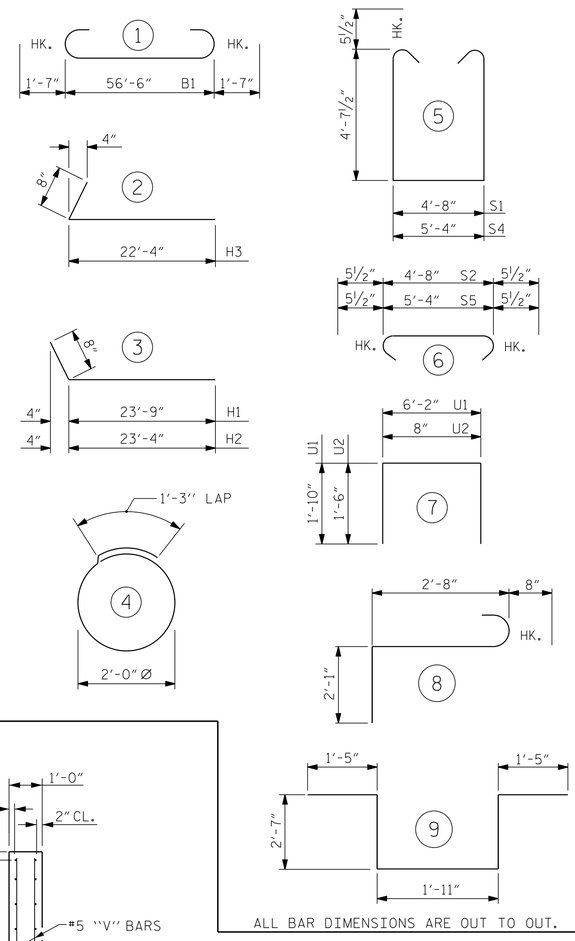


SECTION X-X



SECTION Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	13	#11	1	59'-8"	4,121
B2	14	#5	STR	56'-6"	825
B3	16	#4	STR	29'-6"	315
B4	14	#4	STR	4'-8"	44
H1	20	#5	3	24'-5"	509
H2	20	#5	3	24'-0"	501
H3	42	#5	2	23'-0"	1,008
K1	32	#4	STR	29'-6"	631
K2	6	#4	STR	2'-11"	12
K3	6	#4	STR	2'-10"	11
S1	64	#5	5	14'-10"	990
S2	64	#5	6	5'-7"	373
S3	68	#4	4	7'-7"	344
S4	4	#5	5	15'-6"	65
S5	4	#5	6	6'-3"	26
S6	6	#6	8	5'-5"	49
S7	6	#6	9	9'-11"	89
U1	45	#10	7	9'-10"	1,904
U2	94	#4	7	3'-8"	230
V1	188	#6	STR	12'-4"	3,483
V2	20	#5	STR	14'-0"	292
V3	12	#5	STR	14'-1"	176
V4	12	#5	STR	14'-2"	177
V5	10	#5	STR	14'-4"	149
V6	20	#5	STR	14'-5"	301
V7	12	#5	STR	14'-7"	183
V8	12	#5	STR	14'-9"	185
V9	8	#5	STR	14'-11"	124

REINFORCING STEEL 17,117 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1	CAP, LOWER PART OF WINGS, CONCRETE COLLARS, & WING BRACE PILE BLOCKS	67.7 C.Y.
POUR #2	BACKWALL & UPPER PART OF WINGS	32.7 C.Y.
TOTAL CLASS A CONCRETE		100.4 C.Y.

HP 14 X 73 STEEL PILES
NO: 19 LIN. FT.= 1,511

PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES NO: 19

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Digitally signed by PATRICK R. GALLAGHER
DN: c=US, o=NCDOT, ou=Engineering, cn=PATRICK R. GALLAGHER
6/22/2022

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PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 30+69.44 -Y1-
31+06.88 -L-
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT NO. 1

V&M Vaughan & Mellon
Consulting Engineers
Raleigh, North Carolina 919-977-9455
Asheville, NC 828-253-2796
New Bern, NC 252-631-5115
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
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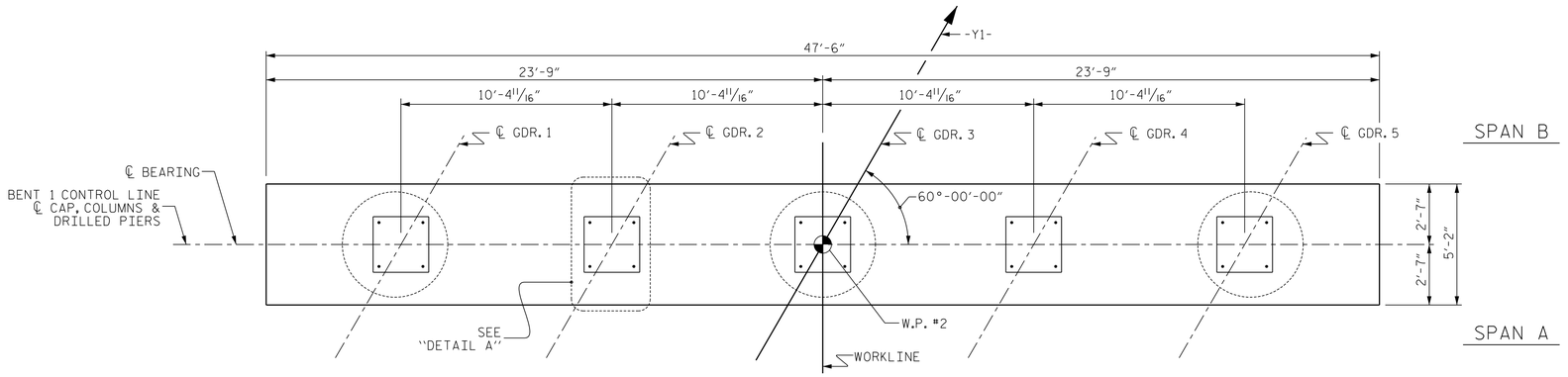
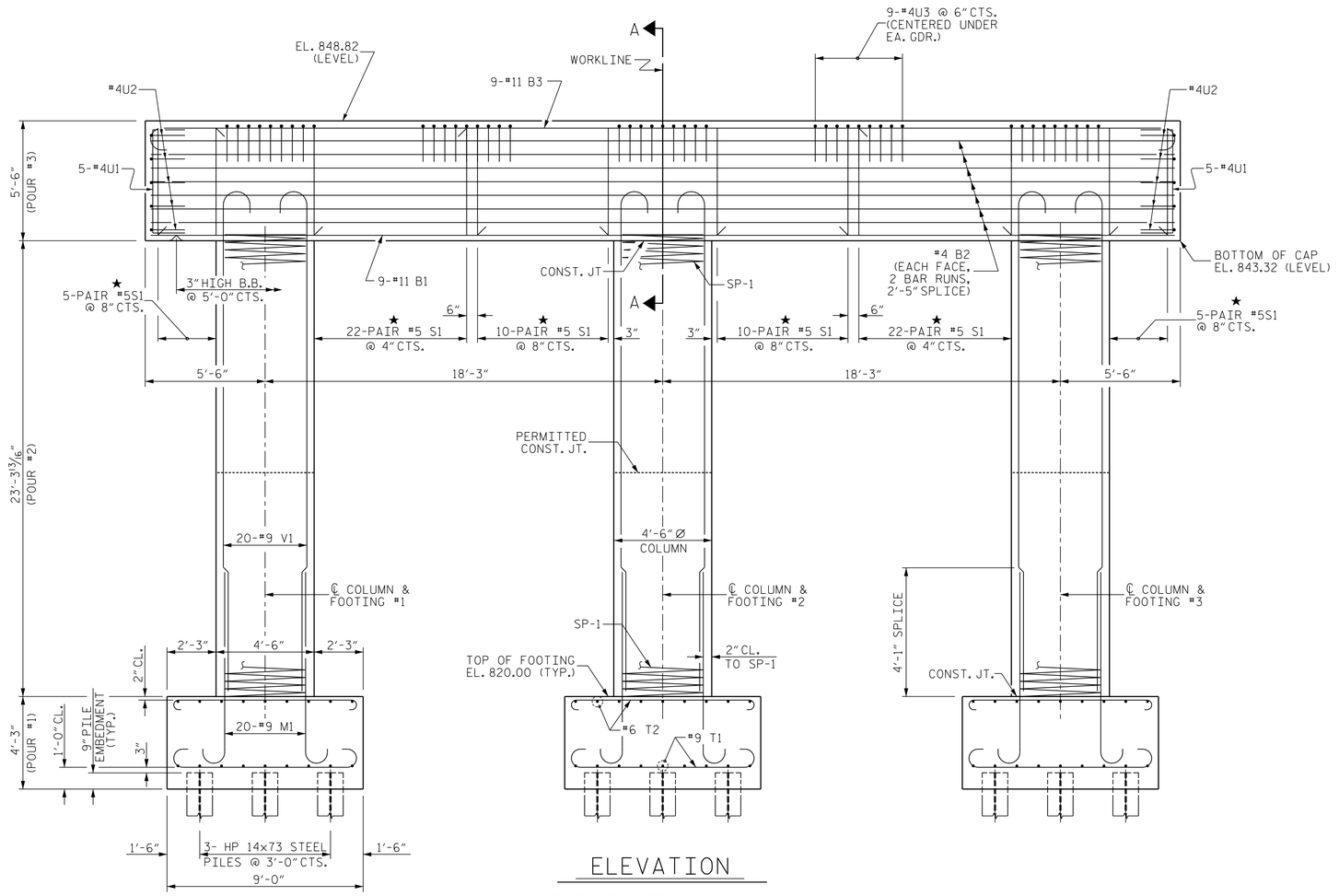
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-39
1			3			TOTAL SHEETS
2			4			50



PLAN



ELEVATION

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING

NOTES

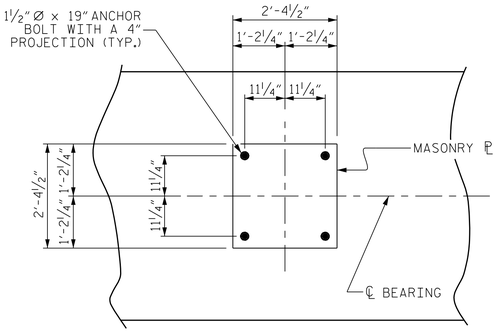
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

★ INVERT ALTERNATE PAIRS OF STIRRUPS.

SEE SHEET 2 OF 2 FOR SECTION "A-A".

FOR PILE SPLICE DETAILS, SEE END BENT 1, SHEET 3 OF 3.



DETAIL A

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAHER
Digitally signed by: Patrick R. Gallaher
DocuSigned by: 6/22/2022

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PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT NO. 1

Vaughn & Melton
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Asheville, North Carolina 828-253-2796
Boone, NC 828-355-9333
Tri-Cities, TN 423-467-8401
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Spartanburg, SC 864-574-4775
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Atlanta, GA 770-627-3590
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488

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1			3			TOTAL SHEETS
2			4			50

DWN. BY: WDC DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

gwowell
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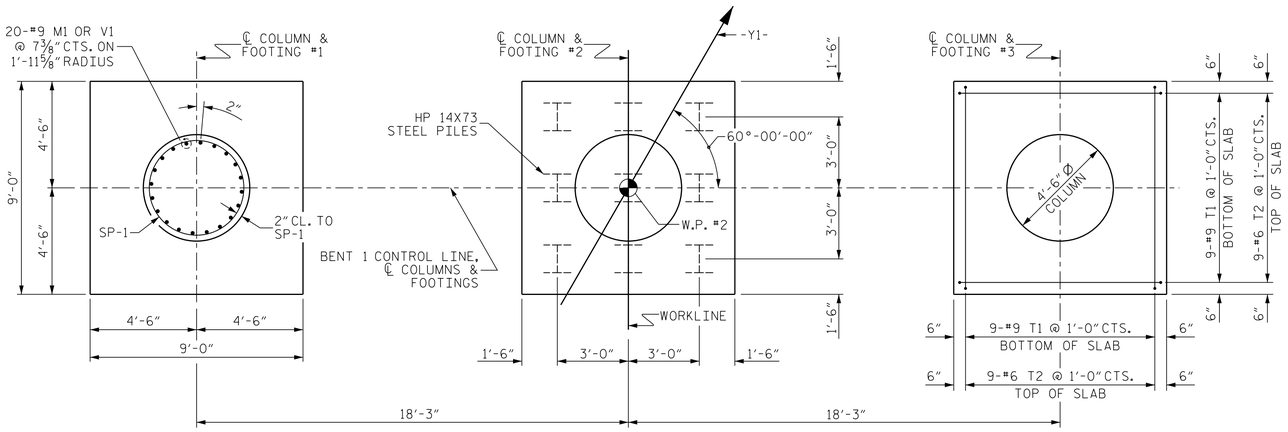
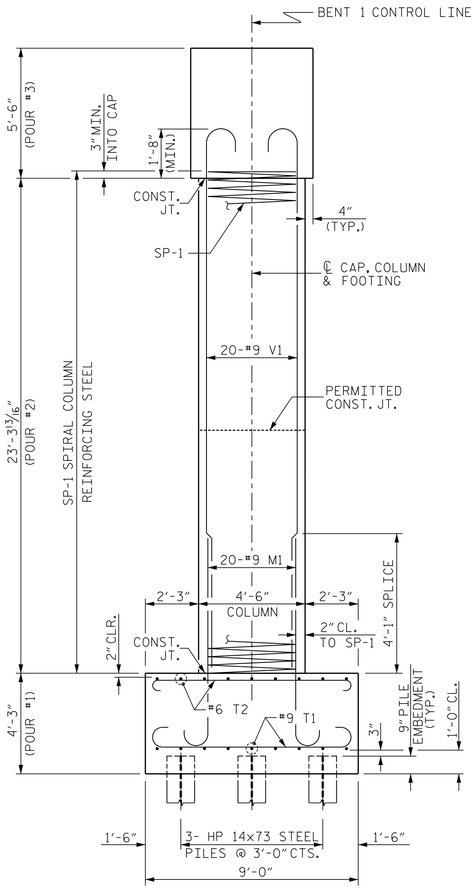
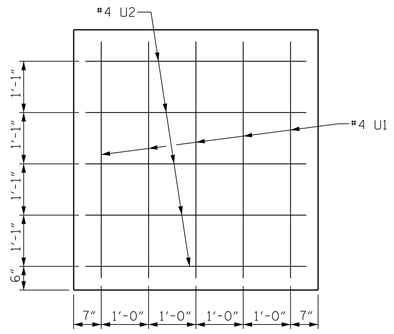


PLAN OF FOOTINGS & COLUMNS

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING

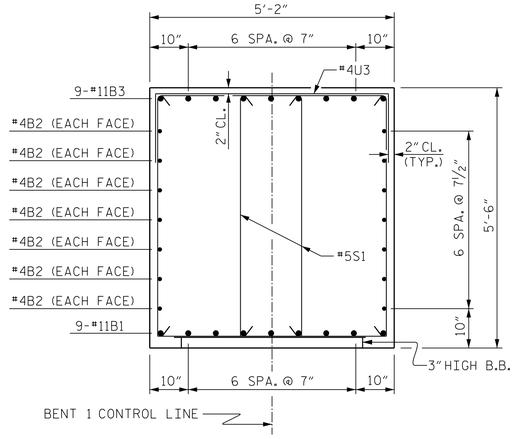


END ELEVATION



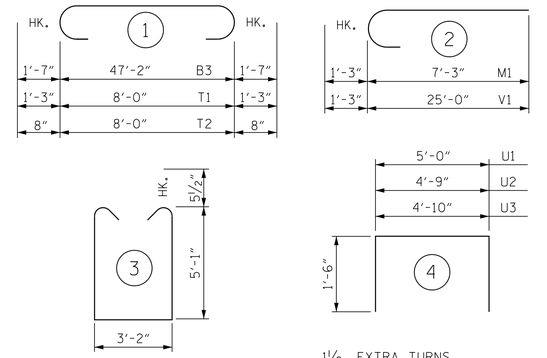
END OF CAP

(TYPICAL EACH END)



SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BENT NO. 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	9	#11	STR	47'-2"	2,255
B2	28	#4	STR	24'-10"	464
B3	9	#11	1	50'-4"	2,407
M1	60	#9	2	8'-7"	1,751
S1	148	#5	3	14'-3"	2,200
T1	54	#9	1	10'-6"	1,928
T2	54	#6	1	9'-4"	757
U1	10	#4	4	8'-0"	53
U2	10	#4	4	7'-9"	52
U3	45	#4	4	7'-10"	235
V1	60	#9	2	26'-3"	5,355
REINFORCING STEEL					17,457 LBS.
SP-1	3	*	5	1270'-3"	2546
SPIRAL COLUMN REINFORCING STEEL					2,546 LBS.

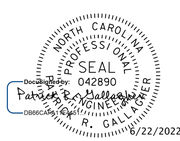
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN

POUR #1 (FOOTINGS)	38.3 C.Y.
POUR #2 (COLUMNS)	41.2 C.Y.
POUR #3 (CAP)	50.0 C.Y.
TOTAL CLASS A CONCRETE	129.5 C.Y.
FOUNDATION EXCAVATION	LUMP SUM

HP 14 X 73 STEEL PILES
NO. 27 LIN. FT. 1,647

PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES
NO. 27



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Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3590

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT NO. 1

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

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

SHEET NO. S4-41

TOTAL SHEETS 50

gwpowell
DGN: V:\WO\Structures\037748-44 U-2579AA STRS\Structures\SITE 4 - Y1 over LT\Final Plans\404_085_U2579AA_SMU_BT12_04.dgn
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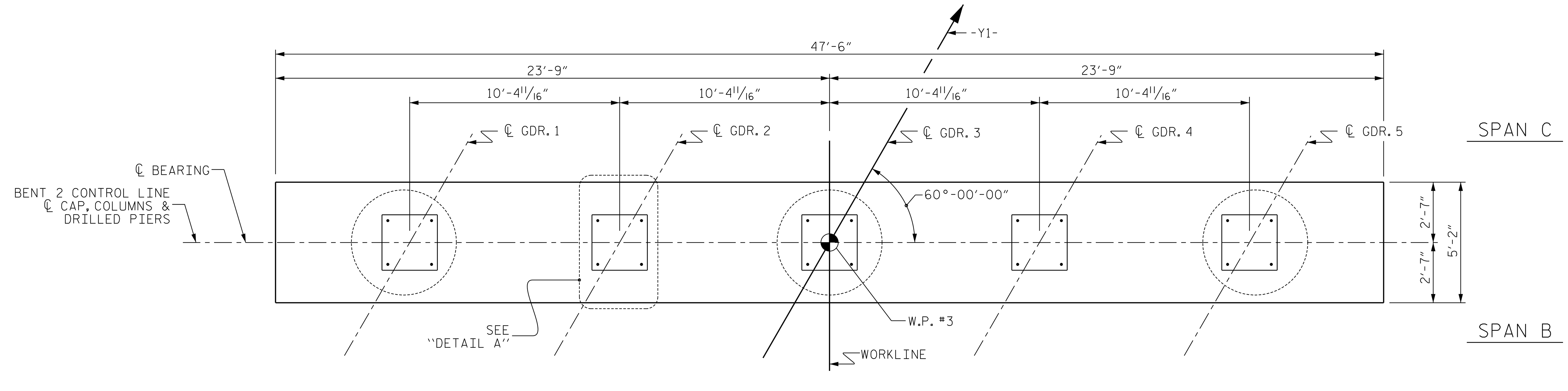


PLAN

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."

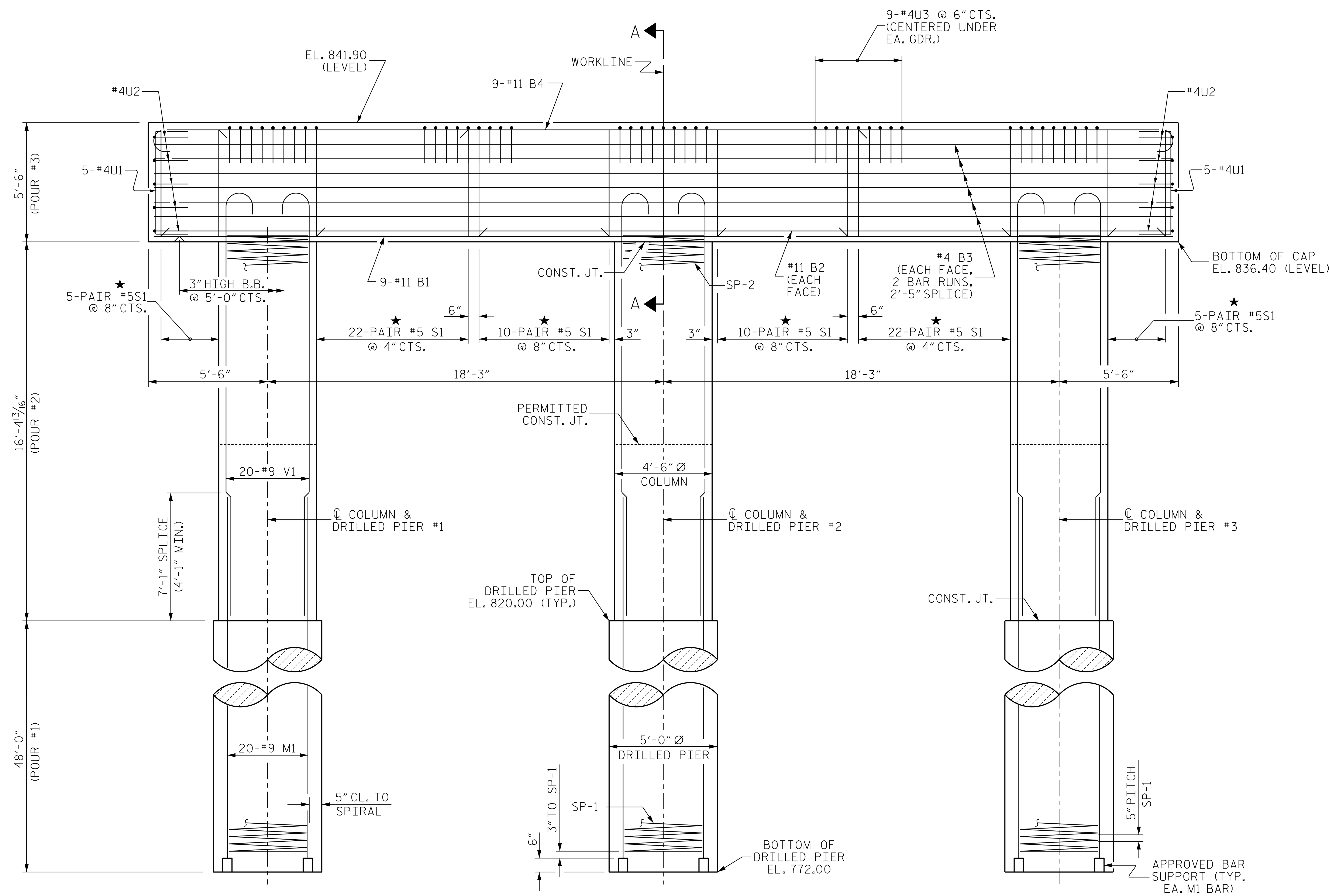
★ INVERT ALTERNATE PAIRS OF STIRRUPS.

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

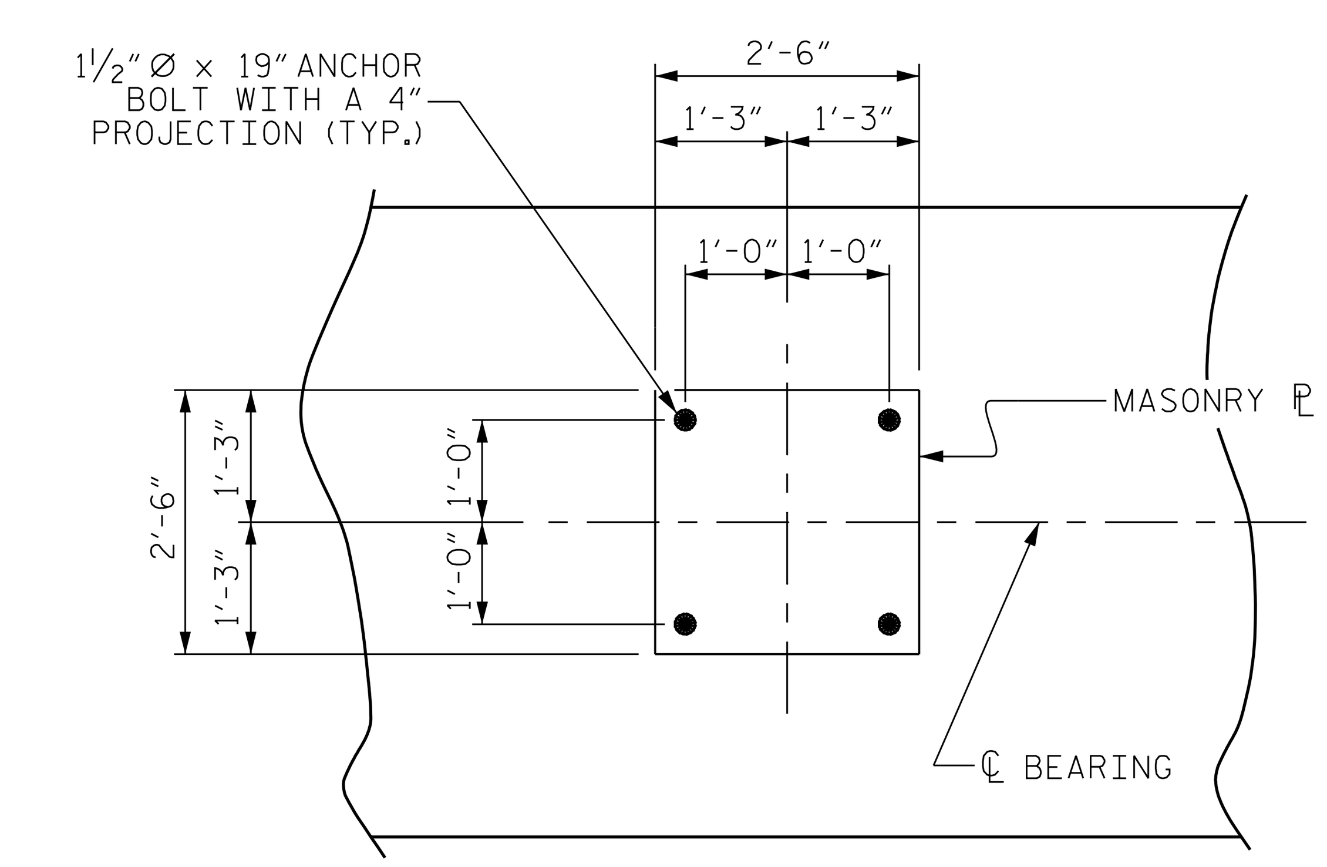
SPLICING OF THE LONGITUDINAL BARS IN THE DRILLED PIER WILL NOT BE PERMITTED.

SEE SHEET 2 OF 2 FOR SECTION "A-A".



ELEVATION

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND DRILLED PIER



DETAIL A

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
DocuSigned by: Patrick R. Gallagher
6/22/2022

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□ Boone, NC 828-355-9933 · □ Tri-Cities, TN 423-467-8401 · □ Knoxville, TN 865-546-5800 · □ Spartanburg, SC 864-574-4775 · □ Charleston, SC 843-974-5650 · □ Middlesboro, KY 606-248-6600 · □ Atlanta, GA 770-627-3590

PROJECT NO. U-2579AA
FORSYTH COUNTY
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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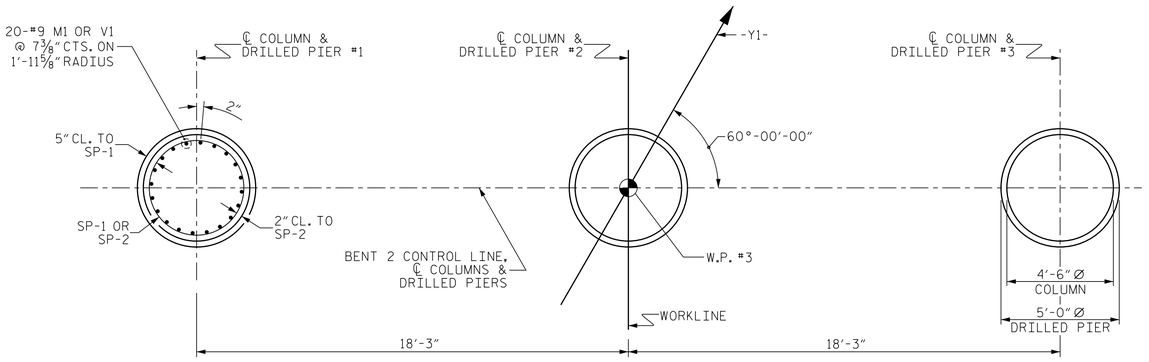
SUBSTRUCTURE
BENT NO. 2

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS

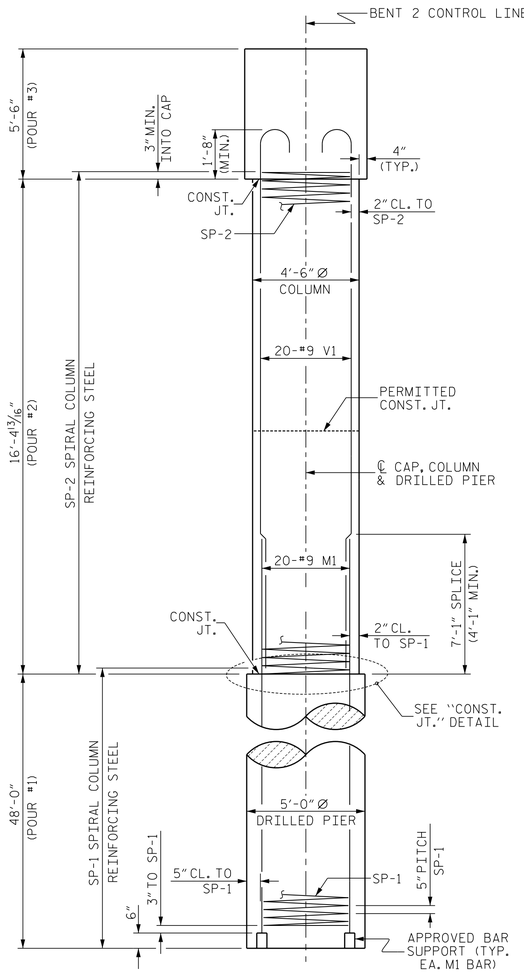
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S4-42
TOTAL SHEETS 50



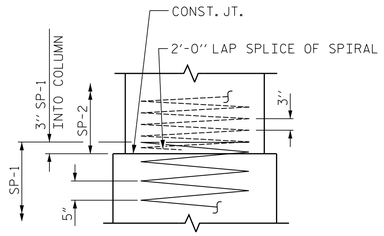
PLAN OF FOOTINGS & COLUMNS

REINFORCING STEEL, DIMENSIONS AND
DETAILS ARE TYPICAL FOR EACH COLUMN
AND DRILLED PIER

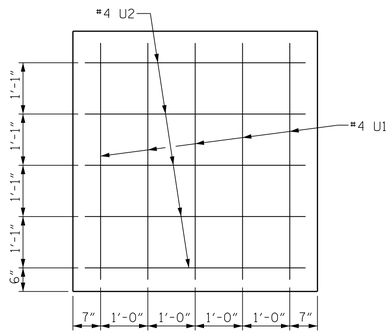


END ELEVATION

REINFORCING STEEL, DIMENSIONS AND
DETAILS ARE TYPICAL FOR EACH COLUMN
AND DRILLED PIER

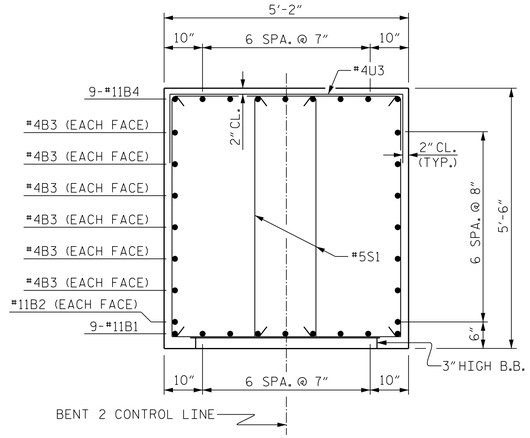


CONSTRUCTION JOINT DETAIL



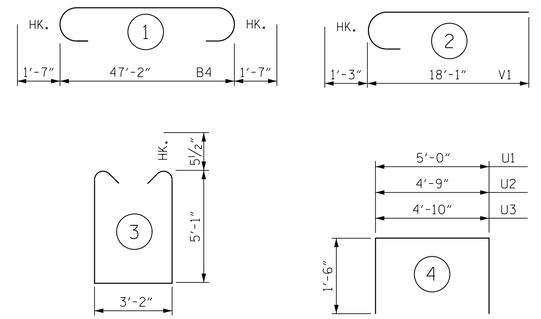
END OF CAP

(TYPICAL EACH END)



SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BENT NO. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	9	#11	STR	47'-2"	2,255
B2	2	#11	STR	47'-2"	501
B3	24	#4	STR	24'-10"	398
B4	9	#11	1	50'-4"	2,407
M1	60	#9	STR	54'-7"	11,135
S1	148	#5	3	14'-3"	2,200
U1	10	#4	4	8'-0"	53
U2	10	#4	4	7'-9"	52
U3	45	#4	4	7'-10"	235
V1	60	#9	2	19'-4"	3,944
REINFORCING STEEL					23,180 LBS.
SP-1	3	**	5	1497'-7"	4,686
SP-2	3	*	6	887'-11"	1,779
SPIRAL COLUMN REINFORCING STEEL					6,465 LBS.

** THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR

* THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN

POUR #2 (COLUMNS)	29.0 C.Y.
POUR #3 (CAP)	50.0 C.Y.
TOTAL CLASS A CONCRETE	79.0 C.Y.

DRILLED PIERS:

DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS)	104.7 C.Y.
5'-0" Ø DRILLED PIERS NOT IN SOIL	53.00 LIN. FT.
5'-0" Ø DRILLED PIERS IN SOIL	91.00 LIN. FT.
CSL TUBES	742.5 LIN. FT.

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Digitally signed by Patrick R. Gallagher
DocuSigned by: 3/22/2022

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Knoxville, TN 865-546-5800
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Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3590
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 30+69.44 -Y1-
31+06.88 -L-
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT NO. 2

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-43
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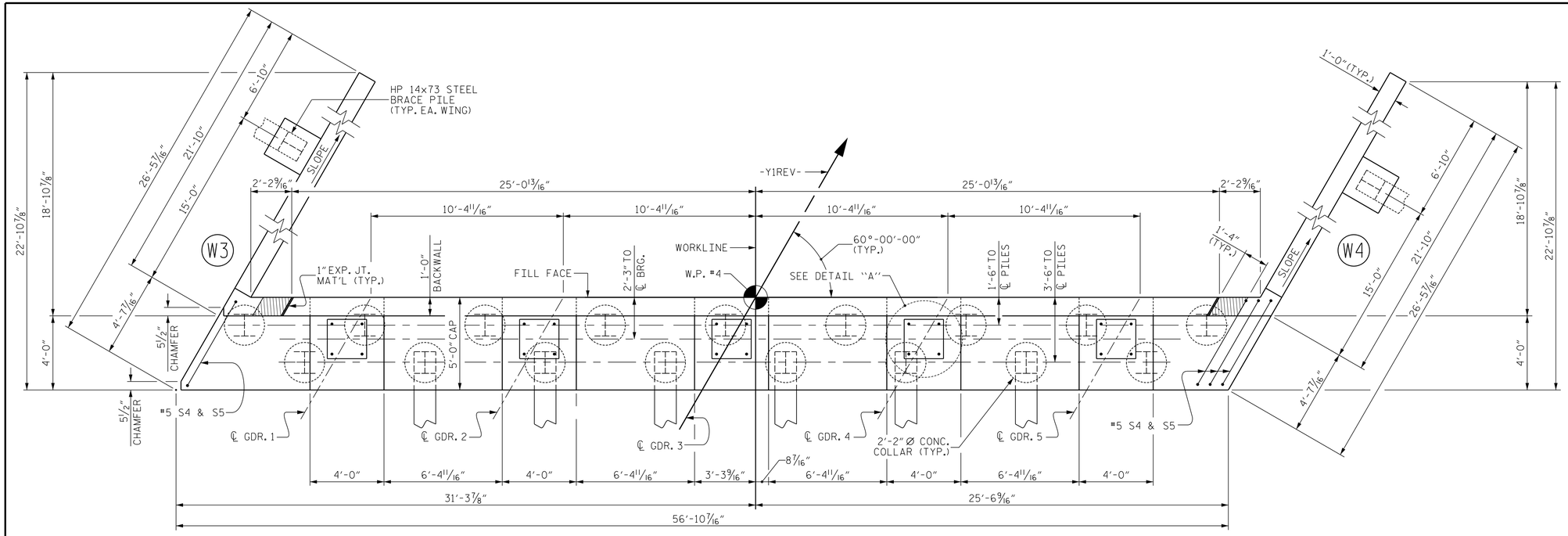
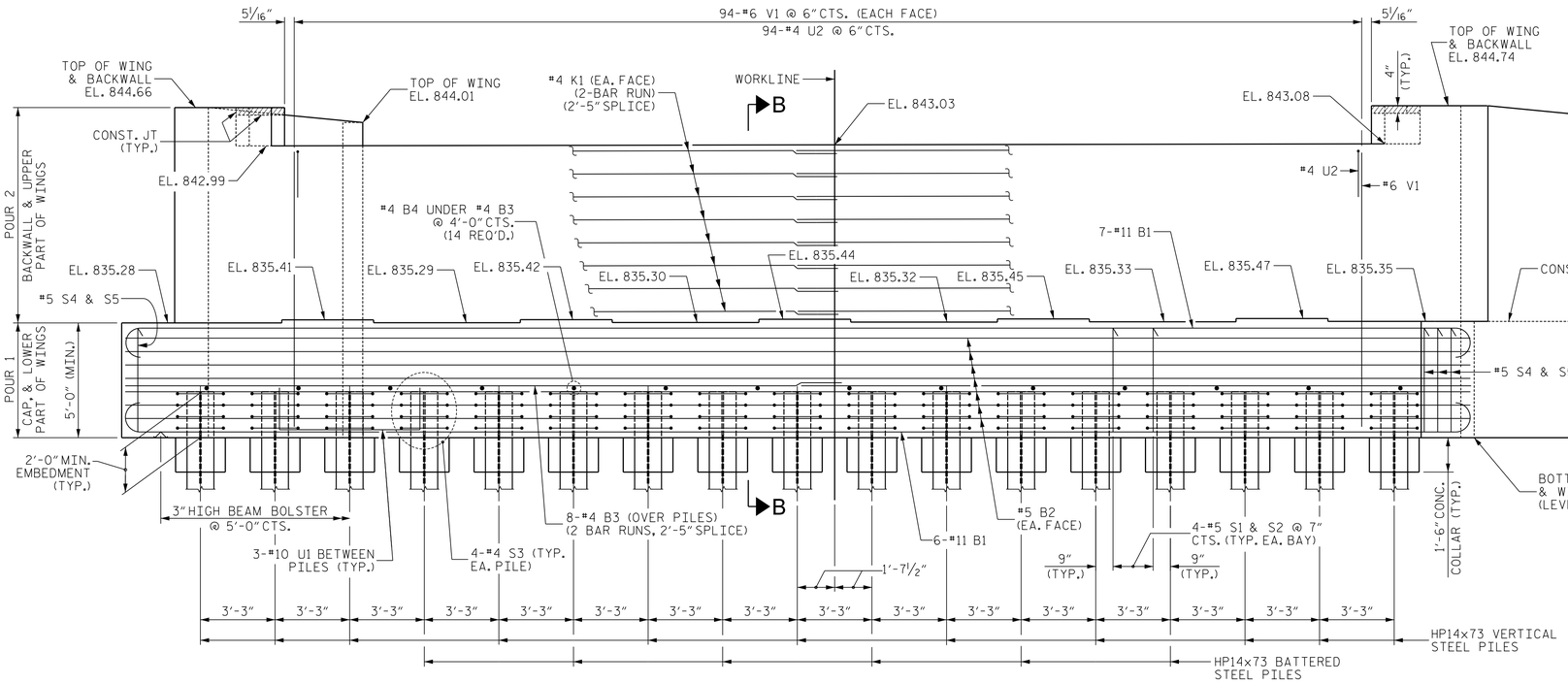
2			4			50



PLAN



ELEVATION

(WING BRACE PILE BLOCKS NOT SHOWN FOR CLARITY)

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

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

THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING METHOD SHALL NOT BE USED.

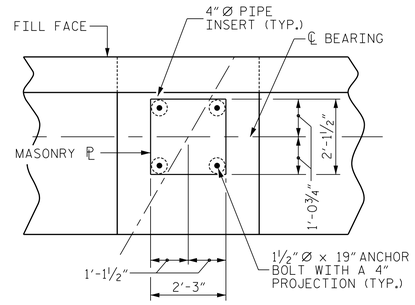
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

FOR PIPE INSERT, DETAILS, SEE BEARING SHEET.

FOR WING DETAILS, SEE SHEET 2 OF 3.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.



DETAIL A

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER R. GALLIMORE
Digitally signed by R. Gallimore
DocuSigned by: 8/22/2022

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PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
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SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT NO. 2

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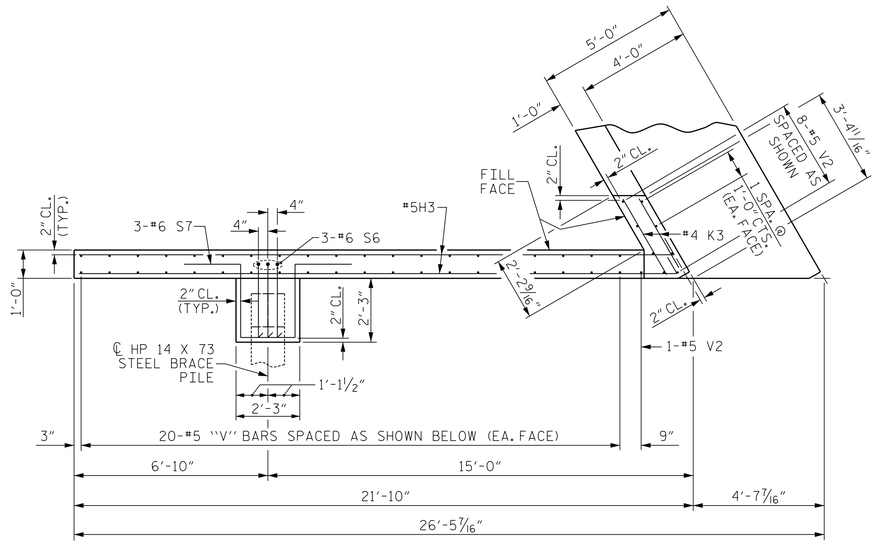
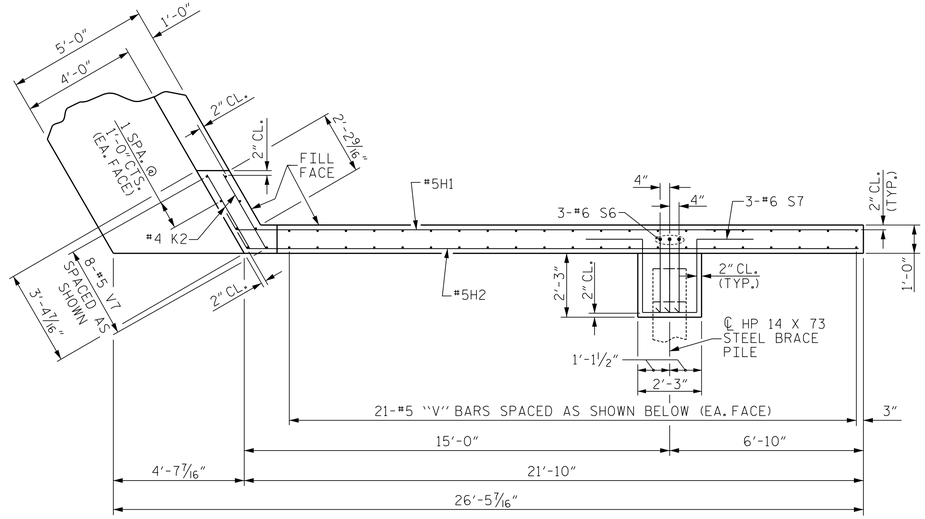
Atlanta, GA 770-627-3590
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-44
1			3			TOTAL SHEETS
2			4			50



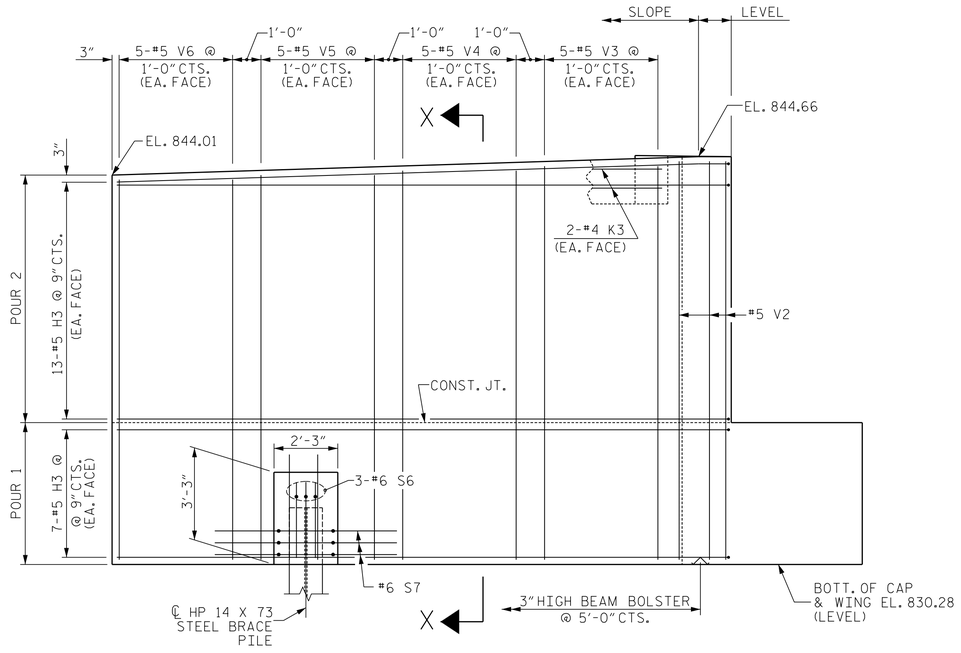
PLAN OF WING (W3)



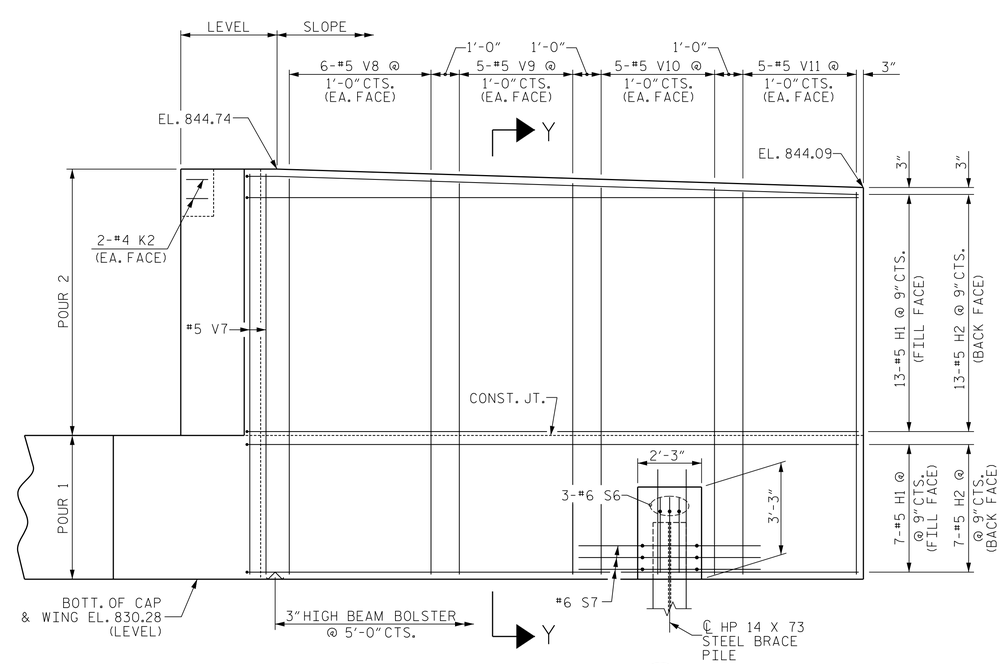
PLAN OF WING (W4)

NOTE:

FOR SECTION X-X AND Y-Y, SEE SHEET 3 OF 3.



ELEVATION OF WING (W3)



ELEVATION OF WING (W4)

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
DocuSigned by: 6/22/2022

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Knoxville, TN 865-546-1800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Asheville, NC 828-253-2796
New Bern, NC 252-631-595
Atlanta, GA 770-627-3509

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 2 OF 3

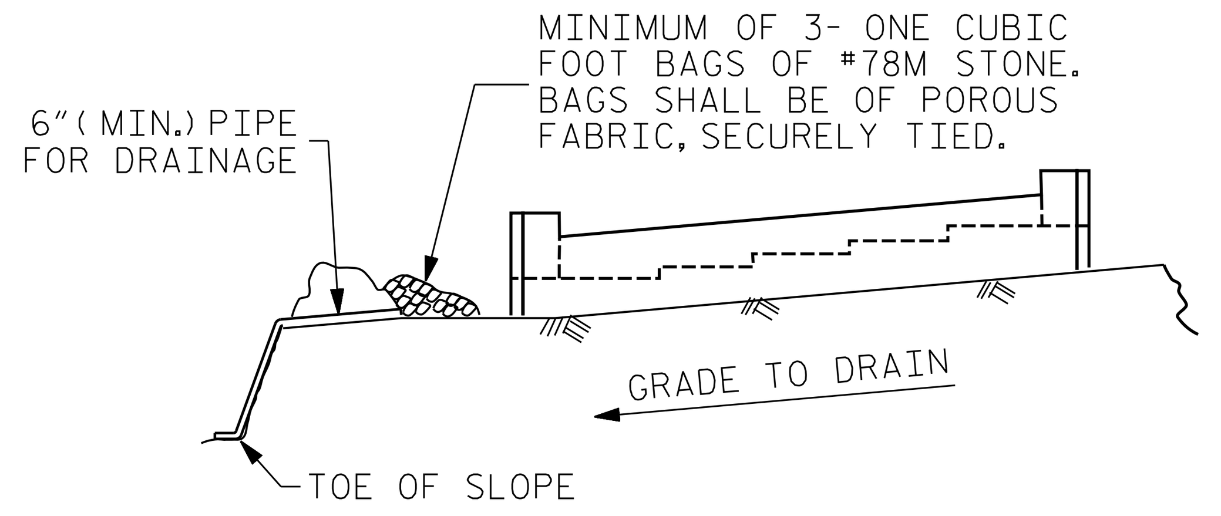
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT NO. 2

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-45
1			3			TOTAL SHEETS
2			4			50

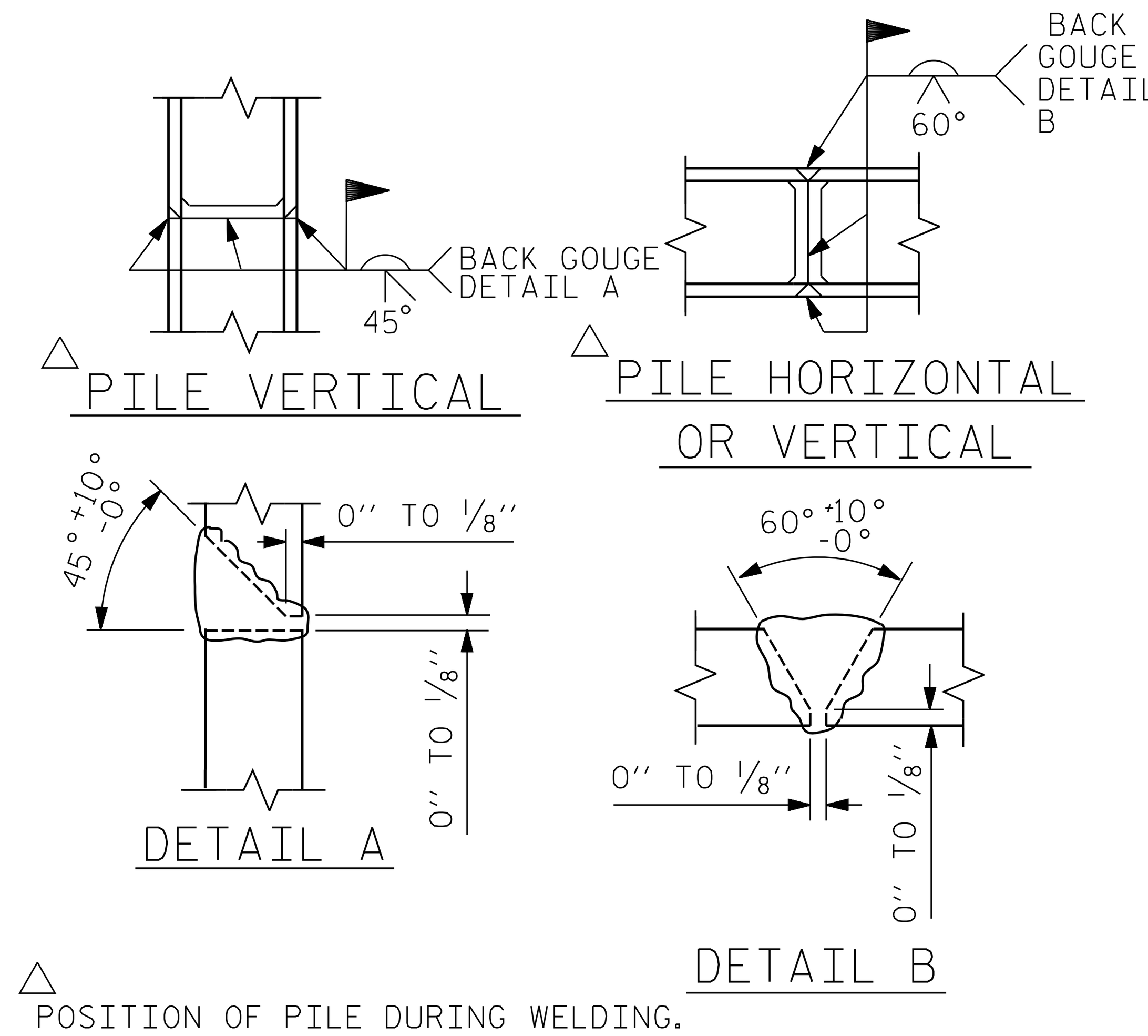


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

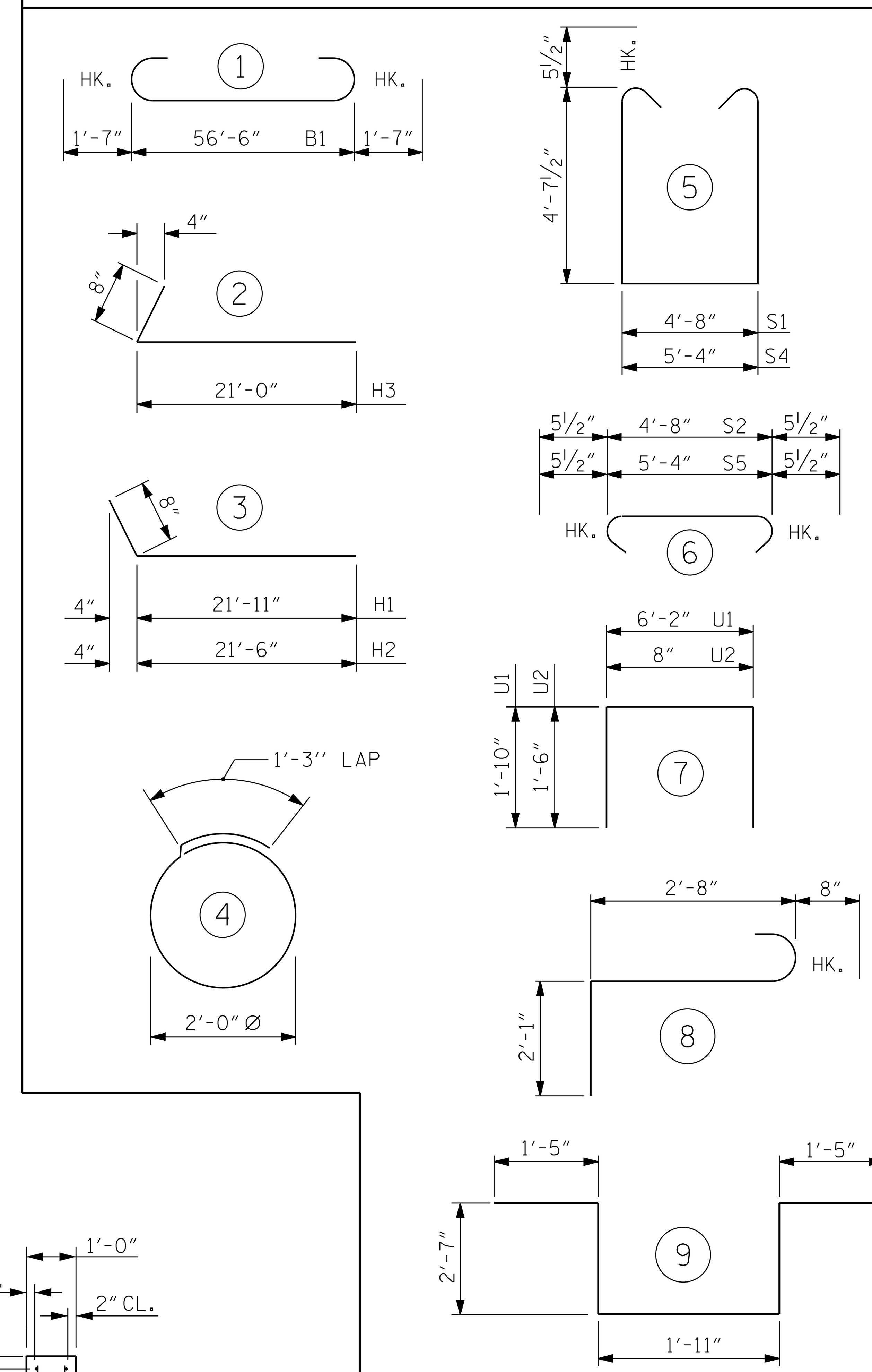
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	13	#11	1	59'-8"	4,121
B2	14	#5	STR	56'-6"	825
B3	16	#4	STR	29'-6"	315
B4	14	#4	STR	4'-8"	44
H1	20	#5	3	22'-7"	471
H2	20	#5	3	22'-2"	462
H3	40	#5	2	21'-8"	904
K1	32	#4	STR	29'-6"	631
K2	4	#4	STR	2'-11"	8
K3	4	#4	STR	2'-10"	8
S1	64	#5	5	14'-10"	990
S2	64	#5	6	5'-7"	373
S3	68	#4	4	7'-7"	344
S4	4	#5	5	15'-6"	65
S5	4	#5	6	6'-3"	26
S6	6	#6	8	5'-5"	49
S7	6	#6	9	9'-11"	89
U1	45	#10	7	9'-10"	1,904
U2	94	#4	7	3'-8"	230
V1	188	#6	STR	12'-3"	3,459
V2	8	#5	STR	14'-0"	117
V3	10	#5	STR	13'-10"	144
V4	10	#5	STR	13'-8"	143
V5	10	#5	STR	13'-6"	141
V6	10	#5	STR	13'-4"	139
V7	8	#5	STR	14'-0"	117
V8	12	#5	STR	13'-10"	173
V9	10	#5	STR	13'-8"	143
V10	10	#5	STR	13'-6"	141
V11	10	#5	STR	13'-4"	139

REINFORCING STEEL 16,715 LBS.

