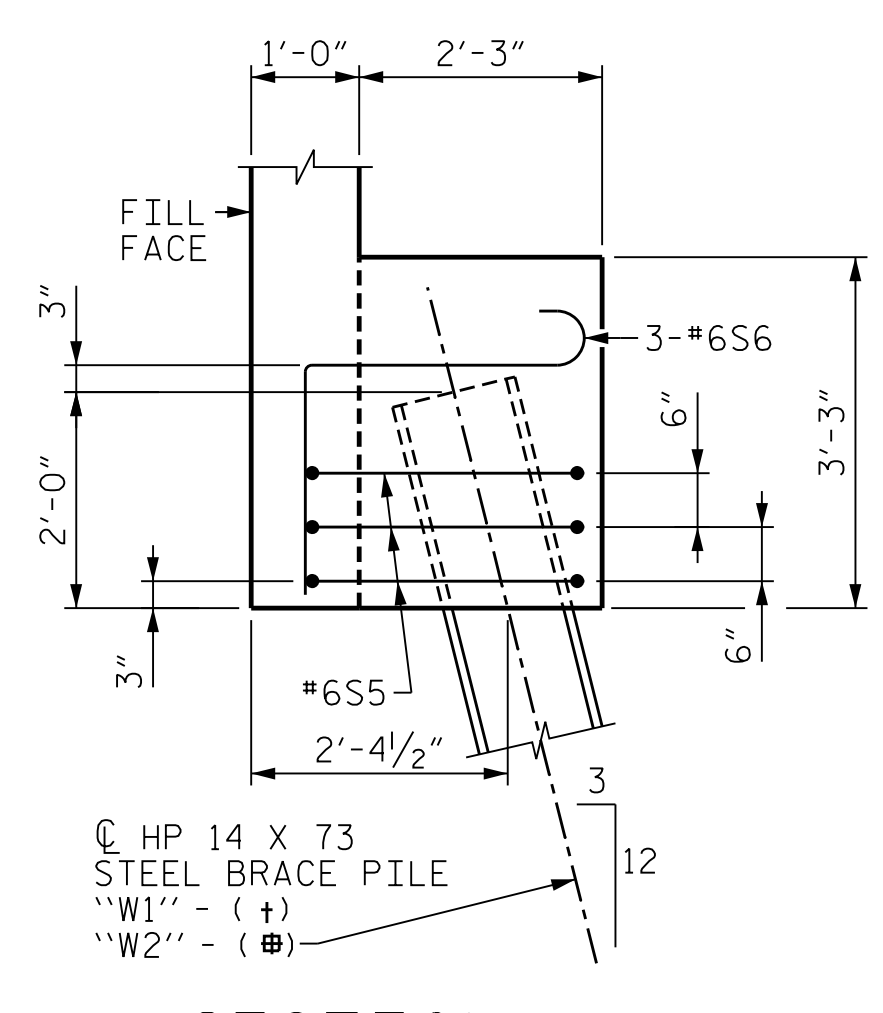
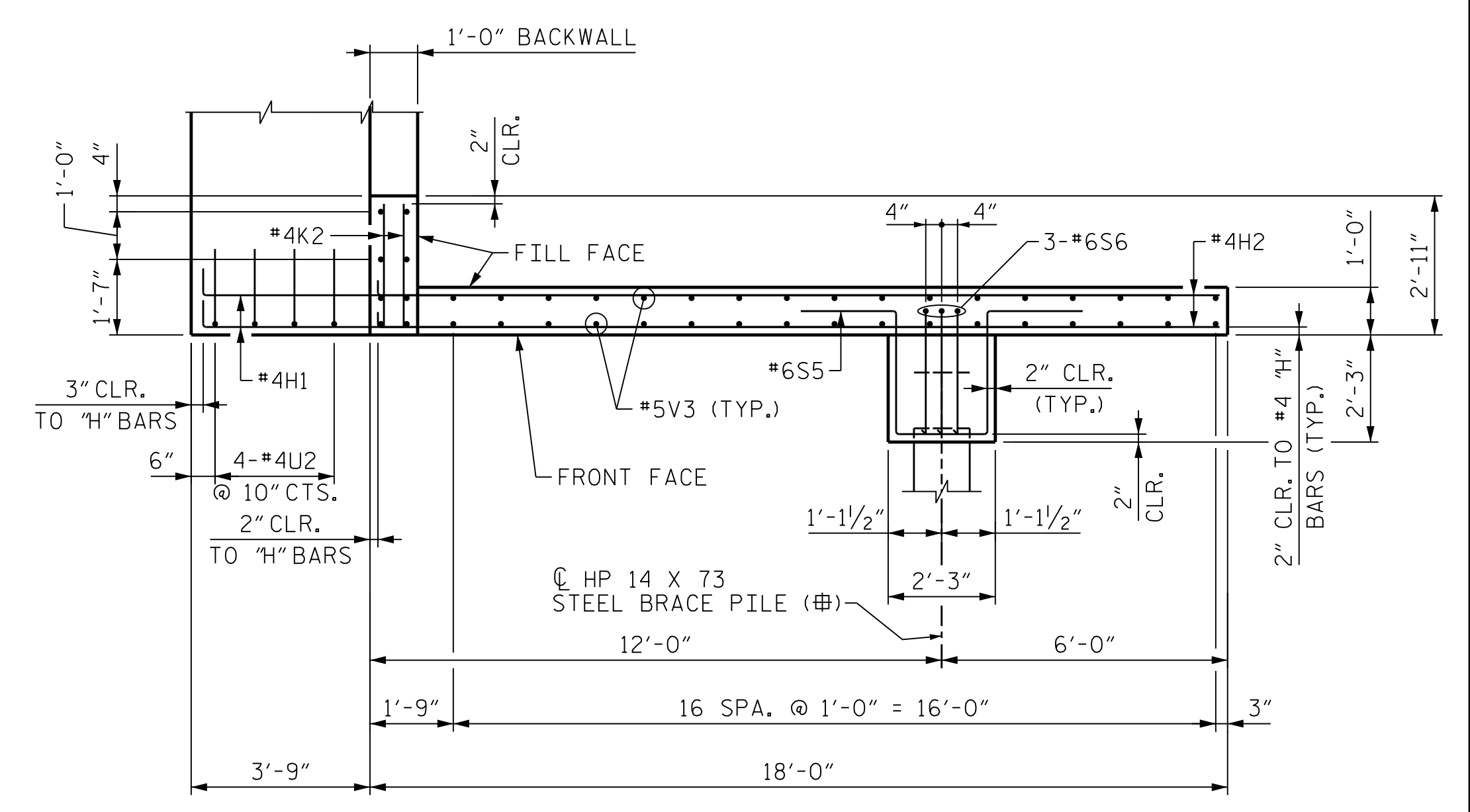


PLAN - WINGWALL "W1"

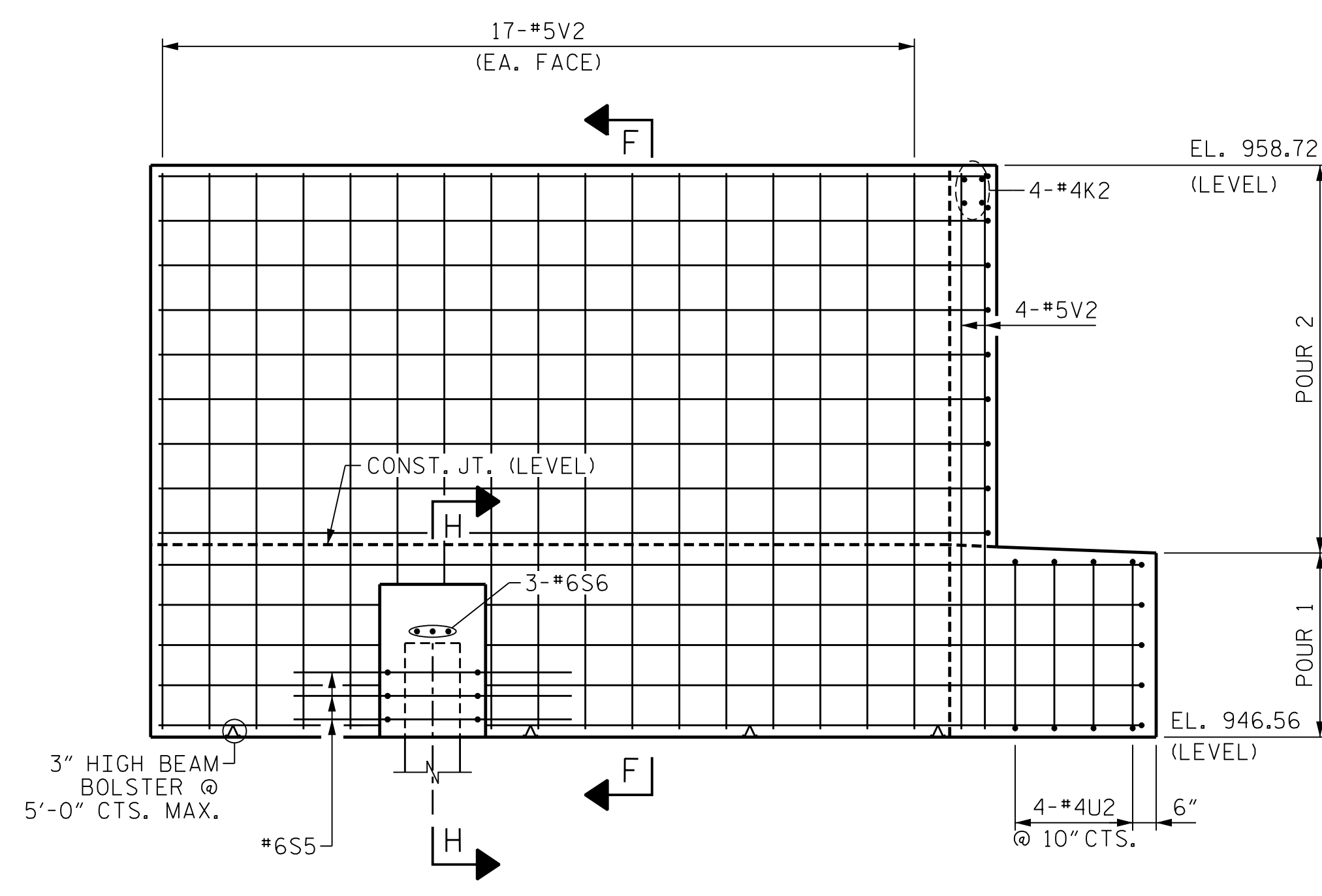


SECTION H-H

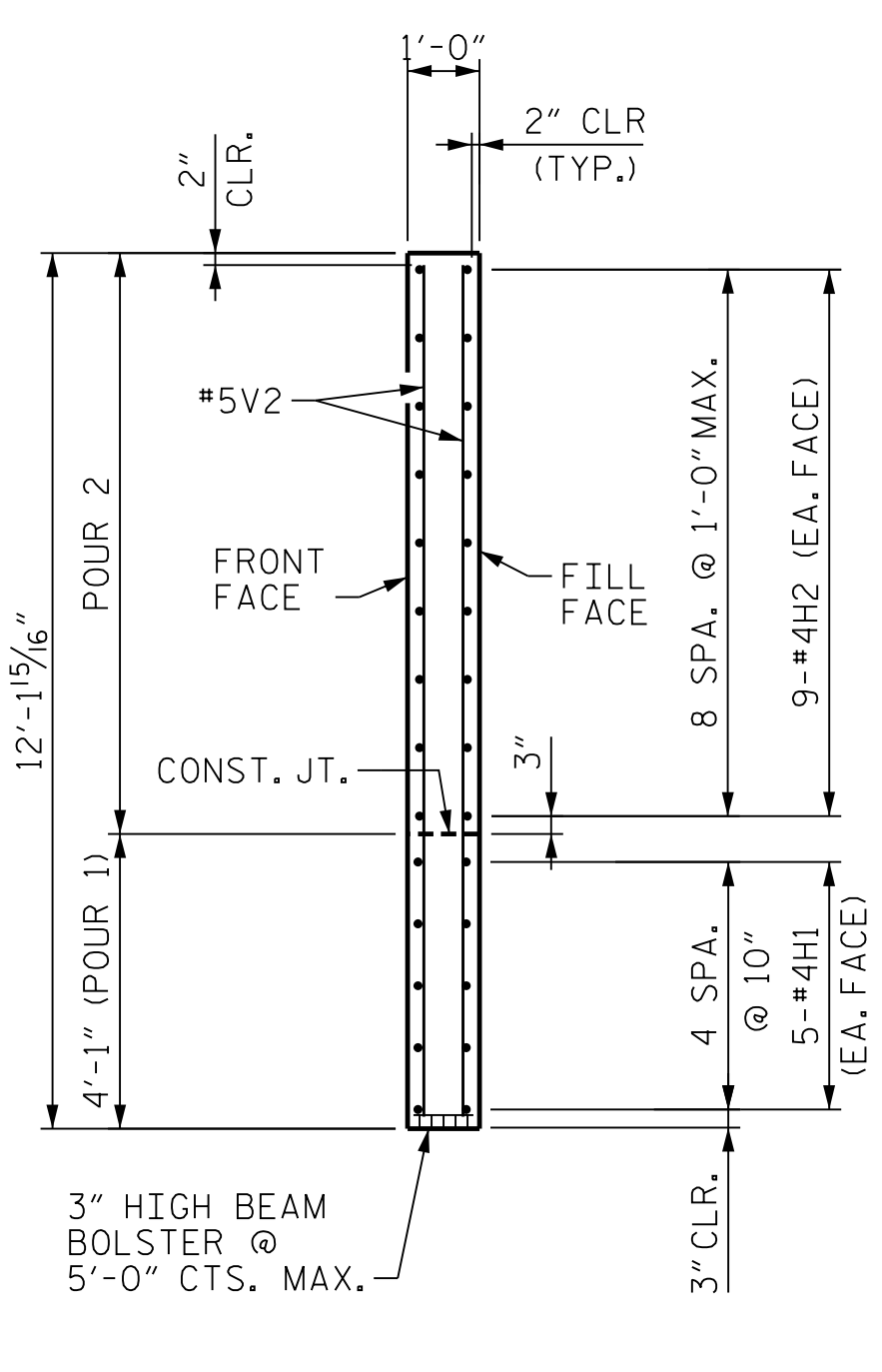


PLAN - WINGWALL "W2"

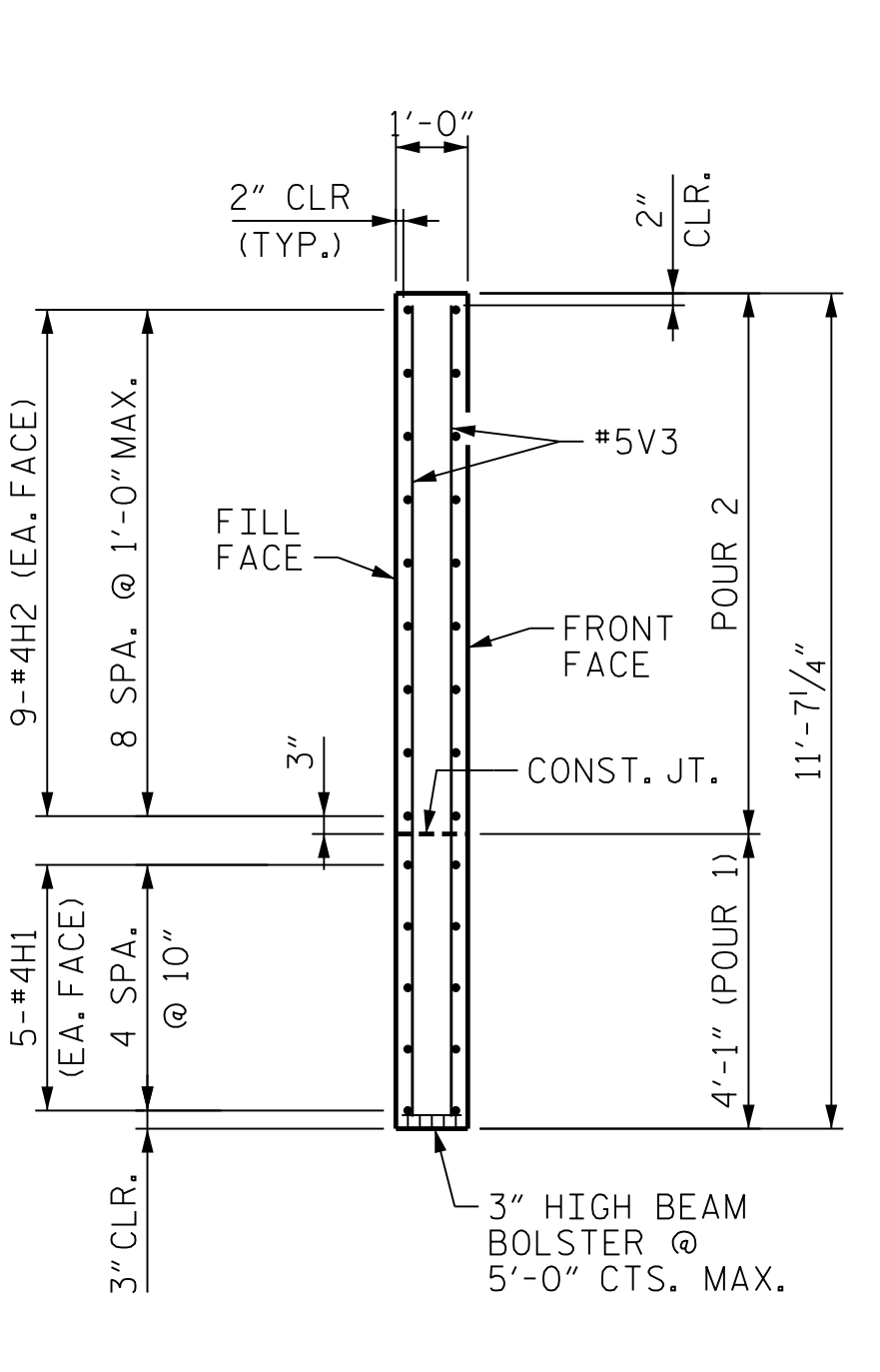
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= PILE CUTOFF ELEVATION 951.51



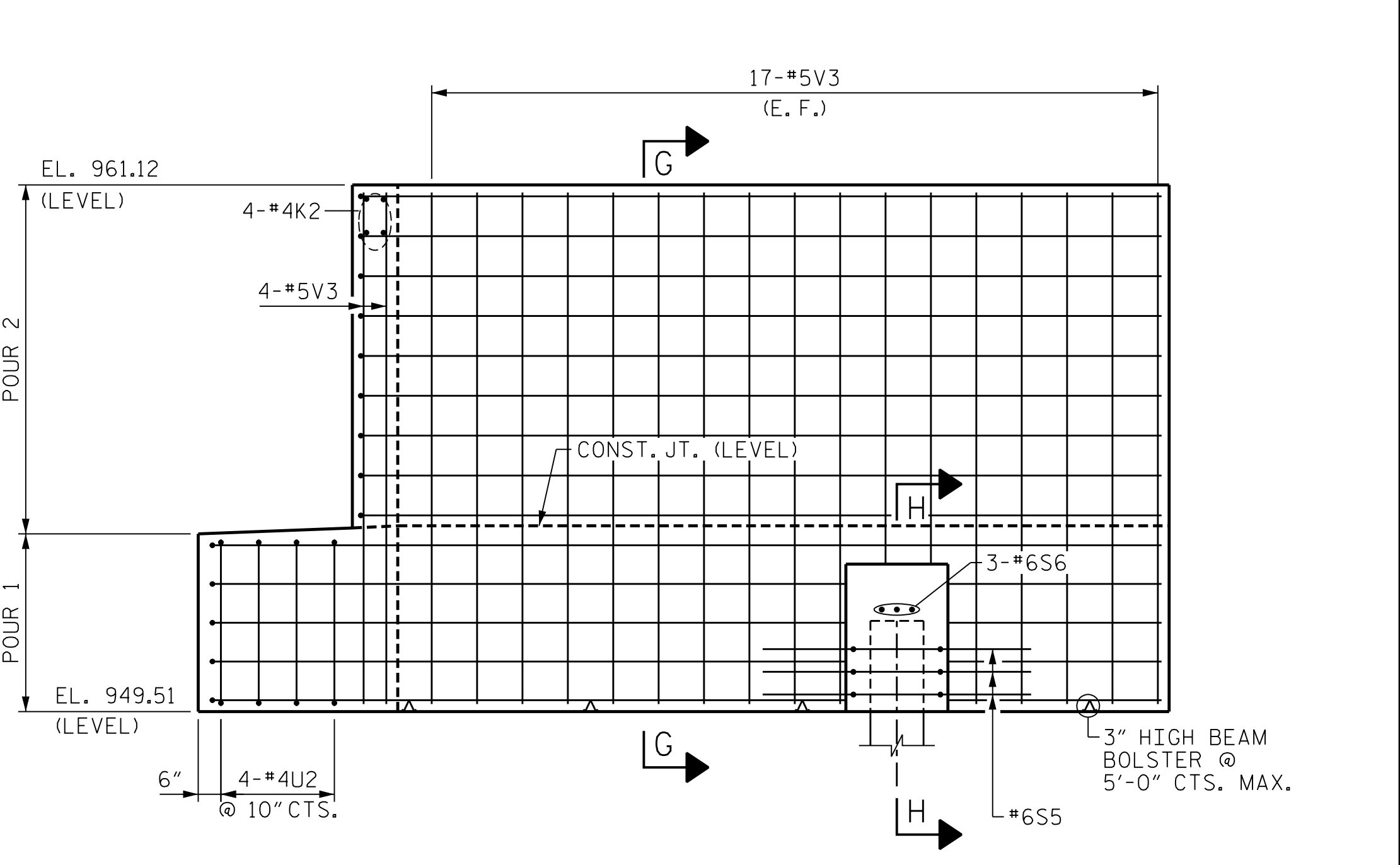
ELEVATION - WINGWALL "W1"



SECTION F-F



SECTION G-G



ELEVATION - WINGWALL "W2"

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 47+63.62 -Y15FLYBD-

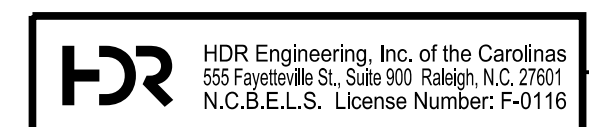
SHEET 2 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2
WING DETAILS

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

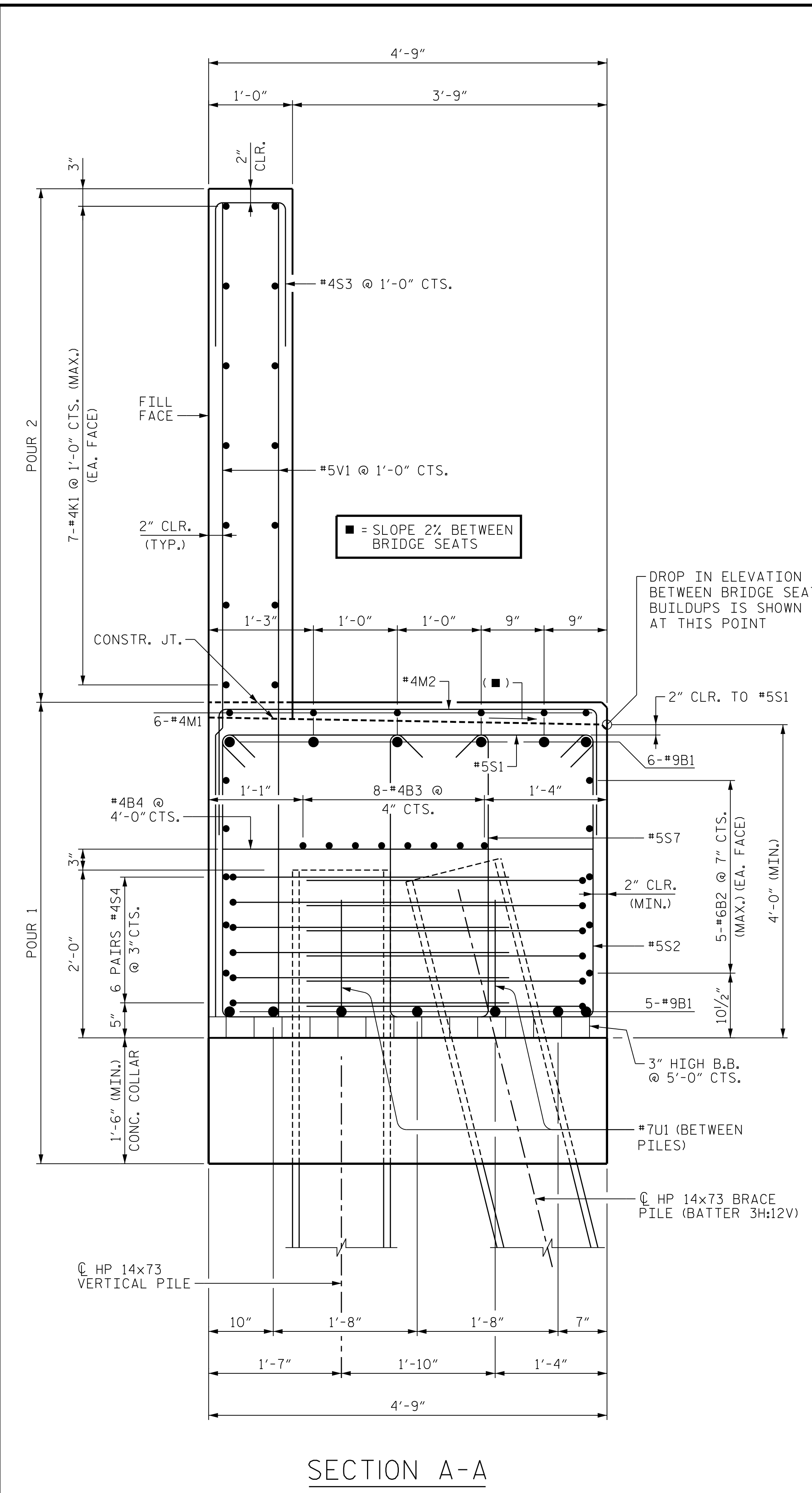


10/11/2021
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PLOT DRIVER: NCDOT...
USER: PPETERSO
DATE: 10/11/2021
FILE: ...SUBSTR

DES BY: A. ZEITOUNI	DATE: 07/19	DWG BY: B. PETERSON	DATE: 07/19
DES CHK: J. EARNEST	DATE: 07/19	CHK BY: J. EARNEST	DATE: 08/19

PLOT DRIVER: NCDOT...
 USER: PPETERSO...
 DATE: 10/11/2021
 FILE: ...SUBSTR



SECTION A-A

NOTES:

FOR PIPE INSERT DETAILS, SEE BEARING SHEETS.

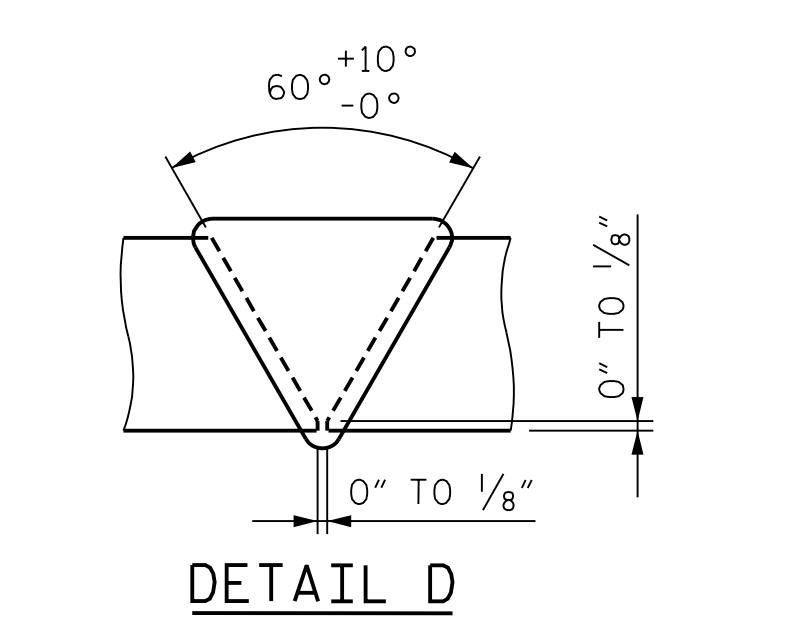
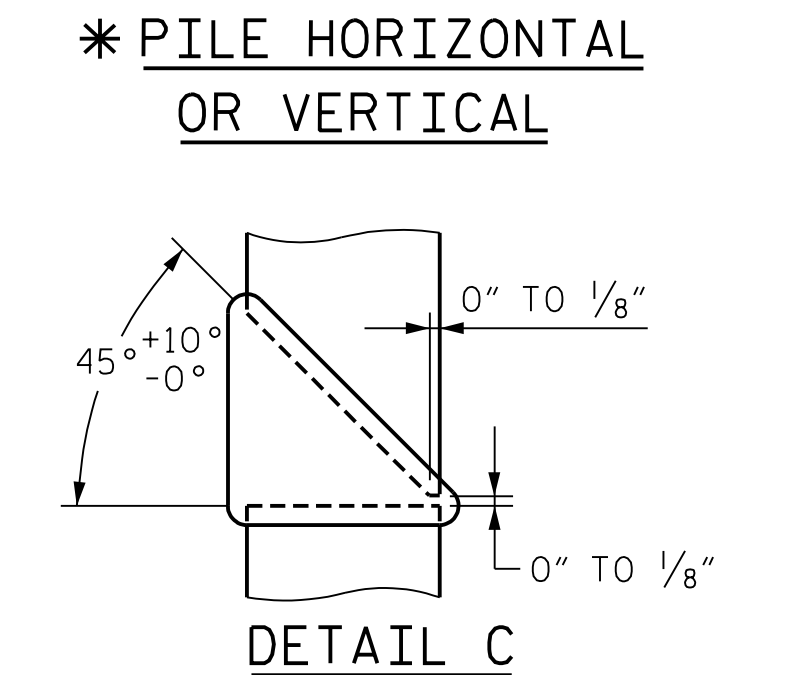
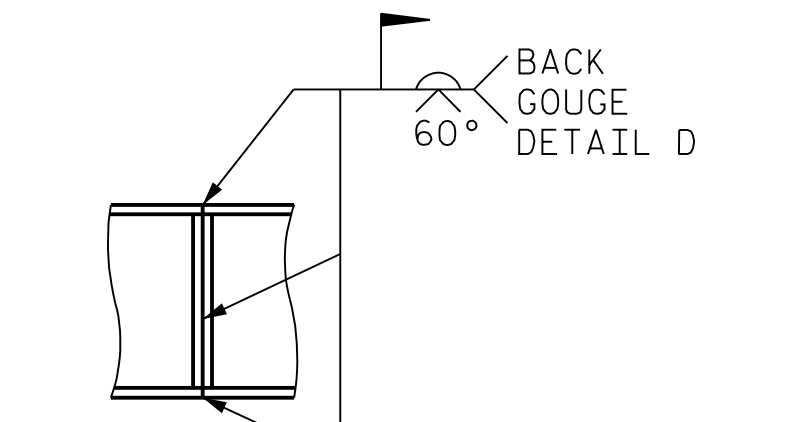
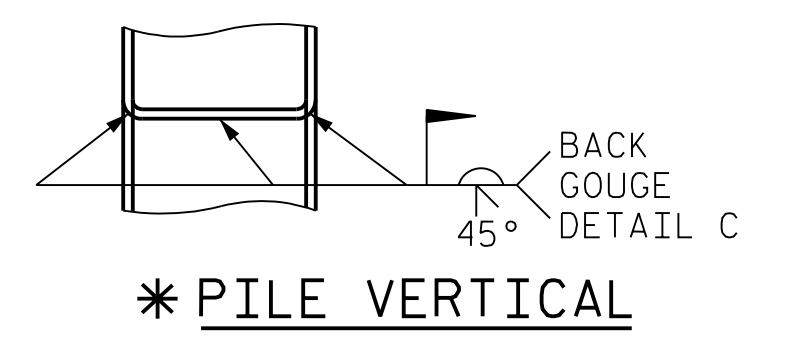
THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

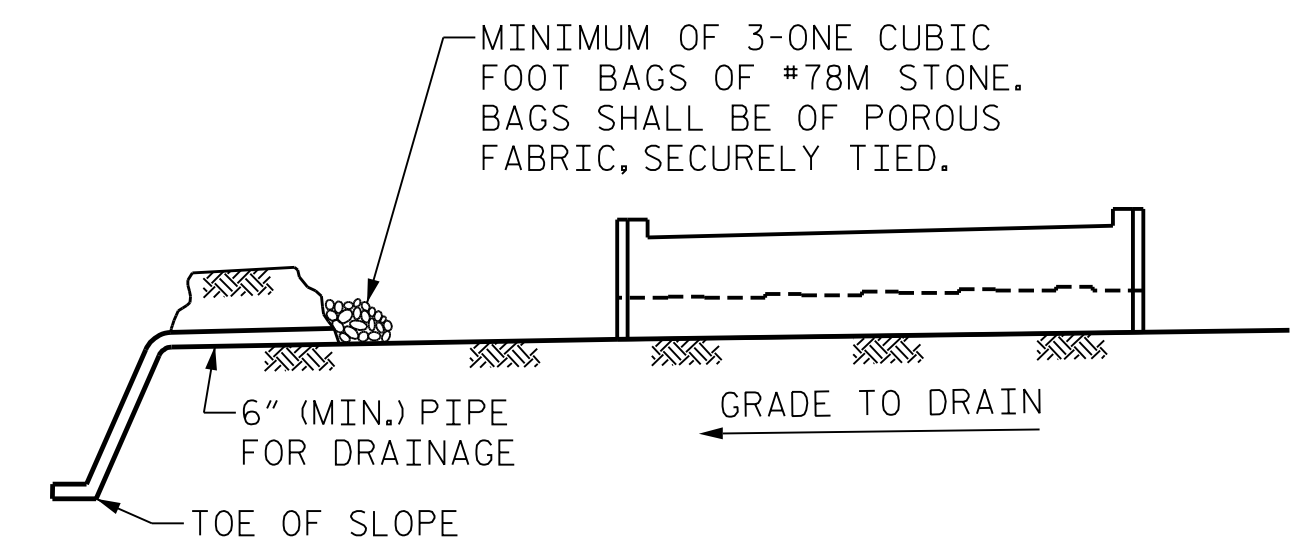
THE TOP SURFACE OF THE END BENT CAP, EXCEPT THE BRIDGE SEAT BUILDUPS, SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

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

SEE GENERAL DRAWING "FOUNDATION LAYOUT" FOR ADDITIONAL NOTES FOR DRIVING PILES.



PILE SPLICE DETAILS
 * = POSITION OF PILE DURING WELDING



NOTES:

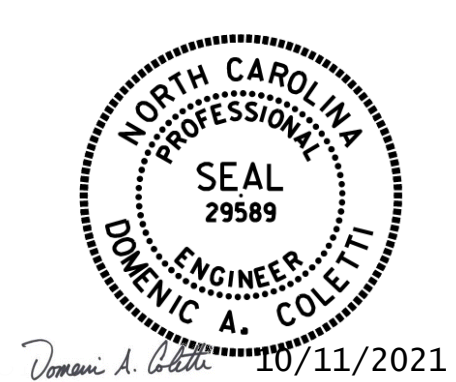
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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 FOR THE SEVERAL PAY ITEMS.

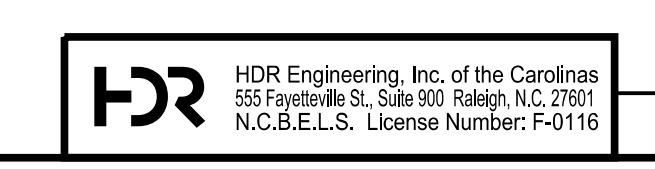
TEMPORARY DRAINAGE AT END BENT

BAR TYPES		BILL OF MATERIAL				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
B1	#9	1	51'-4"	1920		
B2	#6	STR	49'-0"	736		
B3	#4	STR	25'-9"	276		
B4	#4	STR	4'-5"	39		
H1	#4	5	22'-0"	294		
H2	#4	5	18'-4"	441		
K1	#4	STR	25'-9"	482		
K2	#4	STR	2'-7"	14		
M1	#4	STR	2'-8"	43		
M2	#4	4	7'-5"	60		
S1	#5	2	5'-4"	295		
S2	#5	3	10'-7"	586		
S3	#4	4	3'-8"	108		
S4	#4	4	8'-6"	409		
S5	#6	7	9'-1"	82		
S6	#6	6	5'-5"	49		
S7	#5	3	11'-4"	627		
U1	#7	4	8'-10"	181		
U2	#4	4	6'-6"	35		
V1	#5	STR	9'-9"	895		
V2	#5	STR	11'-8"	512		
V3	#5	STR	11'-2"	490		
REINFORCING STEEL				LBS.	8574	
CLASS "A" CONCRETE						
POUR 1: COLLAR, CAP, LOWER PART OF WINGS			CU. YDS.	45.8		
POUR 2: BACKWALL & UPPER PART OF WINGS			CU. YDS.	22.1		
TOTAL CONCRETE			CU. YDS.	67.9		
HP 14x73 STEEL PILES						
			NO.	14		
			LF	1540		
PILE DRIVING EQUIPMENT SETUP FOR HP 14x73 STEEL PILES			EA.	14		

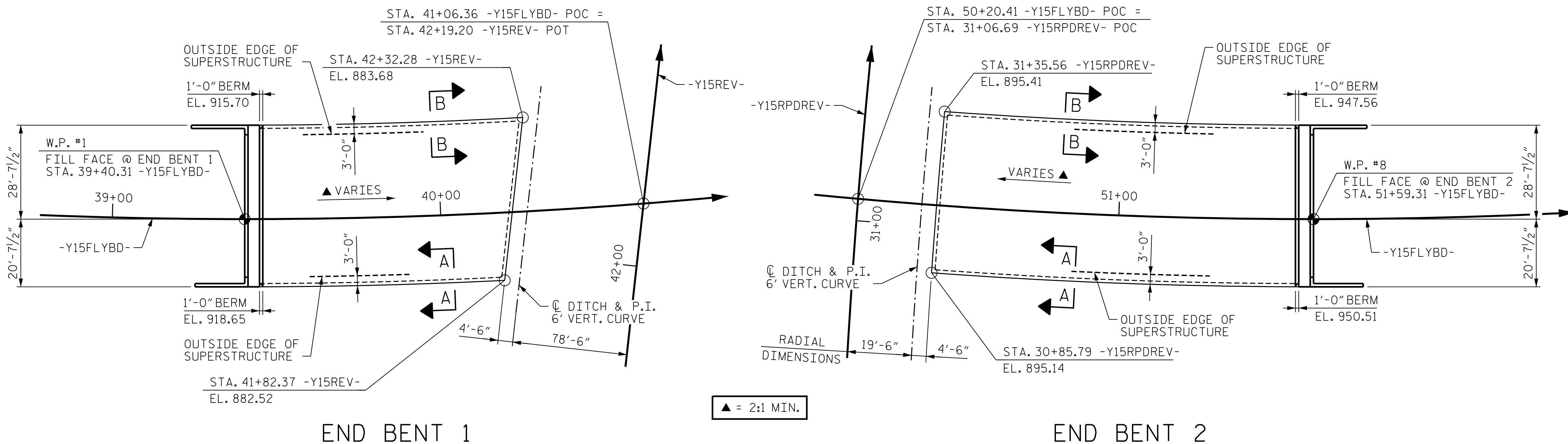


PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 47+63.62 -Y15FLYBD-
 SHEET 3 OF 3

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S05-113	
1	--	--	3	--	--	TOTAL SHEETS 116	
2	--	--	4	--	--		



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END BENT 1

END BENT 2

▲ = 2:1 MIN.

PLAN

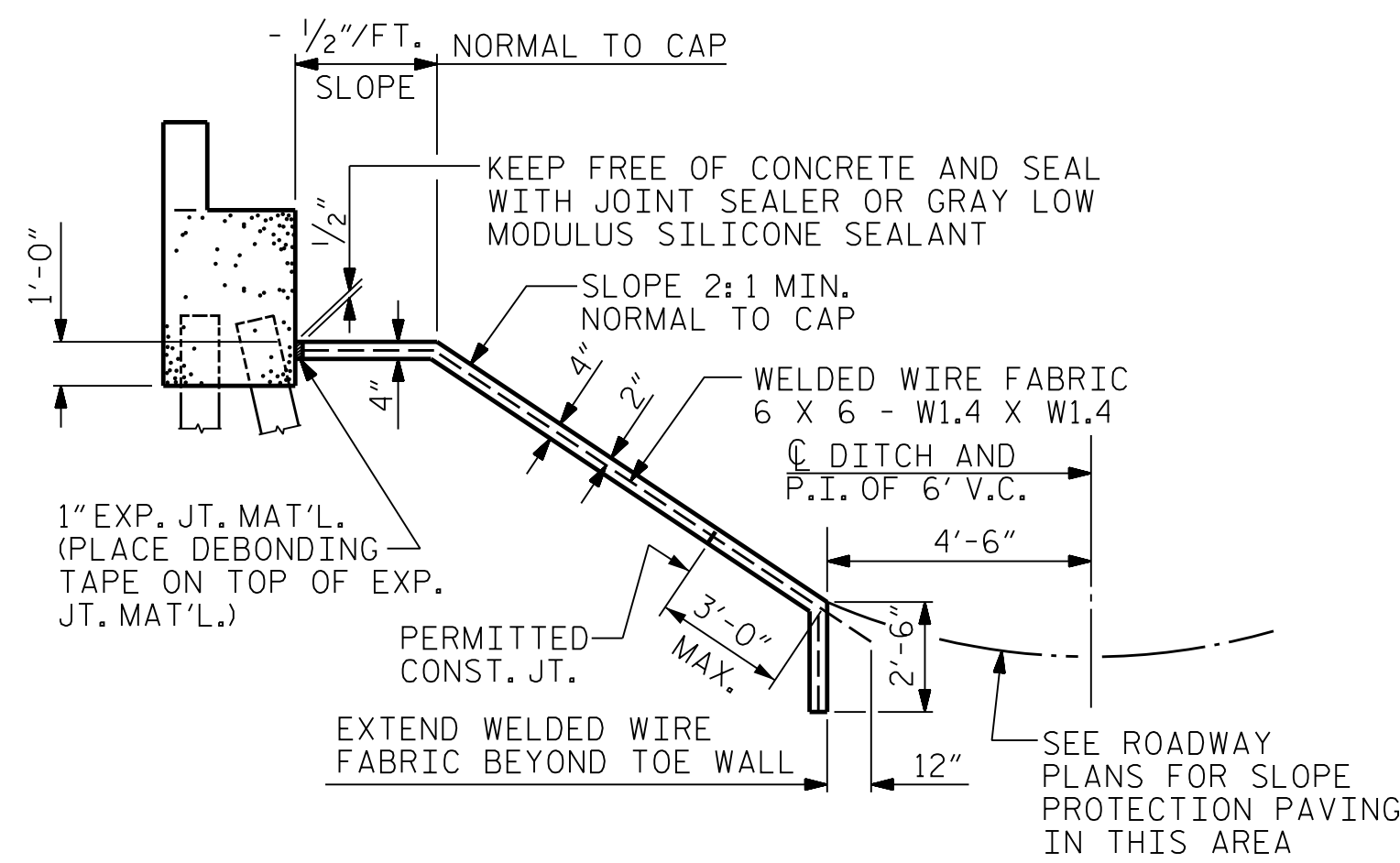
NOTES

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 PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS.