CLASS A CONCRETE BREAKDOWN

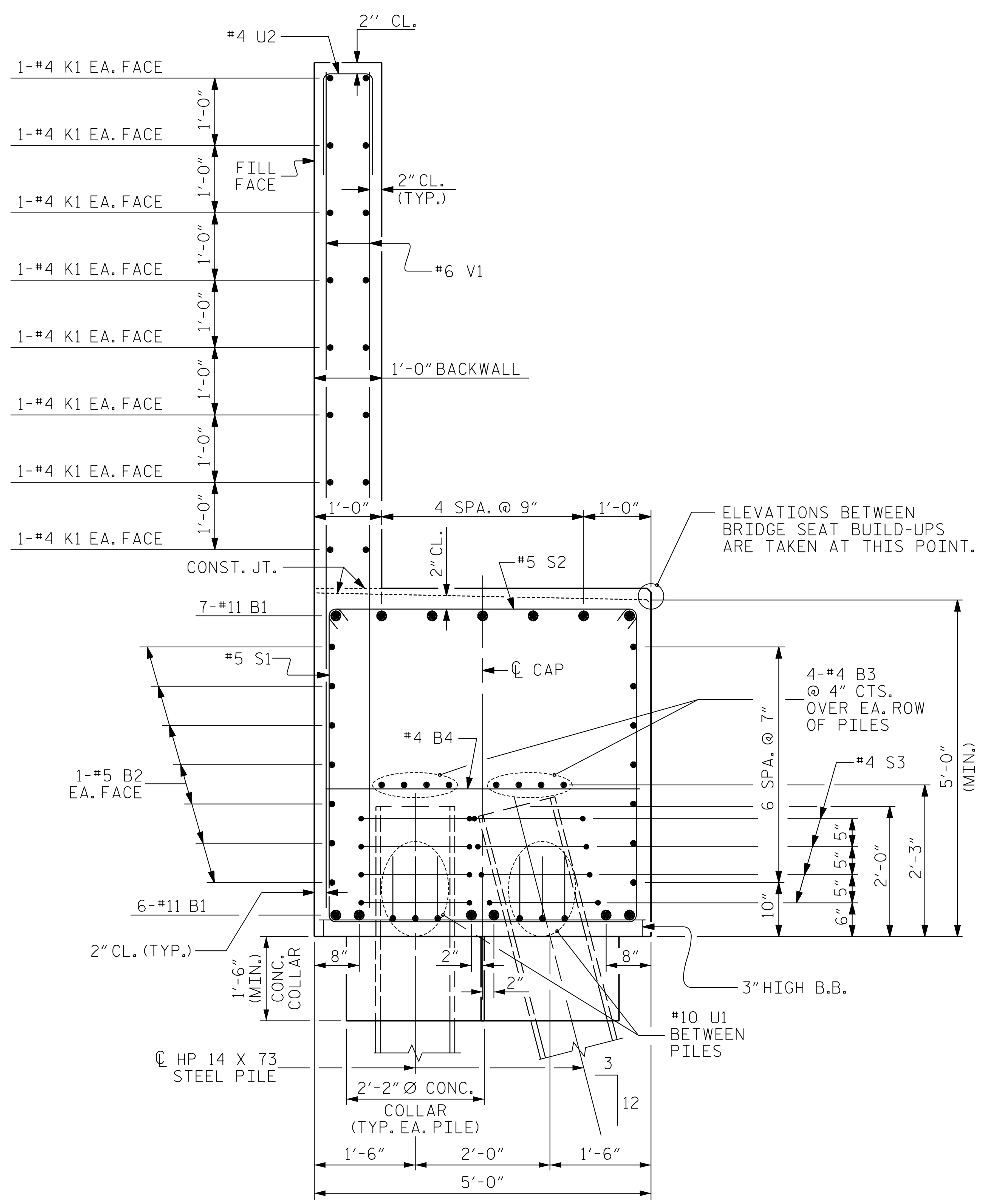
POUR #1 CAP, LOWER PART OF WINGS, CONCRETE COLLARS, & WING BRACE PILE BLOCKS 65.2 C.Y.

POUR #2 BACKWALL & UPPER PART OF WINGS 29.8 C.Y.

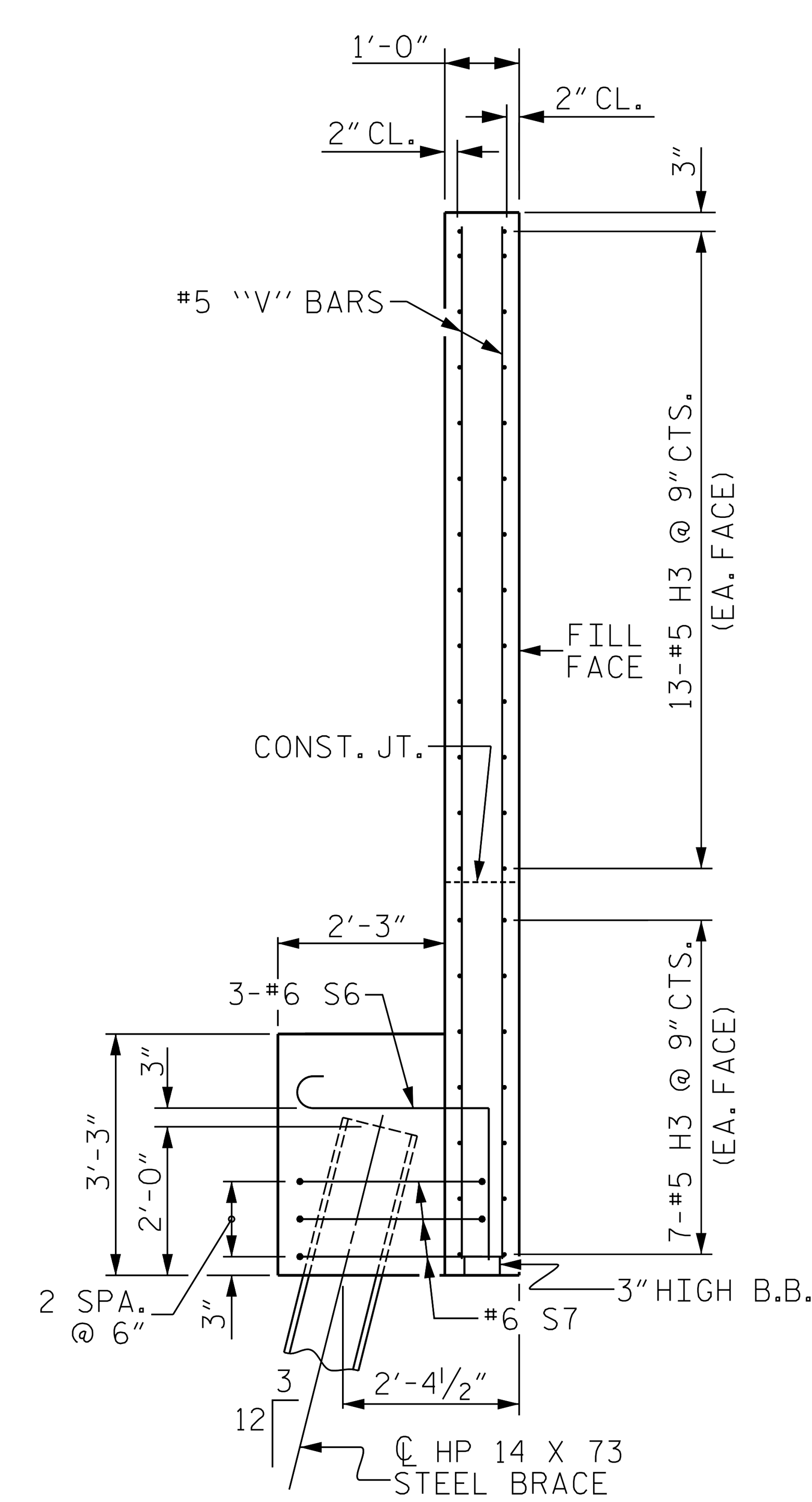
TOTAL CLASS A CONCRETE 95.0 C.Y.

HP 14 X 73 STEEL PILES
NO: 19 LIN. FT.= 1,178

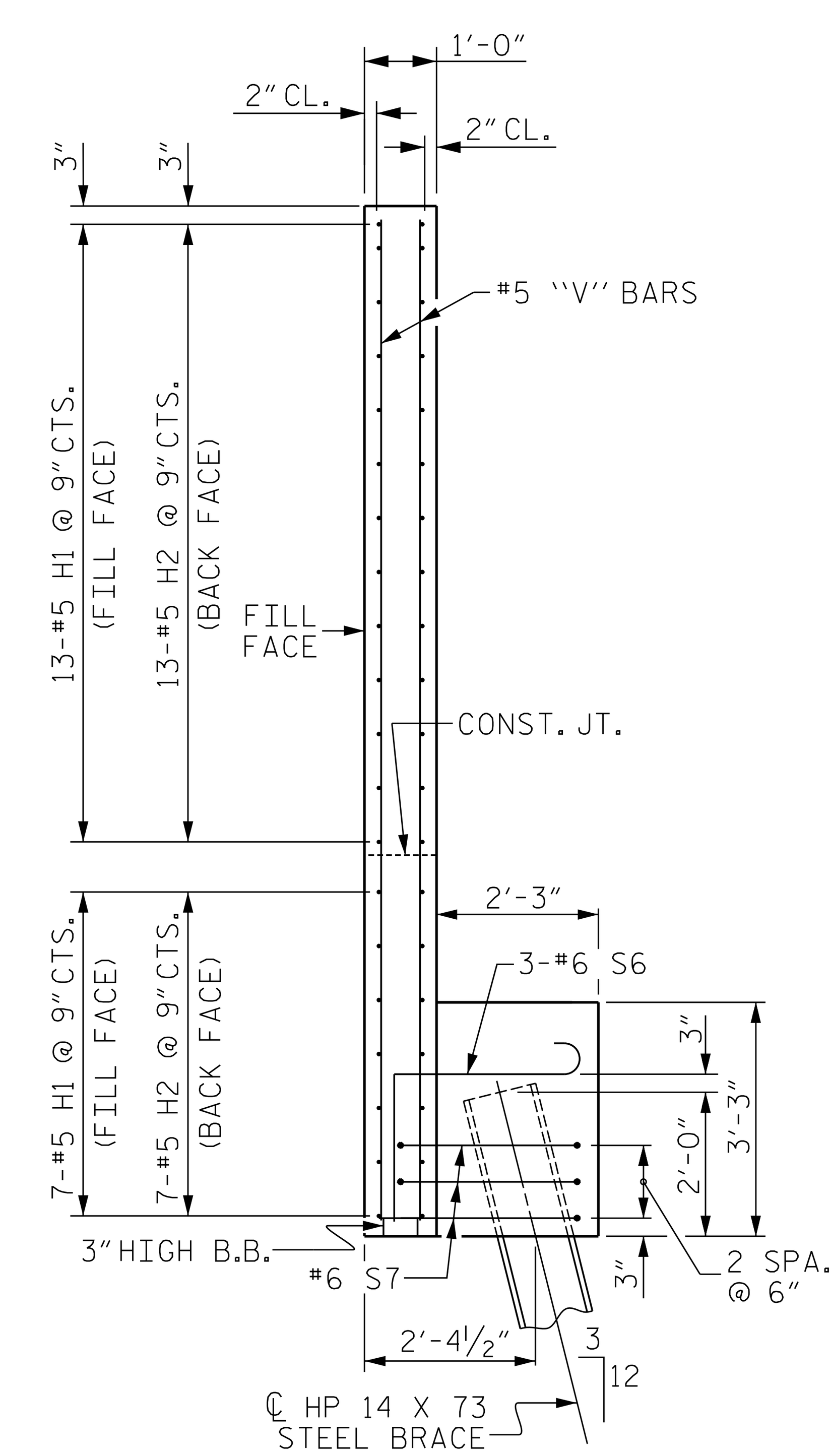
PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES NO: 19



SECTION A-A



SECTION X-X



SECTION Y-Y

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042890 PATRICK R. GALLAGHER 6/22/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 30+69.44 -Y1- 31+06.88 -L-
SHEET 3 OF 3

Vaughn & Melton Consulting Engineers
Raleigh, North Carolina 919-977-9455
Boone, NC 828-355-9933; Tri-Cities, TN 423-467-8401; Knoxville, TN 865-546-5800; Spartanburg, SC 864-574-4775; Charleston, SC 843-974-5650; Middlesboro, KY 606-248-6600; Atlanta, GA 770-627-3509; Asheville, NC 828-253-2796; New Bern, NC 252-631-5115

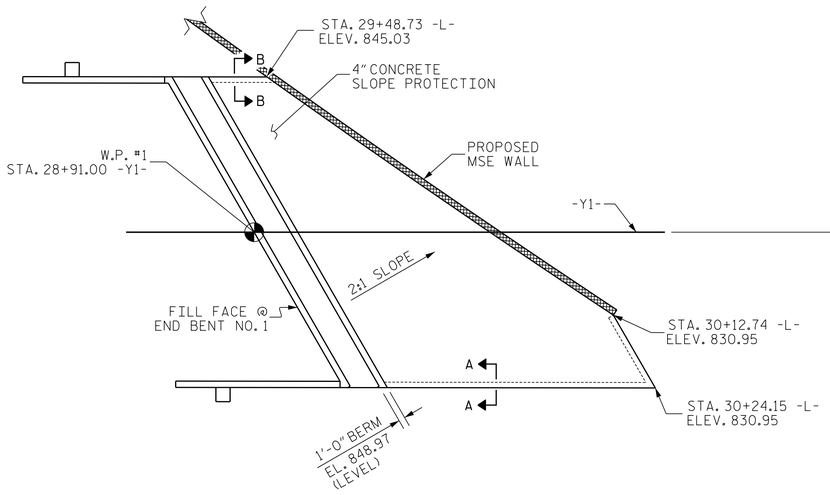
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT NO. 2

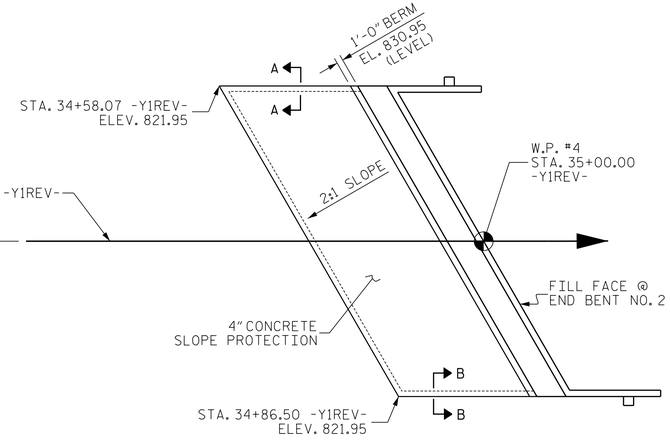
DWN. BY: WDC DATE: 3/22
CHKD. BY: PRG DATE: 3/22
DES. EGR. OF RECORD: PRG DATE: 3/22

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

SHEET NO. S4-46
TOTAL SHEETS 50



PLAN @ END BENT 1



PLAN @ END BENT 2

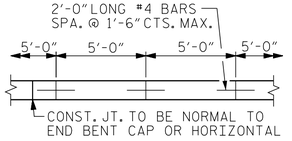
GENERAL NOTES

SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN THE DETAILS. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS. FOR BERM WIDTH, SEE GENERAL DRAWING.

SLOPE PROTECTION SHALL CONSIST OF 4'' POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS ''B''. THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60'' WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE ''POURING DETAIL'' WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE ''OPTIONAL POURING DETAIL'' WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6''. THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

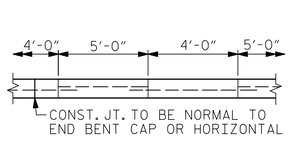
BRIDGE @ STA. 30+69.44 -Y1-	4-INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	200.9	412.4
END BENT 2	155.8	296.1

* QUANTITY SHOWN IS BASED ON 5' POURS.



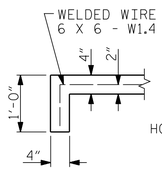
STRIP WIDTHS MAY VARY IN CURVED PORTION.

POURING DETAIL

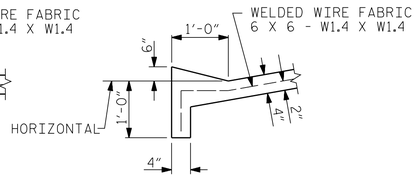


POUR A 4'-0'' STRIP FIRST. STRIP WIDTHS MAY VARY IN CURVED PORTION.

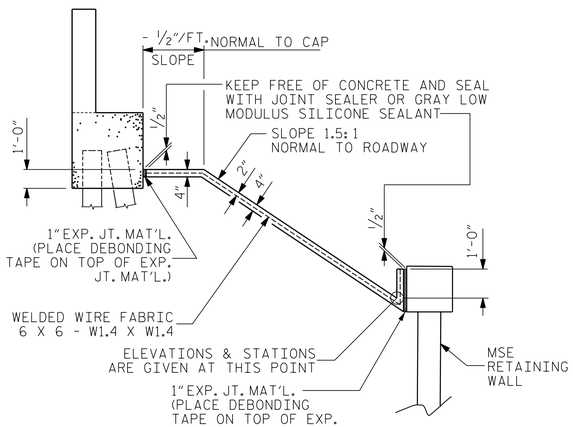
OPTIONAL POURING DETAIL



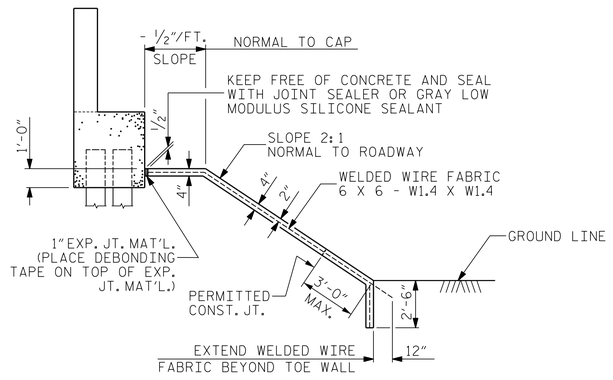
SECTION A-A



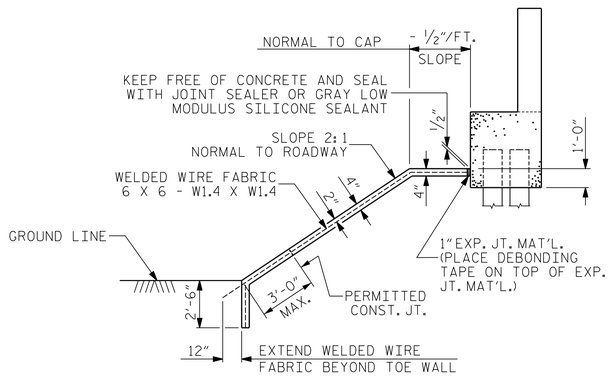
SECTION B-B



SECTION ALONG -Y1-
@ END BENT 1
(BEHIND WALL)



SECTION ALONG -Y1-
@ END BENT 1
(BEYOND WALL)



SECTION ALONG -Y1REV-
@ END BENT 2

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
8/22/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Vaughn & Melton
Consulting Engineers
Raleigh, North Carolina 919-977-9455
Asheville, NC 828-253-2796 | New Bern, NC 252-631-5915
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 30+69.44 -Y1-
31+06.88 -L-

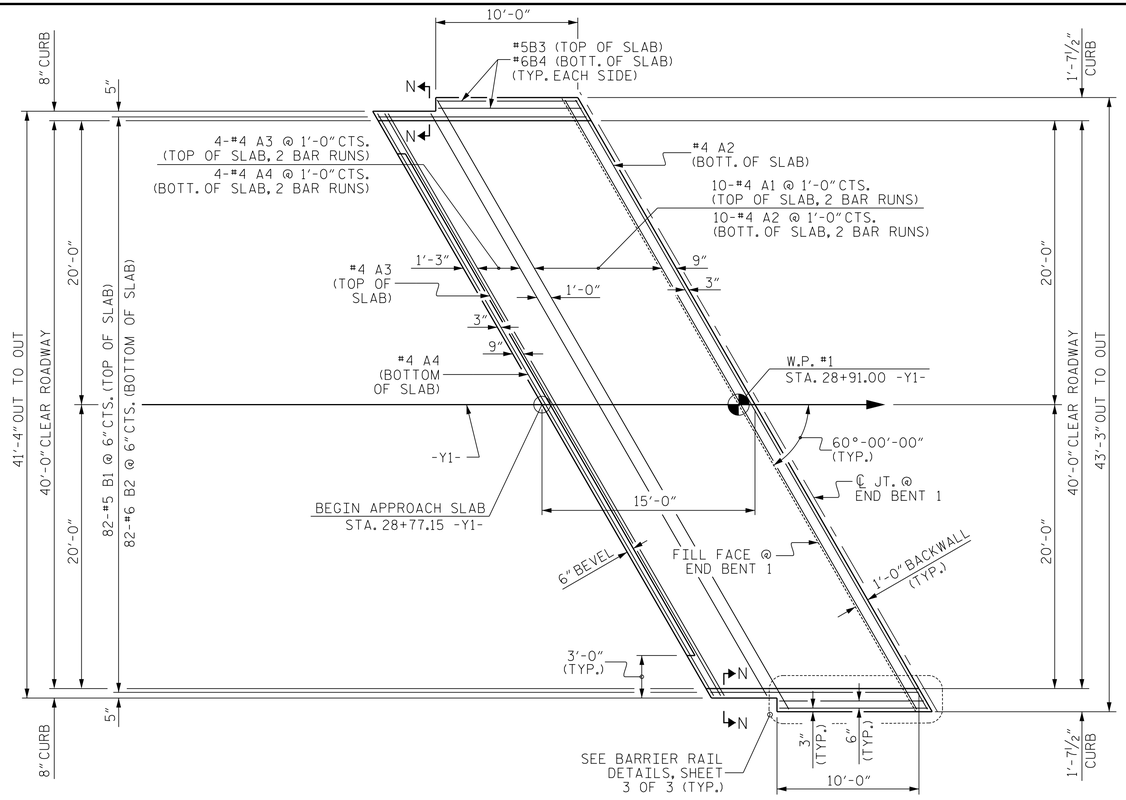
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

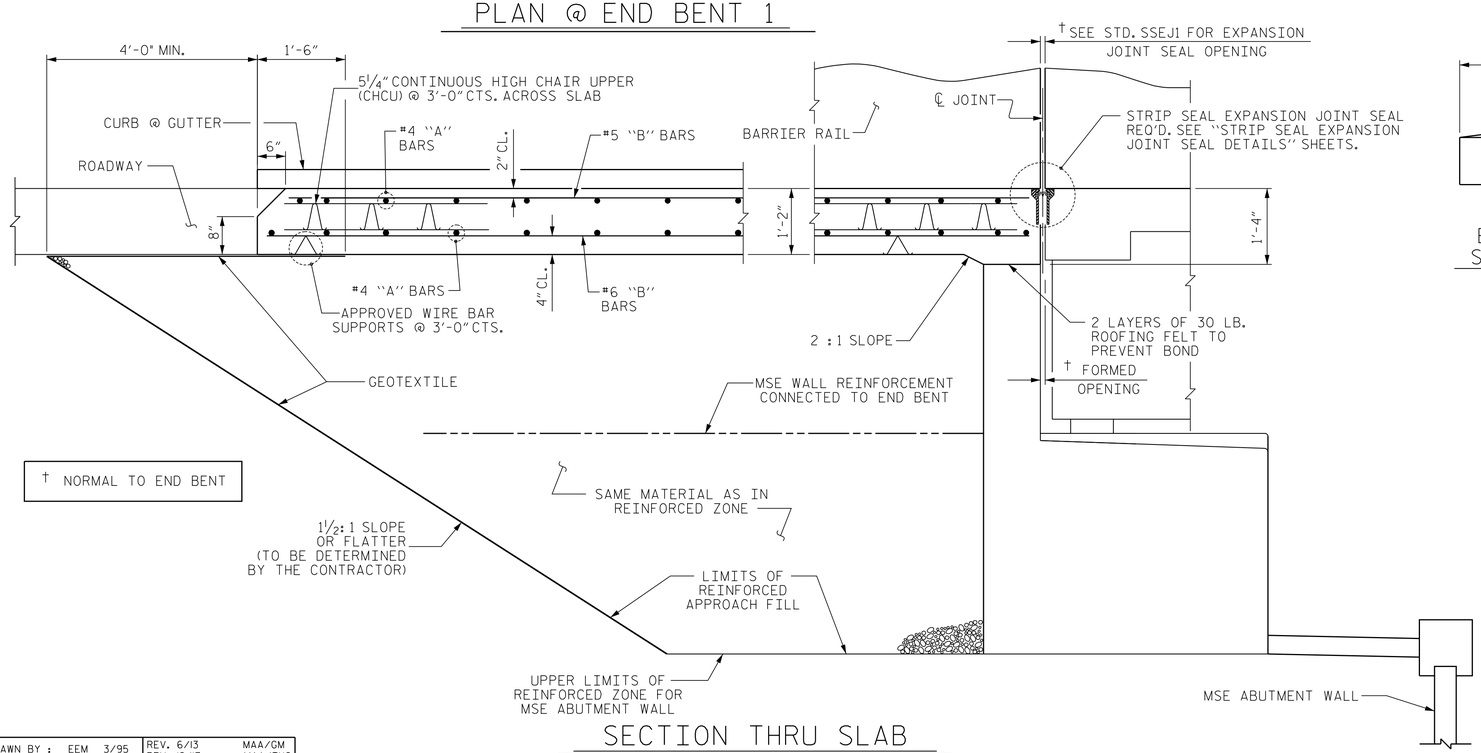
SLOPE PROTECTION DETAILS

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-47
1			3			TOTAL SHEETS
2			4			50

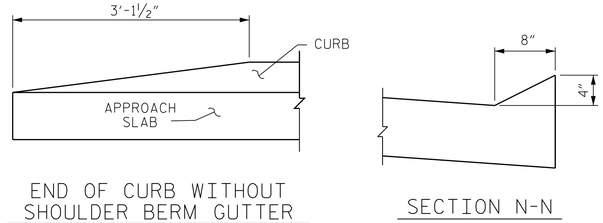


PLAN @ END BENT 1



SECTION THRU SLAB

(TYPE III - REINFORCED APPROACH FILL)



END OF CURB WITHOUT SHOULDER BERM GUTTER

SECTION N-N

CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, MSE WALL REINFORCEMENT AND BACKFILL MATERIAL SEE ROADWAY PLANS.

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

BACKFILL MATERIAL SHALL BE THE SAME MATERIAL USED IN THE MSE REINFORCED ZONE.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

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.

FOR STRIP SEAL EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL

APPROACH SLAB @ END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	20	#4	STR	25'-9"	344
A2	22	#4	STR	25'-8"	377
* A3	10	#4	STR	24'-8"	165
A4	10	#4	STR	24'-7"	164
* B1	82	#5	STR	14'-2"	1,212
B2	82	#6	STR	14'-8"	1,806
* B3	4	#5	STR	9'-8"	40
B4	4	#6	STR	9'-8"	58

REINFORCING STEEL	2,405 LBS.
* EPOXY COATED REINFORCING STEEL	1,761 LBS.
CLASS AA CONCRETE	28.0 CU. YDS.

QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED. SEE SHEET 3 OF 3.

SPLICE LENGTHS

BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

Vaughn & Melton
Consulting Engineers
Raleigh, North Carolina 99-977-9455
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
ASHEVILLE, NC 828-253-2796
New Bern, NC 252-631-515
Atlanta, GA 770-627-3509

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB
FOR FLEXIBLE PAVEMENT
FOR END BENT 1

NORTH CAROLINA PROFESSIONAL SEAL 042890 ENGINEER PATRICK R. GALLAGHER
Docusigned by: Patrick R. Gallagher
8/22/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : EEM	3/95	REV. 6/13	MAA/GM
CHECKED BY : VAP	3/95	REV. 12/17	MAA/THC
		REV. 06/19	BNB/THC

DWN. BY: WDC	DATE: 3/22	
CHKD. BY: PRG	DATE: 3/22	
DES. EGR. OF RECORD: PRG	DATE: 3/22	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-48
1			3			TOTAL SHEETS
2			4			50

STD. NO. BAS2

gwpowell
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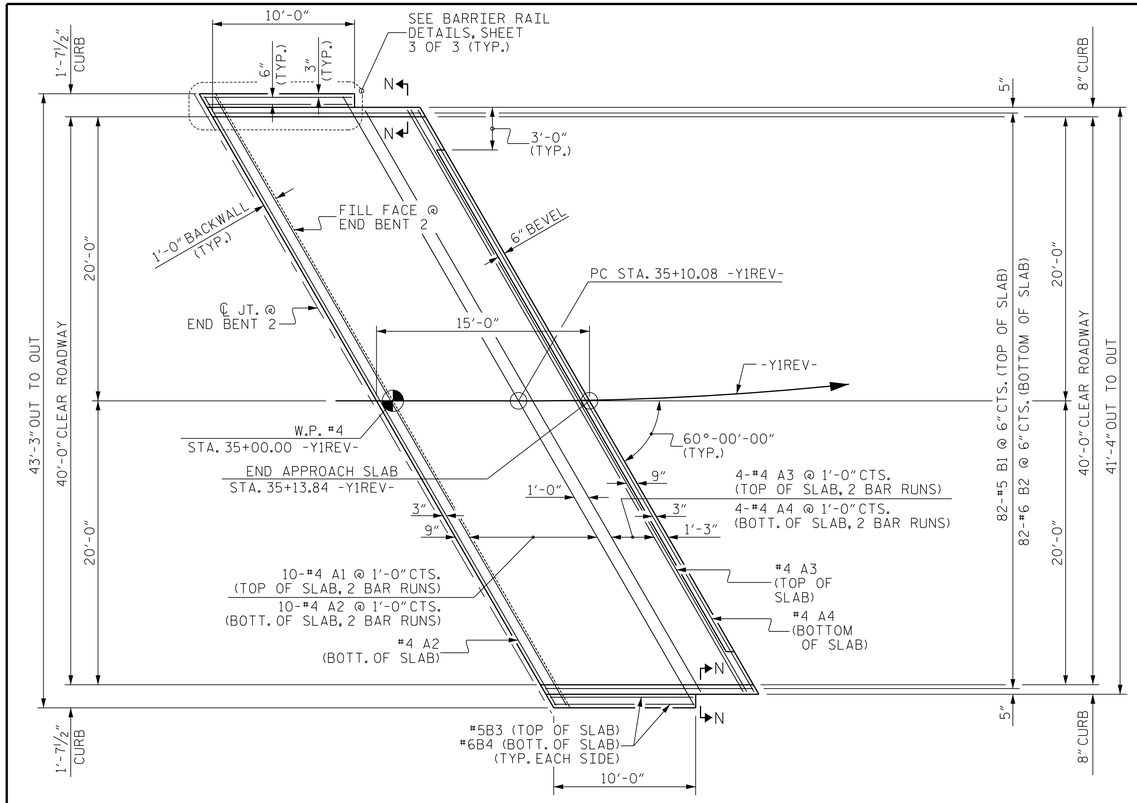
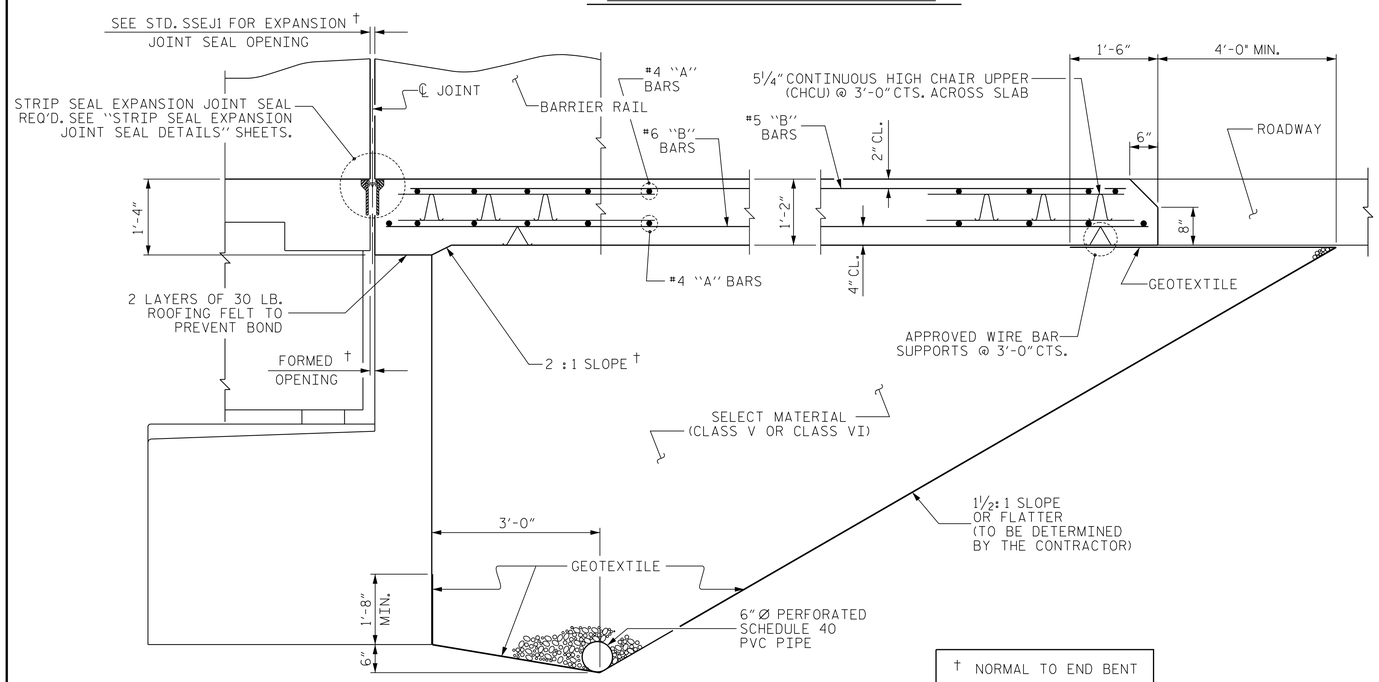


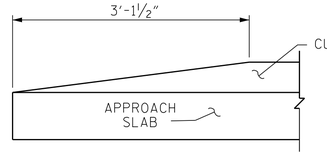
PLAN @ END BENT 2



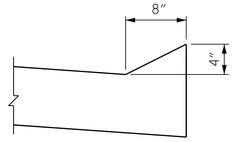
† NORMAL TO END BENT

SECTION THRU SLAB

(TYPE I - STANDARD APPROACH FILL)



END OF CURB WITHOUT SHOULDER BERM GUTTER



SECTION N-N

CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

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

SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

FOR THE 6" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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

FOR STRIP SEAL EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL

APPROACH SLAB @ END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	20	#4	STR	25'-9"	344
A2	22	#4	STR	25'-8"	377
* A3	10	#4	STR	24'-8"	165
A4	10	#4	STR	24'-7"	164
* B1	82	#5	STR	14'-2"	1,212
B2	82	#6	STR	14'-8"	1,806
* B3	4	#5	STR	9'-8"	40
B4	4	#6	STR	9'-8"	58

REINFORCING STEEL	2,405 LBS.
* EPOXY COATED REINFORCING STEEL	1,761 LBS.
CLASS AA CONCRETE	28.0 CU. YDS.

QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED. SEE SHEET 3 OF 3.

SPLICE LENGTHS

BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

Vaughn & Melton
Consulting Engineers
Raleigh, North Carolina 919-977-9455
Boone, NC 828-355-9933
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Knoxville, TN 865-546-5800
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Charleston, SC 843-974-5650
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New Bern, NC 252-631-515
Atlanta, GA 770-627-3509

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042890 PATRICK R. GALLAGHER
Digitally signed by: Patrick Ray Gallagher
DocuSigned by: 6/22/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

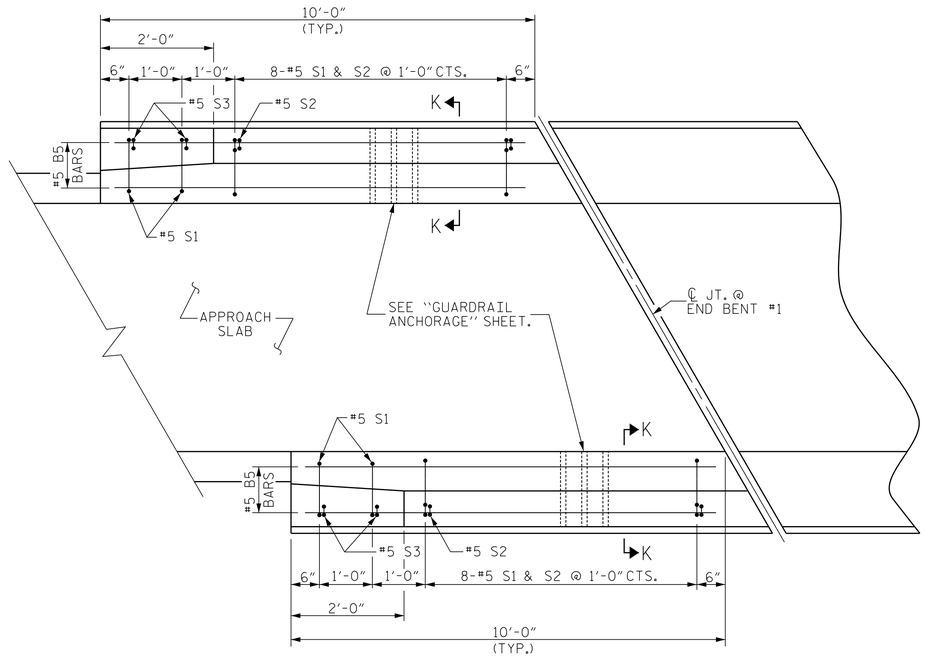
BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT FOR END BENT 2

DRAWN BY : EEM 3/95	REV. 6/13 MAA/GM
CHECKED BY : VAP 3/95	REV. 12/17 MAA/THC
	REV. 06/19 BNB/THC

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-49
1			3			TOTAL SHEETS
2			4			50

STD. NO. BAS2



PLAN OF BARRIER RAIL

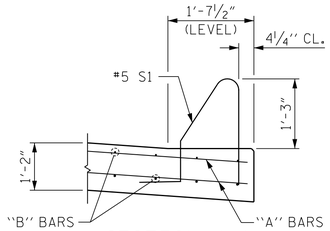
(END BENT #1 SHOWN, END BENT #2 SIMILAR)

NOTES

THE COST OF THE BARRIER RAIL ON THE APPROACH SLAB SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "CONCRETE BARRIER RAIL".

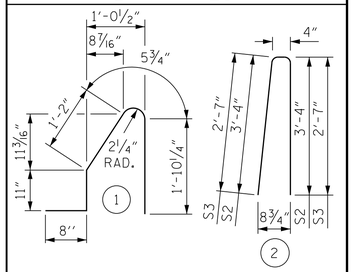
THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.



SECTION K-K

BAR TYPES

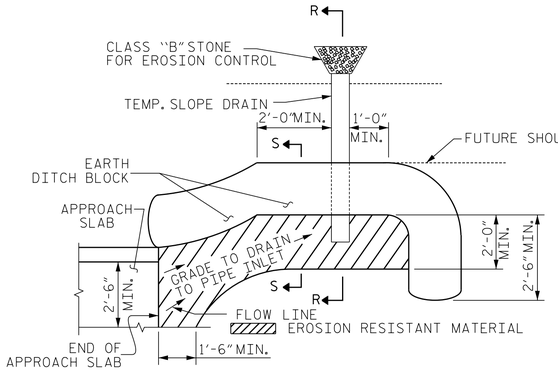


ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

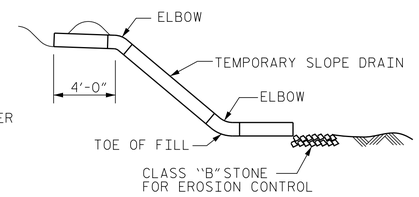
BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱B5	44	#5	STR	9'-8"	444
✱S1	40	#5	1	5'-1"	212
✱S2	32	#5	2	7'-0"	234
✱S3	8	#5	2	5'-6"	46
✱EPOXY COATED REINFORCING STEEL					936 LBS.
CLASS AA CONCRETE					11.0 C.Y.
CONCRETE BARRIER RAIL					40.0 LIN.FT.

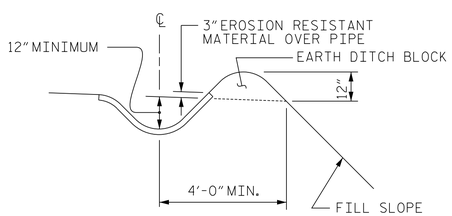


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

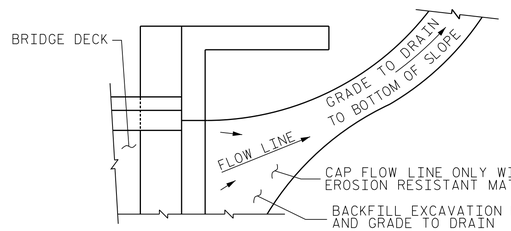
PLAN VIEW



SECTION R-R



SECTION S-S



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

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL
Digitally signed by: 042890
Patrick Ryan Gallagher
DocuSigned by: 3/22/2022
R. GALLAGHER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

V&M Vaughn & Melton
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Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Asheville, NC 828-253-2796
New Bern, NC 252-631-5115

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 30+69.44 -Y1-
31+06.88 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

DWN. BY: WDC	DATE: 3/22
CHKD. BY: PRG	DATE: 3/22
DES. EGR. OF RECORD: PRG	DATE: 3/22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-50
1			3			TOTAL SHEETS
2			4			50

STD. NO. BAS4

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" 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 ¼" 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 ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

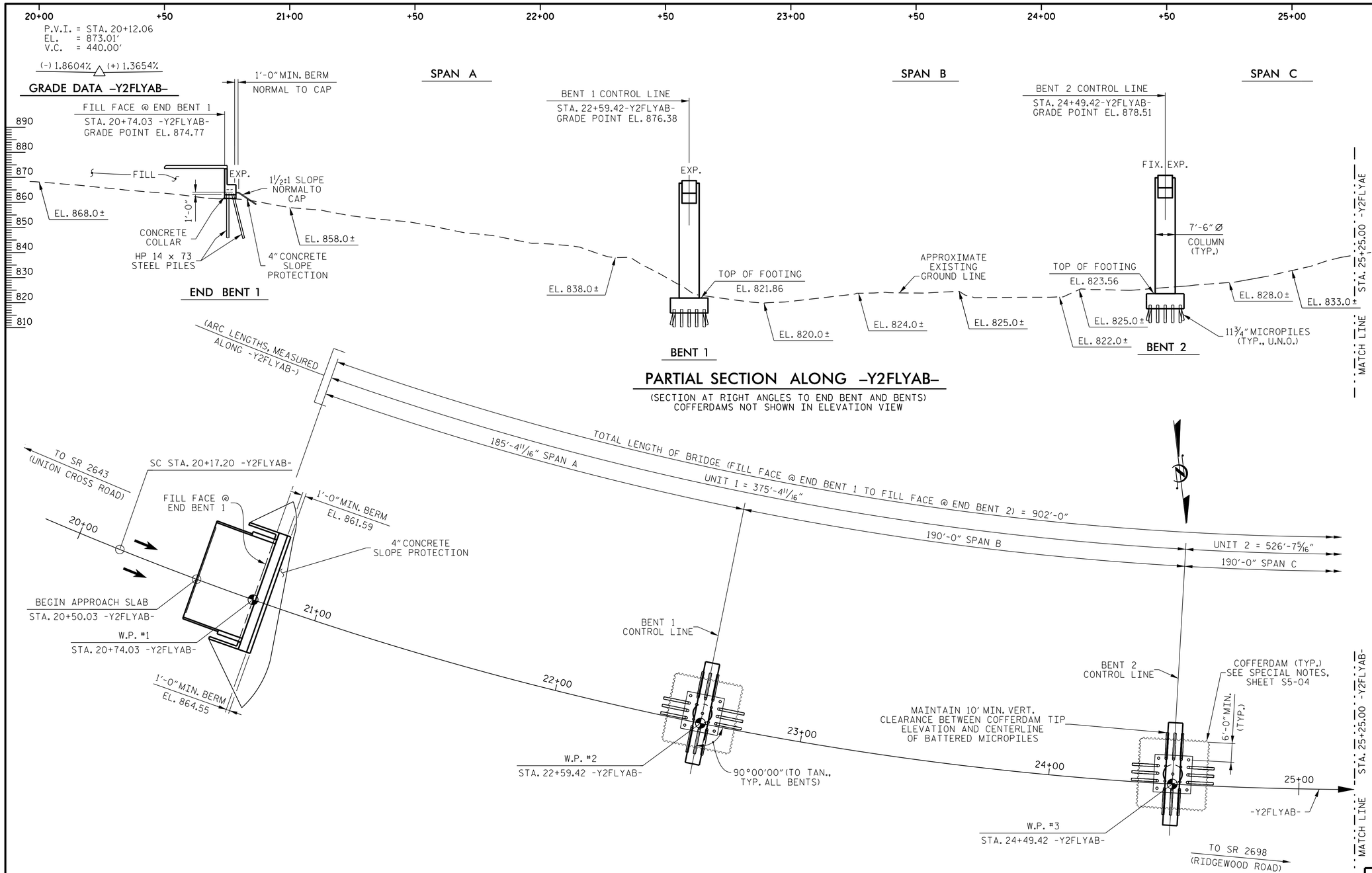
STD. NO. SN

REV. 6-16-95 EEM (✓) RGW
REV. 8-16-99 RWW (✓) LES
REV. 5-7-03 RWW (✓) JTE
REV. 5-1-06 TLA (✓) GM
REV. 10-1-11 MAA (✓) GM
REV. 12-17 MAA (✓) THC

F.A. PROJECT NO. 0074226

NOTES

FOR NOTES, SEE SHEET 7 OF 7.



HORIZONTAL CURVE DATA –Y2FLYAB–

PI STA. 25+18.52
△ = 41° 18' 21.6" (LT.)
D = 4° 18' 28.6"
L = 958.83'
T = 501.32'
R = 1,330.00'

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER
Docusigned by: Gregory Shafer E328BE5537384A7...
8/8/2022

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–
SHEET 1 OF 7 BRIDGE No. 330733

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER WINSTON-SALEM NORTHERN BELTWAY (–L–) ON US 311 NBL FLYOVER (–Y2FLYAB–) BETWEEN SR 2643 AND SR 2698

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-01
1			3			TOTAL SHEETS
2			4			84

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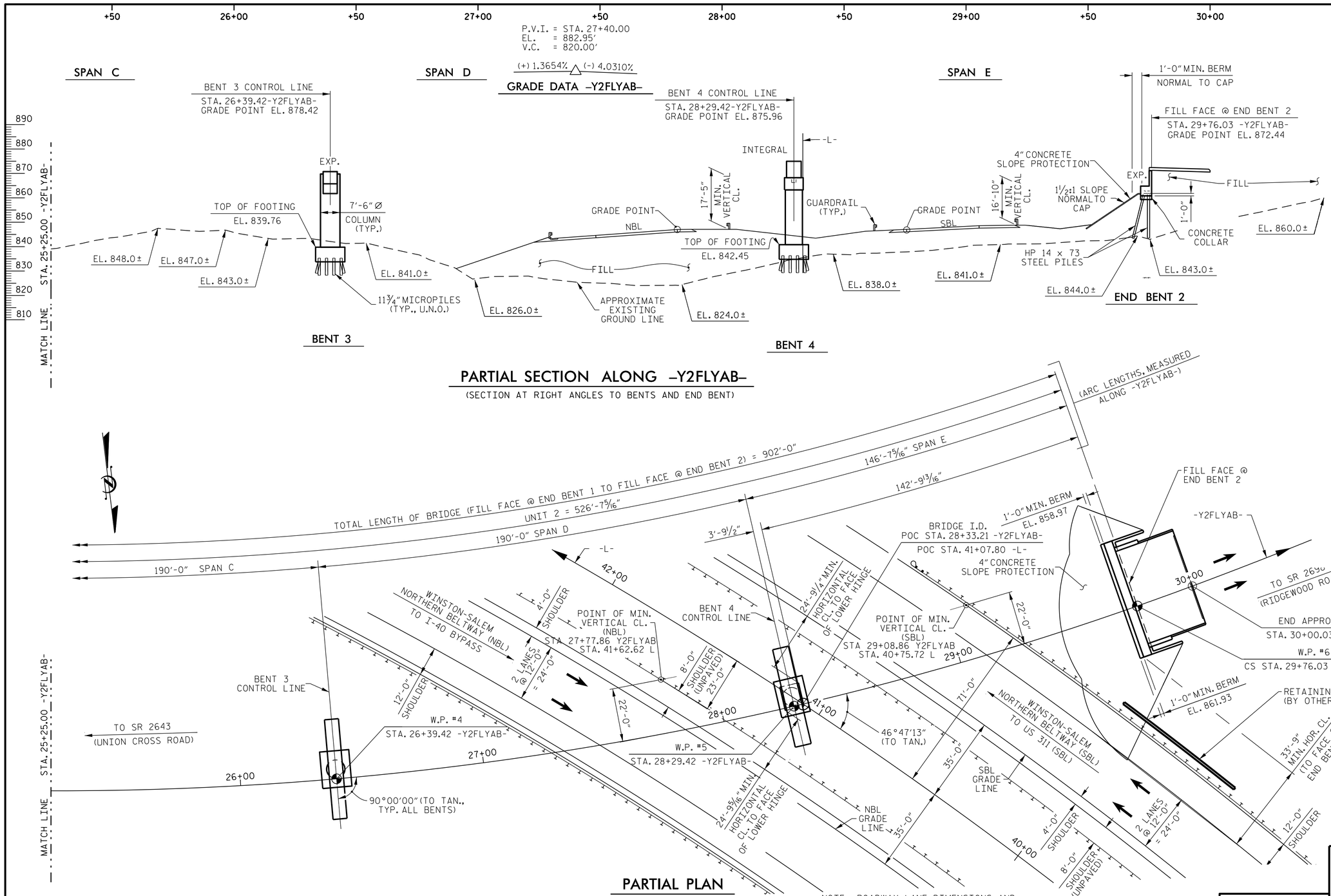

NOTES

FOR NOTES, SEE SHEET 7 OF 7.

PARTIAL SECTION ALONG –Y2FLYAB–

(SECTION AT RIGHT ANGLES TO BENTS AND END BENT)

PARTIAL PLAN

PILES NOT SHOWN IN PLAN VIEW.

NOTE: ROADWAY LANE DIMENSIONS AND OFFSETS ARE RADIAL TO -L-.

HORIZONTAL CURVE DATA Y2FLYAB–

PI STA. 25+18.52
△ = 41° 18' 21.6" (LT.)
D = 4° 18' 28.6"
L = 958.83'
T = 501.32'
R = 1,330.00'

PIs STA. 30+30.05
Θs = 3° 29' 22.0"
Ls = 162.00'
LT = 108.02'
ST = 54.02'

HORIZONTAL CURVE DATA –L–

PI STA. 38+52.35
△ = 102° 02' 03.1" (LT.)
D = 3° 09' 55.8"
L = 3,223.31'
T = 2,236.53'
R = 1,810.00'

GRADE DATA –L–

P.V.I. = STA. 49+68.13
EL. = 876.50'
V.C. = 560'
(+)3.4198% △ (+)1.1955%

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY H. SHAFFER
9/29/2022

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–
SHEET 2 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER WINSTON-SALEM NORTHERN BELTWAY (–L–) ON US 311 NBL FLYOVER (–Y2FLYAB–) BETWEEN SR 2643 AND SR 2698

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-02
1			3			TOTAL SHEETS
2			4			84

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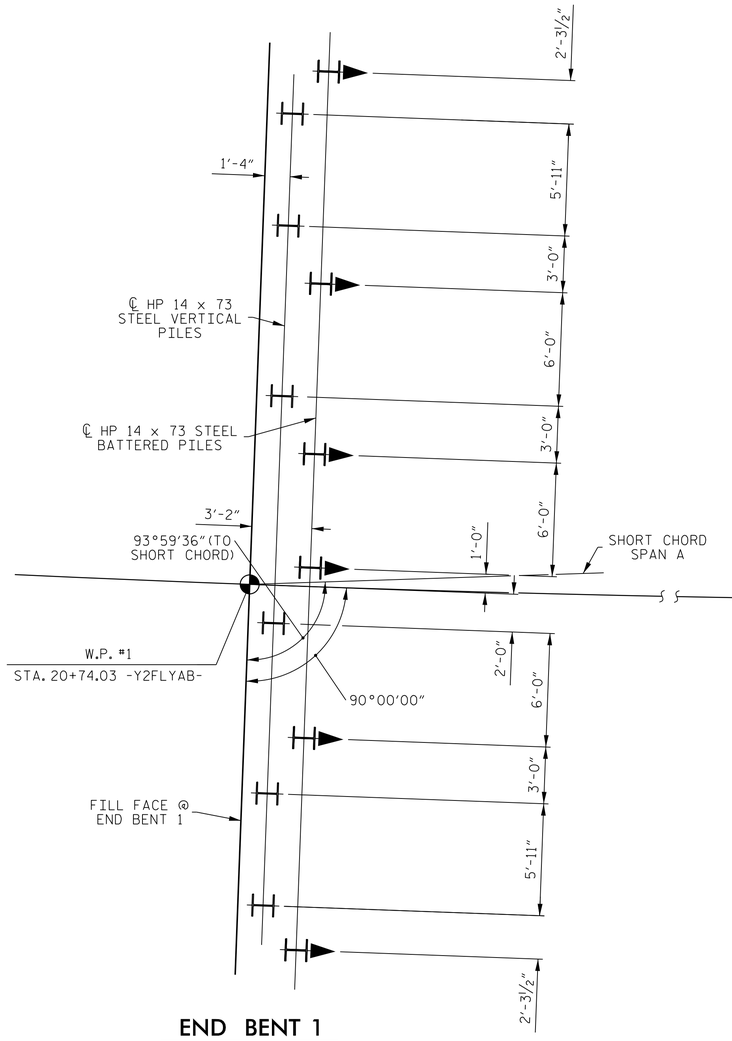
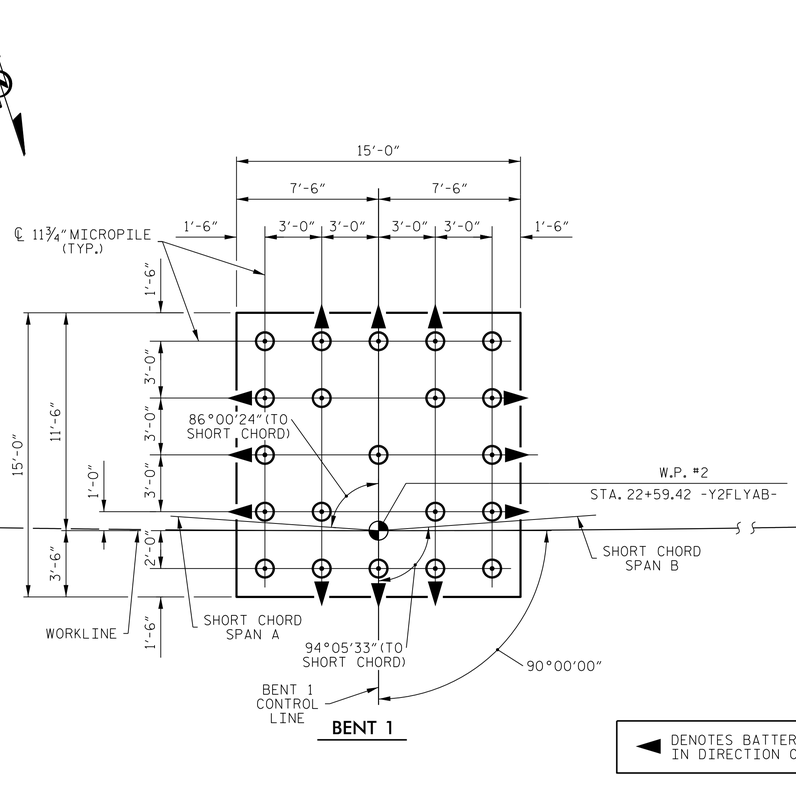


END BENT 1



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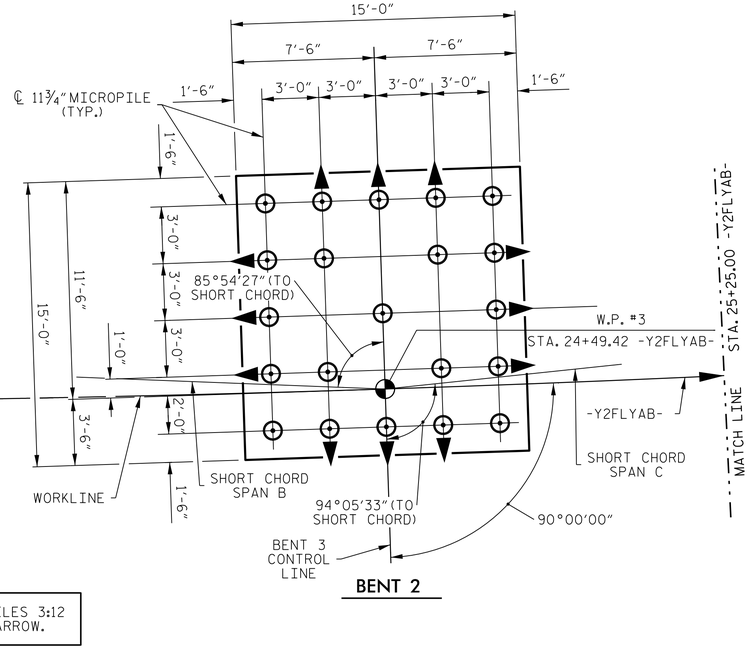

BENT 2

◀ DENOTES BATTER PILES 3:12 IN DIRECTION OF ARROW.

PARTIAL FOUNDATION LAYOUT

FOUNDATION RECOMMENDATION NOTES

1. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
2. PILES AT END BENT NO. 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 168 TONS PER PILE.
3. DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 280 TONS PER PILE.
4. FOR MICROPILES, SEE MICROPILES PROVISION.
5. USE PRIME DOMESTIC REINFORCING CASINGS WITH YIELD STRENGTHS OF AT LEAST 80 KSI AND A MINIMUM WALL THICKNESS OF 0.489 IN FOR MICROPILES AT BENT NOS. 1 THROUGH 4.
6. REINFORCING CASING FOR MICROPILES ARE TO BE INSTALLED TO A DEPTH OF 20 FT BELOW THE BOTTOM OF FOOTING ELEVATION. MINIMUM CASING LENGTH IS REQUIRED TO RESIST A LATERAL FACTORED LOAD OF 7 KIPS PER PILE. NO CASING JOINTS WILL BE LOCATED WITHIN 10 FEET BELOW BOTTOM OF FOOTING.
7. MICROPILE ESTIMATED LENGTHS ARE BASED ON NCDOT GEOTECHNICAL DESIGN ASSUMPTIONS AND IS FOR INFORMATION PURPOSES ONLY. CONTRACTOR TO VERIFY MICROPILE LENGTHS FOR ESTIMATING PURPOSES.
8. A MINIMUM OF ONE VERIFICATION TEST IS REQUIRED ON A DEMONSTRATION MICROPILE INSTALLED AT THE SITE. ADDITIONAL VERIFICATION TEST AND DEMONSTRATION PILES MAY BE REQUIRED TO VERIFY ALL GEOTECHNICAL DESIGN BOND ASSUMPTIONS. PERFORM VERIFICATION TEST ON DEMONSTRATION PILE NEAR BENT NO. 3. LOCATION OF DEMONSTRATION PILE IS TO BE APPROVED BY ENGINEER.
9. PROOF TESTING IS REQUIRED AT EACH BENT LOCATION.
10. DESIGN MICROPILES AT BENT NO. 1 FOR A FACTORED LOAD RESISTANCE OF 240 TONS/PILE AND 35 TONS/PILE UPLIFT RESISTANCE.
11. DESIGN MICROPILES AT BENT NO. 2 FOR A FACTORED LOAD RESISTANCE OF 240 TONS/PILE AND 90 TONS/PILE UPLIFT RESISTANCE.
12. DESIGN MICROPILES AT BENT NO. 3 FOR A FACTORED LOAD RESISTANCE OF 240 TONS/PILE AND 40 TONS/PILE UPLIFT RESISTANCE.
13. DESIGN MICROPILES AT BENT NO. 4 FOR A FACTORED LOAD RESISTANCE OF 240 TONS/PILE AND 70 TONS/PILE UPLIFT RESISTANCE.
14. PILES AT END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 135 TONS PER PILE.

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DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY H. SHAFER
9/29/2022

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-
SHEET 3 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER WINSTON-SALEM NORTHERN BELTWAY (-L-) ON US 311 NBL FLYOVER (-Y2FLYAB-) BETWEEN SR 2643 AND SR 2698

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-03
1			3			TOTAL SHEETS
2			4			84

PARTIAL FOUNDATION LAYOUT

FOUNDATION RECOMMENDATION NOTES (CONTINUED)

15. DRIVE PILES AT END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 225 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG.
16. TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING AT END BENT NO. 2 MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
17. OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
18. IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 50,000 ~ 70,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO. 1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

SPECIAL NOTES

1. COFFERDAMS ARE REQUIRED TO PERFORM THE FOUNDATION EXCAVATION AT BENT NOS. 1 AND 2 DUE TO HIGH GROUNDWATER ELEVATIONS AT THESE LOCATIONS. FOR COFFERDAMS, SEE SECTION 410 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER WINSTON-SALEM NORTHERN BELTWAY (-L-) ON US 311 NBL FLYOVER (-Y2FLYAB-) BETWEEN SR 2643 AND SR 2698

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY H. SHAFER
9/29/2022

PLANS PREPARED BY:
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5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS

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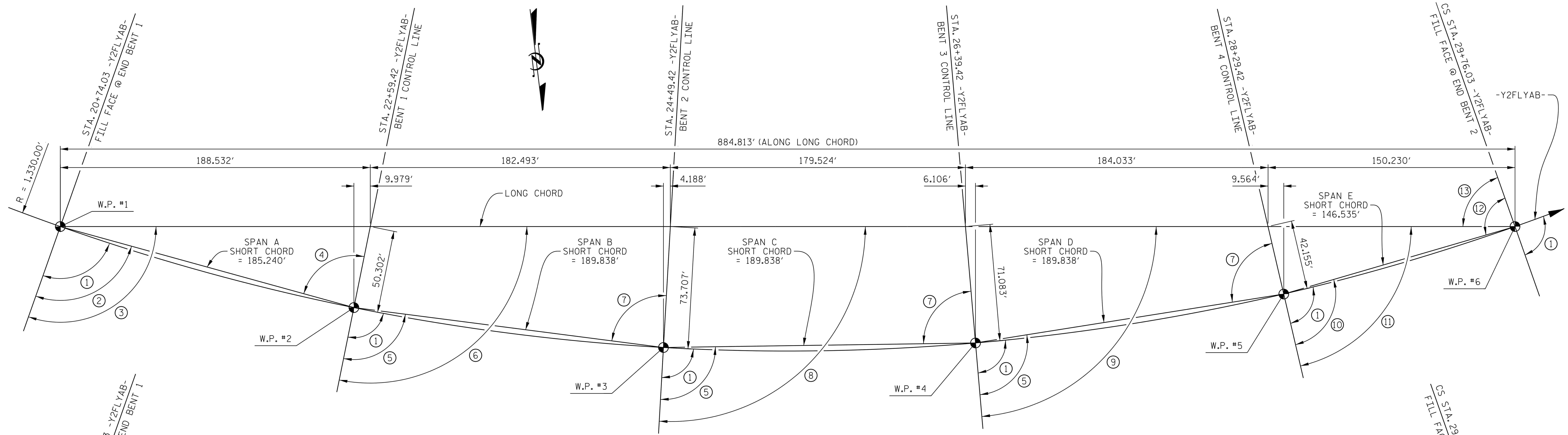
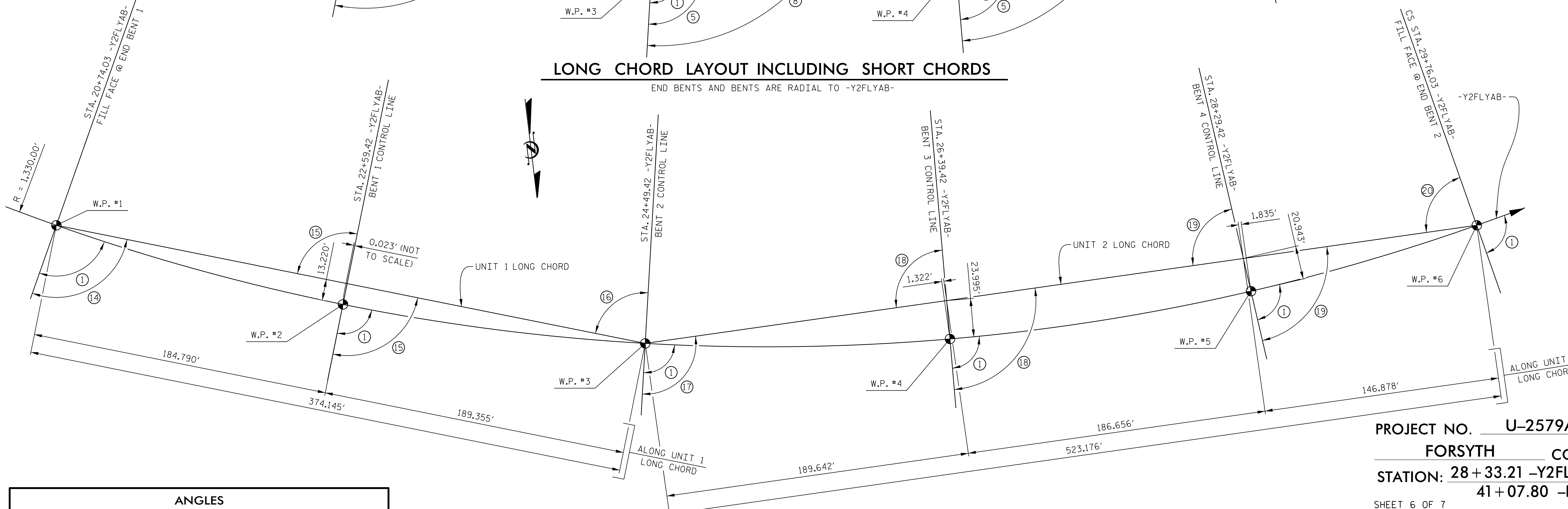
2			4		

SHEET No. S5-04
TOTAL SHEETS 84



LONG CHORD LAYOUT INCLUDING SHORT CHORDS

END BENTS AND BENTS ARE RADIAL TO -Y2FLYAB-



UNIT LONG CHORD LAYOUT

END BENTS AND BENTS ARE RADIAL TO -Y2FLYAB-

ANGLES

1	90°00′00″ (TANGENT TO CURVE)	11	76°53′13″
2	93°59′36″	12	86°50′31″
3	109°25′44″	13	70°34′16″
4	86°00′24″	14	98°05′09″
5	94°05′33″	15	90°05′57″
6	101°26′32″	16	81°54′51″
7	85°54′27″	17	101°20′35″
8	93°15′26″	18	93°09′29″
9	85°04′20″	19	84°58′22″
10	93°09′29″	20	78°39′25″

HORIZONTAL CURVE DATA -Y2FLYAB-

PI STA. 25+18.52	PIs STA. 30+30.05
Δ = 41°18′21.6″ (LT.)	Θs = 3°29′22.0″
D = 4°18′28.6″	Ls = 162.00′
L = 958.83′	LT = 108.02′
T = 501.32′	ST = 54.02′
R = 1,330.00′	

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 6 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER WINSTON-SALEM NORTHERN BELTWAY (-L-) ON US 311 NBL FLYOVER (-Y2FLYAB-) BETWEEN SR 2643 AND SR 2698

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033698 JOSHUA B. TAYLOR
9/27/2021

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : J. CAYETANO	DATE :	
CHECKED BY : J. B. TAYLOR	DATE :	
DESIGN ENGINEER : J. B. TAYLOR	DATE :	

REVISIONS

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

SHEET No. S5-06
TOTAL SHEETS 84

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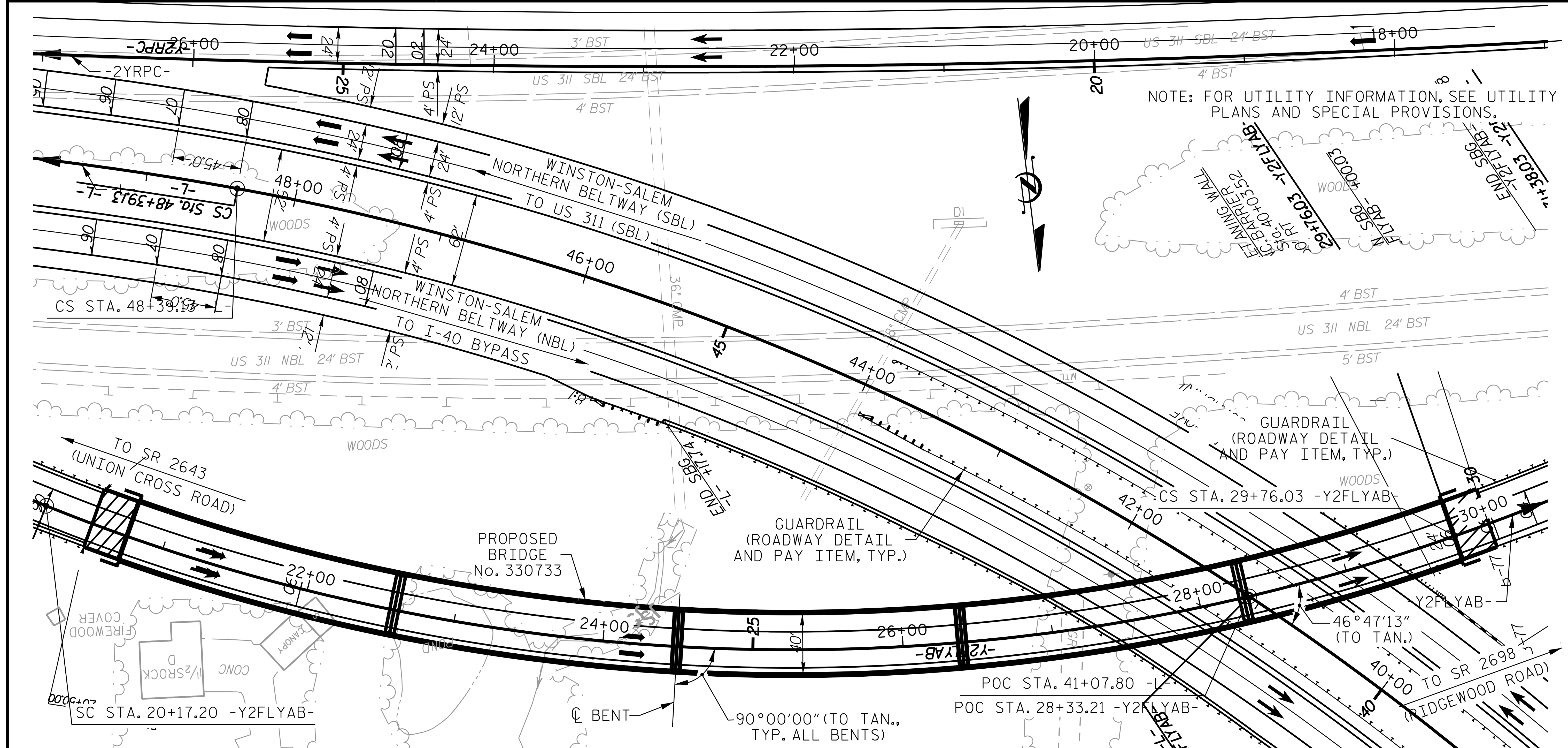

LOCATION SKETCH

TOTAL BILL OF MATERIAL

	FOUNDATION EXCAVATION AT BENT	PDA TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	APPROX. 2,099,664 LBS STRUCTURAL STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP14x73	HP14X73 STEEL PILES	
	LUMP SUM	EA.	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	LUMP SUM	EA.	NO.	LIN. FT.
SUPERSTRUCTURE			38,784	34,851		LUMP SUM			LUMP SUM			
END BENT 1					61.3		10,034			12	12	660
BENT 1	LUMP SUM				184.8		44,459	2,173				
BENT 2	LUMP SUM				185.8		49,135	2,198				
BENT 3	LUMP SUM				148.9		37,318	1,226				
BENT 4					71.6		36,733	1,211				
END BENT 2					61.4		10,062			12	12	480
TOTAL	LUMP SUM	1	38,784	34,851	713.8	LUMP SUM	187,741	6,808	LUMP SUM	24	24	1,140

	CONCRETE BARRIER RAIL
	LIN. FT.
SUPERSTRUCTURE	1,834.2
END BENT 1	
BENT 1	
BENT 2	
BENT 3	
BENT 4	
END BENT 2	
TOTAL	1,834.2

	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS	PT TENDONS	PT ENCASEMENT	6000 PSI CONCRETE	11.75" DIA. MICROPILES	DEMONSTRATION PILE	VERIFICATION TESTS	PROOF TESTS
	SQ. YD.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	CU. YDS.	EA.	EA.	EA.	EA.
SUPERSTRUCTURE		LUMP SUM	LUMP SUM							
END BENT 1	100									
BENT 1							21			1
BENT 2							21			1
BENT 3							20	1	1	1
BENT 4				LUMP SUM	LUMP SUM	75.2	20			1
END BENT 2	300									
TOTAL	400	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	75.2	82	1	1	8 *

* ONE PROOF TEST IS REQUIRED FOR EACH BENT, PLUS 4 ADDITIONAL CONTINGENCY AS NEEDED

SAMPLE BAR REPLACEMENT	
SIZE	LENGTH
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

NOTE:
SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND f_y = 60KSI.

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR TEMPORARY BENTS, SEE SPECIAL PROVISIONS.

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.

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR POST TENSIONING TENDONS, SEE SPECIAL PROVISIONS.

FOR 6000 PSI CONCRETE, SEE SPECIAL PROVISIONS.

FOR MASS CONCRETE, SEE SPECIAL PROVISIONS. BENTS 1, 2, 3 AND 4 INCLUDE MASS CONCRETE.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 5 OR SYSTEM 6 OF ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

FOR EROSION CONTROLS, SEE EROSION CONTROL PLANS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS (360,000 KG) OF REINFORCING STEEL, ONE 30 INCH (760 MM) SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS (360,000 KG) OF REINFORCING STEEL, TWO 30 INCH (760 MM) SAMPLES OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE SLAB.

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 7 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER WINSTON-SALEM NORTHERN BELTWAY (-L-) ON US 311 NBL FLYOVER (-Y2FLYAB-) BETWEEN SR 2643 AND SR 2698

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034539 GREGORY H. SHAFER
9/29/2022

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

REVISIONS							
No.	BY:	DATE:		No.	BY:	DATE:	
1				3			
2				4			

SHEET No. S5-07
TOTAL SHEETS 84

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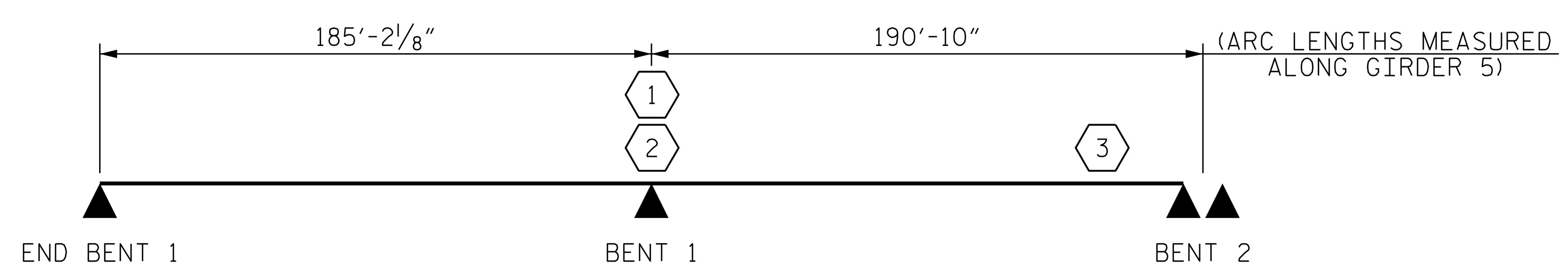
LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR STEEL GIRDERS

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE											SERVICE II 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 (INVENTORY)	N/A	1	1.23	--	1.75	--	1.23	B	ER	0.00	--	1.48	B	ER	190.82	1.30	--	1.80	B	ER	114.49	
		HL-93 (OPERATING)	N/A		1.59	--	1.35	--	1.59	B	ER	0.00	--	1.92	B	ER	190.82	1.00	--	2.34	B	ER	114.49	
		HS-20 (INVENTORY)	36.000	2	2.83	101.88	1.75	--	2.95	B	ER	114.49	--	2.83	B	ER	190.82	1.30	--	5.45	B	ER	114.49	
		HS-20 (OPERATING)	36.000		3.67	132.12	1.35	--	3.82	B	ER	114.49	--	3.67	B	ER	190.82	1.00	--	5.45	B	ER	114.49	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	12.500		4.38	54.75	1.40	--	4.60	B	ER	114.49	--	4.38	B	ER	190.82	1.30	--	6.81	B	ER	114.49	
		S3C	21.500		5.76	123.84	1.40	--	5.76	B	ER	114.49	--	5.91	B	ER	190.82	1.30	--	8.53	B	ER	114.49	
		S3A	22.750		5.46	124.22	1.40	--	5.46	B	ER	114.49	--	5.57	B	ER	190.82	1.30	--	8.07	B	ER	114.49	
		S4A	26.750		4.73	126.53	1.40	--	4.73	B	ER	114.49	--	4.85	B	ER	190.82	1.30	--	7.00	B	ER	114.49	
		S5A	30.500		4.20	128.10	1.40	--	4.20	B	ER	114.49	--	4.31	B	ER	190.82	1.30	--	6.21	B	ER	114.49	
		S6A	34.500		3.78	130.41	1.40	--	3.78	B	ER	114.49	--	3.92	B	ER	190.82	1.30	--	5.59	B	ER	114.49	
		S7A	40.000	3	3.33	133.20	1.40	--	3.33	B	ER	114.49	--	3.44	B	ER	190.82	1.30	--	4.93	B	ER	114.49	
		S7B	38.500		3.39	130.52	1.40	--	3.39	B	ER	114.49	--	3.58	B	ER	190.82	1.30	--	5.01	B	ER	114.49	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250		4.58	129.39	1.40	--	4.58	B	ER	114.49	--	4.67	B	ER	190.82	1.30	--	6.77	B	ER	114.49	
		T5B	32.000		4.07	130.24	1.40	--	4.07	B	ER	114.49	--	4.19	B	ER	190.82	1.30	--	6.03	B	ER	114.49	
		T6A	36.000		3.66	131.76	1.40	--	3.66	B	ER	114.49	--	3.95	B	ER	190.82	1.30	--	5.41	B	ER	114.49	
		T7A	40.000		3.36	134.40	1.40	--	3.36	B	ER	114.49	--	3.47	B	ER	190.82	1.30	--	4.97	B	ER	114.49	
		T7B	40.000		3.35	134.00	1.40	--	3.44	B	ER	114.49	--	3.35	A	ER	148.12	1.30	--	5.08	B	ER	114.49	
		HL-93 (INVENTORY)	γ_{LL}=0.75	--	--																			



LRFR SUMMARY

LOAD FACTORS:

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

NOTES:

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

ALLOWABLE STRESS FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

THE ORIGINAL DESIGN AND RATING OF THIS BRIDGE WERE BASED ON AN INFLUENCE SURFACE ANALYSIS. LIVE LOAD DISTRIBUTION FACTORS WERE NOT USED AND ARE NOT PROVIDED.

DISTANCE FROM LEFT END OF SPAN GIVEN WITH RESPECT TO CENTERLINE OF BEARING LOCATIONS.

FATIGUE RATING IS NOT REQUIRED OR REPORTED SINCE GIRDER DESIGN DOES NOT INCLUDE FATIGUE-PRONE DETAILS.

COMMENTS:

1.
2.
3.
4.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93) ✱✱

(2) DESIGN LOAD RATING (HS-20) ✱✱

(3) LEGAL LOAD RATING ✱✱

✱✱ SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR STEEL GIRDERS (INTERSTATE TRAFFIC) (UNIT 1)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033698 JOSHUA B. TAYLOR
9/27/2021

PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS

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

SHEET No. S5-08
TOTAL SHEETS 84

STD. NO. LRFR4

ASSEMBLED BY : DATE :
CHECKED BY : DATE :
DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08
REV. 11/12/08RR MAA/GM
REV. 10/1/11 MAA/GM
REV. 12/17 MAA/THC

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LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR STEEL GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE: LIVE-LOAD FACTORS (γ_{LL})	STRENGTH I MOMENT: DISTRIBUTION FACTORS (DF)	STRENGTH I MOMENT: RATING FACTOR	STRENGTH I MOMENT: SPAN	STRENGTH I MOMENT: GIRDER LOCATION	STRENGTH I MOMENT: DISTANCE FROM LEFT END OF SPAN (ft)	STRENGTH I SHEAR: DISTRIBUTION FACTORS (DF)	STRENGTH I SHEAR: RATING FACTOR	STRENGTH I SHEAR: SPAN	STRENGTH I SHEAR: GIRDER LOCATION	STRENGTH I SHEAR: DISTANCE FROM LEFT END OF SPAN (ft)	SERVICE II LIMIT STATE: LIVE-LOAD FACTORS (γ_{LL})	SERVICE II MOMENT: DISTRIBUTION FACTORS (DF)	SERVICE II MOMENT: RATING FACTOR	SERVICE II MOMENT: SPAN	SERVICE II MOMENT: GIRDER LOCATION	SERVICE II MOMENT: DISTANCE FROM LEFT END OF SPAN (ft)	COMMENT NUMBER
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.24	--	1.75	--	1.24	C	ER	76.33	--	1.43	C	ER	0.00	1.30	--	1.81	C	ER	76.33	
DESIGN LOAD RATING	HL-93 (OPERATING)	N/A		1.60	--	1.35	--	1.60	C	ER	76.33	--	1.86	C	ER	0.00	1.00	--	2.35	C	ER	76.33	
DESIGN LOAD RATING	HS-20 (INVENTORY)	36.000	2	2.73	98.28	1.75	--	2.92	C	ER	76.33	--	2.73	C	ER	0.00	1.30	--	5.55	C	ER	76.33	
DESIGN LOAD RATING	HS-20 (OPERATING)	36.000		3.54	127.44	1.35	--	3.79	C	ER	76.33	--	3.54	C	ER	0.00	1.00	--	5.55	C	ER	76.33	
LEGAL LOAD RATING – SINGLE VEHICLE (SV)	SH	12.500		4.23	52.88	1.40	--	4.56	C	ER	76.33	--	4.23	C	ER	0.00	1.30	--	6.94	C	ER	76.33	
LEGAL LOAD RATING – SINGLE VEHICLE (SV)	S3C	21.500		5.39	115.89	1.40	--	5.70	C	ER	76.33	--	5.39	C	ER	0.00	1.30	--	8.67	C	ER	76.33	
LEGAL LOAD RATING – SINGLE VEHICLE (SV)	S3A	22.750		5.11	116.25	1.40	--	5.40	C	ER	76.33	--	5.11	C	ER	0.00	1.30	--	8.21	C	ER	76.33	
LEGAL LOAD RATING – SINGLE VEHICLE (SV)	S4A	26.750		4.68	125.19	1.40	--	4.68	C	ER	76.33	--	4.69	C	ER	0.00	1.30	--	7.12	C	ER	76.33	
LEGAL LOAD RATING – SINGLE VEHICLE (SV)	S5A	30.500		4.16	126.88	1.40	--	4.16	C	ER	76.33	--	4.16	C	ER	0.00	1.30	--	6.32	C	ER	76.33	
LEGAL LOAD RATING – SINGLE VEHICLE (SV)	S6A	34.500		3.74	129.03	1.40	--	3.74	C	ER	76.33	--	3.79	C	ER	0.00	1.30	--	5.69	C	ER	76.33	
LEGAL LOAD RATING – SINGLE VEHICLE (SV)	S7A	40.000	3	3.27	130.80	1.40	--	3.27	C	ER	76.33	--	3.33	C	ER	0.00	1.30	--	4.98	C	ER	76.33	
LEGAL LOAD RATING – SINGLE VEHICLE (SV)	S7B	38.500		3.31	127.44	1.40	--	3.35	C	ER	76.33	--	3.31	C	ER	0.00	1.30	--	5.09	C	ER	76.33	
LEGAL LOAD RATING – TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250		4.52	127.69	1.40	--	4.53	C	ER	76.33	--	4.52	C	ER	0.00	1.30	--	6.89	C	ER	76.33	
LEGAL LOAD RATING – TRUCK TRACTOR SEMI-TRAILER (TTST)	T5B	32.000		3.96	126.72	1.40	--	4.04	C	ER	76.33	--	3.96	C	ER	0.00	1.30	--	6.14	C	ER	76.33	
LEGAL LOAD RATING – TRUCK TRACTOR SEMI-TRAILER (TTST)	T6A	36.000		3.62	130.32	1.40	--	3.62	C	ER	76.33	--	3.66	C	ER	0.00	1.30	--	5.51	C	ER	76.33	
LEGAL LOAD RATING – TRUCK TRACTOR SEMI-TRAILER (TTST)	T7A	40.000		3.33	133.20	1.40	--	3.33	C	ER	76.33	--	3.36	C	ER	0.00	1.30	--	5.07	C	ER	76.33	
LEGAL LOAD RATING – TRUCK TRACTOR SEMI-TRAILER (TTST)	T7B	40.000		3.37	134.80	1.40	--	3.41	C	ER	76.33	--	3.37	C	ER	0.00	1.30	--	5.18	C	ER	76.33	
	HL-93 (INVENTORY)	γ_{LL}=0.75	--	--																			

LOAD FACTORS:

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

NOTES:

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

ALLOWABLE STRESS FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

THE ORIGINAL DESIGN AND RATING OF THIS BRIDGE WERE BASED ON AN INFLUENCE SURFACE ANALYSIS. LIVE LOAD DISTRIBUTION FACTORS WERE NOT USED AND ARE NOT PROVIDED.

DISTANCE FROM LEFT END OF SPAN GIVEN WITH RESPECT TO CENTERLINE OF BEARING LOCATIONS.

FATIGUE RATING IS NOT REQUIRED OR REPORTED SINCE GIRDER DESIGN DOES NOT INCLUDE FATIGUE-PRONE DETAILS.

COMMENTS:

1.

2.

3.

4.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93) ∗∗

(2) DESIGN LOAD RATING (HS-20) ∗∗

(3) LEGAL LOAD RATING ∗∗

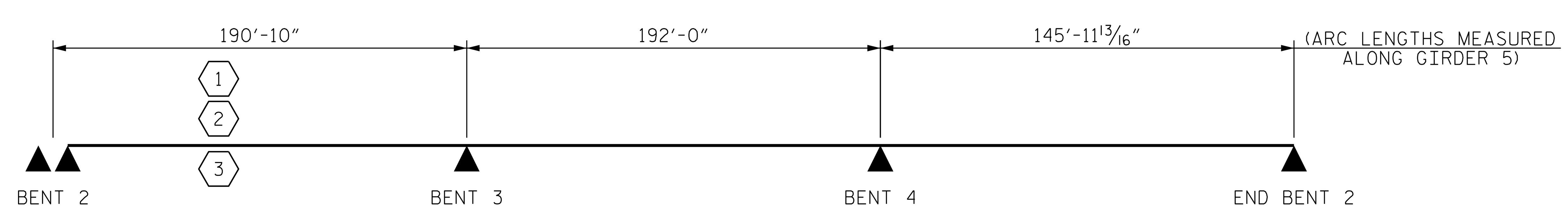
∗∗ SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER

EL - EXTERIOR LEFT GIRDER

ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR STEEL GIRDERS (INTERSTATE TRAFFIC) (UNIT 2)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033698 JOSHUA B. TAYLOR 9/27/2021

PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY: J. CAYETANO DATE: 9-21
CHECKED BY: J. B. TAYLOR DATE: 9-21
DESIGN ENGINEER: J. B. TAYLOR DATE: 9-21

REVISIONS No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		

SHEET No. S5-09
TOTAL SHEETS 84

STD. NO. LRFR4

ASSEMBLED BY: DATE:
CHECKED BY: DATE:
DRAWN BY: MAA 1/08
CHECKED BY: GM/DI 2/08
REV. 11/12/08RR MAA/GM
REV. 10/1/11 MAA/GM
REV. 12/17 MAA/THC

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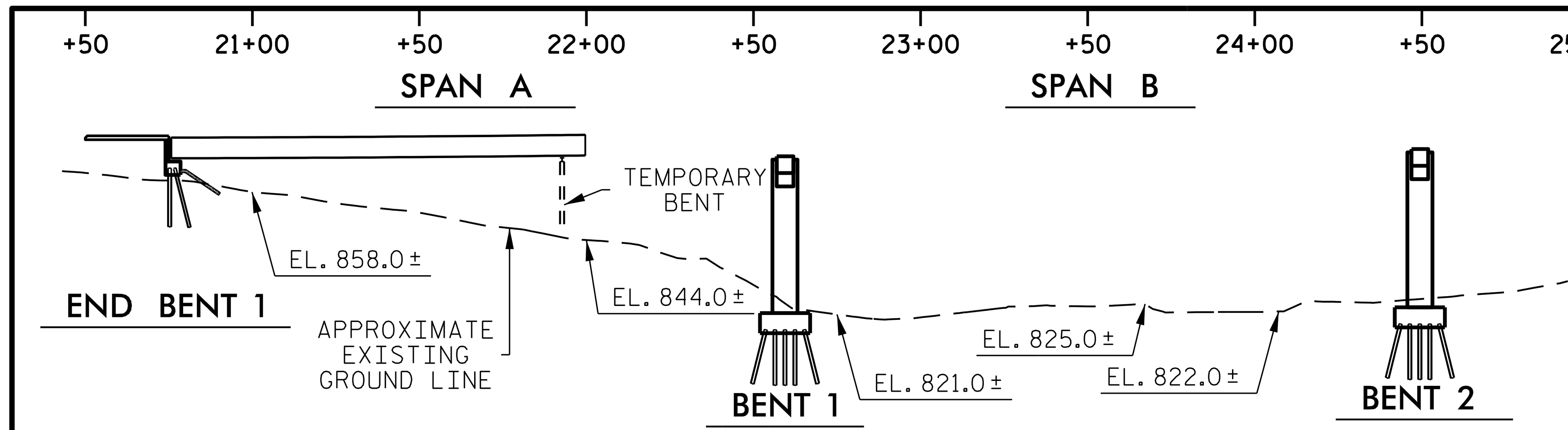
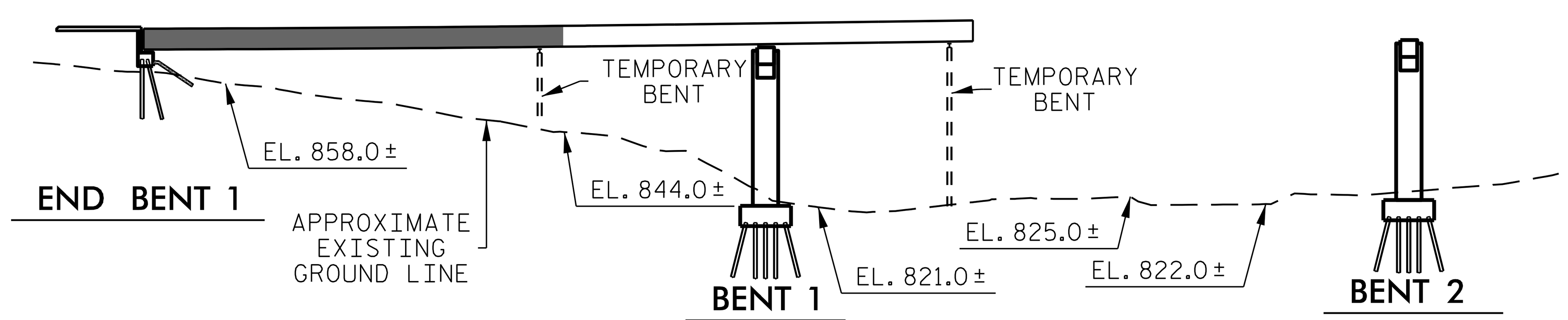
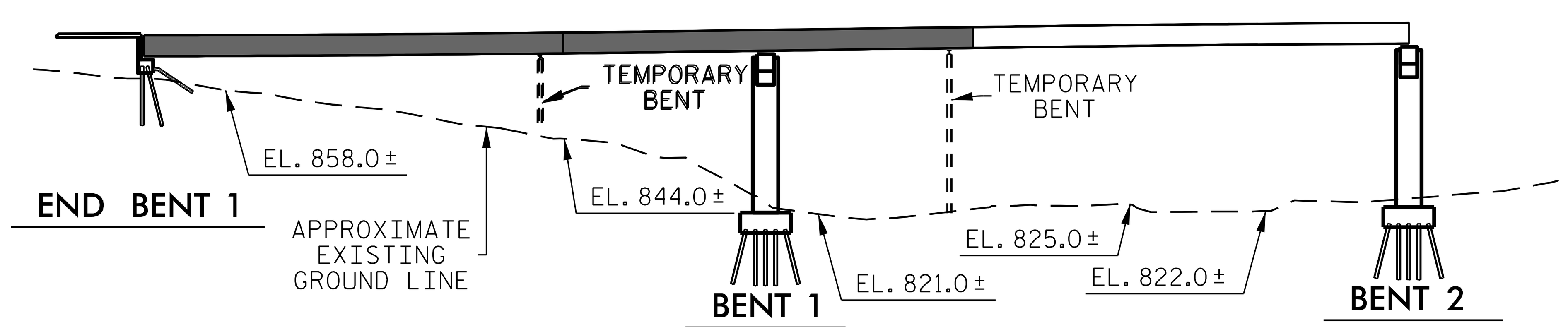


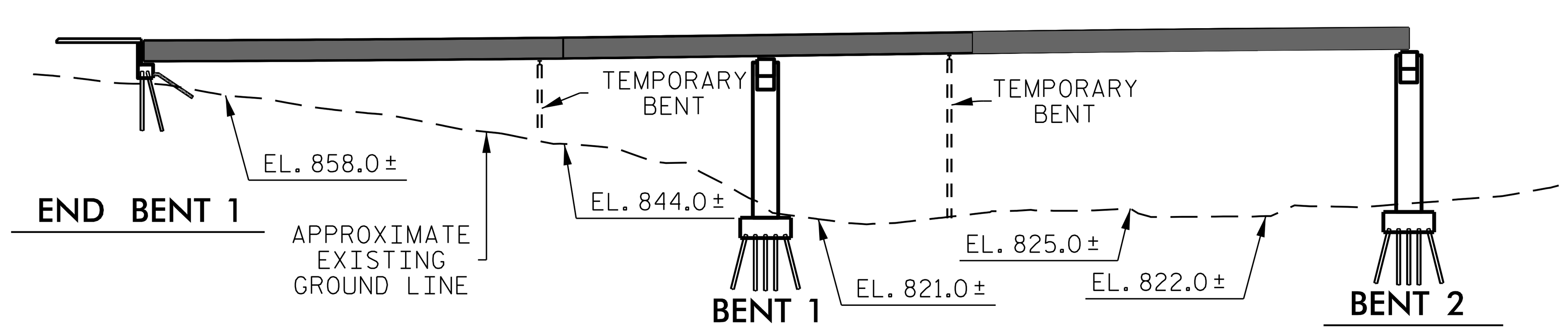
UNIT 1 STEP 1 GIRDER ERECTION



UNIT 1 STEP 2 GIRDER ERECTION



UNIT 1 STEP 3 GIRDER ERECTION



UNIT 1 STEP 4 GIRDER ERECTION

ERECTION NOTES

ERECT A MINIMUM OF TWO GIRDERS WITH ALL DIAPHRAGMS/ CROSSFRAMES BETWEEN THE GIRDERS IN PLACE AND THE BOLTS TIGHTENED PRIOR TO RELEASING THE GIRDERS, FOR THE FIRST PICK OF EACH SECTION.

ERECT EACH SUBSEQUENT GIRDER WITH DIAPHRAGMS/ CROSSFRAMES CONNECTING TO THE ADJACENT PREVIOUSLY ERECTED GIRDER AND TIGHTEN ALL BOLTS BEFORE RELEASING.

THE STRUCTURAL STEEL SHALL REMAIN SUPPORTED DURING ERECTION IN ITS CAMBERED POSITION. TEMPORARY BENTS AS SHOWN SHALL BE USED.

TEMPORARY BENTS LOCATED BETWEEN PERMANENT BENTS SHALL REMAIN IN PLACE UNTIL ALL DIAPHRAGMS/CROSSFRAMES ARE IN PLACE AND ALL HIGH STRENGTH BOLTS ARE TIGHTENED.

TEMPORARY BENT LOCATED AT INTEGRAL BENT 4 SHALL REMAIN IN PLACE UNTIL INTEGRAL CAP IS CONSTRUCTED. SEE "SCHEMATIC SEQUENCE OF CONSTRUCTION AND NOTES, INTEGRAL BENT 4".

TEMPORARY BENTS SHALL PROVIDE BEARING AT CONNECTOR PLATE LOCATIONS. WHEN CONNECTOR PLATES ARE USED AS TEMPORARY BEARING STIFFENERS, DIAPHRAGMS MUST BE ATTACHED.

THE CONTRACTOR'S ERECTION PLANS SHALL INCLUDE A METHOD OF TEMPORARY SUPPORT REMOVAL THAT WILL UNIFORMLY TRANSFER THE STRUCTURAL WEIGHT TO THE DIAPHRAGMS/ CROSSFRAMES AND THE GIRDERS WILL REMAIN IN THE CAMBERED POSITIONS. PLANS FOR TEMPORARY BENT ERECTION AND REMOVAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING THE TEMPORARY BENTS. THE DESIGN SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA. THE CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WORKING DRAWINGS AND CALCULATIONS FOR APPROVAL BY THE ENGINEER.

DURING GIRDER ERECTION PROCEDURE, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY LATERAL BRACING AND OTHER MEANS OF SUPPORT, AS REQUIRED TO ENSURE STABILITY OF THE GIRDERS, AVOID UPLIFT OF THE GIRDERS AND TEMPORARY SUPPORTS AND TO ENSURE PLUMBNESS OF THE GIRDERS IN THE FINAL POSITION.

NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR PROVIDING THE TEMPORARY BENTS, TEMPORARY LATERAL BRACING OR OTHER MEANS OF SUPPORT. THE COST FOR ALL MATERIALS, EQUIPMENT, TOOLS, LABOR AND ANY INCIDENTALS NECESSARY TO PROVIDE THE TEMPORARY SUPPORTS SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM BID PRICE FOR STRUCTURAL STEEL.

THE CONTRACTOR IS ADVISED THAT THE EXISTING GROUND UNDER THE PROPOSED BRIDGE MAY HAVE STEEP SLOPES AND/OR HEAVY VEGETATION.

THE CONTRACTOR MAY SUBMIT AN ALTERNATE ERECTION METHOD TO THE ENGINEER FOR REVIEW AND APPROVAL.

FOR TEMPORARY BENTS, SEE SPECIAL PROVISIONS.

FOR TEMPORARY FALSEWORK, SEE POST-TENSIONING SPECIAL PROVISION.

PLANS FOR TEMPORARY BENT AND INTEGRAL BENT CAP FALSEWORK ERECTION AND REMOVAL SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 -Y2FLYAB-
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SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONSTRUCTION SEQUENCE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY M. SHAFER
8/8/2022

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

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SHEET No. S5-10
TOTAL SHEETS 84

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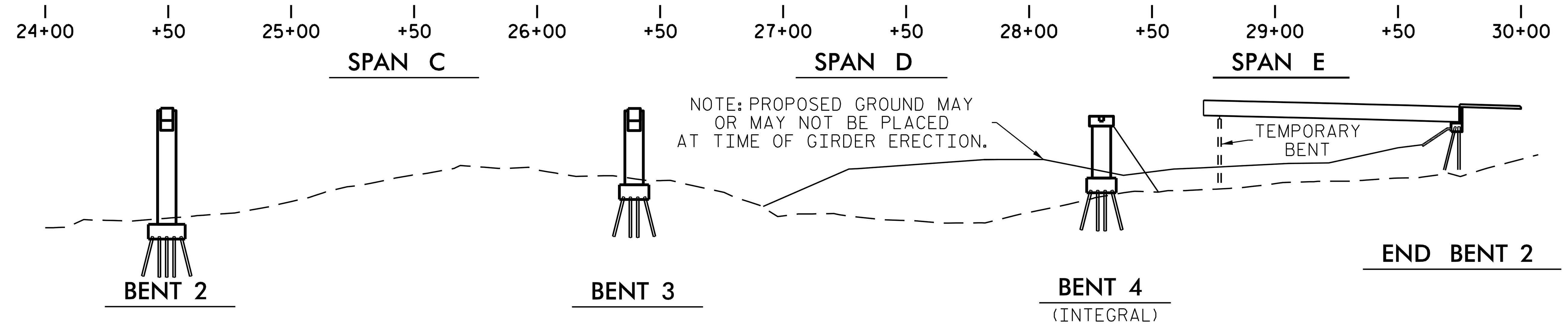
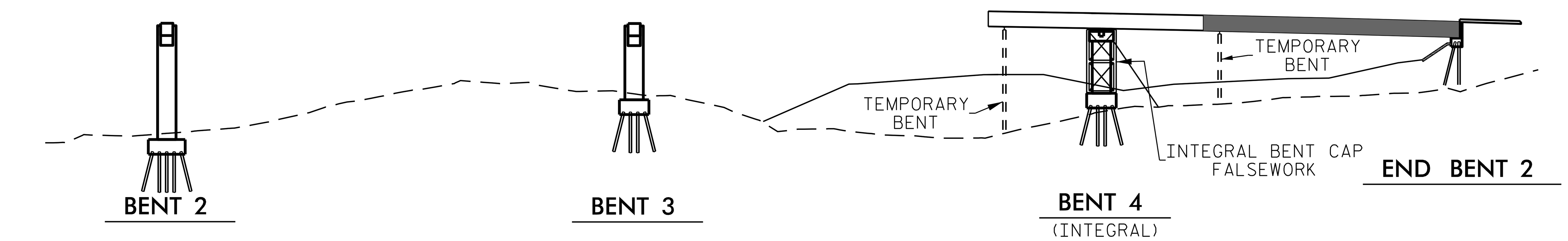


UNIT 2 STEP 1 GIRDER ERECTION



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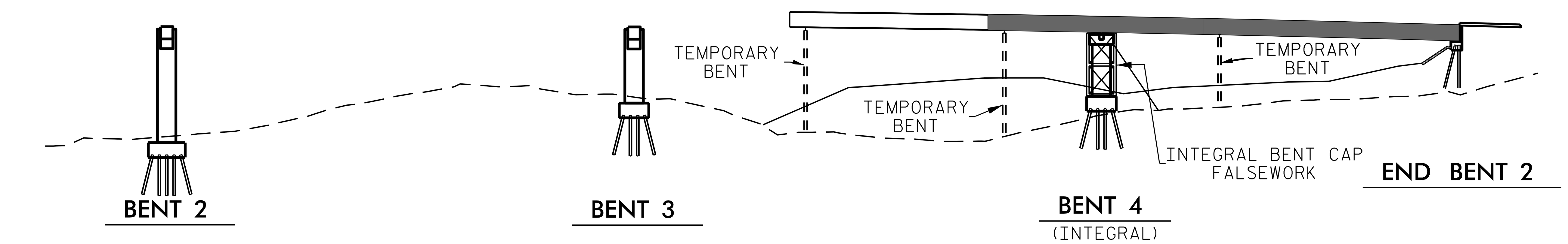

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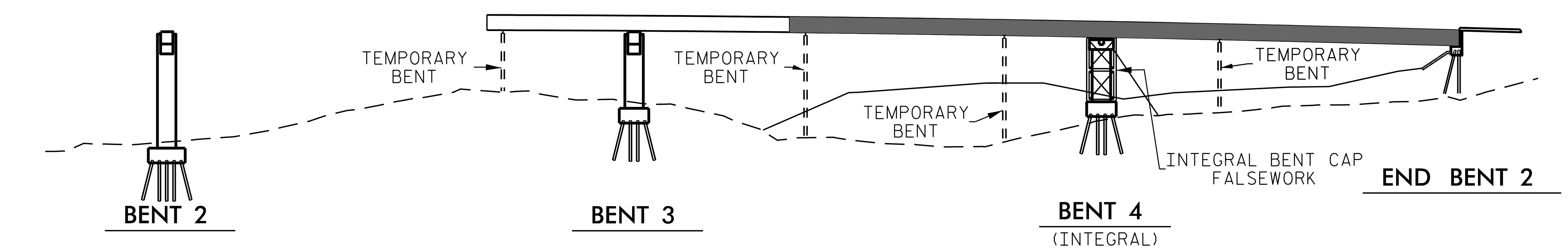

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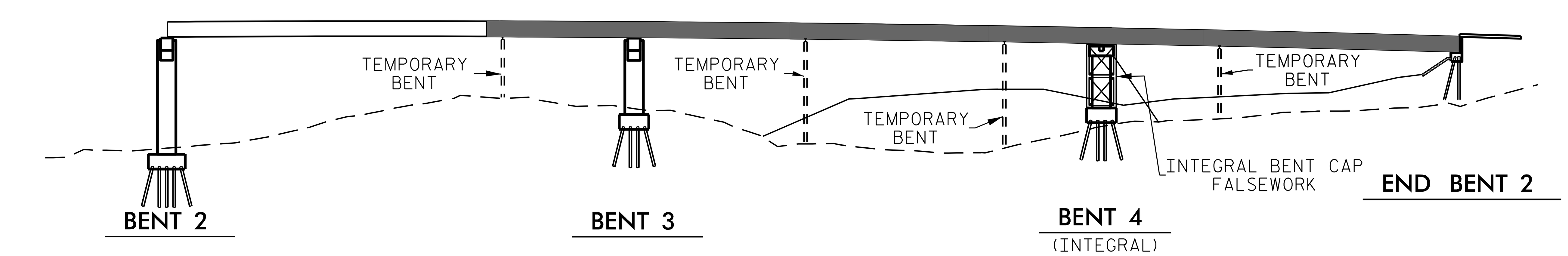
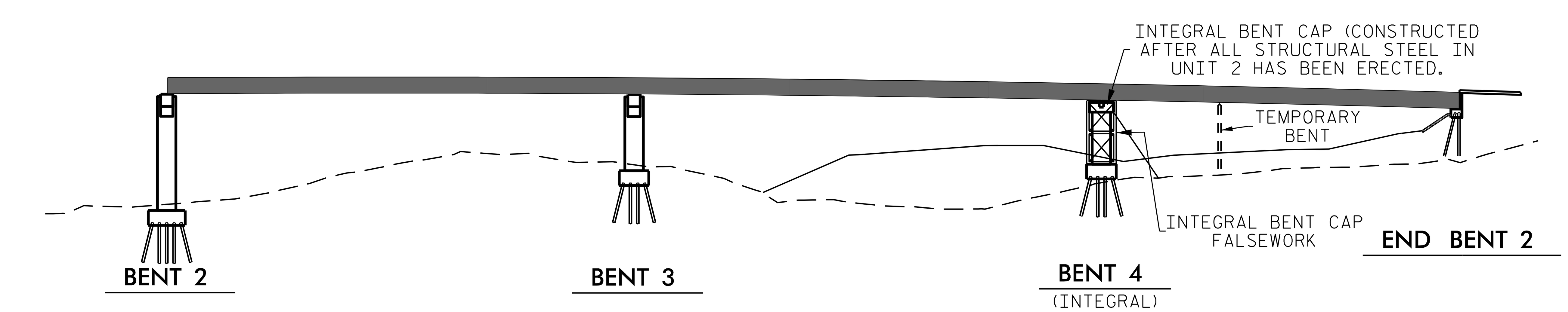


UNIT 2 STEP 5 GIRDER ERECTION



UNIT 2 STEP 6 GIRDER ERECTION

NOTES

FOR ERECTION NOTES, SEE SHEET 1 OF 2.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
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SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONSTRUCTION SEQUENCE

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NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY H. SHAFER
9/29/2022

PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

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1			3			
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SHEET No. S5-11
TOTAL SHEETS 84

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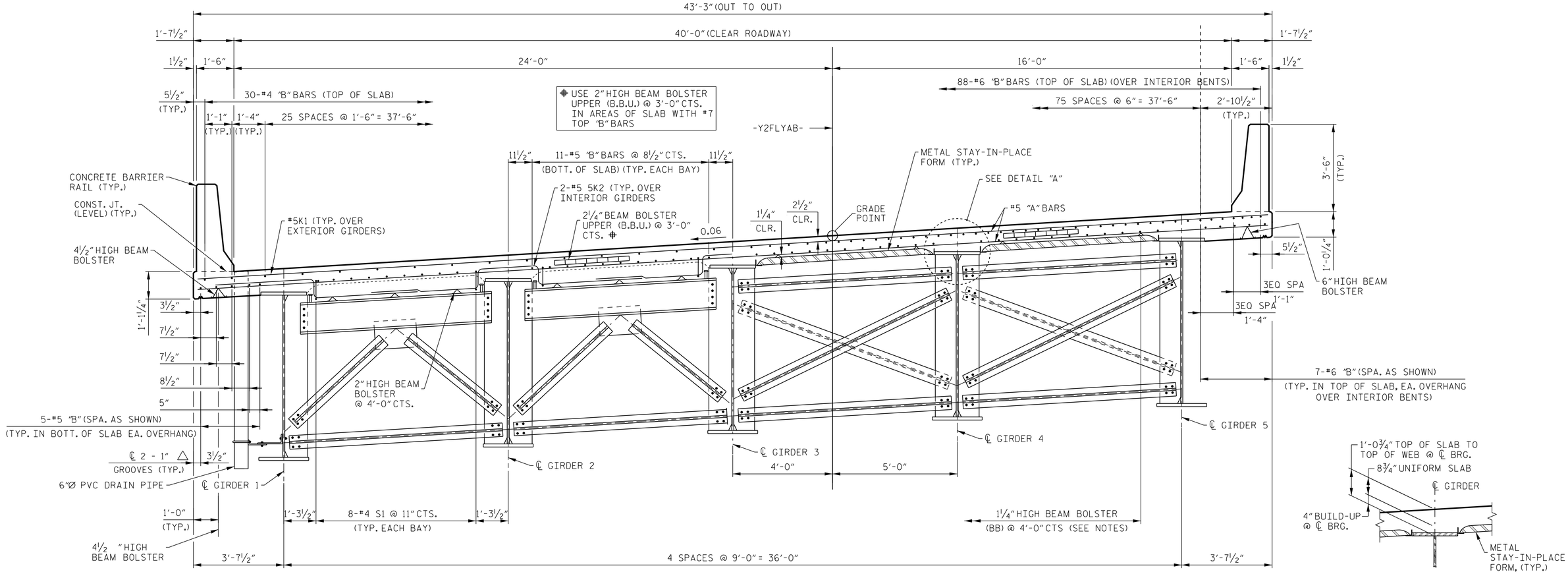

SECTION AT END BENT DIAPHRAGM

(TYPICAL AT END BENT 1, BENT 2 AND END BENT 2)

SECTION AT INTERMEDIATE AND BENT DIAPHRAGM

(TYPICAL AT BENT 1 AND BENT 3)

DETAIL "A"

TYPICAL SECTION

ALL HORIZONTAL DIMENSIONS ARE RADIAL.

NOTES:

PROVIDE 1¼" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2½" ABOVE THE TOP OF THE REMOVABLE FORM.

PVC DECK DRAINS SHALL BE PAINTED WITH TWO COATS OF BROWN PRIMER MEETING THE REQUIREMENTS OF ARTICLE 1080-09 OF THE STANDARD SPECIFICATIONS. EACH COAT SHALL BE 2 DRY MILS THICK. DECK DRAINS SHALL BE ROUGHENED PRIOR TO PAINTING. NO SEPARATE PAYMENT SHALL BE MADE FOR PAINTING PVC DECK DRAINS AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM FOR REINFORCED CONCRETE DECK SLAB.

METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO BEAM OR GIRDER FLANGES IN THE ZONES REQUIRING CHARPY V-NOTCH TEST. SEE STRUCTURAL STEEL DETAIL SHEETS.

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND BEAM/GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-INPLACE FORM WORKING DRAWINGS.

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

COUPLING IN DRAIN PIPE WILL BE PERMITTED AS APPROVED BY THE ENGINEER.

TOP OF FLOOR DRAIN TO BE SET ⅜" BELOW SURFACE OF SLAB.

4 - ½" SQUARE LUGS TO BE GLUED TO THE PVC PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.

BOLT SIZE TO BE SAME AS DIAPHRAGMS AND CROSS FRAME CONNECTIONS. STAINLESS STEEL WORM DRIVE HOSE CLAMP SHALL BE COMMERCIAL QUALITY.

THE 6"Ø PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.

FOR DRAIN PIPE PLACEMENT, SEE PLAN OF SPAN SHEETS.

FOR DRAIN PIPE CONNECTION DETAILS, SEE STRUCTURAL STEEL DETAILS SHEET.

BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
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SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION AND DETAILS

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5–12
1			3			TOTAL SHEETS
2			4			84

DRAWN BY : J. CAYETANO DATE : 9–21
CHECKED BY : J. B. TAYLOR DATE : 9–21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9–21

PLANS PREPARED BY :
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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFFER

Docusigned by: Gregory Shaffer E32B8E5537B44AE...

8/8/2022

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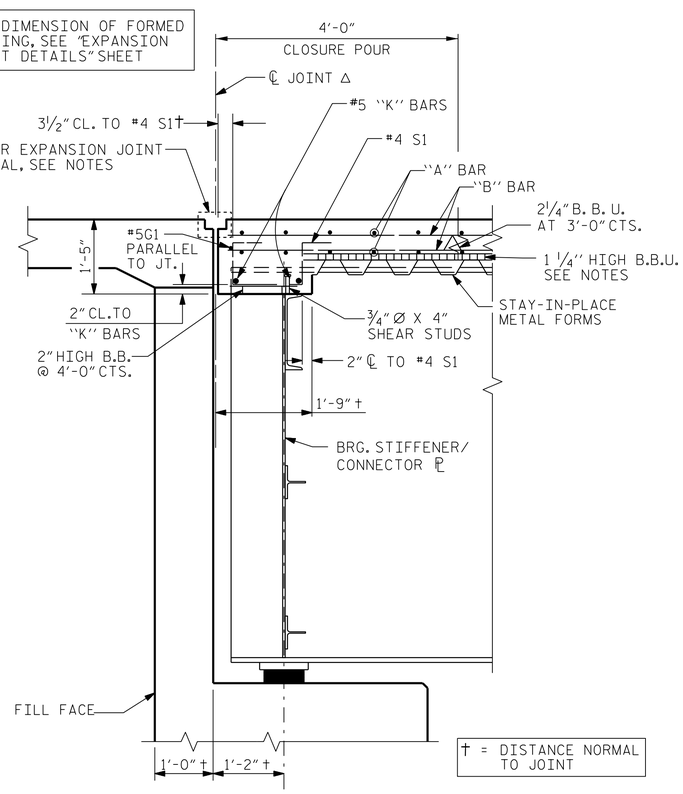
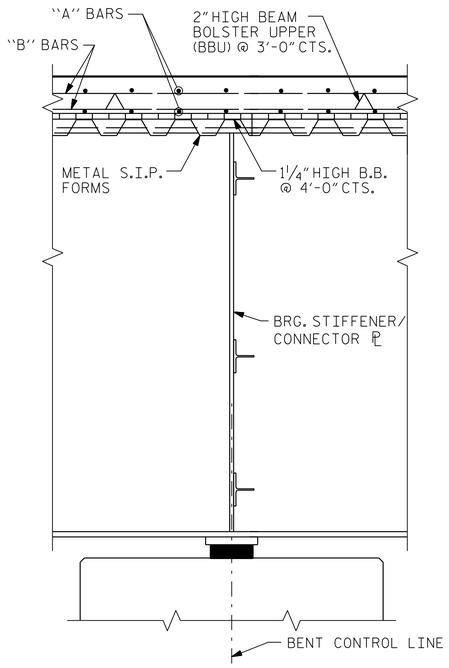
Δ = FOR DIMENSION OF FORMED OPENING, SEE "EXPANSION JOINT DETAILS" SHEET



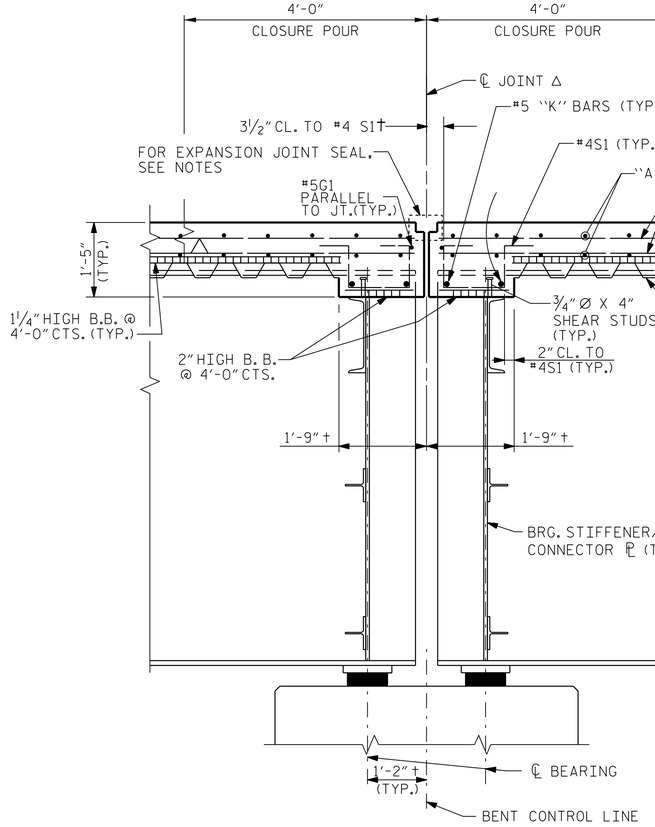
SECTION A-A

(SEE SHEETS "PLAN OF SPAN" SHEETS FOR LOCATION OF SECTION)



SECTION B-B

(SEE SHEETS "PLAN OF SPAN" SHEETS FOR LOCATION OF SECTION)



SECTION C-C

(SEE SHEETS "PLAN OF SPAN" SHEETS FOR LOCATION OF SECTION)

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION AND DETAILS

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5–13
1			3			TOTAL SHEETS
2			4			84

DRAWN BY : J. CAYETANO DATE : 9–21
CHECKED BY : J. B. TAYLOR DATE : 9–21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9–21

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Gregory Shafer
8/8/2022

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NOTES

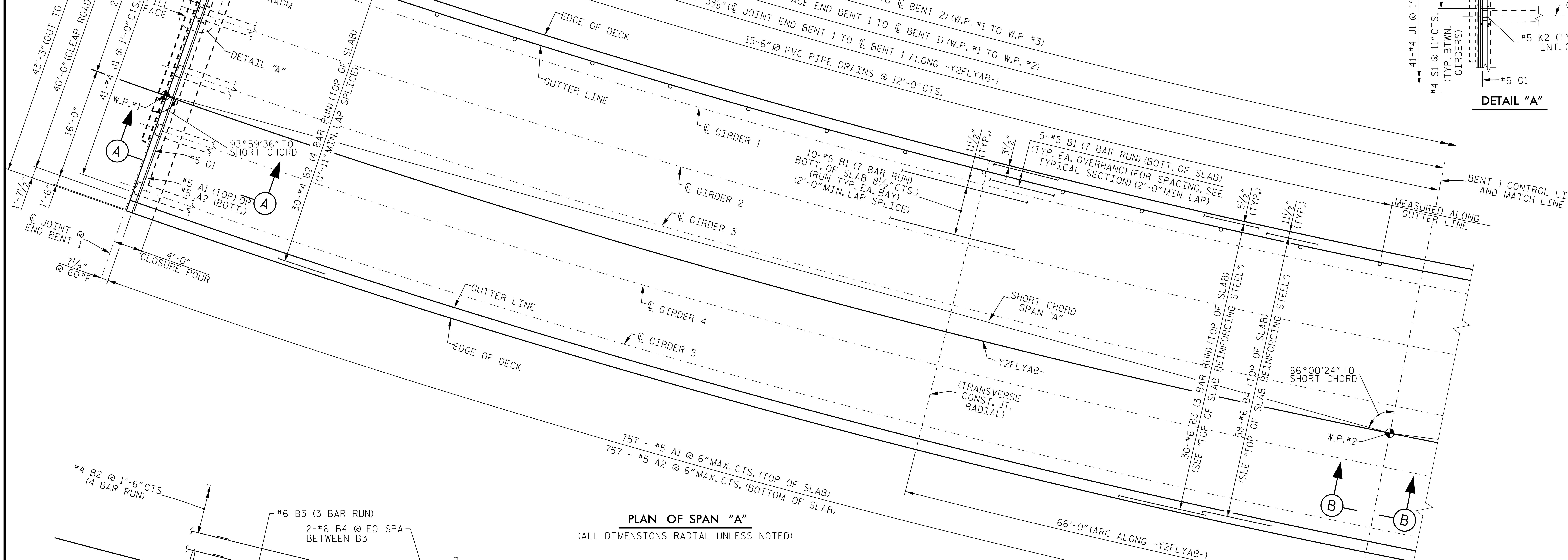
FOR SECTIONS A-A, B-B AND C-C, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET.