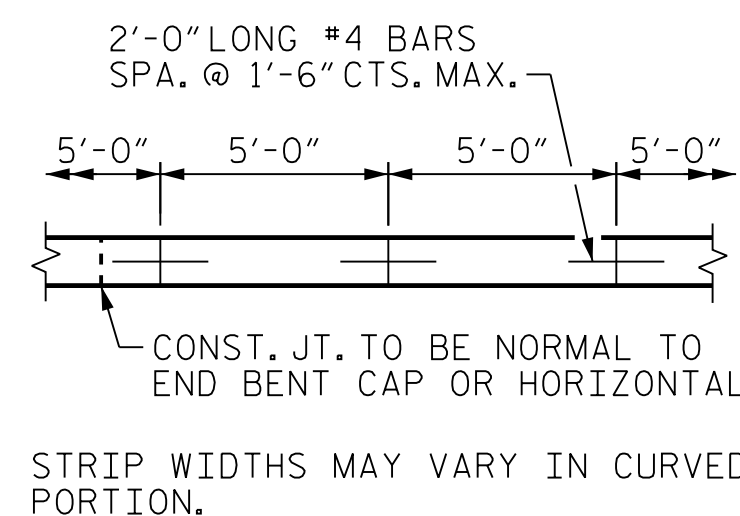
SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL 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.	4 INCH SLOPE PROTECTION SQUARE YARDS	* WELDED WIRE FABRIC 60 INCHES WIDE APPROX. L.F.
END BENT 1	462	832
END BENT 2	670	1206

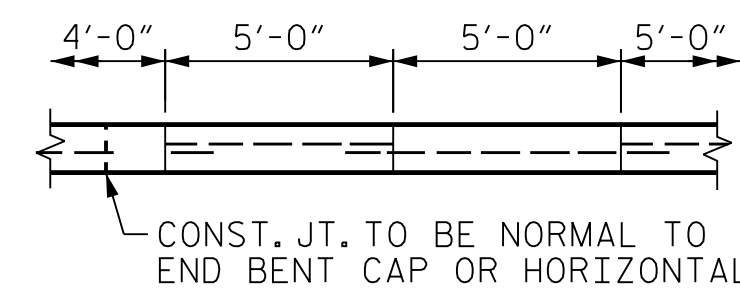
* QUANTITY SHOWN IS BASED ON 5'-0" POURS.



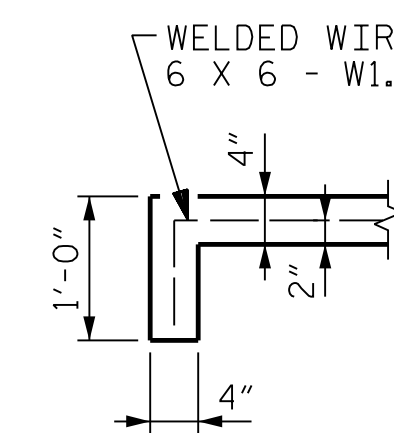
SECTION ALONG -Y15FLYBD-
WHEN FILL CATCHES IN DITCH



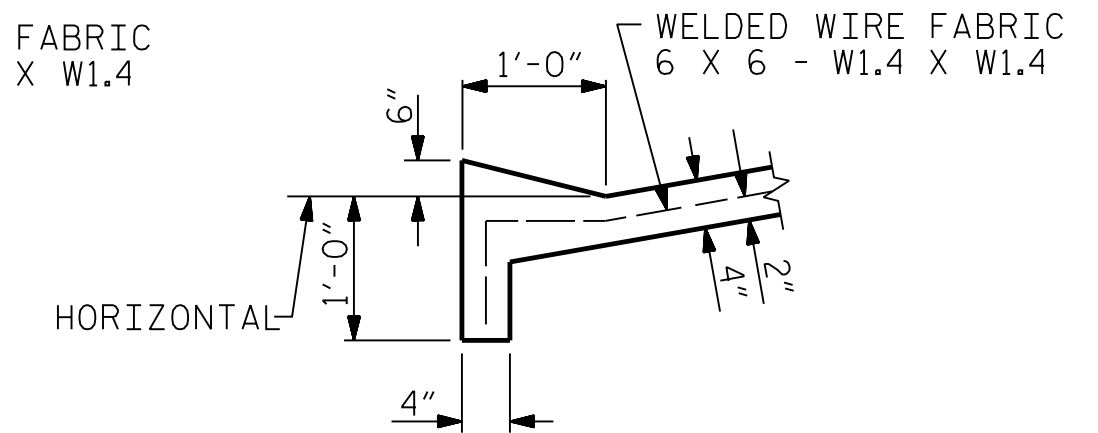
POURING DETAIL



OPTIONAL POURING DETAIL



SECTION A-A

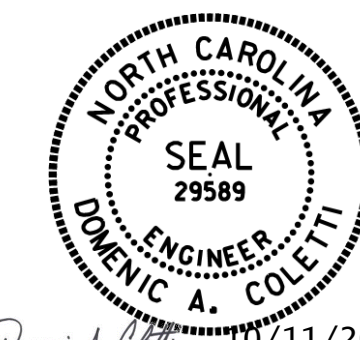


SECTION B-B

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 47+63.62 -Y15FLYBD-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE SLOPE PROTECTION DETAILS

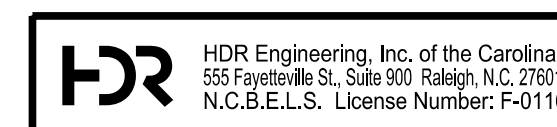


10/11/2021

REVISIONS

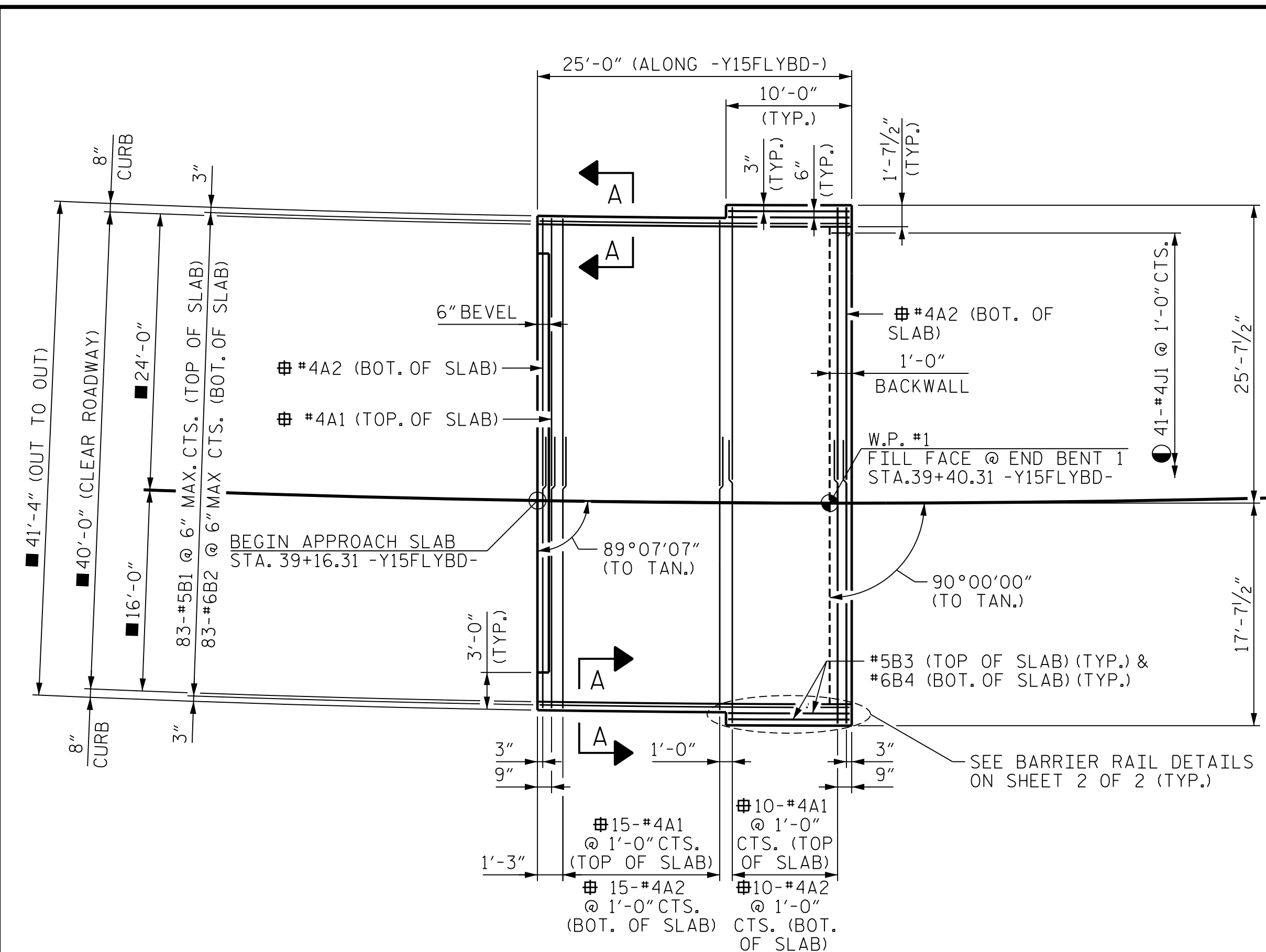
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SHEET NO. S05-114
 TOTAL SHEETS 116

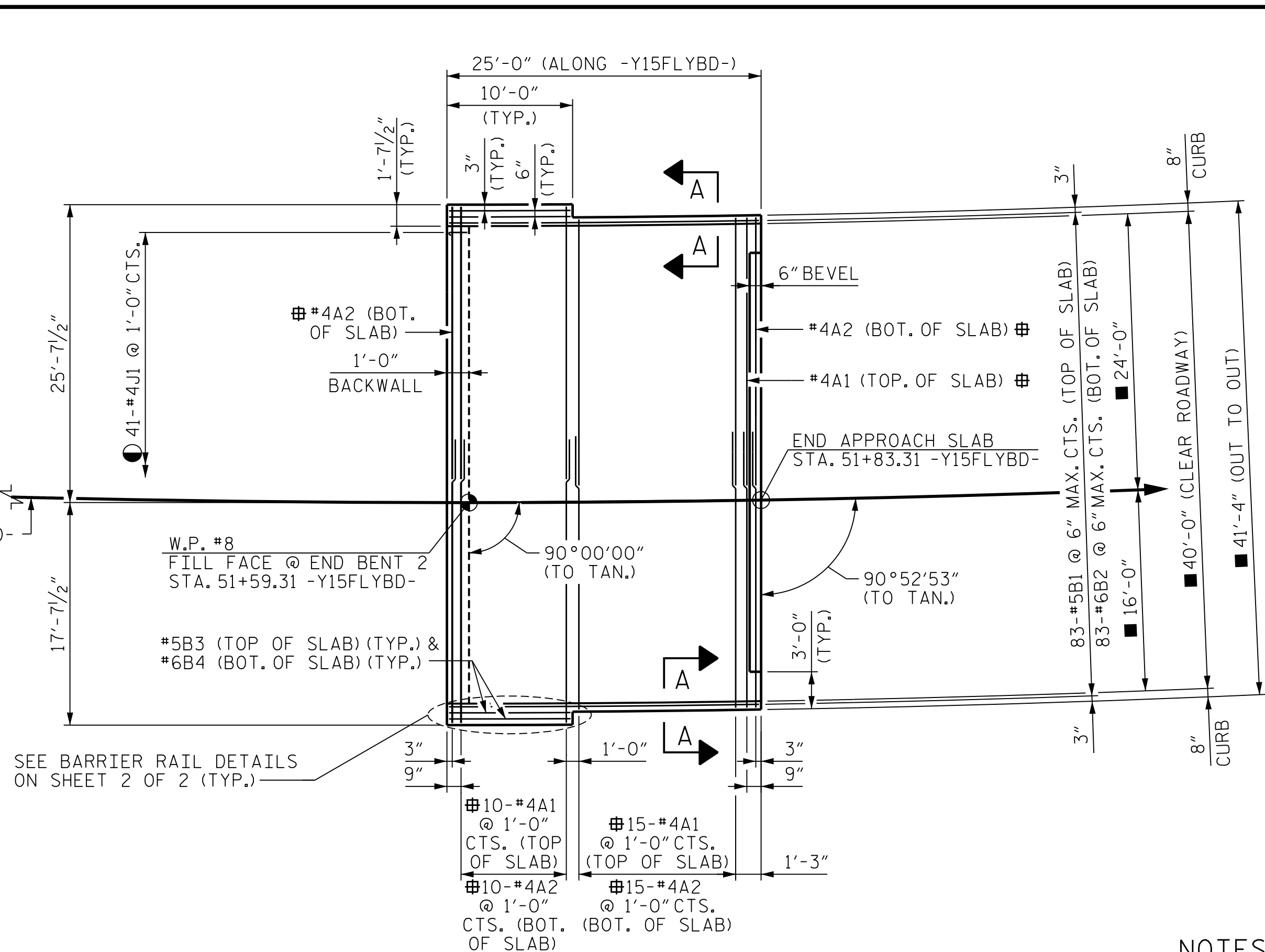


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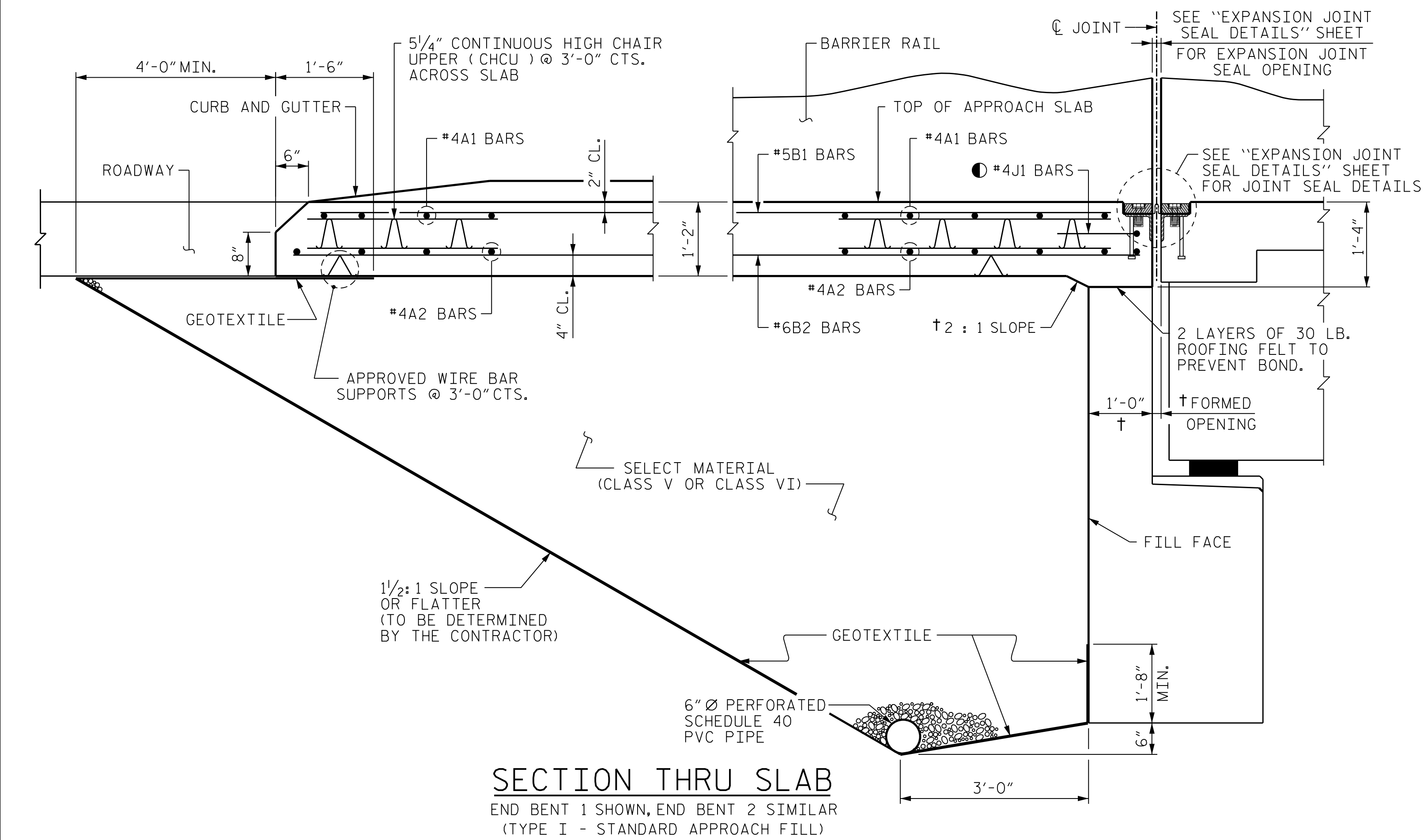
DES BY: S. NIFONG	DATE: 10/19	DWG BY: B. PETERSON	DATE: 07/19
DES CHK: M. NEIHEISEL	DATE: 10/19	CHK BY: M. NEIHEISEL	DATE: 10/19



PLAN AT END BENT 1

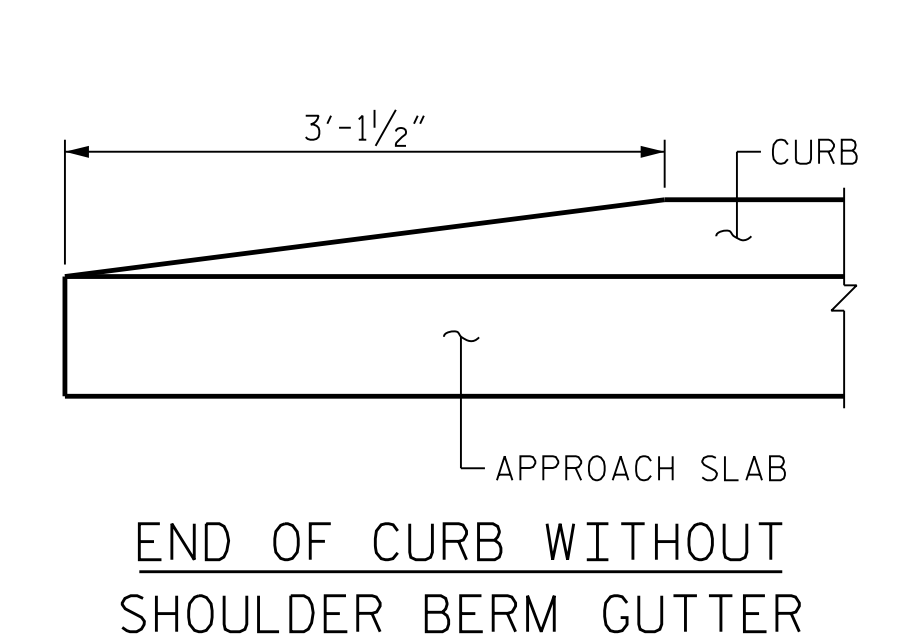
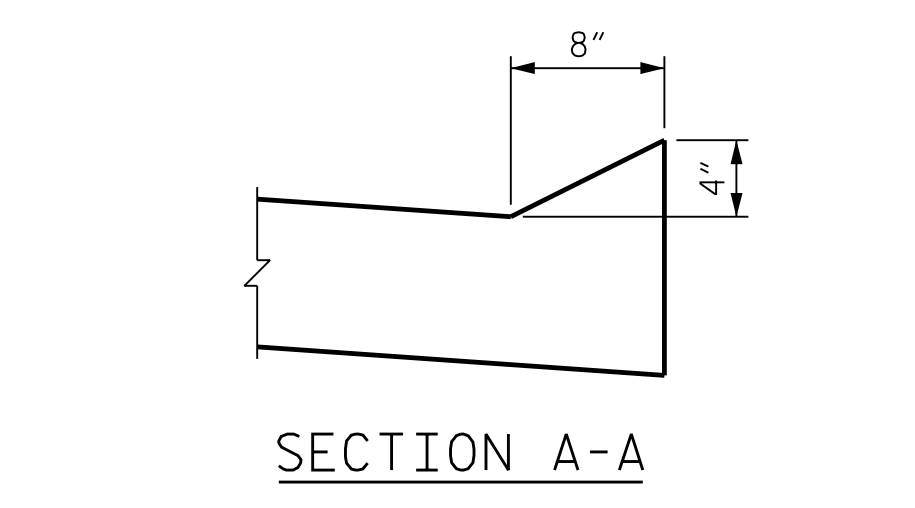


PLAN AT END BENT 2



SECTION THRU SLAB
END BENT 1 SHOWN, END BENT 2 SIMILAR
(TYPE I - STANDARD APPROACH FILL)

- NOTES**
- = FOR PLACEMENT OF #4J1 BARS SEE "EXPANSION JOINT SEAL DETAILS" SHEET
 - △ = CONCRETE QUANTITY DOES NOT INCLUDE BARRIER RAIL
 - † = NORMAL TO END BENT
 - = RADIAL DIMENSION
 - # = 2 BAR RUN



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

BILL OF MATERIAL					
APPROACH SLAB 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR.	22'-5"	749
A2	52	#4	STR.	22'-3"	773
*B1	83	#5	STR.	23'-10"	2,064
B2	83	#6	STR.	24'-4"	3,034
*B3	4	#5	STR.	9'-8"	41
B4	4	#6	STR.	9'-8"	59
*J1	41	#4		1'-5"	39
REINFORCING STEEL					3,866 LBS.
*EPOXY COATED REINFORCING STEEL					2,893 LBS.
△ CLASS AA CONCRETE					45.6 C.Y.
APPROACH SLAB 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR.	22'-5"	749
A2	52	#4	STR.	22'-3"	773
*B1	83	#5	STR.	23'-10"	2,064
B2	83	#6	STR.	24'-4"	3,034
*B3	4	#5	STR.	9'-8"	41
B4	4	#6	STR.	9'-8"	59
*J1	41	#4		1'-5"	39
REINFORCING STEEL					3,866 LBS.
*EPOXY COATED REINFORCING STEEL					2,893 LBS.
△ CLASS AA CONCRETE					45.6 C.Y.
BAR TYPES					
(ALL BAR DIMENSIONS ARE OUT TO OUT)					

NOTES

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

GEOTEXTILE SHALL BE TYPE I 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.

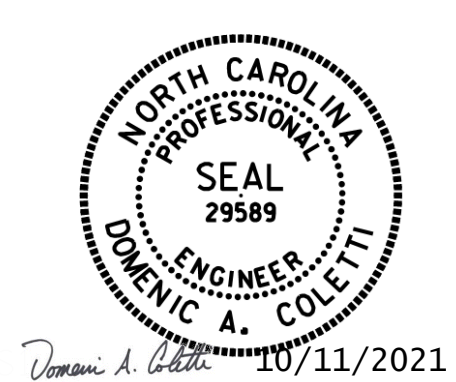
FOR THE 6" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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.

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 47+63.62 -Y15FLYBD-
 SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BRIDGE APPROACH SLAB
 PLAN AND SECTION**



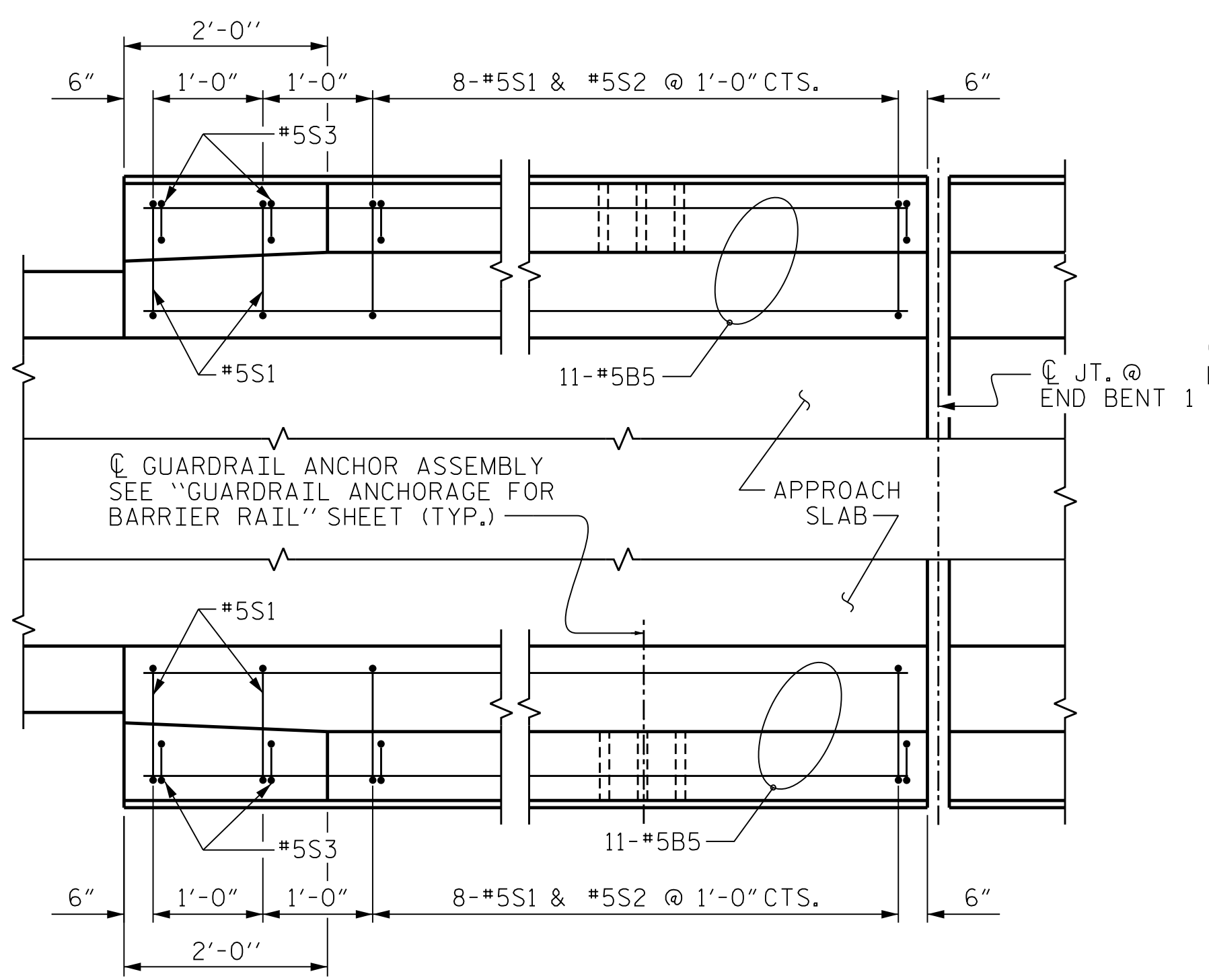
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NO.	BY:	DATE:	NO.	BY:	DATE:
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2	--	--	4	--	--

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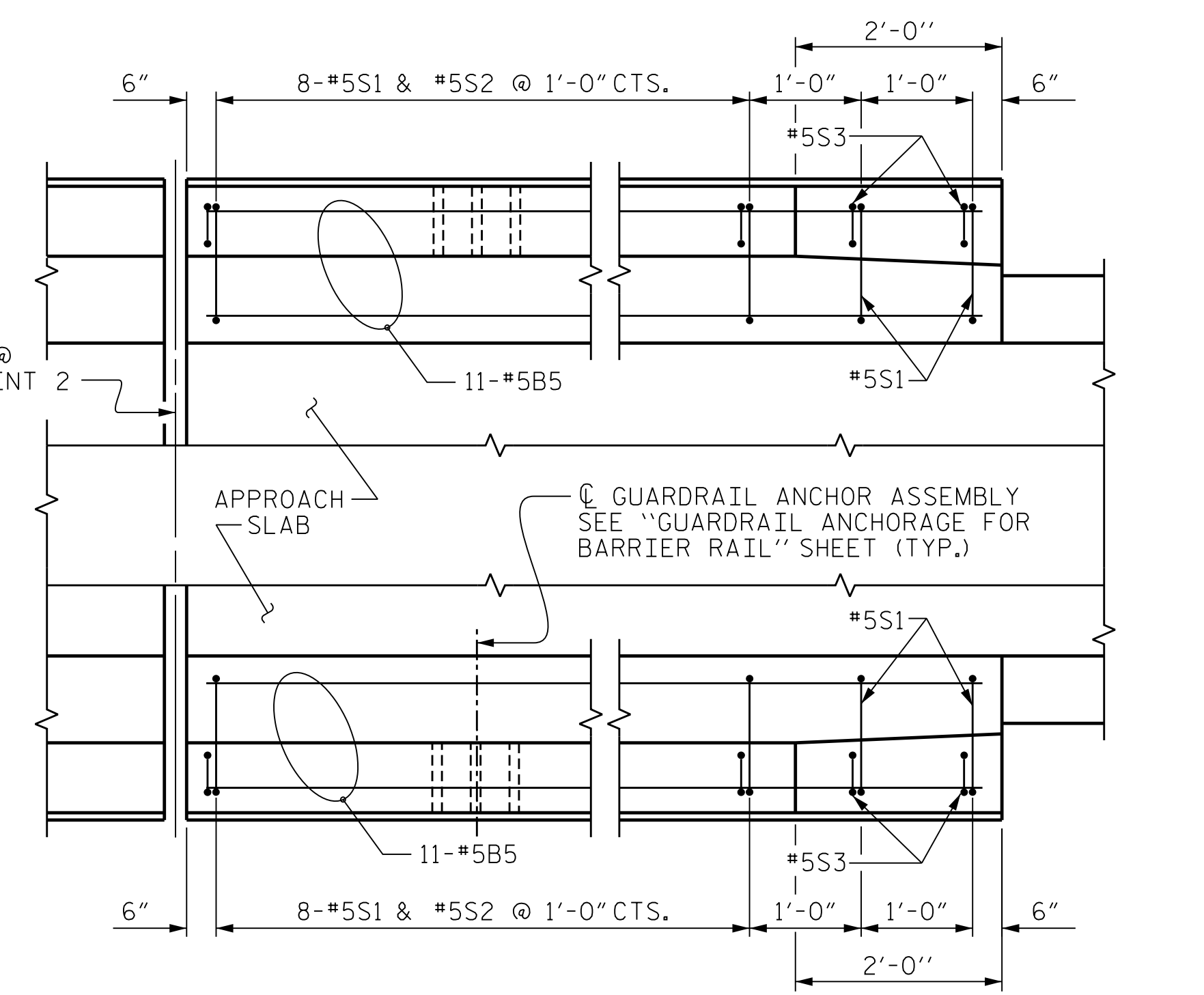
DES BY: L. ZAMPETTI DATE: 07/19 DWG BY: M. SELLS DATE: 07/19
 DES CHK: J. ROBERTS DATE: 07/19 CHK BY: S. NIFONG DATE: 12/19



10/11/2021
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



END BENT 1



END BENT 2

PLAN OF BARRIER RAIL

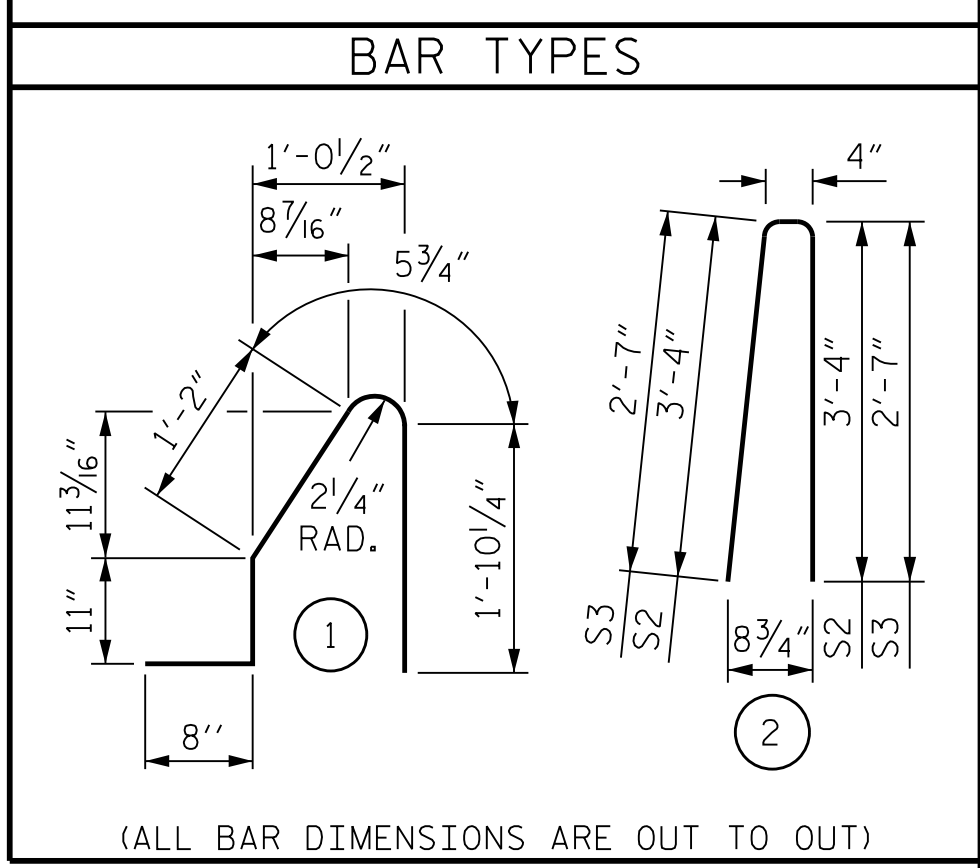
NOTES

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

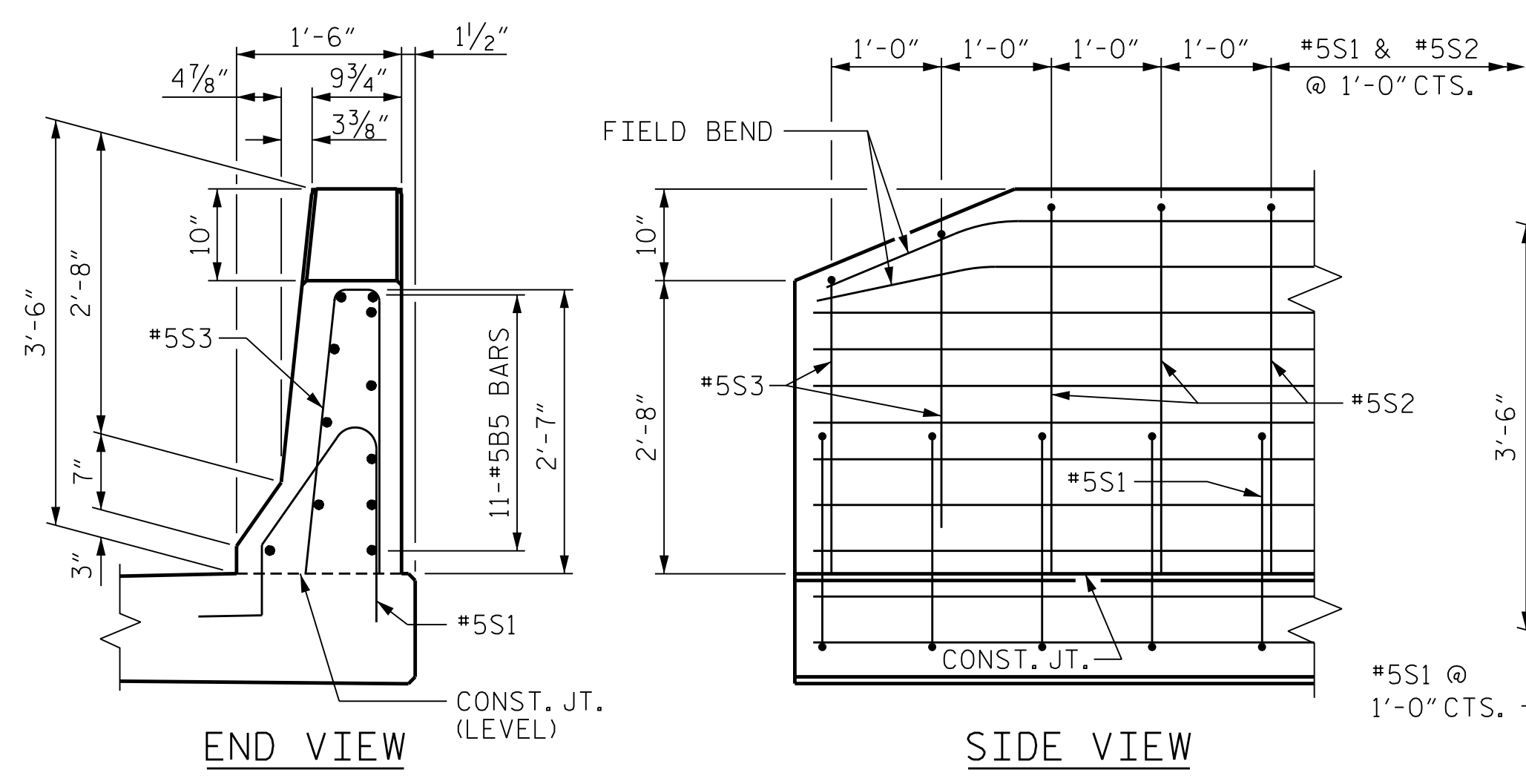
THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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"	213
*S2	32	#5	2	7'-0"	234
*S3	8	#5	2	5'-6"	46
*EPOXY COATED REINFORCING STEEL					937 LBS.
CLASS AA CONCRETE					5.3 C. Y.
CONCRETE BARRIER RAIL					40.0 L. F.



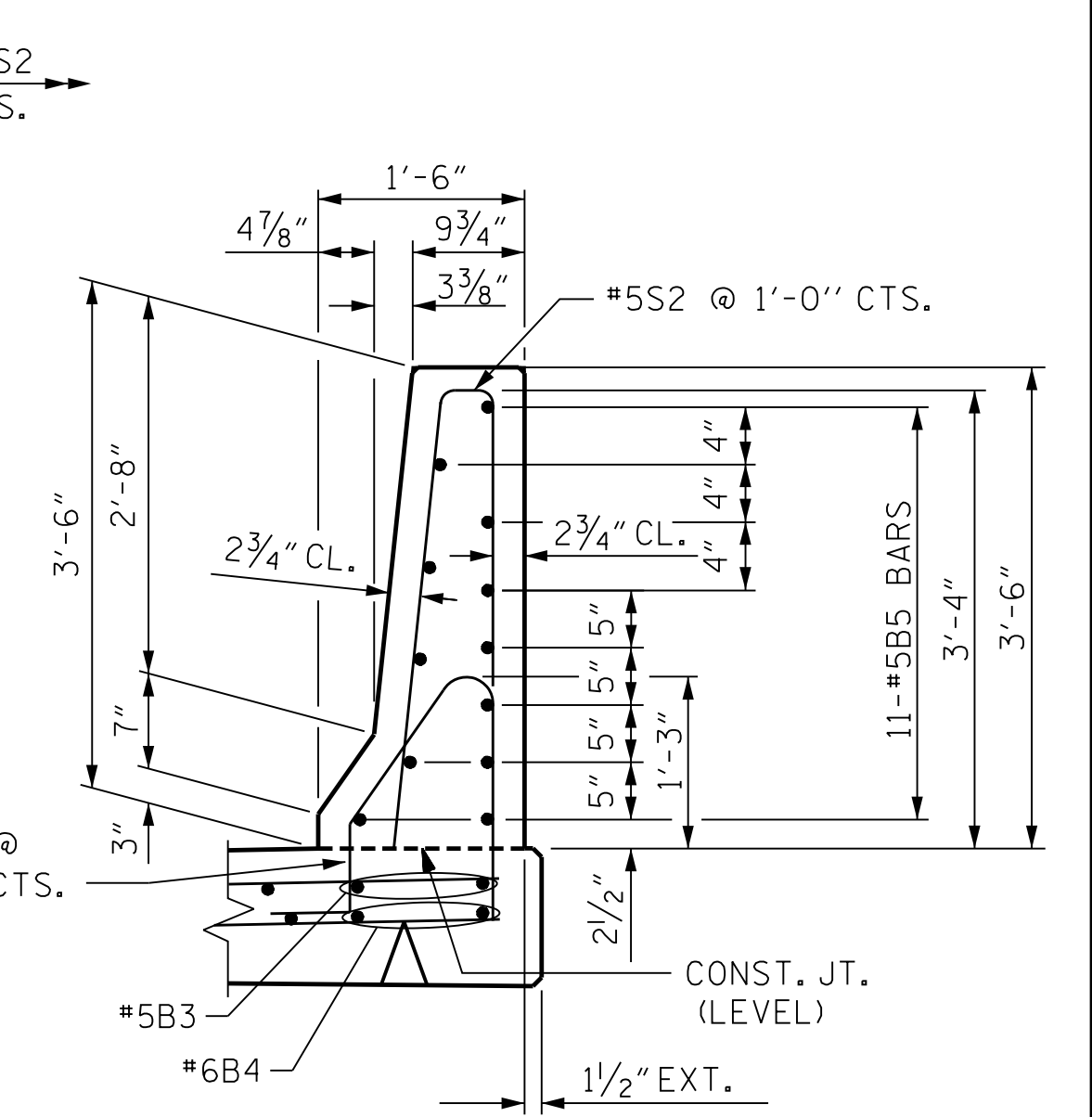
(ALL BAR DIMENSIONS ARE OUT TO OUT)