FOR OUTSIDE EDGE OF DECK CURVE OFFSETS, SEE "ARC OFFSETS" SHEETS.

FOR REINFORCING STEEL IN CONCRETE BARRIER RAIL, SEE "CONCRETE BARRIER RAIL" SHEETS.

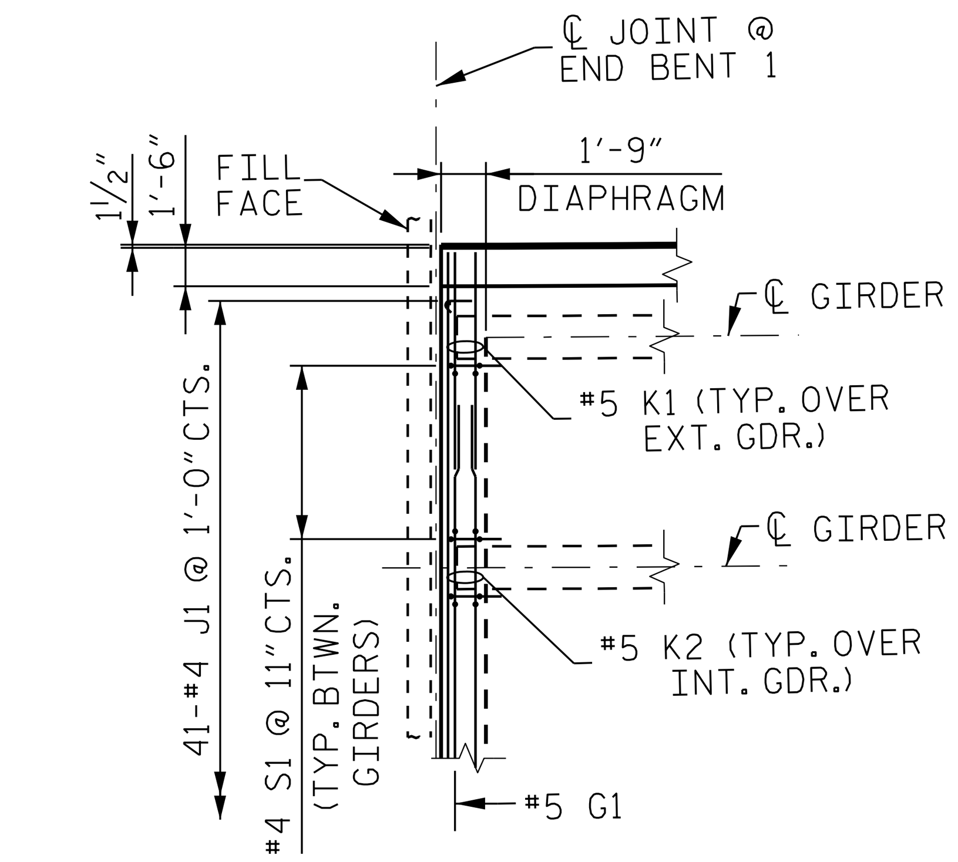
#5 "A" BARS ARE TO BE PLACED RADIALLY ALONG RIGHT OUTSIDE EDGE OF SUPERSTRUCTURE.

FOR DECK POURING SEQUENCE, SEE "BILL OF MATERIAL" SHEET.



PLAN OF SPAN "A"

(ALL DIMENSIONS RADIAL UNLESS NOTED)



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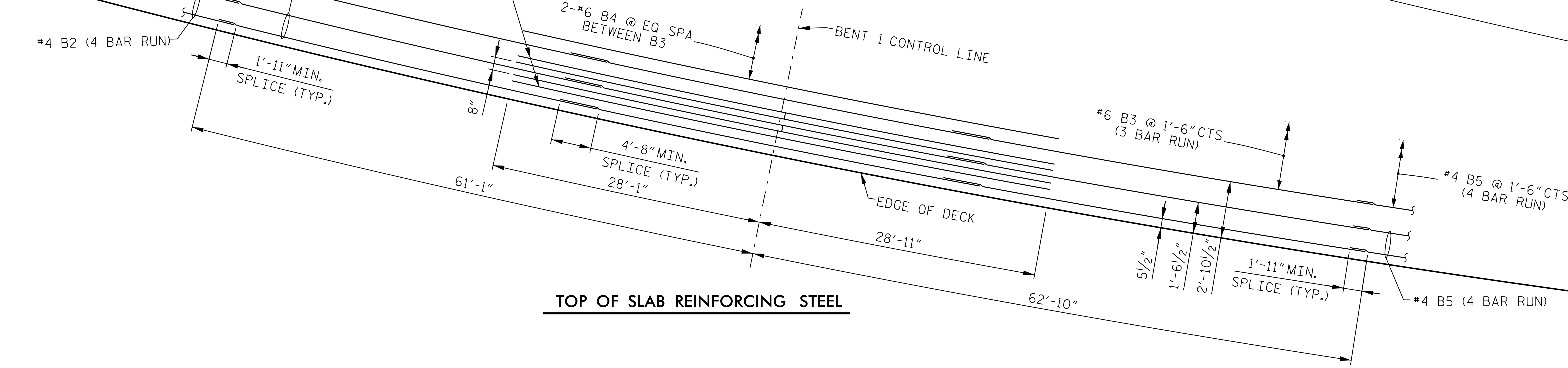

TOP OF SLAB REINFORCING STEEL

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN "A"

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NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY R. SHAFER
8/8/2022

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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
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DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

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TOTAL SHEETS 84

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NOTES

FOR NOTES, SEE SHEET 1 OF 6.

PLAN OF SPAN "B"

(ALL DIMENSIONS RADIAL UNLESS NOTED)

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN "B"

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NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY S. SHAFER
8/8/2022

PLANS PREPARED BY: PARSONS
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NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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SHEET No. S5-15
TOTAL SHEETS 84

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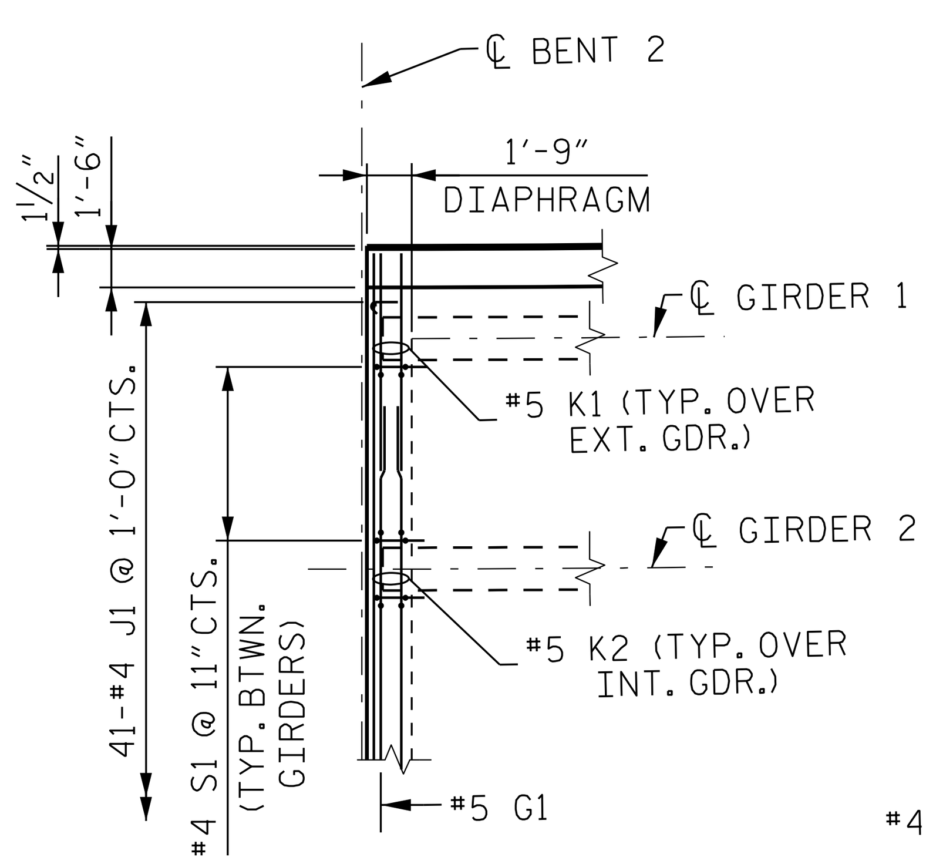
NOTES

FOR NOTES, SEE SHEET 1 OF 6.

PLAN OF SPAN "C"

(ALL DIMENSIONS RADIAL UNLESS NOTED)



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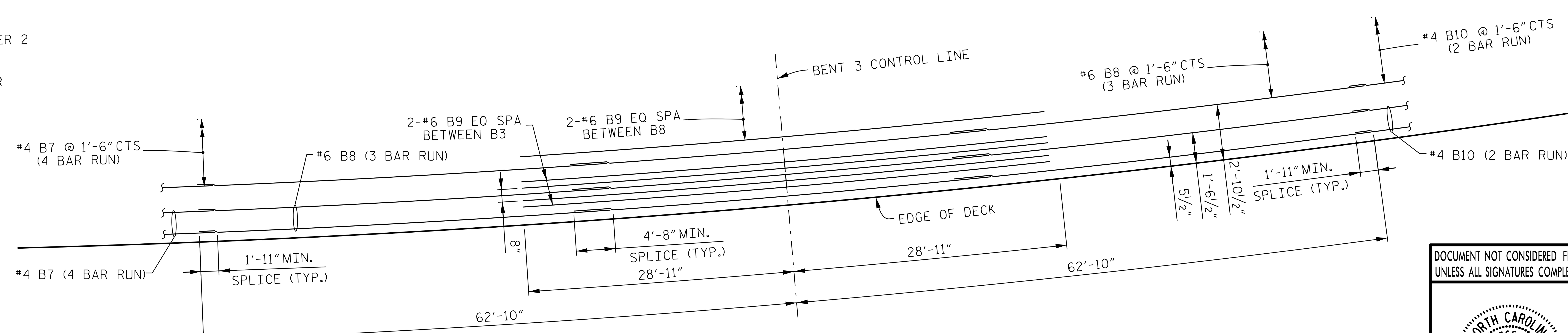

TOP OF SLAB REINFORCING STEEL

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB- 41+07.80 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN "C"

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NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY H. SHAFER 8/8/2022

PLANS PREPARED BY: PARSONS
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NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

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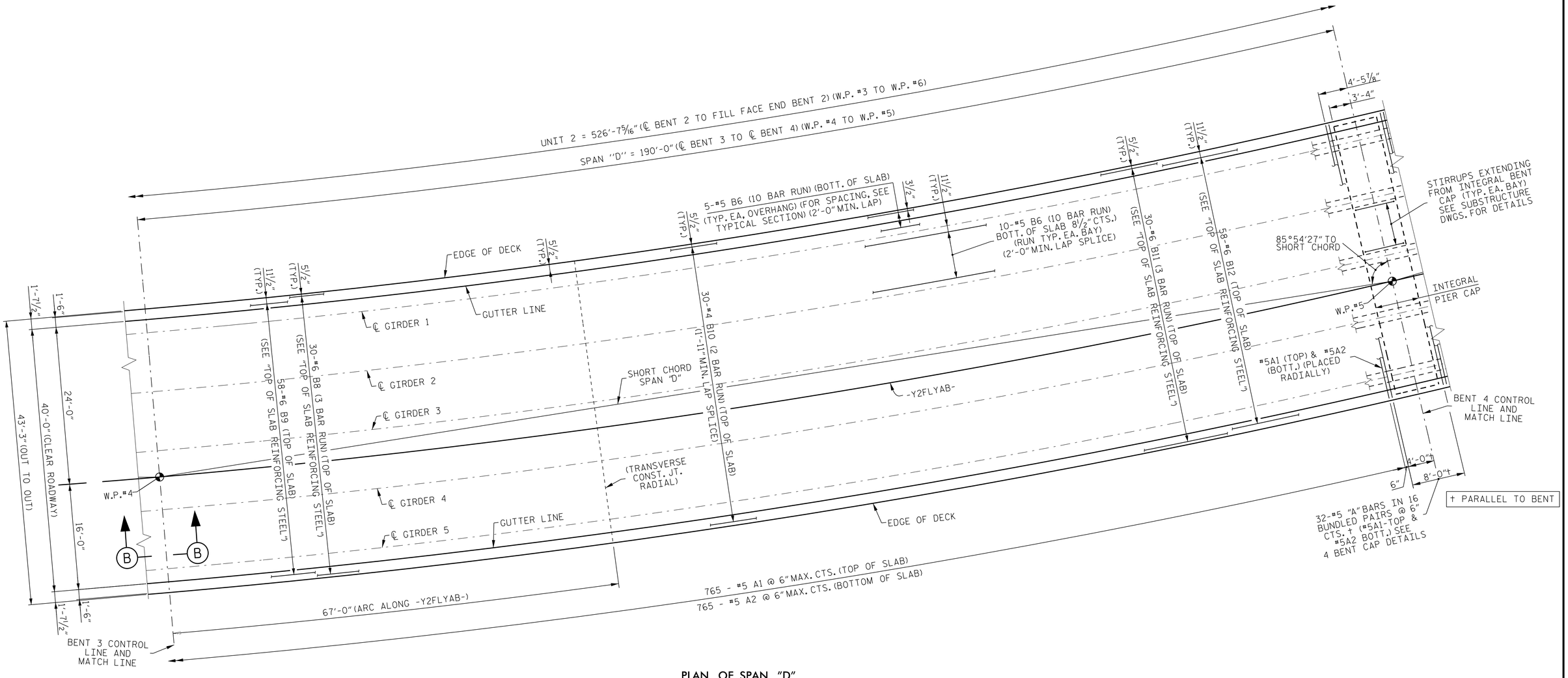
FOR NOTES, SEE SHEET 1 OF 6.



PLAN OF SPAN "D"

(ALL DIMENSIONS RADIAL UNLESS NOTED)

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–

41+07.80 –L–

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN "D"

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NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY K. SHAFFER

Gregory K. Shaffer
E32988E537384A7...
8/8/2022

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

PLANS PREPARED BY :
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Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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1			3			TOTAL SHEETS
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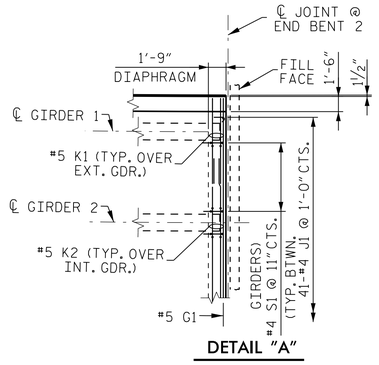
NOTES

FOR NOTES, SEE SHEET 1 OF 6.



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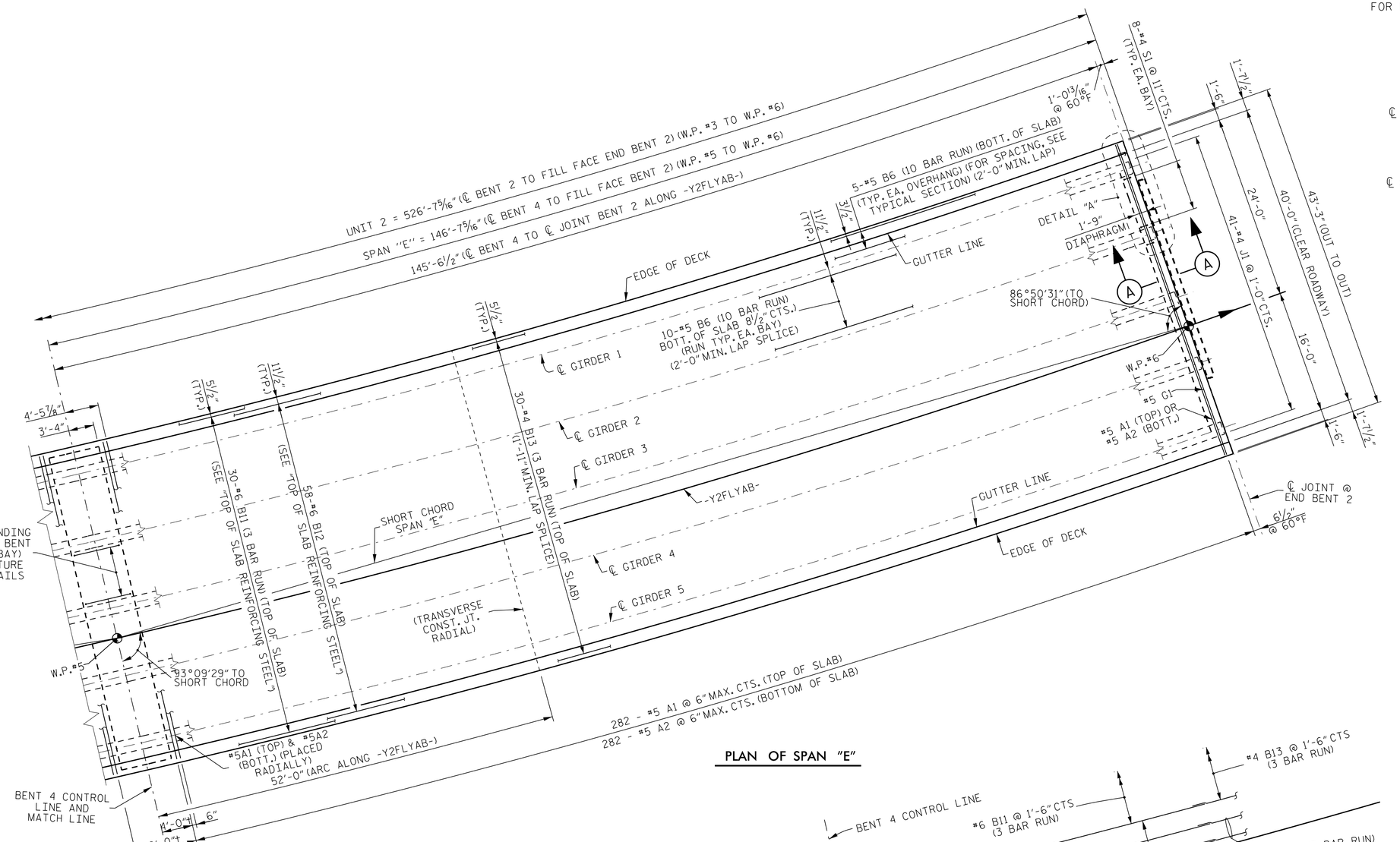

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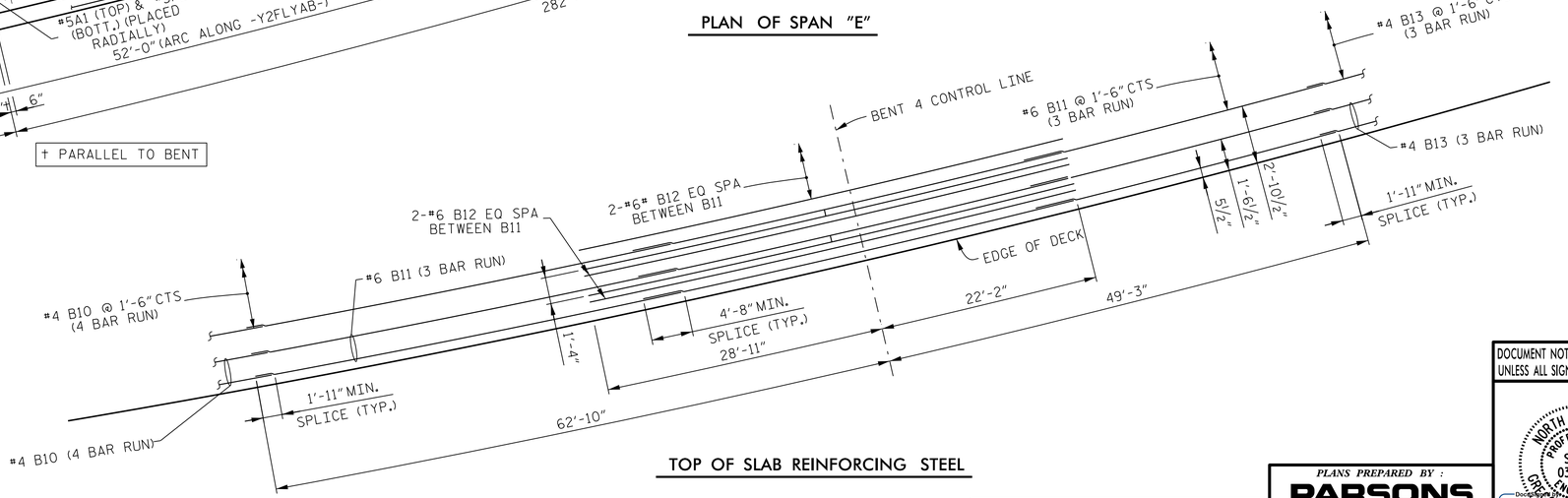

TOP OF SLAB REINFORCING STEEL

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN "E"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER

Docusigned by: Gregory Shafer E329BE5537384A6...
8/8/2022

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No.	BY:	DATE:	No.	BY:	DATE:	S5-18
1			3			TOTAL SHEETS
2			4			84

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

PLANS PREPARED BY :
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5540 Centerview Drive, Suite 217
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NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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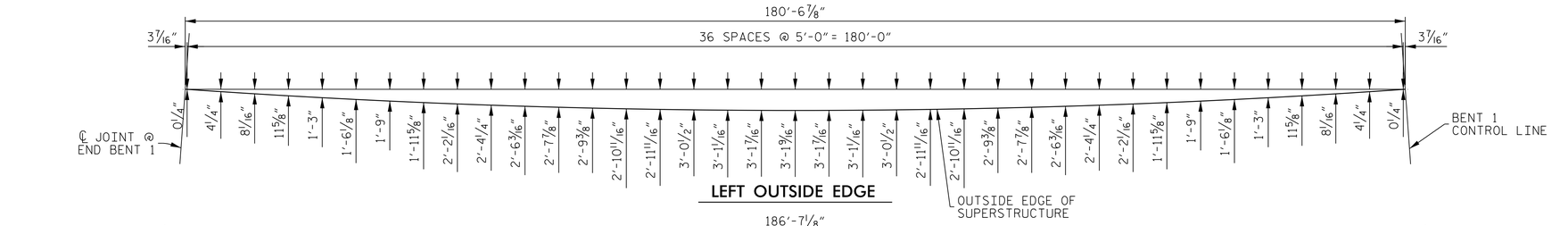
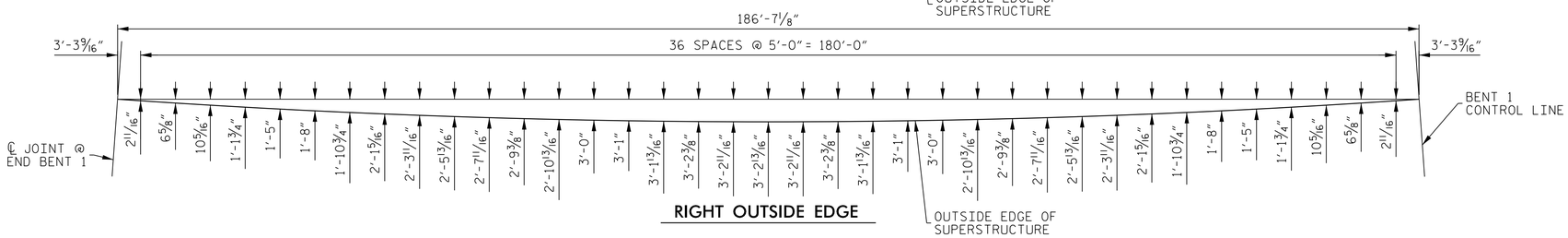
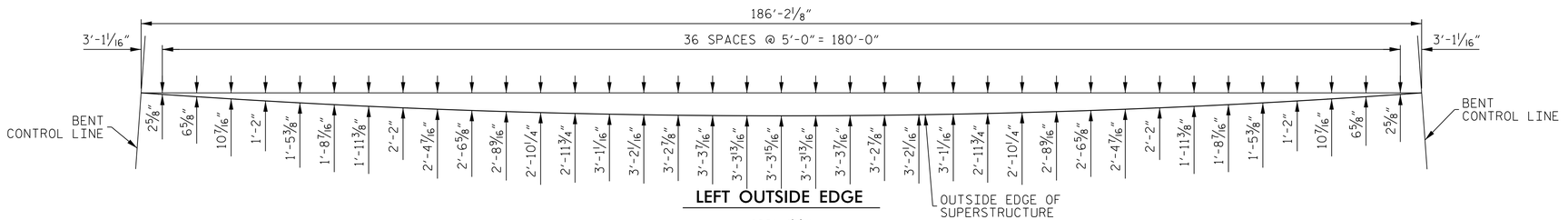
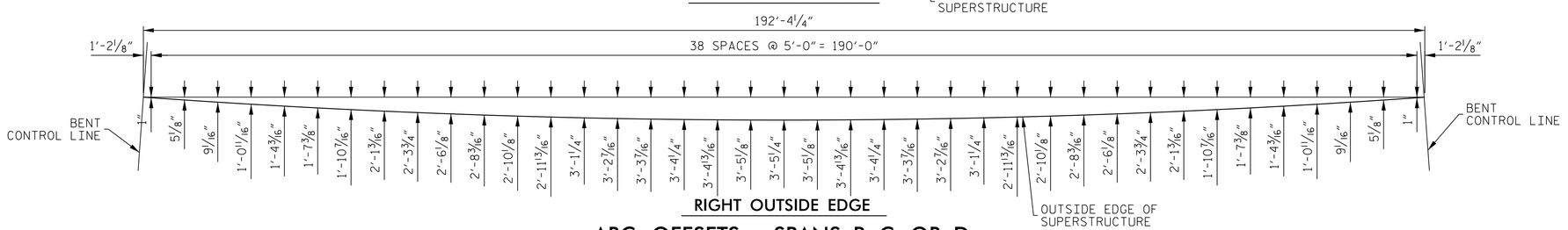




ARC OFFSETS – SPAN A





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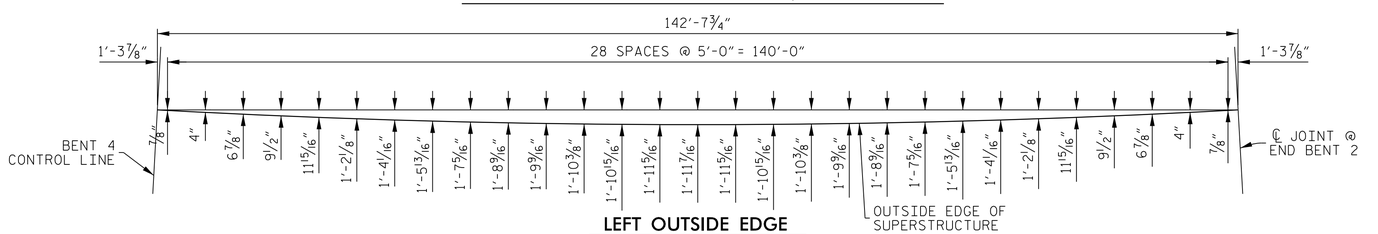

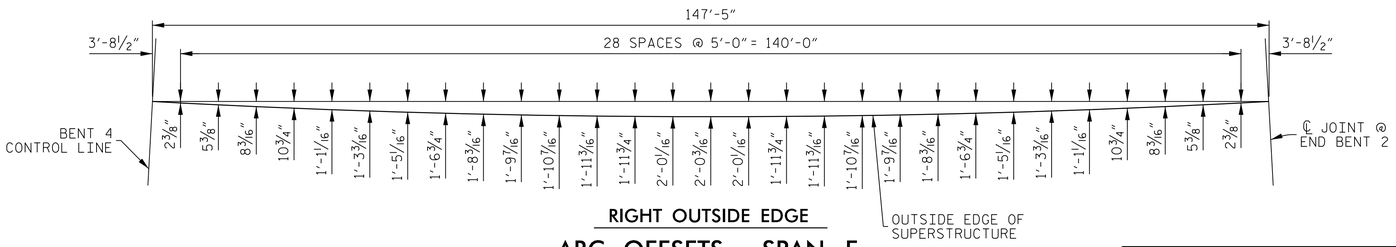

ARC OFFSETS – SPAN E

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
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NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY W. SHAFER
Digitally signed by Gregory W. Shafer
8/8/2022

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–
SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS ARC OFFSETS

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-19
1			3			TOTAL SHEETS
2			4			84

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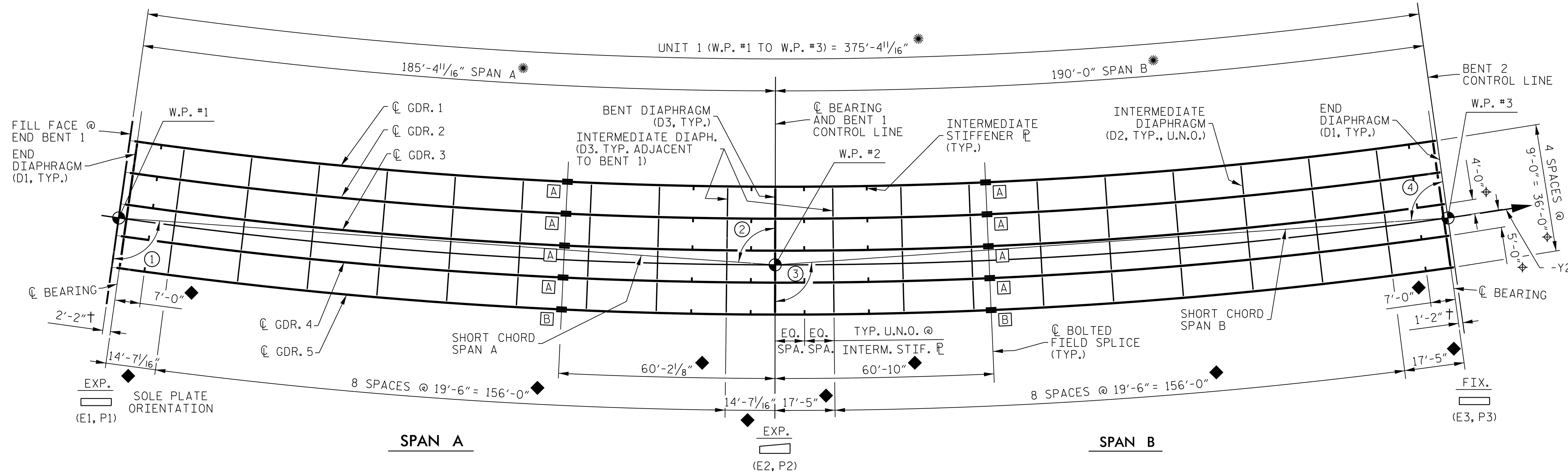

FRAMING PLAN – UNIT 1

LEGEND

- ✺ ARC LENGTH ALONG -Y2FLYAB-
- ◆ ARC LENGTH ALONG ℄ GIRDER 5.
- ✧ RADIAL DIMENSION
- † PERPENDICULAR TO END BENT FILL FACE OR BENT CONTROL LINE
- [X] FIELD SPLICE TYPE

SHORT CHORD ANGLES	
1	93°59'36"
2	86°00'24"
3	94°05'33"
4	85°54'27"
5	93°09'29"
6	86°50'31"

FRAMING PLAN – UNIT 2

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

NOTES

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 5 OR SYSTEM 6 OF ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE 7/8" DIAMETER HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 15 FEET OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

END OF GIRDERS SHALL BE PLUMB IN THE FINAL CONDITION.

BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE.

STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

FOR TEMPORARY BENTS, SEE SPECIAL PROVISIONS.

FABRICATOR SHALL DETAIL DIAPHRAGM MEMBERS AND CONNECTIONS FOR NO-LOAD FIT UP.

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

PLANS PREPARED BY :
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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR
9/27/2021

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

FRAMING PLAN
UNITS 1 & 2

REVISIONS							
No.	BY:	DATE:		No.	BY:	DATE:	
1				3			
2				4			

SHEET No. S5-20
TOTAL SHEETS 84

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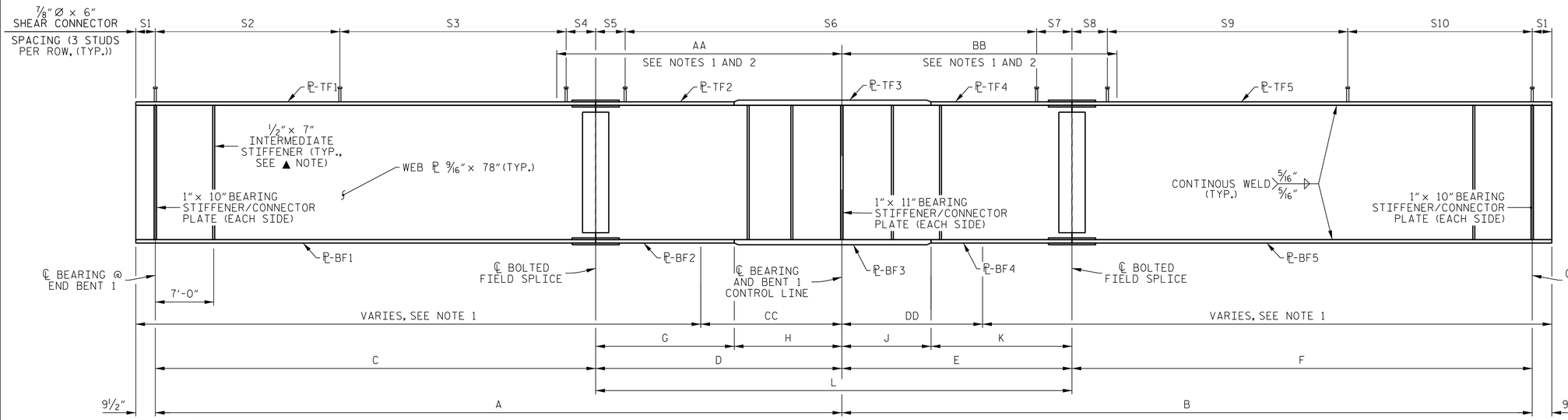
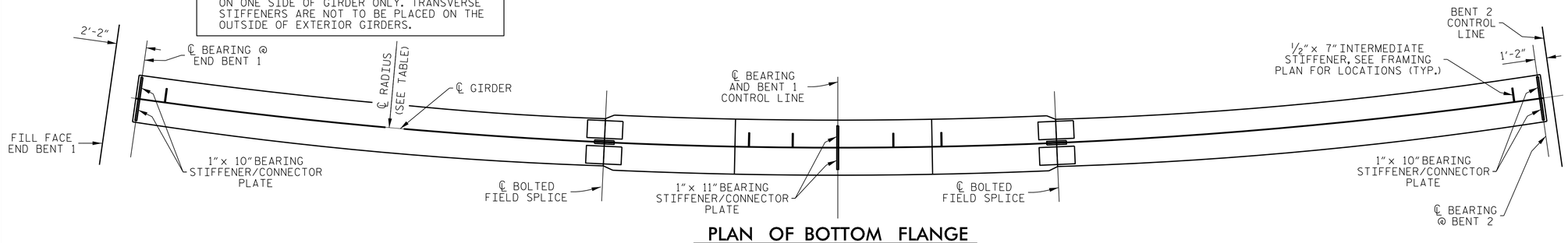


GIRDER ELEVATION

▲ NOTE:
INTERMEDIATE STIFFENERS ARE TO BE PLACED ON ONE SIDE OF GIRDER ONLY. TRANSVERSE STIFFENERS ARE NOT TO BE PLACED ON THE OUTSIDE OF EXTERIOR GIRDERS.



PLAN OF BOTTOM FLANGE

UNIT 1 – GIRDER DIMENSIONS

GIRDER	℄ RADIUS	A	B	C	D	E	F	G	H	J	K	L
1	1308'-0"	180'-1 1/8"	185'-8 1/4"	121'-7 1/8"	58'-6 3/4"	59'-2 1/16"	126'-5 13/16"	34'-2 13/16"	24'-3 15/16"	24'-3 15/16"	34'-10 1/2"	117'-9 3/16"
2	1317'-0"	181'-5"	186'-11 3/4"	122'-5 3/8"	58'-11 5/8"	59'-7 3/8"	127'-4 3/8"	34'-5 5/8"	24'-6"	24'-6"	35'-1 3/8"	118'-7"
3	1326'-0"	182'-8"	188'-3 1/8"	123'-3 9/16"	59'-4 1/16"	60'-0 1/4"	128'-2 7/8"	34'-8 1/16"	24'-8"	24'-8"	35'-4 1/4"	119'-4 11/16"
4	1335'-0"	183'-11 1/16"	189'-6 9/16"	124'-1 13/16"	59'-9 1/4"	60'-5 1/8"	129'-1 7/16"	34'-11 1/4"	24'-10"	24'-10"	35'-7 1/8"	120'-2 3/8"
5	1344'-0"	185'-2 1/8"	190'-10"	125'-0"	60'-2 1/8"	60'-10"	130'-0"	35'-2 1/8"	25'-0"	25'-0"	35'-10"	121'-0 1/8"

UNIT 1 – SHEAR STUD SPACING

GIRDER	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
1	9 1/2"	39 SPACES @ 1'-3"	65 SPACES @ 1'-1"	2'-5 1/8"	2'-11"	96 SPACES @ 1'-2"	2'-10 3/16"	2'-11 13/16"	54 SPACES @ 1'-1"	52 SPACES @ 1'-3"
2	9 1/2"	40 SPACES @ 1'-3"	64 SPACES @ 1'-1"	3'-1 3/8"	2'-8 5/8"	97 SPACES @ 1'-2"	2'-8 3/8"	2'-9 3/8"	55 SPACES @ 1'-1"	52 SPACES @ 1'-3"
3	9 1/2"	41 SPACES @ 1'-3"	64 SPACES @ 1'-1"	2'-8 9/16"	2'-6 11/16"	98 SPACES @ 1'-2"	2'-6"	2'-6 7/8"	56 SPACES @ 1'-1"	52 SPACES @ 1'-3"
4	9 1/2"	40 SPACES @ 1'-3"	66 SPACES @ 1'-1"	2'-7 13/16"	2'-11 3/16"	98 SPACES @ 1'-2"	2'-11 3/16"	2'-4 7/16"	57 SPACES @ 1'-1"	52 SPACES @ 1'-3"
5	9 1/2"	42 SPACES @ 1'-3"	65 SPACES @ 1'-1"	2'-1"	2'-9"	99 SPACES @ 1'-2"	2'-9 1/8"	2'-11"	55 SPACES @ 1'-1"	54 SPACES @ 1'-3"

UNIT 1 – LIMITS OF TENSION FLANGES FOR CHARPY V-NOTCH TEST

GIRDER	AA	BB	CC	DD
1	76'-5"	73'-6"	37'-8"	37'-4"
2	72'-6"	69'-8"	38'-8"	38'-2"
3	72'-11"	69'-10"	39'-7"	39'-3"
4	78'-1"	73'-9"	38'-9"	38'-3"
5	84'-1"	76'-4"	38'-5"	38'-2"

UNIT 1 – GIRDER FLANGE SIZES

TOP FLANGE PLATES					
GIRDER	℄-TF1	℄-TF2	℄-TF3	℄-TF4	℄-TF5
1 THRU 4	1 1/2" x 20"	1 1/2" x 24"	2 1/2" x 24"	1 1/2" x 24"	1 1/2" x 20"
5	2" x 22"	2" x 26"	3" x 26"	2" x 26"	2" x 22"
BOTTOM FLANGE PLATES					
GIRDER	℄-BF1	℄-BF2	℄-BF3	℄-BF4	℄-BF5
1 THRU 4	1 1/2" x 22"	1 1/2" x 26"	2 1/2" x 26"	1 1/2" x 26"	1 1/2" x 22"
5	2" x 24"	2" x 28"	3" x 28"	2" x 28"	2" x 24"

CHARPY V-NOTCH NOTES

1. CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM FLANGE PLATES WHICH FALL WITHIN THESE LIMITS, ALL WEB PLATES, AND ALL SPLICE PLATES. IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TESTS, SEE ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.
2. NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.

   FOR CHARPY V-NOTCH TEST, SEE SPECIAL PROVISIONS.

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

PLANS PREPARED BY :
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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER
Digitally signed by Gregory Shafer
E32085E5537d04A...
8/8/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER DETAILS – UNIT 1

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-21
1			3			TOTAL SHEETS
2			4			84

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⌖ NOTE:
FOR HOLES IN WEB ALLOWING INTEGRAL BENT 4 POST-TENSIONING TENDON PLACEMENT, SEE SHEET 2 OF 3.

GIRDER ELEVATION

▲ NOTE:
INTERMEDIATE STIFFENERS ARE TO BE PLACED ON ONE SIDE OF GIRDER ONLY. TRANSVERSE STIFFENERS ARE NOT TO BE PLACED ON THE OUTSIDE OF EXTERIOR GIRDERS.

PLAN OF BOTTOM FLANGE

NOTE
FOR CHARPY V-NOTCH NOTES, SEE SHEET "SUPERSTRUCTURE GIRDER DETAILS - UNIT 1."

UNIT 2 – GIRDER DIMENSIONS

GIRDER	℄ RADIUS	A	B	C	D	E	F	G	H	J
1	1308'-0"	185'-8 1/4"	186'-10 1/4"	142'-0 3/16"	127'-5 1/2"	58'-2 3/4"	61'-6 11/16"	80'-6 3/8"	44'-9 3/16"	40'-4 11/16"
2	1317'-0"	186'-11 11/16"	188'-1 11/16"	143'-0 1/8"	128'-4 1/8"	58'-7 9/16"	61'-11 3/4"	81'-1"	45'-0 15/16	40'-8"
3	1326'-0"	188'-3 1/8"	189'-5 1/8"	144'-0"	129'-2 3/4"	59'-0 3/8"	62'-4 7/8"	81'-7 5/8"	45'-4 5/8"	40'-11 5/16"
4	1335'-0"	189'-6 9/16"	190'-8 5/8"	144'-11 15/16"	130'-1 3/8"	59'-5 3/16"	62'-9 15/16"	82'-2 3/8"	45'-8 5/16"	41'-2 11/16
5	1344'-0"	190'-10"	192'-0"	145'-11 13/16"	131'-0"	59'-10"	63'-3"	82'-9"	46'-0"	41'-6"

GIRDER	K	L	M	N	P	Q	R	S	T	U	V
1	101'-7 1/2"	33'-10 13/16"	24'-3 15/16"	24'-3 15/16"	37'-2 3/4"	20'-5 1/4"	24'-3 15/16"	24'-3 15/16"	16'-0 3/4"	119'-9 7/16"	85'-1 7/8"
2	102'-4 1/8"	34'-1 9/16"	24'-6"	24'-6"	37'-5 3/4"	20'-6 15/16	24'-6"	24'-6"	16'-2"	120'-7 5/16"	85'-8 15/16"
3	103'-0 11/16"	34'-4 3/8"	24'-8"	24'-8"	37'-8 7/8"	20'-8 5/8"	24'-8"	24'-8"	16'-3 5/16"	121'-5 1/4"	86'-3 15/16"
4	103'-9 1/4"	34'-7 3/16"	24'-10"	24'-10"	37'-11 15/16"	20'-10 5/16"	24'-10"	24'-10"	16'-4 11/16	122'-3 1/8"	86'-11"
5	104'-5 13/16"	34'-10"	25'-0"	25'-0"	38'-3"	21'-0"	25'-0"	25'-0"	16'-6"	123'-1"	87'-6"

UNIT 2 – SHEAR STUD SPACING

GIRDER	S1	S2	S3	S4	S5	S6	S7	S8
1	9 1/2"	61 SPACES @ 1'-3"	45 SPACES @ 1'-1"	2'-5 1/2"	2'-0 1/2"	92 SPACES @ 1'-3"	2'-8 15/16"	2'-11"
2	9 1/2"	60 SPACES @ 1'-3"	47 SPACES @ 1'-1"	2'-5 1/8"	2'-4 7/8"	92 SPACES @ 1'-3"	3'-2 7/16"	3'-2 1/2"
3	9 1/2"	59 SPACES @ 1'-3"	49 SPACES @ 1'-1"	2'-4 3/4"	2'-3 1/4"	93 SPACES @ 1'-3"	2'-11"	2'-11"
4	9 1/2"	60 SPACES @ 1'-3"	49 SPACES @ 1'-1"	2'-0 3/8"	1'-11 5/8"	94 SPACES @ 1'-3"	2'-9 1/2"	2'-7 1/2"
5	9 1/2"	58 SPACES @ 1'-3"	52 SPACES @ 1'-1"	2'-2"	2'-6"	94 SPACES @ 1'-3"	3'-1"	2'-10 1/2"

GIRDER	S9	S10	S11	S12	S13	S14	S15	S16
1	64 SPACES @ 1'-2"	2'-11 3/8"	2'-6 11/16"	60 SPACES @ 1'-4"	2'-7 3/16"	3'-3 1/2"	16 SPACES @ 1'-4"	66 SPACES @ 1'-2"
2	64 SPACES @ 1'-2"	3'-2 1/2"	2'-10 9/16"	60 SPACES @ 1'-4"	2'-10 3/8"	3'-0 1/8"	15 SPACES @ 1'-4"	68 SPACES @ 1'-2"
3	65 SPACES @ 1'-2"	2'-10 5/8"	3'-2 3/8"	60 SPACES @ 1'-4"	3'-1 9/16"	2'-6 11/16"	15 SPACES @ 1'-4"	69 SPACES @ 1'-2"
4	66 SPACES @ 1'-2"	2'-6 7/8"	2'-9 1/8"	61 SPACES @ 1'-4"	2'-9 7/8"	3'-3 1/4"	15 SPACES @ 1'-4"	69 SPACES @ 1'-2"
5	66 SPACES @ 1'-2"	2'-10 1/2"	3'-1"	61 SPACES @ 1'-4"	3'-1"	2'-9 13/16"	15 SPACES @ 1'-4"	70 SPACES @ 1'-2"

UNIT 2 – GIRDER FLANGE PLATE SIZES

TOP FLANGE PLATES

GIRDER	PL-TF1	PL-TF2	PL-TF3	PL-TF4	PL-TF5	PL-TF6	PL-TF7	PL-TF8	PL-TF9
1 THRU 4	1 1/2" × 22"	1 1/2" × 22"	2 1/2" × 22"	1 1/2" × 22"	1 1/2" × 20"	1 1/2" × 22"	2 1/2" × 22"	1 1/2" × 22"	1 1/2" × 20"
5	1 1/2" × 24"	1 1/2" × 24"	2 3/4" × 24"	2" × 24"	2" × 20"	2" × 24"	2 1/2" × 24"	1 1/2" × 24"	1 1/2" × 20"

BOTTOM FLANGE PLATES

GIRDER	PL-BF1	PL-BF2	PL-BF3	PL-BF4	PL-BF5	PL-BF6	PL-BF7	PL-BF8	PL-BF9
1 THRU 4	1 1/2" × 24"	1 1/2" × 24"	2 1/2" × 24"	1 1/2" × 24"	1 1/2" × 22"	1 1/2" × 24"	2 1/2" × 24"	1 1/2" × 24"	1 1/2" × 20"
5	2" × 26"	2" × 26"	2 3/4" × 26"	2" × 26"	2" × 22"	2" × 26"	2 1/2" × 26"	1 1/2" × 26"	1 1/2" × 22"

UNIT 2 – LIMITS OF TENSION FLANGES FOR CHARPY V–NOTCH TEST

GIRDER	AA	BB	CC	DD	EE	FF	GG	HH
1	62'-11"	85'-2"	32'-6"	35'-2"	64'-9"	65'-11"	26'-11"	25'-2"
2	59'-2"	80'-1"	33'-1"	37'-8"	60'-3"	57'-3"	27'-3"	25'-4"
3	56'-6"	82'-6"	33'-8"	38'-7"	61'-0"	57'-7"	28'-5"	25'-7"
4	60'-4"	95'-4"	32'-10"	38'-3"	68'-4"	62'-4"	27'-5"	24'-2"
5	64'-7"	115'-2"	32'-6"	38'-6"	76'-10"	70'-0"	26'-9"	23'-2"

PROJECT NO. U–2579AA
FORSYTH COUNTY
STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER
DETAILS – UNIT 2

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NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER
8/8/2022

PLANS PREPARED BY :
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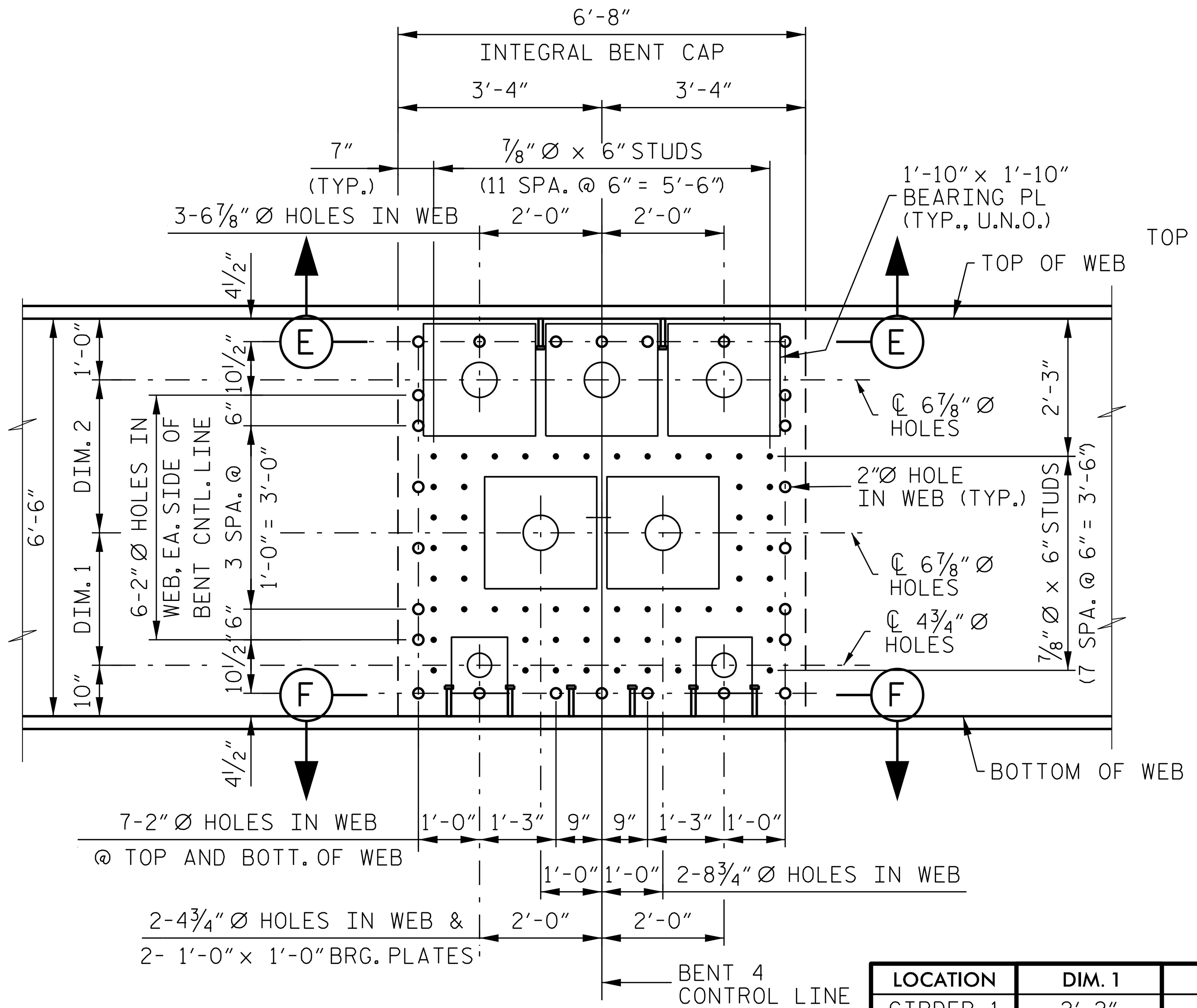
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

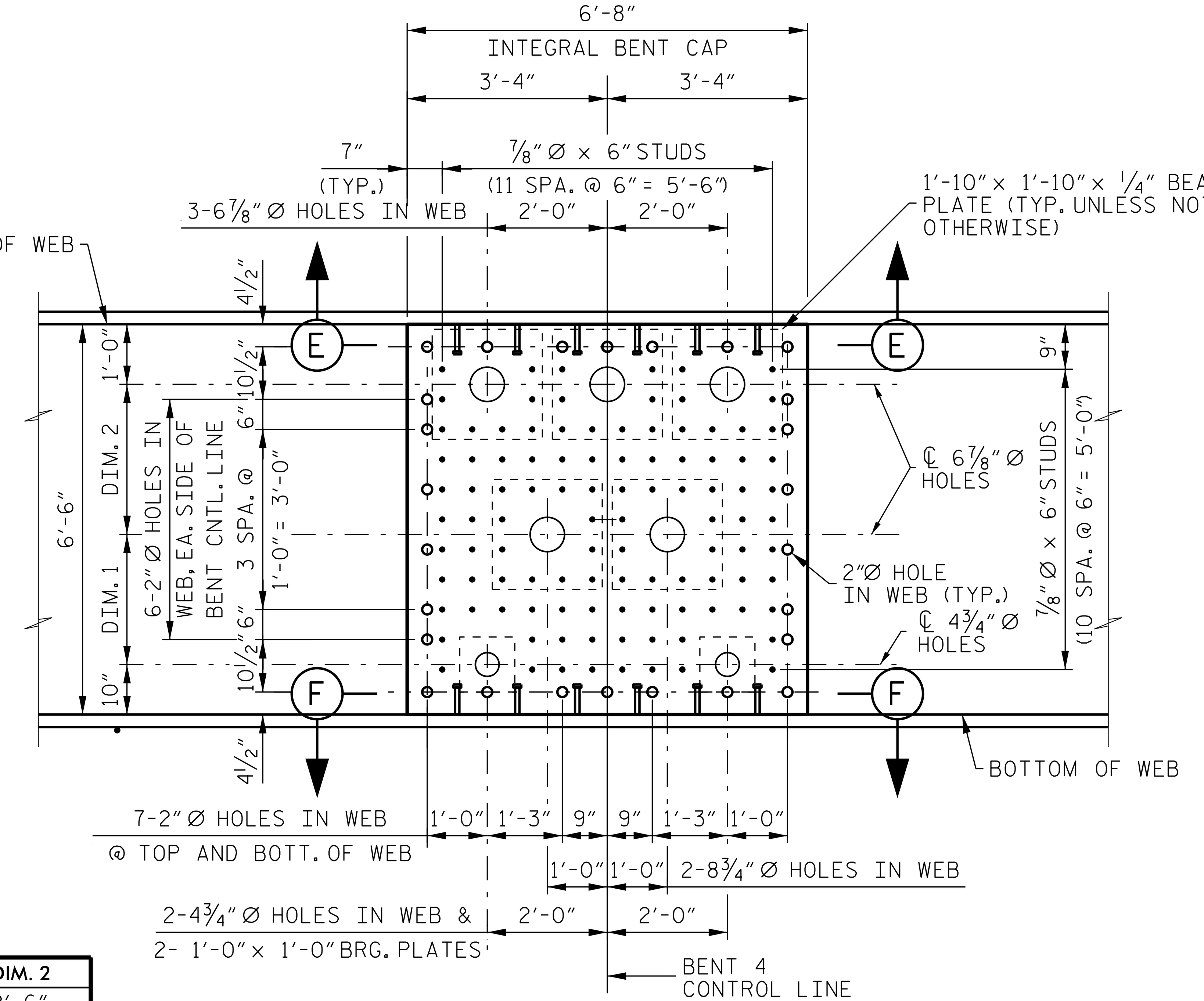
DRAWN BY : J. CAYETANO DATE : 9–21
CHECKED BY : J. B. TAYLOR DATE : 9–21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9–21

REVISIONS								SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:			S5–22
1			3					TOTAL SHEETS
2			4					84



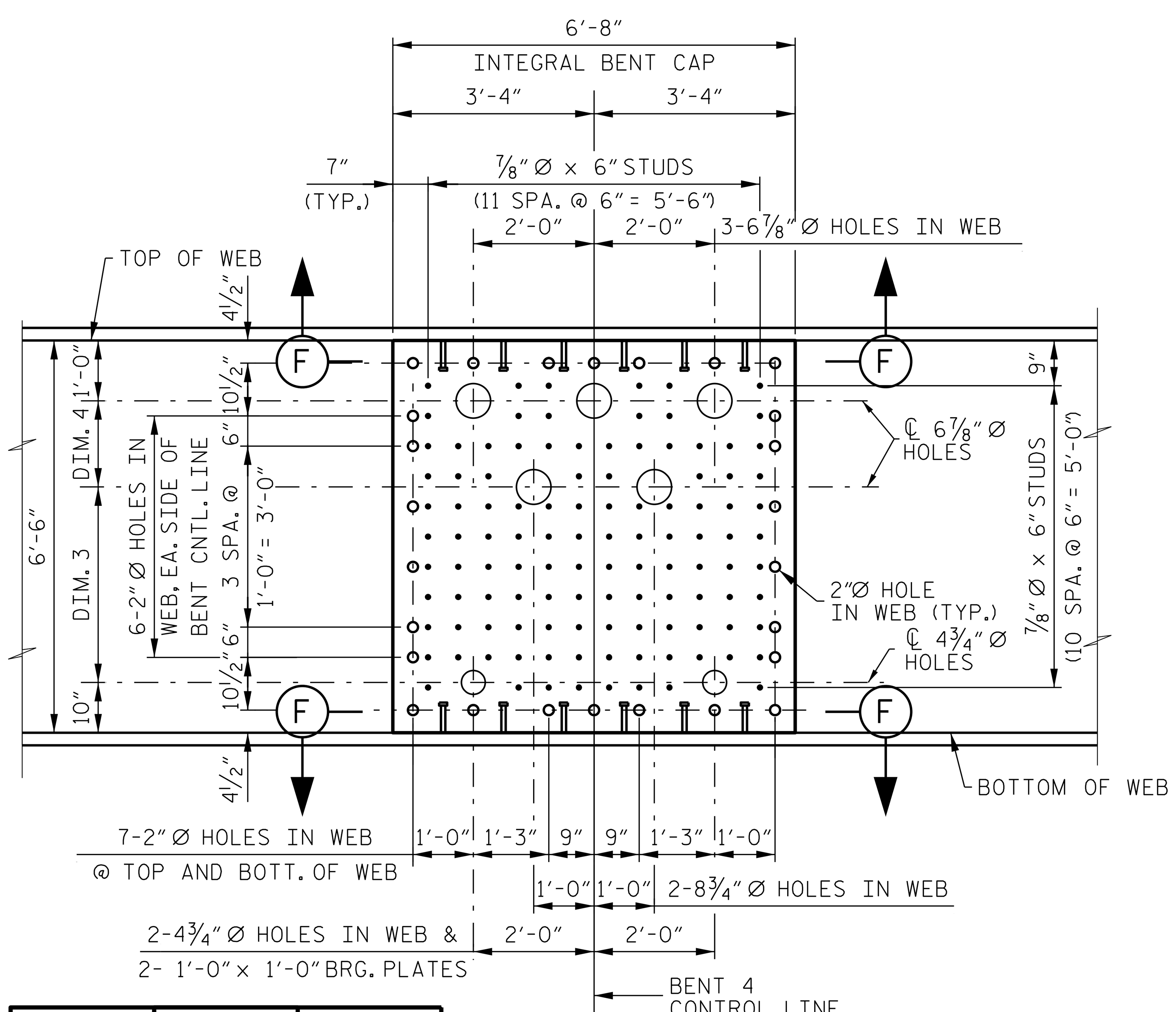
EXTERIOR FACE

LOCATION	DIM. 1	DIM. 2
GIRDER 1	2'-2"	2'-6"
GIRDER 5	2'-1 13/16"	2'-6 3/16"



INTERIOR FACE

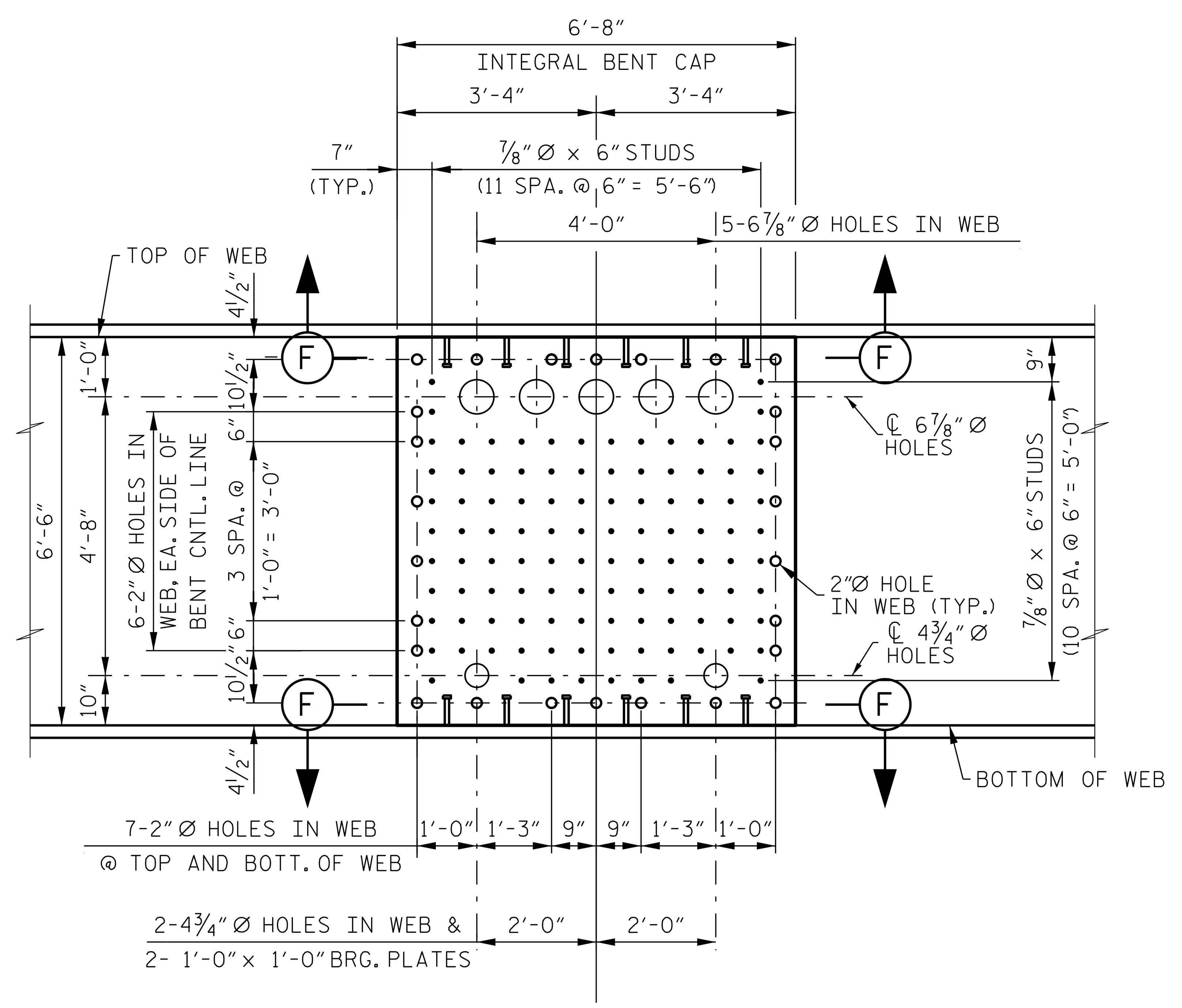
GIRDER 1 AND GIRDER 5



LOCATION	DIM. 3	DIM. 4
GIRDER 2	4'-0 7/8"	7 1/8"
GIRDER 4	4'-0 3/8"	7 5/8"

BOTH FACES

GIRDER 2 AND GIRDER 4



BOTH FACES

GIRDER 3

NOTES

THE ITEMS LISTED BELOW SHALL BE VERIFIED BY THE POST-TENSIONING SUPPLIER PRIOR TO FABRICATION:

1. SIZE, SHAPE AND THICKNESS OF BEARING PLATE.
2. DIAMETER OF THE BEARING PLATE HOLES.
3. DIAMETER OF WEB HOLES.

LOCATIONS OF SHEAR STUDS ON THE WEB MAY BE SHIFTED SLIGHTLY TO PROVIDE ADEQUATE CLEARANCE TO BEARING PLATES AND WEB HOLES, MAINTAINING A MINIMUM CLEAR DISTANCE OF 1" FROM ALL EDGES.

SHEAR STUDS ON THE WEB SHALL BE OMITTED AT LOCATIONS AS SHOWN.

SEE SECTIONS E-E AND F-F FOR SPACING OF SHEAR STUDS ON BOTTOM OF TOP FLANGE & TOP OF BOTTOM FLANGE.

FOR SECTIONS E-E AND F-F, SEE "SUPERSTRUCTURE GIRDER DETAILS - UNIT 2 (SHEET 3 OF 3)".

SEE GIRDER ELEVATIONS FOR SPACING OF SHEAR STUDS ON TOP OF THE TOP FLANGE.

FOR ADDITIONAL NOTES ON POST-TENSIONING AND ANCHORAGE, SEE "BENT 4 SCHEMATIC SEQUENCE OF CONSTRUCTION AND NOTES" SHEET.

HOLES IN WEB MAY NEED TO BE A GREATER DIAMETER TO ACCEPT BEARING PLATE TO TRUMPET WELD.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER DETAILS - UNIT 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR
9/27/2021

PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY:	J. CAYETANO	DATE:	9-21
CHECKED BY:	J. B. TAYLOR	DATE:	9-21
DESIGN ENGINEER:	J. B. TAYLOR	DATE:	9-21

REVISIONS

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

SHEET No. S5-23

TOTAL SHEETS 84

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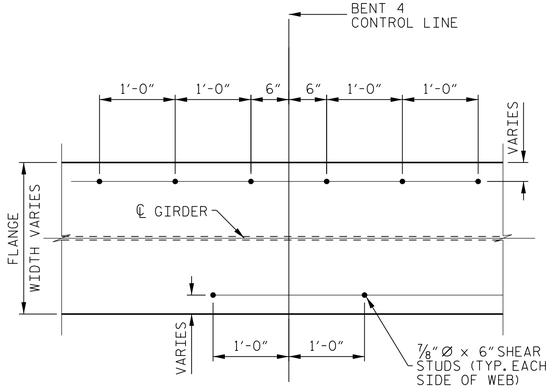

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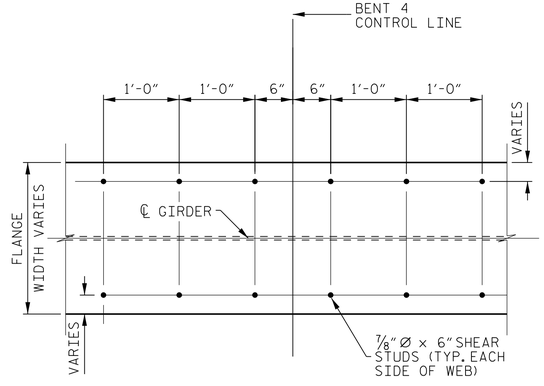

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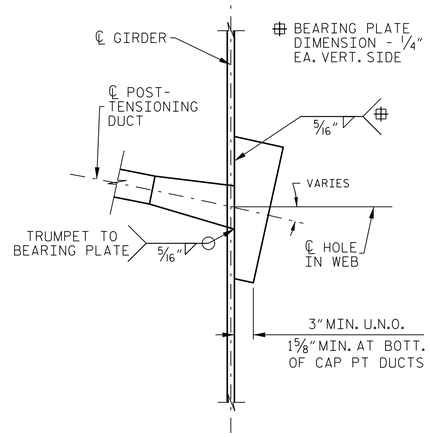
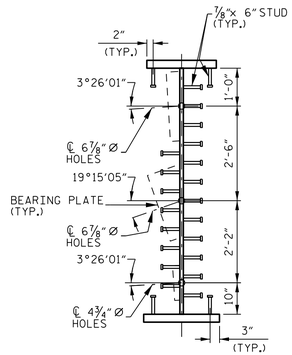


SECTION AT BEARING PLATE

GIRDER 5 SHOWN, GIRDER 1 SIMILAR.



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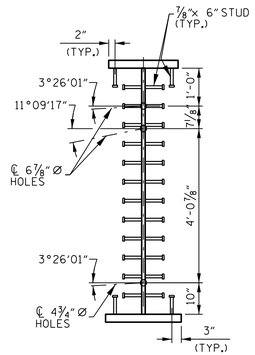

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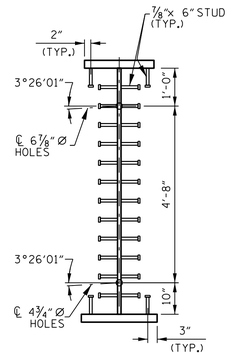

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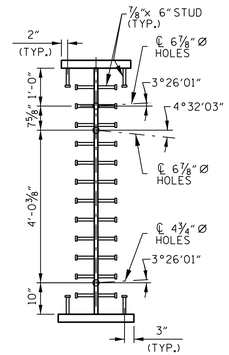

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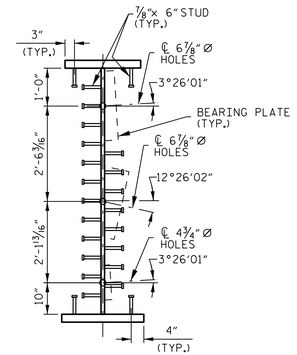

GIRDER 5

SECTION THRU WEB

PROJECT NO. U–2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–

41+07.80 –L–

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER DETAILS – UNIT 2

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5–24
1			3			TOTAL SHEETS
2			4			84

DRAWN BY : J. CAYETANO DATE : 9–21
CHECKED BY : J. B. TAYLOR DATE : 9–21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9–21

PLANS PREPARED BY :
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5540 Centerview Drive, Suite 217
Raleigh, NC 27606–3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR
Joshua B. Taylor
23ED8646C4434...
9/27/2021

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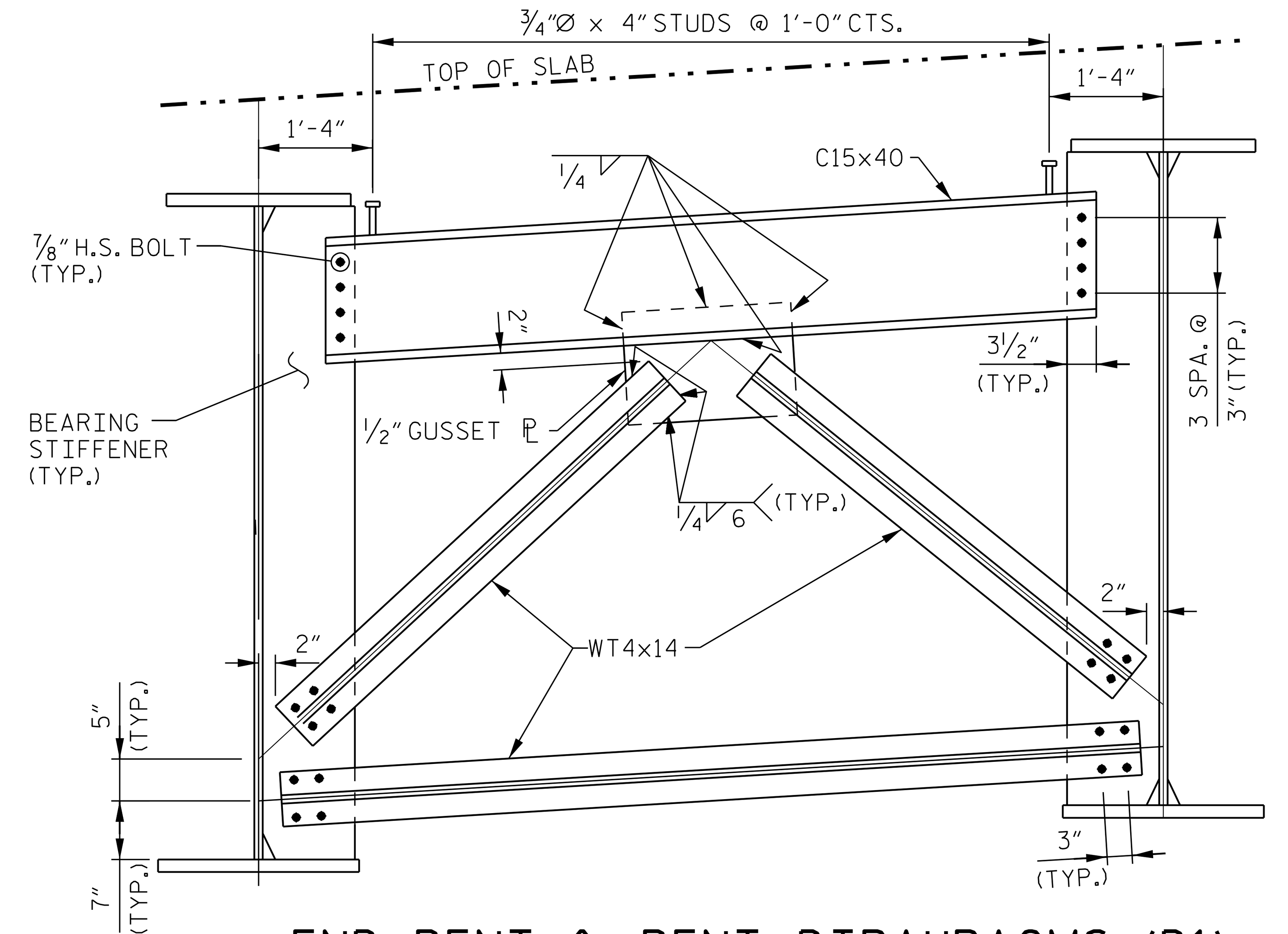
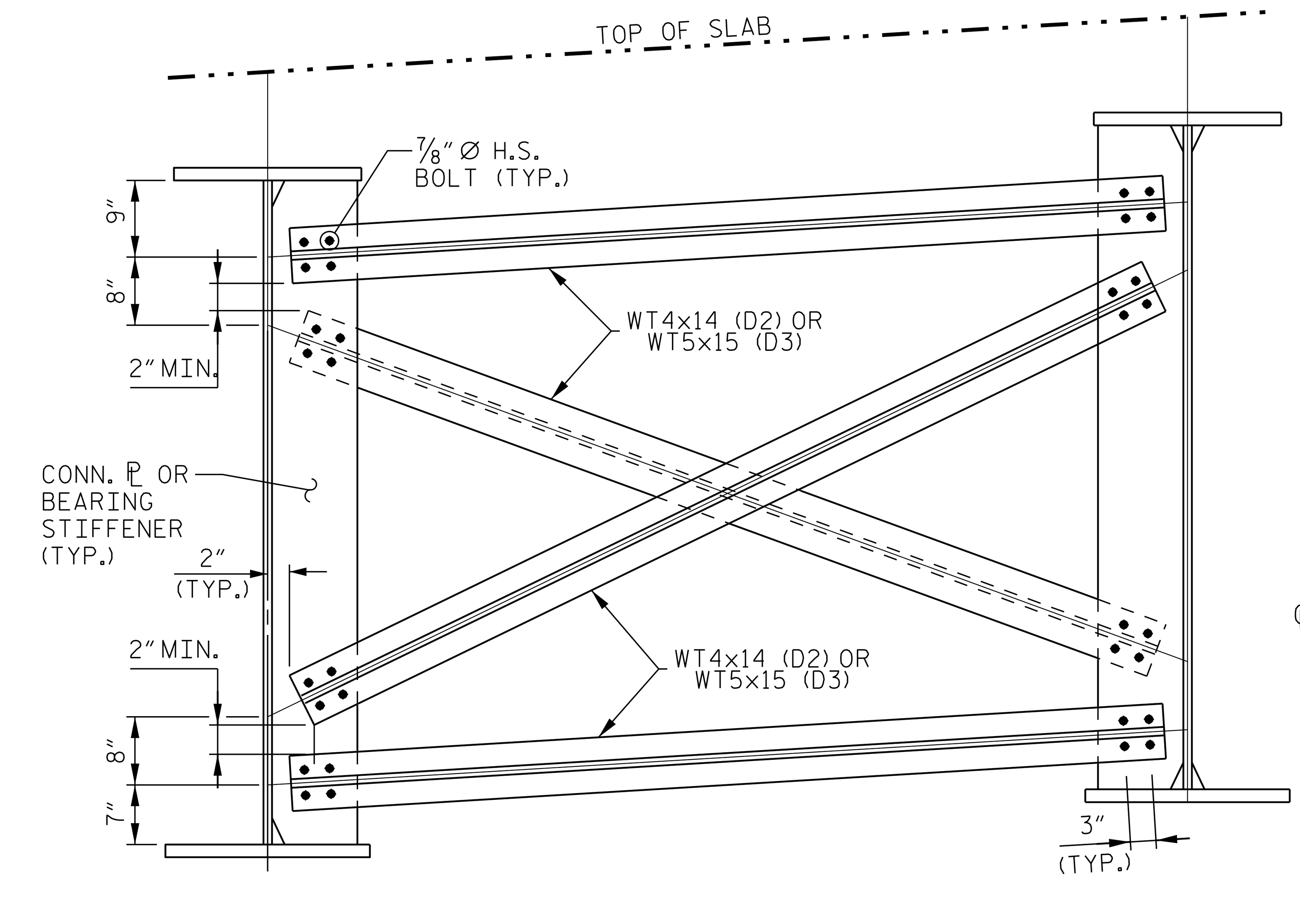
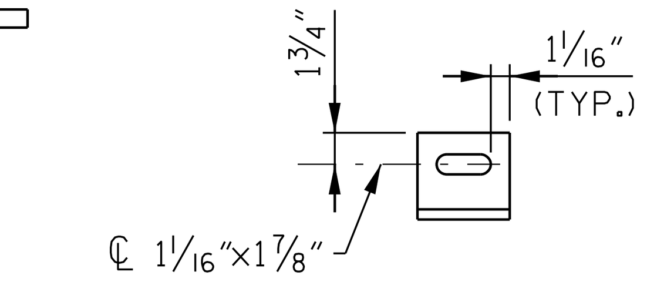


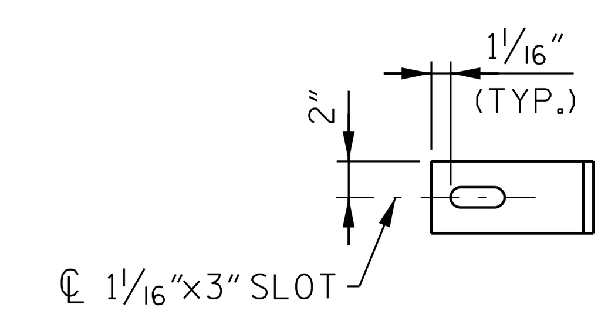
END BENT & BENT DIPAHRAGMS (D1)



INTERMEDIATE & BENT DIAPHRAGMS (D2 & D3)



SECTION B-B



SECTION A-A

NOTES ON PLANS:

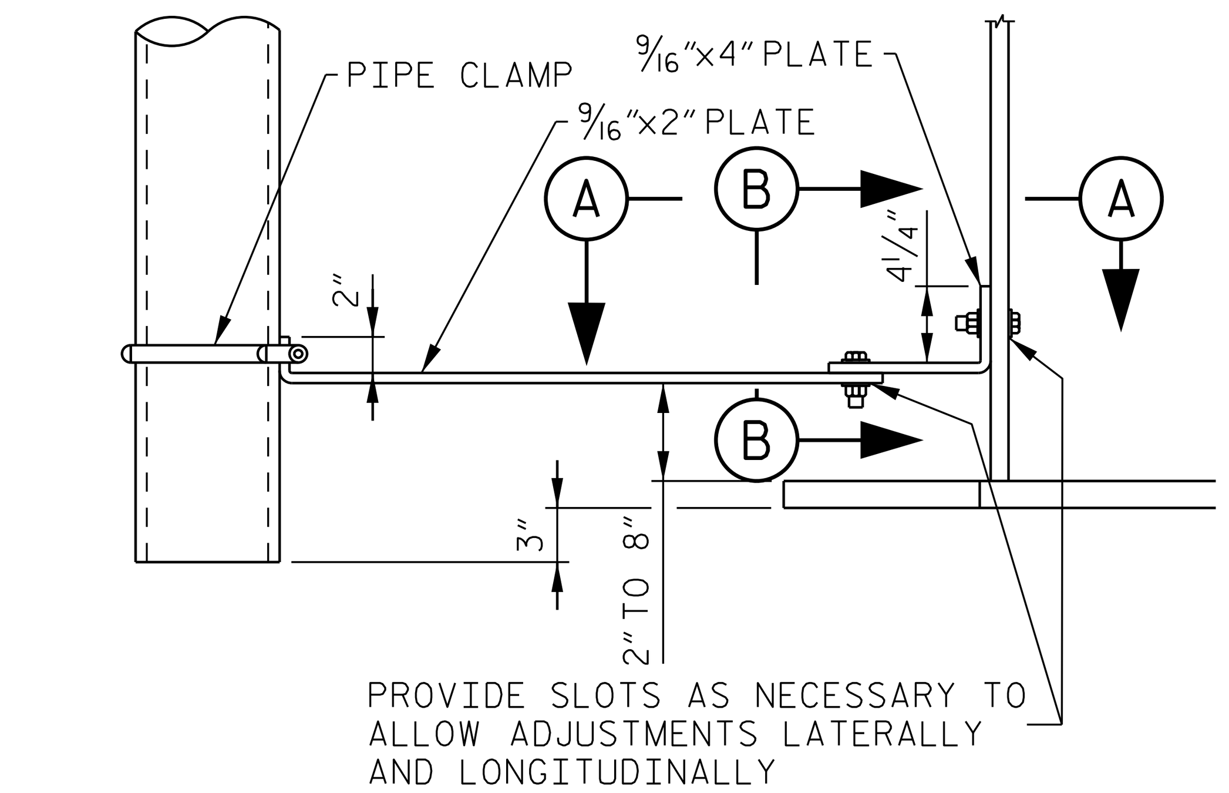
COUPLING IN DRAIN PIPE WILL BE PERMITTED AS APPROVED BY THE ENGINEER.

TOP OF FLOOR DRAIN TO BE SET ⅜" BELOW SURFACE OF SLAB.

4-½" SQUARE LUGS TO BE GLUED TO THE PVC PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.

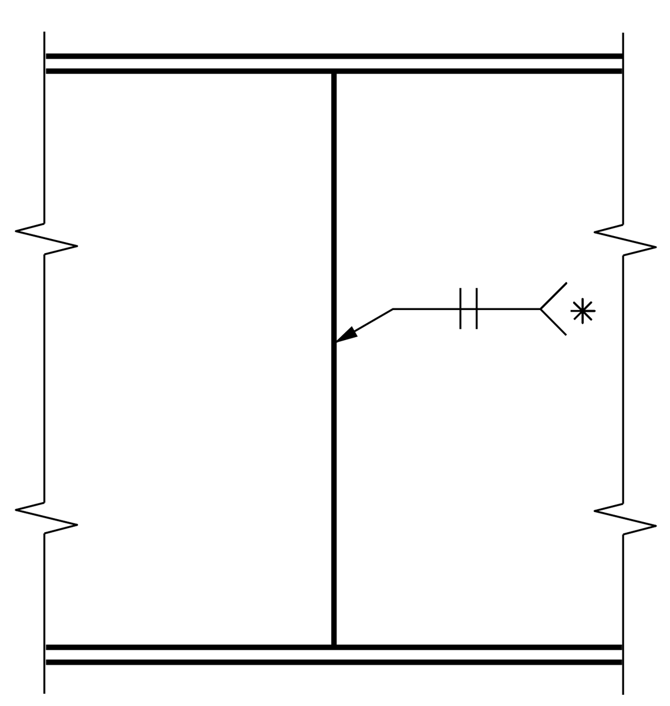
BOLT SIZE TO BE SAME AS DIAPHRAGMS AND CROSS FRAME CONNECTIONS. STAINLESS STEEL WORM DRIVE HOSE CLAMP SHALL BE COMMERCIAL QUALITY.

THE 6" Ø PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.



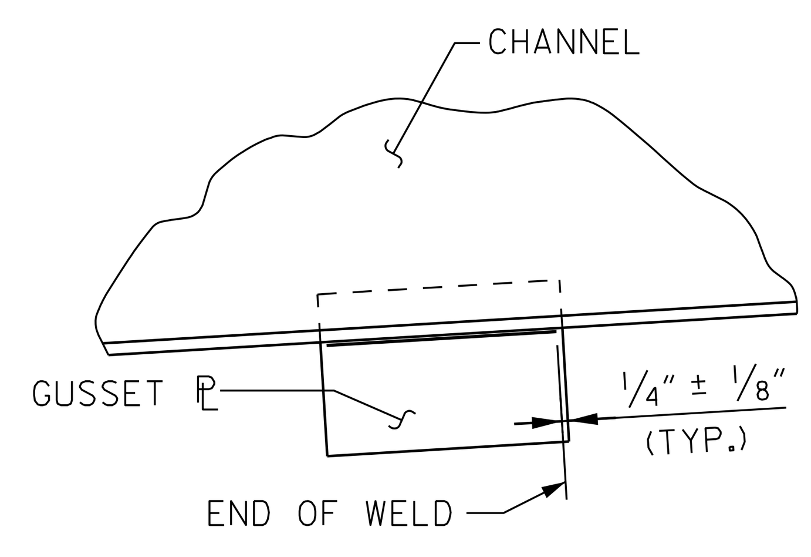
DRAIN CONNECTOR DETAILS

(SEE PLAN OF SPAN FOR LOCATION)

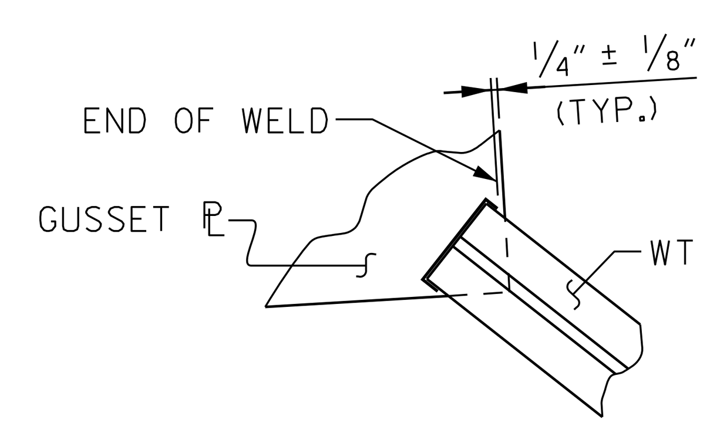


SHOP WEB SPLICE

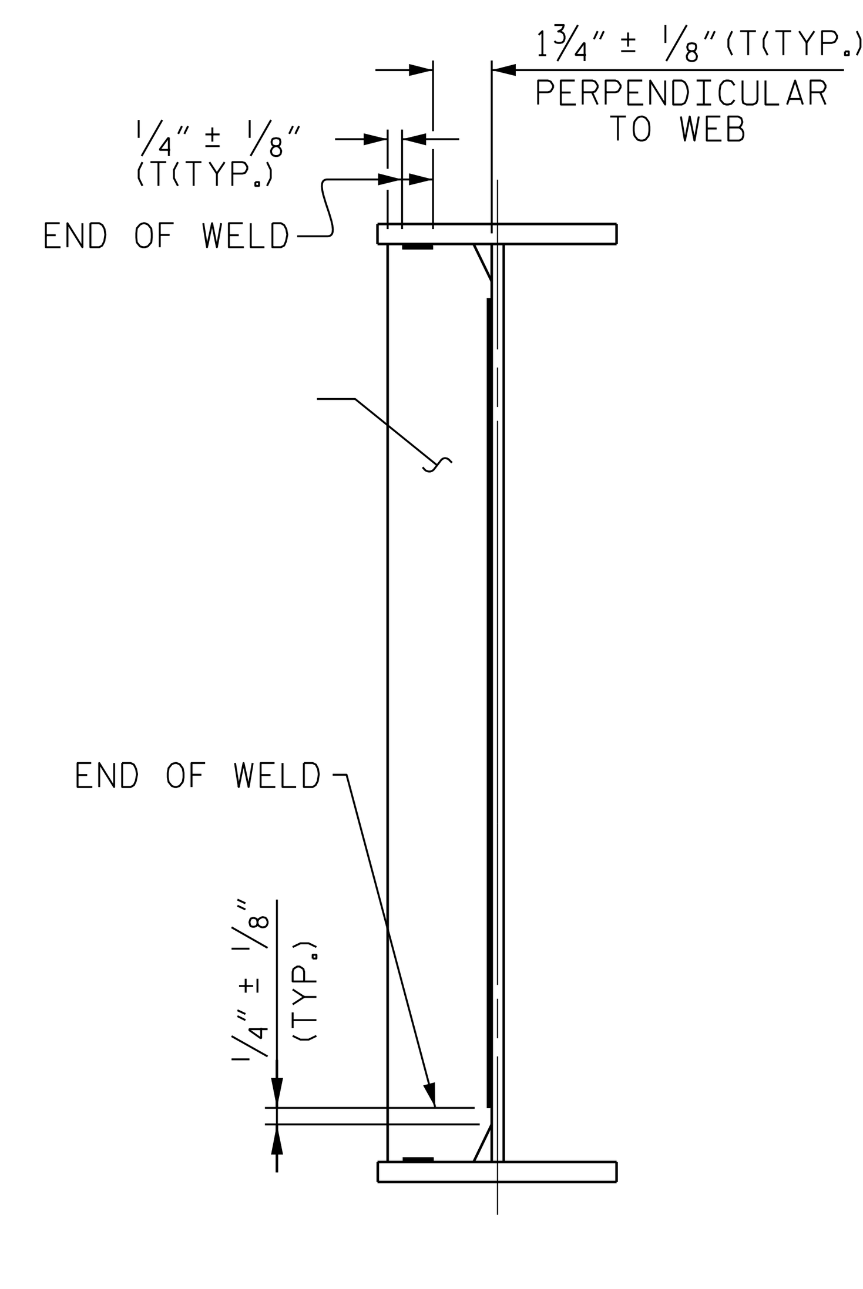
* GRIND SMOOTH AND FLUSH ON OUTSIDE OF EXTERIOR GIRDERS



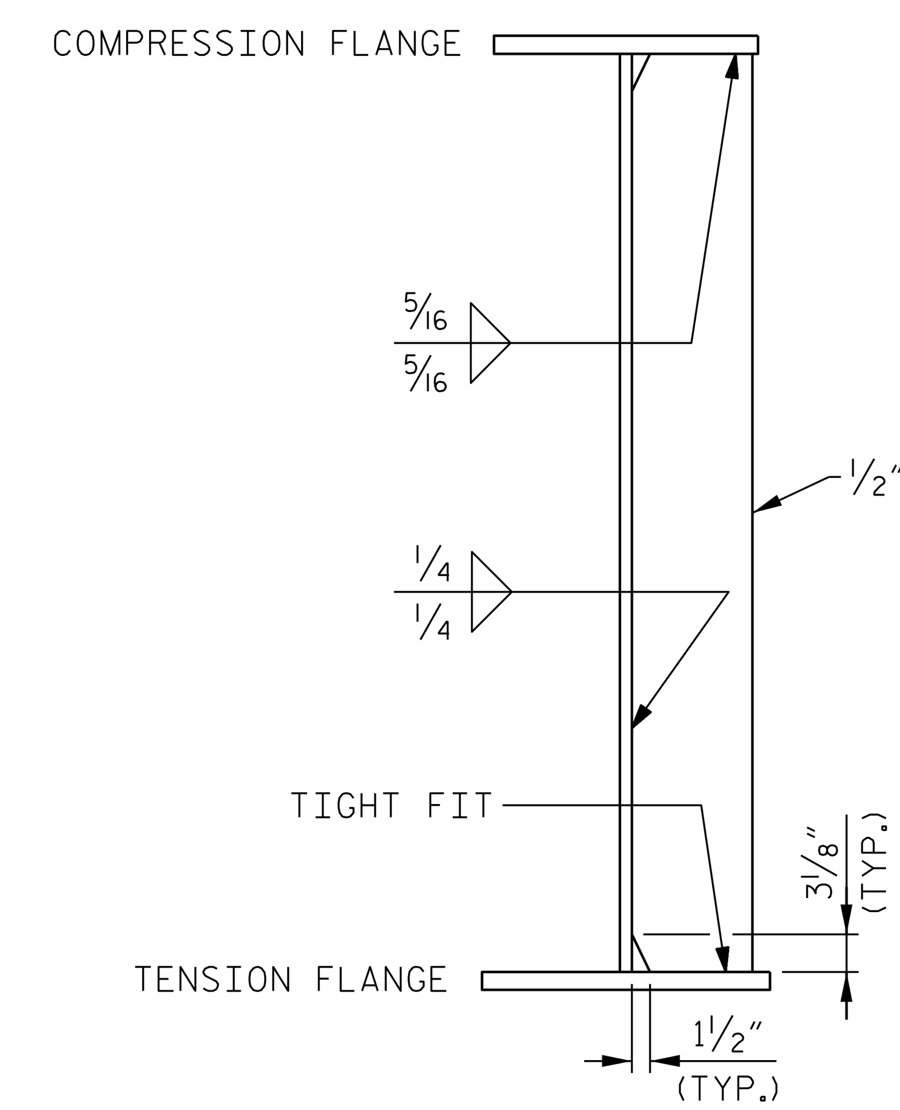
TYPICAL GUSSET PLATE CONNECTION



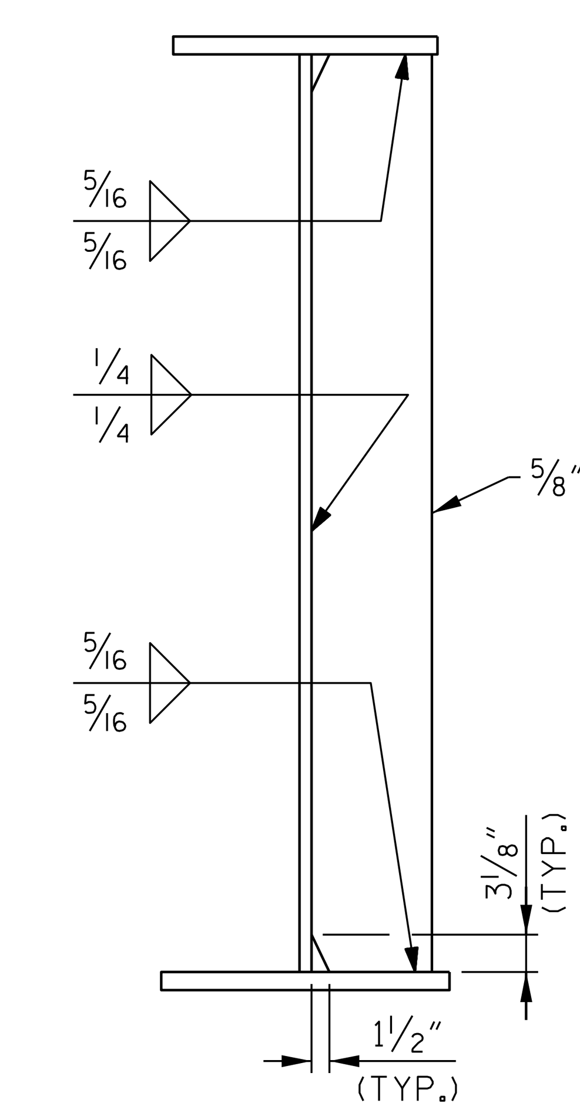
TYPICAL WT TO GUSSET PLATE CONNECTION



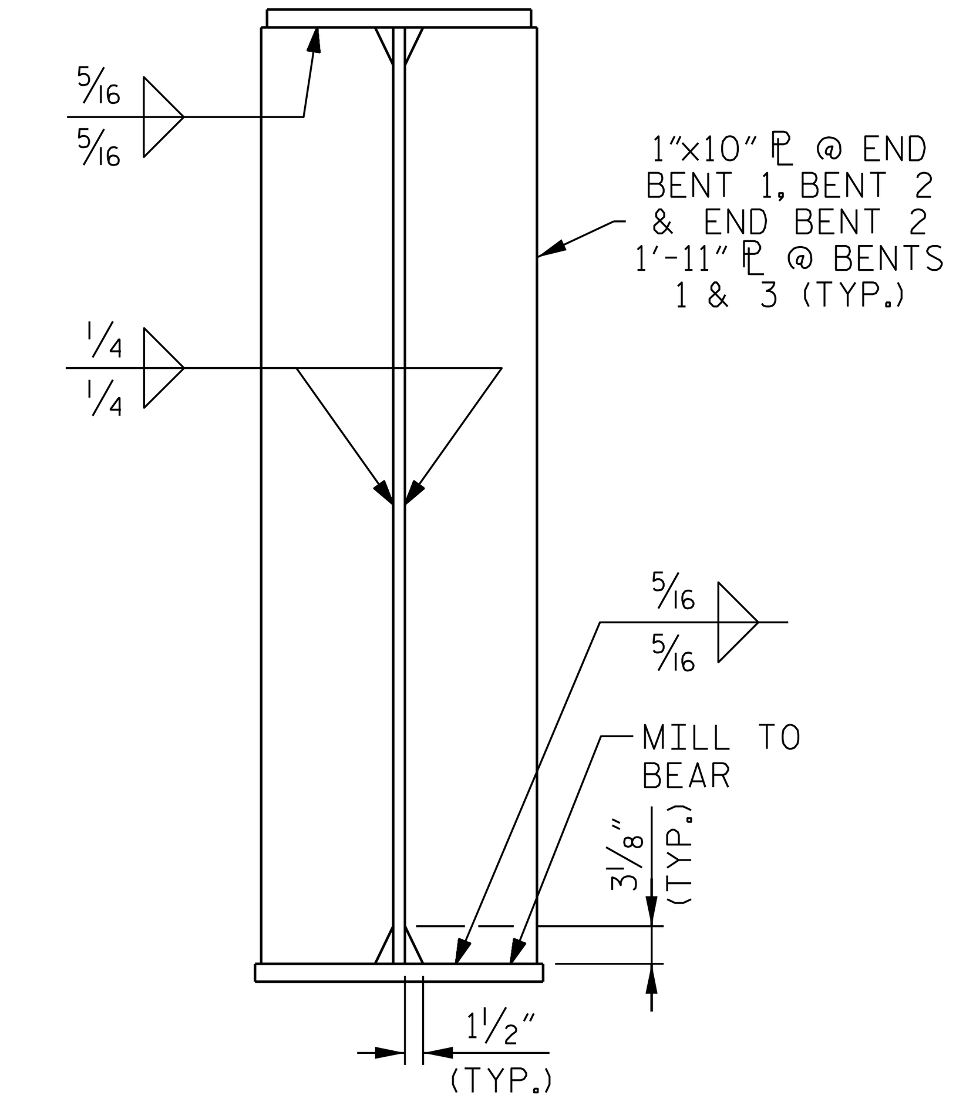
TYPICAL STIFFENER & CONNECTOR PLATE



INTERMEDIATE STIFFENER



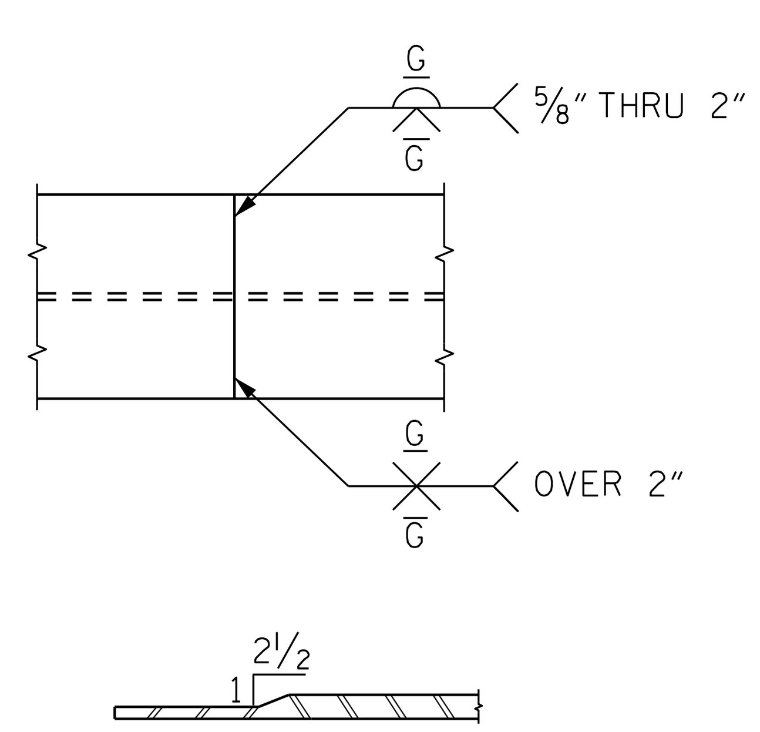
CONNECTOR PLATE



BEARING STIFFENER

NOTE: BEARING STIFFENER MAY REQUIRE COPING WIDER THAN BOTTOM FLANGE

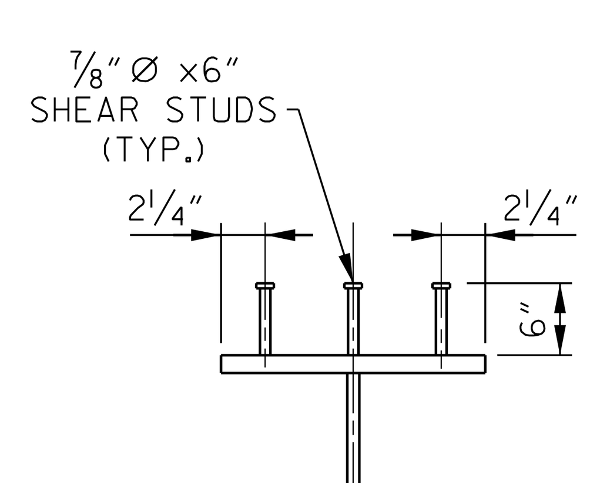
WELD TERMINATION DETAILS



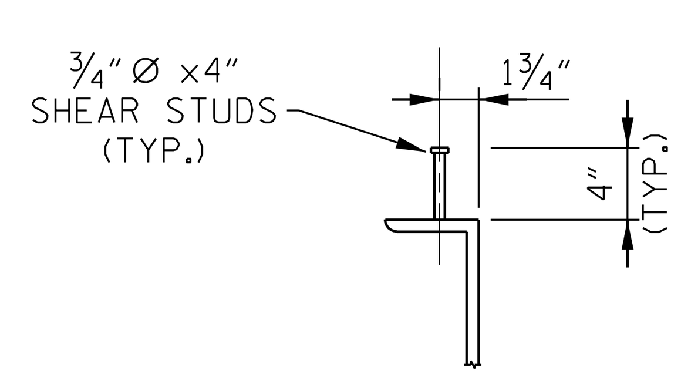
SHOP FLANGE SPLICE DETAIL

(TOP FLANGE SHOWN, BOTTOM FLANGE SIMILAR)

SHOP SPLICE DETAILS

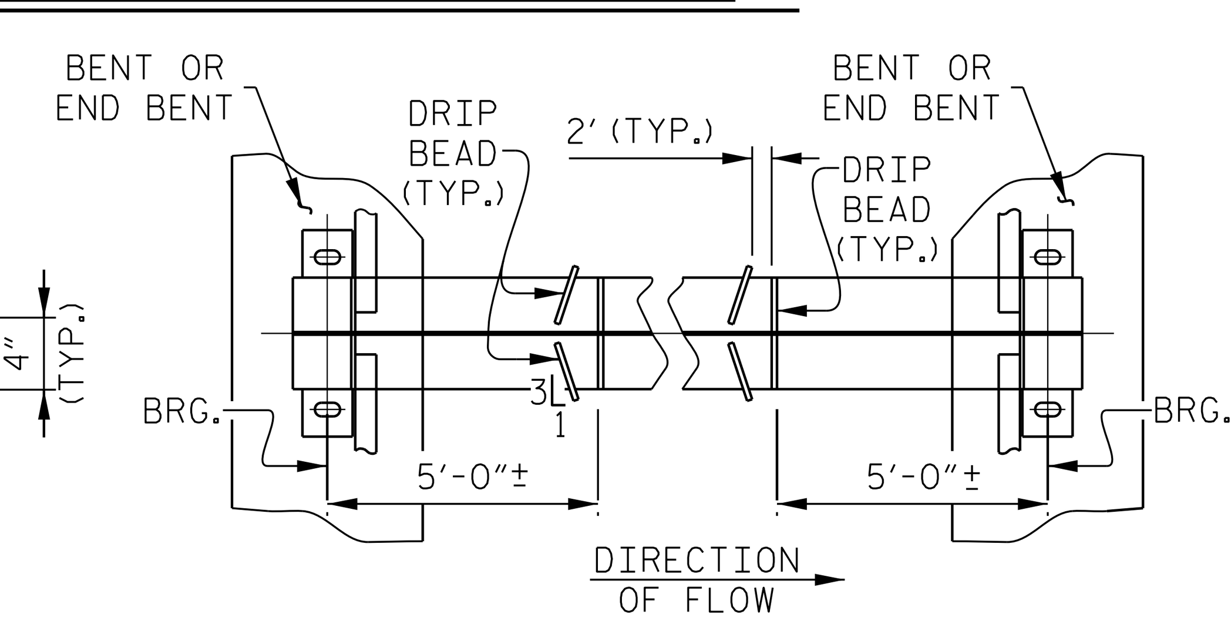


GIRDER SHEAR CONNECTORS

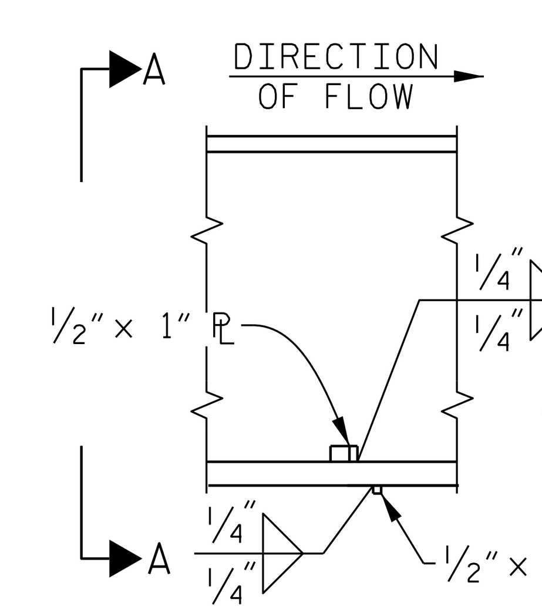


DIAPHRAGM SHEAR CONNECTORS

SHEAR CONNECTOR DETAILS



PART PLAN - BOTTOM FLANGE



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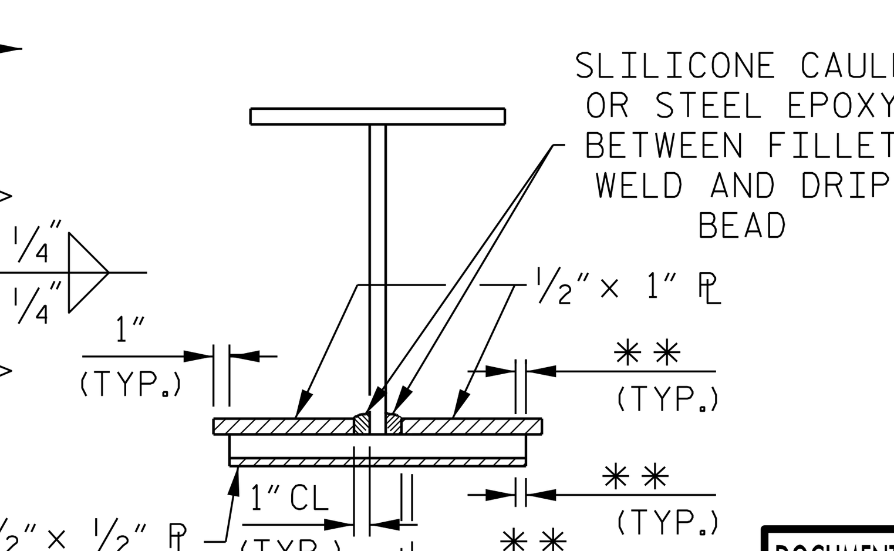

VIEW A-A

** SEE FIGURE 6-113 "WELD TEMINATION DETAILS"

DRIP BED DETAILS

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

STRUCTURAL STEEL DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034539 GREGORY H. SHAFER
8/8/2022

REVISIONS							
No.	BY:	DATE:	No.	BY:	DATE:	SHEET No.	S5-25
1			3			TOTAL SHEETS	84
2			4				

PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
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NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

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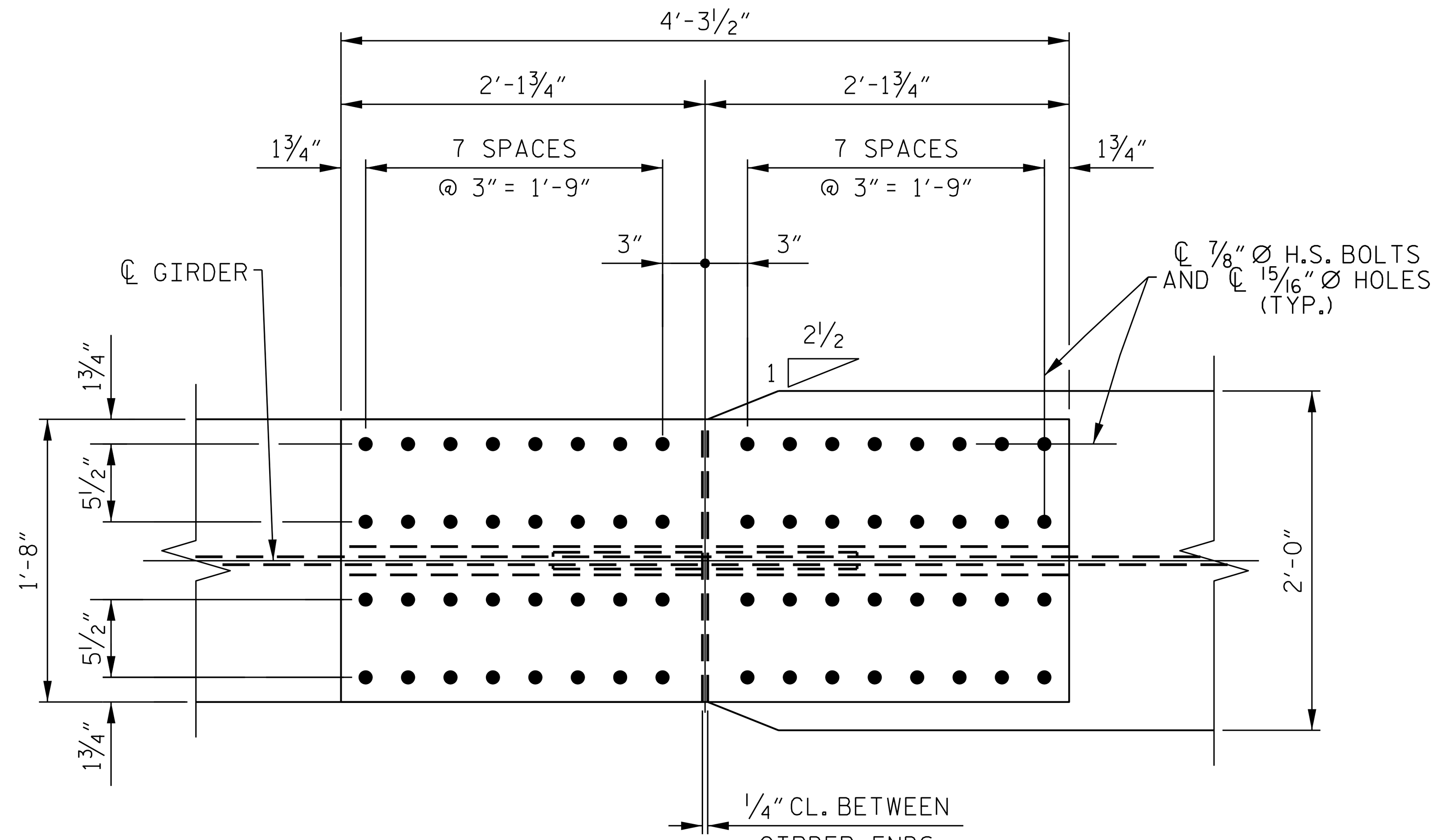
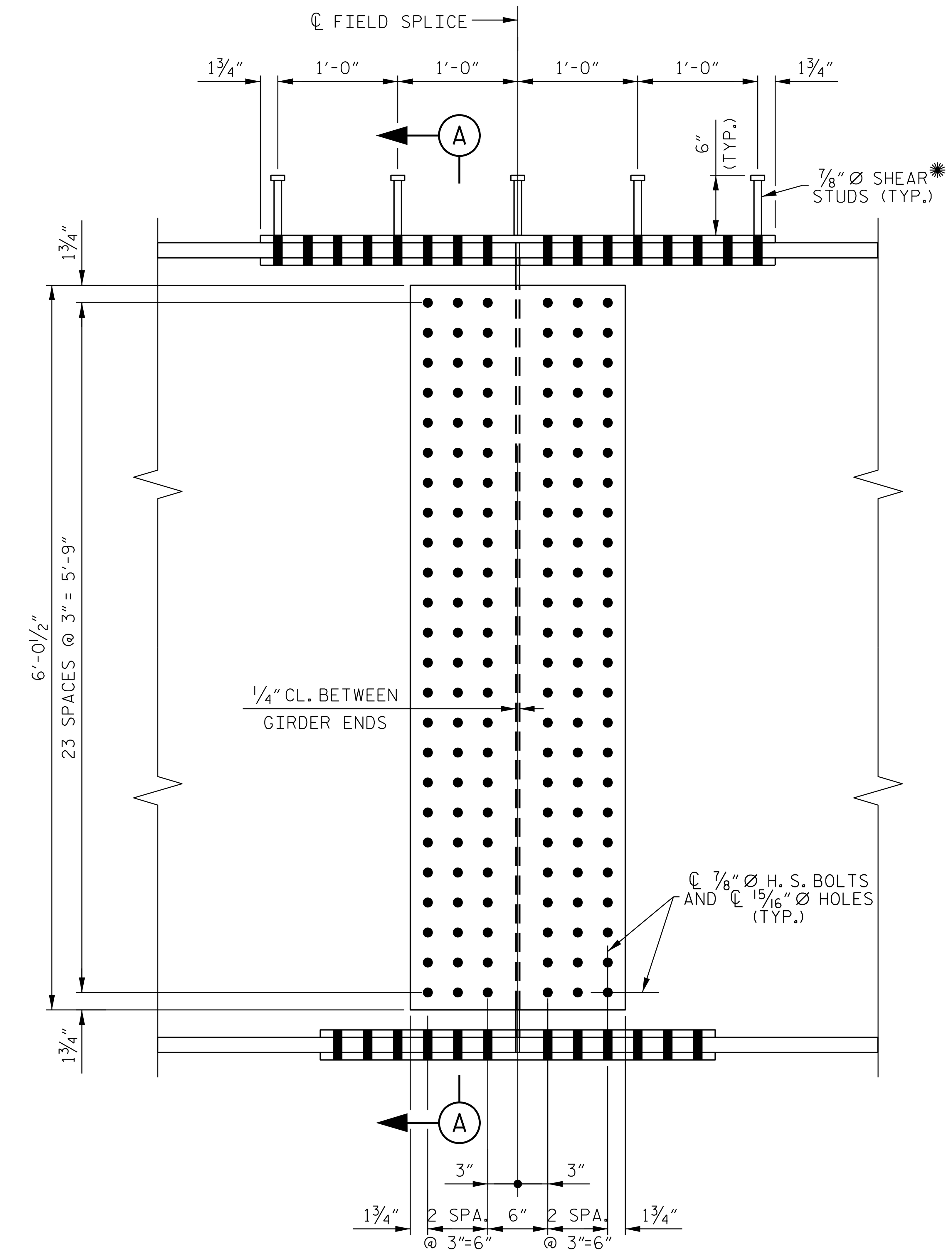


PLAN (TOP OF TOP FLANGE)

(SHEAR STUDS NOT SHOWN FOR CLARITY)



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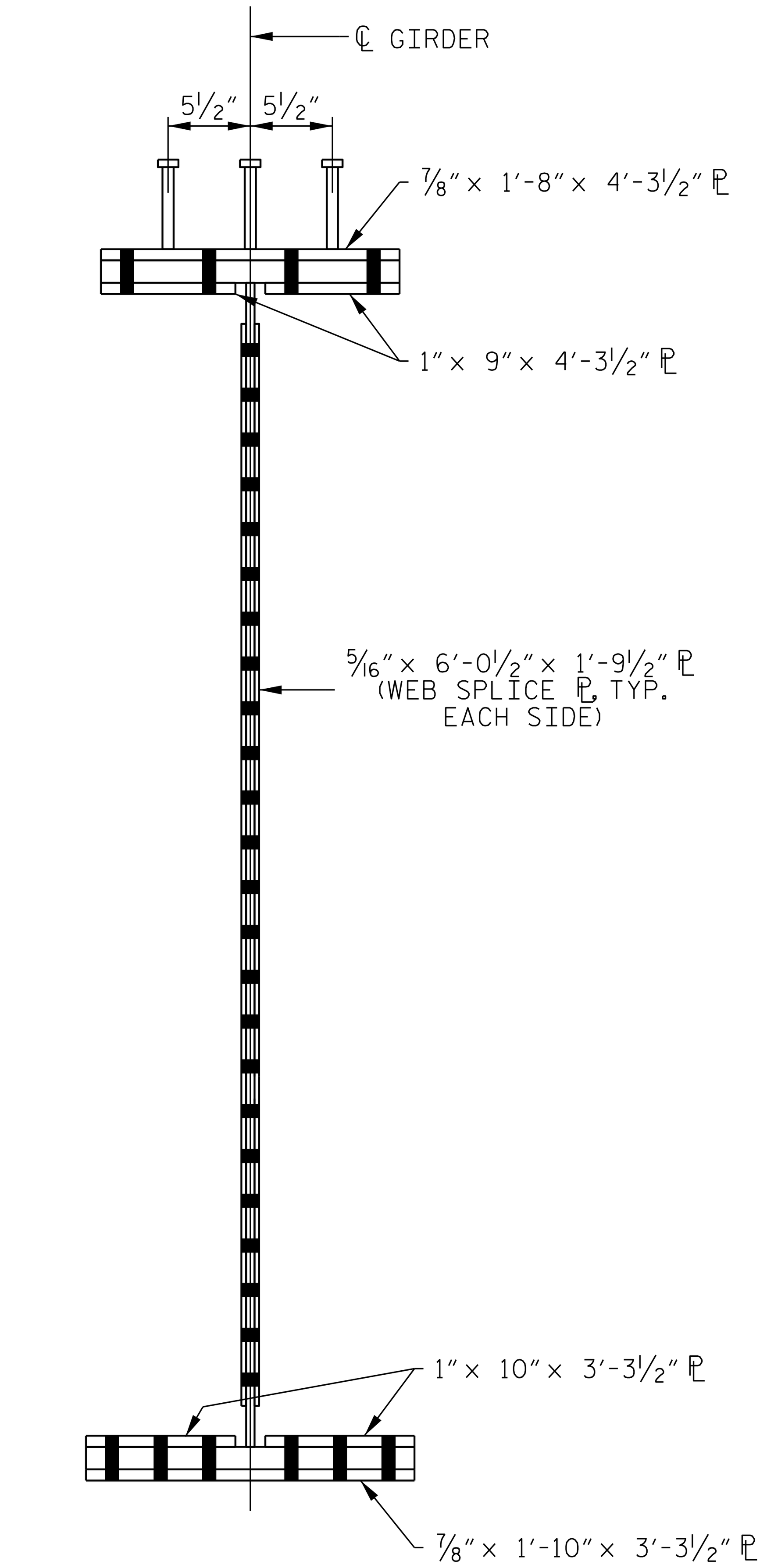
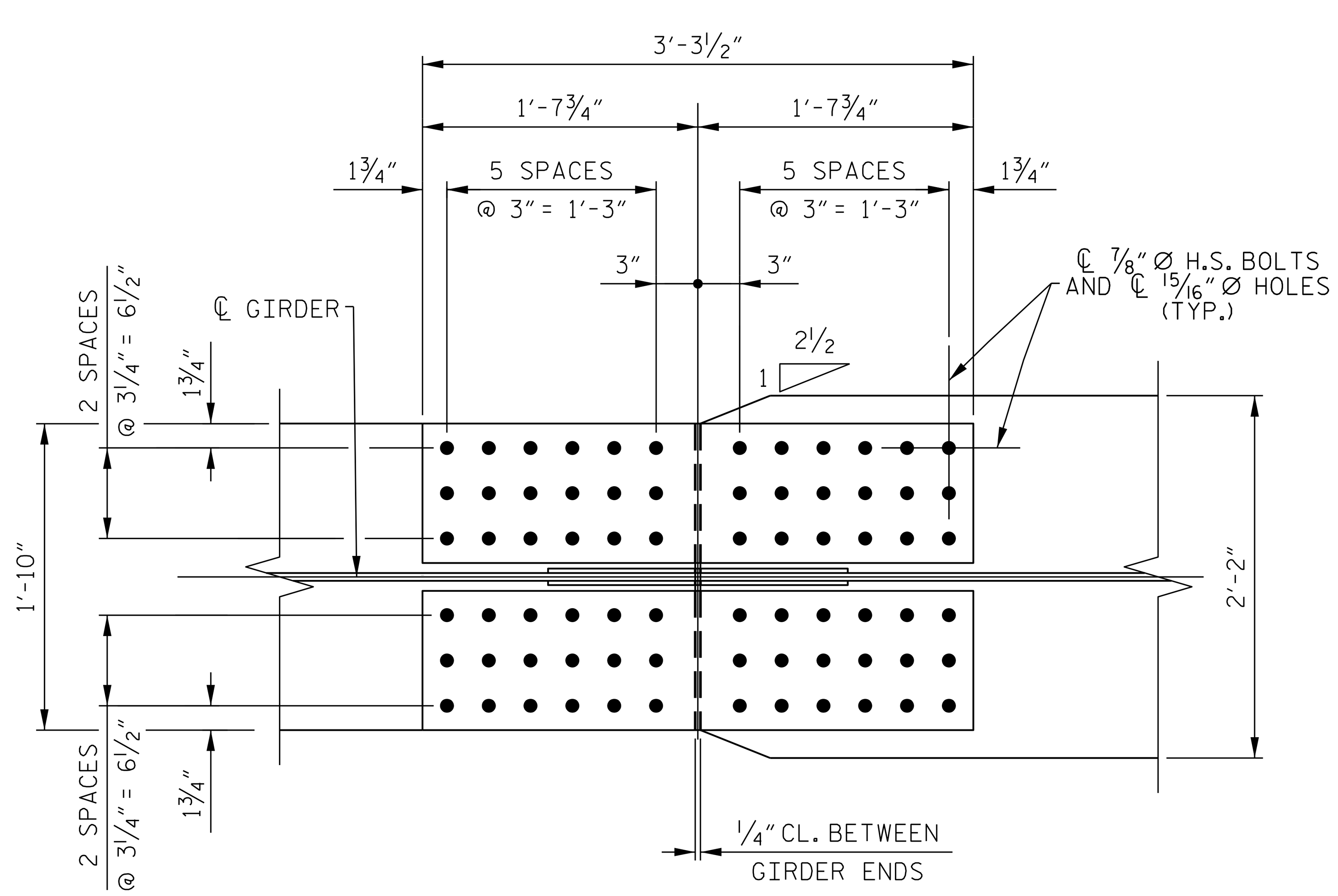