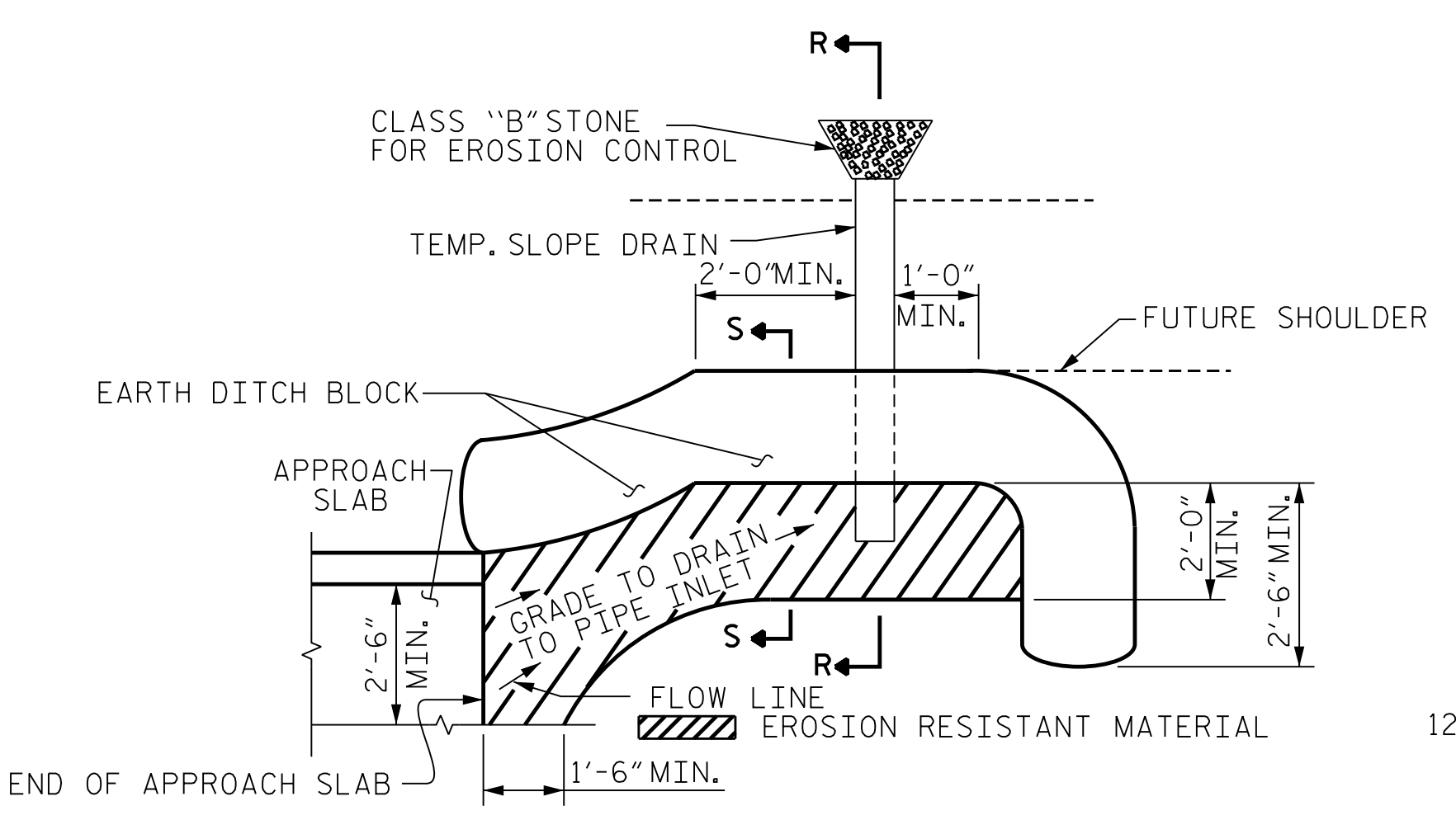
END VIEW

SIDE VIEW

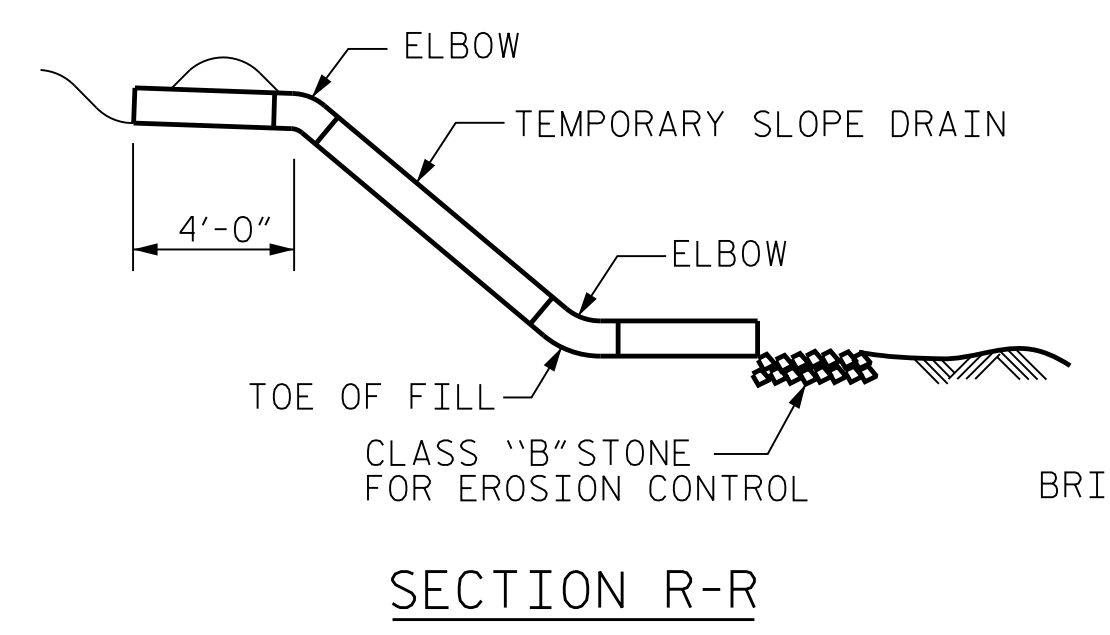
END OF RAIL DETAILS



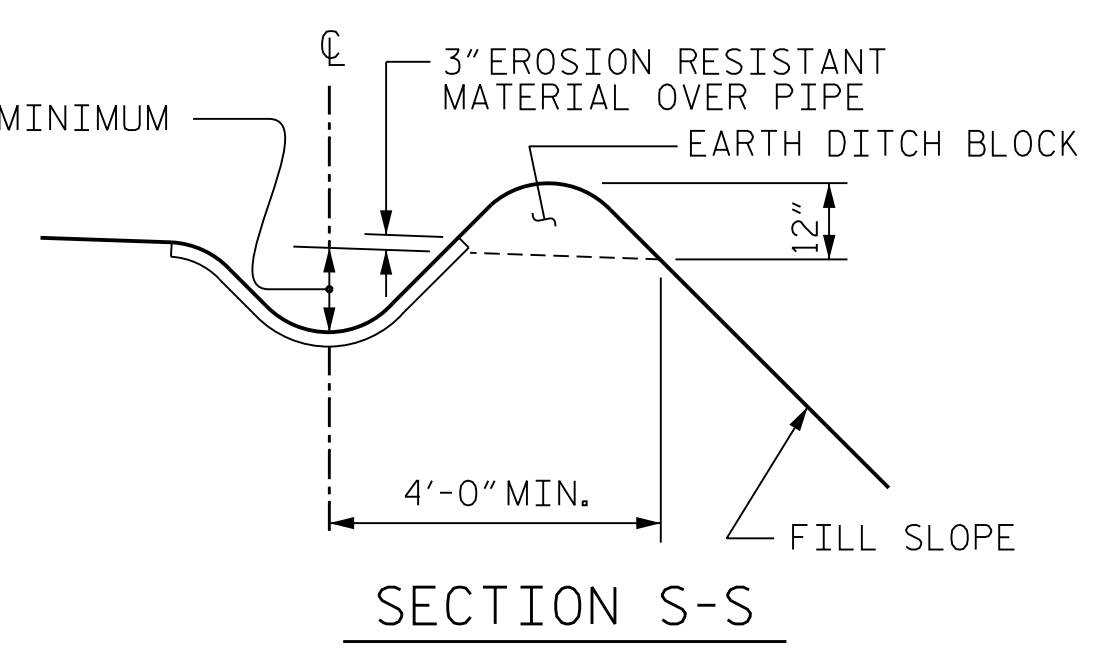
SECTION THRU RAIL



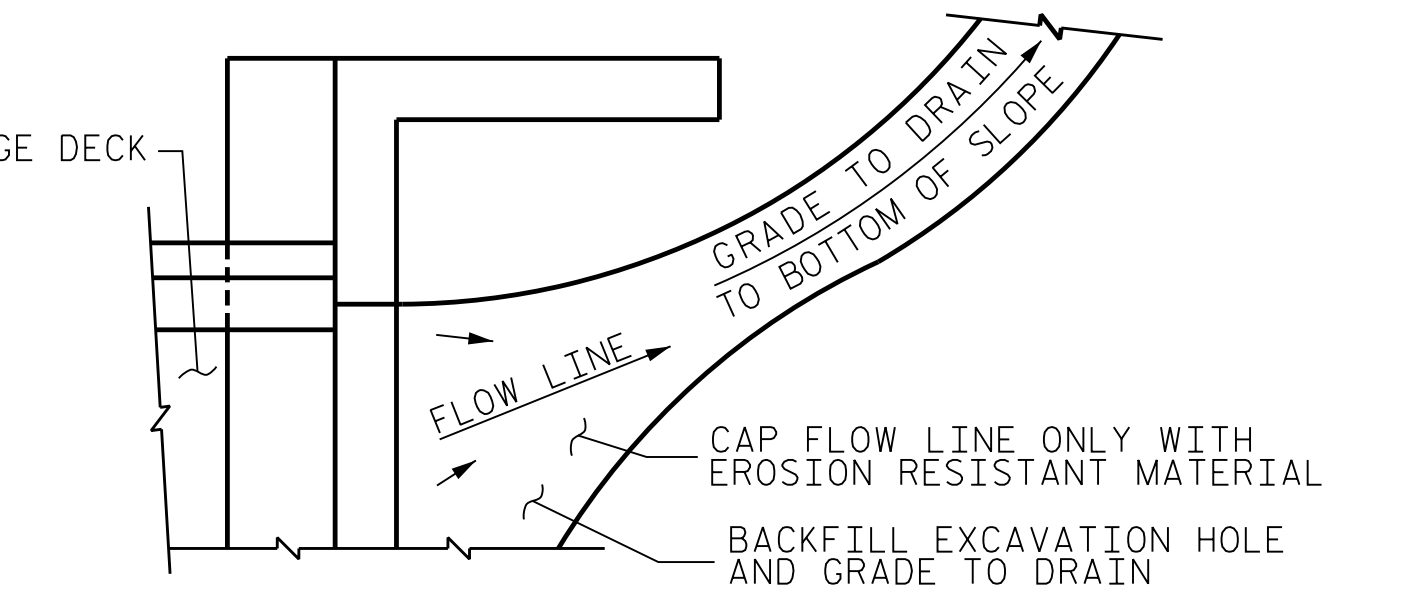
PLAN VIEW



SECTION R-R



SECTION S-S



TEMPORARY DRAINAGE DETAIL

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.

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

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

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 47+63.62 -Y15FLYBD-
SHEET 2 OF 2

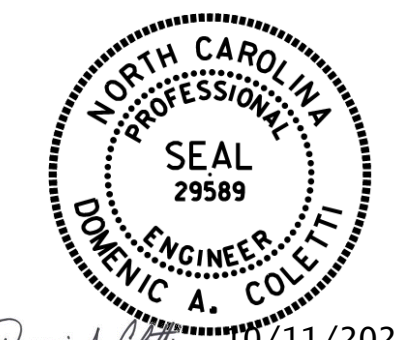
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB
DETAILS

REVISIONS

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

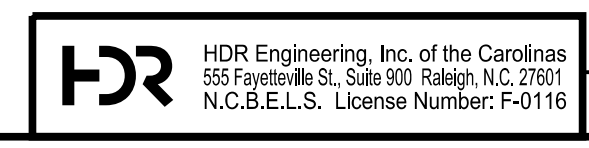
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TOTAL SHEETS 116



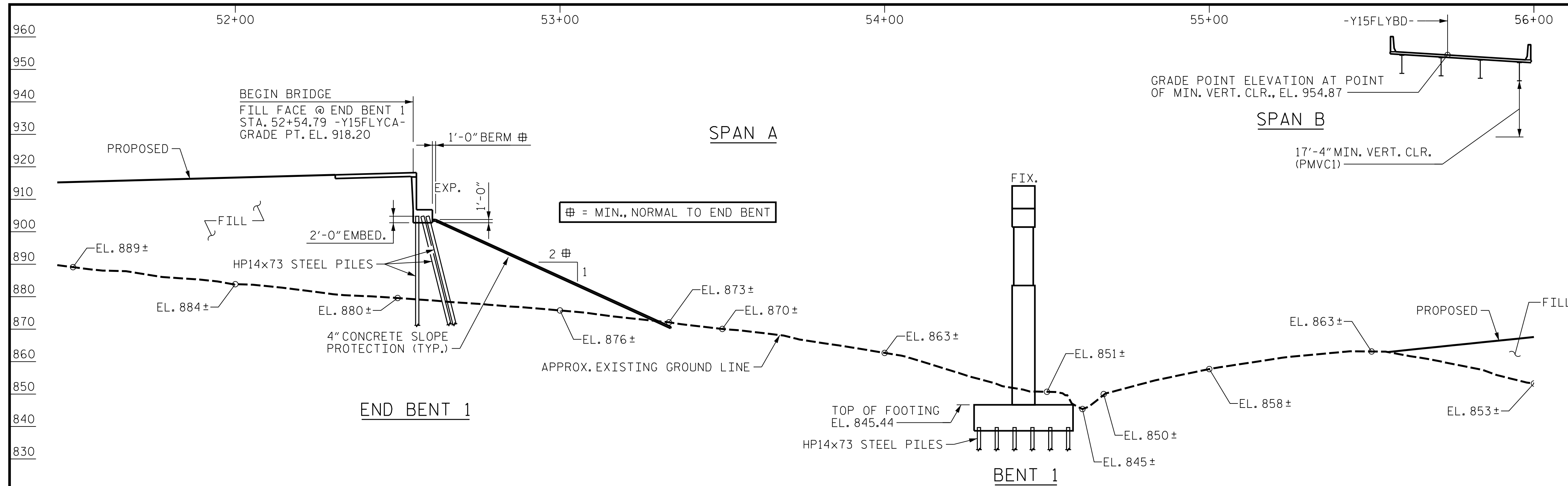
10/11/2021

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 PENTABLE: NCDOT STRUCTURES DEFAULT PEN.tbl
 TIME: 8:31:40 AM
 DATE: 10/11/2021

DES BY: L. ZAMPETTI	DATE: 07/19	DWG BY: M. SELLS	DATE: 07/19
DES CHK: J. ROBERTS	DATE: 07/19	CHK BY: S. NIFONG	DATE: 12/19



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UNLESS ALL SIGNATURES COMPLETED



+2.7484% -5.0000%
 PVI STA. 61+30.00
 PVI EL. = 942.25
 VC = 1175.00'
 GRADE DATA
 -Y15FLYCA-

POINT OF MINIMUM VERTICAL CLEARANCE (PMVC)		
ROADWAY ABOVE		ELEV. ON ROADWAY ABOVE
STATION	OFFSET	
46+42.83 -Y15FLYBD-	23.50' (LT)	953.46
ROADWAY BELOW		ELEV. ON ROADWAY BELOW
STATION	OFFSET	
55+98.42 -Y15FLYCA-	17.63' (RT)	928.59

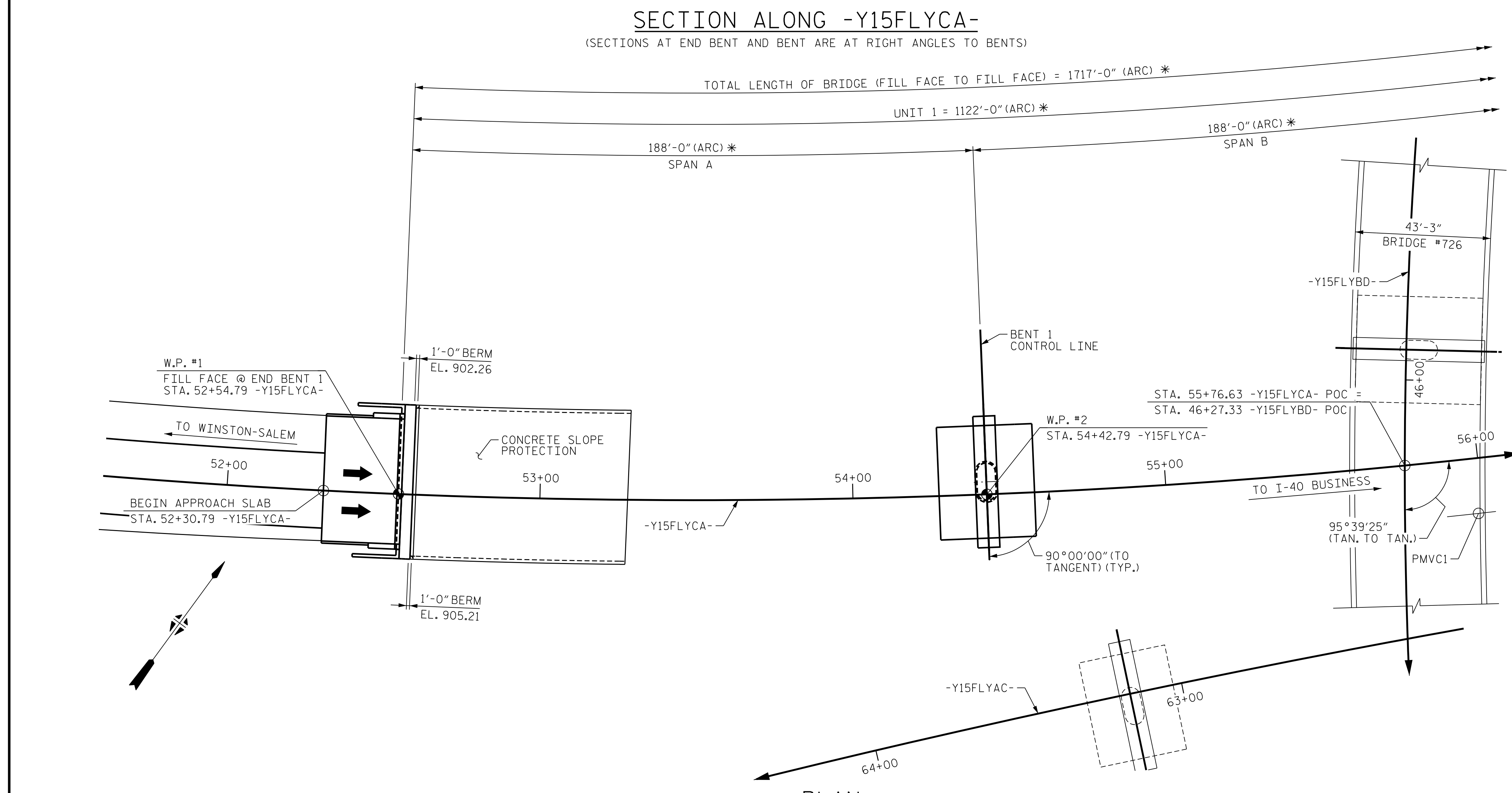
HORIZONTAL CURVE DATA -Y15FLYCA-

PI STA. 65+16.52
 $\Delta = 103^\circ 35' 56.2''$ (LT.)
 D = 02°28'10.7"
 L = 4,194.89'
 T = 2,948.14'
 R = 2,320.00'

HORIZONTAL CURVE DATA -Y15FLYBD-

PI STA. 88+39.55
 $\Delta = 150^\circ 28' 10.6''$ (LT.)
 D = 03°40'22.1"
 L = 4,096.86'
 T = 5,918.92'
 R = 1,560.00'

* = DIMENSION MEASURED ALONG -Y15FLYCA-



PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 792+28.12 -L-
 SHEET 1 OF 10 BRIDGE NO. 727



10/15/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

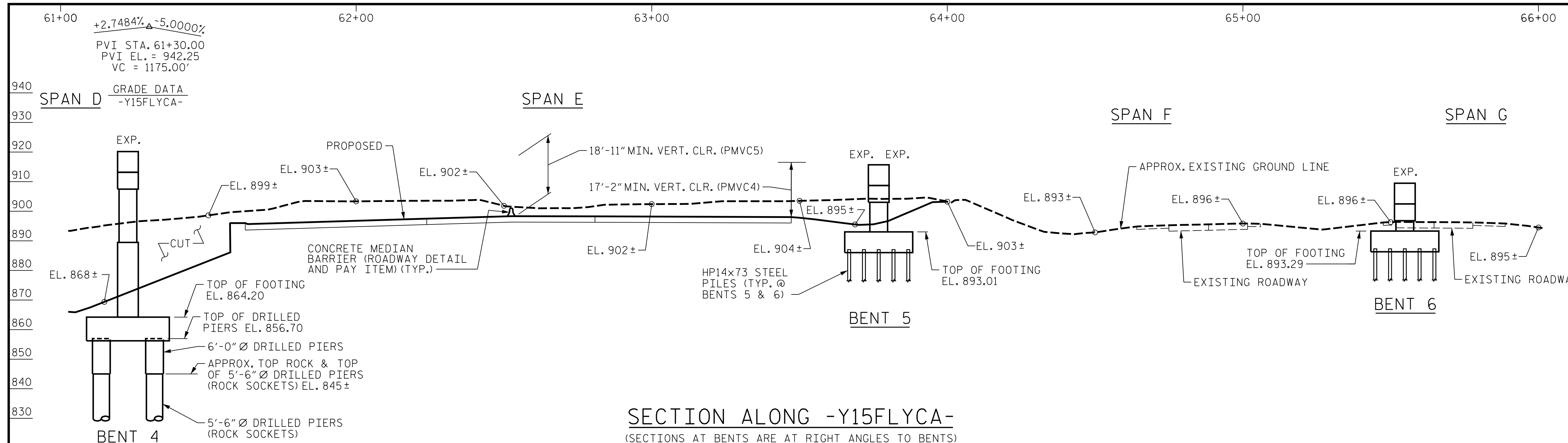
GENERAL DRAWING
 BRIDGE ON -Y15FLYCA- IN
 INTERCHANGE CONNECTING WINSTON-SALEM
 NORTHERN BELTWAY AND I-40 BYPASS
 BETWEEN SR 4315 AND SR 2679

REVISIONS						SHEET NO. S06-001
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 129
2	--	--	4	--	--	

HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

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HORIZONTAL CLEARANCE DIMENSIONS

- (D) 18'-8" MIN. HORIZ. CLEAR TO FACE OF COLUMN ▲
- (E) 23'-7" MIN. HORIZ. CLEAR TO FACE OF COLUMN ▲
- (F) 11'-10" MIN. HORIZ. CLEAR TO FACE OF CAP ▲

POINT OF MINIMUM VERTICAL CLEARANCE (PMVC5)

ROADWAY ABOVE		ELEV. ON ROADWAY ABOVE
STATION	OFFSET	
62+35.11 -Y15FLYCA-	23.50' (LT)	927.91
ROADWAY BELOW		ELEV. ON ROADWAY BELOW
STATION	OFFSET	
48+55.74 -Y15REV-	00.00'	897.66

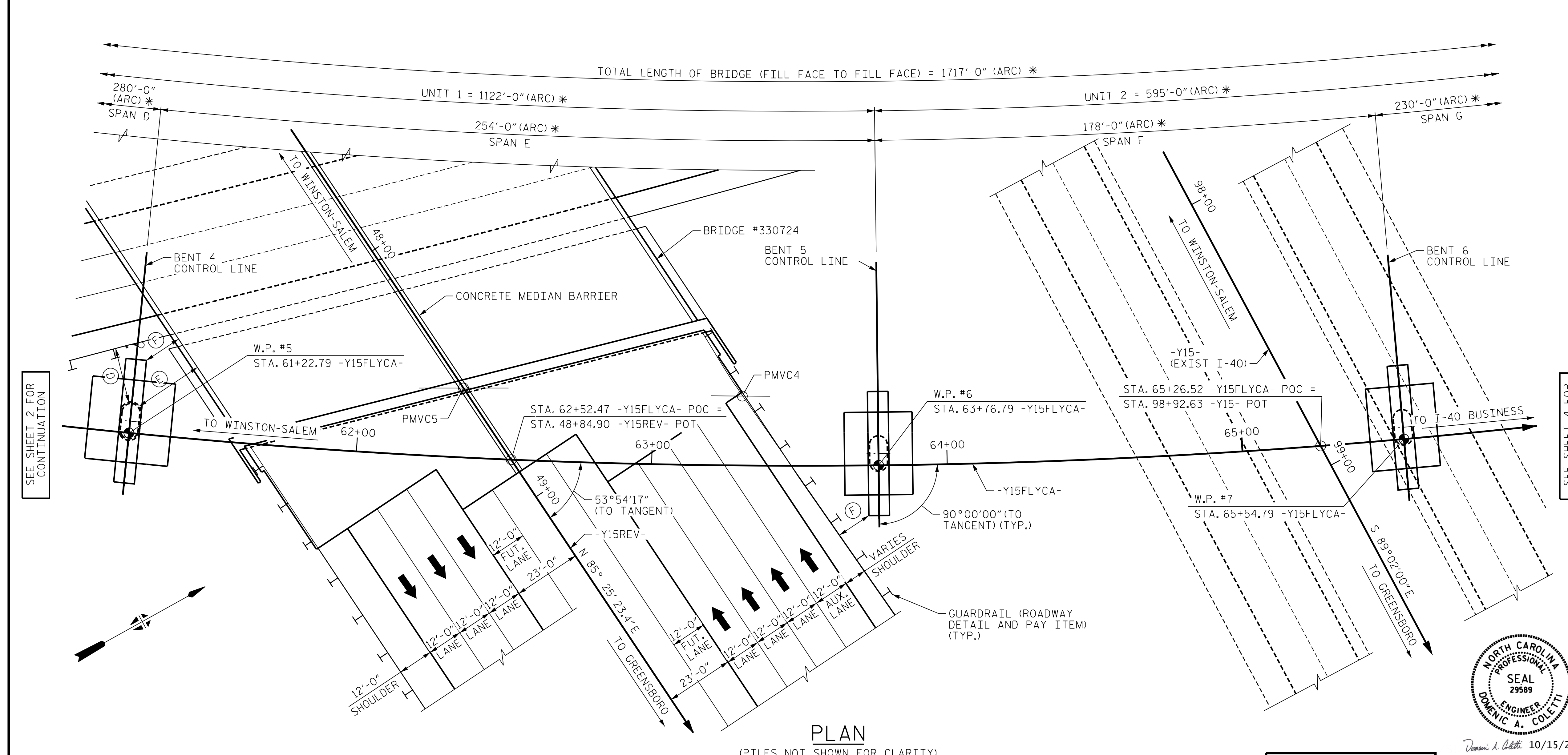
POINT OF MINIMUM VERTICAL CLEARANCE (PMVC4)

ROADWAY ABOVE		ELEV. ON ROADWAY ABOVE
STATION	OFFSET	
63+30.49 -Y15FLYCA-	23.50' (LT)	925.87
ROADWAY BELOW		ELEV. ON ROADWAY BELOW
STATION	OFFSET	
49+10.35 -Y15REV-	77.00' (LT)	897.39

HORIZONTAL CURVE DATA -Y15FLYCA-

PI STA. 65+16.52
 Δ = 103°35'56.2" (LT.)
 D = 02°28'10.7"
 L = 4,194.89'
 T = 2,948.14'
 R = 2,320.00'

* = DIMENSION MEASURED ALONG -Y15FLYCA-
 ▲ = RADIAL DIMENSION



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON -Y15FLYCA- IN
 INTERCHANGE CONNECTING WINSTON-SALEM
 NORTHERN BELTWAY AND I-40 BYPASS
 BETWEEN SR 4315 AND SR 2679

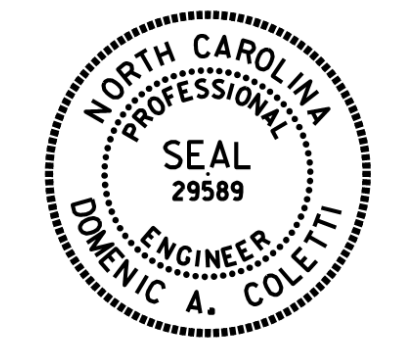
REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
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2	--	--	4	--	--

SHEET NO. 306-003
 TOTAL SHEETS 129

DES BY: S. NIFONG	DATE: 06/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: M. NEHEISEL	DATE: 06/19	CHK BY: S. NIFONG	DATE: 06/19

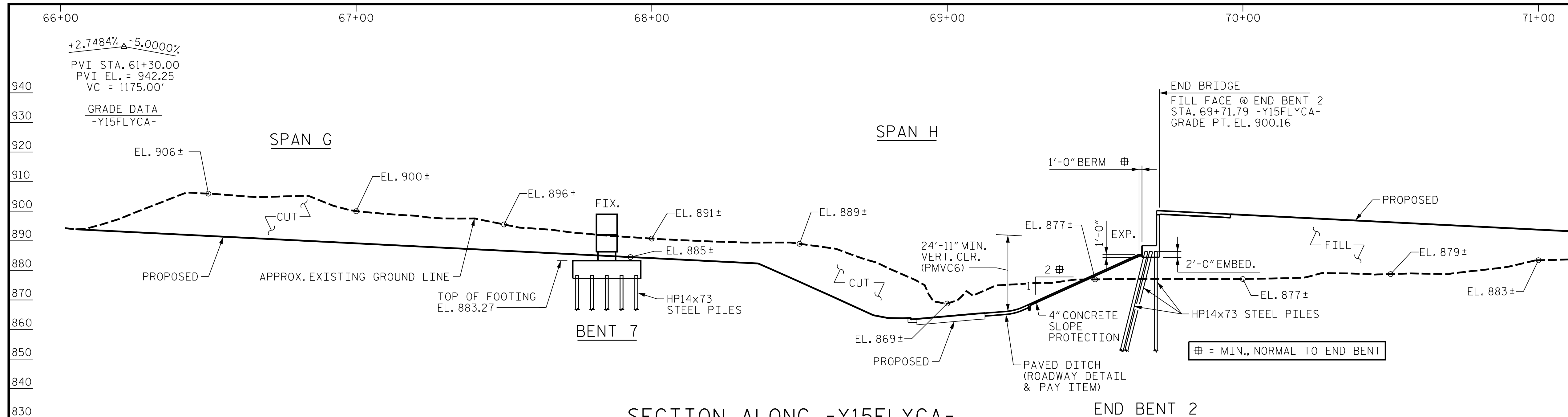
HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116



10/15/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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POINT OF MINIMUM VERTICAL CLEARANCE (PMVC6)

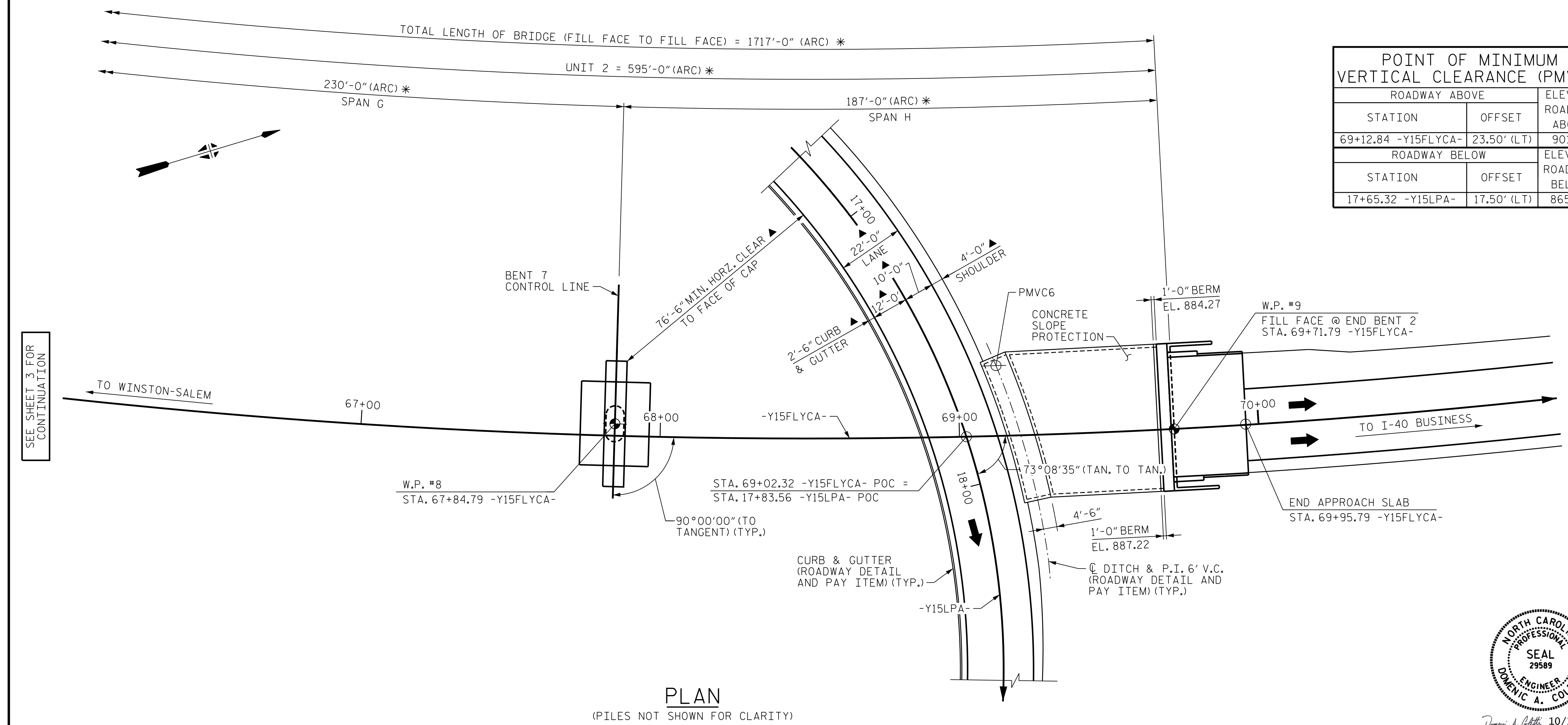
ROADWAY ABOVE		ELEV. ON ROADWAY ABOVE
STATION	OFFSET	
69+12.84 -Y15FLYCA-	23.50' (LT)	901.70
ROADWAY BELOW		ELEV. ON ROADWAY BELOW
STATION	OFFSET	
17+65.32 -Y15LPA-	17.50' (LT)	865.45

HORIZONTAL CURVE DATA -Y15FLYCA-

PI STA. 65+16.52
Δ = 103°35'56.2" (LT.)
D = 02°28'10.7"
L = 4,194.89'
T = 2,948.14'
R = 2,320.00'

HORIZONTAL CURVE DATA -Y15LPA-

PI STA. 53+68.09
Δ = 187°35'04.9" (RT.)
D = 22°55'05.9"
L = 818.49'
T = 3,771.54'
R = 250.00'

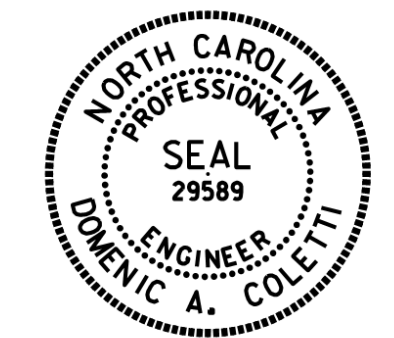


* = DIMENSION MEASURED ALONG -Y15FLYCA-
▲ = RADIAL DIMENSION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-
SHEET 4 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE ON -Y15FLYCA- IN
INTERCHANGE CONNECTING WINSTON-SALEM
NORTHERN BELTWAY AND I-40 BYPASS
BETWEEN SR 4315 AND SR 2679



10/15/2021

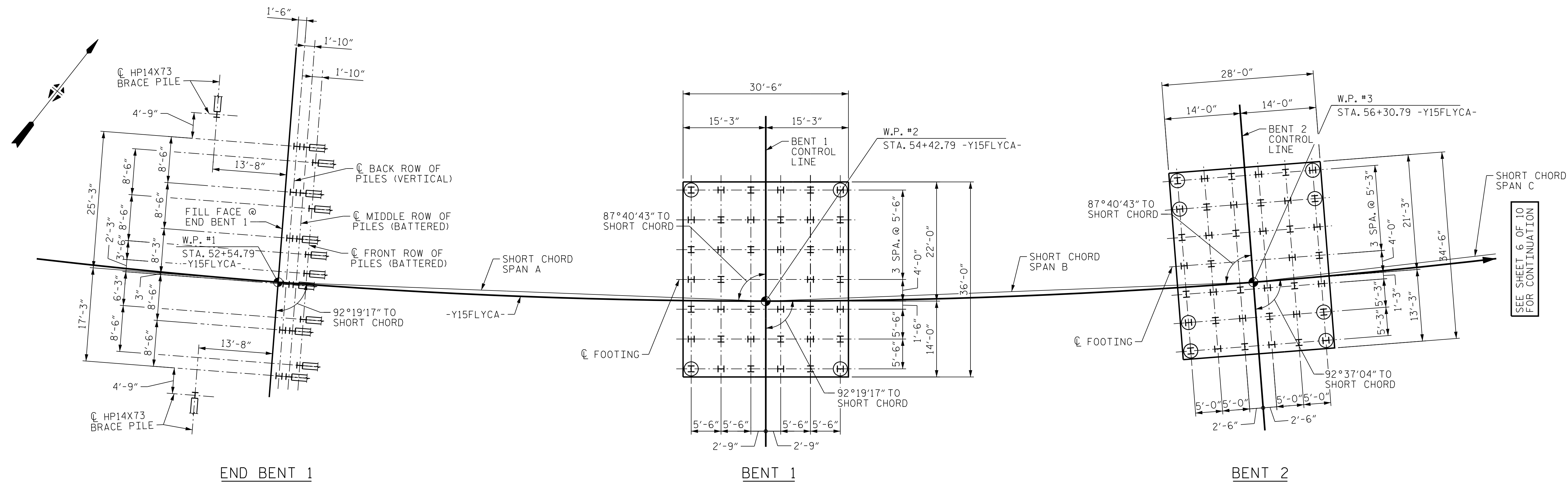
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N.C.B.E.L.S. License Number: F-0116

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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DES BY: S. NIFONG	DATE: 06/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: M. NEHEISEL	DATE: 06/19	CHK BY: S. NIFONG	DATE: 06/19



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO PILE CENTERLINE AT BOTTOM OF THE CAP OR FOOTING, MEASURED FROM THE TANGENT TO -Y15FLYCA- AT EACH WORK POINT.

☉ FOOTING IN THE TRANSVERSE DIRECTION IS COINCIDENT WITH THE BENT CONTROL LINE, AND RADIAL TO -Y15FLYCA-, AT ALL BENTS.

OBSERVE PILE ORIENTATION AND LOCATION OF OMITTED PILES IN EACH FOOTING.

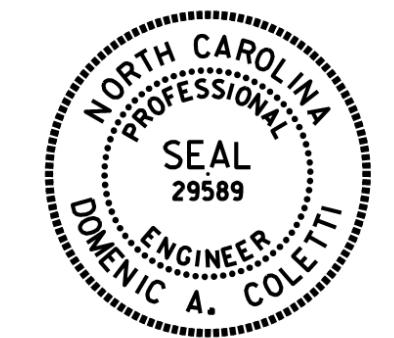
NOTES

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 147 TONS PER PILE.
- DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 245 TONS PER PILE.
- OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT TO THE FINISHED GRADE BEFORE BEGINNING PILE DRIVING AND END BENT CONSTRUCTION AT END BENT NO.1. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
- PILES AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 165 TONS PER PILE.
- DRIVE PILES AT BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 275 TONS PER PILE.
- PILES AT BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 150 TONS PER PILE.
- DRIVE PILES AT BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 250 TONS PER PILE.
- PILES AT BENT NO.3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 180 TONS PER PILE.
- DRIVE PILES AT BENT NO.3 TO A REQUIRED DRIVING RESISTANCE OF 300 TONS PER PILE.
- FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- DRILLED PIERS AT BENT NO.4 ARE DESIGNED FOR A FACTORED RESISTANCE OF 1660 TONS/PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 40 TSF.
- INSTALL DRILLED PIERS AT BENT NO.4 TO A TIP ELEVATION NO HIGHER THAN 810 FT, SATISFY THE REQUIRED TIP RESISTANCE AND HAVE A PENETRATION OF AT LEAST 35 FT INTO WEATHERED ROCK OR HARD ROCK.

- TO VERIFY BEARING STRATA, STANDARD PENETRATION TESTING (SPT) IS REQUIRED FOR DRILLED PIERS AT BENT NO.4. PERFORM SPTS AT ELEVATION 845 FT TO VERIFY TOP OF PARTIALLY WEATHERED ROCK AND AGAIN AT THE FINAL TIP ELEVATION INDICATED. FOR SPT TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS AT BENTS NO.4. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- PILES AT BENT NO.5 ARE DESIGNED FOR A FACTORED RESISTANCE OF 162 TONS PER PILE.
- DRIVE PILES AT BENT NO.5 TO A REQUIRED DRIVING RESISTANCE OF 270 TONS PER PILE.
- PILES AT BENT NO.6 ARE DESIGNED FOR A FACTORED RESISTANCE OF 162 TONS PER PILE.
- DRIVE PILES AT BENT NO.6 TO A REQUIRED DRIVING RESISTANCE OF 270 TONS PER PILE.
- PREDRILLING FOR PILES IS REQUIRED FOR THE LEFT MOST 16 PILES AT BENT NO.6. PREDRILL PILE LOCATIONS TO AN ELEVATION NO LOWER THAN 880 FT WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 12". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT BENT NO.7 ARE DESIGNED FOR A FACTORED RESISTANCE OF 159 TONS PER PILE.
- DRIVE PILES AT BENT NO.7 TO A REQUIRED DRIVING RESISTANCE OF 265 TONS PER PILE.
- PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 138 TONS PER PILE.
- DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 230 TONS PER PILE.
- COFFERDAMS ARE REQUIRED TO PERFORM THE FOUNDATION EXCAVATION AT BENT NO.1 DUE TO HIGH GROUNDWATER ELEVATIONS AT THIS LOCATION. FOR COFFERDAMS, SEE SECTION 410 OF THE STANDARD SPECIFICATIONS.

LEGEND

- H HP14X73 VERTICAL PILE
- H-HP14X73 BRACE PILE (BATTER 3H:12V)
- (H) HP14X73 TENSION PILE
- 6'-0" Ø DRILLED PIER AND 5'-6" DRILLED PIER (ROCK SOCKET)



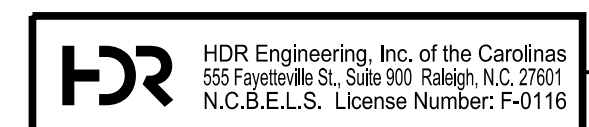
Dominic A. Coletti 10/15/2021

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 5 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON -Y15FLYCA- IN
 INTERCHANGE CONNECTING WINSTON-SALEM
 NORTHERN BELTWAY AND I-40 BYPASS
 BETWEEN SR 4315 AND SR 2679

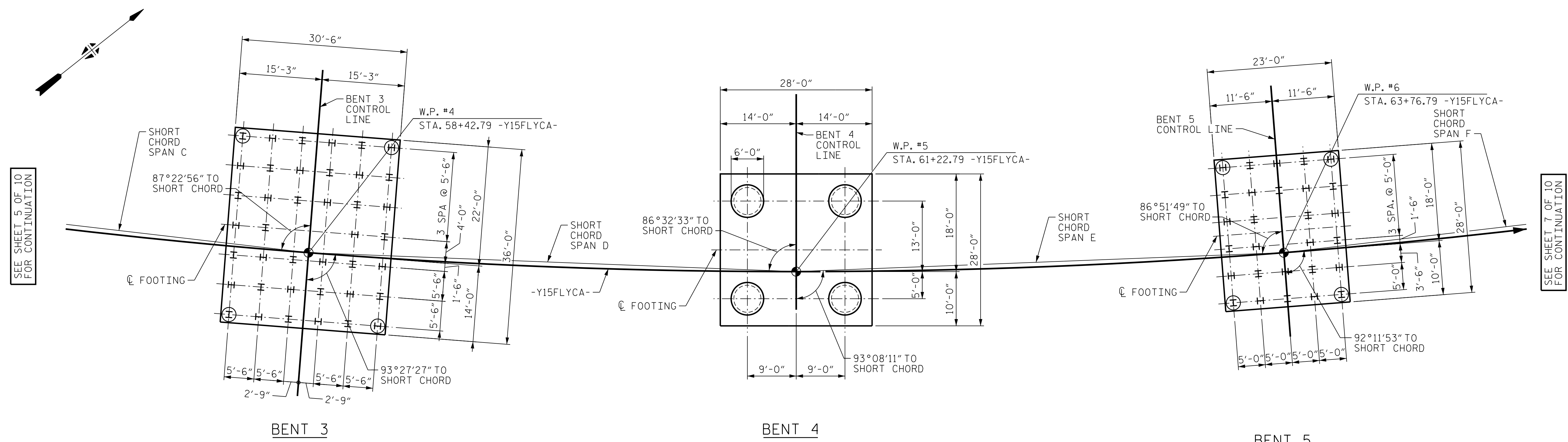
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DES CHK: <u>N. LIU</u>	DATE: <u>11/19</u>	CHK BY: <u>M. WERNER</u>	DATE: <u>01/20</u>



NOTE
SEE SHEET 5 OF 10 FOR NOTES.

FOUNDATION LAYOUT

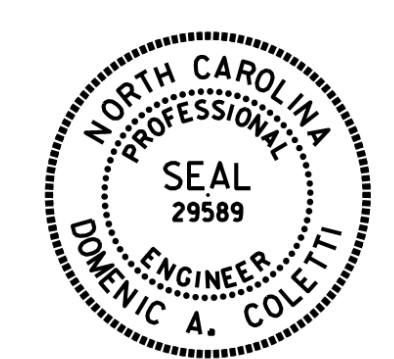
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☉ FOOTING IN THE TRANSVERSE DIRECTION IS COINCIDENT WITH THE BENT CONTROL LINE, AND RADIAL TO -Y15FLYCA-, AT ALL BENTS.

OBSERVE PILE ORIENTATION AND LOCATION OF OMITTED PILES IN EACH FOOTING.