SECTION A–A



PLAN (TOP OF BOTTOM FLANGE)

PROJECT NO. U–2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB– 41+07.80 –L–

SHEET 1 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BOLTED FIELD SPLICE DETAILS – TYPE "A"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033698 JOSHUA B. TAYLOR

9/27/2021

PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

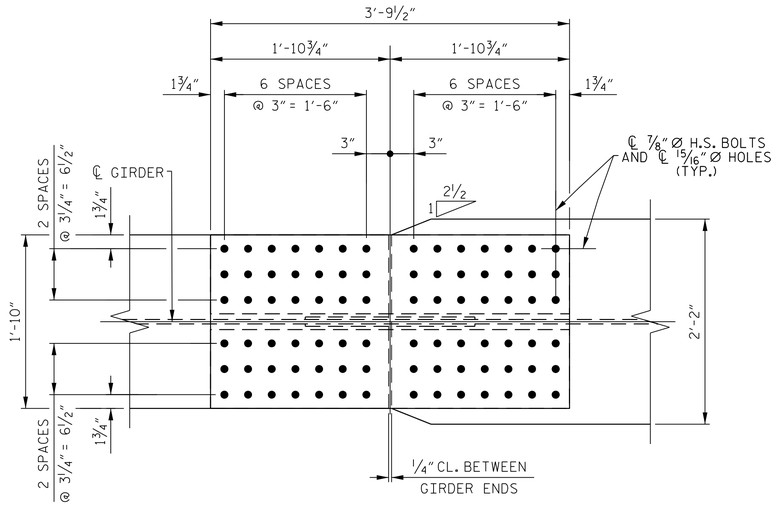
DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS

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

SHEET No. S5-26

TOTAL SHEETS 84



PLAN (TOP OF TOP FLANGE)

(SHEAR STUDS NOT SHOWN FOR CLARITY)

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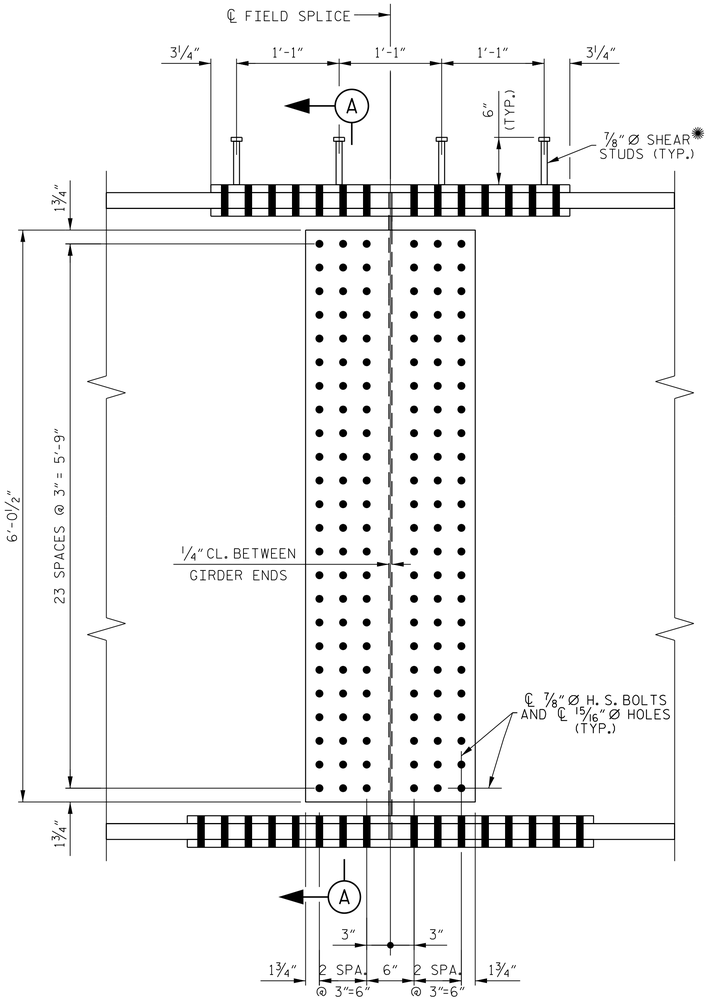

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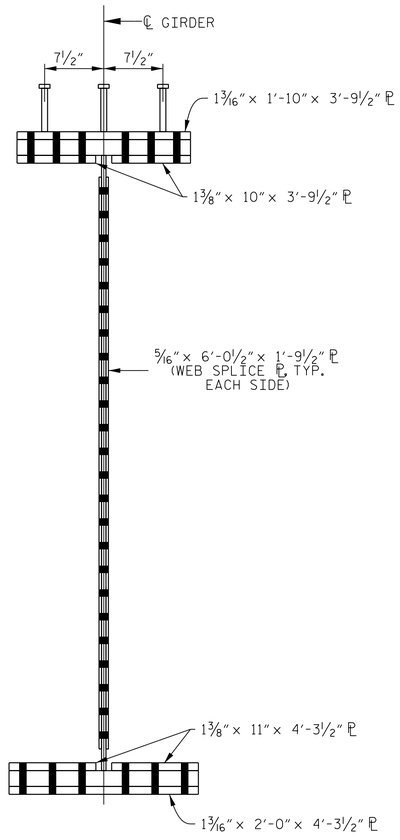
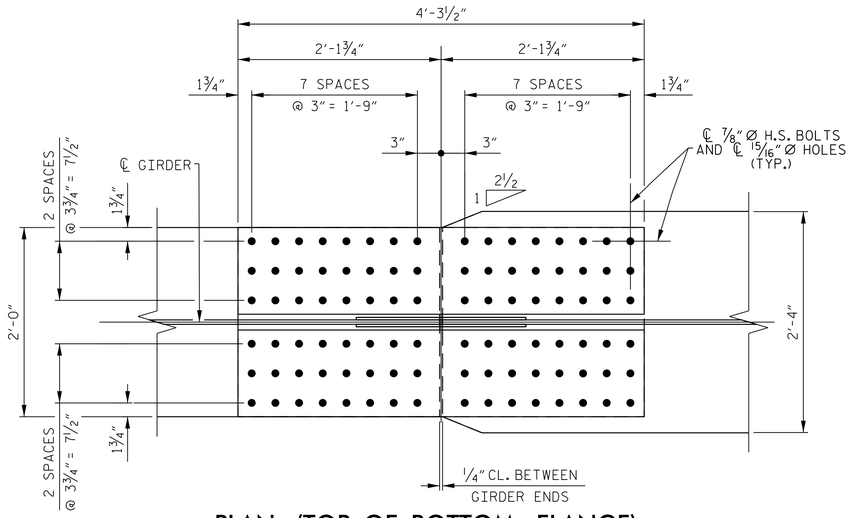


SECTION A–A



PLAN (TOP OF BOTTOM FLANGE)

PROJECT NO. U–2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 2 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BOLTED FIELD SPLICE DETAILS – TYPE "B"

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NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR

Joshua B. Taylor
23ED8649C4A34B7...
9/27/2021

DRAWN BY : J. CAYETANO DATE : 9–21
CHECKED BY : J. B. TAYLOR DATE : 9–21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9–21

PLANS PREPARED BY :
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5540 Centerview Drive, Suite 217
Raleigh, NC 27606–3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5–27
1			3			TOTAL SHEETS
2			4			84

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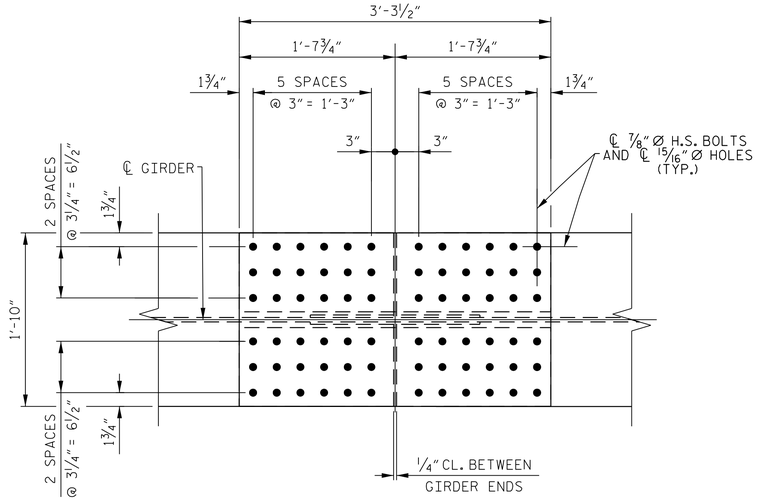
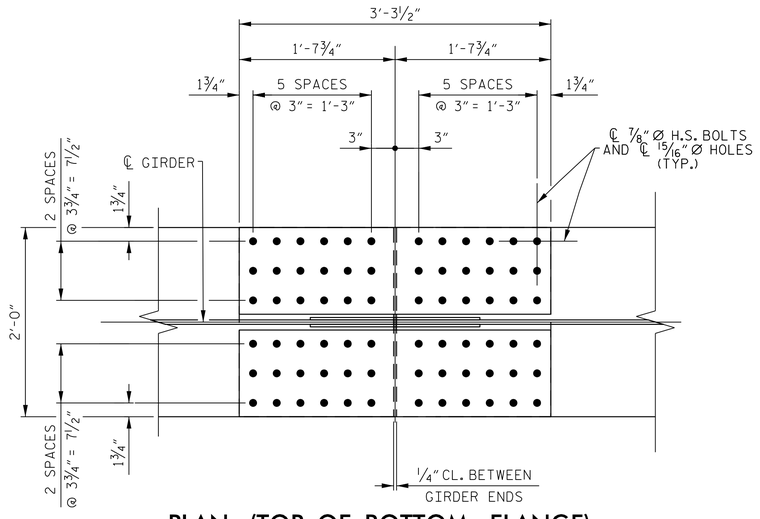


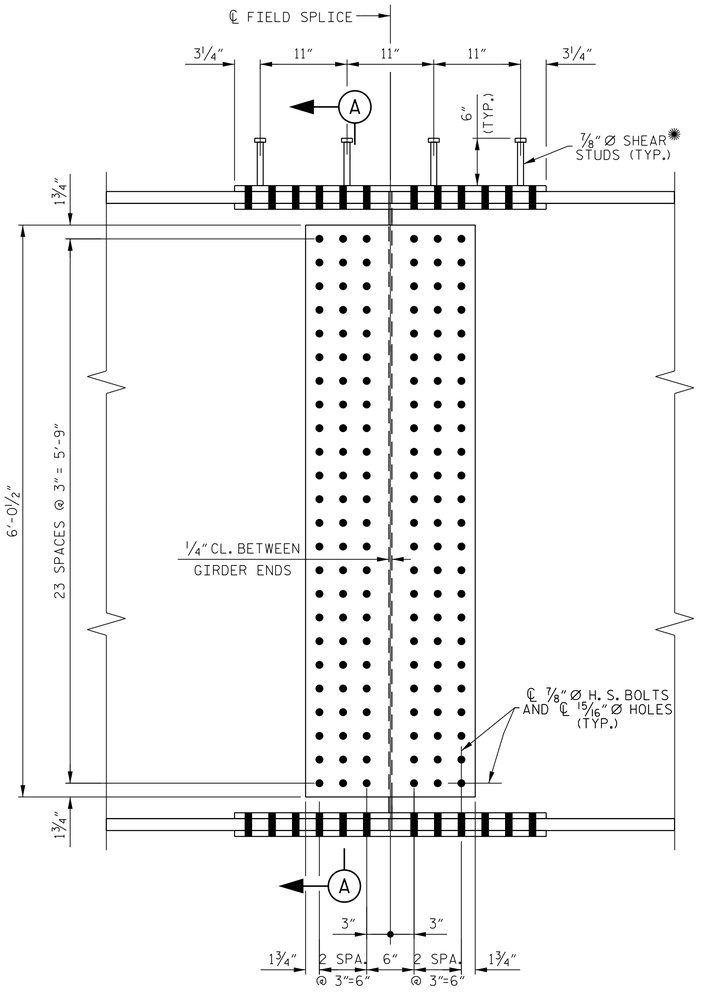
PLAN (TOP OF TOP FLANGE)

(SHEAR STUDS NOT SHOWN FOR CLARITY)



PLAN (TOP OF BOTTOM FLANGE)

✺ SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF THE SPLICE PLATE BEFORE FIELD ASSEMBLY.



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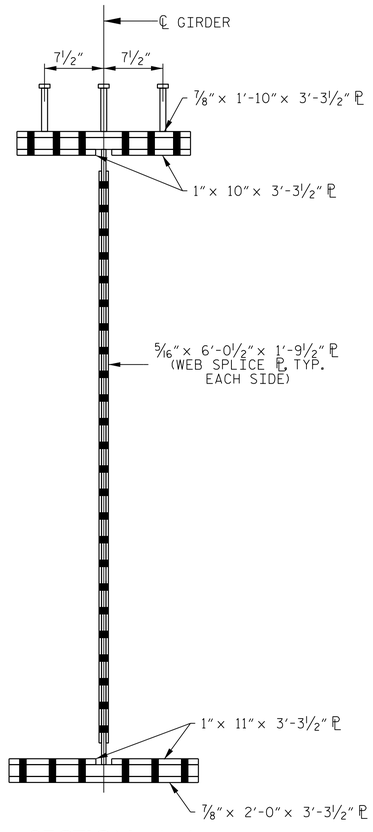

SECTION A–A

PROJECT NO. U–2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–

41+07.80 –L–

SHEET 3 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BOLTED FIELD SPLICE DETAILS – TYPE "C"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA BRYAN TAYLOR
Digitally signed by Joshua Bryan Taylor
23ED8649CA5B4...
9/27/2021

DRAWN BY :	J. CAYETANO	DATE :	9–21
CHECKED BY :	J. B. TAYLOR	DATE :	9–21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9–21

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606–3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5–28
1			3			TOTAL SHEETS
2			4			84

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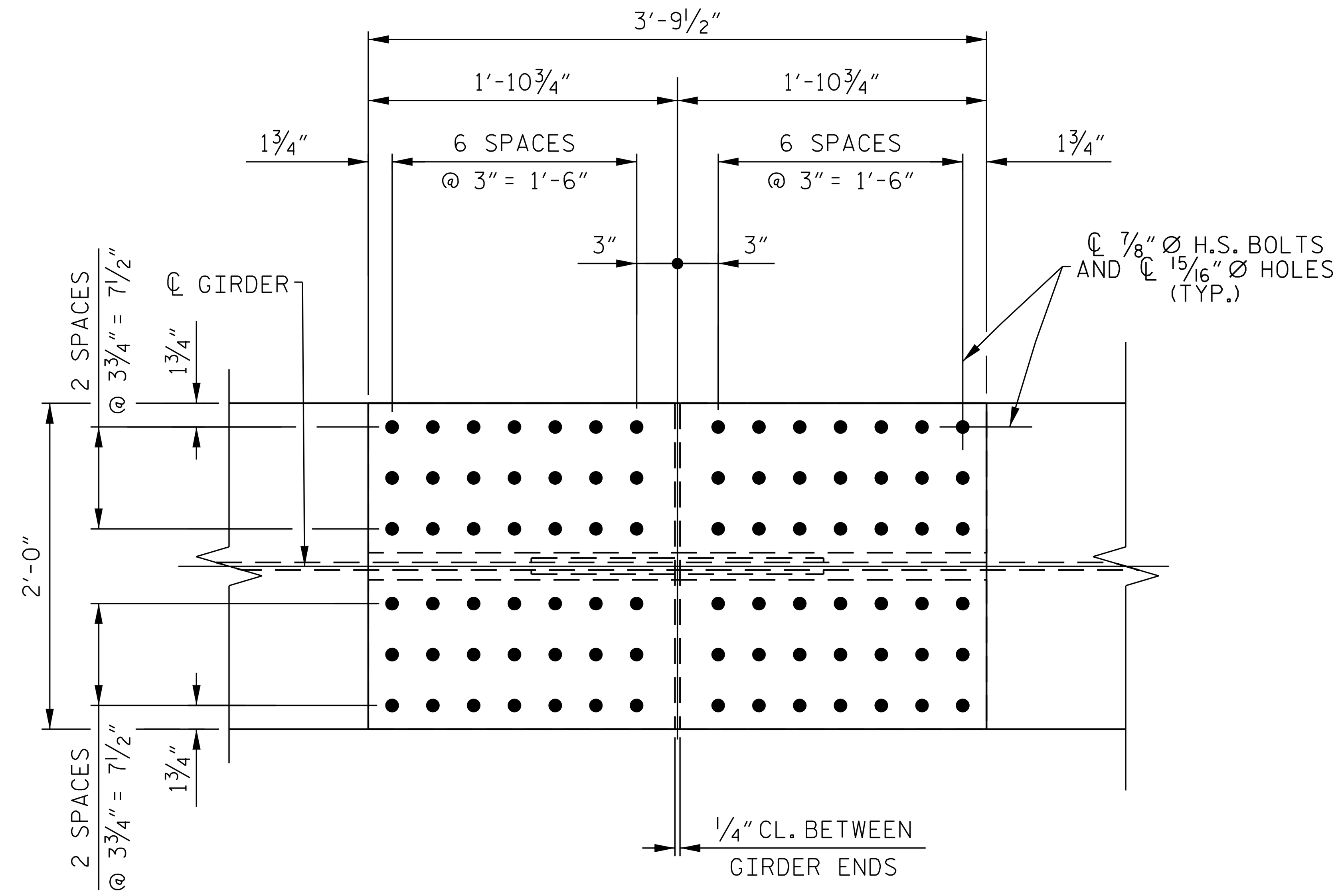
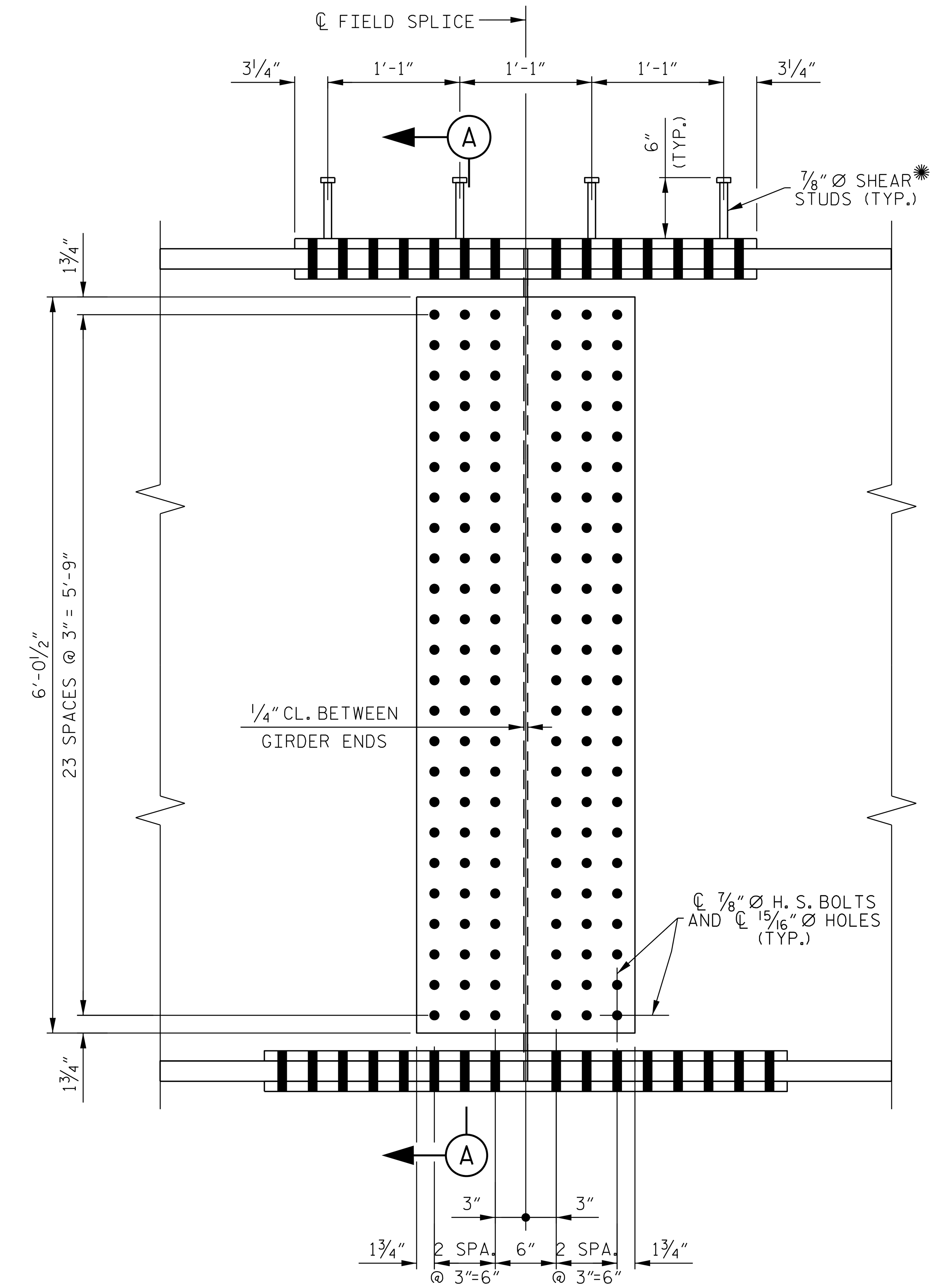
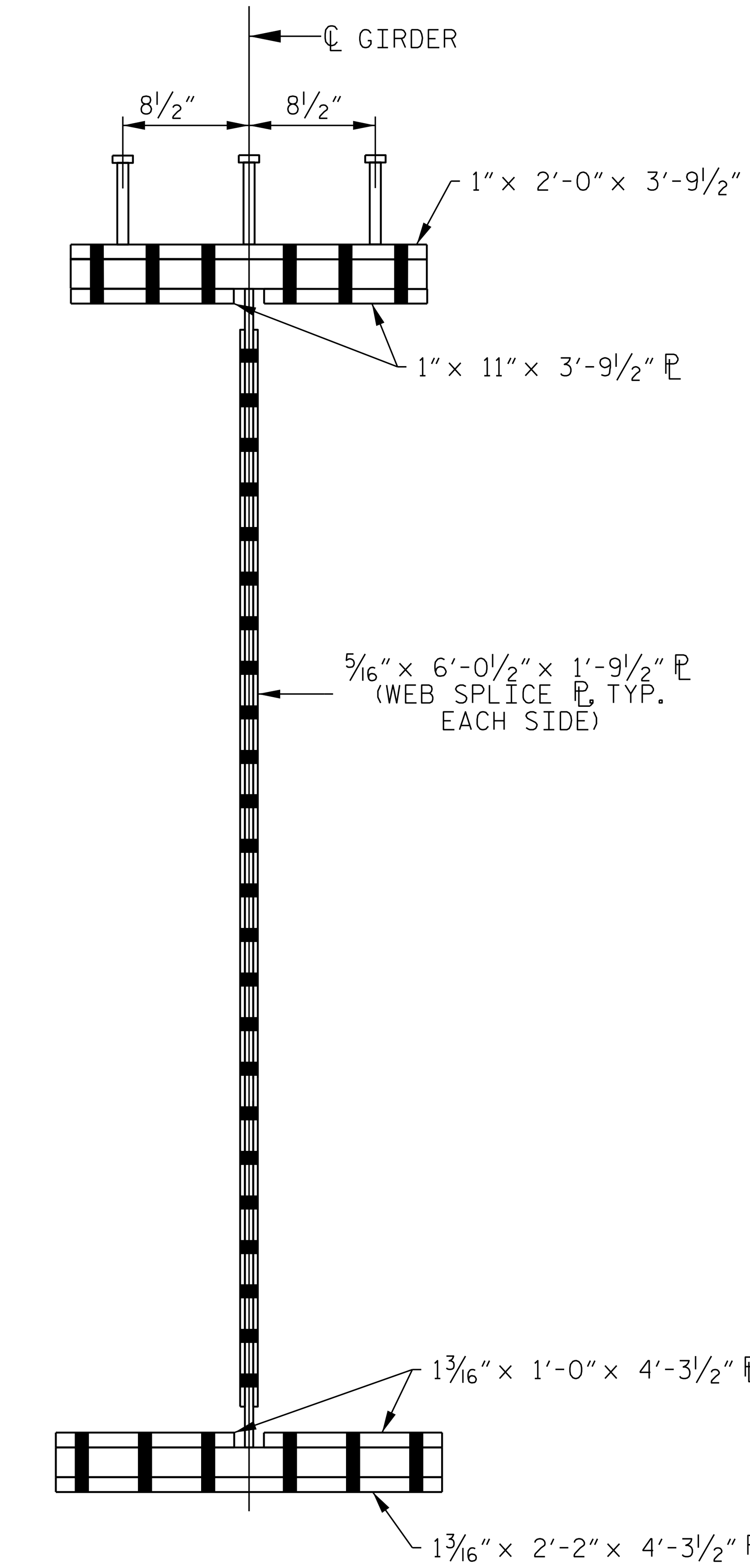


PLAN (TOP OF TOP FLANGE)

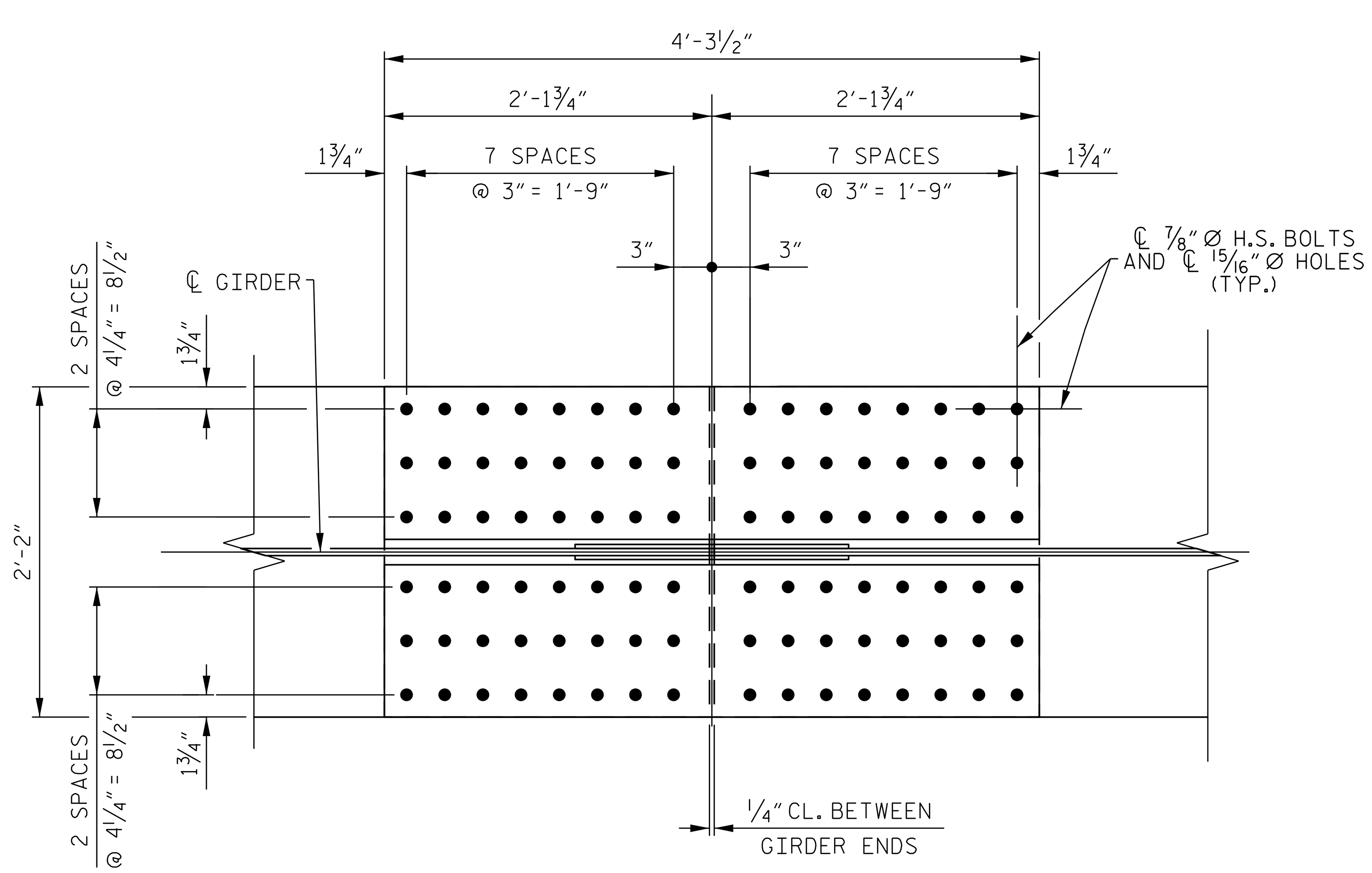
(SHEAR STUDS NOT SHOWN FOR CLARITY)



ELEVATION



SECTION A–A



PLAN (TOP OF BOTTOM FLANGE)

PROJECT NO. U–2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB– 41+07.80 –L–

SHEET 4 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BOLTED FIELD SPLICE DETAILS – TYPE "D"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR

9/27/2021

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS

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

SHEET No. S5-29

TOTAL SHEETS 84

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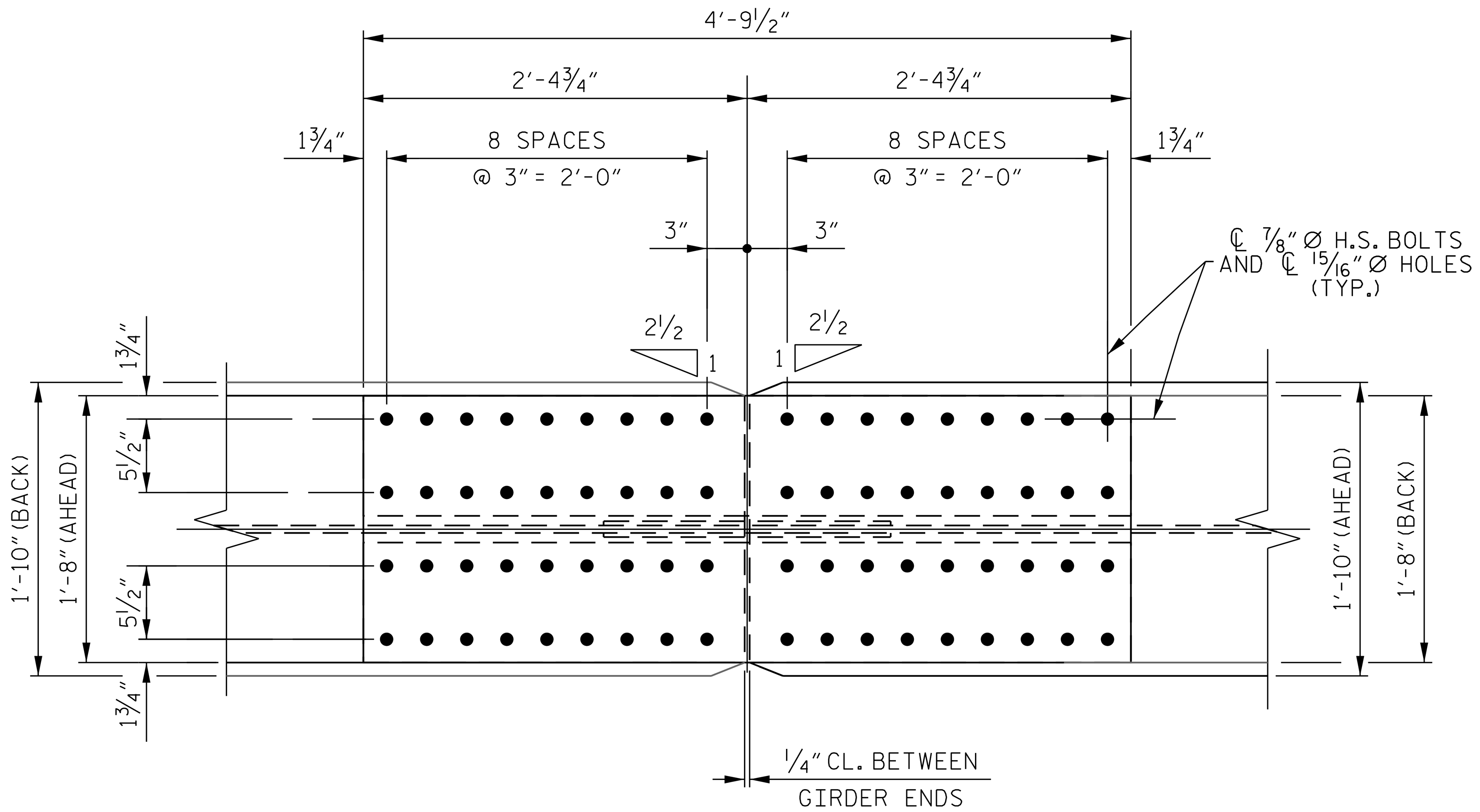
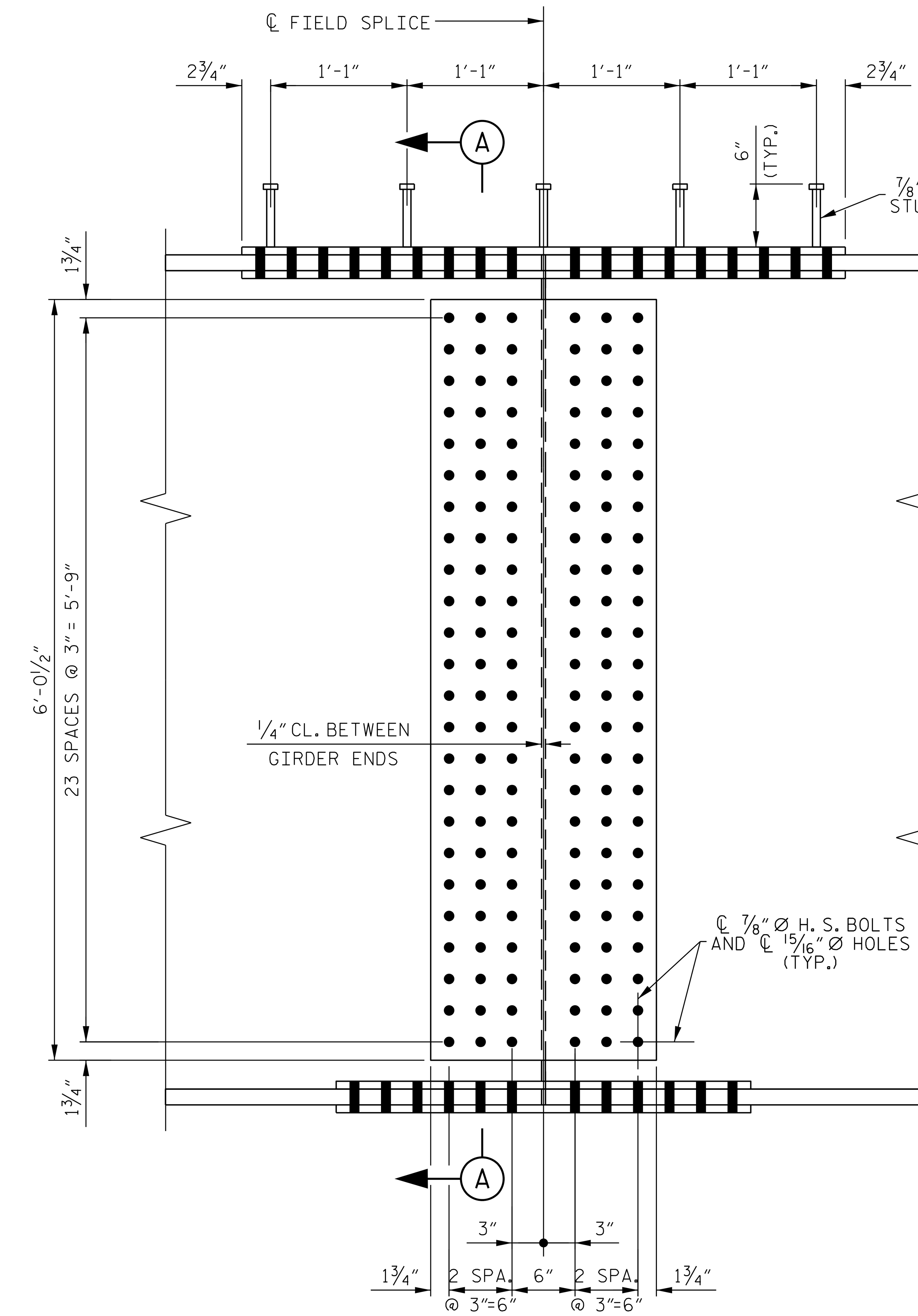


PLAN (TOP OF TOP FLANGE)

(SHEAR STUDS NOT SHOWN FOR CLARITY)

✱ SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF THE SPLICE PLATE BEFORE FIELD ASSEMBLY.



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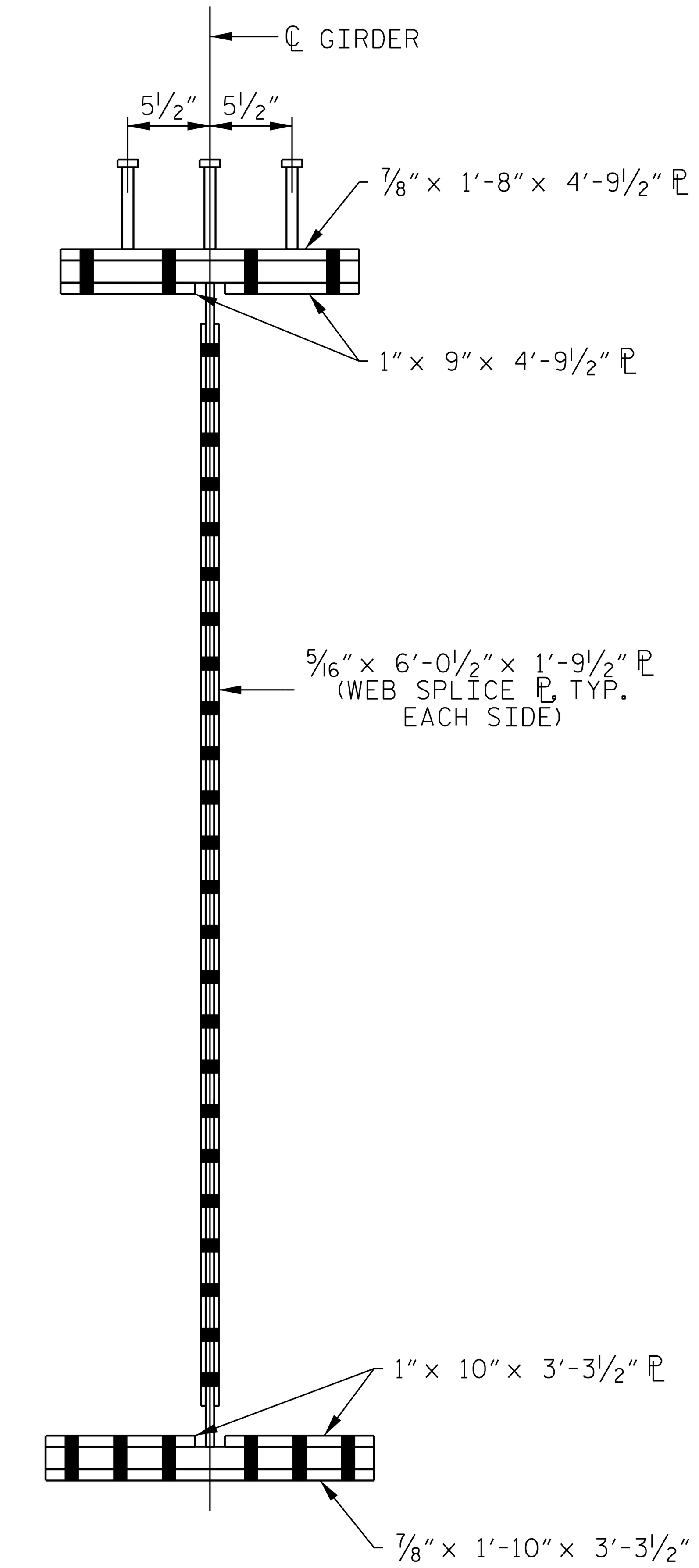

SECTION A–A

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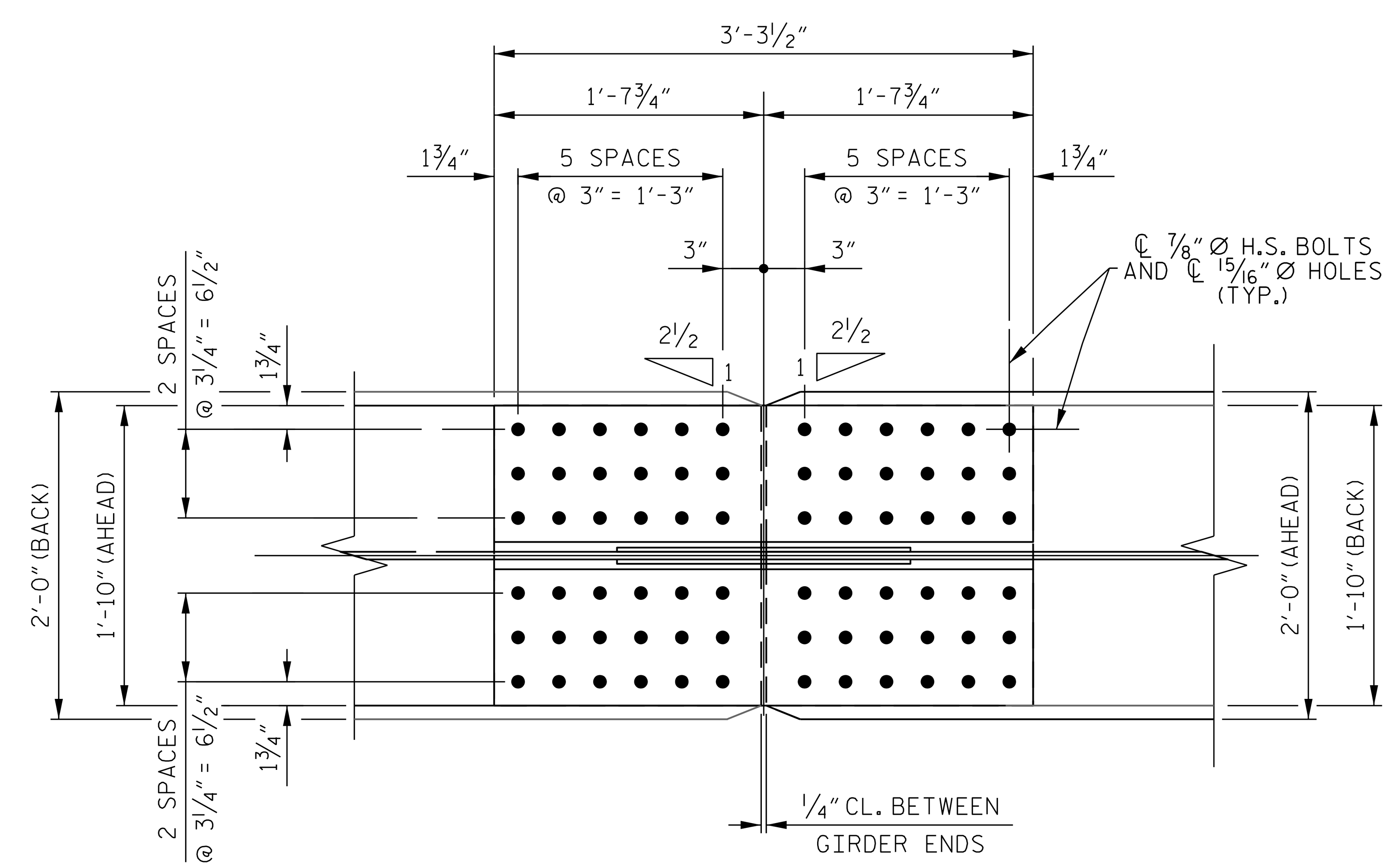

PLAN (TOP OF BOTTOM FLANGE)

PROJECT NO. U–2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 5 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BOLTED FIELD SPLICE DETAILS – TYPE "E"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR
9/27/2021

PLANS PREPARED BY :
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FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE : 9-21
CHECKED BY :	J. B. TAYLOR	DATE : 9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE : 9-21

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

SHEET No. S5–30
TOTAL SHEETS 84

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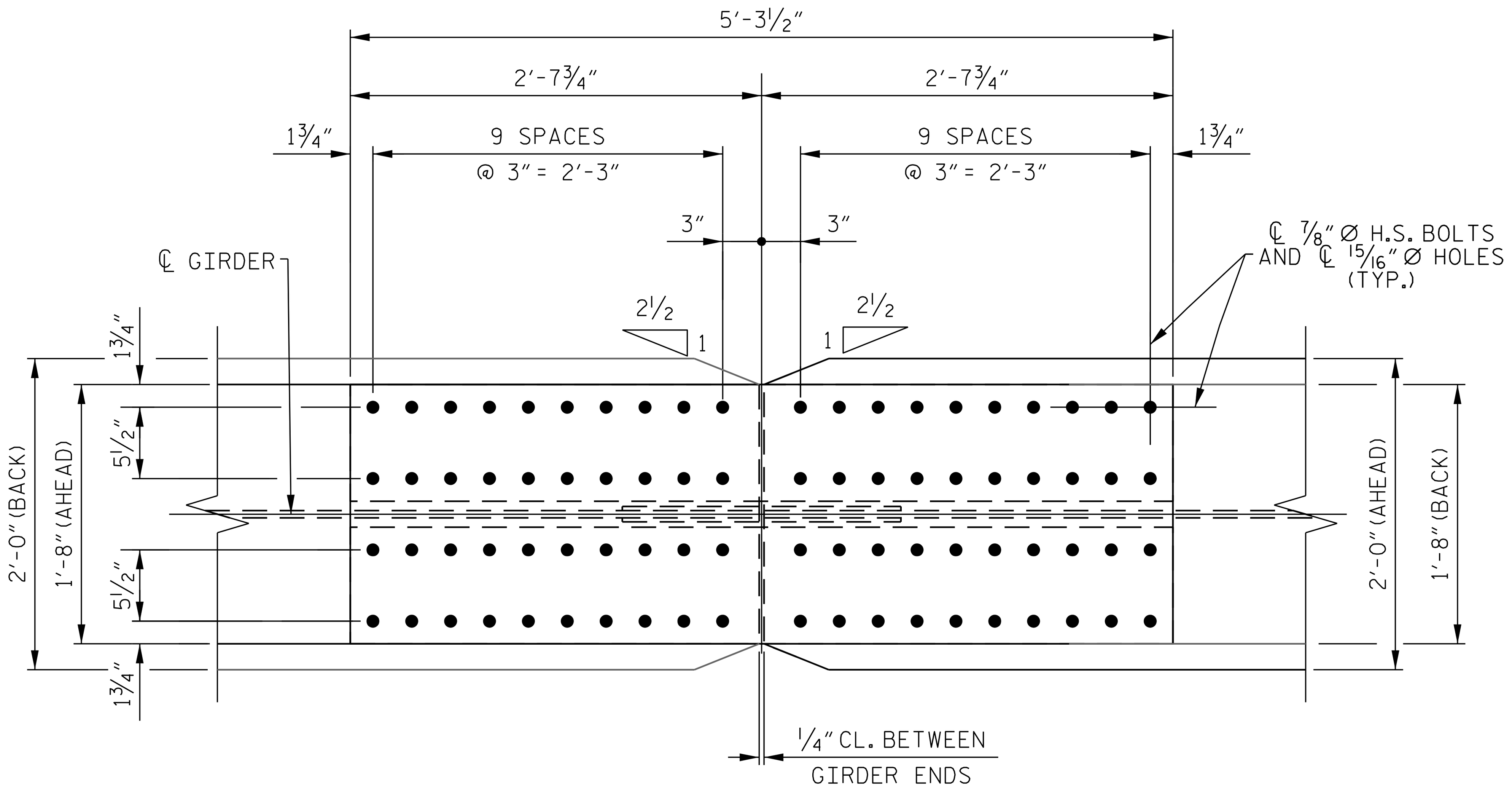

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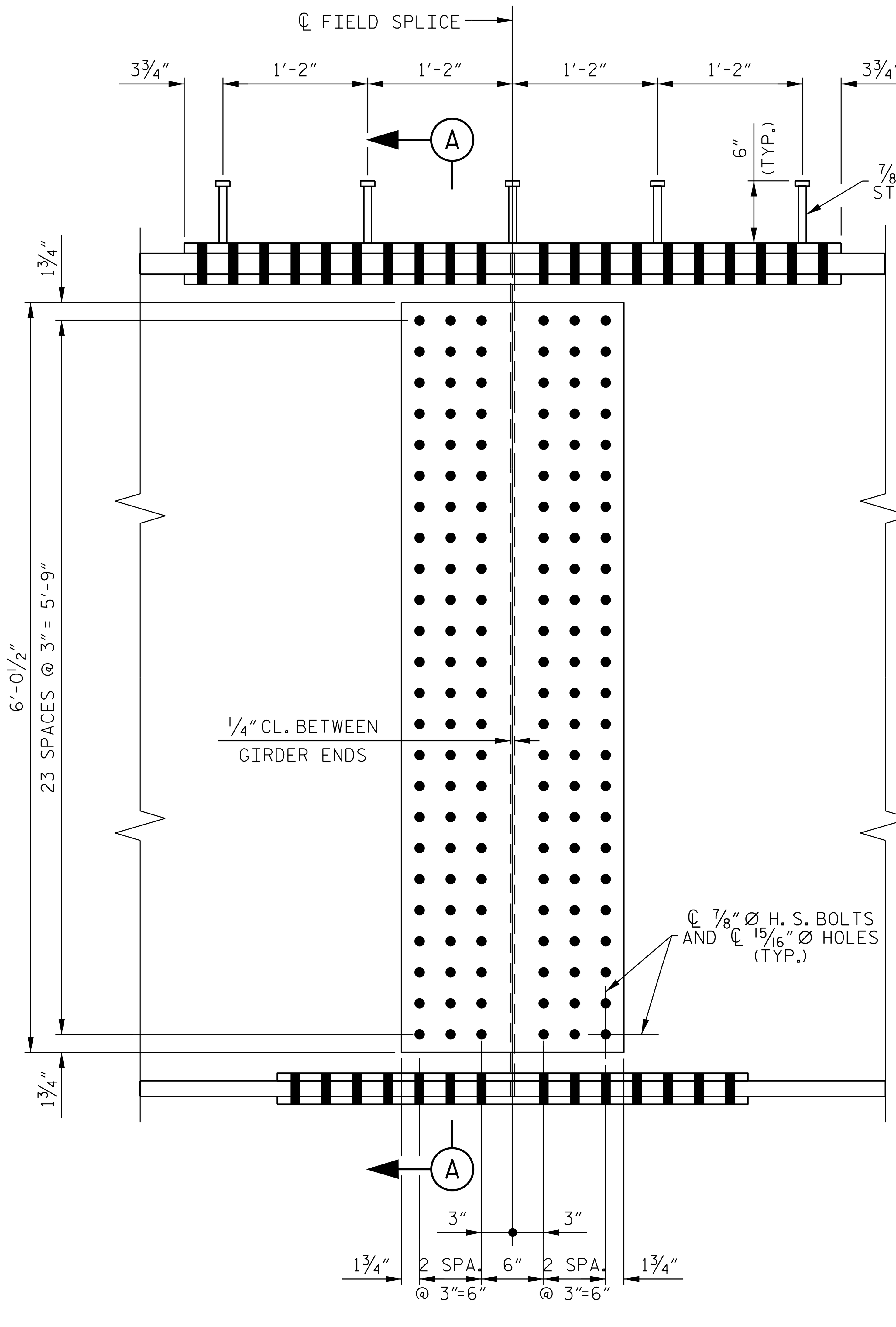
✹ SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF THE SPLICE PLATE BEFORE FIELD ASSEMBLY.



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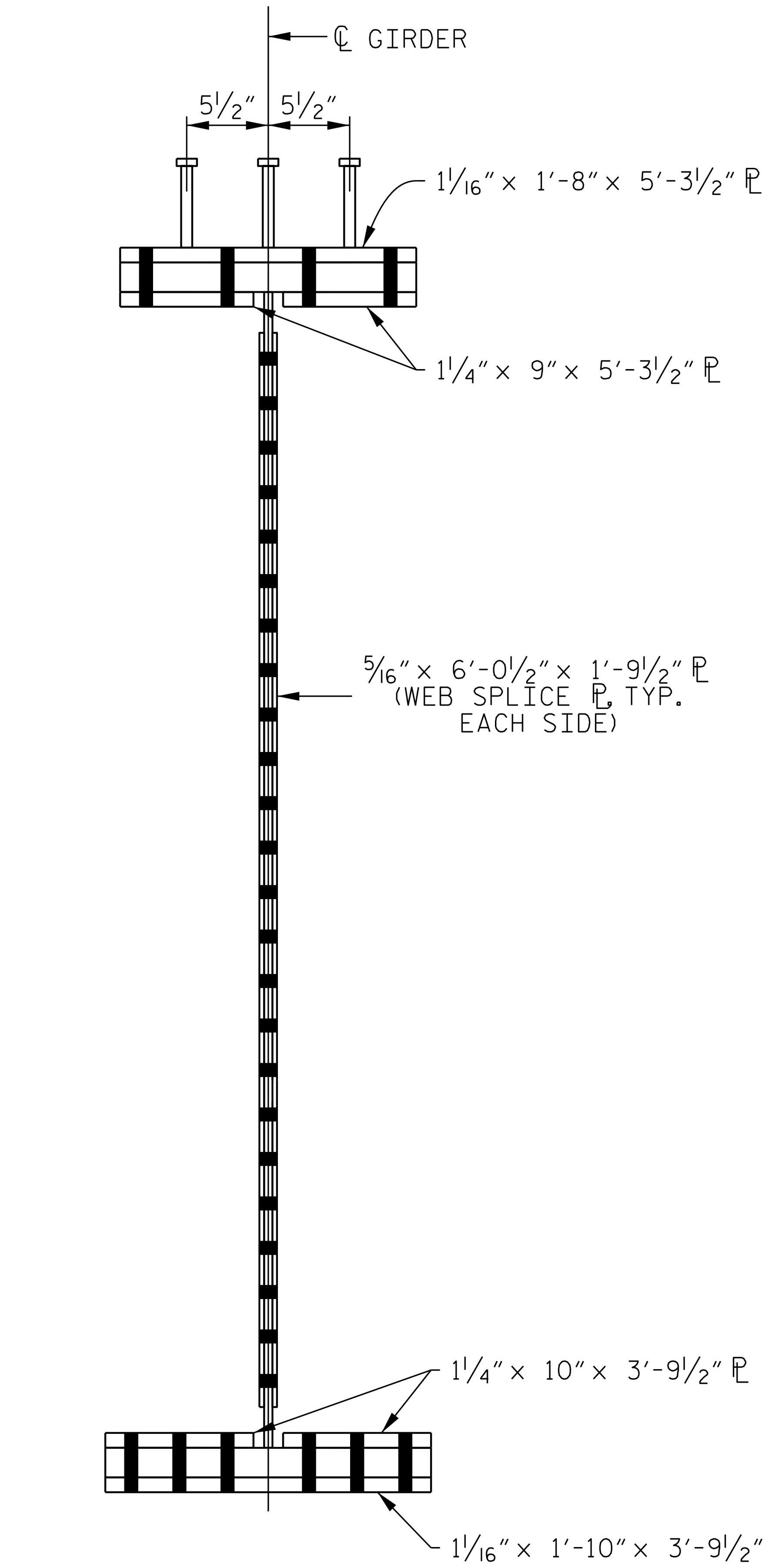

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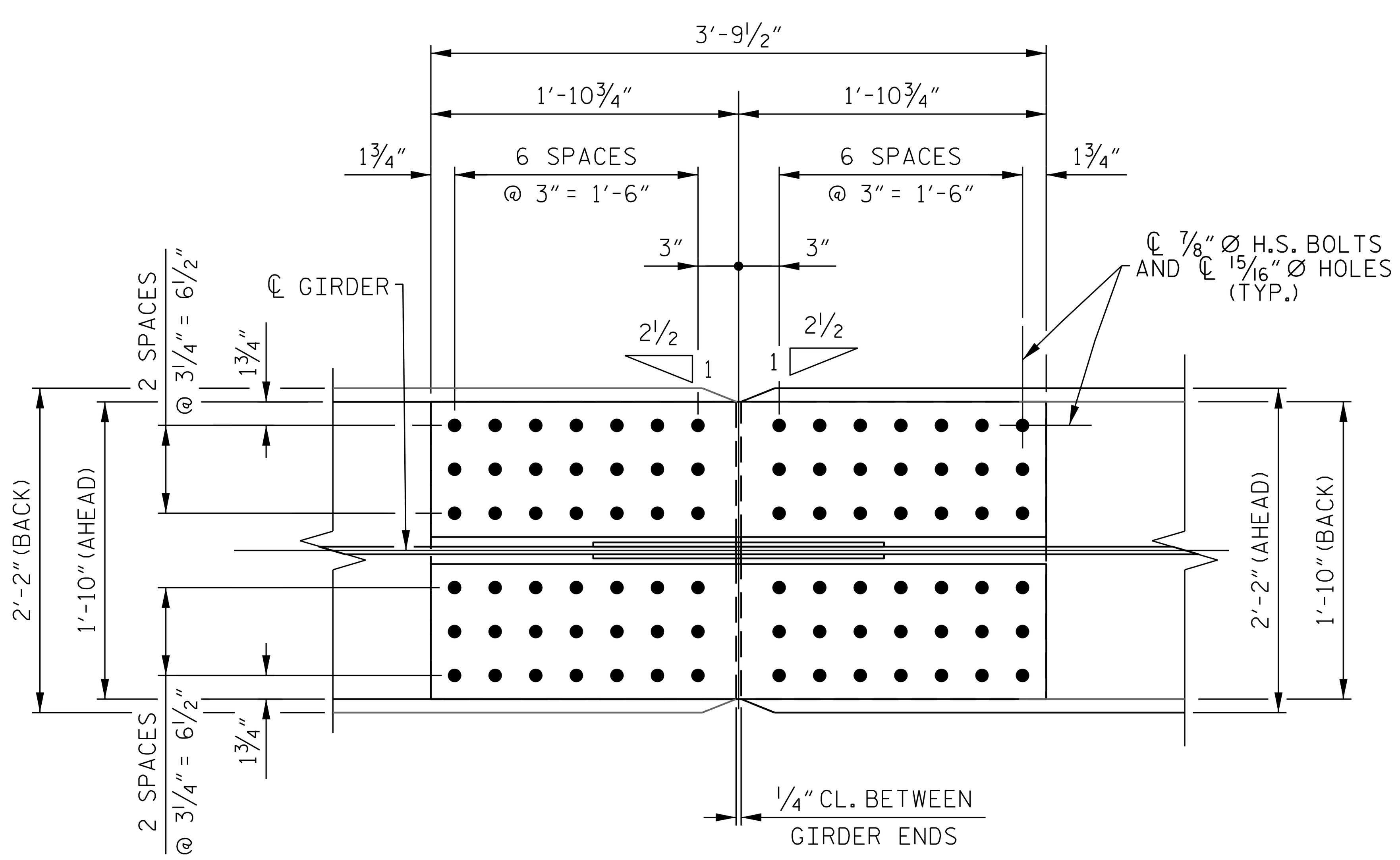

PLAN (TOP OF BOTTOM FLANGE)

PROJECT NO. U–2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 6 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BOLTED FIELD SPLICE DETAILS – TYPE "F"

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NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR
9/27/2021

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Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS					
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1			3		
2			4		

SHEET No. S5-31
TOTAL SHEETS 84

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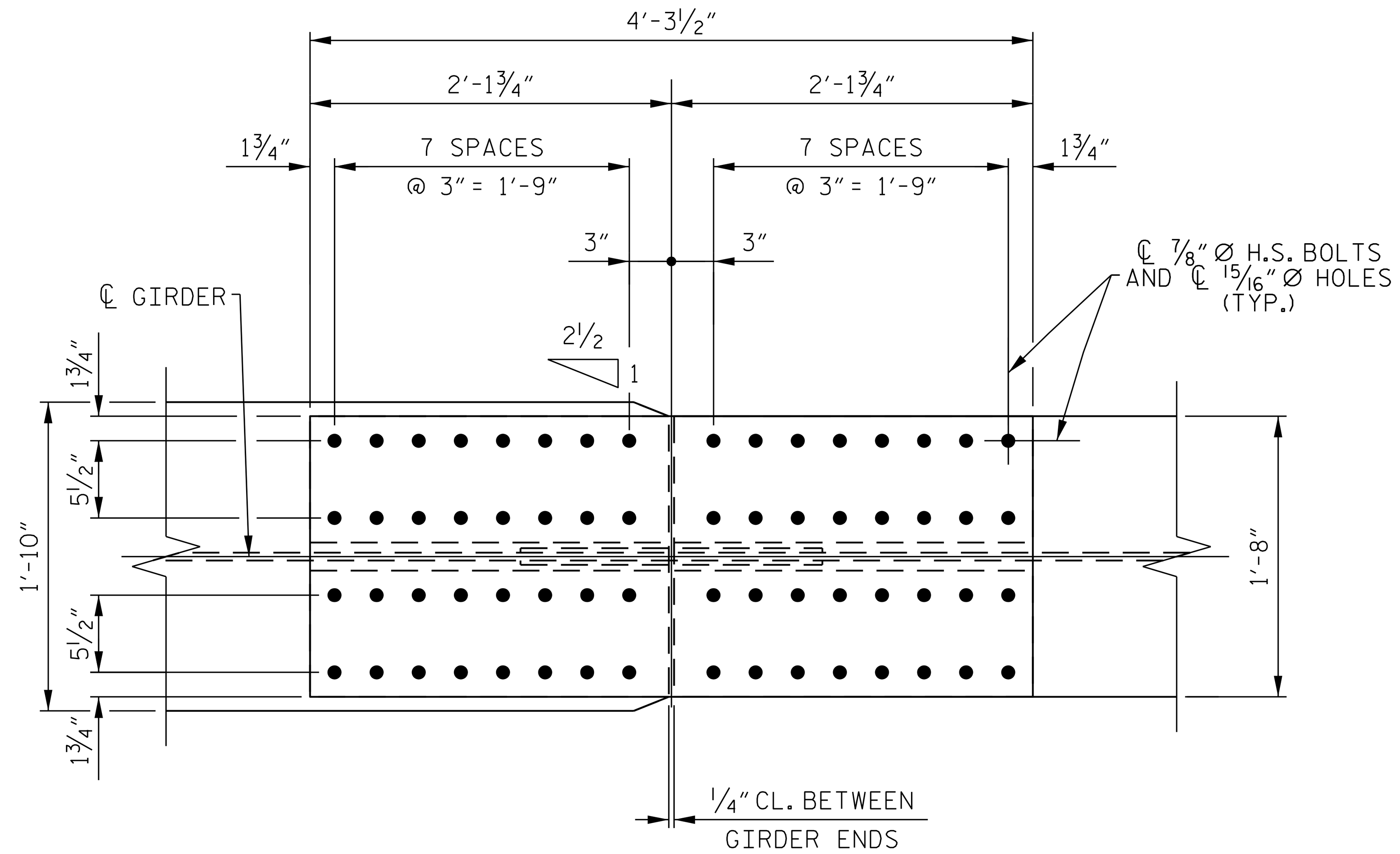
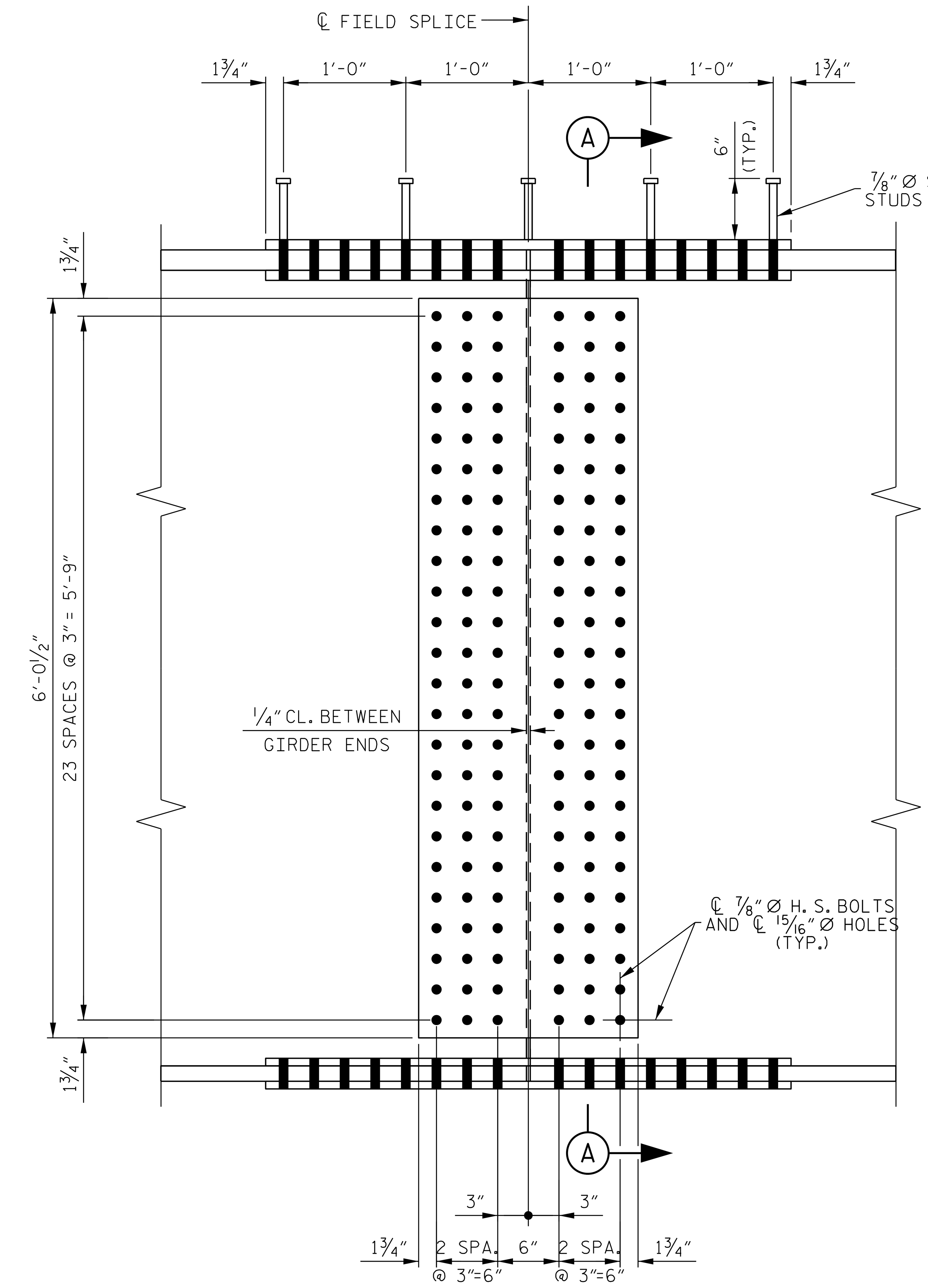


PLAN (TOP OF TOP FLANGE)

(SHEAR STUDS NOT SHOWN FOR CLARITY)

✱ SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF THE SPLICE PLATE BEFORE FIELD ASSEMBLY.



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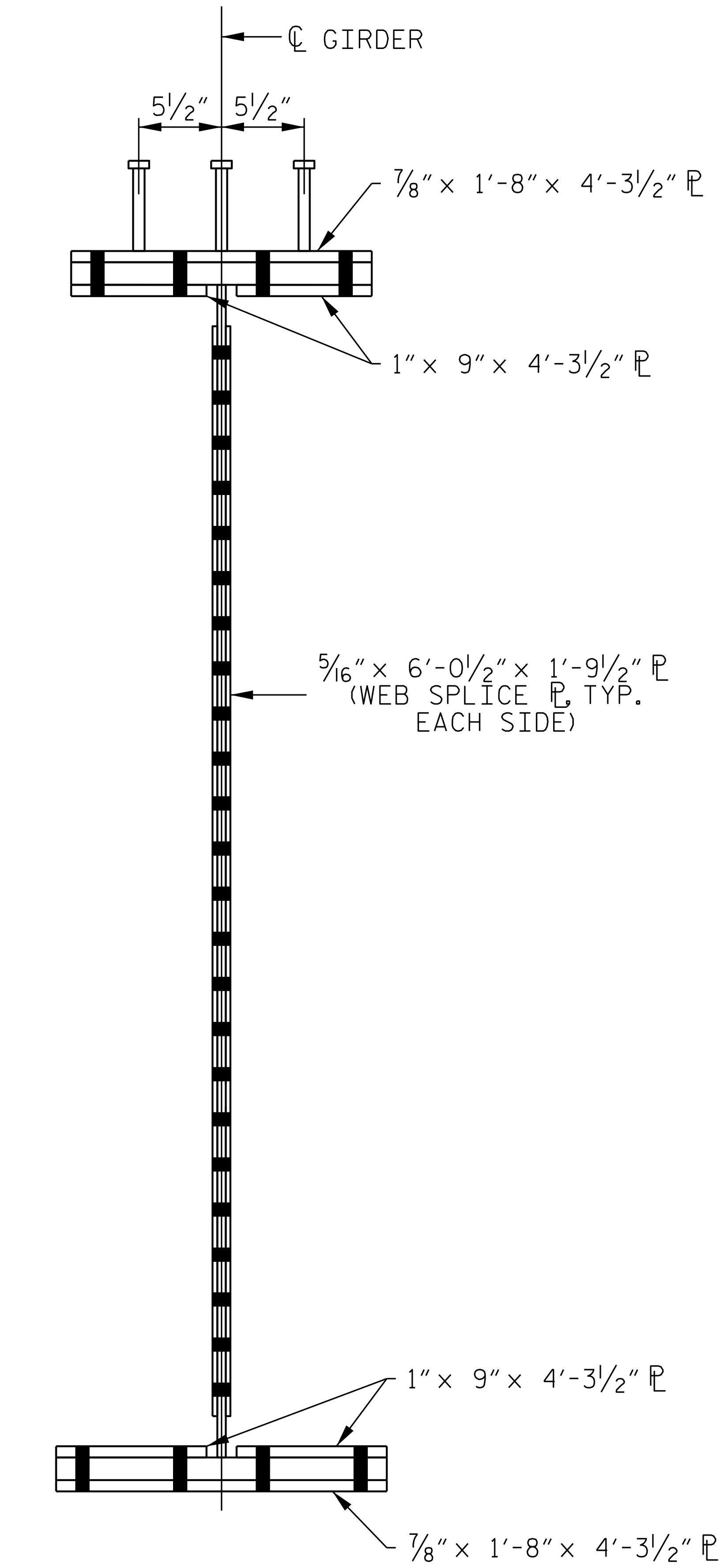

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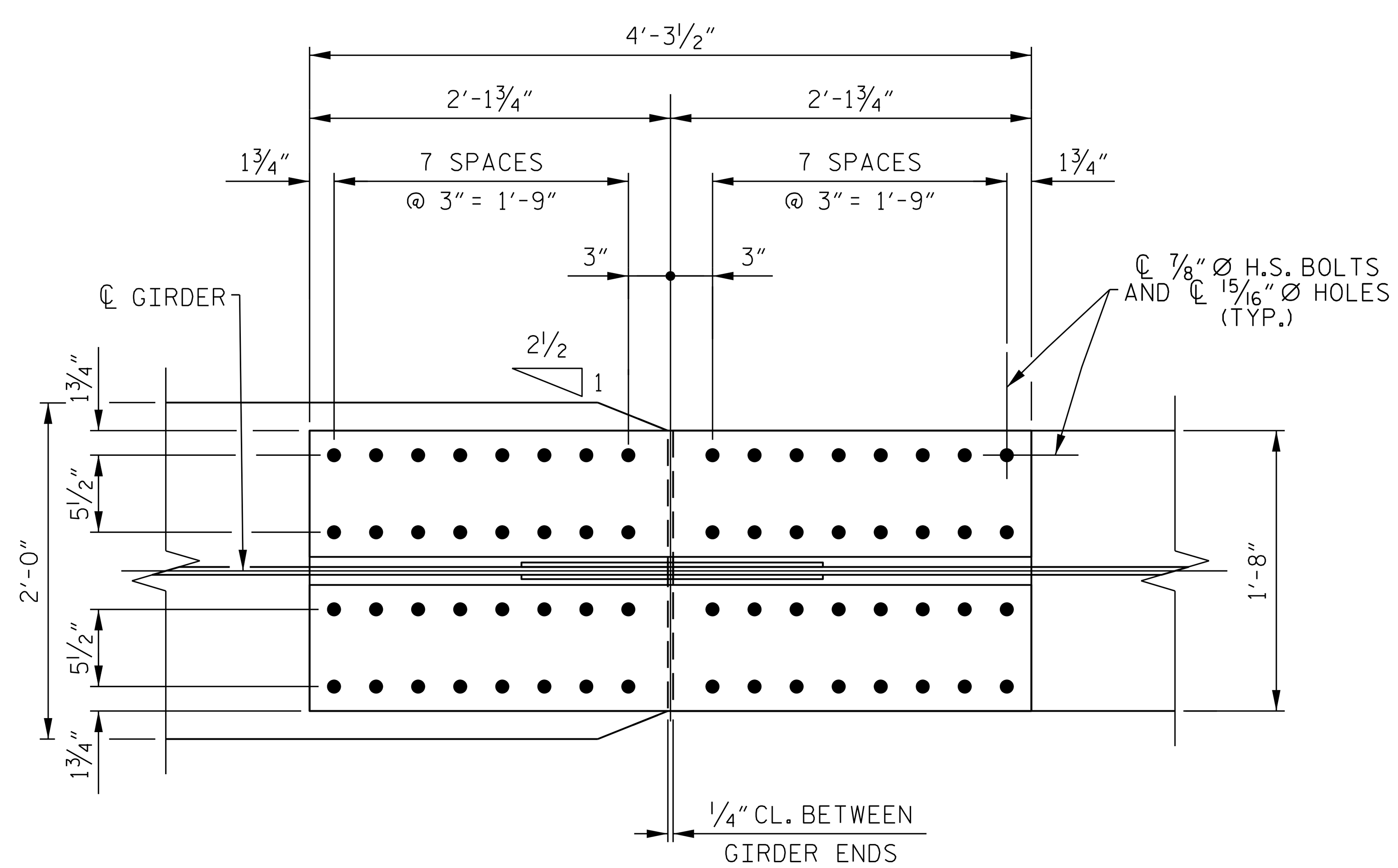

PLAN (TOP OF BOTTOM FLANGE)

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 7 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BOLTED FIELD SPLICE DETAILS – TYPE "G"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR

9/27/2021

PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS

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

SHEET No. S5-32

TOTAL SHEETS 84

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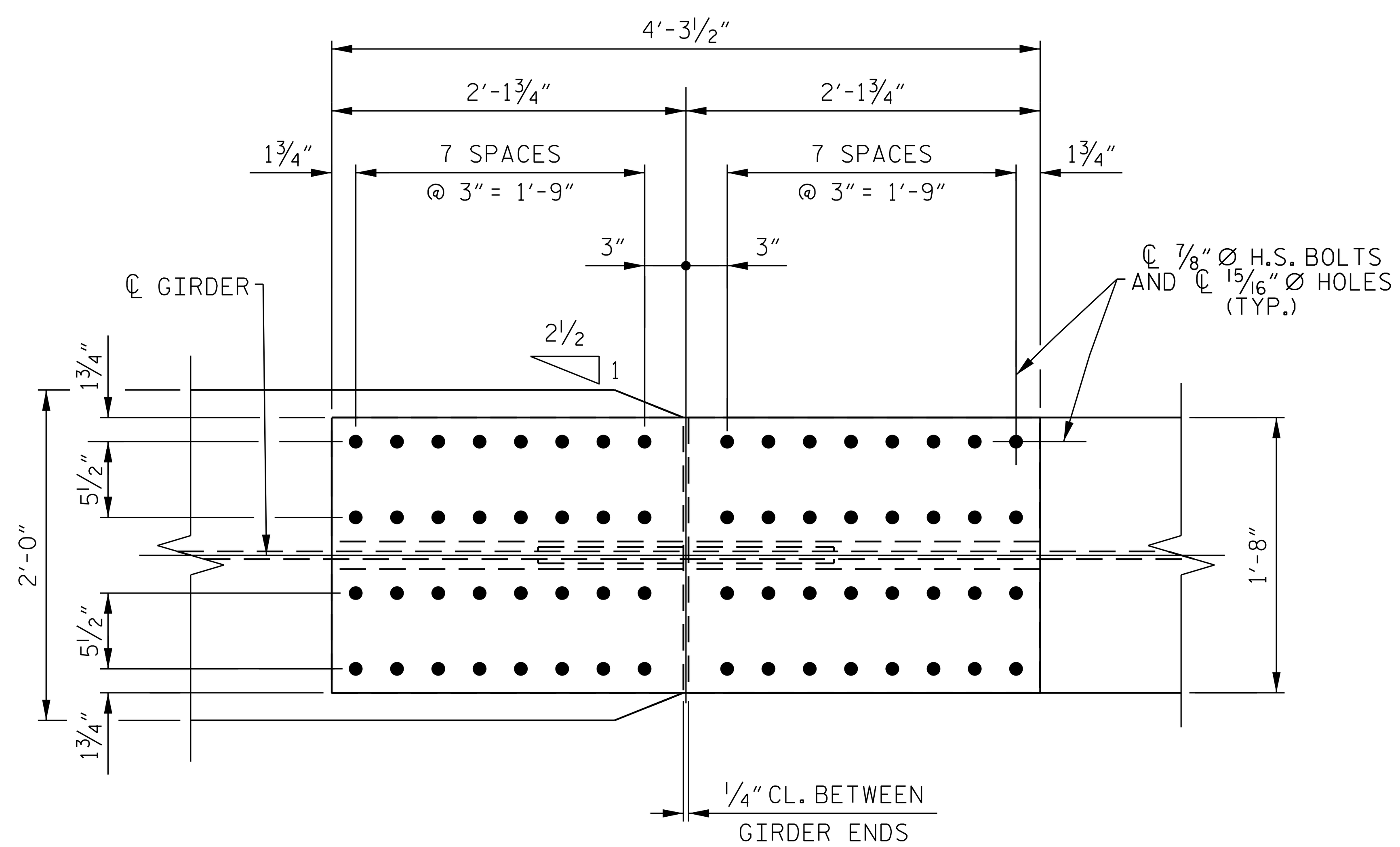
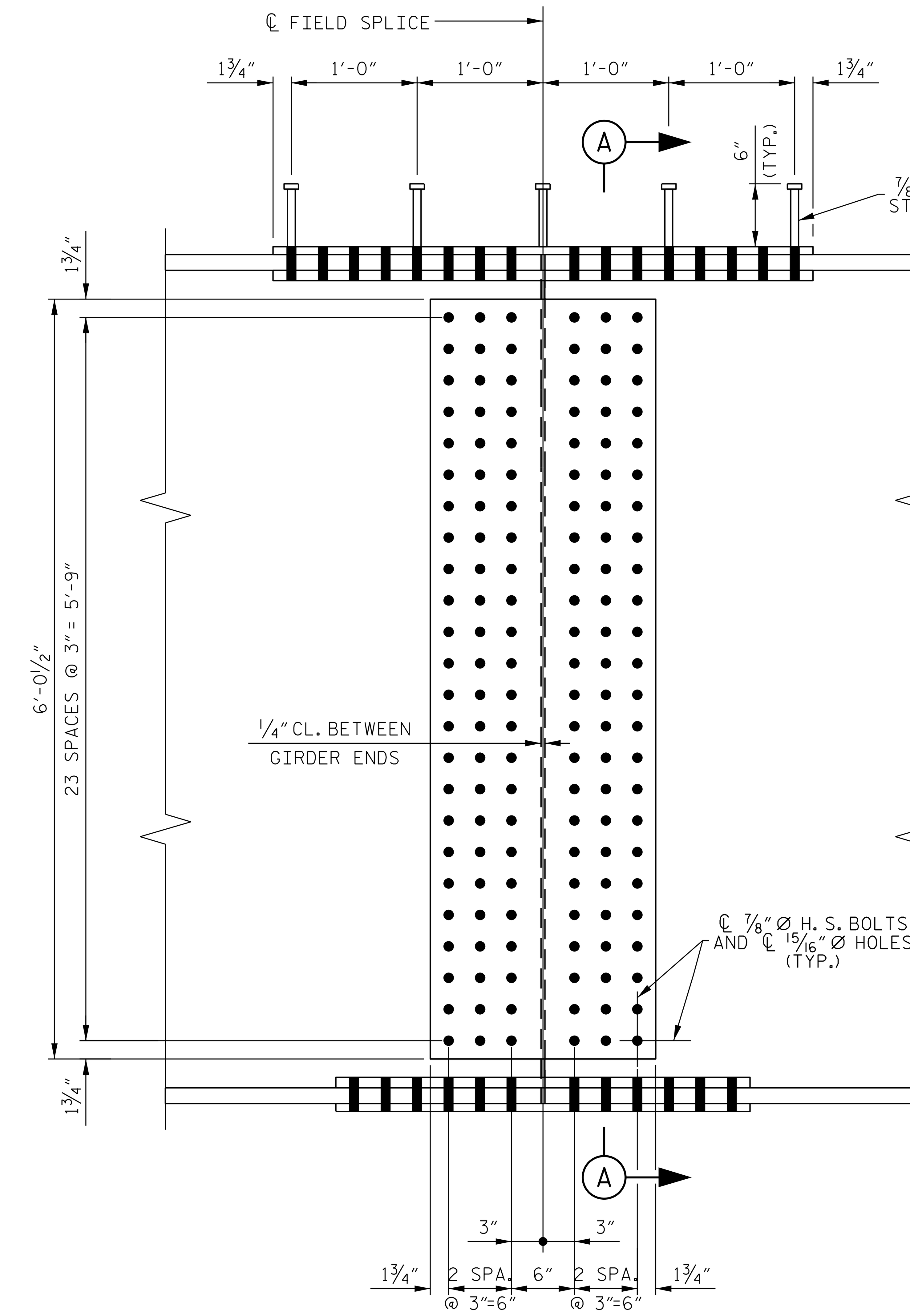


PLAN (TOP OF TOP FLANGE)

(SHEAR STUDS NOT SHOWN FOR CLARITY)

✹ SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF THE SPLICE PLATE BEFORE FIELD ASSEMBLY.



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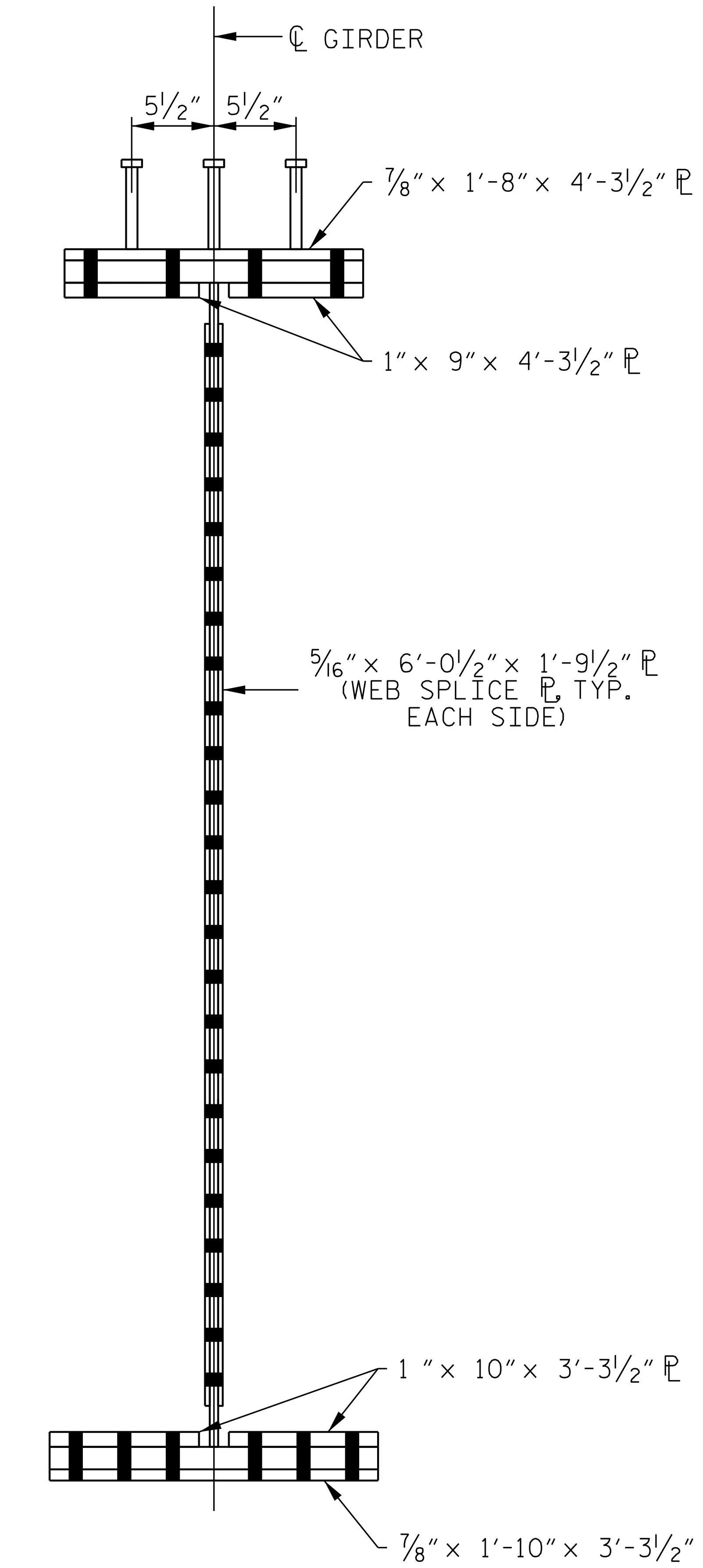

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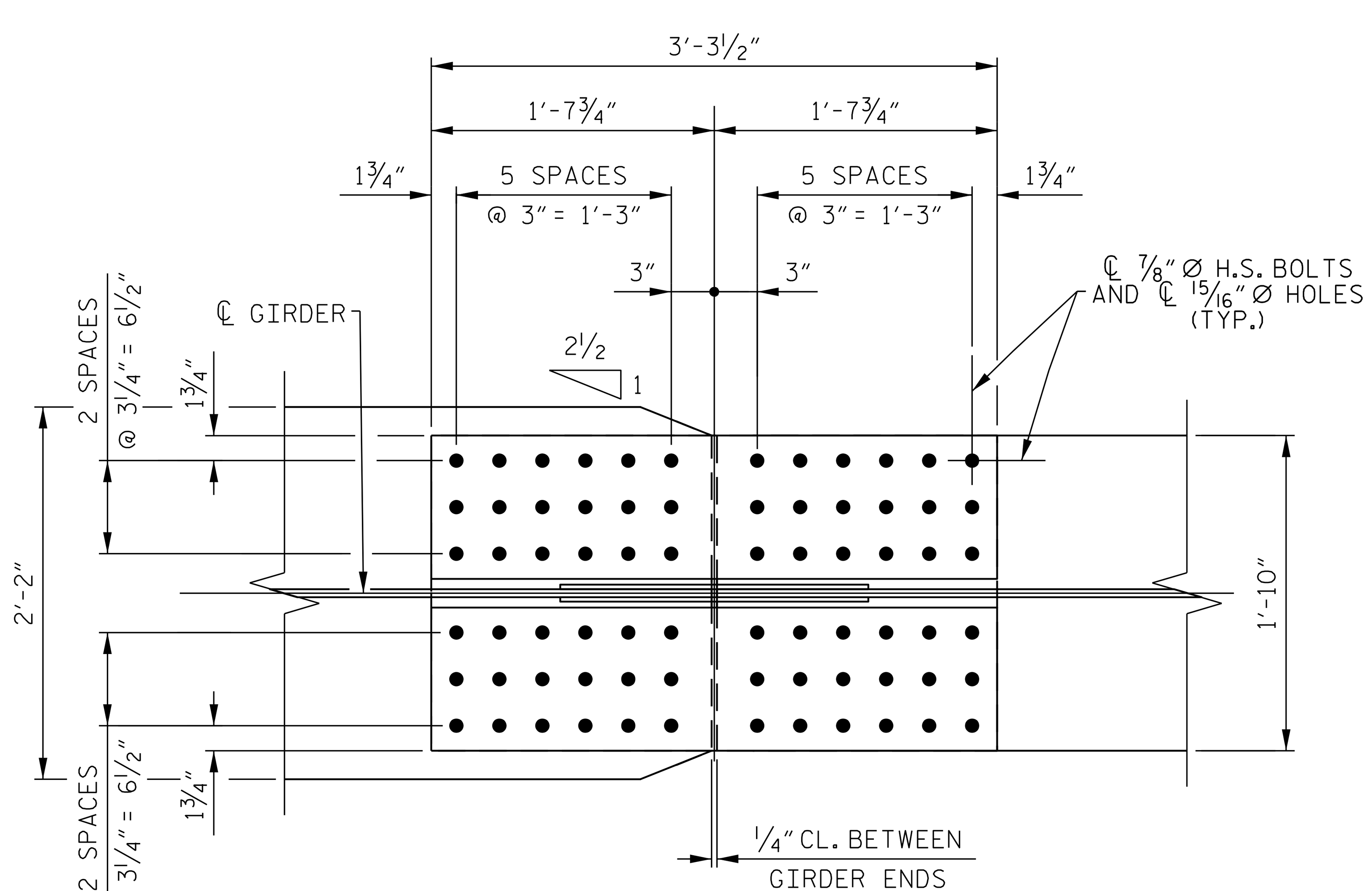

PLAN (TOP OF BOTTOM FLANGE)

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 8 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BOLTED FIELD SPLICE DETAILS – TYPE "H"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR
9/27/2021

PLANS PREPARED BY :
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5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS

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

SHEET No. S5-33

TOTAL SHEETS 84

FILE: F:\U-2579AA\Structures\Drawings\U-2579aa_Site_5_smu_619.dgn
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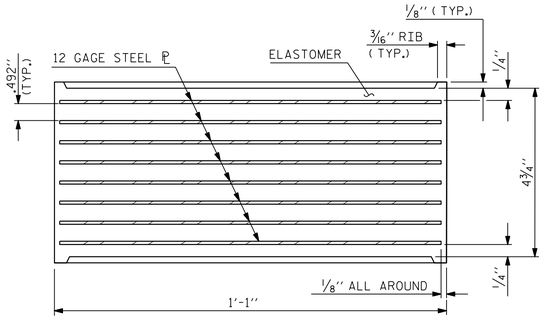
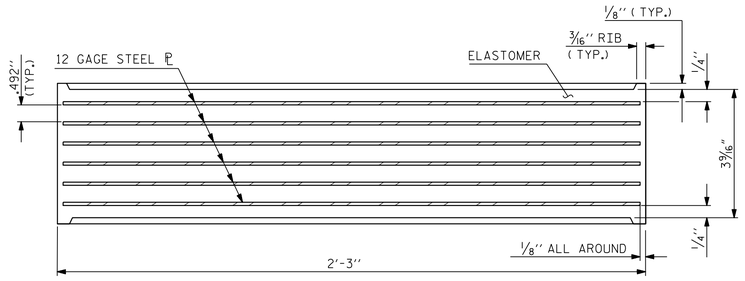
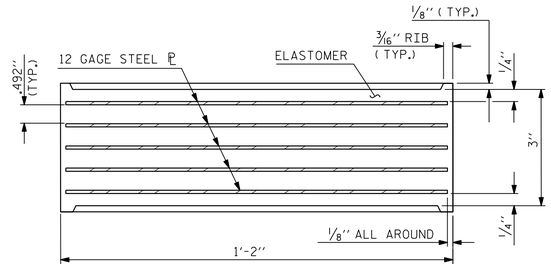


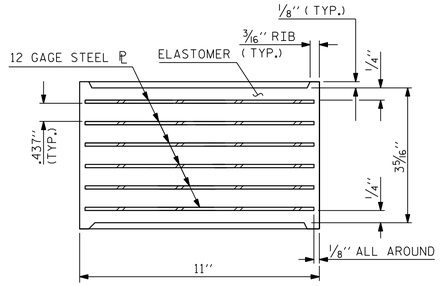
TYPICAL SECTION OF ELASTOMERIC BEARING



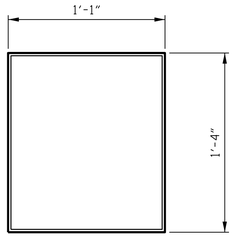
TYPICAL SECTION OF ELASTOMERIC BEARING



TYPICAL SECTION OF ELASTOMERIC BEARING



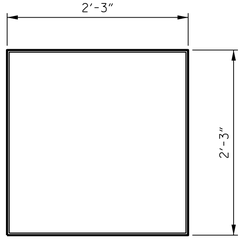
TYPICAL SECTION OF ELASTOMERIC BEARING



PLAN VIEW OF ELASTOMERIC BEARING

TYPE E1

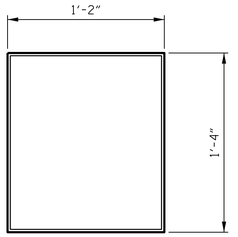
(10 REQUIRED)



PLAN VIEW OF ELASTOMERIC BEARING

TYPE E2

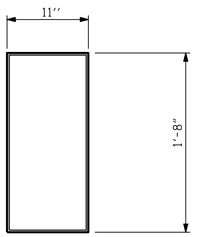
(10 REQUIRED)



PLAN VIEW OF ELASTOMERIC BEARING

TYPE E3

(5 REQUIRED)



PLAN VIEW OF ELASTOMERIC BEARING

TYPE E4

(5 REQUIRED)

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR PAINTED STRUCTURAL STEEL (EXCLUDING AASHTO M270 GRADE 50W), SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

WHEN FIELD WELDING THE SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

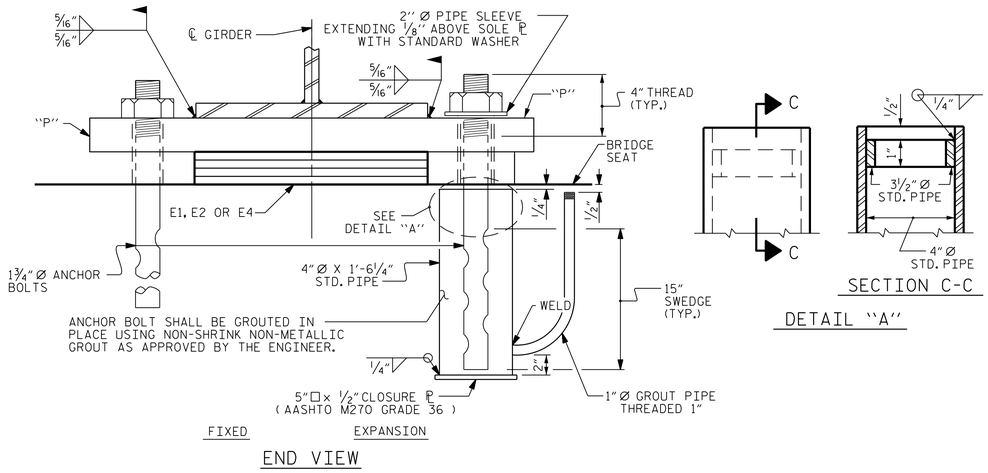
FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

THE CLOSURE PLATE, GROUT PIPE AND STANDARD PIPE FOR THE EXPANSION ASSEMBLY NEED NOT BE GALVANIZED.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURE, WHICH MAY BE REQUIRED BY THE ENGINEER, TO RESET ELASTOMERIC BEARINGS DUE TO GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED THEN THE ANCHOR BOLTS AND ELASTOMERIC BEARING SLOTS CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60°F.
2. AFTER CENTERING THE ELASTOMERIC BEARING SLOTS AND ANCHOR BOLTS, THE ANCHOR BOLTS SHALL BE GROUTED.

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.



END VIEW

DETAIL "A"

SECTION C-C

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
E1	300 k
E2	725 k
E3	288 k
E4	217 k

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-

41+07.80 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ELASTOMERIC BEARING DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER

Docusigned by: Gregory Shafer E32A8E5337384A5...

8/8/2022

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-34
1			3			TOTAL SHEETS
2			4			84

DRAWN BY : J. CAYETANO DATE : 9-21

CHECKED BY : J. B. TAYLOR DATE : 9-21

DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

PLANS PREPARED BY :

PARSONS

5540 Centerview Drive, Suite 217
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NC LICENSE No. F-0246

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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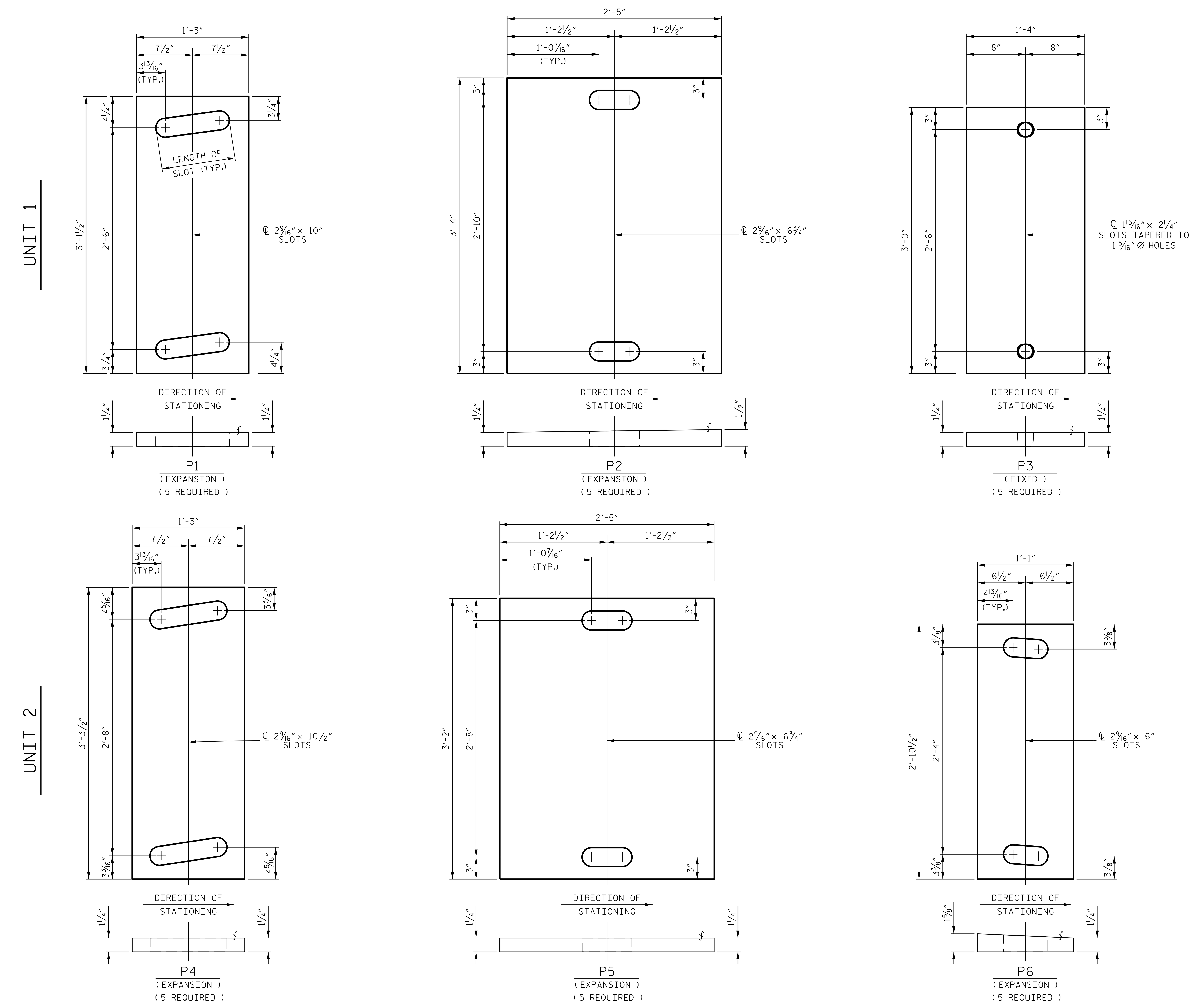

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ELASTOMERIC BEARING DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 033698 ENGINEER JOSHUA B. TAYLOR
9/27/2021

PLANS PREPARED BY:
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Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
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DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

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1			3		
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SHEET No. S5-35

TOTAL SHEETS 84

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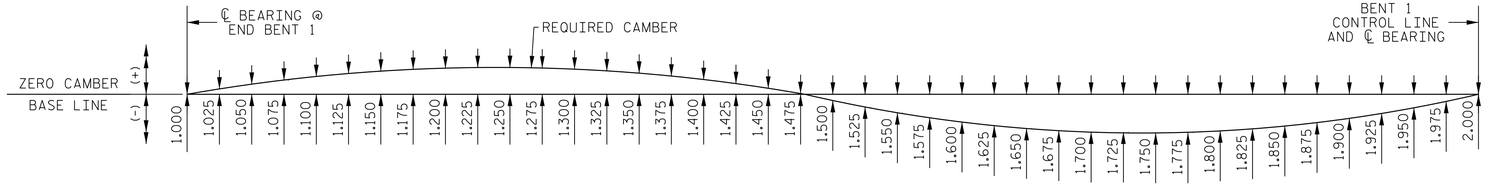

SCHEMATIC CAMBER ORDINATES

FOR CAMBER VALUES AT 40TH POINTS, SEE TABLES

NOTES

(✳) INCLUDES SLAB, BUILD-UP AND METAL STAY-IN-PLACE FORMS.

SLOPE FOR THE ZERO CAMBER BASE LINE VARIES.

VALUES GIVEN ARE AT FORTIETH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

THERE IS NO SUPERELEVATION ORDINATE.

DOWNWARD DEFLECTION IS INDICATED WITH A "-" SIGN.

GIRDER A1

40TH POINTS	1.000	1.025	1.050	1.075	1.100	1.125	1.150	1.175	1.200	1.225	1.250	1.275	1.300	1.325	1.350	1.375	1.400	1.425	1.450	1.475	1.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.008	-0.015	-0.022	-0.029	-0.035	-0.042	-0.048	-0.053	-0.058	-0.062	-0.065	-0.068	-0.071	-0.072	-0.073	-0.074	-0.073	-0.072	-0.070	-0.068
DEFLECTION DUE TO WEIGHT OF SLAB(✳)	0	-0.025	-0.050	-0.073	-0.095	-0.117	-0.138	-0.157	-0.175	-0.191	-0.205	-0.218	-0.229	-0.237	-0.244	-0.248	-0.250	-0.250	-0.248	-0.244	-0.239
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.003	-0.005	-0.008	-0.010	-0.013	-0.015	-0.017	-0.019	-0.020	-0.022	-0.023	-0.024	-0.025	-0.026	-0.026	-0.026	-0.026	-0.026	-0.026	-0.025
TOTAL DEAD LOAD DEFLECTION	0	-0.036	-0.070	-0.103	-0.134	-0.165	-0.195	-0.222	-0.247	-0.269	-0.289	-0.307	-0.321	-0.333	-0.342	-0.347	-0.350	-0.350	-0.346	-0.340	-0.332
VERTICAL CURVE ORDINATE	0	-0.029	-0.057	-0.083	-0.108	-0.131	-0.153	-0.173	-0.191	-0.208	-0.224	-0.238	-0.250	-0.261	-0.270	-0.278	-0.284	-0.289	-0.292	-0.294	-0.294
REQUIRED CAMBER	0	1/16	1/8	1/4	5/16	3/8	1/2	9/16	11/16	3/4	3/4	13/16	7/8	7/8	7/8	13/16	13/16	3/4	5/8	9/16	7/16

GIRDER A1

40TH POINTS	1.500	1.525	1.550	1.575	1.600	1.625	1.650	1.675	1.700	1.725	1.750	1.775	1.800	1.825	1.850	1.875	1.900	1.925	1.950	1.975	2.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.068	-0.066	-0.063	-0.059	-0.055	-0.051	-0.046	-0.041	-0.036	-0.032	-0.027	-0.022	-0.018	-0.014	-0.010	-0.007	-0.005	-0.003	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(✳)	-0.239	-0.231	-0.222	-0.210	-0.198	-0.184	-0.168	-0.153	-0.137	-0.122	-0.106	-0.088	-0.074	-0.060	-0.046	-0.034	-0.024	-0.016	-0.009	-0.004	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.025	-0.024	-0.023	-0.022	-0.020	-0.019	-0.017	-0.015	-0.014	-0.012	-0.010	-0.008	-0.007	-0.005	-0.004	-0.003	-0.002	-0.001	-0.001	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.332	-0.321	-0.308	-0.290	-0.273	-0.254	-0.230	-0.209	-0.187	-0.165	-0.143	-0.119	-0.099	-0.080	-0.060	-0.044	-0.031	-0.020	-0.011	-0.004	0
VERTICAL CURVE ORDINATE	-0.294	-0.292	-0.289	-0.285	-0.279	-0.271	-0.262	-0.251	-0.239	-0.225	-0.210	-0.193	-0.175	-0.155	-0.134	-0.111	-0.089	-0.067	-0.045	-0.022	0
REQUIRED CAMBER	7/16	5/16	3/16	1/16	- 1/16	- 3/16	- 3/8	- 1/2	- 5/8	- 3/4	- 13/16	- 7/8	- 15/16	- 7/8	- 7/8	- 13/16	- 11/16	- 9/16	- 3/8	- 3/16	0

GIRDER A2

40TH POINTS	1.000	1.025	1.050	1.075	1.100	1.125	1.150	1.175	1.200	1.225	1.250	1.275	1.300	1.325	1.350	1.375	1.400	1.425	1.450	1.475	1.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.008	-0.016	-0.024	-0.031	-0.038	-0.045	-0.051	-0.057	-0.062	-0.066	-0.070	-0.073	-0.076	-0.077	-0.078	-0.079	-0.078	-0.077	-0.075	-0.073
DEFLECTION DUE TO WEIGHT OF SLAB(✳)	0	-0.026	-0.052	-0.076	-0.100	-0.122	-0.145	-0.165	-0.183	-0.200	-0.214	-0.228	-0.239	-0.248	-0.255	-0.259	-0.262	-0.262	-0.259	-0.255	-0.249
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.003	-0.006	-0.008	-0.011	-0.013	-0.016	-0.018	-0.020	-0.022	-0.023	-0.025	-0.026	-0.027	-0.027	-0.028	-0.028	-0.028	-0.027	-0.027	-0.026
TOTAL DEAD LOAD DEFLECTION	0	-0.038	-0.074	-0.108	-0.142	-0.173	-0.206	-0.234	-0.260	-0.283	-0.304	-0.323	-0.338	-0.350	-0.359	-0.365	-0.368	-0.368	-0.364	-0.357	-0.349
VERTICAL CURVE ORDINATE	0	-0.029	-0.057	-0.083	-0.108	-0.131	-0.153	-0.173	-0.191	-0.208	-0.224	-0.238	-0.250	-0.261	-0.270	-0.278	-0.284	-0.289	-0.292	-0.294	-0.294
REQUIRED CAMBER	0	1/8	3/16	5/16	3/8	1/2	5/8	3/4	13/16	7/8	15/16	1	1 1/16	1 1/16	1 1/16	1 1/16	1	15/16	7/8	3/4	5/8

GIRDER A2

40TH POINTS	1.500	1.525	1.550	1.575	1.600	1.625	1.650	1.675	1.700	1.725	1.750	1.775	1.800	1.825	1.850	1.875	1.900	1.925	1.950	1.975	2.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.073	-0.070	-0.067	-0.063	-0.058	-0.054	-0.049	-0.044	-0.039	-0.034	-0.028	-0.023	-0.019	-0.015	-0.011	-0.007	-0.005	-0.003	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(✳)	-0.249	-0.241	-0.230	-0.219	-0.206	-0.192	-0.175	-0.159	-0.143	-0.126	-0.111	-0.091	-0.076	-0.062	-0.049	-0.035	-0.025	-0.016	-0.009	-0.004	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.026	-0.025	-0.024	-0.022	-0.021	-0.019	-0.018	-0.016	-0.014	-0.012	-0.010	-0.009	-0.007	-0.005	-0.004	-0.003	-0.002	-0.001	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.349	-0.337	-0.320	-0.304	-0.285	-0.265	-0.241	-0.218	-0.195	-0.172	-0.149	-0.123	-0.102	-0.082	-0.063	-0.045	-0.031	-0.020	-0.011	-0.004	0
VERTICAL CURVE ORDINATE	-0.294	-0.292	-0.289	-0.285	-0.279	-0.271	-0.262	-0.251	-0.239	-0.225	-0.210	-0.193	-0.175	-0.155	-0.134	-0.111	-0.089	-0.067	-0.045	-0.022	0
REQUIRED CAMBER	5/8	9/16	3/8	1/4	1/16	- 1/16	- 1/4	- 3/8	- 1/2	- 5/8	- 3/4	- 7/8	- 7/8	- 7/8	- 13/16	- 13/16	- 11/16	- 9/16	- 6/16	- 3/16	0

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–

41+07.80 –L–

SHEET 1 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS AND CAMBER ORDINATES SPAN "A"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER

Docusigned by: Gregory Shafer E328BE5337384AA...

8/8/2022

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-36
1			3			TOTAL SHEETS
2			4			84

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

PLANS PREPARED BY :

PARSONS

5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

FILE: M:\U-2579AA\Structures\Drawings\U-2579aa_Site_3_smu_dll5.dgn
DATE: 4/5/2022 12:48:13 PM

GIRDER A3

40TH POINTS	1.000	1.025	1.050	1.075	1.100	1.125	1.150	1.175	1.200	1.225	1.250	1.275	1.300	1.325	1.350	1.375	1.400	1.425	1.450	1.475	1.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.009	-0.017	-0.025	-0.033	-0.040	-0.048	-0.054	-0.060	-0.065	-0.070	-0.074	-0.078	-0.080	-0.082	-0.083	-0.083	-0.083	-0.082	-0.080	-0.077
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.027	-0.053	-0.078	-0.103	-0.126	-0.149	-0.170	-0.188	-0.205	-0.221	-0.235	-0.246	-0.256	-0.263	-0.267	-0.270	-0.270	-0.268	-0.263	-0.257
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.003	-0.006	-0.009	-0.011	-0.014	-0.016	-0.018	-0.020	-0.022	-0.024	-0.025	-0.027	-0.027	-0.028	-0.029	-0.029	-0.029	-0.028	-0.028	-0.027
TOTAL DEAD LOAD DEFLECTION	0	-0.039	-0.076	-0.112	-0.147	-0.180	-0.213	-0.242	-0.269	-0.293	-0.315	-0.335	-0.351	-0.363	-0.373	-0.379	-0.382	-0.382	-0.377	-0.371	-0.361
VERTICAL CURVE ORDINATE	0	-0.029	-0.057	-0.083	-0.108	-0.131	-0.153	-0.173	-0.191	-0.208	-0.224	-0.238	-0.250	-0.261	-0.270	-0.278	-0.284	-0.289	-0.292	-0.294	-0.294
REQUIRED CAMBER	0	1/8	1/4	3/8	7/16	9/16	3/4	13/16	15/16	1	1 1/16	1 3/16	1 3/16	1 1/4	1 1/4	1 3/16	1 3/16	1 1/8	1	15/16	13/16

GIRDER A3

40TH POINTS	1.500	1.525	1.550	1.575	1.600	1.625	1.650	1.675	1.700	1.725	1.750	1.775	1.800	1.825	1.850	1.875	1.900	1.925	1.950	1.975	2.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.077	-0.074	-0.070	-0.066	-0.062	-0.057	-0.051	-0.046	-0.040	-0.035	-0.029	-0.024	-0.020	-0.015	-0.011	-0.007	-0.005	-0.002	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.257	-0.249	-0.237	-0.226	-0.212	-0.198	-0.180	-0.163	-0.147	-0.130	-0.111	-0.095	-0.079	-0.064	-0.049	-0.037	-0.026	-0.017	-0.010	-0.004	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.027	-0.026	-0.024	-0.023	-0.022	-0.020	-0.018	-0.016	-0.014	-0.013	-0.011	-0.009	-0.007	-0.006	-0.004	-0.003	-0.002	-0.001	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.361	-0.349	-0.332	-0.315	-0.296	-0.275	-0.249	-0.225	-0.202	-0.178	-0.151	-0.128	-0.106	-0.085	-0.064	-0.047	-0.032	-0.020	-0.011	-0.004	0
VERTICAL CURVE ORDINATE	-0.294	-0.292	-0.289	-0.285	-0.279	-0.271	-0.262	-0.251	-0.239	-0.225	-0.210	-0.193	-0.175	-0.155	-0.134	-0.111	-0.089	-0.067	-0.045	-0.022	0
REQUIRED CAMBER	13/16	11/16	1/2	3/8	3/16	1/16	- 3/16	- 5/16	- 7/16	- 9/16	- 11/16	- 13/16	- 13/16	- 13/16	- 13/16	- 3/4	- 11/16	- 9/16	- 3/8	- 3/16	0

GIRDER A4

40TH POINTS	1.000	1.025	1.050	1.075	1.100	1.125	1.150	1.175	1.200	1.225	1.250	1.275	1.300	1.325	1.350	1.375	1.400	1.425	1.450	1.475	1.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.009	-0.018	-0.026	-0.034	-0.042	-0.050	-0.057	-0.063	-0.068	-0.074	-0.078	-0.081	-0.084	-0.086	-0.087	-0.087	-0.087	-0.086	-0.084	-0.081
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.028	-0.054	-0.080	-0.104	-0.127	-0.151	-0.172	-0.191	-0.209	-0.224	-0.239	-0.251	-0.260	-0.267	-0.272	-0.275	-0.275	-0.273	-0.268	-0.262
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.003	-0.006	-0.009	-0.011	-0.014	-0.017	-0.019	-0.021	-0.023	-0.025	-0.026	-0.027	-0.028	-0.029	-0.029	-0.029	-0.029	-0.029	-0.028	-0.027
TOTAL DEAD LOAD DEFLECTION	0	-0.040	-0.078	-0.115	-0.150	-0.184	-0.218	-0.248	-0.275	-0.300	-0.323	-0.343	-0.359	-0.372	-0.382	-0.388	-0.391	-0.391	-0.388	-0.380	-0.371
VERTICAL CURVE ORDINATE	0	-0.029	-0.057	-0.083	-0.108	-0.131	-0.153	-0.173	-0.191	-0.208	-0.224	-0.238	-0.250	-0.261	-0.270	-0.278	-0.284	-0.289	-0.292	-0.294	-0.294
REQUIRED CAMBER	0	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 3/16	1 1/4	1 5/16	1 5/16	1 5/16	1 5/16	1 5/16	1 1/4	1 1/8	1 1/16	15/16

GIRDER A4

40TH POINTS	1.500	1.525	1.550	1.575	1.600	1.625	1.650	1.675	1.700	1.725	1.750	1.775	1.800	1.825	1.850	1.875	1.900	1.925	1.950	1.975	2.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.081	-0.078	-0.074	-0.069	-0.065	-0.060	-0.054	-0.048	-0.042	-0.037	-0.031	-0.025	-0.020	-0.016	-0.011	-0.008	-0.005	-0.003	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.262	-0.254	-0.244	-0.230	-0.217	-0.202	-0.184	-0.167	-0.150	-0.133	-0.114	-0.097	-0.081	-0.066	-0.050	-0.038	-0.027	-0.018	-0.010	-0.004	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.027	-0.026	-0.025	-0.024	-0.022	-0.020	-0.018	-0.017	-0.015	-0.013	-0.011	-0.009	-0.007	-0.006	-0.004	-0.003	-0.002	-0.001	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.371	-0.358	-0.343	-0.323	-0.304	-0.282	-0.256	-0.232	-0.207	-0.183	-0.155	-0.131	-0.109	-0.088	-0.066	-0.048	-0.033	-0.021	-0.011	-0.004	0
VERTICAL CURVE ORDINATE	-0.294	-0.292	-0.289	-0.285	-0.279	-0.271	-0.262	-0.251	-0.239	-0.225	-0.210	-0.193	-0.175	-0.155	-0.134	-0.111	-0.089	-0.067	-0.045	-0.022	0
REQUIRED CAMBER	15/16	13/16	5/8	7/16	5/16	1/8	- 1/16	- 1/4	- 3/8	- 1/2	- 11/16	- 3/4	- 13/16	- 13/16	- 13/16	- 3/4	- 11/16	- 9/16	- 3/8	- 3/16	0

GIRDER A5

40TH POINTS	1.000	1.025	1.050	1.075	1.100	1.125	1.150	1.175	1.200	1.225	1.250	1.275	1.300	1.325	1.350	1.375	1.400	1.425	1.450	1.475	1.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.010	-0.019	-0.028	-0.036	-0.044	-0.052	-0.060	-0.066	-0.072	-0.077	-0.082	-0.085	-0.088	-0.090	-0.091	-0.092	-0.091	-0.090	-0.088	-0.085
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.028	-0.055	-0.080	-0.105	-0.129	-0.151	-0.174	-0.194	-0.211	-0.227	-0.242	-0.254	-0.263	-0.271	-0.276	-0.279	-0.279	-0.277	-0.272	-0.266
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.003	-0.006	-0.009	-0.012	-0.014	-0.017	-0.019	-0.022	-0.024	-0.025	-0.027	-0.028	-0.029	-0.030	-0.030	-0.030	-0.030	-0.030	-0.029	-0.028
TOTAL DEAD LOAD DEFLECTION	0	-0.041	-0.080	-0.117	-0.153	-0.188	-0.221	-0.253	-0.281	-0.307	-0.330	-0.351	-0.367	-0.380	-0.390	-0.397	-0.400	-0.400	-0.397	-0.389	-0.379
VERTICAL CURVE ORDINATE	0	-0.029	-0.057	-0.083	-0.108	-0.131	-0.153	-0.173	-0.191	-0.208	-0.224	-0.238	-0.250	-0.261	-0.270	-0.278	-0.284	-0.289	-0.292	-0.294	-0.294
REQUIRED CAMBER	0	1/8	1/4	3/8	9/16	11/16	13/16	15/16	1 1/16	1 3/16	1 1/4	1 3/8	1 3/8	1 7/16	1 7/16	1 7/16	1 3/8	1 5/16	1 1/4	1 1/8	1

GIRDER A5

40TH POINTS	1.500	1.525	1.550	1.575	1.600	1.625	1.650	1.675	1.700	1.725	1.750	1.775	1.800	1.825	1.850	1.875	1.900	1.925	1.950	1.975	2.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.085	-0.082	-0.077	-0.073	-0.068	-0.063	-0.057	-0.050	-0.045	-0.039	-0.032	-0.027	-0.021	-0.017	-0.012	-0.008	-0.005	-0.002	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.266	-0.258	-0.248	-0.234	-0.220	-0.206	-0.189	-0.170	-0.153	-0.136	-0.119	-0.099	-0.083	-0.068	-0.054	-0.039	-0.027	-0.018	-0.010	-0.004	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.028	-0.027	-0.026	-0.024	-0.023	-0.021	-0.019	-0.017	-0.015	-0.013	-0.011	-0.009	-0.007	-0.006	-0.004	-0.003	-0.002	-0.001	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.379	-0.367	-0.351	-0.331	-0.311	-0.289	-0.265	-0.237	-0.212	-0.187	-0.162	-0.135	-0.112	-0.090	-0.070	-0.049	-0.034	-0.021	-0.011	-0.004	0
VERTICAL CURVE ORDINATE	-0.294	-0.293	-0.290	-0.285	-0.279	-0.271	-0.262	-0.251	-0.239	-0.225	-0.210	-0.193	-0.175	-0.155	-0.134	-0.111	-0.089	-0.067	-0.045	-0.022	0
REQUIRED CAMBER	1	7/8	3/4	9/16	3/8	3/16	1/16	- 3/16	- 5/16	- 7/16	- 9/16	- 11/16	- 3/4	- 13/16	- 3/4	- 3/4	- 11/16	- 9/16	- 3/8	- 3/16	0

NOTES

FOR NOTES, SEE SHEET 1 OF 10.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 2 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS AND CAMBER ORDINATES SPAN "A"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER

Docusigned by: Gregory Shafer E32B8E5537384AE...