- LEGEND**
- H HP14X73 VERTICAL PILE
 - H-3 HP14X73 BRACE PILE (BATTER 3H:12V)
 - (H) HP14X73 TENSION PILE
 - 6'-0" Ø DRILLED PIER AND 5'-6" DRILLED PIER (ROCK SOCKET)

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 6 OF 10



Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON -Y15FLYCA- IN
 INTERCHANGE CONNECTING WINSTON-SALEM
 NORTHERN BELTWAY AND I-40 BYPASS
 BETWEEN SR 4315 AND SR 2679

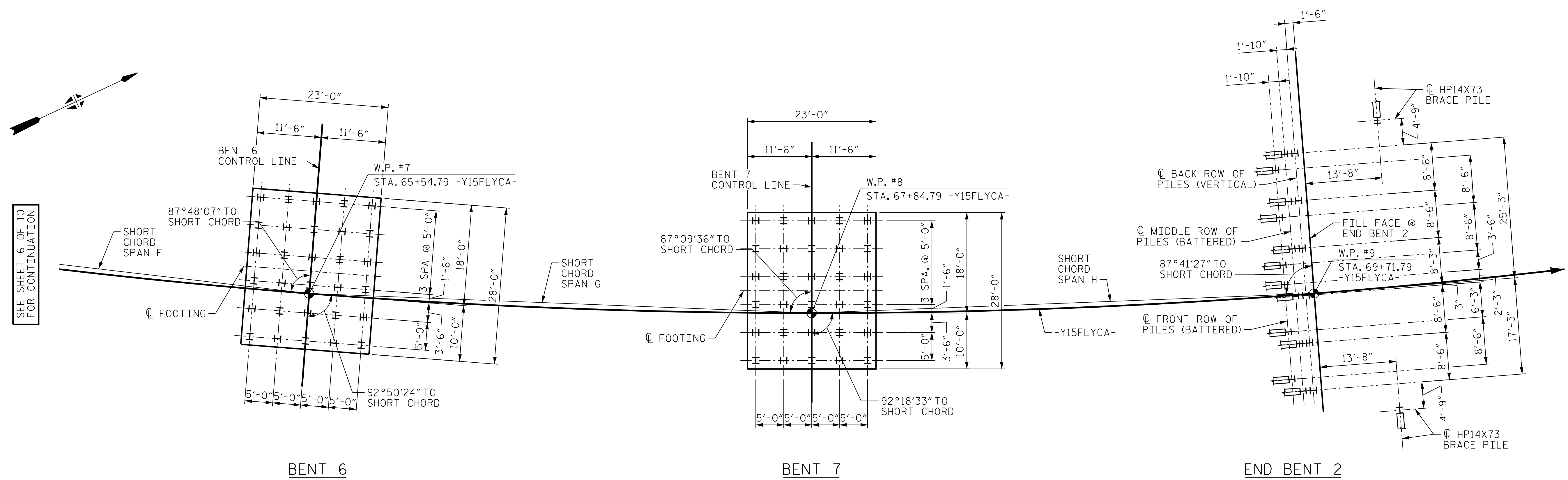
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DES CHK: <u>N. LIU</u>	DATE: <u>11/19</u>	CHK BY: <u>M. WERNER</u>	DATE: <u>01/20</u>



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO PILE CENTERLINE AT BOTTOM OF THE CAP OR FOOTING, MEASURED FROM THE TANGENT TO -Y15FLYCA- AT EACH WORK POINT.

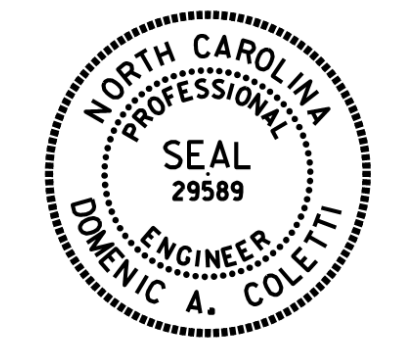
FOOTING IN THE TRANSVERSE DIRECTION IS COINCIDENT WITH THE BENT CONTROL LINE, AND RADIAL TO -Y15FLYCA-, AT ALL BENTS.

OBSERVE PILE ORIENTATION AND LOCATION OF OMITTED PILES IN EACH FOOTING.

NOTE
SEE SHEET 5 OF 10 FOR NOTES.

- LEGEND**
- HP14X73 VERTICAL PILE
 - HP14X73 BRACE PILE (BATTER 3H:12V)
 - HP14X73 TENSION PILE
 - 6'-0" Ø DRILLED PIER AND 5'-6" DRILLED PIER (ROCK SOCKET)

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 7 OF 10



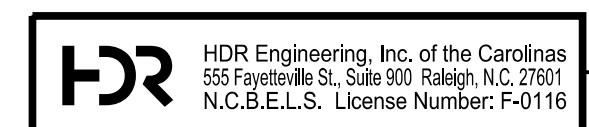
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON -Y15FLYCA- IN
 INTERCHANGE CONNECTING WINSTON-SALEM
 NORTHERN BELTWAY AND I-40 BYPASS
 BETWEEN SR 4315 AND SR 2679

REVISIONS						SHEET NO.	
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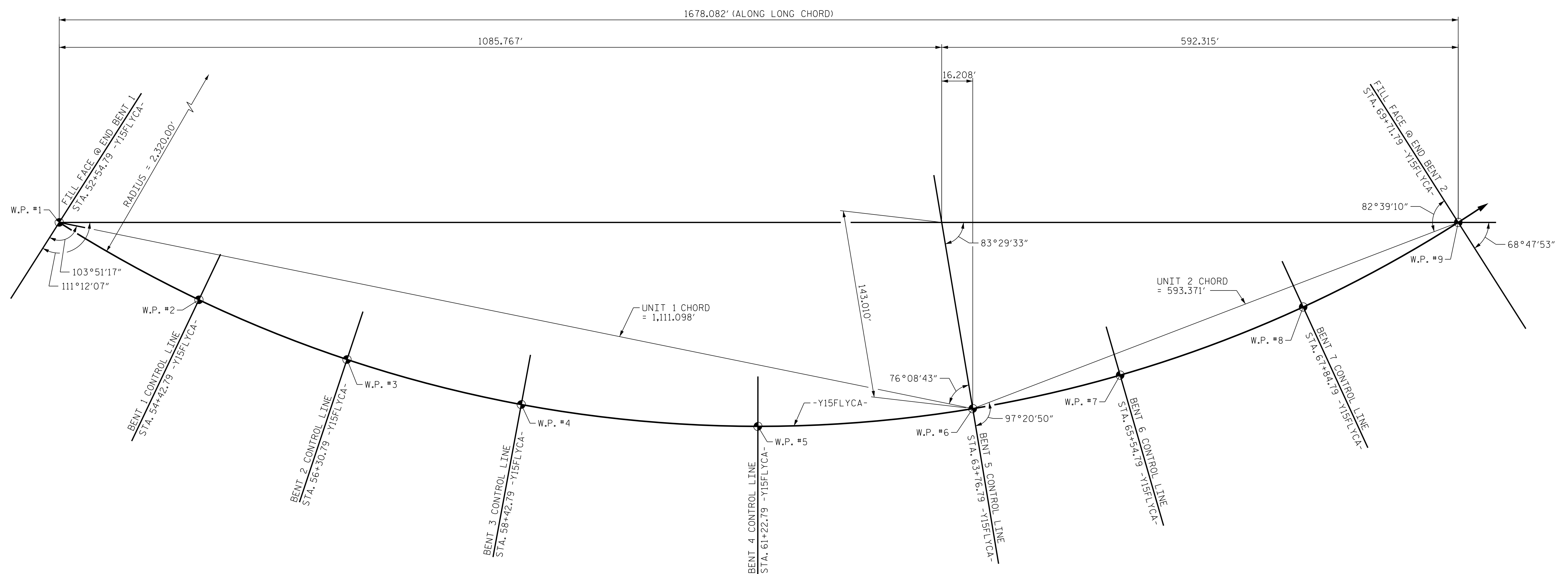
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DES CHK: <u>N. LIU</u>	DATE: <u>11/19</u>	CHK BY: <u>M. WERNER</u>	DATE: <u>01/20</u>



10/15/2021
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LONG CHORD LAYOUT

ALL BENTS ARE RADIAL TO -Y15FLYCA-

HORIZONTAL CURVE DATA -Y15FLYCA-

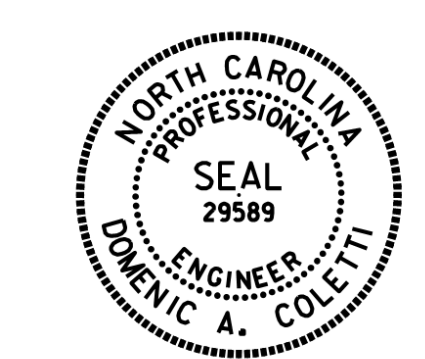
PI STA.	65+16.52
Δ	103°35'56.2" (L.T.)
D	02°28'10.7"
L	4,194.89'
T	2,948.14'
R	2,320.00'

PROJECT NO. U-2579AB

FORSYTH COUNTY

STATION: 58+33.94 -Y15FLYCA-

SHEET 8 OF 10



Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

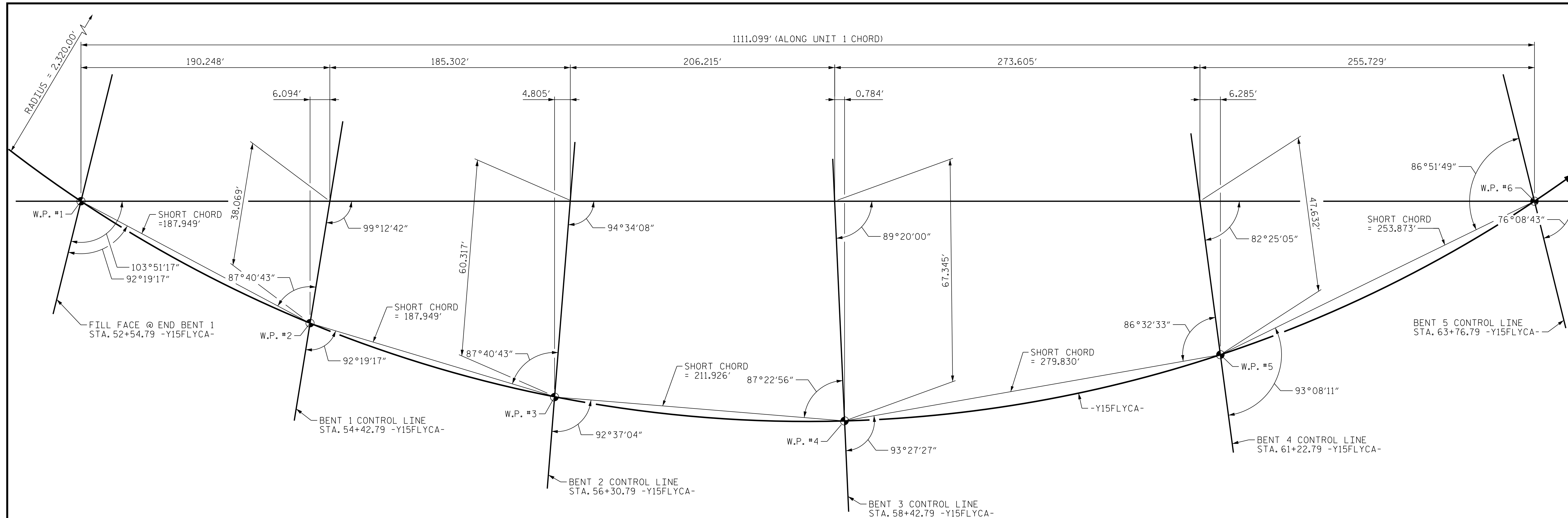
GENERAL DRAWING

BRIDGE ON -Y15FLYCA- IN
INTERCHANGE CONNECTING WINSTON-SALEM
NORTHERN BELTWAY AND I-40 BYPASS
BETWEEN SR 4315 AND SR 2679

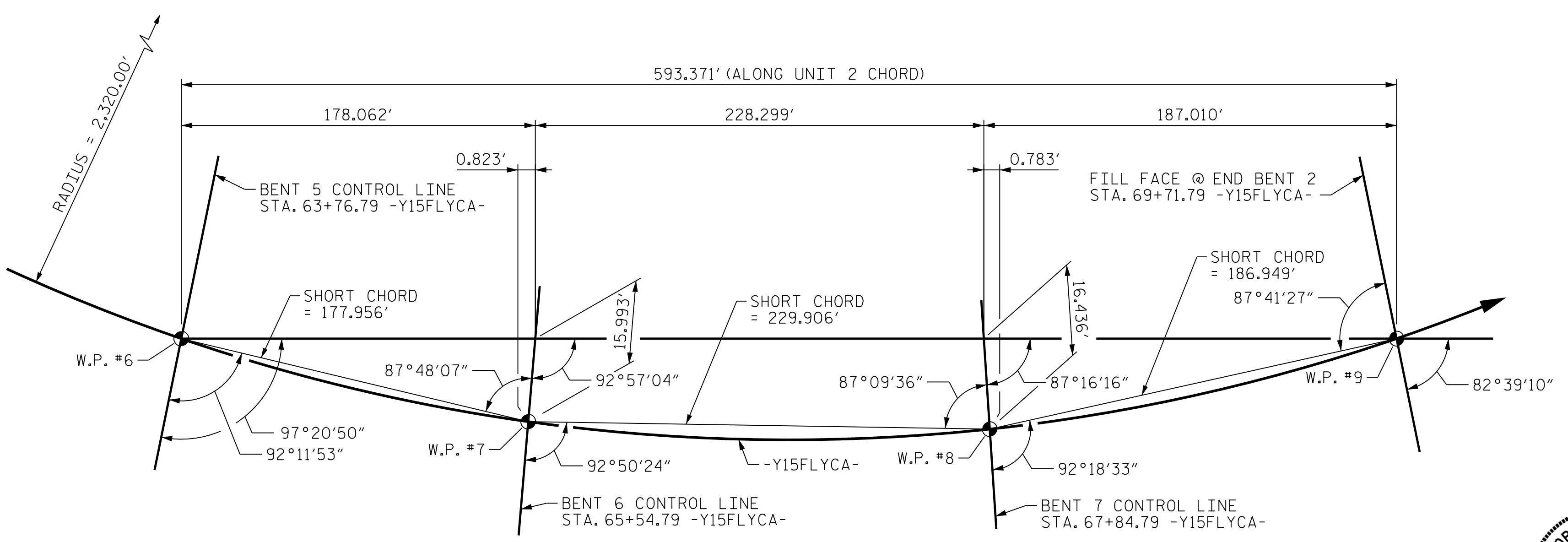
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DES CHK: <u>M. NEIHEISEL</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>10/19</u>

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

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NO.	BY:	DATE:	NO.	BY:	DATE:	
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UNIT 1 CHORD LAYOUT
ALL BENTS ARE RADIAL TO -Y15FLYCA-

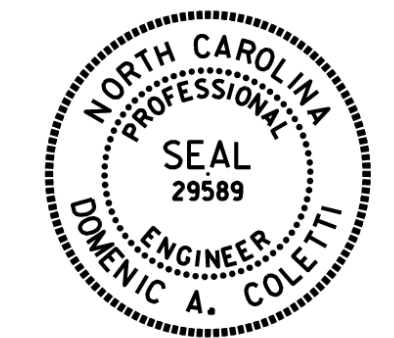


UNIT 2 CHORD LAYOUT
ALL BENTS ARE RADIAL TO -Y15FLYCA-

HORIZONTAL CURVE DATA -Y15FLYCA-
 PI STA. 65+16.52
 $\Delta = 103^\circ 35' 56.2''$ (LT.)
 $D = 02^\circ 28' 10.7''$
 $L = 4,194.89'$
 $T = 2,948.14'$
 $R = 2,320.00'$

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-

SHEET 9 OF 10



Dominic A. Coletti 10/15/2021

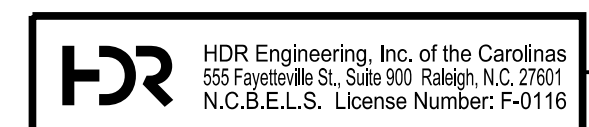
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON -Y15FLYCA- IN
 INTERCHANGE CONNECTING WINSTON-SALEM
 NORTHERN BELTWAY AND I-40 BYPASS
 BETWEEN SR 4315 AND SR 2679

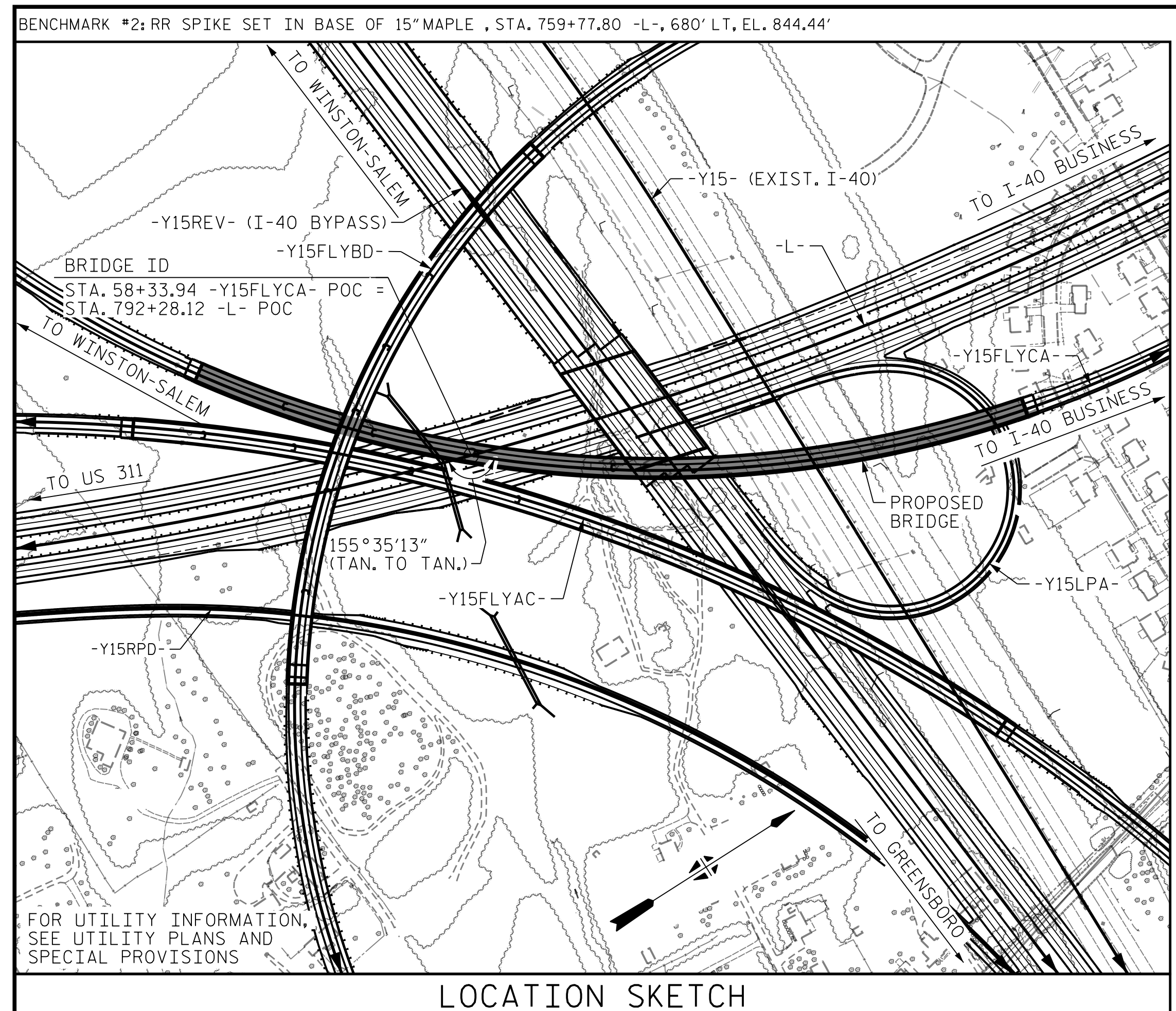
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2	--	--	4	--	--	

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DES BY: S. NIFONG	DATE: 06/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: M. NEIHEISEL	DATE: 06/19	CHK BY: S. NIFONG	DATE: 10/19



**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



TOTAL BILL OF MATERIAL

	FOUNDATION EXCAVATION FOR BENT	6'-0" Ø DRILLED PIERS IN SOIL	5'-6" Ø DRILLED PIERS NOT IN SOIL	SID INSPECTION	SPT TESTING	CSL TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	CLASS A CONCRETE	BRIDGE APPROACH SLABS, STA. 58+33.94 -Y15FLYCA-	REINFORCING STEEL
	LUMP SUM	LIN. FT.	LIN. FT.	EA.	EA.	EA.	SQ. FT.	SQ. FT.	CU. YDS.	CU. YDS.	LUMP SUM	LB.
SUPERSTRUCTURE							74,039	65,047			LUMP SUM	
END BENT 1										102.0		13,687
BENT 1	LUMP SUM								586.9			96,534
BENT 2									475.5			82,471
BENT 3	LUMP SUM								549.1			89,845
BENT 4	LUMP SUM	47	140	4	8				459.7			124,942
BENT 5	LUMP SUM								299.9			50,041
BENT 6	LUMP SUM								284.4			49,718
BENT 7	LUMP SUM								283.2			49,477
END BENT 2										97.5		13,497
TOTAL	LUMP SUM	47	140	4	8	1	74,039	65,047	2,938.7	199.5	LUMP SUM	570,212

	SPIRAL COLUMN REINFORCING STEEL	APPROX. 4,026,000 LBS. STRUCTURAL STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP14x73 STEEL PILES	HP14x73 STEEL PILES	PREDRILLING FOR PILES	CONCRETE BARRIER RAIL	4" SLOPE PROTECTION	DISC BEARINGS	EXPANSION JOINT SEALS	MODULAR EXPANSION JOINT SEALS
	LB.	LUMP SUM	EA.	NO.	LIN. FT.	LIN. FT.	SQ. YDS.	LUMP SUM	LUMP SUM	LUMP SUM
SUPERSTRUCTURE		LUMP SUM						LUMP SUM	LUMP SUM	LUMP SUM
END BENT 1			20	20	1,800		417			
BENT 1			40	40	1,200					
BENT 2			40	40	2,000					
BENT 3			40	40	1,600					
BENT 4	7,642									
BENT 5			28	28	1,120					
BENT 6			30	30	450	96				
BENT 7			30	30	600					
END BENT 2			20	20	1,500		245			
TOTAL	7,642	LUMP SUM	248	248	10,270	96	3,463.7	662	LUMP SUM	LUMP SUM

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 "STANDARD NOTES" SHEET (SN).

ALL ELEVATIONS ARE IN FEET.

THE ELEVATION(S) AND CLEARANCE(S) SHOWN ON THE PLANS AT THE POINT(S) OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION(S) ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE ENGINEER.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE 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.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE AT STATION 58+33.94 -Y15FLYCA-, SEE SPECIAL PROVISIONS.

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 THE STRUCTURAL STEEL SHOP COATINGS PROGRAM AND SECTION 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND 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 DECK SLAB.

WORK SHALL NOT BE STARTED ON BENTS 3, 4, 5, OR 7 UNTIL ROADWAY SECTION HAS BEEN EXCAVATED.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

FOR TEMPORARY BENTS, SEE SPECIAL PROVISIONS.

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS

SPECIAL SNOWPLOW PROTECTION IS REQUIRED. SEE SPECIAL PROVISION FOR MODULAR EXPANSION JOINT SEALS.

FOR MASS CONCRETE, SEE SPECIAL PROVISIONS. BENTS 1, 2, 3, 4, 5, 6, AND 7 INCLUDE MASS CONCRETE.

FOR BRIDGE DECK RIDEABILITY AND GROOVING, SEE SPECIAL PROVISIONS.

FOR DISC BEARINGS, SEE SPECIAL PROVISIONS.

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

CLASS AA CONCRETE SHALL BE USED IN CAST-IN-PLACE COLUMNS, INTERIOR BENT CAPS, AND FOOTINGS, AS NOTED ON THE PLANS.

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 $f_y = 60\text{ksi}$.

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 10 OF 10

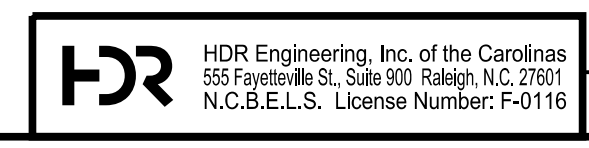


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

BRIDGE ON -Y15FLYCA- IN INTERCHANGE CONNECTING WINSTON-SALEM NORTHERN BELTWAY AND I-40 BYPASS BETWEEN SR 4315 AND SR 2679

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	006-010
1	--	--	3	--	--	TOTAL SHEETS 129
2	--	--	4	--	--	



Dominic A. Coletti 10/15/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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 DATE: 10/14/2021

DES BY: S. NIFONG	DATE: 01/20	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: M. NEIHEISEL	DATE: 01/20	CHK BY: M. NEIHEISEL	DATE: 01/20

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	1.13	--	1.75	--	1.13	E	4	190.59	--	1.72	E	1	0.00	1.30	--	1.70	E	4	114.71	--	
	HL-93 (OPERATING)	N/A		1.46	--	1.35	--	1.46	E	4	190.59	--	2.23	E	1	0.00	1.00	--	2.21	E	4	114.71	--	
	HS-20 (INVENTORY)	36.000	②	2.12	76.32	1.75	--	2.12	E	4	190.59	--	3.00	C	2	0.00	1.30	--	3.14	A	4	100.23	--	
	HS-20 (OPERATING)	36.000		2.75	98.93	1.35	--	2.75	E	4	190.59	--	3.89	C	2	0.00	1.00	--	4.08	A	4	100.23	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH		4.13	51.63	1.40	--	4.13	D	4	0.00	--	7.44	E	1	0.00	1.30	--	5.15	D	4	0.00	--	
		S3C	21.500		3.03	65.15	1.40	--	3.03	D	4	0.00	--	5.49	C	3	0.00	1.30	--	3.79	D	4	0.00	--
		S3A	22.750		2.93	66.66	1.40	--	2.93	D	4	0.00	--	5.26	C	3	0.00	1.30	--	3.65	D	4	0.00	--
		S4A	26.750		2.64	70.62	1.40	--	2.64	D	4	0.00	--	4.77	C	3	0.00	1.30	--	3.30	D	4	0.00	--
		S5A	30.500		2.43	74.12	1.40	--	2.43	D	4	0.00	--	4.19	C	3	0.00	1.30	--	3.03	D	4	0.00	--
	TRUCK TRACTOR SEMI-TRAILER (T/ST)	S6A	34.500		2.24	77.28	1.40	--	2.24	D	4	0.00	--	3.76	C	3	0.00	1.30	--	2.79	D	4	0.00	--
		S7B	38.500		2.08	80.08	1.40	--	2.08	D	4	0.00	--	3.48	C	3	0.00	1.30	--	2.59	D	4	0.00	--
		S7A	40.000	③	2.04	81.60	1.40	--	2.04	D	4	0.00	--	3.61	C	3	0.00	1.30	--	2.54	D	4	0.00	--
		T4A	28.250		2.57	72.60	1.40	--	2.57	D	4	0.00	--	4.60	C	3	0.00	1.30	--	3.20	D	4	0.00	--
		T5B	32.000		2.36	75.52	1.40	--	2.36	D	4	0.00	--	4.23	C	3	0.00	1.30	--	2.95	D	4	0.00	--
FATIGUE	T6A	36.000		2.19	78.84	1.40	--	2.19	D	4	0.00	--	4.06	C	3	0.00	1.30	--	2.73	D	4	0.00	--	
	T7A	40.000	③	2.04	81.60	1.40	--	2.04	D	4	0.00	--	3.71	C	3	0.00	1.30	--	2.55	D	4	0.00	--	
	T7B	40.000	③	2.04	81.60	1.40	--	2.04	D	4	0.00	--	3.48	C	3	0.00	1.30	--	2.55	D	4	0.00	--	
	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.

COMMENTS:

- THE ORIGINAL DESIGN AND RATING OF THIS BRIDGE WAS BASED ON AN INFLUENCE SURFACE ANALYSIS. LIVE LOAD DISTRIBUTION FACTORS WERE NOT USED AND ARE NOT PROVIDED.
- DISTANCE FROM LEFT END OF SPAN IS GIVEN WITH RESPECT TO CENTERLINE OF BEARING AND IS MEASURED ALONG THE CONTROLLING GIRDER.
- FATIGUE RATING IS NOT REQUIRED OR REPORTED SINCE GIRDER DESIGN DOES NOT INCLUDE FATIGUE-PRONE DETAILS.
- LARSA 4D VERSION 8.00 r8101 WAS USED FOR INFLUENCE SURFACE ANALYSIS.
- AS APPLICABLE FOR THIS UNIT, LEGAL LOAD RATING INCLUDES CONSIDERATION OF THE FOLLOWING (PER AASHTO MANUAL FOR BRIDGE EVALUATION, 3RD ED., 2018, 6A.4.4.2.1a):
 - 100% OF ONE LEGAL LOAD VEHICLE WITH NO LANE LOAD
 - 75% OF ONE LEGAL LOAD VEHICLE WITH 0.200 KLF LANE LOAD
 - 75% OF TWO LEGAL LOAD VEHICLES SEPARATED BY 30 FEET WITH 0.200 KLF LANE LOAD (NEGATIVE MOMENT ONLY)

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

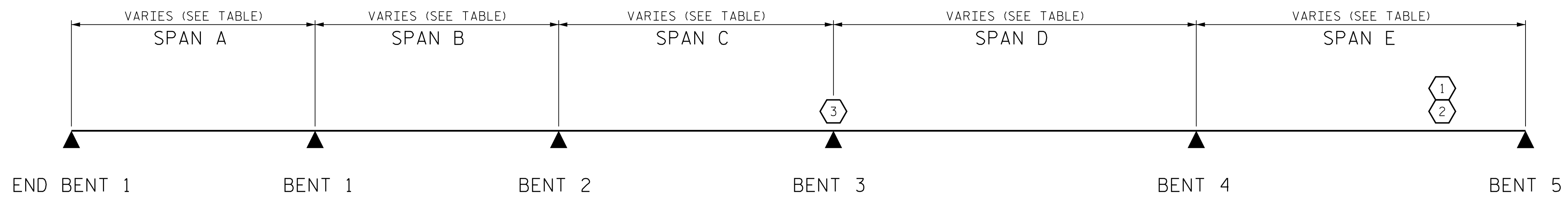
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

GIRDER LOCATION IS PROVIDED USING GIRDER NUMBER, WHERE GIRDER 1 IS THE EXTERIOR GIRDER TO THE LEFT OF -Y15FLYCA-

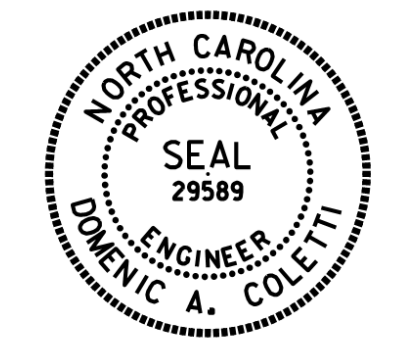


CL BRG - CL BRG SPAN LENGTHS					
GIRDER	SPAN A	SPAN B	SPAN C	SPAN D	SPAN E
1	183'-4 ⁵ / ₈ "	186'-2 ⁵ / ₈ "	209'-11 ⁷ / ₈ "	277'-4 ¹ / ₈ "	249'-10 ¹ / ₈ "
2	184'-4 ¹ / ₄ "	187'-2 ¹ / ₄ "	211'-1 ¹ / ₁₆ "	278'-9 ¹ / ₂ "	251'-1 ⁷ / ₈ "
3	185'-3 ¹⁵ / ₁₆ "	188'-1 ⁵ / ₁₆ "	212'-2 ³ / ₁₆ "	280'-2 ⁷ / ₈ "	252'-5 ⁵ / ₈ "
4	186'-3 ⁵ / ₈ "	189'-1 ⁵ / ₈ "	213'-3 ³ / ₈ "	281'-8 ¹ / ₄ "	253'-9 ³ / ₈ "

LRFR SUMMARY

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-

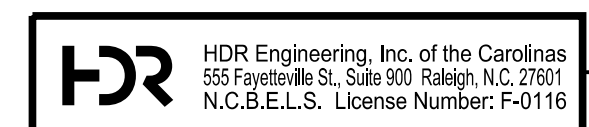
SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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

DES BY: <u>G. SCHMITZ</u>	DATE: <u>10/19</u>	DWG BY: <u>T. SAS</u>	DATE: <u>10/19</u>
DES CHK: <u>D. OLDS</u>	DATE: <u>10/19</u>	CHK BY: <u>D. OLDS</u>	DATE: <u>10/19</u>



REVISIONS						SHEET NO. 506-011 TOTAL SHEETS 129
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2	--	--	4	--	--	

PLOT DRIVER: NCDOT_pdf_color_eng-50dpi
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 PENTABLE: NCDOT_STRUCTURES_DEFAULT_PEN.tbl
 TIME: 5:11:20 PM

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	1.19	--	1.75	--	1.19	H	4	0.00	--	2.05	G	4	25.92	1.30	--	1.72	H	4	111.18	--	
	HL-93 (OPERATING)	N/A		1.54	--	1.35	--	1.54	H	4	0.00	--	2.66	G	4	25.92	1.00	--	2.24	H	4	111.18	--	
	HS-20 (INVENTORY)	36.000	②	2.03	73.08	1.75	--	2.03	H	4	111.18	--	3.60	G	4	25.92	1.30	--	2.89	H	4	111.18	--	
	HS-20 (OPERATING)	36.000		2.63	94.73	1.35	--	2.63	H	4	111.18	--	4.67	G	4	25.92	1.00	--	3.76	H	4	111.18	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH		4.67	58.38	1.40	--	4.67	G	4	0.00	--	9.10	G	4	25.92	1.30	--	5.86	G	1	0.00	--	
		S3C	21.500		3.28	70.52	1.40	--	3.28	H	4	22.05	--	6.50	G	4	25.92	1.30	--	4.28	G	1	0.00	--
		S3A	22.750		3.15	71.66	1.40	--	3.15	H	4	22.05	--	6.27	G	4	25.92	1.30	--	4.13	G	1	0.00	--
		S4A	26.750		2.82	75.44	1.40	--	2.82	H	4	22.05	--	5.70	G	4	25.92	1.30	--	3.73	G	1	0.00	--
		S5A	30.500		2.57	78.39	1.40	--	2.57	H	4	22.05	--	5.17	H	3	21.94	1.30	--	3.39	H	4	111.18	--
	TRUCK TRACTOR SEMI-TRAILER (T/S)	S6A	34.500		2.36	81.42	1.40	--	2.36	H	4	22.05	--	4.65	H	3	21.94	1.30	--	3.01	H	4	111.18	--
		S7B	38.500		2.19	84.32	1.40	--	2.19	H	4	22.05	--	4.29	H	3	21.94	1.30	--	2.75	H	4	111.18	--
		S7A	40.000	③	2.15	86.00	1.40	--	2.15	H	4	22.05	--	4.32	G	4	25.92	1.30	--	2.67	H	4	111.18	--
		T4A	28.250		2.74	77.41	1.40	--	2.74	H	4	22.05	--	5.51	G	4	25.92	1.30	--	3.64	G	1	0.00	--
		T5B	32.000		2.51	80.32	1.40	--	2.51	H	4	22.05	--	5.11	G	4	25.92	1.30	--	3.31	H	4	111.18	--
FATIGUE	T6A	36.000		2.32	83.52	1.40	--	2.32	H	4	22.05	--	4.67	G	4	25.92	1.30	--	2.99	H	4	111.18	--	
	T7A	40.000	③	2.15	86.00	1.40	--	2.15	H	4	22.05	--	4.32	G	4	25.92	1.30	--	2.71	H	4	111.18	--	
	T7B	40.000		2.16	86.40	1.40	--	2.16	H	4	22.05	--	4.22	G	4	25.92	1.30	--	2.73	H	4	111.18	--	
	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.

COMMENTS:

- THE ORIGINAL DESIGN AND RATING OF THIS BRIDGE WAS BASED ON AN INFLUENCE SURFACE ANALYSIS. LIVE LOAD DISTRIBUTION FACTORS WERE NOT USED AND ARE NOT PROVIDED.
- DISTANCE FROM LEFT END OF SPAN IS GIVEN WITH RESPECT TO CENTERLINE OF BEARING AND IS MEASURED ALONG THE CONTROLLING GIRDER.
- FATIGUE RATING IS NOT REQUIRED OR REPORTED SINCE GIRDER DESIGN DOES NOT INCLUDE FATIGUE-PRONE DETAILS.
- LARSA 4D VERSION 8.00 r8101 WAS USED FOR INFLUENCE SURFACE ANALYSIS.
- AS APPLICABLE FOR THIS UNIT, LEGAL LOAD RATING INCLUDES CONSIDERATION OF THE FOLLOWING (PER AASHTO MANUAL FOR BRIDGE EVALUATION, 3RD ED., 2018, 6A.4.4.2.1a):
 - 100% OF ONE LEGAL LOAD VEHICLE WITH NO LANE LOAD
 - 75% OF ONE LEGAL LOAD VEHICLE WITH 0.200 KLF LANE LOAD
 - 75% OF TWO LEGAL LOAD VEHICLES SEPARATED BY 30 FEET WITH 0.200 KLF LANE LOAD (NEGATIVE MOMENT ONLY)

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

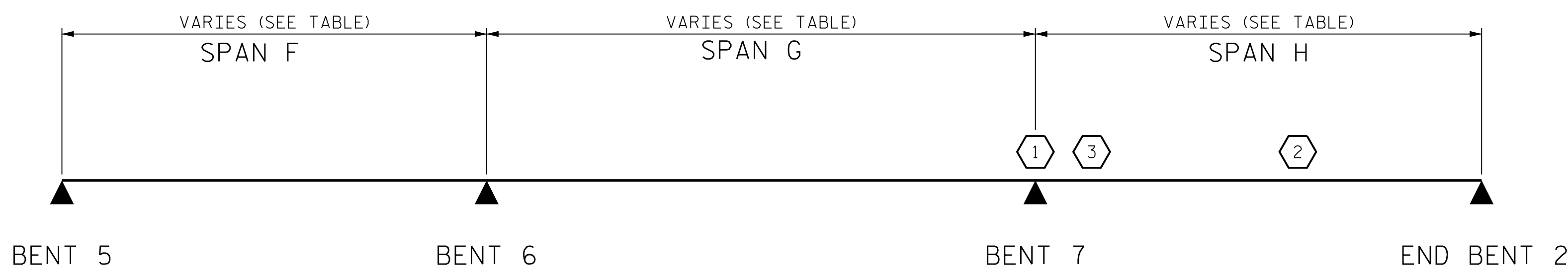
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

GIRDER LOCATION IS PROVIDED USING GIRDER NUMBER, WHERE GIRDER 1 IS THE EXTERIOR GIRDER TO THE LEFT OF -Y15FLYCA-

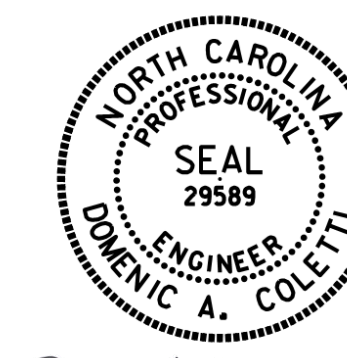


CL BRG - CL BRG	SPAN LENGTHS		
GIRDER	SPAN F	SPAN G	SPAN H
1	174'-6 3/4"	227'-9 13/16"	182'-4 3/4"
2	175'-5 13/16"	229'-0 1/8"	183'-4 5/16"
3	176'-4 13/16"	230'-2 3/8"	184'-3 15/16"
4	177'-3 7/8"	231'-4 5/8"	185'-3 9/16"

LRFR SUMMARY

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-

SHEET 2 OF 2



Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

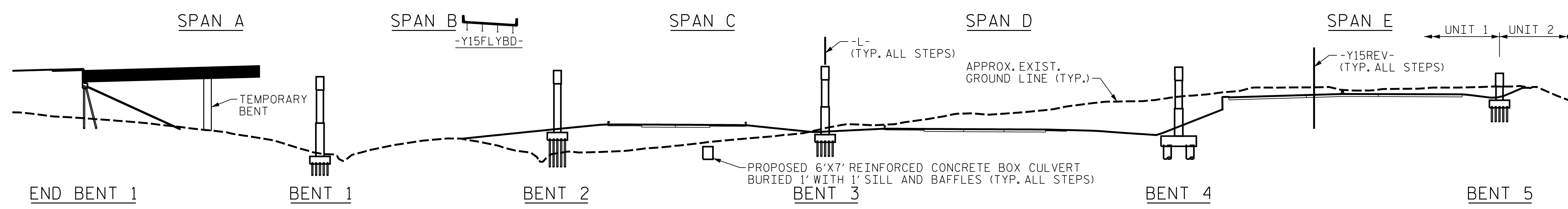
**LRFR SUMMARY FOR
 STEEL GIRDERS
 (INTERSTATE TRAFFIC)
 (UNIT 2)**

REVISIONS						SHEET NO. S06-012
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2	--	--	4	--	--	

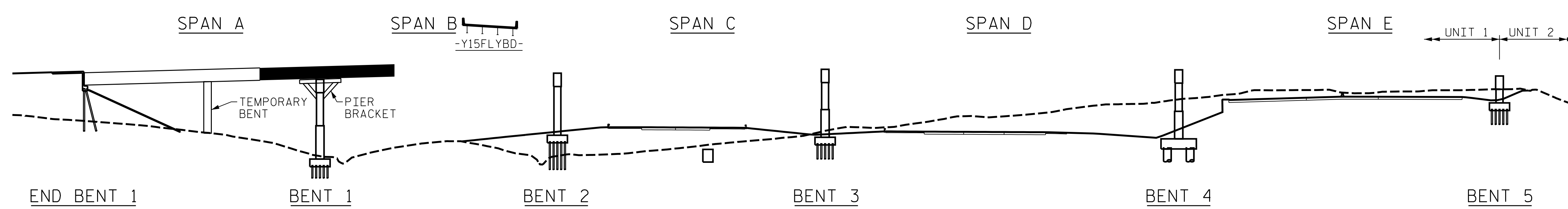
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 UNLESS ALL SIGNATURES COMPLETED**



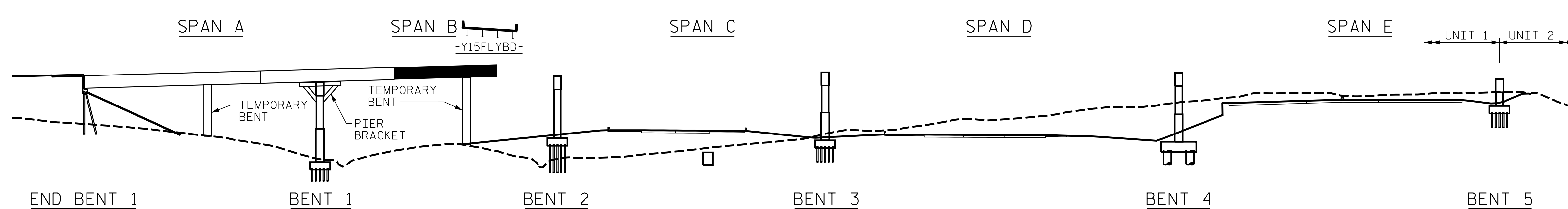
DES BY: M. NEIHEISEL DATE: 10/19 DWG BY: T. SAS DATE: 10/19
 DES CHK: G. SCHMITZ DATE: 10/19 CHK BY: M. NEIHEISEL DATE: 10/19



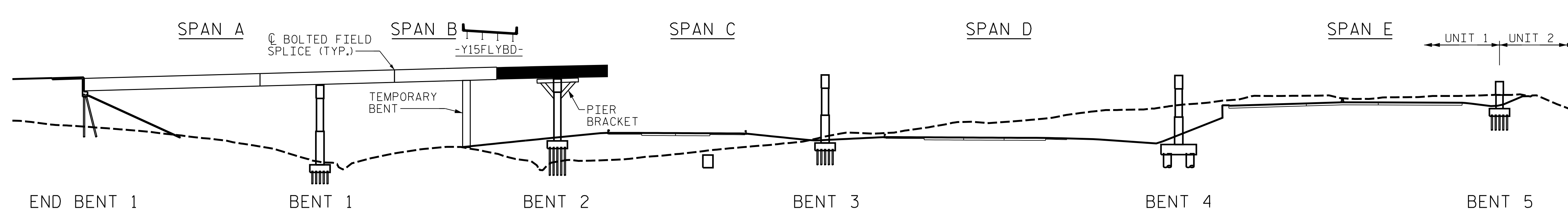
UNIT 1, STEP 1 GIRDER ERECTION



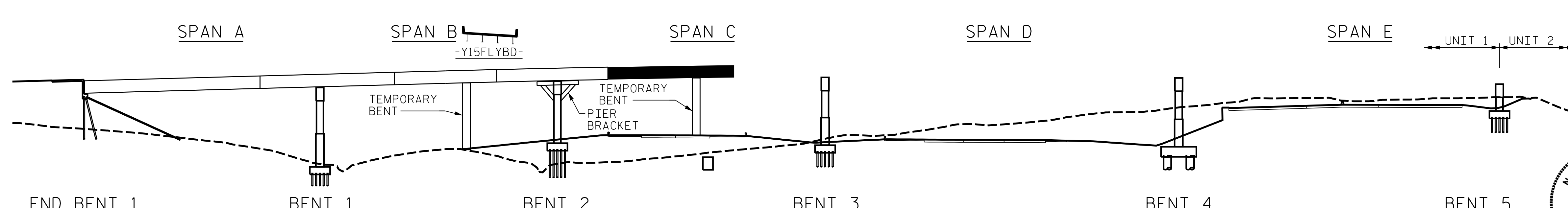
UNIT 1, STEP 2 GIRDER ERECTION



UNIT 1, STEP 3 GIRDER ERECTION



UNIT 1, STEP 4 GIRDER ERECTION



UNIT 1, STEP 5 GIRDER ERECTION

NOTES

UNIT 1 STEPS 1 THROUGH 10 SHALL BE ACCOMPLISHED PRIOR TO SHIFTING ANY TRAFFIC FROM -Y15- TO -Y15REV-. SEE TRANSPORTATION MANAGEMENT PLAN (TMP) FOR MORE DETAILS.