8/8/2022

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-37
1			3			TOTAL SHEETS
2			4			84

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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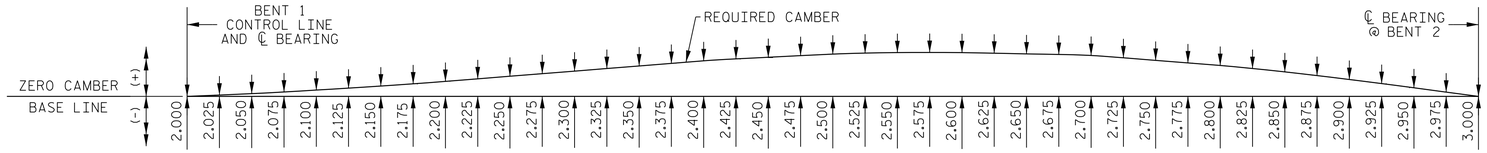

NOTES

FOR NOTES, SEE SHEET 1 OF 10.

SCHEMATIC CAMBER ORDINATES

FOR CAMBER VALUES AT 40TH POINTS, SEE TABLES

GIRDER B1																						
40TH POINTS	2.000	2.025	2.050	2.075	2.100	2.125	2.150	2.175	2.200	2.225	2.250	2.275	2.300	2.325	2.350	2.375	2.400	2.425	2.450	2.475	2.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.001	-0.003	-0.006	-0.008	-0.012	-0.017	-0.021	-0.026	-0.031	-0.037	-0.043	-0.048	-0.054	-0.059	-0.065	-0.070	-0.074	-0.079	-0.082	-0.085
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.001	-0.003	-0.007	-0.013	-0.020	-0.029	-0.042	-0.053	-0.066	-0.079	-0.095	-0.109	-0.123	-0.136	-0.152	-0.164	-0.176	-0.186	-0.197	-0.205
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.000	-0.001	-0.002	-0.003	-0.004	-0.006	-0.008	-0.010	-0.012	-0.014	-0.016	-0.018	-0.020	-0.022	-0.024	-0.025	-0.027	-0.028	-0.029	-0.030
TOTAL DEAD LOAD DEFLECTION	0	-0.002	-0.007	-0.015	-0.024	-0.037	-0.052	-0.071	-0.089	-0.108	-0.129	-0.154	-0.175	-0.196	-0.217	-0.240	-0.259	-0.277	-0.293	-0.309	-0.321
VERTICAL CURVE ORDINATE	0	0.011	0.023	0.034	0.046	0.057	0.069	0.080	0.092	0.103	0.115	0.126	0.138	0.149	0.161	0.173	0.183	0.192	0.200	0.207	0.211
REQUIRED CAMBER	0	3/16	3/8	9/16	7/8	1 1/8	1 7/16	1 13/16	2 3/16	2 9/16	2 15/16	3 3/8	3 3/4	4 1/8	4 9/16	4 15/16	5 5/16	5 5/8	5 15/16	6 3/16	6 3/8

GIRDER B1																					
40TH POINTS	2.500	2.525	2.550	2.575	2.600	2.625	2.650	2.675	2.700	2.725	2.750	2.775	2.800	2.825	2.850	2.875	2.900	2.925	2.950	2.975	3.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.085	-0.087	-0.089	-0.089	-0.089	-0.089	-0.087	-0.085	-0.082	-0.079	-0.074	-0.069	-0.063	-0.057	-0.050	-0.042	-0.035	-0.026	-0.018	-0.009	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.205	-0.212	-0.218	-0.221	-0.222	-0.221	-0.218	-0.214	-0.207	-0.198	-0.187	-0.175	-0.161	-0.145	-0.128	-0.108	-0.088	-0.068	-0.046	-0.024	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.030	-0.031	-0.032	-0.032	-0.032	-0.032	-0.031	-0.030	-0.029	-0.028	-0.026	-0.024	-0.022	-0.020	-0.018	-0.015	-0.012	-0.009	-0.006	-0.003	0
TOTAL DEAD LOAD DEFLECTION	-0.321	-0.330	-0.338	-0.342	-0.343	-0.342	-0.337	-0.329	-0.319	-0.305	-0.287	-0.268	-0.246	-0.222	-0.195	-0.165	-0.135	-0.104	-0.071	-0.036	0
VERTICAL CURVE ORDINATE	0.211	0.215	0.217	0.217	0.216	0.213	0.210	0.204	0.197	0.189	0.179	0.168	0.155	0.141	0.125	0.108	0.089	0.069	0.048	0.024	0
REQUIRED CAMBER	6 3/8	6 9/16	6 5/8	6 11/16	6 11/16	6 11/16	6 9/16	6 3/8	6 3/16	5 15/16	5 5/8	5 1/4	4 13/16	4 3/8	3 7/8	3 1/4	2 11/16	2 1/16	1 7/16	3/4	0

GIRDER B2																					
40TH POINTS	2.000	2.025	2.050	2.075	2.100	2.125	2.150	2.175	2.200	2.225	2.250	2.275	2.300	2.325	2.350	2.375	2.400	2.425	2.450	2.475	2.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.001	-0.003	-0.006	-0.009	-0.013	-0.018	-0.023	-0.028	-0.034	-0.040	-0.047	-0.053	-0.059	-0.065	-0.071	-0.076	-0.081	-0.085	-0.089	-0.092
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.000	-0.003	-0.007	-0.012	-0.020	-0.031	-0.041	-0.053	-0.066	-0.079	-0.096	-0.110	-0.124	-0.141	-0.154	-0.168	-0.180	-0.191	-0.202	-0.211
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.000	-0.001	-0.002	-0.003	-0.005	-0.006	-0.008	-0.010	-0.012	-0.014	-0.017	-0.019	-0.021	-0.023	-0.025	-0.027	-0.028	-0.030	-0.031	-0.032
TOTAL DEAD LOAD DEFLECTION	0	-0.002	-0.007	-0.015	-0.025	-0.038	-0.055	-0.073	-0.091	-0.112	-0.134	-0.159	-0.181	-0.204	-0.229	-0.250	-0.270	-0.289	-0.306	-0.323	-0.335
VERTICAL CURVE ORDINATE	0	0.011	0.023	0.034	0.046	0.057	0.069	0.080	0.092	0.103	0.115	0.127	0.138	0.150	0.161	0.173	0.183	0.192	0.200	0.207	0.211
REQUIRED CAMBER	0	3/16	3/8	9/16	7/8	1 1/8	1 1/2	1 13/16	2 3/16	2 9/16	3	3 3/16	3 13/16	4 1/4	4 11/16	5 1/16	5 7/16	5 3/4	6 1/16	6 3/8	6 9/16

GIRDER B2																					
40TH POINTS	2.500	2.525	2.550	2.575	2.600	2.625	2.650	2.675	2.700	2.725	2.750	2.775	2.800	2.825	2.850	2.875	2.900	2.925	2.950	2.975	3.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.092	-0.095	-0.096	-0.098	-0.098	-0.097	-0.095	-0.093	-0.090	-0.086	-0.081	-0.075	-0.069	-0.062	-0.055	-0.046	-0.038	-0.029	-0.020	-0.010	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.211	-0.217	-0.224	-0.227	-0.228	-0.227	-0.225	-0.220	-0.213	-0.204	-0.194	-0.180	-0.166	-0.150	-0.132	-0.111	-0.091	-0.070	-0.047	-0.024	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.032	-0.033	-0.034	-0.034	-0.034	-0.034	-0.033	-0.032	-0.031	-0.030	-0.028	-0.026	-0.024	-0.022	-0.019	-0.016	-0.013	-0.010	-0.007	-0.003	0
TOTAL DEAD LOAD DEFLECTION	-0.335	-0.345	-0.354	-0.358	-0.360	-0.358	-0.353	-0.345	-0.334	-0.320	-0.303	-0.282	-0.259	-0.234	-0.206	-0.173	-0.142	-0.108	-0.074	-0.038	0
VERTICAL CURVE ORDINATE	0.211	0.215	0.217	0.217	0.216	0.213	0.209	0.204	0.197	0.189	0.179	0.168	0.155	0.141	0.125	0.108	0.089	0.069	0.048	0.025	0
REQUIRED CAMBER	6 9/16	6 11/16	6 13/16	6 7/8	6 15/16	6 7/8	6 3/4	6 9/16	6 3/8	6 1/8	5 13/16	5 3/8	4 15/16	4 1/2	3 15/16	3 3/8	2 3/4	2 1/8	1 7/16	3/4	0

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 3 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS AND CAMBER ORDINATES SPAN "B"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER

Digitally signed by Gregory Shafer
E32985E5537384A2...
8/8/2022

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-38
1			3			TOTAL SHEETS
2			4			84

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GIRDER B3

40TH POINTS	2.000	2.025	2.050	2.075	2.100	2.125	2.150	2.175	2.200	2.225	2.250	2.275	2.300	2.325	2.350	2.375	2.400	2.425	2.450	2.475	2.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.002	-0.004	-0.007	-0.010	-0.014	-0.019	-0.025	-0.031	-0.037	-0.043	-0.050	-0.057	-0.063	-0.069	-0.076	-0.082	-0.087	-0.092	-0.096	-0.099
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.000	-0.003	-0.007	-0.012	-0.020	-0.031	-0.041	-0.053	-0.066	-0.083	-0.097	-0.111	-0.126	-0.143	-0.156	-0.169	-0.182	-0.193	-0.205	-0.213
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.001	-0.001	-0.002	-0.003	-0.005	-0.007	-0.009	-0.011	-0.013	-0.015	-0.018	-0.020	-0.022	-0.024	-0.026	-0.028	-0.030	-0.032	-0.033	-0.034
TOTAL DEAD LOAD DEFLECTION	0	-0.002	-0.008	-0.015	-0.026	-0.039	-0.057	-0.075	-0.095	-0.116	-0.141	-0.164	-0.187	-0.211	-0.236	-0.259	-0.279	-0.299	-0.316	-0.334	-0.347
VERTICAL CURVE ORDINATE	0	0.011	0.023	0.034	0.046	0.057	0.069	0.081	0.092	0.104	0.115	0.127	0.138	0.150	0.161	0.173	0.183	0.192	0.200	0.206	0.211
REQUIRED CAMBER	0	3/16	3/8	5/8	7/8	1 3/16	1 1/2	1 7/8	2 1/4	2 5/8	3 1/16	3 1/2	3 14/16	4 5/16	4 3/4	5 3/16	5 9/16	5 7/8	6 3/16	6 1/2	6 11/16

GIRDER B3

40TH POINTS	2.500	2.525	2.550	2.575	2.600	2.625	2.650	2.675	2.700	2.725	2.750	2.775	2.800	2.825	2.850	2.875	2.900	2.925	2.950	2.975	3.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.099	-0.102	-0.104	-0.105	-0.105	-0.104	-0.103	-0.100	-0.097	-0.092	-0.087	-0.081	-0.074	-0.067	-0.059	-0.050	-0.041	-0.031	-0.021	-0.011	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.213	-0.220	-0.225	-0.230	-0.231	-0.230	-0.228	-0.223	-0.216	-0.207	-0.197	-0.183	-0.168	-0.152	-0.134	-0.113	-0.093	-0.071	-0.048	-0.025	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.034	-0.035	-0.036	-0.036	-0.036	-0.035	-0.035	-0.034	-0.033	-0.031	-0.029	-0.027	-0.025	-0.023	-0.020	-0.017	-0.014	-0.010	-0.007	-0.004	0
TOTAL DEAD LOAD DEFLECTION	-0.347	-0.357	-0.365	-0.370	-0.372	-0.370	-0.365	-0.357	-0.346	-0.331	-0.313	-0.291	-0.268	-0.242	-0.213	-0.180	-0.147	-0.113	-0.077	-0.039	0
VERTICAL CURVE ORDINATE	0.211	0.215	0.217	0.217	0.216	0.214	0.210	0.204	0.197	0.189	0.179	0.168	0.155	0.141	0.125	0.108	0.089	0.069	0.048	0.025	0
REQUIRED CAMBER	6 11/16	6 7/8	7	7 1/16	7 1/16	7	6 7/8	6 3/4	6 1/2	6 1/4	5 7/8	5 1/2	5 1/16	4 9/16	4 1/16	3 7/16	2 13/16	2 3/16	1 1/2	3/4	0

GIRDER B4

40TH POINTS	2.000	2.025	2.050	2.075	2.100	2.125	2.150	2.175	2.200	2.225	2.250	2.275	2.300	2.325	2.350	2.375	2.400	2.425	2.450	2.475	2.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.002	-0.004	-0.007	-0.011	-0.016	-0.021	-0.027	-0.033	-0.040	-0.047	-0.054	-0.061	-0.068	-0.075	-0.082	-0.088	-0.093	-0.098	-0.103	-0.106
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.000	-0.002	-0.006	-0.012	-0.020	-0.029	-0.042	-0.054	-0.066	-0.080	-0.097	-0.112	-0.126	-0.143	-0.157	-0.170	-0.182	-0.194	-0.205	-0.214
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.001	-0.001	-0.002	-0.004	-0.005	-0.007	-0.009	-0.011	-0.014	-0.016	-0.018	-0.021	-0.023	-0.025	-0.028	-0.030	-0.031	-0.033	-0.034	-0.036
TOTAL DEAD LOAD DEFLECTION	0	-0.003	-0.008	-0.016	-0.027	-0.041	-0.057	-0.078	-0.098	-0.120	-0.143	-0.170	-0.193	-0.217	-0.243	-0.266	-0.287	-0.306	-0.324	-0.342	-0.355
VERTICAL CURVE ORDINATE	0	0.011	0.023	0.034	0.046	0.057	0.069	0.081	0.092	0.104	0.115	0.127	0.138	0.150	0.161	0.172	0.183	0.193	0.200	0.207	0.211
REQUIRED CAMBER	0	3/16	3/8	5/8	7/8	1 3/16	1 1/2	1 7/8	2 5/16	2 11/16	3 1/8	3 9/16	4	4 3/8	4 7/8	5 1/4	5 5/8	6	6 5/16	6 9/16	6 13/16

GIRDER B4

40TH POINTS	2.500	2.525	2.550	2.575	2.600	2.625	2.650	2.675	2.700	2.725	2.750	2.775	2.800	2.825	2.850	2.875	2.900	2.925	2.950	2.975	3.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.106	-0.109	-0.111	-0.112	-0.112	-0.111	-0.109	-0.106	-0.103	-0.098	-0.093	-0.086	-0.079	-0.071	-0.062	-0.053	-0.043	-0.033	-0.022	-0.011	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.214	-0.220	-0.227	-0.230	-0.231	-0.231	-0.228	-0.223	-0.216	-0.207	-0.196	-0.183	-0.168	-0.152	-0.132	-0.113	-0.092	-0.071	-0.048	-0.025	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.036	-0.036	-0.037	-0.037	-0.037	-0.037	-0.036	-0.035	-0.034	-0.033	-0.031	-0.029	-0.026	-0.024	-0.020	-0.017	-0.014	-0.011	-0.007	-0.004	0
TOTAL DEAD LOAD DEFLECTION	-0.355	-0.366	-0.374	-0.379	-0.381	-0.378	-0.373	-0.365	-0.353	-0.338	-0.320	-0.297	-0.273	-0.246	-0.215	-0.183	-0.150	-0.115	-0.078	-0.040	0
VERTICAL CURVE ORDINATE	0.211	0.215	0.217	0.217	0.216	0.213	0.210	0.204	0.197	0.189	0.179	0.168	0.155	0.141	0.125	0.108	0.089	0.069	0.048	0.025	0
REQUIRED CAMBER	6 13/16	6 15/16	7 1/16	7 1/8	7 3/16	7 1/8	7	6 13/16	6 5/8	6 5/16	6	5 9/16	5 1/8	4 5/8	4 1/16	3 1/2	2 7/8	2 3/16	1 1/2	3/4	0

GIRDER B5

40TH POINTS	2.000	2.025	2.050	2.075	2.100	2.125	2.150	2.175	2.200	2.225	2.250	2.275	2.300	2.325	2.350	2.375	2.400	2.425	2.450	2.475	2.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.002	-0.004	-0.008	-0.012	-0.017	-0.023	-0.029	-0.036	-0.043	-0.051	-0.058	-0.066	-0.073	-0.080	-0.087	-0.094	-0.099	-0.105	-0.110	-0.113
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.000	-0.002	-0.006	-0.012	-0.019	-0.030	-0.041	-0.053	-0.066	-0.080	-0.097	-0.111	-0.126	-0.143	-0.157	-0.170	-0.182	-0.193	-0.205	-0.213
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.001	-0.001	-0.003	-0.004	-0.006	-0.008	-0.010	-0.012	-0.014	-0.017	-0.019	-0.022	-0.024	-0.026	-0.029	-0.031	-0.033	-0.035	-0.036	-0.037
TOTAL DEAD LOAD DEFLECTION	0	-0.003	-0.008	-0.016	-0.028	-0.042	-0.061	-0.081	-0.101	-0.123	-0.147	-0.174	-0.199	-0.223	-0.249	-0.273	-0.294	-0.314	-0.333	-0.351	-0.364
VERTICAL CURVE ORDINATE	0	0.011	0.023	0.034	0.046	0.058	0.069	0.081	0.092	0.104	0.115	0.127	0.138	0.149	0.161	0.173	0.183	0.193	0.200	0.207	0.211
REQUIRED CAMBER	0	3/16	3/8	5/8	7/8	1 3/16	1 9/16	1 15/16	2 5/16	2 3/4	3 1/8	3 5/8	4 1/16	4 7/16	4 15/16	5 3/8	5 3/4	6 1/16	6 3/8	6 11/16	6 7/8

GIRDER B5

40TH POINTS	2.500	2.525	2.550	2.575	2.600	2.625	2.650	2.675	2.700	2.725	2.750	2.775	2.800	2.825	2.850	2.875	2.900	2.925	2.950	2.975	3.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.113	-0.116	-0.118	-0.119	-0.119	-0.118	-0.116	-0.113	-0.109	-0.104	-0.099	-0.092	-0.084	-0.076	-0.066	-0.056	-0.046	-0.035	-0.024	-0.012	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.213	-0.220	-0.226	-0.229	-0.231	-0.230	-0.227	-0.222	-0.215	-0.206	-0.194	-0.182	-0.167	-0.151	-0.134	-0.112	-0.092	-0.070	-0.048	-0.024	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.037	-0.038	-0.039	-0.039	-0.039	-0.039	-0.038	-0.037	-0.036	-0.034	-0.032	-0.030	-0.027	-0.025	-0.021	-0.018	-0.015	-0.011	-0.008	-0.004	0
TOTAL DEAD LOAD DEFLECTION	-0.364	-0.374	-0.383	-0.388	-0.389	-0.387	-0.381	-0.372	-0.360	-0.345	-0.325	-0.303	-0.279	-0.251	-0.221	-0.186	-0.152	-0.117	-0.079	-0.041	0
VERTICAL CURVE ORDINATE	0.211	0.215	0.217	0.217	0.216	0.214	0.210	0.204	0.197	0.189	0.179	0.168	0.155	0.141	0.125	0.108	0.089	0.069	0.047	0.024	0
REQUIRED CAMBER	6 7/8	7 1/16	7 3/16	7 1/4	7 1/4	7 3/16	7 1/16	6 15/16	6 11/16	6 3/8	6 1/16	5 5/8	5 3/16	4 11/16	4 1/8	3 1/2	2 7/8	2 1/4	1 1/2	3/4	0

NOTES

FOR NOTES, SEE SHEET 1 OF 10.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 4 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS AND CAMBER ORDINATES SPAN "B"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER

8/8/2022

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS

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

SHEET No. S5-39

TOTAL SHEETS 84

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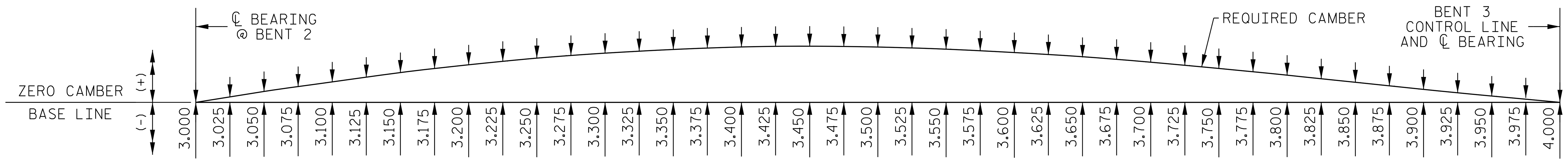

NOTES

FOR NOTES, SEE SHEET 1 OF 10.

GIRDER C1

40TH POINTS	3.000	3.025	3.050	3.075	3.100	3.125	3.150	3.175	3.200	3.225	3.250	3.275	3.300	3.325	3.350	3.375	3.400	3.425	3.450	3.475	3.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.010	-0.020	-0.029	-0.038	-0.047	-0.056	-0.064	-0.071	-0.078	-0.084	-0.089	-0.094	-0.097	-0.100	-0.102	-0.104	-0.104	-0.104	-0.103	-0.101
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.027	-0.052	-0.077	-0.101	-0.124	-0.147	-0.167	-0.186	-0.203	-0.220	-0.233	-0.245	-0.254	-0.262	-0.267	-0.271	-0.272	-0.270	-0.267	-0.263
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.003	-0.007	-0.010	-0.013	-0.016	-0.019	-0.021	-0.024	-0.026	-0.028	-0.030	-0.031	-0.033	-0.034	-0.034	-0.035	-0.035	-0.035	-0.035	-0.034
TOTAL DEAD LOAD DEFLECTION	0	-0.040	-0.079	-0.116	-0.152	-0.186	-0.222	-0.253	-0.281	-0.307	-0.332	-0.352	-0.370	-0.384	-0.396	-0.404	-0.409	-0.411	-0.409	-0.405	-0.398
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.081	0.106	0.128	0.150	0.169	0.188	0.205	0.220	0.234	0.246	0.257	0.267	0.275	0.282	0.287	0.290	0.293	0.293
REQUIRED CAMBER	0	13/16	1 5/8	2 3/8	3 1/16	3 3/4	4 7/16	5 1/16	5 5/8	6 1/8	6 5/8	7 1/16	7 3/8	7 11/16	7 15/16	8 1/8	8 5/16	8 3/8	8 3/8	8 3/8	8 5/16

GIRDER C1

40TH POINTS	3.500	3.525	3.550	3.575	3.600	3.625	3.650	3.675	3.700	3.725	3.750	3.775	3.800	3.825	3.850	3.875	3.900	3.925	3.950	3.975	4.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.101	-0.099	-0.095	-0.092	-0.087	-0.083	-0.077	-0.071	-0.065	-0.059	-0.052	-0.045	-0.039	-0.033	-0.026	-0.021	-0.016	-0.011	-0.007	-0.003	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.263	-0.256	-0.247	-0.237	-0.226	-0.213	-0.198	-0.183	-0.167	-0.151	-0.132	-0.116	-0.099	-0.084	-0.066	-0.052	-0.039	-0.027	-0.017	-0.008	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.034	-0.033	-0.032	-0.031	-0.030	-0.028	-0.026	-0.024	-0.022	-0.020	-0.018	-0.015	-0.013	-0.011	-0.009	-0.007	-0.005	-0.004	-0.002	-0.001	0
TOTAL DEAD LOAD DEFLECTION	-0.398	-0.388	-0.374	-0.359	-0.343	-0.324	-0.300	-0.278	-0.255	-0.230	-0.202	-0.177	-0.152	-0.128	-0.102	-0.080	-0.060	-0.042	-0.026	-0.012	0
VERTICAL CURVE ORDINATE	0.293	0.293	0.290	0.287	0.282	0.275	0.267	0.257	0.246	0.234	0.220	0.205	0.188	0.169	0.150	0.128	0.106	0.081	0.056	0.029	0
REQUIRED CAMBER	8 5/16	8 3/16	8	7 3/4	7 1/2	7 3/16	6 13/16	6 7/16	6	5 9/16	5 1/16	4 9/16	4 1/16	3 9/16	3	2 1/2	2	1 1/2	1	1/2	0

GIRDER C2

40TH POINTS	3.000	3.025	3.050	3.075	3.100	3.125	3.150	3.175	3.200	3.225	3.250	3.275	3.300	3.325	3.350	3.375	3.400	3.425	3.450	3.475	3.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.011	-0.022	-0.033	-0.043	-0.053	-0.063	-0.071	-0.080	-0.087	-0.094	-0.100	-0.105	-0.109	-0.112	-0.115	-0.117	-0.117	-0.117	-0.116	-0.114
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.029	-0.057	-0.084	-0.110	-0.134	-0.160	-0.182	-0.202	-0.221	-0.239	-0.253	-0.266	-0.276	-0.285	-0.291	-0.295	-0.296	-0.295	-0.292	-0.287
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.004	-0.007	-0.011	-0.014	-0.017	-0.021	-0.024	-0.026	-0.029	-0.031	-0.033	-0.035	-0.036	-0.037	-0.038	-0.039	-0.039	-0.039	-0.038	-0.038
TOTAL DEAD LOAD DEFLECTION	0	-0.044	-0.087	-0.127	-0.167	-0.204	-0.243	-0.277	-0.308	-0.336	-0.363	-0.386	-0.405	-0.421	-0.434	-0.444	-0.450	-0.452	-0.450	-0.446	-0.438
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.081	0.106	0.128	0.150	0.169	0.188	0.205	0.220	0.234	0.246	0.257	0.267	0.275	0.282	0.287	0.290	0.293	0.293
REQUIRED CAMBER	0	7/8	1 11/16	2 1/2	3 1/4	4	4 11/16	5 3/8	5 15/16	6 1/2	7	7 7/16	7 13/16	8 1/8	8 7/16	8 5/8	8 3/4	8 7/8	8 7/8	8 7/8	8 13/16

GIRDER C2

40TH POINTS	3.500	3.525	3.550	3.575	3.600	3.625	3.650	3.675	3.700	3.725	3.750	3.775	3.800	3.825	3.850	3.875	3.900	3.925	3.950	3.975	4.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.114	-0.111	-0.107	-0.103	-0.098	-0.093	-0.087	-0.080	-0.073	-0.066	-0.058	-0.051	-0.044	-0.037	-0.031	-0.024	-0.018	-0.013	-0.008	-0.004	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.287	-0.280	-0.269	-0.259	-0.246	-0.233	-0.215	-0.200	-0.183	-0.166	-0.145	-0.127	-0.109	-0.092	-0.076	-0.058	-0.044	-0.031	-0.019	-0.009	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.038	-0.037	-0.036	-0.034	-0.033	-0.031	-0.029	-0.027	-0.024	-0.022	-0.019	-0.017	-0.015	-0.012	-0.010	-0.008	-0.006	-0.004	-0.003	-0.001	0
TOTAL DEAD LOAD DEFLECTION	-0.438	-0.428	-0.412	-0.396	-0.378	-0.357	-0.332	-0.307	-0.281	-0.254	-0.223	-0.195	-0.168	-0.142	-0.117	-0.090	-0.068	-0.048	-0.030	-0.014	0
VERTICAL CURVE ORDINATE	0.293	0.293	0.290	0.287	0.282	0.275	0.267	0.257	0.246	0.234	0.220	0.205	0.188	0.169	0.150	0.128	0.106	0.081	0.056	0.029	0
REQUIRED CAMBER	8 13/16	8 5/8	8 7/16	8 3/16	7 15/16	7 9/16	7 3/16	6 3/4	6 5/16	5 7/8	5 5/16	4 13/16	4 1/4	3 3/4	3 3/16	2 5/8	2 1/16	1 9/16	1	1/2	0

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 5 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS AND CAMBER ORDINATES SPAN "C"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY N. SHAFER

8/8/2022

PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE :	9-21
CHECKED BY :	J. B. TAYLOR	DATE :	9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE :	9-21

REVISIONS

No.	BY:	DATE:	No.	BY:	DATE:
1			3		
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SHEET No. S5-40

TOTAL SHEETS 84

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GIRDER C3

40TH POINTS	3.000	3.025	3.050	3.075	3.100	3.125	3.150	3.175	3.200	3.225	3.250	3.275	3.300	3.325	3.350	3.375	3.400	3.425	3.450	3.475	3.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.012	-0.025	-0.036	-0.047	-0.058	-0.069	-0.079	-0.087	-0.096	-0.103	-0.110	-0.116	-0.120	-0.124	-0.127	-0.129	-0.129	-0.129	-0.128	-0.126
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.031	-0.061	-0.089	-0.117	-0.143	-0.168	-0.194	-0.216	-0.236	-0.254	-0.271	-0.285	-0.296	-0.305	-0.312	-0.316	-0.318	-0.317	-0.314	-0.308
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.004	-0.008	-0.012	-0.015	-0.019	-0.022	-0.025	-0.028	-0.031	-0.034	-0.036	-0.038	-0.039	-0.040	-0.041	-0.042	-0.042	-0.042	-0.042	-0.041
TOTAL DEAD LOAD DEFLECTION	0	-0.047	-0.093	-0.137	-0.180	-0.220	-0.259	-0.298	-0.332	-0.363	-0.391	-0.417	-0.438	-0.455	-0.470	-0.480	-0.486	-0.489	-0.488	-0.483	-0.475
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.081	0.106	0.128	0.150	0.169	0.188	0.205	0.220	0.234	0.246	0.257	0.267	0.275	0.282	0.287	0.290	0.293	0.293
REQUIRED CAMBER	0	15/16	1 13/16	2 5/8	3 7/16	4 3/16	4 15/16	5 5/8	6 1/4	6 13/16	7 5/16	7 13/16	8 3/16	8 9/16	8 13/16	9 1/16	9 3/16	9 5/16	9 3/8	9 5/16	9 1/4

GIRDER C3

40TH POINTS	3.500	3.525	3.550	3.575	3.600	3.625	3.650	3.675	3.700	3.725	3.750	3.775	3.800	3.825	3.850	3.875	3.900	3.925	3.950	3.975	4.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.126	-0.123	-0.119	-0.114	-0.109	-0.103	-0.096	-0.089	-0.081	-0.074	-0.065	-0.057	-0.049	-0.042	-0.034	-0.027	-0.020	-0.014	-0.009	-0.004	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.308	-0.301	-0.292	-0.279	-0.266	-0.251	-0.235	-0.216	-0.198	-0.180	-0.161	-0.139	-0.120	-0.101	-0.084	-0.064	-0.049	-0.034	-0.022	-0.010	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.041	-0.040	-0.039	-0.037	-0.036	-0.034	-0.032	-0.029	-0.027	-0.024	-0.021	-0.019	-0.016	-0.014	-0.011	-0.009	-0.007	-0.005	-0.003	-0.001	0
TOTAL DEAD LOAD DEFLECTION	-0.475	-0.464	-0.450	-0.430	-0.410	-0.388	-0.363	-0.334	-0.306	-0.278	-0.248	-0.215	-0.185	-0.157	-0.129	-0.100	-0.076	-0.054	-0.034	-0.016	0
VERTICAL CURVE ORDINATE	0.293	0.293	0.290	0.287	0.282	0.275	0.267	0.257	0.246	0.234	0.220	0.205	0.188	0.169	0.150	0.128	0.106	0.081	0.056	0.029	0
REQUIRED CAMBER	9 1/4	9 1/16	8 7/8	8 5/8	8 5/16	7 15/16	7 9/16	7 1/8	6 5/8	6 1/8	5 5/8	5 1/16	4 1/2	3 15/16	3 5/16	2 3/4	2 3/16	1 5/8	1 1/16	9/16	0

GIRDER C4

40TH POINTS	3.000	3.025	3.050	3.075	3.100	3.125	3.150	3.175	3.200	3.225	3.250	3.275	3.300	3.325	3.350	3.375	3.400	3.425	3.450	3.475	3.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.014	-0.027	-0.039	-0.052	-0.063	-0.075	-0.086	-0.095	-0.104	-0.113	-0.120	-0.126	-0.131	-0.135	-0.138	-0.140	-0.141	-0.141	-0.140	-0.138
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.033	-0.064	-0.095	-0.124	-0.152	-0.181	-0.206	-0.229	-0.251	-0.271	-0.288	-0.303	-0.315	-0.324	-0.332	-0.336	-0.338	-0.337	-0.334	-0.329
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.004	-0.009	-0.013	-0.016	-0.020	-0.024	-0.027	-0.031	-0.033	-0.036	-0.038	-0.040	-0.042	-0.043	-0.044	-0.045	-0.045	-0.045	-0.045	-0.044
TOTAL DEAD LOAD DEFLECTION	0	-0.051	-0.100	-0.147	-0.192	-0.235	-0.280	-0.319	-0.355	-0.388	-0.420	-0.446	-0.469	-0.488	-0.503	-0.514	-0.522	-0.525	-0.523	-0.519	-0.510
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.081	0.106	0.128	0.150	0.169	0.188	0.205	0.220	0.234	0.246	0.257	0.267	0.275	0.282	0.287	0.290	0.293	0.293
REQUIRED CAMBER	0	15/16	1 7/8	2 3/4	3 9/16	4 3/8	5 1/8	5 7/8	6 1/2	7 1/8	7 11/16	8 3/16	8 9/16	8 15/16	9 1/4	9 1/2	9 5/8	9 3/4	9 3/4	9 3/4	9 5/8

GIRDER C4

40TH POINTS	3.500	3.525	3.550	3.575	3.600	3.625	3.650	3.675	3.700	3.725	3.750	3.775	3.800	3.825	3.850	3.875	3.900	3.925	3.950	3.975	4.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.138	-0.134	-0.130	-0.125	-0.119	-0.113	-0.106	-0.097	-0.089	-0.081	-0.072	-0.063	-0.055	-0.046	-0.038	-0.030	-0.023	-0.016	-0.010	-0.005	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.329	-0.321	-0.309	-0.298	-0.284	-0.269	-0.252	-0.232	-0.213	-0.194	-0.171	-0.150	-0.130	-0.110	-0.091	-0.071	-0.054	-0.038	-0.024	-0.011	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.044	-0.043	-0.042	-0.040	-0.039	-0.037	-0.034	-0.032	-0.029	-0.026	-0.023	-0.021	-0.018	-0.015	-0.013	-0.010	-0.007	-0.005	-0.003	-0.002	0
TOTAL DEAD LOAD DEFLECTION	-0.510	-0.499	-0.482	-0.463	-0.442	-0.419	-0.392	-0.361	-0.332	-0.301	-0.266	-0.234	-0.202	-0.172	-0.142	-0.110	-0.084	-0.060	-0.038	-0.018	0
VERTICAL CURVE ORDINATE	0.293	0.293	0.290	0.287	0.282	0.275	0.267	0.257	0.246	0.234	0.220	0.205	0.188	0.169	0.150	0.128	0.106	0.081	0.056	0.029	0
REQUIRED CAMBER	9 5/8	9 1/2	9 1/4	9	8 11/16	8 5/16	7 15/16	7 7/16	6 15/16	6 7/16	5 13/16	5 1/4	4 11/16	4 1/8	3 1/2	2 7/8	2 1/4	1 11/16	1 1/8	9/16	0

GIRDER C5

40TH POINTS	3.000	3.025	3.050	3.075	3.100	3.125	3.150	3.175	3.200	3.225	3.250	3.275	3.300	3.325	3.350	3.375	3.400	3.425	3.450	3.475	3.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	-0.015	-0.029	-0.043	-0.056	-0.069	-0.082	-0.093	-0.104	-0.114	-0.123	-0.131	-0.138	-0.143	-0.148	-0.151	-0.153	-0.154	-0.154	-0.152	-0.150
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	-0.035	-0.068	-0.101	-0.132	-0.161	-0.192	-0.219	-0.244	-0.266	-0.287	-0.306	-0.322	-0.334	-0.345	-0.353	-0.358	-0.360	-0.359	-0.355	-0.350
DEFLECTION DUE TO WEIGHT OF RAIL	0	-0.005	-0.009	-0.014	-0.018	-0.022	-0.026	-0.030	-0.033	-0.036	-0.039	-0.041	-0.044	-0.045	-0.047	-0.048	-0.049	-0.049	-0.049	-0.049	-0.048
TOTAL DEAD LOAD DEFLECTION	0	-0.054	-0.107	-0.157	-0.206	-0.252	-0.300	-0.342	-0.381	-0.416	-0.448	-0.478	-0.503	-0.523	-0.540	-0.552	-0.559	-0.563	-0.561	-0.556	-0.548
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.081	0.106	0.128	0.150	0.169	0.188	0.205	0.220	0.234	0.246	0.257	0.267	0.275	0.282	0.287	0.290	0.293	0.293
REQUIRED CAMBER	0	1	1 15/16	2 7/8	3 3/4	4 9/16	5 3/8	6 1/8	6 13/16	7 7/16	8	8 9/16	9	9 3/8	9 11/16	9 15/16	10 1/16	10 3/16	10 1/4	10 3/16	10 1/8

GIRDER C5

40TH POINTS	3.500	3.525	3.550	3.575	3.600	3.625	3.650	3.675	3.700	3.725	3.750	3.775	3.800	3.825	3.850	3.875	3.900	3.925	3.950	3.975	4.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.150	-0.147	-0.142	-0.136	-0.130	-0.123	-0.114	-0.106	-0.097	-0.088	-0.078	-0.069	-0.060	-0.051	-0.041	-0.033	-0.025	-0.018	-0.011	-0.005	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.350	-0.342	-0.330	-0.318	-0.303	-0.287	-0.267	-0.248	-0.228	-0.207	-0.183	-0.161	-0.140	-0.119	-0.099	-0.076	-0.058	-0.041	-0.026	-0.012	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.048	-0.047	-0.045	-0.044	-0.042	-0.040	-0.037	-0.034	-0.032	-0.029	-0.025	-0.022	-0.019	-0.017	-0.013	-0.011	-0.008	-0.006	-0.004	-0.002	0
TOTAL DEAD LOAD DEFLECTION	-0.548	-0.535	-0.517	-0.497	-0.475	-0.450	-0.419	-0.388	-0.357	-0.324	-0.287	-0.252	-0.219	-0.186	-0.153	-0.120	-0.091	-0.065	-0.041	-0.019	0
VERTICAL CURVE ORDINATE	0.293	0.293	0.290	0.287	0.282	0.275	0.267	0.257	0.246	0.234	0.220	0.205	0.188	0.169	0.150	0.128	0.106	0.081	0.056	0.029	0
REQUIRED CAMBER	10 1/8	9 15/16	9 11/16	9 7/16	9 1/16	8 11/16	8 1/4	7 3/4	7 1/4	6 11/16	6 1/16	5 1/2	4 7/8	4 1/4	3 5/8	3	2 3/8	1 3/4	1 3/16	9/16	0

NOTES

FOR NOTES, SEE SHEET 1 OF 10.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 6 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS AND CAMBER ORDINATES SPAN "C"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFER

Docusigned by: Gregory Shafer E32D8E5537384A6...

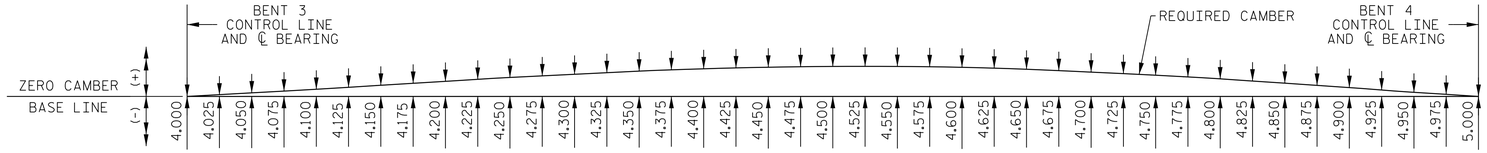
8/8/2022

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-41
1			3			TOTAL SHEETS
2			4			84

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

FILE: J:\U-2579AA\Structures\Drawings\U-2579aa_Site_5_smu_dfl5.dgn
DATE: 8/8/2022 10:44:20 AM



NOTES

FOR NOTES, SEE SHEET 1 OF 10.

GIRDER D1																					
40TH POINTS	4.000	4.025	4.050	4.075	4.100	4.125	4.150	4.175	4.200	4.225	4.250	4.275	4.300	4.325	4.350	4.375	4.400	4.425	4.450	4.475	4.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	0.002	0.003	0.004	0.004	0.003	0.002	0.000	-0.001	-0.003	-0.006	-0.009	-0.011	-0.013	-0.016	-0.018	-0.020	-0.022	-0.024	-0.025	-0.026
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.004	0.006	0.006	0.006	0.003	-0.002	-0.007	-0.012	-0.019	-0.025	-0.035	-0.043	-0.050	-0.059	-0.065	-0.071	-0.076	-0.081	-0.085	-0.087
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.001	0.001	0.001	0.000	0.000	-0.001	-0.002	-0.002	-0.003	-0.004	-0.005	-0.006	-0.007	-0.008	-0.009	-0.009	-0.010	-0.010	-0.010
TOTAL DEAD LOAD DEFLECTION	0	0.006	0.009	0.011	0.010	0.007	0.000	-0.007	-0.015	-0.024	-0.035	-0.048	-0.059	-0.069	-0.082	-0.092	-0.100	-0.108	-0.114	-0.120	-0.123
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.082	0.107	0.130	0.151	0.171	0.190	0.207	0.223	0.237	0.249	0.261	0.270	0.278	0.285	0.290	0.294	0.296	0.297
REQUIRED CAMBER	0	1/4	9/16	7/8	1 3/16	1 1/2	1 13/16	2 1/8	2 7/16	2 3/4	3 1/16	3 7/16	3 11/16	3 15/16	4 1/4	4 7/16	4 5/8	4 3/4	4 7/8	5	5 1/16

GIRDER D1																					
40TH POINTS	4.500	4.525	4.550	4.575	4.600	4.625	4.650	4.675	4.700	4.725	4.750	4.775	4.800	4.825	4.850	4.875	4.900	4.925	4.950	4.975	5.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.026	-0.026	-0.026	-0.026	-0.026	-0.025	-0.023	-0.022	-0.020	-0.018	-0.016	-0.013	-0.011	-0.009	-0.007	-0.005	-0.003	-0.002	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.087	-0.088	-0.087	-0.086	-0.083	-0.080	-0.076	-0.070	-0.064	-0.058	-0.049	-0.043	-0.036	-0.029	-0.024	-0.016	-0.011	-0.007	-0.004	-0.001	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.010	-0.011	-0.011	-0.010	-0.010	-0.010	-0.009	-0.009	-0.008	-0.007	-0.006	-0.005	-0.004	-0.004	-0.003	-0.002	-0.001	-0.001	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.123	-0.124	-0.124	-0.122	-0.119	-0.115	-0.109	-0.100	-0.092	-0.083	-0.072	-0.062	-0.052	-0.043	-0.033	-0.023	-0.016	-0.010	-0.005	-0.002	0
VERTICAL CURVE ORDINATE	0.297	0.296	0.294	0.290	0.285	0.278	0.270	0.261	0.249	0.237	0.223	0.207	0.190	0.171	0.151	0.130	0.107	0.082	0.056	0.029	0
REQUIRED CAMBER	5 1/16	5 1/16	5	4 15/16	4 7/8	4 11/16	4 9/16	4 5/16	4 1/8	3 13/16	3 9/16	3 1/4	2 7/8	2 9/16	2 3/16	1 13/16	1 1/2	1 1/8	3/4	3/8	0

GIRDER D2																					
40TH POINTS	4.000	4.025	4.050	4.075	4.100	4.125	4.150	4.175	4.200	4.225	4.250	4.275	4.300	4.325	4.350	4.375	4.400	4.425	4.450	4.475	4.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	0.002	0.004	0.005	0.005	0.005	0.004	0.002	0.001	-0.001	-0.004	-0.006	-0.009	-0.011	-0.014	-0.017	-0.019	-0.021	-0.022	-0.024	-0.025
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.005	0.008	0.009	0.009	0.008	0.003	-0.001	-0.006	-0.012	-0.021	-0.028	-0.035	-0.043	-0.050	-0.059	-0.065	-0.070	-0.075	-0.079	-0.081
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.001	0.001	0.001	0.001	0.001	0.000	-0.001	-0.001	-0.002	-0.003	-0.004	-0.005	-0.006	-0.007	-0.008	-0.008	-0.009	-0.009	-0.010
TOTAL DEAD LOAD DEFLECTION	0	0.007	0.013	0.015	0.016	0.014	0.008	0.002	-0.006	-0.014	-0.027	-0.038	-0.048	-0.059	-0.070	-0.082	-0.091	-0.099	-0.106	-0.112	-0.116
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.082	0.107	0.130	0.151	0.171	0.190	0.207	0.223	0.237	0.249	0.261	0.270	0.278	0.285	0.290	0.294	0.296	0.297
REQUIRED CAMBER	0	1/4	1/2	13/16	1 1/16	1 3/8	1 3/4	2 1/16	2 3/8	2 11/16	3	3 5/16	3 9/16	3 13/16	4 1/16	4 5/16	4 1/2	4 11/16	4 13/16	4 7/8	4 15/16

GIRDER D2																					
40TH POINTS	4.500	4.525	4.550	4.575	4.600	4.625	4.650	4.675	4.700	4.725	4.750	4.775	4.800	4.825	4.850	4.875	4.900	4.925	4.950	4.975	5.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.025	-0.025	-0.026	-0.025	-0.025	-0.024	-0.023	-0.021	-0.019	-0.018	-0.015	-0.013	-0.011	-0.009	-0.007	-0.004	-0.003	-0.002	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.081	-0.082	-0.082	-0.081	-0.079	-0.076	-0.070	-0.065	-0.060	-0.054	-0.046	-0.039	-0.032	-0.026	-0.020	-0.013	-0.009	-0.005	-0.002	-0.001	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.010	-0.010	-0.010	-0.010	-0.009	-0.009	-0.009	-0.008	-0.007	-0.007	-0.006	-0.005	-0.004	-0.003	-0.002	-0.002	-0.001	-0.001	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.116	-0.117	-0.118	-0.116	-0.113	-0.109	-0.102	-0.094	-0.087	-0.078	-0.066	-0.057	-0.047	-0.038	-0.029	-0.020	-0.013	-0.008	-0.004	-0.001	0
VERTICAL CURVE ORDINATE	0.297	0.296	0.294	0.290	0.285	0.278	0.270	0.261	0.249	0.237	0.223	0.207	0.190	0.171	0.151	0.130	0.107	0.082	0.056	0.029	0
REQUIRED CAMBER	4 15/16	4 15/16	4 15/16	4 7/8	4 3/4	4 5/8	4 7/16	4 1/4	4 1/16	3 3/4	3 1/2	3 3/16	2 7/8	2 1/2	2 3/16	1 13/16	1 7/16	1 1/16	3/4	3/8	0

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 –Y2FLYAB–
41+07.80 –L–

SHEET 7 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS AND CAMBER ORDINATES SPAN "D"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY SHAFFER

Digitally signed by Gregory Shaffer
E329BE5337164E4...
8/8/2022

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY : J. CAYETANO DATE : 9-21
CHECKED BY : J. B. TAYLOR DATE : 9-21
DESIGN ENGINEER : J. B. TAYLOR DATE : 9-21

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S5-42
1			3			TOTAL SHEETS
2			4			84

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DATE: 9/8/2022 10:45:06 AM

GIRDER D3

40TH POINTS	4.000	4.025	4.050	4.075	4.100	4.125	4.150	4.175	4.200	4.225	4.250	4.275	4.300	4.325	4.350	4.375	4.400	4.425	4.450	4.475	4.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	0.003	0.005	0.006	0.007	0.007	0.005	0.004	0.003	0.001	-0.001	-0.004	-0.007	-0.009	-0.012	-0.015	-0.017	-0.019	-0.021	-0.022	-0.023
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.006	0.010	0.012	0.013	0.012	0.010	0.005	0.000	-0.005	-0.012	-0.020	-0.028	-0.035	-0.042	-0.051	-0.057	-0.062	-0.068	-0.071	-0.074
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.001	0.002	0.002	0.002	0.001	0.001	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.005	-0.006	-0.007	-0.007	-0.008	-0.008	-0.009
TOTAL DEAD LOAD DEFLECTION	0	0.009	0.016	0.020	0.021	0.021	0.017	0.010	0.004	-0.005	-0.014	-0.027	-0.037	-0.048	-0.058	-0.071	-0.080	-0.088	-0.096	-0.102	-0.106
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.082	0.107	0.130	0.151	0.171	0.190	0.207	0.223	0.237	0.249	0.261	0.270	0.278	0.285	0.290	0.294	0.296	0.297
REQUIRED CAMBER	0	1/4	1/2	3/4	1	1 5/16	1 5/8	1 15/16	2 1/4	2 9/16	2 13/16	3 3/16	3 7/16	3 11/16	3 15/16	4 3/16	4 3/8	4 9/16	4 11/16	4 3/4	4 13/16

GIRDER D3

40TH POINTS	4.500	4.525	4.550	4.575	4.600	4.625	4.650	4.675	4.700	4.725	4.750	4.775	4.800	4.825	4.850	4.875	4.900	4.925	4.950	4.975	5.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.023	-0.024	-0.024	-0.024	-0.024	-0.023	-0.022	-0.020	-0.019	-0.017	-0.014	-0.012	-0.010	-0.008	-0.006	-0.004	-0.003	-0.001	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.074	-0.075	-0.075	-0.074	-0.072	-0.069	-0.064	-0.060	-0.055	-0.049	-0.041	-0.035	-0.029	-0.023	-0.016	-0.011	-0.007	-0.003	-0.001	0.000	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.009	-0.009	-0.009	-0.009	-0.009	-0.008	-0.008	-0.007	-0.007	-0.006	-0.005	-0.004	-0.003	-0.003	-0.002	-0.001	-0.001	0.000	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.106	-0.108	-0.108	-0.107	-0.105	-0.101	-0.094	-0.087	-0.080	-0.072	-0.060	-0.051	-0.042	-0.034	-0.023	-0.016	-0.010	-0.005	-0.002	0.000	0
VERTICAL CURVE ORDINATE	0.297	0.296	0.294	0.290	0.285	0.278	0.270	0.261	0.249	0.237	0.223	0.207	0.190	0.171	0.151	0.130	0.107	0.082	0.056	0.029	0
REQUIRED CAMBER	4 13/16	4 7/8	4 13/16	4 3/4	4 11/16	4 9/16	4 3/8	4 3/16	3 15/16	3 11/16	3 3/8	3 1/8	2 13/16	2 7/16	2 1/8	1 3/4	1 3/8	1 1/16	11/16	3/8	0

GIRDER D4

40TH POINTS	4.000	4.025	4.050	4.075	4.100	4.125	4.150	4.175	4.200	4.225	4.250	4.275	4.300	4.325	4.350	4.375	4.400	4.425	4.450	4.475	4.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	0.003	0.005	0.007	0.008	0.008	0.008	0.006	0.005	0.003	0.001	-0.002	-0.004	-0.007	-0.010	-0.012	-0.014	-0.016	-0.019	-0.020	-0.021
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.007	0.012	0.015	0.017	0.017	0.016	0.011	0.007	0.002	-0.006	-0.012	-0.018	-0.025	-0.034	-0.041	-0.047	-0.052	-0.058	-0.062	-0.064
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	-0.001	-0.002	-0.003	-0.004	-0.005	-0.005	-0.006	-0.007	-0.007	-0.007
TOTAL DEAD LOAD DEFLECTION	0	0.011	0.019	0.024	0.027	0.028	0.026	0.019	0.014	0.006	-0.005	-0.014	-0.024	-0.035	-0.048	-0.058	-0.067	-0.075	-0.083	-0.089	-0.093
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.082	0.107	0.130	0.151	0.171	0.190	0.207	0.223	0.237	0.249	0.261	0.270	0.278	0.285	0.290	0.294	0.296	0.297
REQUIRED CAMBER	0	1/4	7/16	11/16	15/16	1 1/4	1 1/2	1 13/16	2 1/8	2 7/16	2 3/4	3	3 5/16	3 9/16	3 13/16	4 1/16	4 1/4	4 3/8	4 1/2	4 5/8	4 11/16

GIRDER D4

40TH POINTS	4.500	4.525	4.550	4.575	4.600	4.625	4.650	4.675	4.700	4.725	4.750	4.775	4.800	4.825	4.850	4.875	4.900	4.925	4.950	4.975	5.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.021	-0.022	-0.023	-0.023	-0.022	-0.022	-0.021	-0.019	-0.018	-0.016	-0.014	-0.012	-0.010	-0.008	-0.005	-0.004	-0.002	-0.001	0.000	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.064	-0.066	-0.066	-0.065	-0.064	-0.061	-0.058	-0.053	-0.048	-0.043	-0.035	-0.030	-0.024	-0.019	-0.014	-0.008	-0.004	-0.002	0.000	0.000	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.007	-0.008	-0.008	-0.008	-0.007	-0.007	-0.007	-0.006	-0.006	-0.005	-0.004	-0.004	-0.003	-0.002	-0.001	-0.001	0.000	0.000	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.093	-0.096	-0.096	-0.096	-0.094	-0.090	-0.086	-0.078	-0.071	-0.064	-0.054	-0.045	-0.037	-0.029	-0.021	-0.012	-0.007	-0.003	-0.001	0.000	0
VERTICAL CURVE ORDINATE	0.297	0.296	0.294	0.290	0.285	0.278	0.270	0.261	0.249	0.237	0.223	0.207	0.190	0.171	0.151	0.130	0.107	0.082	0.056	0.029	0
REQUIRED CAMBER	4 11/16	4 11/16	4 11/16	4 5/8	4 9/16	4 7/16	4 1/4	4 1/16	3 7/8	3 5/8	3 5/16	3	2 3/4	2 3/8	2 1/16	1 11/16	1 3/8	1	11/16	5/16	0

GIRDER D5

40TH POINTS	4.000	4.025	4.050	4.075	4.100	4.125	4.150	4.175	4.200	4.225	4.250	4.275	4.300	4.325	4.350	4.375	4.400	4.425	4.450	4.475	4.500
DEFLECTION DUE TO WEIGHT OF STEEL	0	0.003	0.006	0.008	0.010	0.010	0.009	0.009	0.007	0.006	0.003	0.001	-0.001	-0.004	-0.007	-0.010	-0.012	-0.014	-0.016	-0.018	-0.019
DEFLECTION DUE TO WEIGHT OF SLAB(*)	0	0.008	0.015	0.019	0.022	0.023	0.021	0.019	0.016	0.012	0.005	-0.001	-0.008	-0.014	-0.021	-0.029	-0.035	-0.041	-0.045	-0.050	-0.053
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.002	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.000	-0.001	-0.001	-0.002	-0.003	-0.004	-0.005	-0.005	-0.006	-0.006
TOTAL DEAD LOAD DEFLECTION	0	0.013	0.023	0.030	0.035	0.036	0.033	0.030	0.026	0.019	0.009	0.000	-0.010	-0.019	-0.030	-0.042	-0.051	-0.059	-0.067	-0.074	-0.078
VERTICAL CURVE ORDINATE	0	0.029	0.056	0.082	0.107	0.130	0.151	0.171	0.190	0.207	0.223	0.237	0.249	0.261	0.270	0.278	0.285	0.290	0.294	0.296	0.297
REQUIRED CAMBER	0	3/16	3/8	5/8	7/8	1 1/8	1 7/16	1 11/16	2	2 1/4	2 9/16	2 7/8	3 1/8	3 3/8	3 5/8	3 7/8	4 1/16	4 3/16	4 5/16	4 7/16	4 1/2

GIRDER D5

40TH POINTS	4.500	4.525	4.550	4.575	4.600	4.625	4.650	4.675	4.700	4.725	4.750	4.775	4.800	4.825	4.850	4.875	4.900	4.925	4.950	4.975	5.000
DEFLECTION DUE TO WEIGHT OF STEEL	-0.019	-0.020	-0.021	-0.021	-0.021	-0.021	-0.019	-0.018	-0.017	-0.015	-0.014	-0.011	-0.009	-0.007	-0.005	-0.003	-0.002	-0.001	0.000	0.000	0
DEFLECTION DUE TO WEIGHT OF SLAB(*)	-0.053	-0.055	-0.055	-0.055	-0.054	-0.052	-0.049	-0.044	-0.040	-0.036	-0.029	-0.024	-0.019	-0.014	-0.010	-0.005	-0.002	0.000	0.001	0.001	0
DEFLECTION DUE TO WEIGHT OF RAIL	-0.006	-0.006	-0.007	-0.007	-0.006	-0.006	-0.006	-0.005	-0.005	-0.004	-0.004	-0.003	-0.002	-0.002	-0.001	-0.001	0.000	0.000	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	-0.078	-0.081	-0.083	-0.083	-0.082	-0.079	-0.075	-0.068	-0.062	-0.055	-0.046	-0.038	-0.031	-0.024	-0.017	-0.009	-0.004	-0.001	0.001	0.001	0
VERTICAL CURVE ORDINATE	0.297	0.296	0.294	0.290	0.285	0.278	0.270	0.261	0.249	0.237	0.223	0.207	0.190	0.171	0.151	0.130	0.107	0.082	0.056	0.029	0
REQUIRED CAMBER	4 1/2	4 9/16	4 1/2	4 1/2	4 3/8	4 5/16	4 1/8	3 15/16	3 3/4	3 1/2	3 1/4	2 15/16	2 5/8	2 5/16	2	1 11/16	1 5/16	1	11/16	5/16	0

NOTES

FOR NOTES, SEE SHEET 1 OF 10.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 28+33.21 -Y2FLYAB-
41+07.80 -L-

SHEET 8 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS AND CAMBER ORDINATES SPAN "D"

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 034539 ENGINEER GREGORY W. SHAFER
8/8/2022

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	J. CAYETANO	DATE : 9-21
CHECKED BY :	J. B. TAYLOR	DATE : 9-21
DESIGN ENGINEER :	J. B. TAYLOR	DATE : 9-21

REVISIONS

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

SHEET No. S5-43
TOTAL SHEETS 84

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