UNIT 2 STEPS 1 AND 2 SHALL BE ACCOMPLISHED PRIOR TO SHIFTING ANY TRAFFIC FROM -Y15- TO -Y15REV-. UNIT 2 STEPS 3, 4, AND 5 SHALL BE ACCOMPLISHED AFTER SHIFTING TRAFFIC FROM -Y15- TO -Y15REV-. SEE TRANSPORTATION MANAGEMENT PLAN (TMP) FOR MORE DETAILS.

ERECT A MINIMUM OF TWO GIRDERS WITH ALL DIAPHRAGMS/CROSSFRAMES AND LATERAL BRACING BETWEEN THE GIRDERS IN PLACE AND THE BOLTS TIGHTENED PRIOR TO RELEASING THE GIRDERS.

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

THE STRUCTURAL STEEL SHALL REMAIN SUPPORTED DURING ERECTION IN ITS NO-LOAD POSITION. TEMPORARY SUPPORTS (TEMPORARY BENTS OR PIER BRACKETS) AS SHOWN SHALL BE USED.

TEMPORARY BENTS AND PIER BRACKETS SHALL REMAIN IN PLACE UNTIL ALL DIAPHRAGMS/CROSSFRAMES ARE IN PLACE AND ALL HIGH STRENGTH BOLTS ARE TIGHTENED.

TEMPORARY BENTS AND PIER BRACKETS 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 BENT REMOVAL THAT WILL TRANSFER THE STRUCTURAL WEIGHT TO THE PERMANENT STRUCTURAL STEEL FRAMING SYSTEM SUCH THAT THE GIRDERS WILL DEFLECT GRADUALLY AND UNIFORMLY TO THEIR INTENDED STEEL DEAD LOAD POSITION, WITHOUT EXPERIENCING UPLIFT OR OTHER ADVERSE INTERIM CONDITIONS.

PLANS FOR TEMPORARY BENT AND PIER BRACKET ERECTION AND REMOVAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING THE TEMPORARY BENTS AND PIER BRACKETS. 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 THE GIRDER ERECTION PROCEDURE, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SUPPORTS, BLOCKING, LATERAL BRACING, AND/OR OTHER MEANS OF SUPPORT, AS REQUIRED, TO MAINTAIN STABILITY, PREVENT UPLIFT OF THE GIRDERS AT TEMPORARY BENTS, PERMANENT BENTS, AND END BENTS, AND TO MAINTAIN PLUMBNESS OF THE GIRDERS IN THEIR SHORED (APPROXIMATELY NO-LOAD) CONDITION.

NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR PROVIDING THE TEMPORARY SUPPORTS, TEMPORARY LATERAL BRACING OR OTHER MEANS OF SUPPORT. THE COST FOR ALL MATERIALS, EQUIPMENT, TOOLS, DESIGN, 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, STREAMS, AND/OR HEAVY VEGETATION.

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

FOR TEMPORARY BENTS (AND PIER BRACKETS, WHICH ARE CONSIDERED A SUBSET OF TEMPORARY BENTS), SEE SPECIAL PROVISIONS.

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**GIRDER ERECTION
 DETAILS
 UNIT 1**

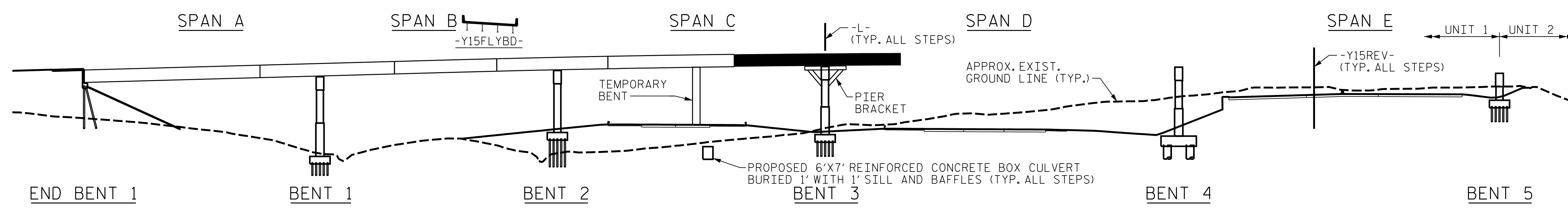
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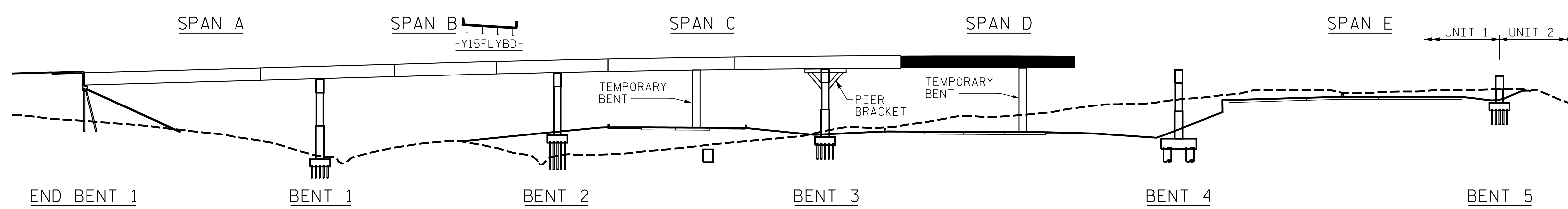
DES BY: S. NIFONG	DATE: 01/19	DWG BY: B. PETERSON	DATE: 01/19
DES CHK: D. OLDS	DATE: 11/19	CHK BY: D. OLDS	DATE: 11/19

HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

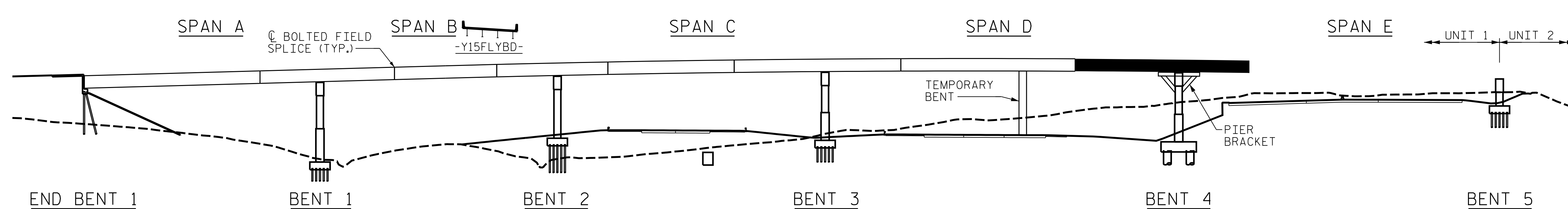
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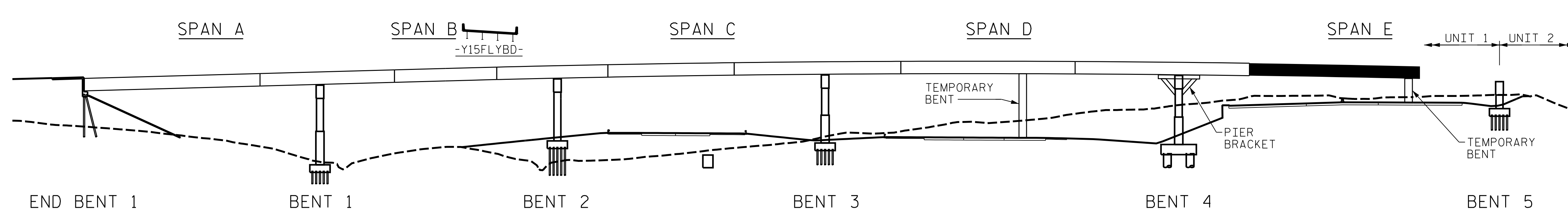
UNIT 1, STEP 6 GIRDER ERECTION



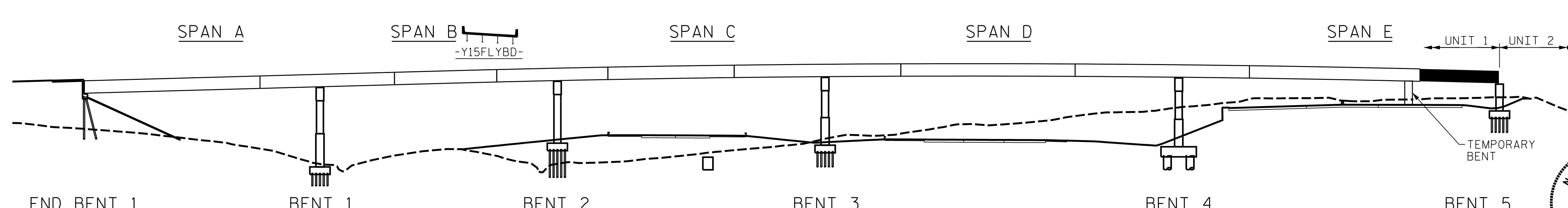
UNIT 1, STEP 7 GIRDER ERECTION



UNIT 1, STEP 8 GIRDER ERECTION



UNIT 1, STEP 9 GIRDER ERECTION



UNIT 1, STEP 10 GIRDER ERECTION

NOTES
 SEE "GIRDER ERECTION DETAILS UNIT 1" SHEET 1 OF 2 FOR NOTES.

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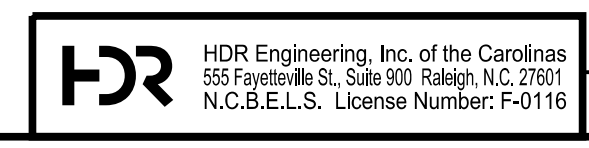
PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**GIRDER ERECTION
 DETAILS
 UNIT 1**

DES BY: S. NIFONG	DATE: 01/19	DWG BY: B. PETERSON	DATE: 01/19
DES CHK: D. OLDS	DATE: 11/19	CHK BY: D. OLDS	DATE: 11/19



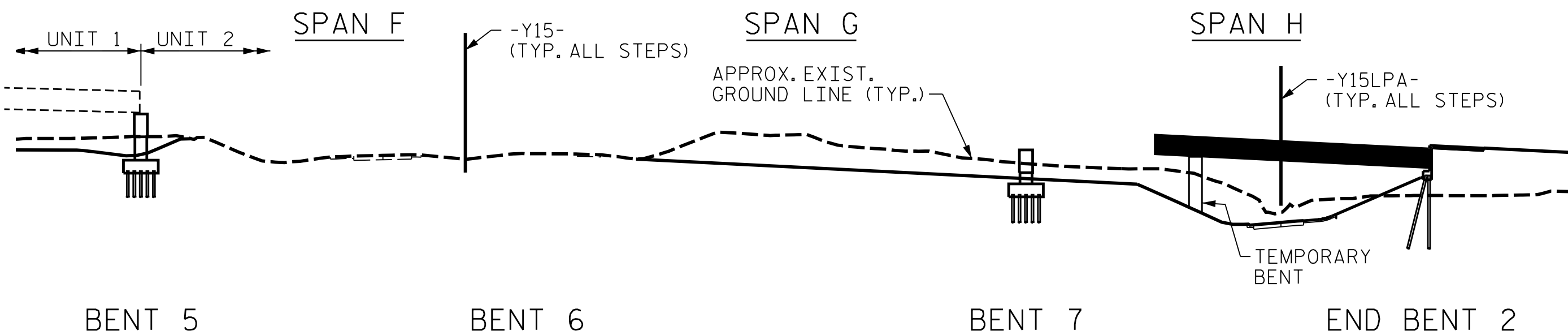
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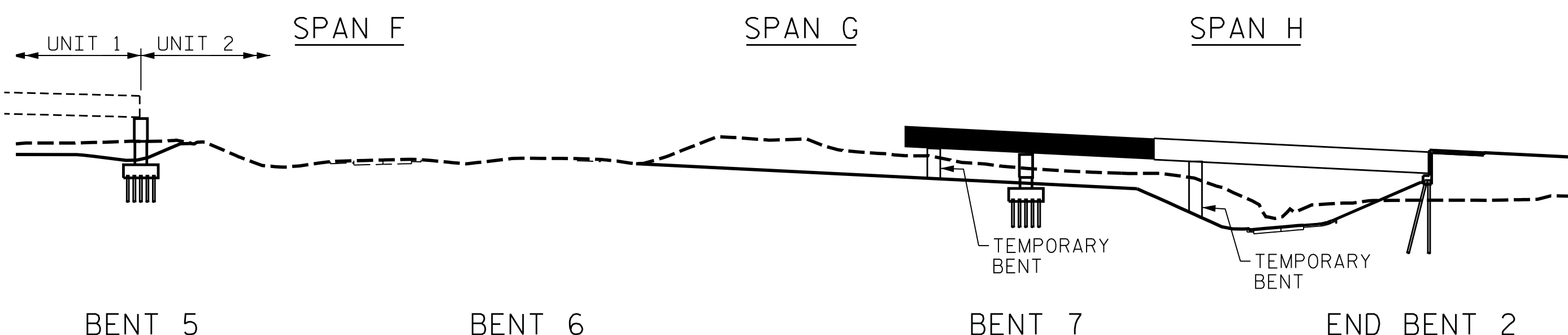
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SHEET NO. 506-014
TOTAL SHEETS 129

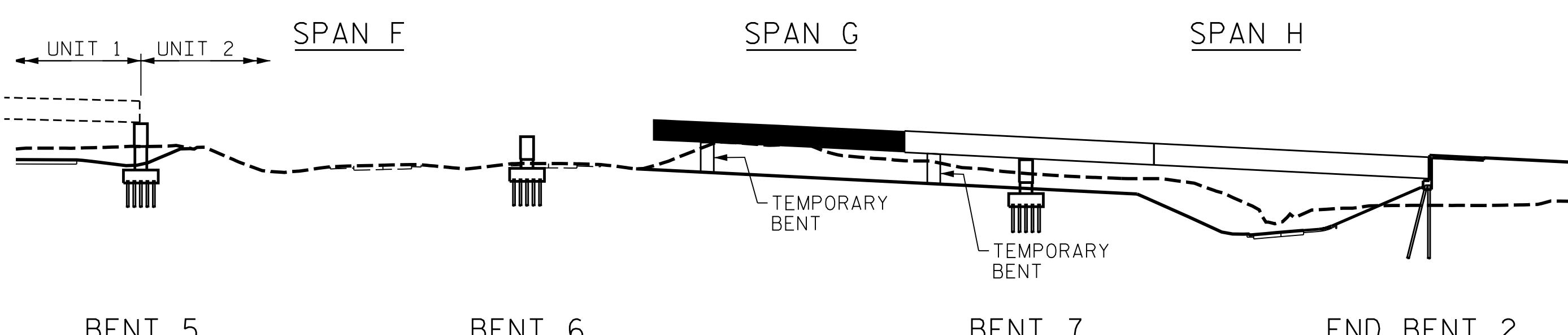
NOTES
SEE "GIRDER ERECTION DETAILS UNIT 1" SHEET
1 OF 2 FOR NOTES.



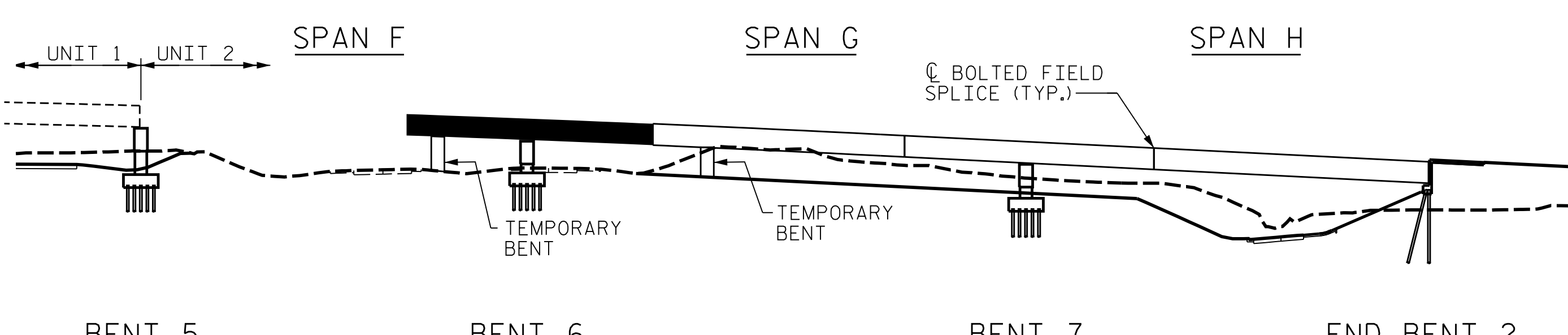
UNIT 2, STEP 1 GIRDER ERECTION



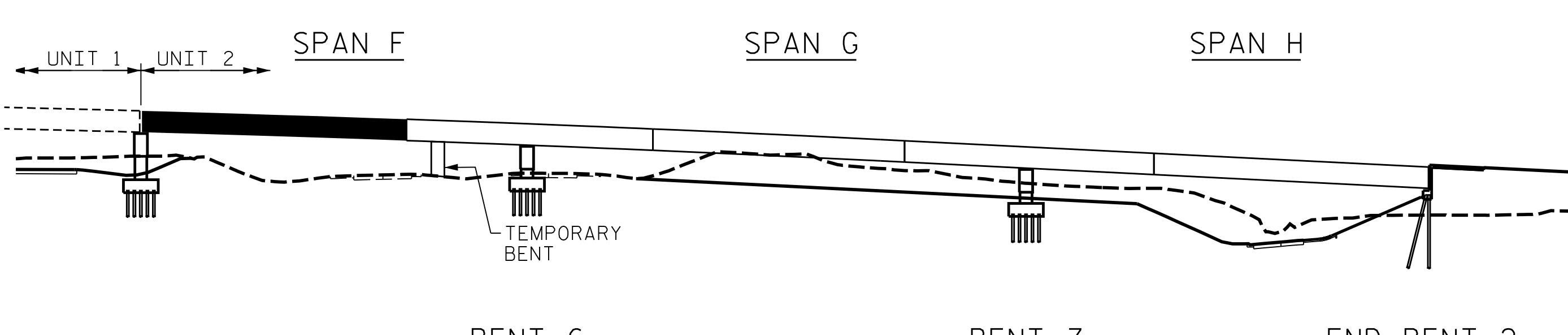
UNIT 2, STEP 2 GIRDER ERECTION



UNIT 2, STEP 3 GIRDER ERECTION



UNIT 2, STEP 4 GIRDER ERECTION



UNIT 2, STEP 5 GIRDER ERECTION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GIRDER ERECTION
DETAILS
UNIT 2



Dominic A. Coletti 10/15/2021

REVISIONS					
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SHEET NO. 506-015
TOTAL SHEETS 129

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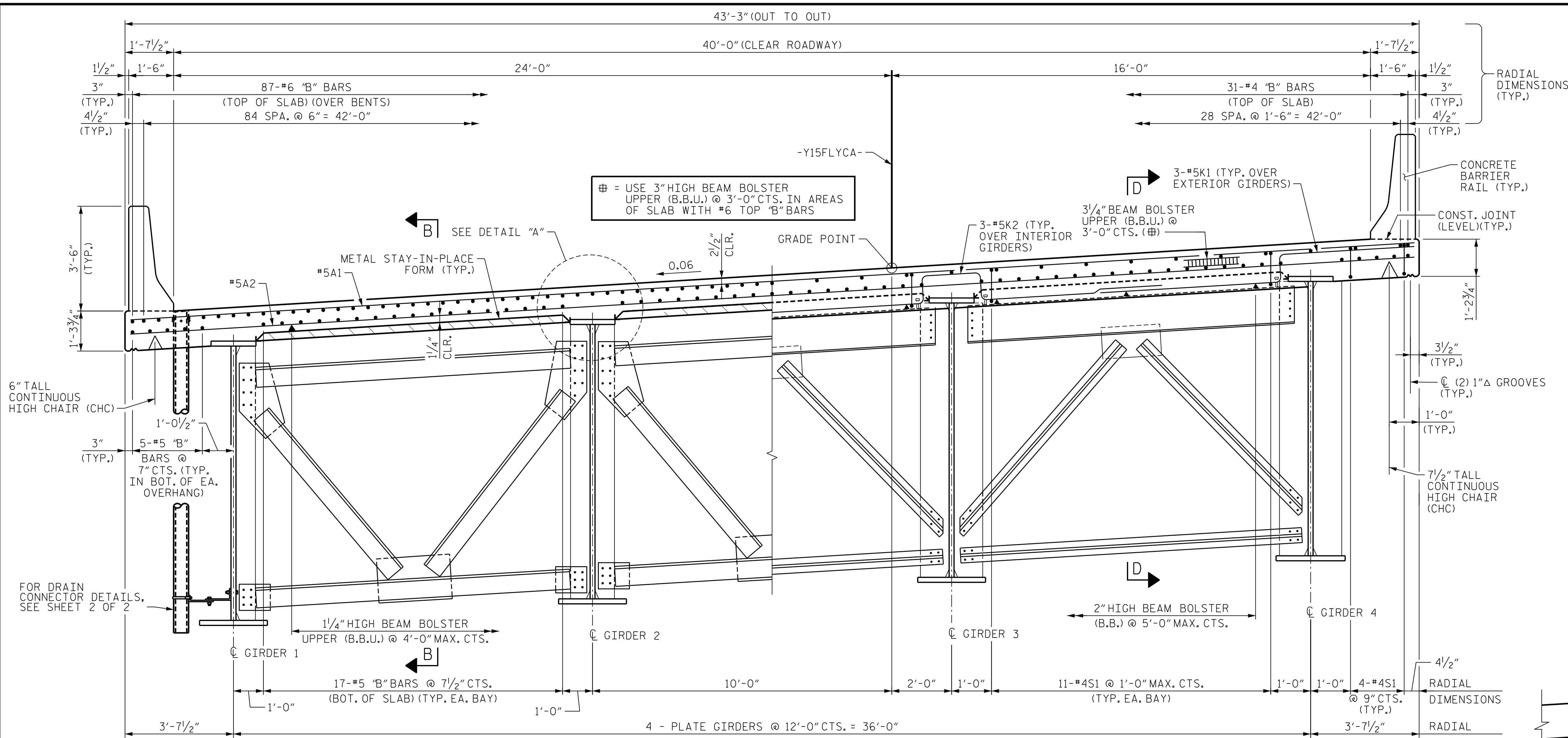
HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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USER: PPETERSO DATE: 10/14/2021
FILE: ...GIRDER

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NOTES

PROVIDE 1/4" HIGH BEAM BOLSTER UPPER (BBU) AT 4'-0" MAX. CENTERS 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" MAX. CENTERS WITH HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO GIRDER FLANGES IN THE ZONES REQUIRING CHAPPY V-NOTCH TEST. SEE STRUCTURAL STEEL DETAILS 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/GIRDERS STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS.

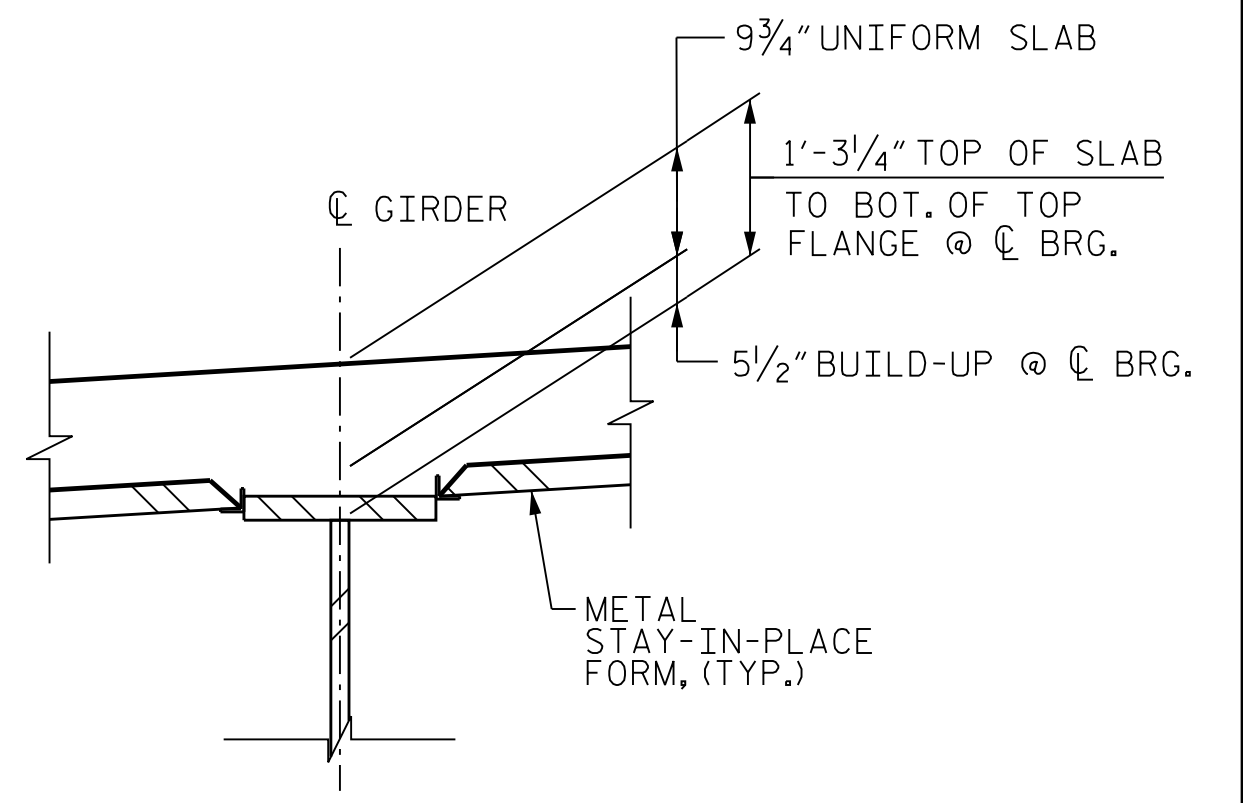
BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

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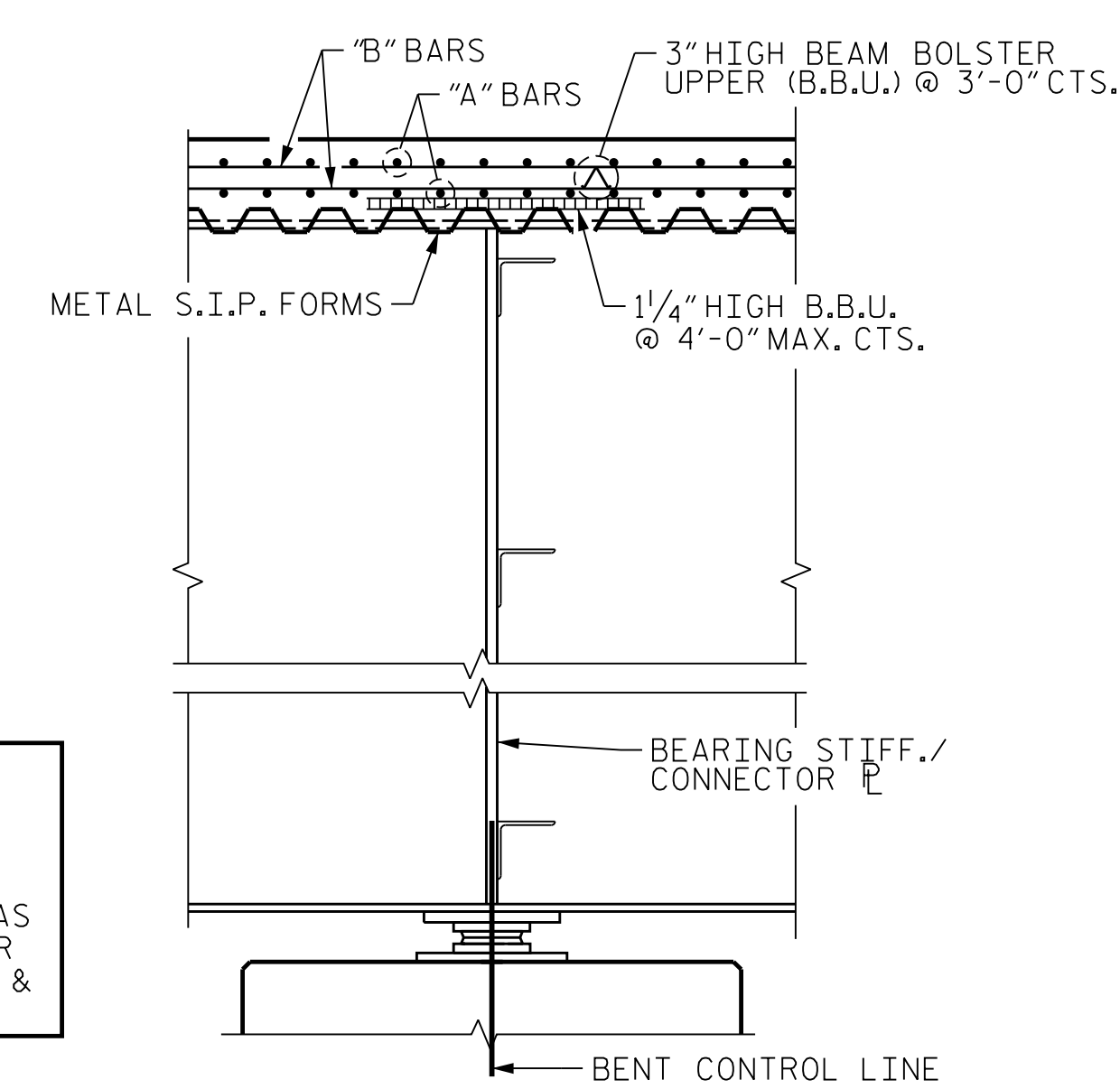
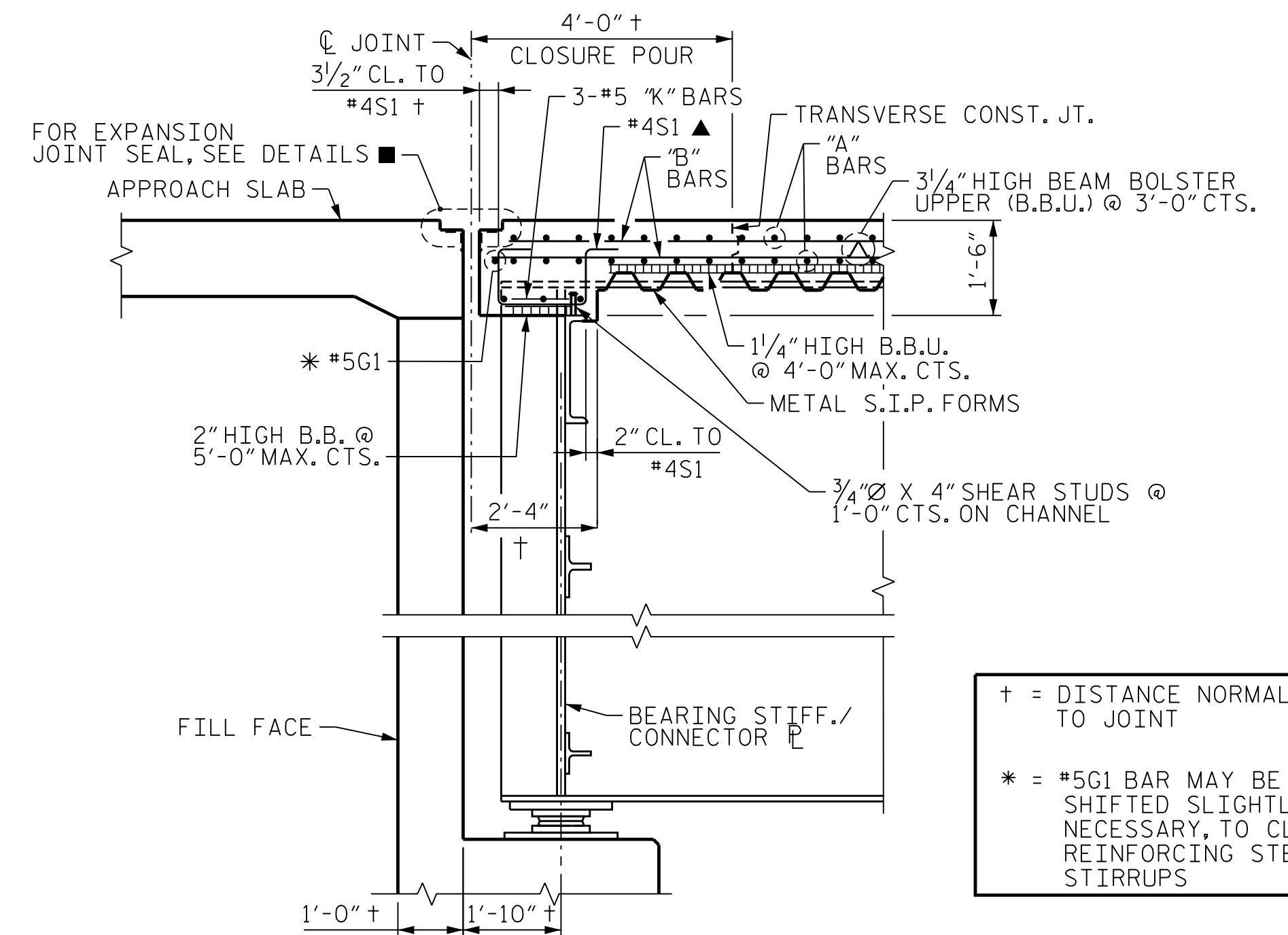
SECTION AT INTERMEDIATE & BENT DIAPHRAGM (TYP. @ BENTS 1, 2, 3, 4, 6 & 7)

SECTION AT END BENT DIAPHRAGM (@ END BENT 2)

TYPICAL SECTION



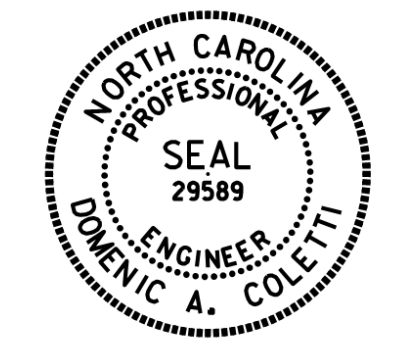
DETAIL "A"



■ = SEE "EXPANSION JOINT SEAL DETAILS" SHEET
 ▲ = SEE "APPROACH SLAB PLAN AND SECTION" SHEET

† = DISTANCE NORMAL TO JOINT
 * = #5G1 BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL & STIRRUPS

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 1 OF 2

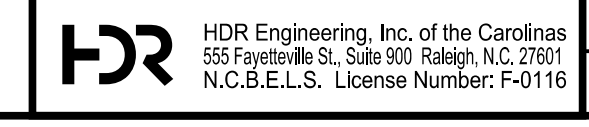


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

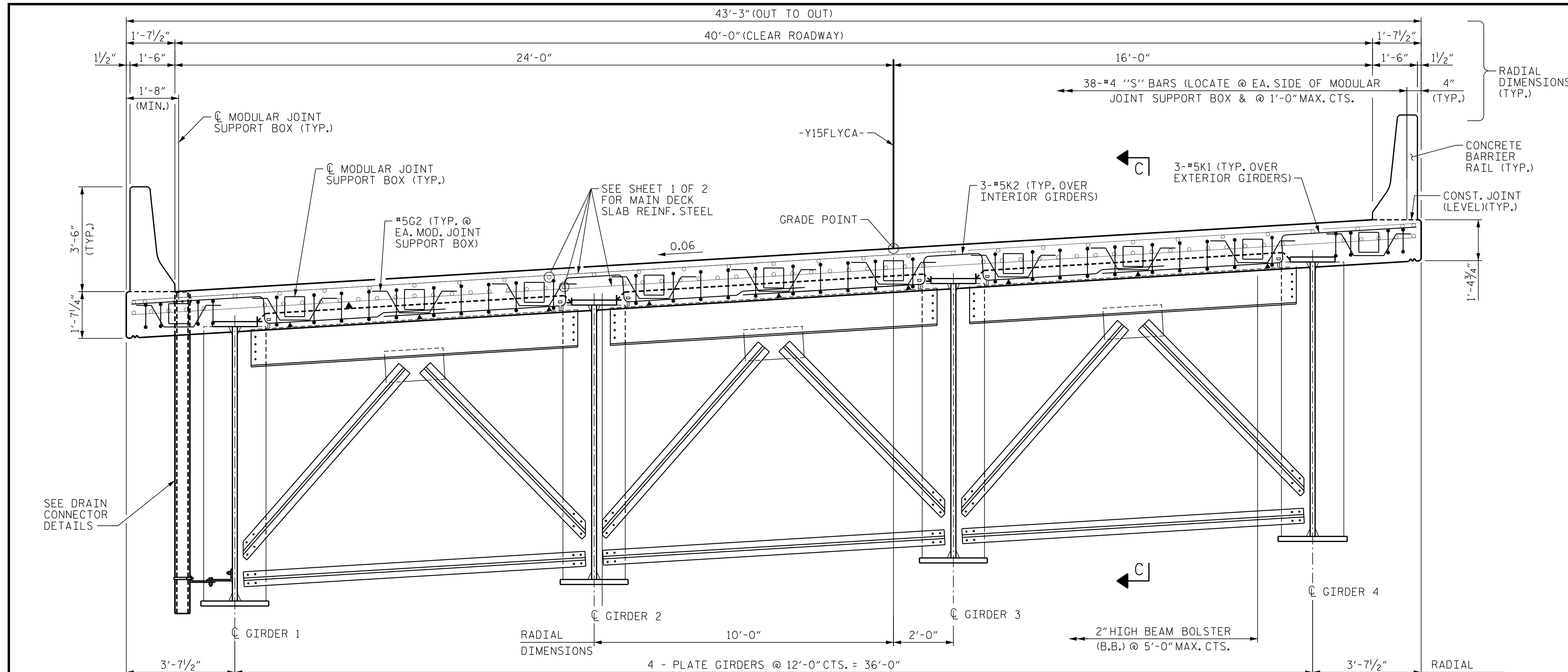
**SUPERSTRUCTURE
TYPICAL SECTION**

REVISIONS						SHEET NO. 506-016
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2	--	--	4	--	--	

DES BY: G. SCHMITZ	DATE: 08/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: D. OLDS	DATE: 08/19	CHK BY: M. NEIHEISEL	DATE: 01/20



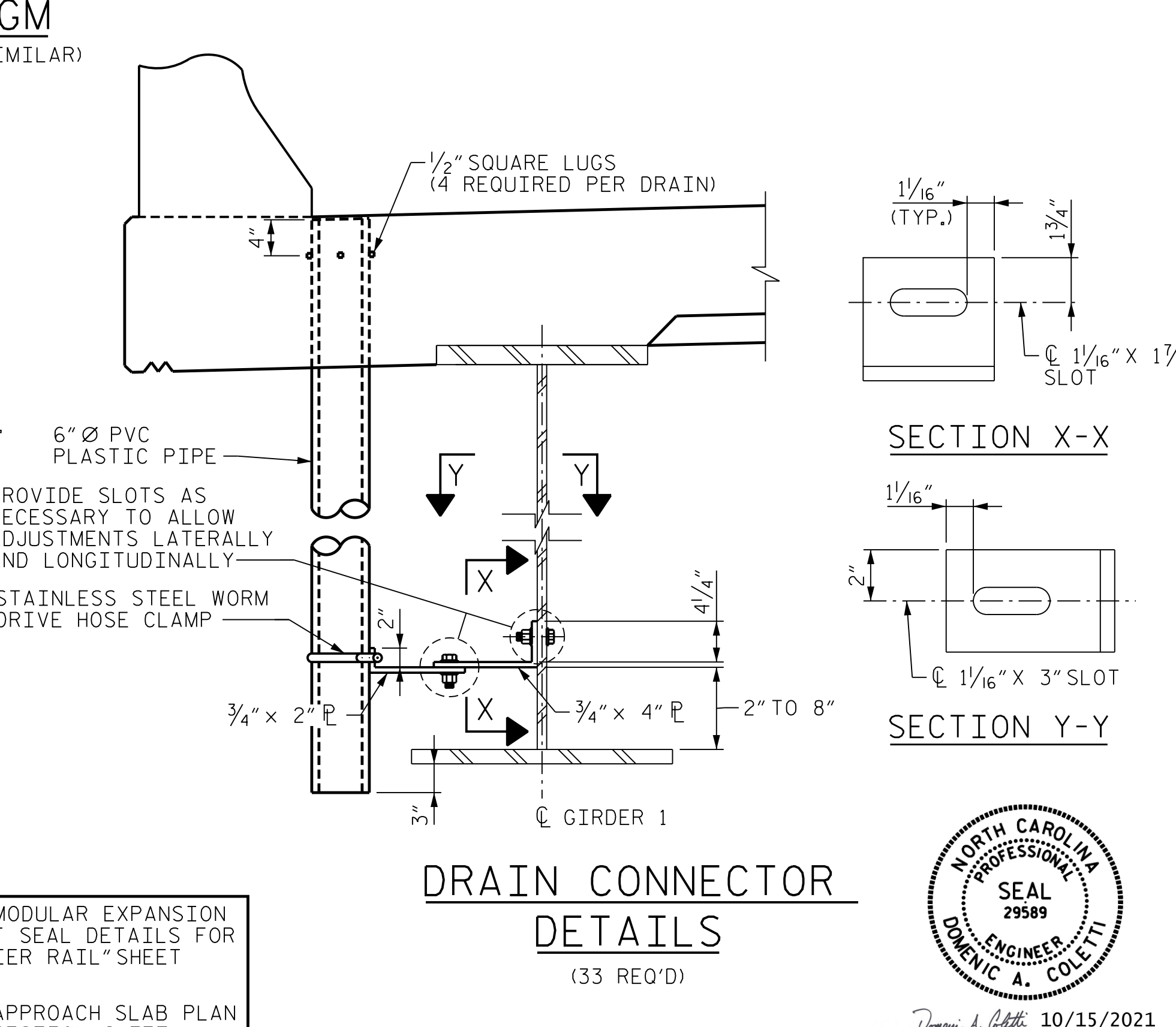
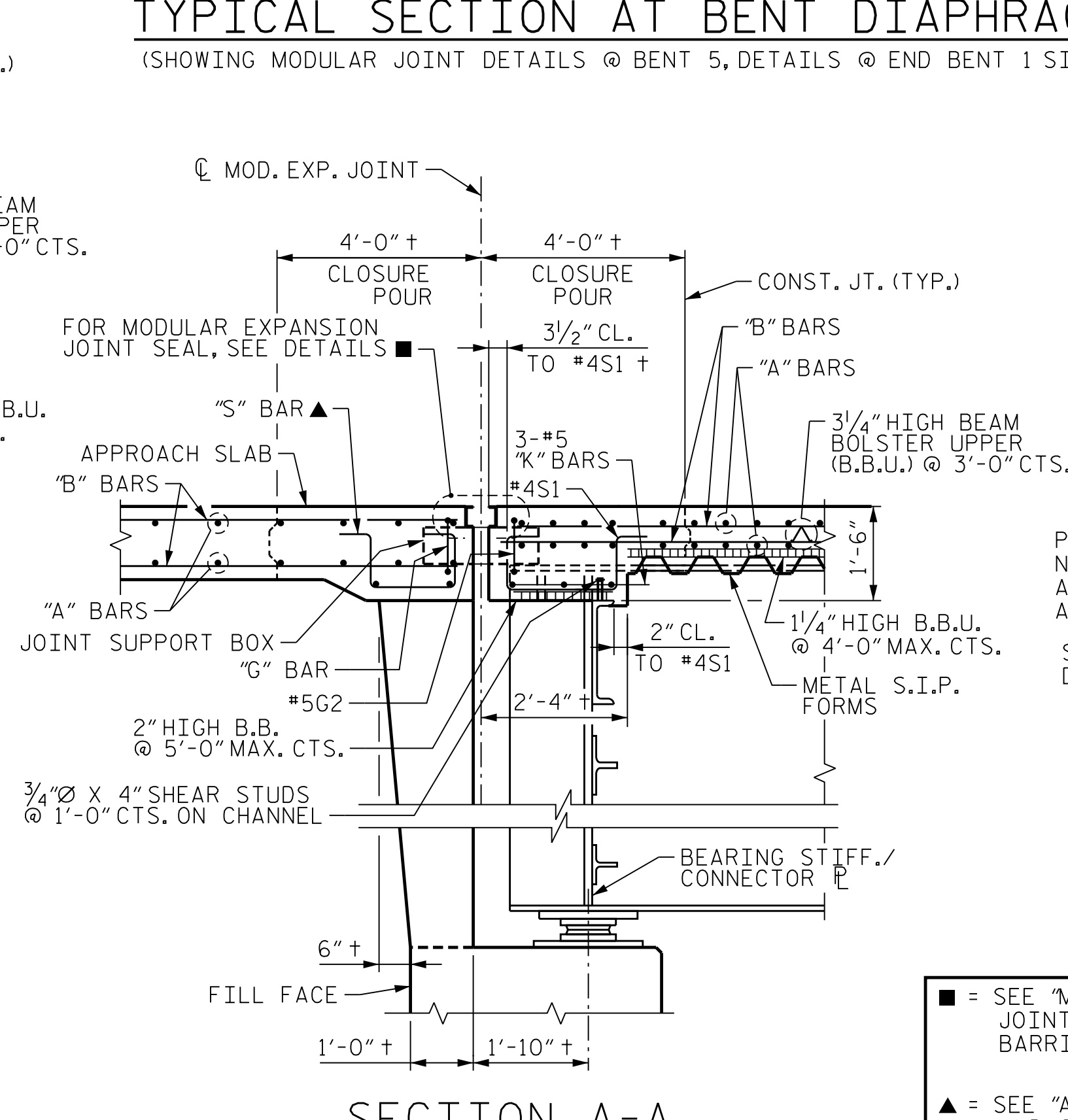
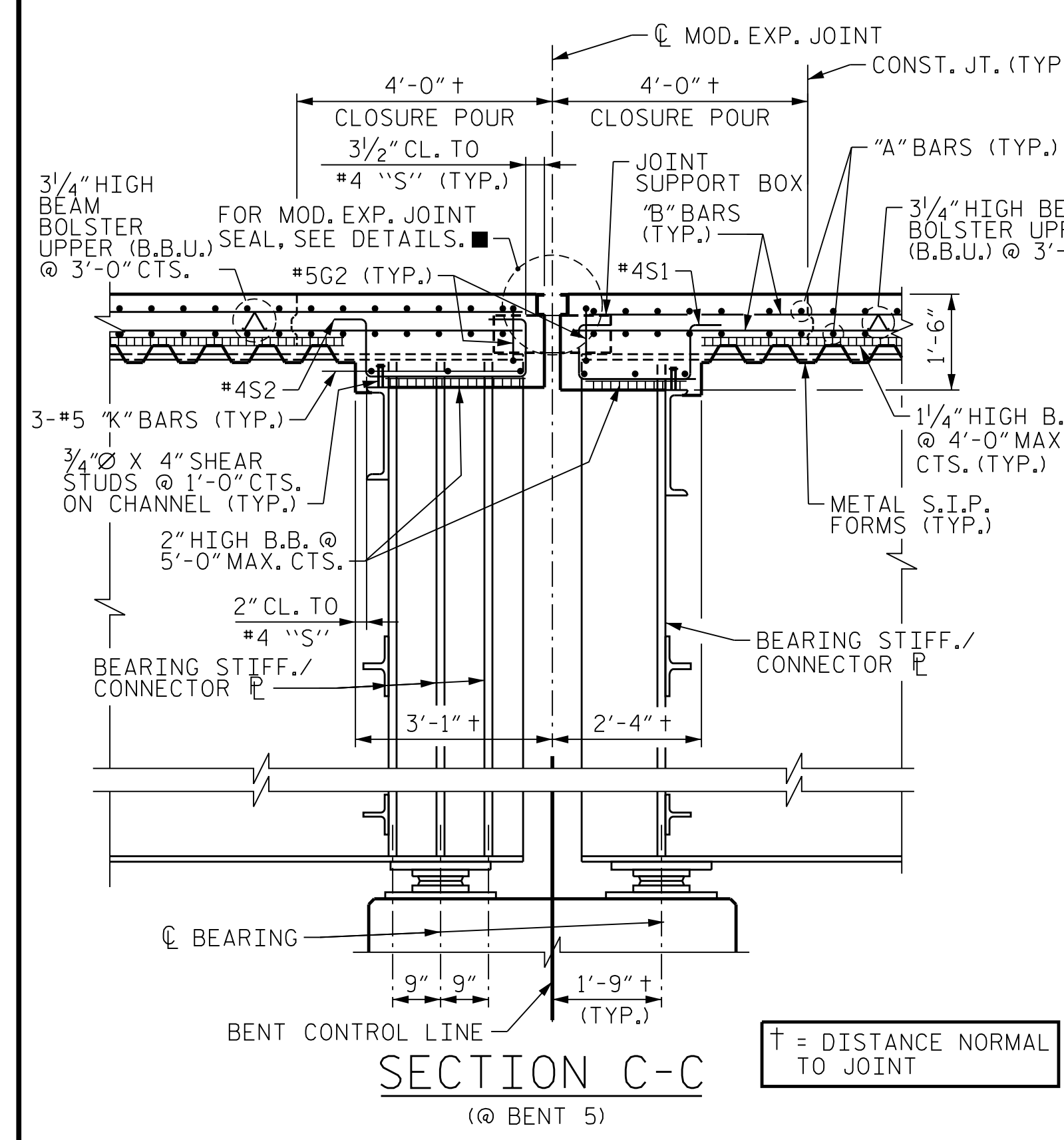
DOCUMENT NOT CONSIDERED FINAL
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 10/15/2021



NOTES
 SEE SHEET 1 OF 2 FOR ADDITIONAL NOTES NOT SHOWN HERE.
 THE "B" BARS IN THE DECK SLAB MAY BE CUT AS DIRECTED BY THE ENGINEER TO CLEAR THE MODULAR JOINT SUPPORT BOXES.
 SPECIAL SNOWPLOW PROTECTION IS REQUIRED. SEE SPECIAL PROVISION FOR MODULAR EXPANSION JOINT SEALS.
 FOR LOCATION OF SECTION A-A, SEE "SUPERSTRUCTURE PLAN OF SPANS UNIT 1" SHEET 1 OF 6.
 SET TOP OF MODULAR EXPANSION JOINT SEAL DEVICE A MINIMUM OF 1/8" AND A MAXIMUM OF 1/4" BELOW THE TOP SLAB.

DECK DRAIN NOTES
 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.
 TOP OF FLOOR DRAIN TO BE SET 3/8" BELOW SURFACE OF SLAB.
 4 - 1/2" 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.
 COUPLING IN DRAIN PIPE WILL BE PERMITTED AS APPROVED BY THE ENGINEER.
 BOLT SIZE TO BE SAME AS DIAPHRAGMS AND CROSSFRAME CONNECTIONS. STAINLESS STEEL WORM DRIVE HOSE CLAMP SHALL BE COMMERCIAL QUALITY.
 THE 6" DIA. PVC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.
 PLATES SHALL CONFORM TO AASHTO M270 GRADE 50W STEEL OR APPROVED EQUAL.

TYPICAL SECTION AT BENT DIAPHRAGM
 (SHOWING MODULAR JOINT DETAILS @ BENT 5, DETAILS @ END BENT 1 SIMILAR)



PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE TYPICAL SECTION

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
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SHEET NO. 506-017
 TOTAL SHEETS 129



10/15/2021

- = SEE "MODULAR EXPANSION JOINT SEAL DETAILS FOR BARRIER RAIL" SHEET
- ▲ = SEE "APPROACH SLAB PLAN AND SECTION" SHEET

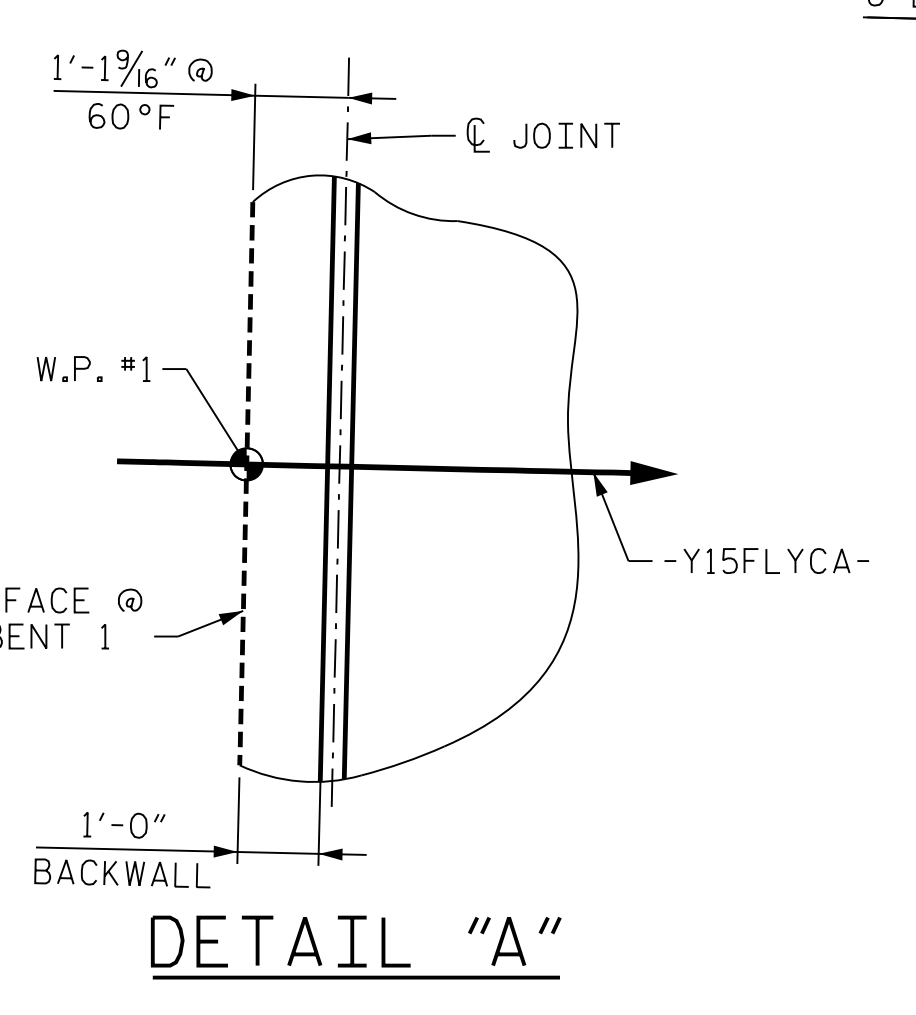
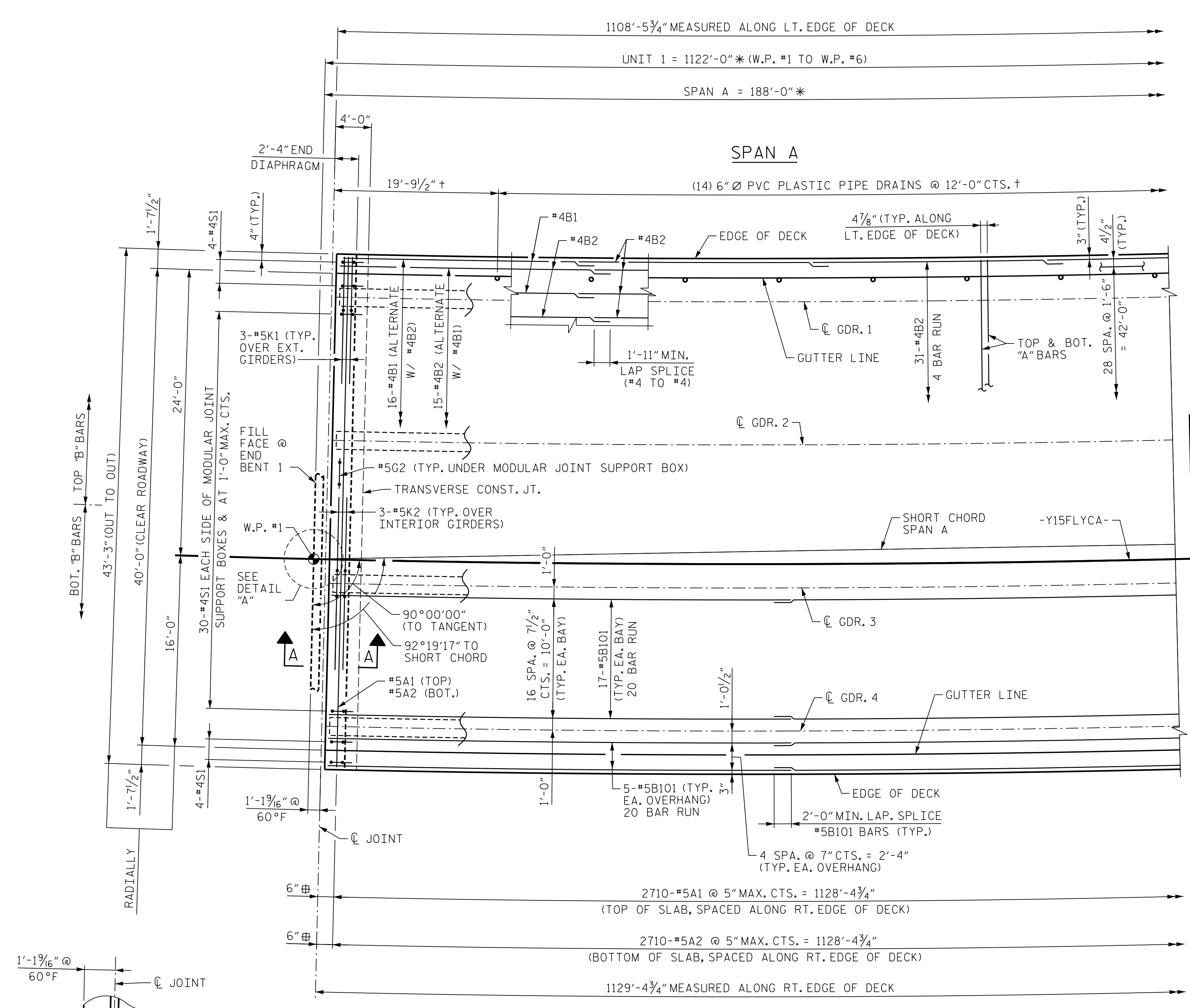


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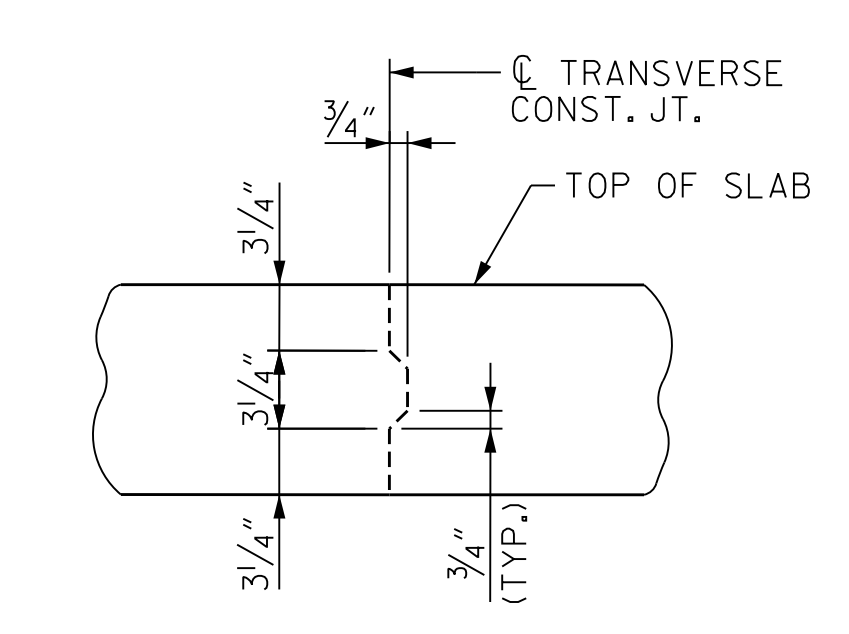
DES BY: <u>G. SCHMITZ</u>	DATE: <u>08/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
DES CHK: <u>D. OLDS</u>	DATE: <u>08/19</u>	CHK BY: <u>M. NEIHEISEL</u>	DATE: <u>01/20</u>

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PARTIAL PLAN OF SPANS - UNIT 1

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-
 † = DIMENSIONS MEASURED ALONG LEFT EDGE OF DECK
 Ⓜ = ADJUST AS REQUIRED TO CLEAR MODULAR EXPANSION JOINT ASSEMBLY



TRANSVERSE CONSTRUCTION JOINT DETAIL
 NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH JOINT.

NOTES

FOR SECTION A-A, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 2 OF 2.

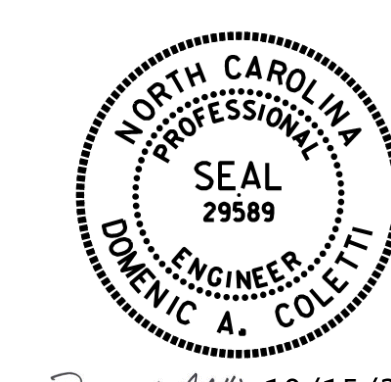
SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.

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

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

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

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 1 OF 6



Dominic A. Coletti 10/15/2021

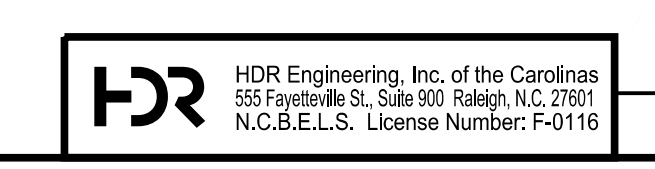
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 1

REVISIONS					
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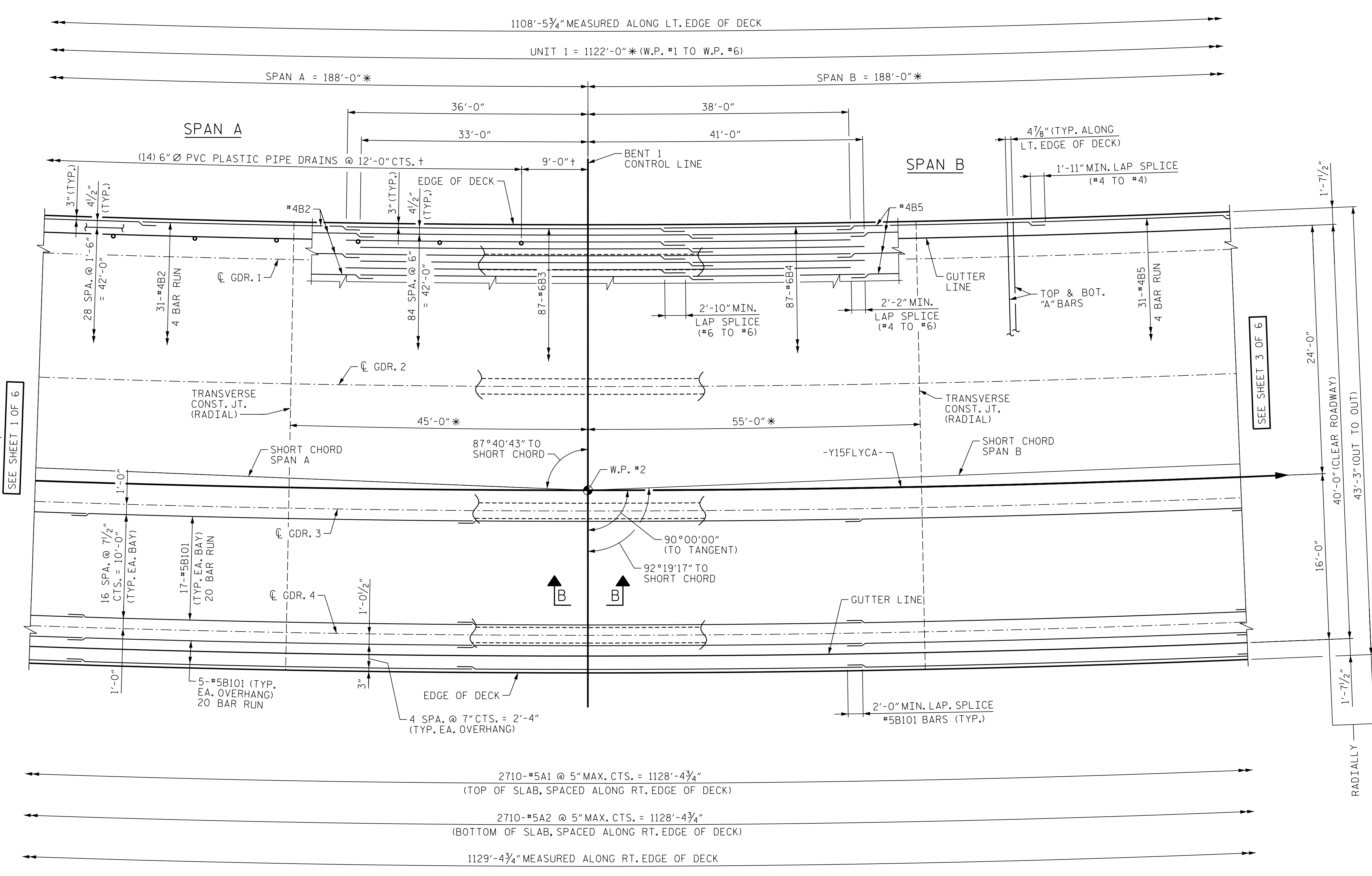
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 TOTAL SHEETS 129

DES BY: <u>G. SCHMITZ</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
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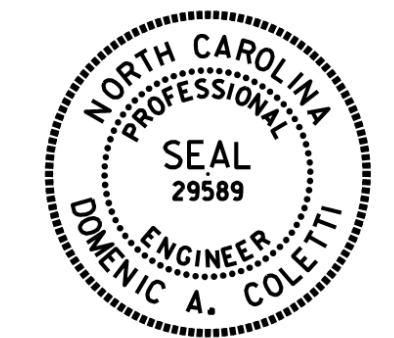


NOTES
 FOR SECTION B-B, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 1 OF 2.
 SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.
 FOR REINFORCING STEEL IN CONCRETE BARRIER RAIL, SEE "SUPERSTRUCTURE CONCRETE BARRIER RAIL" SHEETS.
 #5 "A" BARS ARE TO BE PLACED RADIALLY SPACED AT 5" MAX. CTS. ALONG RIGHT OUTSIDE EDGE OF SUPERSTRUCTURE.
 FOR DECK POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
 FOR TRANSVERSE CONST. JT. DETAIL, SEE SHEET 1 OF 6.

PARTIAL PLAN OF SPANS - UNIT 1

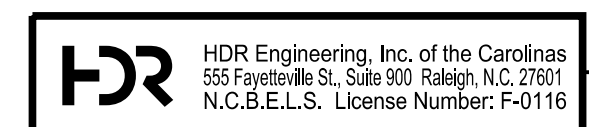
* = DIMENSIONS MEASURED ALONG -Y15FLYCA-
 † = DIMENSIONS MEASURED ALONG LEFT EDGE OF DECK

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 6



Dominic A. Coletti 10/15/2021

DES BY: G. SCHMITZ	DATE: 06/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: D. OLDS	DATE: 06/19	CHK BY: D. OLDS	DATE: 12/19



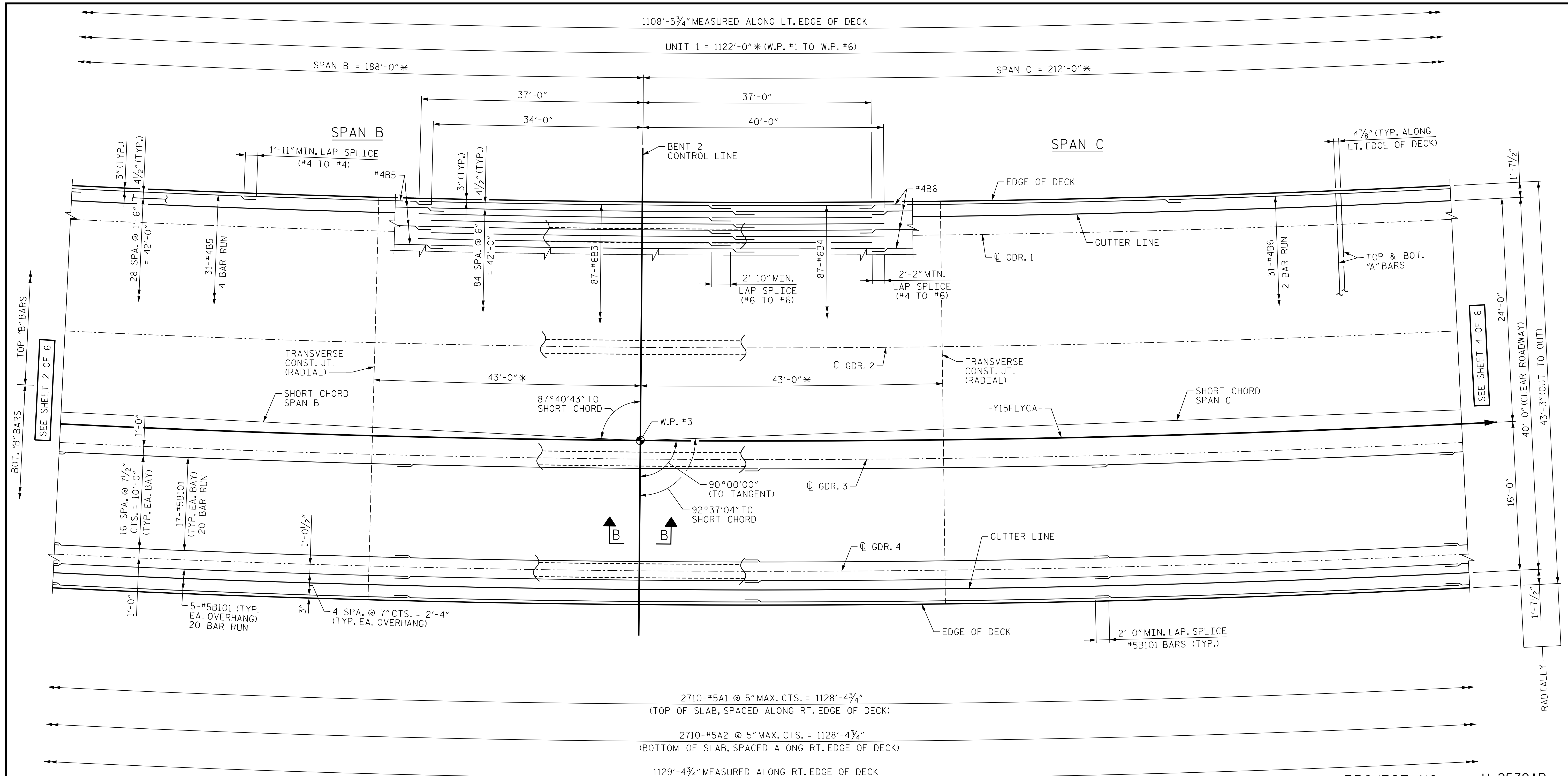
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 1

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
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SHEET NO. 506-019
 TOTAL SHEETS 129



PARTIAL PLAN OF SPANS - UNIT 1

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-

NOTES

FOR SECTION B-B, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 1 OF 2.

SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.

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

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

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

FOR TRANSVERSE CONST. JT. DETAIL, SEE SHEET 1 OF 6.

PROJECT NO. U-2579AB

FORSYTH COUNTY

STATION: 58+33.94 -Y15FLYCA-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPANS
UNIT 1



10/15/2021

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
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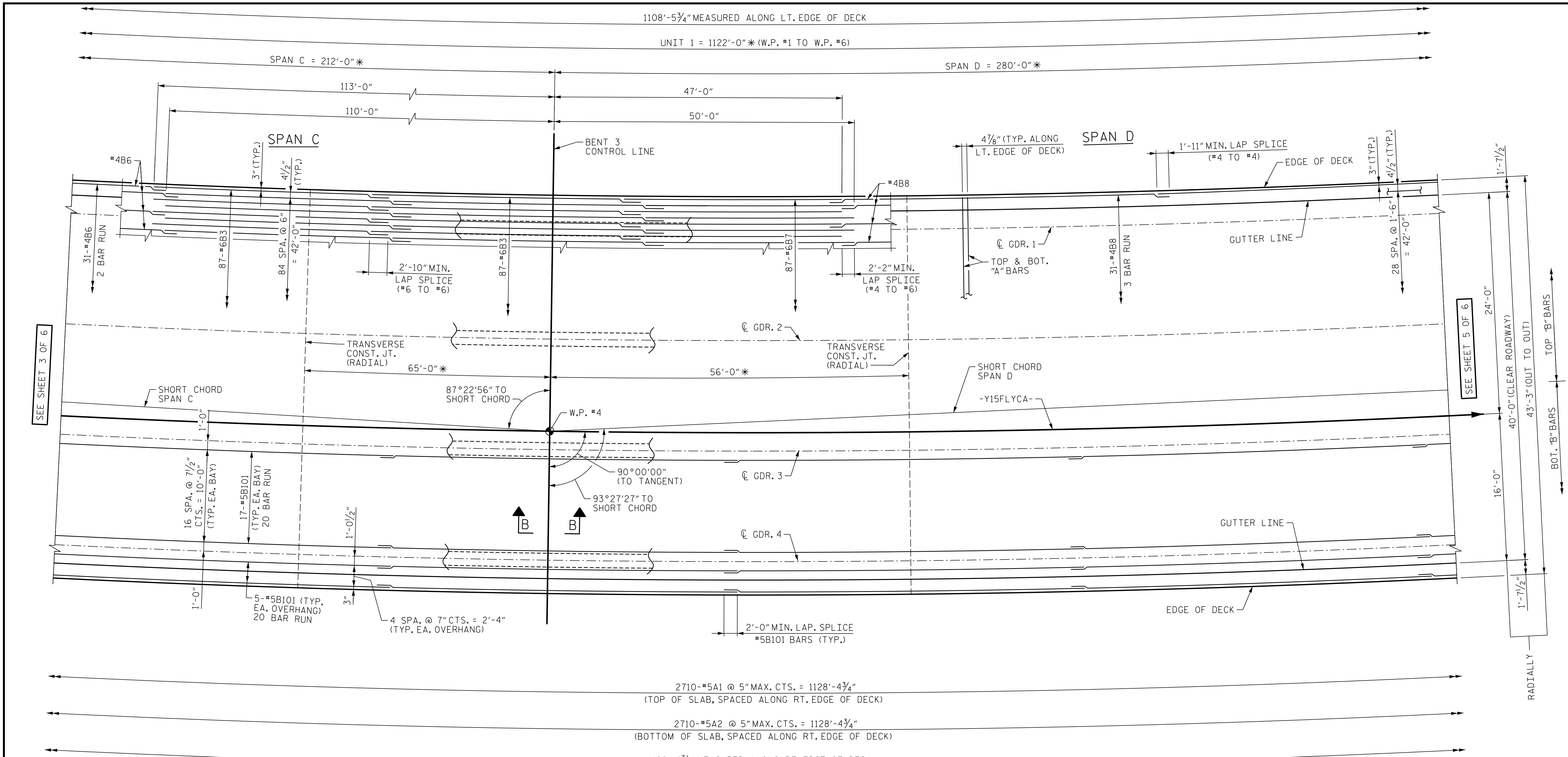
SHEET NO. 506-020
TOTAL SHEETS 129



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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DATE: 10/14/2021
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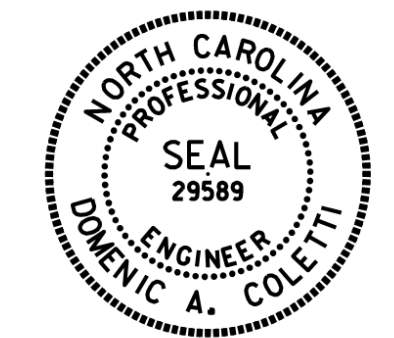


PARTIAL PLAN OF SPANS - UNIT 1

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-

NOTES

- FOR SECTION B-B, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 1 OF 2.
- SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.
- FOR REINFORCING STEEL IN CONCRETE BARRIER RAIL, SEE "SUPERSTRUCTURE CONCRETE BARRIER RAIL" SHEETS.
- #5 "A" BARS ARE TO BE PLACED RADIALLY SPACED AT 5" MAX. CTS. ALONG RIGHT OUTSIDE EDGE OF SUPERSTRUCTURE.
- FOR DECK POURING SEQUENCE AND, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
- FOR TRANSVERSE CONST. JT. DETAIL, SEE SHEET 1 OF 6.



Dominic A. Coletti 10/15/2021

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 4 OF 6

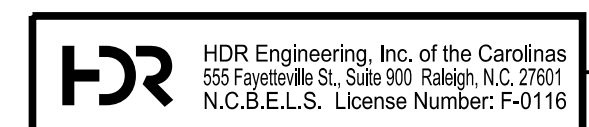
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 1

REVISIONS						SHEET NO. S06-021	
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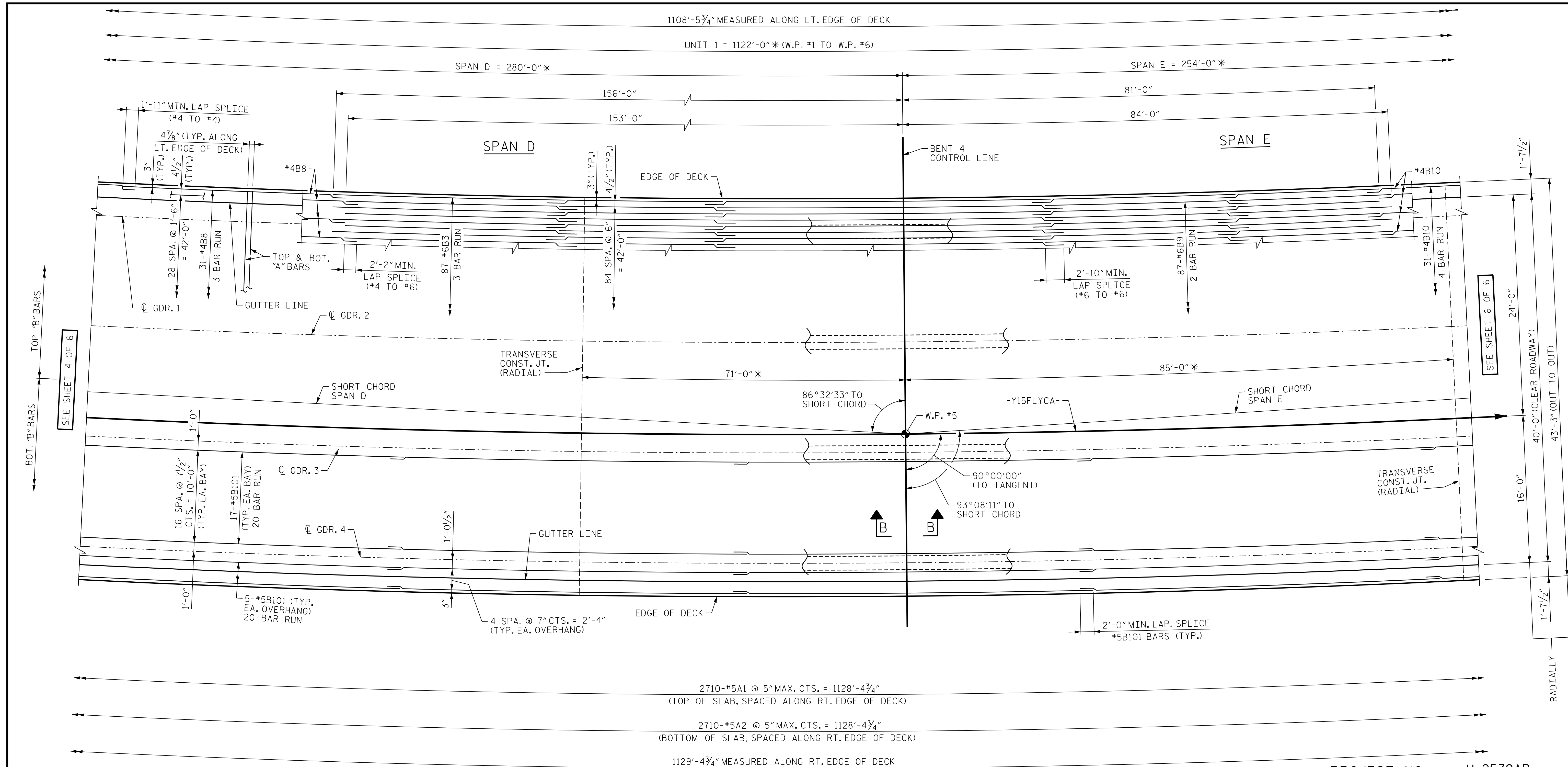
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DES CHK: D. OLDS	DATE: 06/19	CHK BY: D. OLDS	DATE: 12/19



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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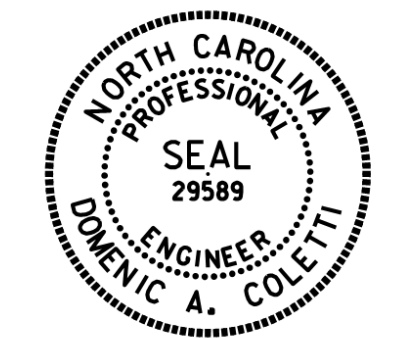


PARTIAL PLAN OF SPANS - UNIT 1

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-

NOTES

- FOR SECTION B-B, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 1 OF 2.
- SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.
- FOR REINFORCING STEEL IN CONCRETE BARRIER RAIL, SEE "SUPERSTRUCTURE CONCRETE BARRIER RAIL" SHEETS.
- #5 "A" BARS ARE TO BE PLACED RADIALLY SPACED AT 5" MAX. CTS. ALONG RIGHT OUTSIDE EDGE OF SUPERSTRUCTURE.
- FOR DECK POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
- FOR TRANSVERSE CONST. JT. DETAIL, SEE SHEET 1 OF 6.



Dominic A. Coletti 10/15/2021

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 1

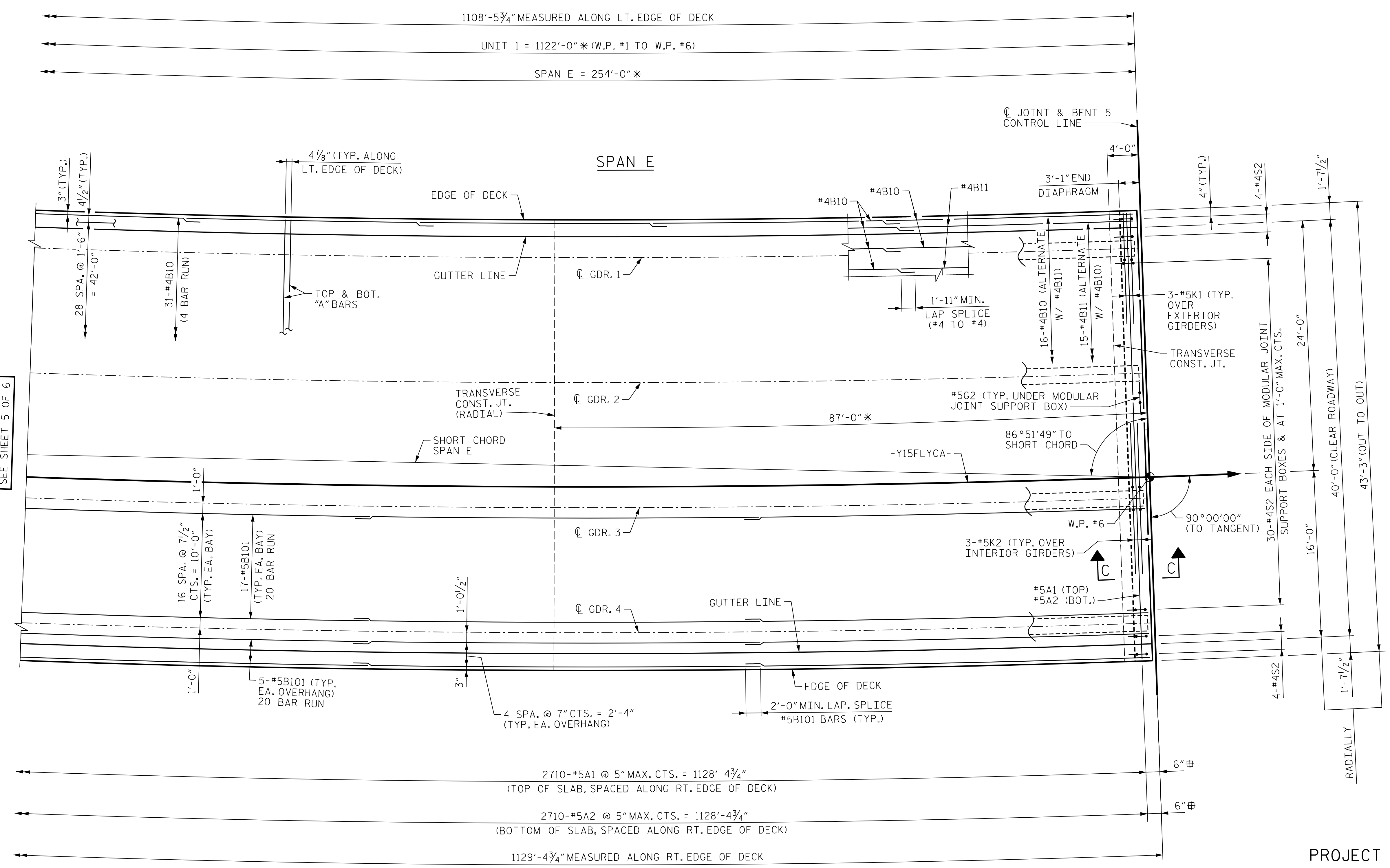
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DES BY: G. SCHMITZ	DATE: 06/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: D. OLDS	DATE: 06/19	CHK BY: D. OLDS	DATE: 12/19

HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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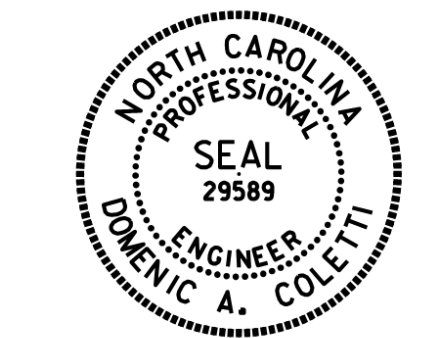


PARTIAL PLAN OF SPANS - UNIT 1

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-
 # = ADJUST AS REQUIRED TO CLEAR MODULAR EXPANSION JOINT ASSEMBLY

NOTES

- FOR SECTION C-C, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 2 OF 2.
- SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.
- FOR REINFORCING STEEL IN CONCRETE BARRIER RAIL, SEE "SUPERSTRUCTURE CONCRETE BARRIER RAIL" SHEETS.
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- FOR DECK POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
- FOR TRANSVERSE CONST. JT. DETAIL, SEE SHEET 1 OF 6.



Dominic A. Coletti 10/15/2021

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 6 OF 6

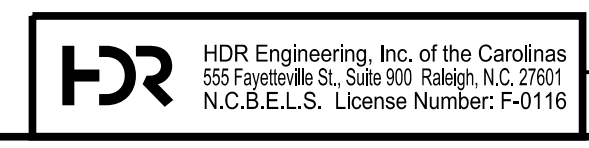
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 1

REVISIONS					
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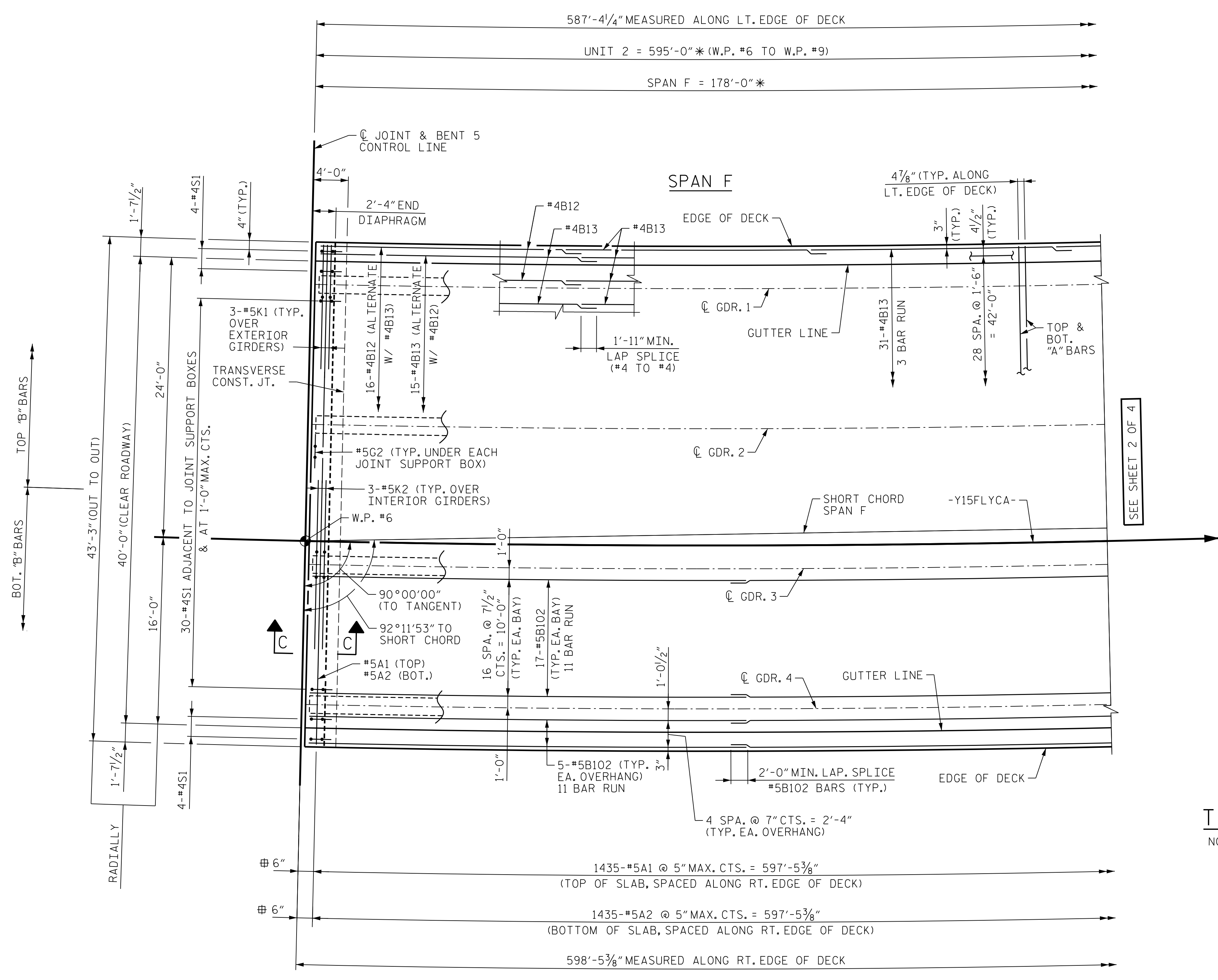
SHEET NO. 506-023
 TOTAL SHEETS 129

DES BY: G. SCHMITZ	DATE: 06/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: D. OLDS	DATE: 06/19	CHK BY: D. OLDS	DATE: 12/19



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

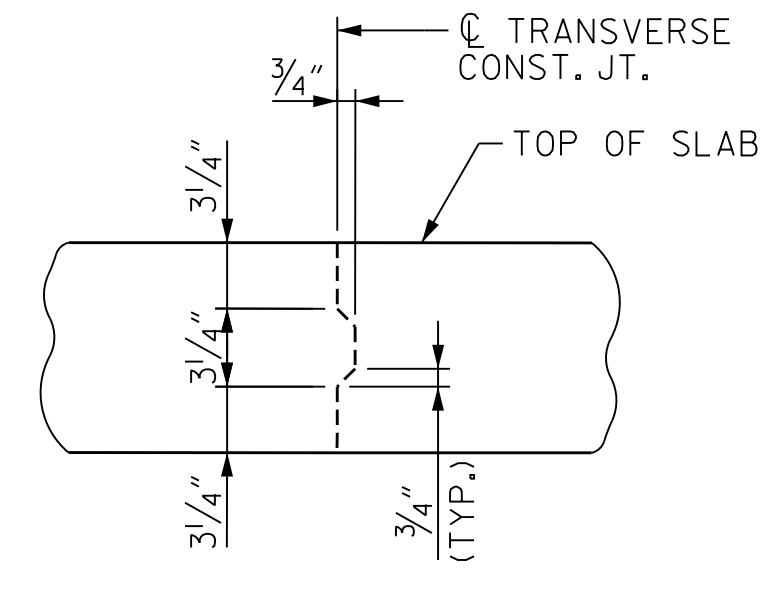
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PARTIAL PLAN OF SPANS - UNIT 2

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-
 ⊕ = ADJUST AS REQUIRED TO CLEAR MODULAR EXPANSION JOINT ASSEMBLY

NOTES
 FOR SECTION C-C, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 2 OF 2.
 SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.
 FOR REINFORCING STEEL IN CONCRETE BARRIER RAIL, SEE "SUPERSTRUCTURE CONCRETE BARRIER RAIL" SHEETS.
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 FOR DECK POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.



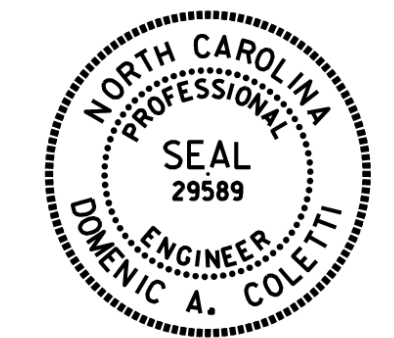
TRANSVERSE CONSTRUCTION JOINT DETAIL

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

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 1 OF 4

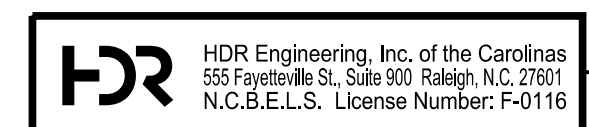
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 2



Dominic A. Coletti 10/15/2021

DES BY: M. NEIHEISEL	DATE: 06/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: G. SCHMITZ	DATE: 06/19	CHK BY: M. NEIHEISEL	DATE: 01/20

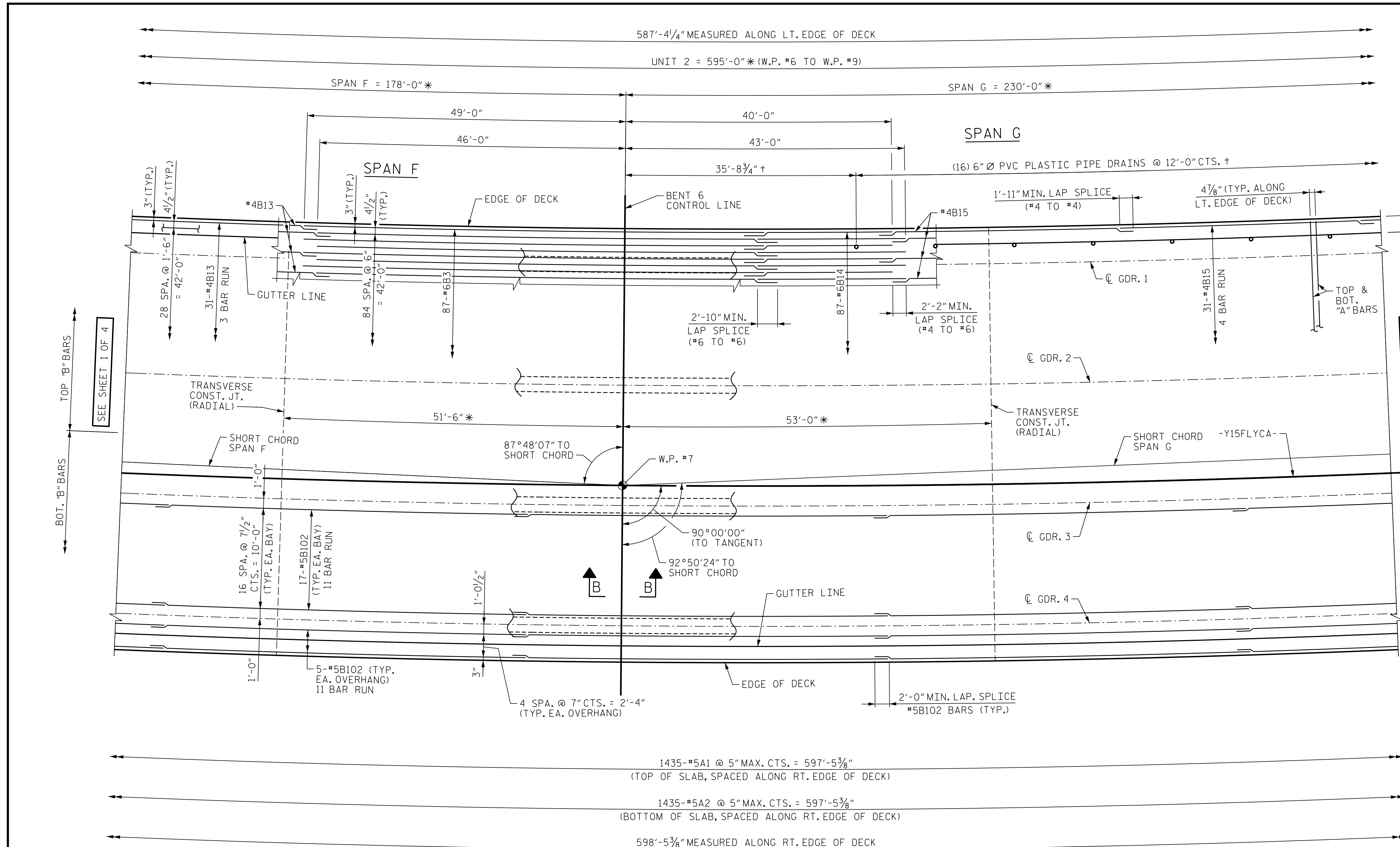


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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SHEET NO. 506-024
TOTAL SHEETS 129

PLOT DRIVER: NCDOT...
 USER: PETERSON...
 DATE: 10/14/2021...
 FILE: ...SUPERS



PARTIAL PLAN OF SPANS - UNIT 2

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-
 † = DIMENSIONS MEASURED ALONG LEFT EDGE OF DECK

NOTES

- FOR SECTION B-B, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 1 OF 2.
- SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.
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- #5 "A" BARS ARE TO BE PLACED RADIALLY SPACED AT 5" MAX. CTS. ALONG RIGHT OUTSIDE EDGE OF SUPERSTRUCTURE.
- FOR DECK POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
- FOR TRANSVERSE CONST. JT. DETAIL, SEE SHEET 1 OF 4.



Dominic A. Coletti 10/15/2021

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 2

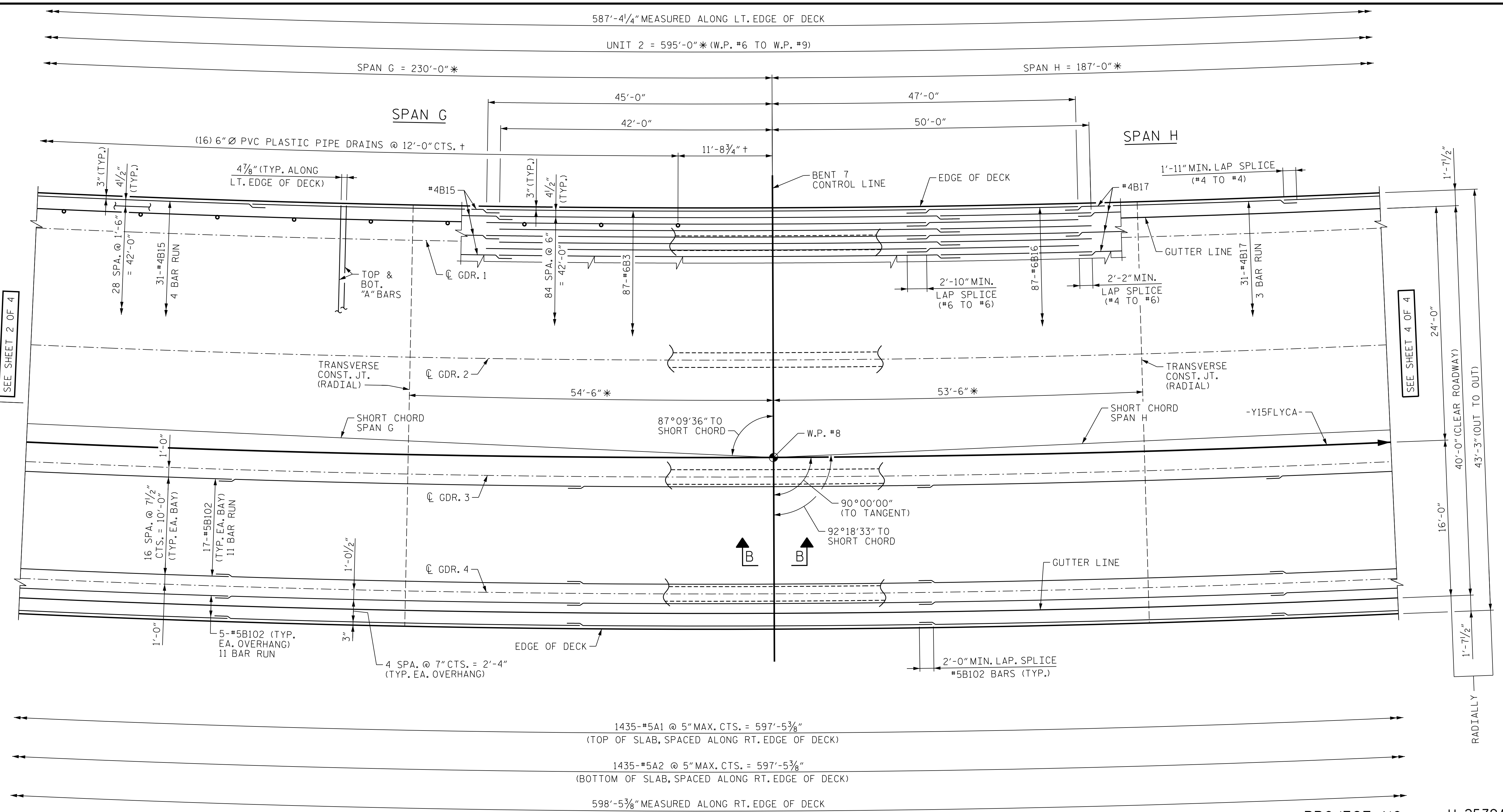
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SHEET NO. 506-025
 TOTAL SHEETS 129

DES BY: M. NEIHEISEL	DATE: 06/19	DWG BY: B. PETERSON	DATE: 06/19
DES CHK: G. SCHMITZ	DATE: 06/19	CHK BY: M. NEIHEISEL	DATE: 01/20



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PARTIAL PLAN OF SPANS - UNIT 2

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-
 † = DIMENSIONS MEASURED ALONG LEFT EDGE OF DECK

NOTES

FOR SECTION B-B, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 1 OF 2.

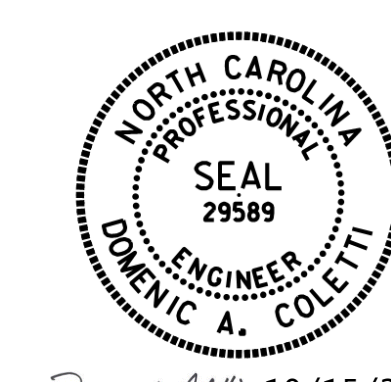
SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.

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

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

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

FOR TRANSVERSE CONST. JT. DETAIL, SEE SHEET 1 OF 4.



PROJECT NO. U-2579AB

FORSYTH COUNTY

STATION: 58+33.94 -Y15FLYCA-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 2

REVISIONS					
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10/15/2021

SEAL 29589

DOMINIC A. COLETTI

DR

HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

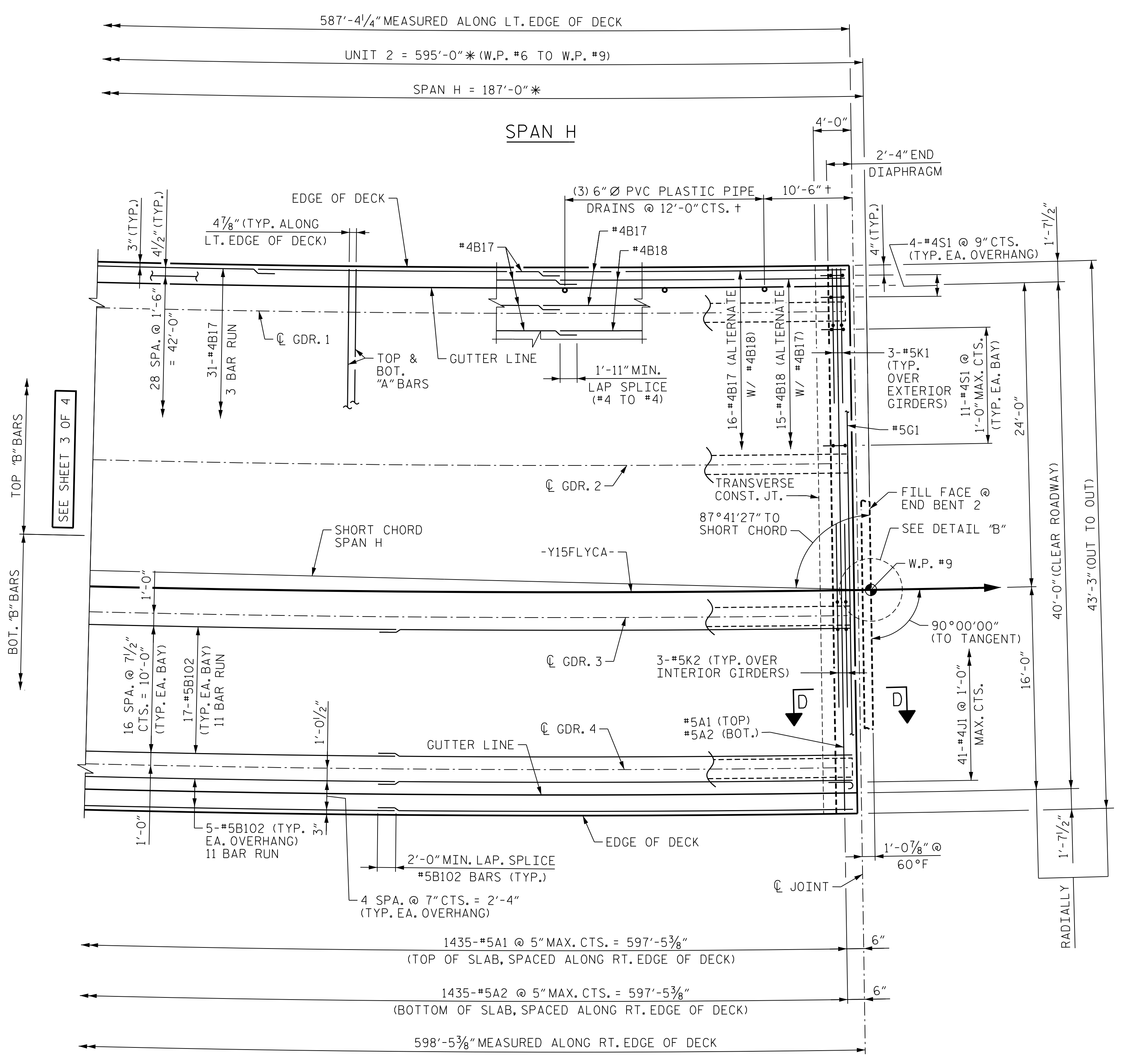
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SHEET NO. 506-026
 TOTAL SHEETS 129

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PLOT DRIVER: NCDOT_PDF_PEN.FBI
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 DATE: 10/14/2021
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PARTIAL PLAN OF SPANS - UNIT 2

* = DIMENSIONS MEASURED ALONG -Y15FLYCA-
 † = DIMENSIONS MEASURED ALONG LEFT EDGE OF DECK

NOTES

FOR SECTION D-D, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 1 OF 2.

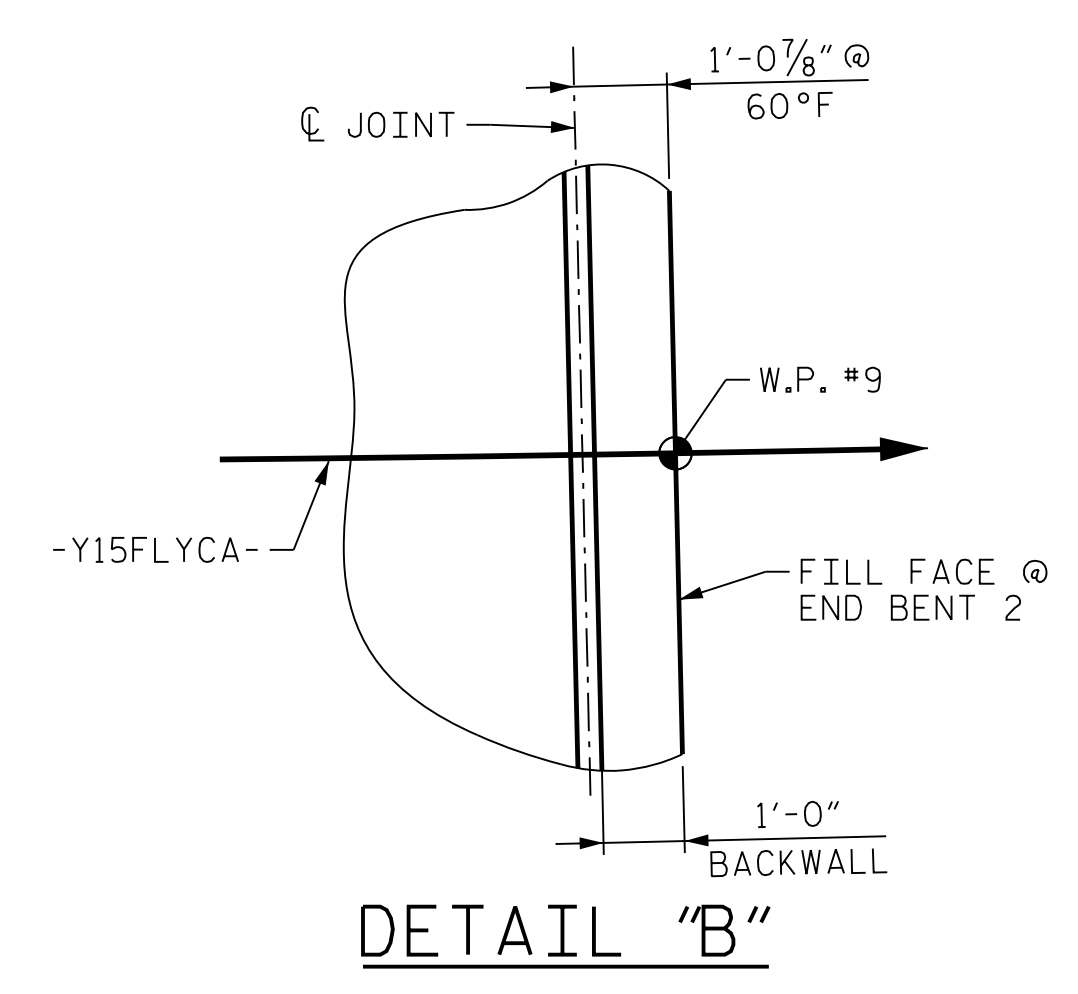
SEE "SUPERSTRUCTURE PLAN OF SPANS ARC OFFSETS" SHEETS FOR OUTSIDE EDGE OF DECK CURVE OFFSETS.

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

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

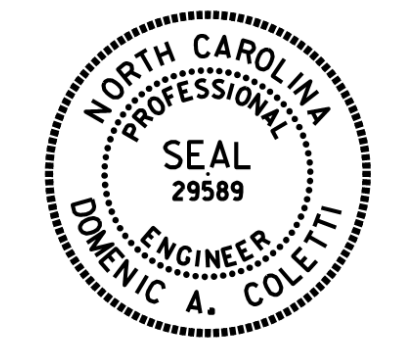
FOR TRANSVERSE CONST. JT. DETAIL, SEE SHEET 1 OF 4.



PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 4 OF 4

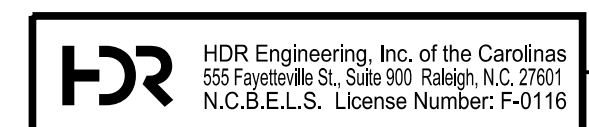
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE PLAN OF SPANS UNIT 2



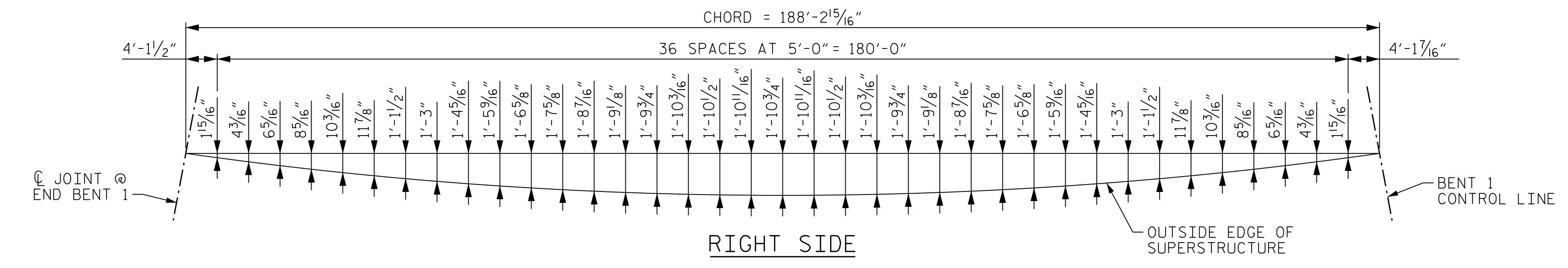
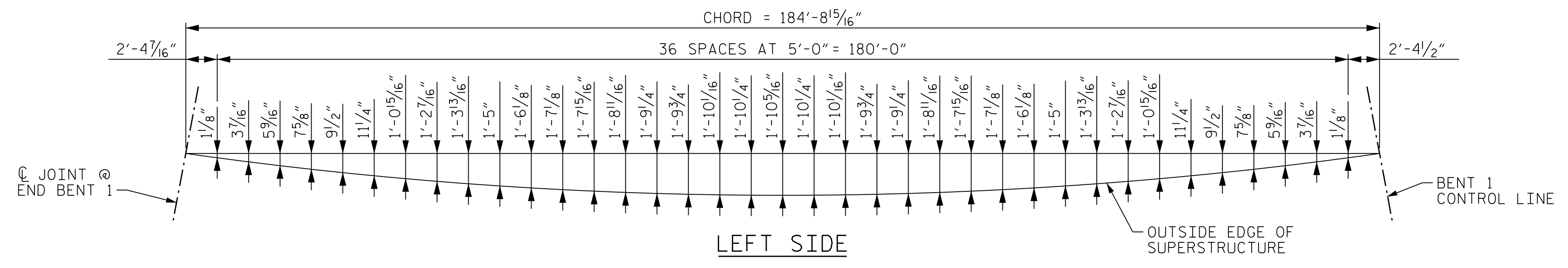
Dominic A. Coletti 10/15/2021

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DES CHK: G. SCHMITZ	DATE: 06/19	CHK BY: M. NEIHEISEL	DATE: 01/20

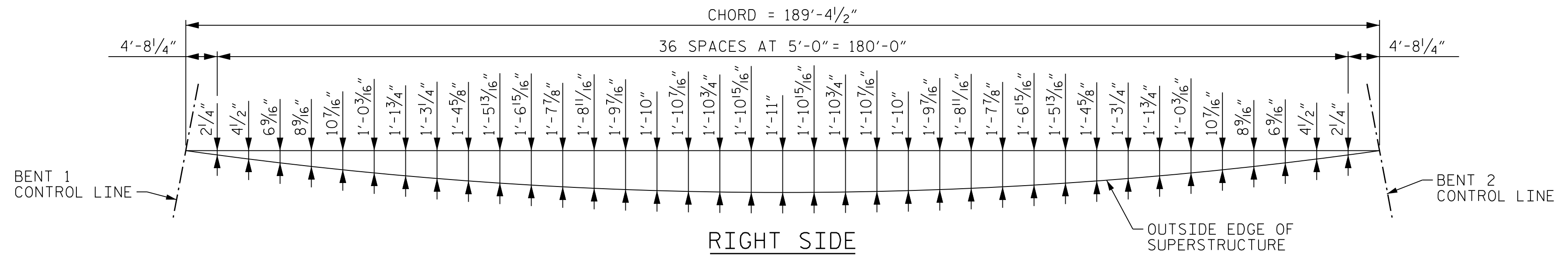
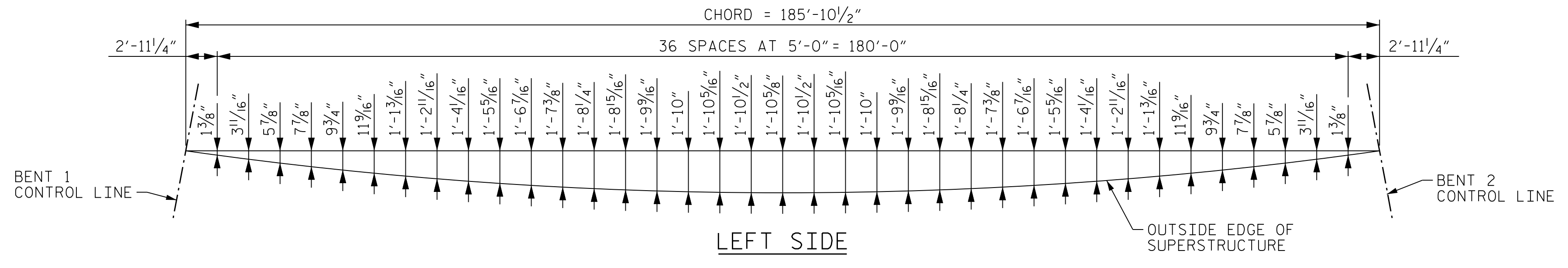


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OUTSIDE EDGE ARC OFFSETS - SPAN A



OUTSIDE EDGE ARC OFFSETS - SPAN B

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF SPANS
 ARC OFFSETS**

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
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2	--	--	4	--	--

SEAL
 29589
 DOMENIC A. COLETTI
 ENGINEER

10/15/2021

SHEET NO. 506-028
 TOTAL SHEETS 129

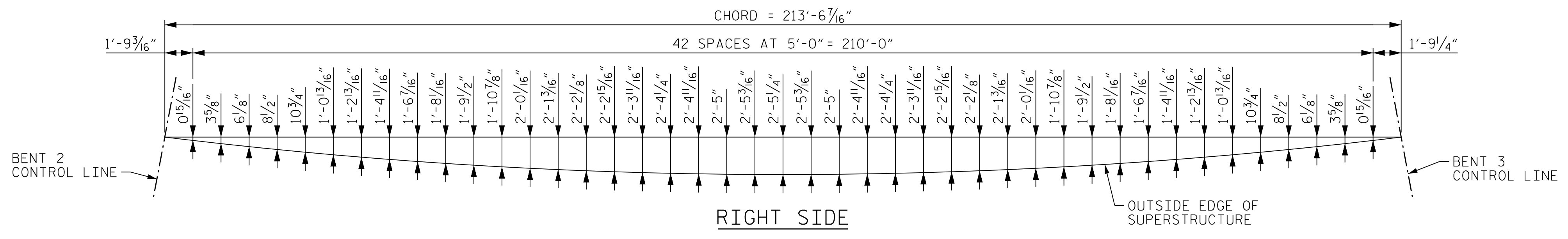
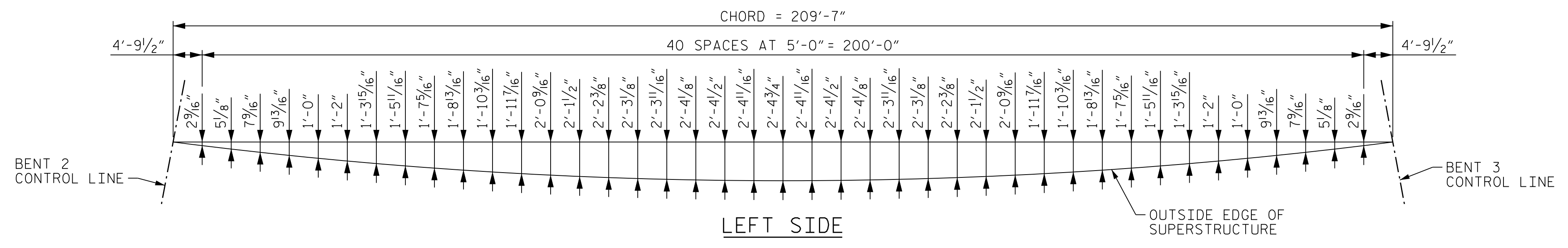
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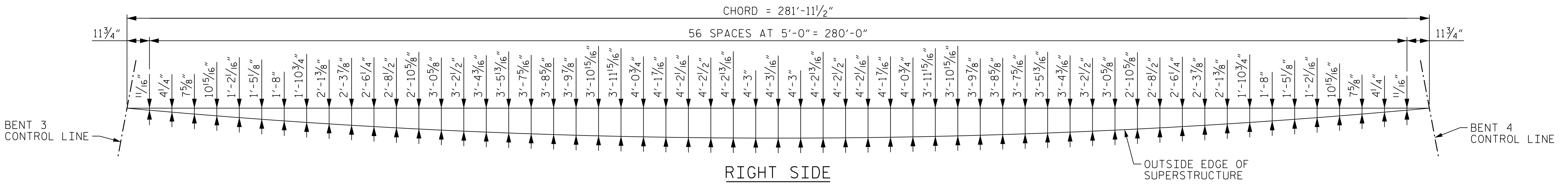
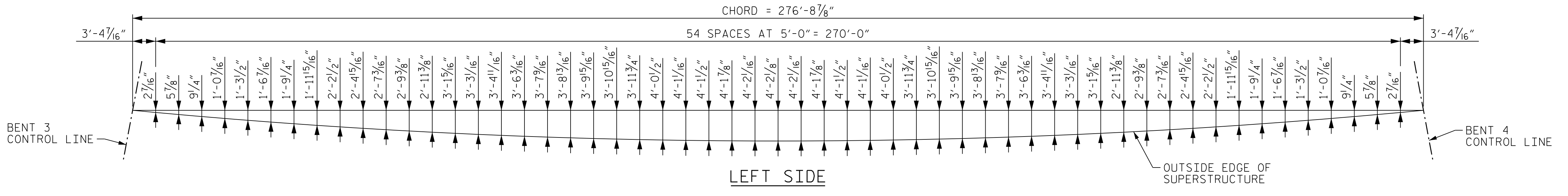


DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

PLOT DRIVER: NCDOT...
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OUTSIDE EDGE ARC OFFSETS - SPAN C



OUTSIDE EDGE ARC OFFSETS - SPAN D

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

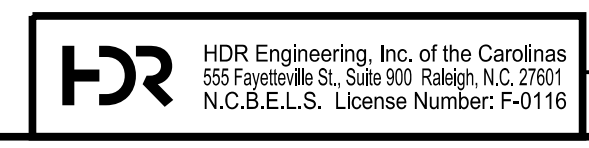
**SUPERSTRUCTURE
 PLAN OF SPANS
 ARC OFFSETS**

REVISIONS					
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SEAL
 29589
 DOMENIC A. COLETTI
 ENGINEER

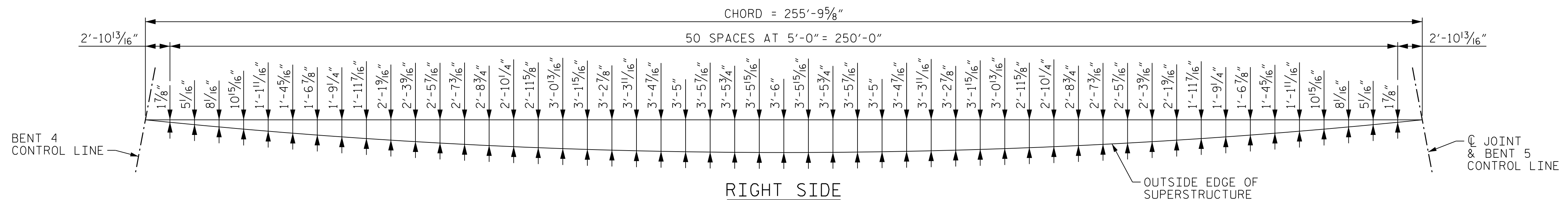
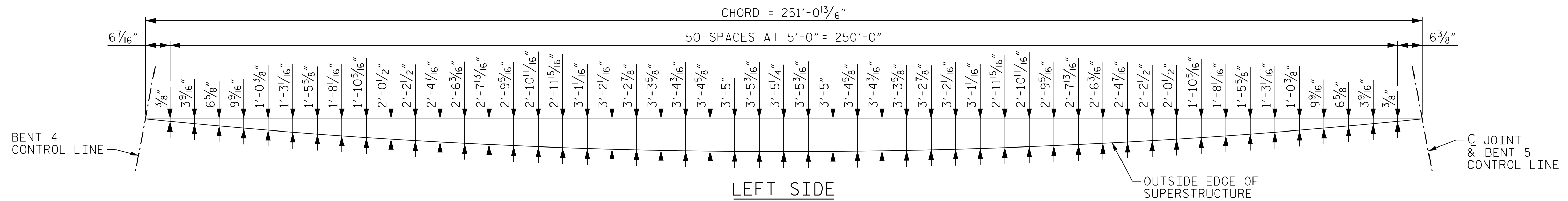
10/15/2021

DES BY: B. PETERSON	DATE: 08/19	DWG BY: B. PETERSON	DATE: 08/19
DES CHK: S. NIFONG	DATE: 08/19	CHK BY: G. SCHMITZ	DATE: 08/19

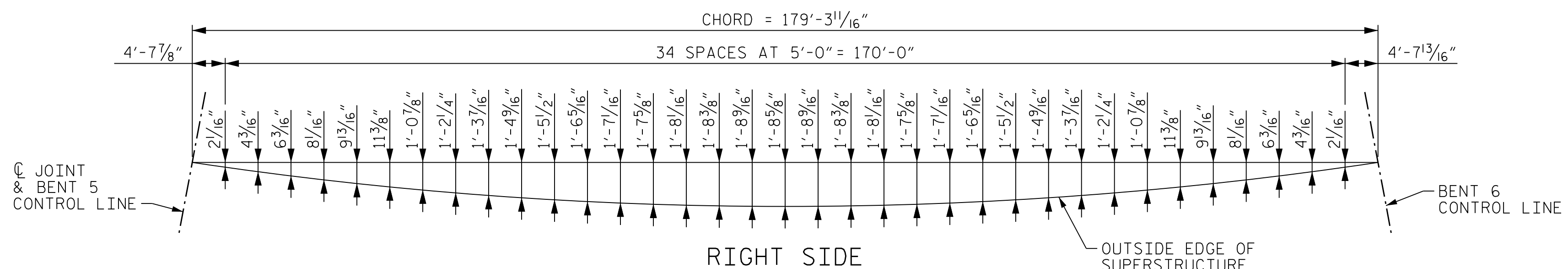
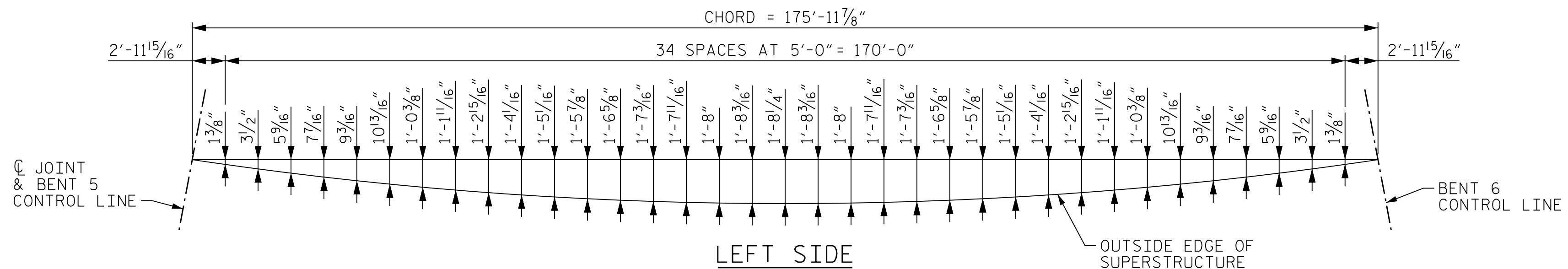


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SHEET NO. 506-029
 TOTAL SHEETS 129



OUTSIDE EDGE ARC OFFSETS - SPAN E



OUTSIDE EDGE ARC OFFSETS - SPAN F

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPANS
 ARC OFFSETS



Dominic A. Coletti 10/15/2021

REVISIONS

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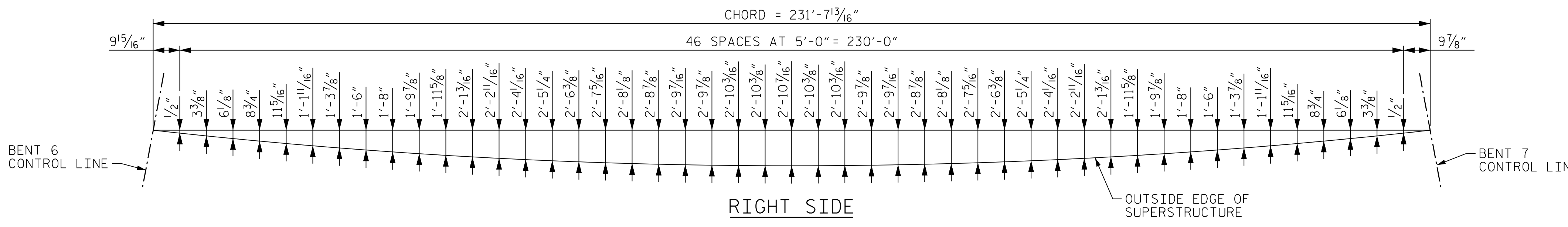
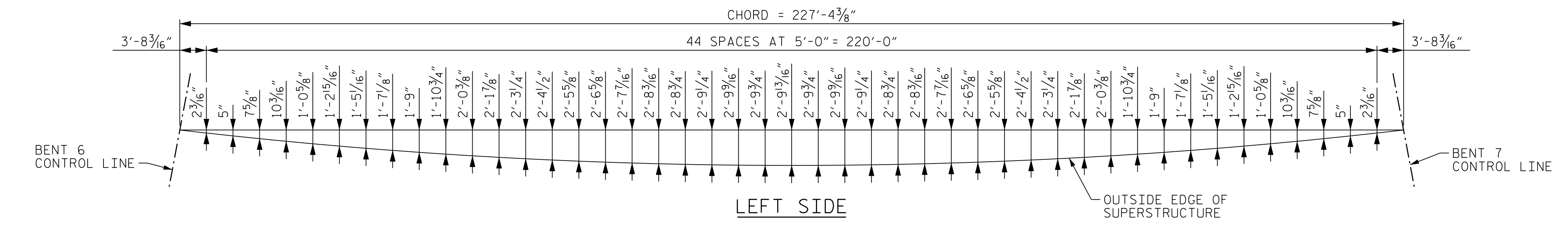
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 TOTAL SHEETS 129



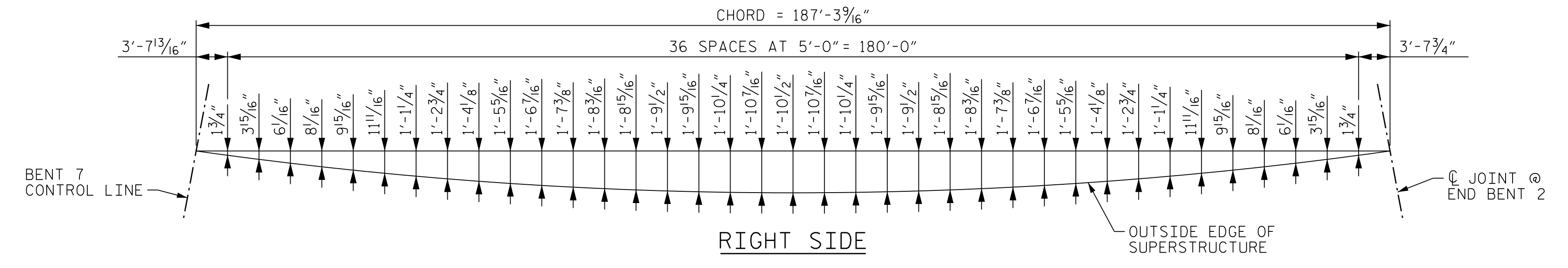
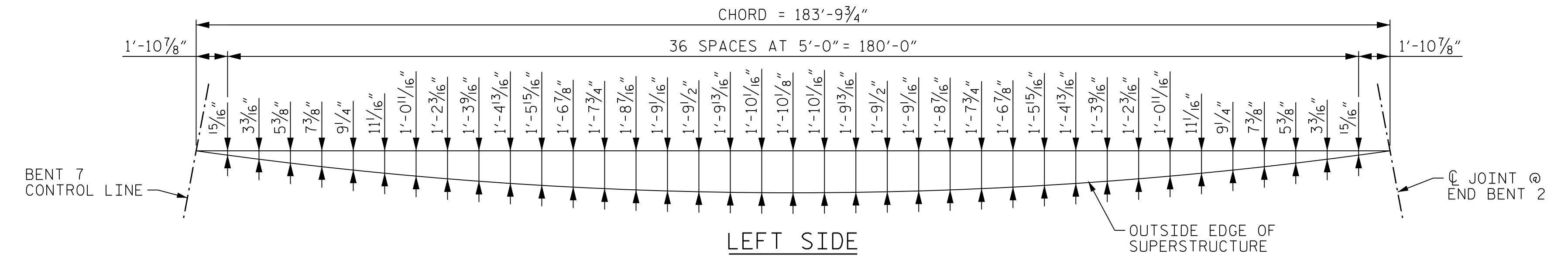
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DES CHK: S. NIFONG	DATE: 08/19	CHK BY: G. SCHMITZ	DATE: 08/19

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OUTSIDE EDGE ARC OFFSETS - SPAN G



OUTSIDE EDGE ARC OFFSETS - SPAN H

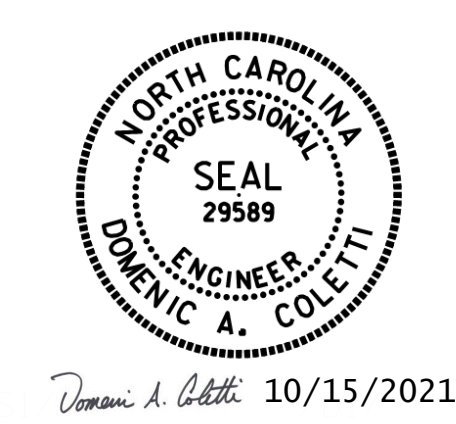
PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF SPANS
 ARC OFFSETS**

REVISIONS					
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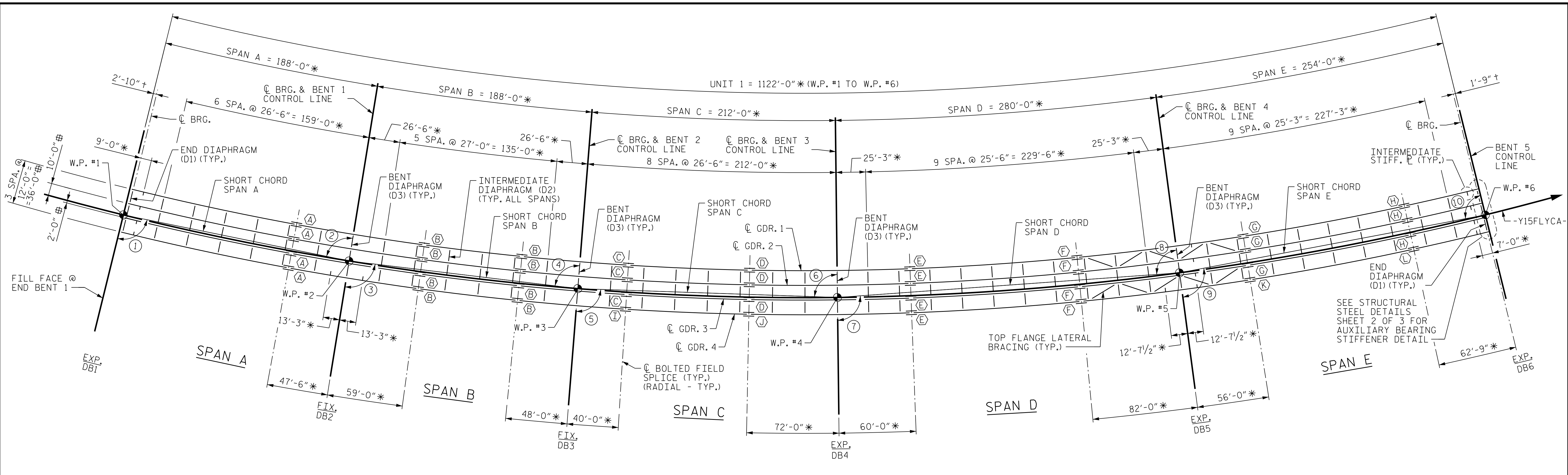
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DES BY: B. PETERSON	DATE: 08/19	DWG BY: B. PETERSON	DATE: 08/19
DES CHK: S. NIFONG	DATE: 08/19	CHK BY: G. SCHMITZ	DATE: 08/19



* = ARC LENGTH ALONG -Y15FLYCA-
 # = RADIAL DIMENSION
 † = MEASURED PERPENDICULAR TO BENT CONTROL LINE OR END BENT FILL FACE
 ⊗ = FIELD SPLICE TYPE

ANGLES TO SHORT CHORD

- ① 92°19'17"
- ② 87°40'43"
- ③ 92°19'17"
- ④ 87°40'43"
- ⑤ 92°37'04"
- ⑥ 87°22'56"
- ⑦ 93°27'27"
- ⑧ 86°32'33"
- ⑨ 93°08'11"
- ⑩ 86°51'49"

FRAMING PLAN - UNIT 1

STRUCTURAL STEEL NOTES

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

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

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

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

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 WELD AND WEB OR FLANGE SHOP SPLICES.

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

TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

ENDS OF GIRDERS SHALL BE PLUMB IN THE FINAL CONDITION.

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

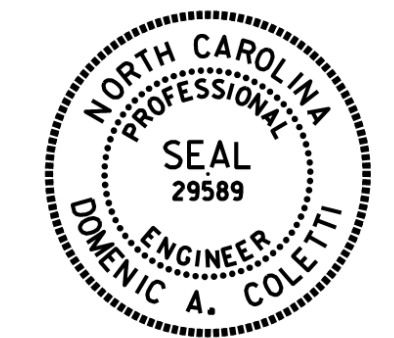
FOR TEMPORARY BENTS, SEE SPECIAL PROVISIONS.

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

FOR FIELD SPLICE TYPES, SEE "SUPERSTRUCTURE BOLTED FIELD SPLICE DETAILS" SHEETS.

FOR DIAPHRAGM TYPES, SEE "SUPERSTRUCTURE STRUCTURAL STEEL DETAILS" SHEETS.

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-

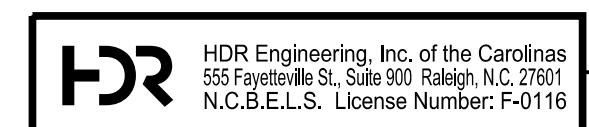


Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE FRAMING PLAN UNIT 1

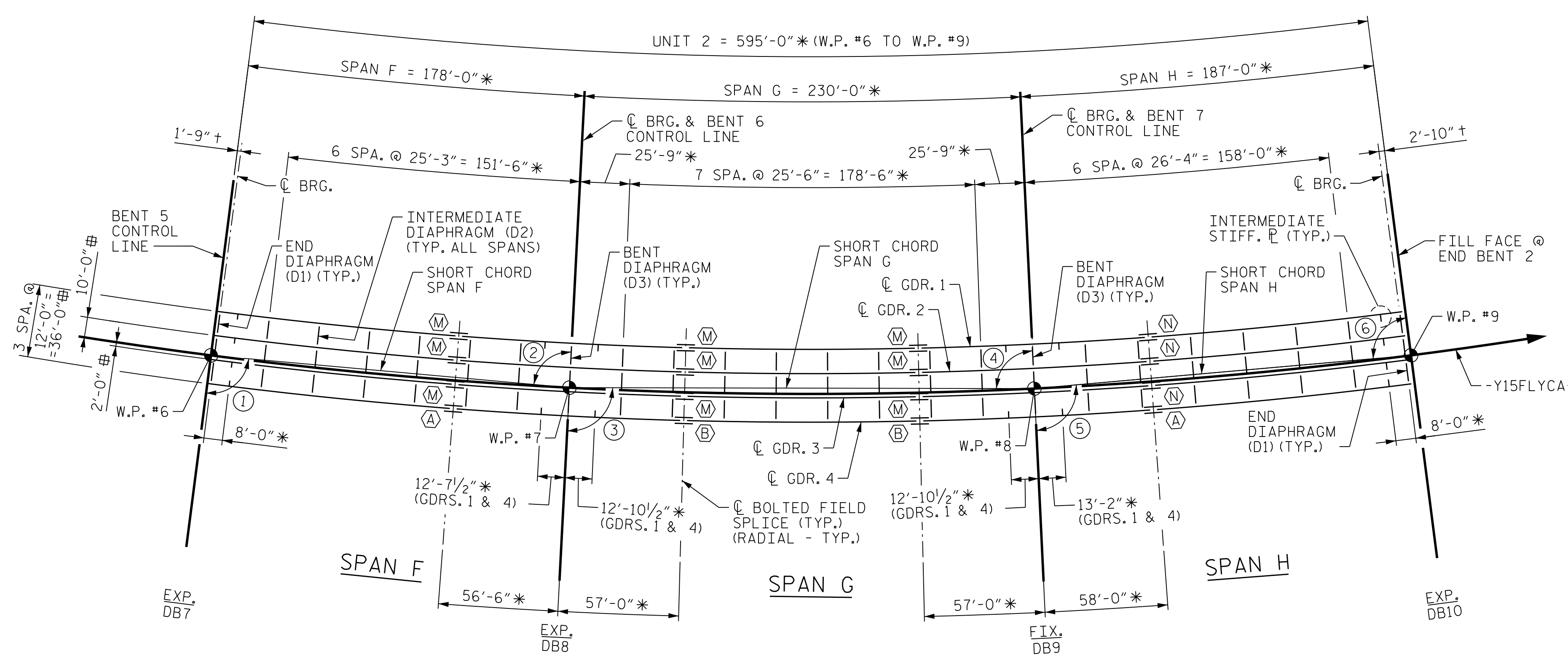
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DES BY: <u>G. SCHMITZ</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
DES CHK: <u>D. OLDS</u>	DATE: <u>08/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>09/19</u>



* = ARC LENGTH ALONG -Y15FLYCA-
 # = RADIAL DIMENSION
 † = MEASURED PERPENDICULAR TO BENT CONTROL LINE OR END BENT FILL FACE
 ⊗ = FIELD SPLICE TYPE

- ANGLES TO SHORT CHORD
- ① 92°11'53"
 - ② 87°48'07"
 - ③ 92°50'24"
 - ④ 87°09'36"
 - ⑤ 92°18'33"
 - ⑥ 87°41'27"

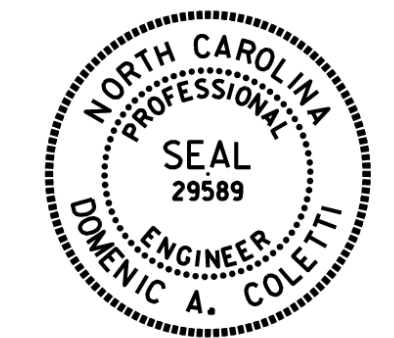
FRAMING PLAN - UNIT 2

NOTE:
 SEE SHEET "SUPERSTRUCTURE FRAMING PLAN, UNIT 1" FOR STRUCTURAL STEEL NOTES

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE FRAMING PLAN
 UNIT 2**



Dominic A. Coletti 10/15/2021

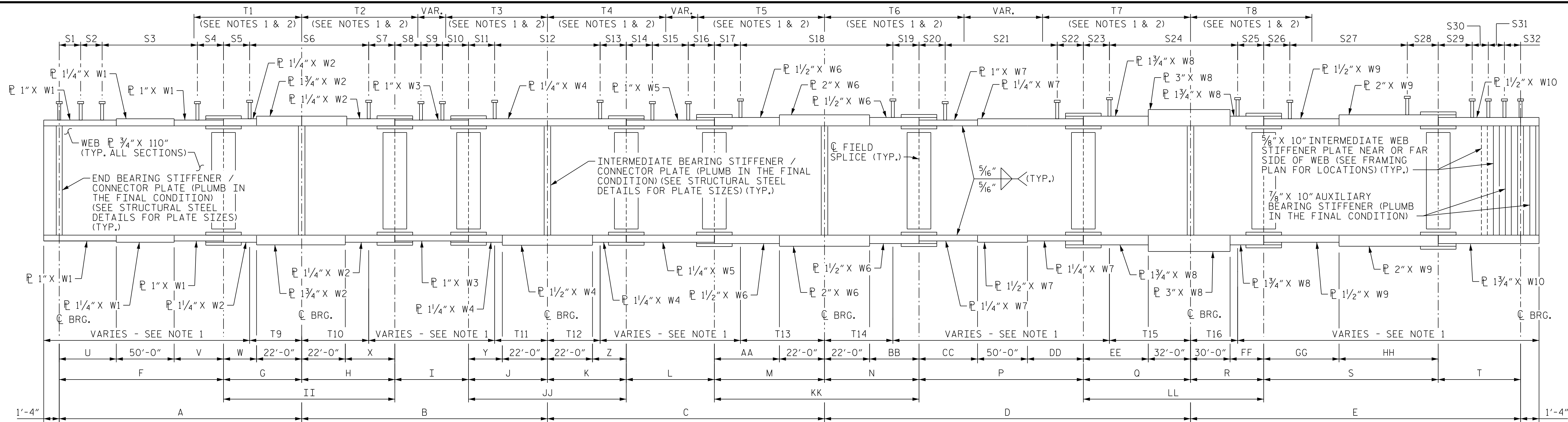
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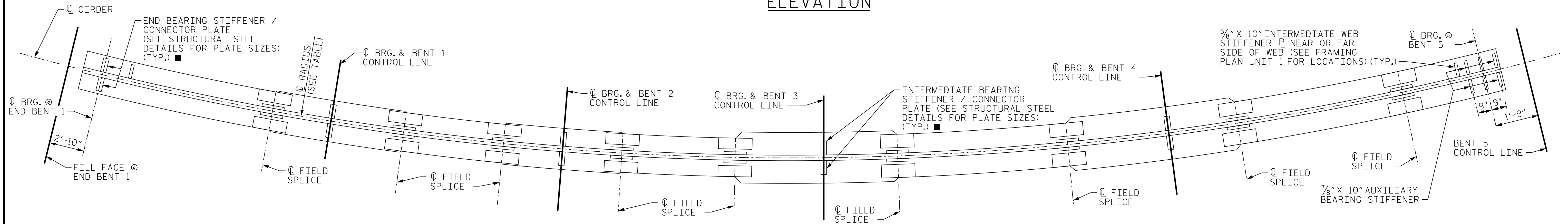
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DES BY: <u>M. NEHEISEL</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
DES CHK: <u>G. SCHMITZ</u>	DATE: <u>08/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>10/19</u>



ELEVATION



PLAN OF BOTTOM FLANGE

■ = SEE TABLE OF BEARING STIFFENERS ON "STRUCTURAL STEEL DETAILS" SHEET 1 OF 3.

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 GIRDER DETAILS
 UNIT 1



Dominic A. Coletti 10/15/2021

NOTES

- SEE "SUPERSTRUCTURE GIRDER DETAILS, UNIT 2" SHEET FOR NOTES.
- FOR DIMENSIONS, SEE SHEET 2 OF 2.
- SEE SHEET "FRAMING PLAN - UNIT 1" FOR FIELD SPLICE TYPES.



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SHEET NO. 506-034
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DES CHK: D. OLDS	DATE: 08/19	CHK BY: G. SCHMITZ	DATE: 09/19

GIRDER DIMENSIONS

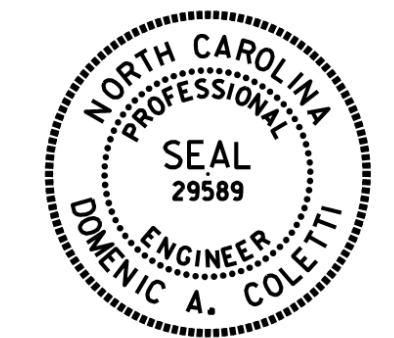
GIRDER	Q RADIUS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1	2298'-0"	183'-4 ⁵ / ₈ "	186'-2 ⁵ / ₈ "	209'-11 ⁷ / ₈ "	277'-4 ¹ / ₈ "	249'-10 ¹ / ₈ "	136'-4"	47'-0 ⁵ / ₈ "	58'-5 ⁵ / ₈ "	80'-2 ³ / ₄ "	47'-6 ³ / ₈ "	39'-7 ⁷ / ₈ "	99'-0 ⁵ / ₈ "	71'-3 ¹ / ₈ "	59'-5 ³ / ₈ "	136'-8 ¹ / ₄ "	81'-2 ¹ / ₁₆ "	55'-5 ⁵ / ₈ "	132'-2 ¹ / ₁₆ "	62'-1 ¹ / ₁₆ "	48'-11 ³ / ₁₆ "	37'-4 ¹ / ₁₆ "	25'-0 ⁵ / ₈ "	36'-5 ⁵ / ₈ "	25'-6 ³ / ₈ "	17'-7 ⁷ / ₈ "	49'-3 ³ / ₈ "
2	2310'-0"	184'-4 ¹ / ₄ "	187'-2 ¹ / ₄ "	211'-1 ¹ / ₁₆ "	278'-9 ¹ / ₂ "	251'-1 ⁷ / ₈ "	137'-0 ¹ / ₁₆ "	47'-3 ³ / ₈ "	58'-8 ⁵ / ₁₆ "	80'-7 ¹ / ₁₆ "	47'-9 ¹ / ₂ "	39'-9 ⁵ / ₁₆ "	99'-6 ⁷ / ₈ "	71'-8 ¹ / ₄ "	59'-8 ⁷ / ₈ "	137'-4 ⁷ / ₈ "	81'-7 ³ / ₄ "	55'-9 ¹ / ₈ "	132'-11 ¹ / ₁₆ "	62'-5 ¹ / ₁₆ "	49'-3 ⁵ / ₁₆ "	37'-8 ³ / ₄ "	25'-3 ³ / ₈ "	36'-8 ⁵ / ₁₆ "	25'-9 ¹ / ₂ "	17'-9 ⁵ / ₁₆ "	49'-8 ¹ / ₄ "
3	2322'-0"	185'-3 ⁵ / ₁₆ "	188'-1 ⁵ / ₁₆ "	212'-2 ³ / ₁₆ "	280'-2 ⁷ / ₈ "	252'-5 ⁵ / ₈ "	137'-9 ⁷ / ₁₆ "	47'-6 ¹ / ₂ "	59'-0 ⁵ / ₈ "	81'-0 ³ / ₁₆ "	48'-0 ¹ / ₂ "	40'-0 ⁷ / ₁₆ "	100'-1"	72'-0 ³ / ₄ "	60'-0 ⁵ / ₈ "	138'-1 ³ / ₈ "	82'-0 ⁷ / ₈ "	56'-0 ³ / ₁₆ "	133'-7 ³ / ₈ "	62'-9 ¹ / ₁₆ "	49'-8 ³ / ₁₆ "	38'-0 ⁵ / ₈ "	25'-6 ¹ / ₂ "	37'-0 ⁵ / ₈ "	26'-0 ¹ / ₂ "	18'-0 ⁷ / ₁₆ "	50'-0 ³ / ₄ "
4	2334'-0"	186'-3 ⁵ / ₈ "	189'-1 ⁵ / ₈ "	213'-3 ³ / ₈ "	281'-8 ¹ / ₄ "	253'-9 ³ / ₈ "	138'-6 ³ / ₁₆ "	47'-9 ⁷ / ₁₆ "	59'-4 ¹ / ₄ "	81'-5 ⁷ / ₈ "	48'-3 ¹ / ₂ "	40'-2 ⁷ / ₈ "	100'-7 ⁵ / ₁₆ "	72'-5 ³ / ₁₆ "	60'-4 ³ / ₈ "	138'-9 ⁵ / ₁₆ "	82'-5 ¹ / ₁₆ "	56'-4 ¹ / ₁₆ "	134'-3 ⁵ / ₈ "	63'-1 ¹ / ₁₆ "	50'-2"	38'-4 ³ / ₁₆ "	25'-9 ⁷ / ₁₆ "	37'-4 ¹ / ₄ "	26'-3 ¹ / ₂ "	18'-2 ⁷ / ₈ "	50'-5 ³ / ₁₆ "

STUD SPACING DIMENSIONS																								
GIRDER	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20				
1	13 SPA. @ 1'-3"	1'-4"	70 SPA. @ 1'-8"	2'-1"	2'-5 ⁵ / ₈ "	67 SPA. @ 1'-6"	2'-5 ⁵ / ₈ "	2'-7 ³ / ₈ "	50 SPA. @ 1'-6"	2'-7 ³ / ₈ "	2'-4"	60 SPA. @ 1'-4 ¹ / ₂ "	2'-4"	2'-0 ⁵ / ₈ "	57 SPA. @ 1'-8"	2'-0 ⁵ / ₈ "	2'-0 ¹ / ₂ "	76 SPA. @ 1'-8"	2'-0 ¹ / ₂ "	2'-6 ¹ / ₈ "				
2	16 SPA. @ 1'-3"	0'-11"	76 SPA. @ 1'-6"	2'-1 ³ / ₄ "	2'-3 ¹ / ₄ "	87 SPA. @ 1'-2"	2'-3 ¹ / ₄ "	2'-3 ³ / ₈ "	57 SPA. @ 1'-4"	2'-3 ³ / ₈ "	2'-3 ³ / ₄ "	83 SPA. @ 1'-0"	2'-3 ³ / ₄ "	2'-5 ⁷ / ₈ "	71 SPA. @ 1'-4"	2'-5 ⁷ / ₈ "	1'-11 ³ / ₁₆ "	102 SPA. @ 1'-3"	1'-11 ³ / ₁₆ "	2'-0 ⁷ / ₈ "				
3	16 SPA. @ 1'-3"	0'-11"	76 SPA. @ 1'-6"	2'-10 ⁷ / ₁₆ "	2'-6 ³ / ₁₆ "	87 SPA. @ 1'-2"	2'-6 ³ / ₁₆ "	2'-6 ¹ / ₁₆ "	57 SPA. @ 1'-4"	2'-6 ¹ / ₁₆ "	2'-6 ¹ / ₁₆ "	83 SPA. @ 1'-0"	2'-6 ¹ / ₁₆ "	2'-8 ¹ / ₂ "	71 SPA. @ 1'-4"	2'-8 ¹ / ₂ "	2'-3 ¹ / ₁₆ "	102 SPA. @ 1'-3"	2'-3 ¹ / ₁₆ "	2'-4 ¹ / ₁₆ "				
4	16 SPA. @ 1'-3"	1'-4"	69 SPA. @ 1'-8"	2'-2 ³ / ₁₆ "	2'-6 ⁷ / ₈ "	68 SPA. @ 1'-6"	2'-6 ⁷ / ₈ "	2'-2 ⁵ / ₁₆ "	44 SPA. @ 1'-9"	2'-2 ⁵ / ₁₆ "	2'-4 ¹ / ₁₆ "	67 SPA. @ 1'-3"	2'-4 ¹ / ₁₆ "	2'-0 ¹ / ₈ "	61 SPA. @ 1'-7"	2'-0 ¹ / ₈ "	2'-2 ³ / ₄ "	77 SPA. @ 1'-8"	2'-2 ³ / ₄ "	2'-9"				

LIMITS OF TENSION FLANGES FOR CHARPY V-NOTCH TESTS																
GIRDER	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16
1	60'-0"	186'-2 ⁵ / ₈ "	0'-0"	62'-0"	100'-0"	75'-0"	100'-0"	92'-0"	32'-0"	36'-0"	26'-0"	26'-0"	43'-0"	42'-0"	57'-0"	55'-0"
2	55'-0"	75'-0"	66'-0"	55'-0"	90'-0"	75'-0"	96'-0"	85'-0"	32'-0"	39'-0"	26'-0"	28'-0"	43'-0"	44'-0"	57'-0"	55'-0"
3	56'-0"	82'-0"	72'-0"	57'-0"	96'-0"	71'-0"	102'-0"	87'-0"	32'-0"	40'-0"	26'-0"	28'-0"	43'-0"	44'-0"	62'-0"	55'-0"
4	59'-0"	189'-1 ⁵ / ₈ "	0'-0"	63'-0"	106'-0"	75'-0"	110'-0"	92'-0"	32'-0"	40'-0"	26'-0"	26'-0"	43'-0"	43'-0"	62'-0"	55'-0"

GIRDER FLANGE WIDTHS											
GIRDER	FLANGE	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10
1, 2 & 3	TOP	22"	22"	20"	22"	20"	30"	24"	30"	24"	22"
	BOTTOM	24"	24"	24"	24"	24"	34"	26"	34"	28"	28"
4	TOP	22"	22"	20"	22"	20"	32"	24"	36"	26"	24"
	BOTTOM	24"	28"	24"	28"	26"	36"	26"	40"	32"	30"

NOTE
SEE "SUPERSTRUCTURE GIRDER DETAILS, UNIT 2" SHEET FOR NOTES.



Dominic A. Coletti 10/15/2021

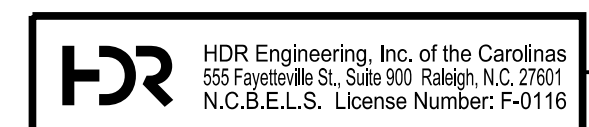
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FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE GIRDER DETAILS
 UNIT 1**

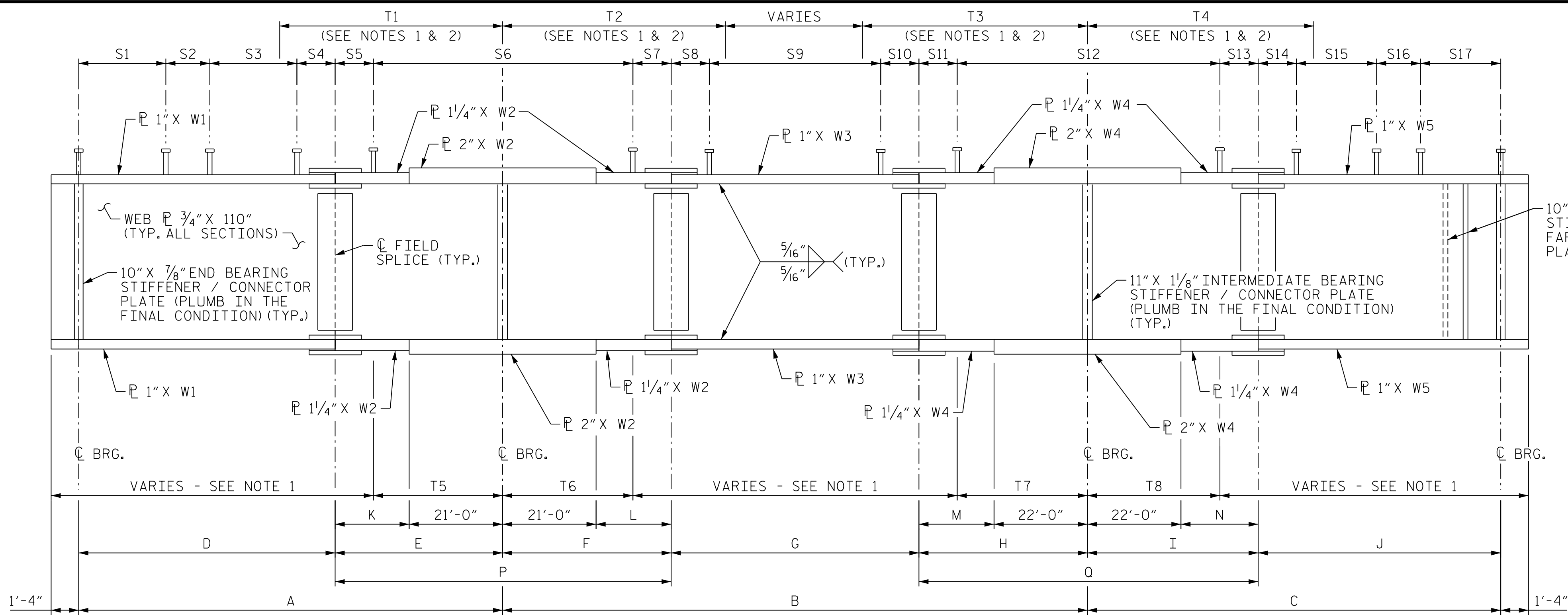
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DES BY: <u>G. SCHMITZ</u>	DATE: <u>07/19</u>	DWG BY: <u>T. SAS</u>	DATE: <u>08/19</u>
DES CHK: <u>D. OLDS</u>	DATE: <u>08/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>09/19</u>

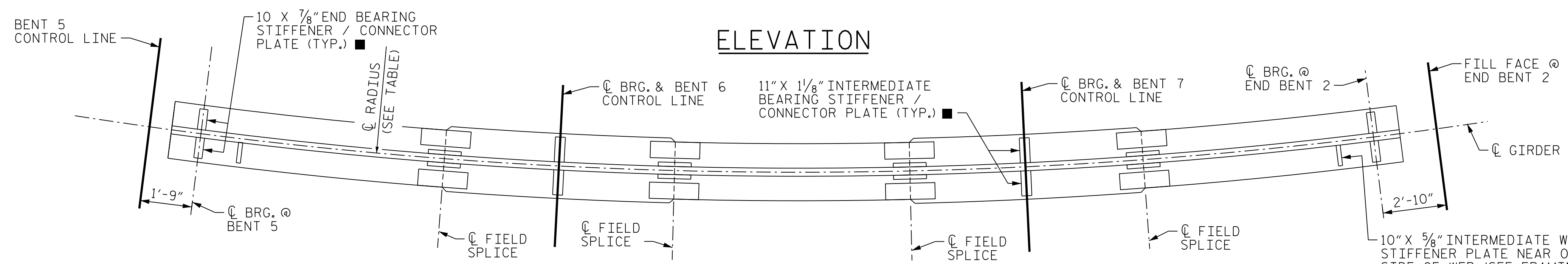


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- NOTES**
- CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM FLANGE PLATES WHICH FALL WITHIN THESE LIMITS, ALL WEB PLATES AND ALL SPLICE PLATES. IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TESTS, SEE ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.
 - NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.
 - DIMENSIONS ARE HORIZONTAL ARC DIMENSIONS ALONG THE C OF GIRDER. NO CORRECTIONS HAVE BEEN MADE TO ADJUST FOR THE DISTANCE ALONG THE GRADE.
 - FOR SHEAR CONNECTOR TRANSVERSE SPACING, SEE "STRUCTURAL STEEL DETAILS" SHEET.
 - FOR CHARPY V-NOTCH TEST, SEE SPECIAL PROVISIONS.
 - SEE SHEET "FRAMING PLAN - UNIT 2" FOR FIELD SPLICE TYPES.



GIRDER	FLANGE	W1	W2	W3	W4	W5
1, 2 & 3	TOP	20"	20"	20"	22"	22"
	BOTTOM	22"	24"	22"	26"	22"
4	TOP	22"	22"	20"	24"	22"
	BOTTOM	24"	28"	24"	30"	24"

■ = SEE TABLE OF BEARING STIFFENERS ON "STRUCTURAL STEEL DETAILS" SHEET 1 OF 3.

PLAN OF BOTTOM FLANGE

GIRDER	C RADIUS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q
1	2298'-0"	174'-6 ³ / ₄ "	227'-9 ³ / ₁₆ "	182'-4 ³ / ₄ "	118'-7 ³ / ₁₆ "	55'-11 ⁹ / ₁₆ "	56'-5 ¹ / ₂ "	114'-10 ³ / ₁₆ "	56'-5 ¹ / ₂ "	57'-5 ³ / ₈ "	124'-11 ³ / ₈ "	34'-11 ⁹ / ₁₆ "	35'-5 ¹ / ₂ "	34'-5 ¹ / ₂ "	35'-5 ³ / ₈ "	112'-5 ¹ / ₁₆ "	113'-10 ⁷ / ₈ "
2	2310'-0"	175'-5 ¹³ / ₁₆ "	229'-0 ¹ / ₈ "	183'-4 ⁵ / ₁₆ "	119'-2 ³ / ₄ "	56'-3 ¹ / ₁₆ "	56'-9 ¹ / ₁₆ "	115'-6"	56'-9 ¹ / ₁₆ "	57'-9"	125'-7 ⁵ / ₁₆ "	35'-3 ¹ / ₁₆ "	35'-9 ¹ / ₁₆ "	34'-9 ¹ / ₁₆ "	35'-9"	113'-0 ¹ / ₈ "	114'-6 ¹ / ₁₆ "
3	2322'-0"	176'-4 ¹³ / ₁₆ "	230'-2 ³ / ₈ "	184'-3 ¹⁵ / ₁₆ "	119'-10 ¹ / ₄ "	56'-6 ⁹ / ₁₆ "	57'-0 ⁹ / ₁₆ "	116'-1 ¹ / ₄ "	57'-0 ⁹ / ₁₆ "	58'-0 ⁵ / ₈ "	126'-3 ⁵ / ₁₆ "	35'-6 ¹ / ₁₆ "	36'-0 ⁹ / ₁₆ "	35'-0 ⁹ / ₁₆ "	36'-0 ⁵ / ₈ "	113'-7 ¹ / ₈ "	115'-1 ³ / ₁₆ "
4	2334'-0"	177'-3 ⁷ / ₈ "	231'-4 ⁵ / ₈ "	185'-3 ³ / ₁₆ "	120'-5 ¹ / ₁₆ "	56'-10 ¹ / ₁₆ "	57'-4 ¹ / ₈ "	116'-8 ³ / ₈ "	57'-4 ¹ / ₈ "	58'-4 ³ / ₁₆ "	126'-11 ³ / ₈ "	35'-10 ¹ / ₁₆ "	36'-4 ¹ / ₈ "	35'-4 ¹ / ₈ "	36'-4 ³ / ₁₆ "	114'-2 ³ / ₁₆ "	115'-8 ⁵ / ₁₆ "

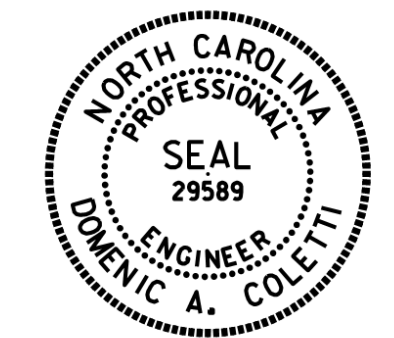
GIRDER	T1	T2	T3	T4	T5	T6	T7	T8
1	72'-0"	68'-0"	74'-0"	74'-0"	37'-7"	40'-0"	41'-10"	39'-5"
2	67'-0"	64'-0"	68'-0"	69'-0"	39'-6"	41'-0"	43'-0"	41'-4"
3	69'-0"	66'-0"	70'-0"	71'-0"	38'-5"	41'-0"	43'-2"	41'-4"
4	75'-0"	70'-0"	76'-0"	76'-0"	38'-4"	41'-0"	43'-4"	40'-4"

GIRDER	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17
1	16 SPA. @ 1'-2"	11"	58 SPA. @ 1'-8"	2'-4 ³ / ₁₆ "	2'-2 ⁹ / ₁₆ "	72 SPA. @ 1'-6"	2'-2 ⁹ / ₁₆ "	2'-0 ³ / ₈ "	70 SPA. @ 1'-7"	2'-0 ³ / ₈ "	2'-2 ⁷ / ₁₆ "	73 SPA. @ 1'-6"	2'-2 ⁷ / ₁₆ "	2'-1 ¹ / ₁₆ "	62 SPA. @ 1'-8"	10"	16 SPA. @ 1'-2"
2	56 SPA. @ 1'-4"	1'-1"	33 SPA. @ 1'-3"	2'-2 ¹ / ₁₆ "	2'-1 ⁹ / ₁₆ "	87 SPA. @ 1'-3"	2'-1 ⁹ / ₁₆ "	2'-4"	70 SPA. @ 1'-7"	2'-4"	1'-11"	83 SPA. @ 1'-4"	1'-11"	1'-11 ⁵ / ₁₆ "	37 SPA. @ 1'-3"	11"	54 SPA. @ 1'-5"
3	56 SPA. @ 1'-4"	1'-1"	33 SPA. @ 1'-3"	2'-10 ¹ / ₄ "	2'-5 ¹ / ₁₆ "	87 SPA. @ 1'-3"	2'-5 ¹ / ₁₆ "	2'-7 ⁵ / ₈ "	70 SPA. @ 1'-7"	2'-7 ⁵ / ₈ "	2'-2 ⁵ / ₈ "	83 SPA. @ 1'-4"	2'-2 ⁵ / ₈ "	2'-5 ⁵ / ₁₆ "	37 SPA. @ 1'-3"	1'-1"	54 SPA. @ 1'-5"
4	16 SPA. @ 1'-2"	11"	59 SPA. @ 1'-8"	2'-6 ¹ / ₁₆ "	2'-4 ¹ / ₈ "	73 SPA. @ 1'-6"	2'-4 ¹ / ₈ "	2'-1 ¹ / ₁₆ "	71 SPA. @ 1'-7"	2'-1 ¹ / ₁₆ "	2'-4 ³ / ₁₆ "	74 SPA. @ 1'-6"	2'-4 ³ / ₁₆ "	2'-5 ⁵ / ₁₆ "	63 SPA. @ 1'-8"	10"	16 SPA. @ 1'-2"

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

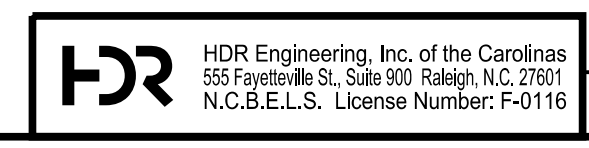
SUPERSTRUCTURE GIRDER DETAILS UNIT 2



10/15/2021

NO.	BY:	DATE:	NO.	BY:	DATE:
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2	--	--	4	--	--

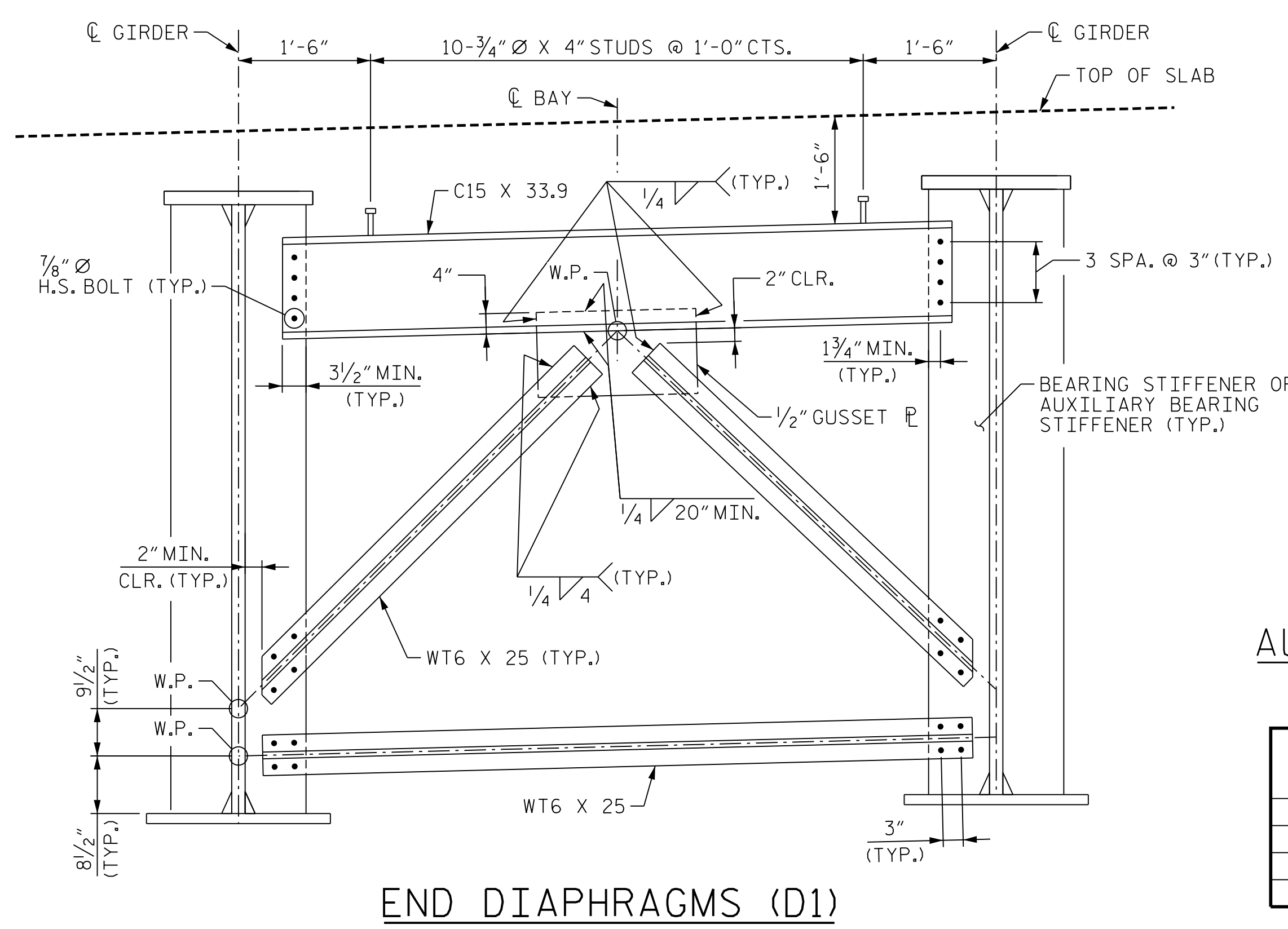
DES BY: M. NEIHEISEL DATE: 07/19
 DWG BY: B. PETERSON DATE: 07/19
 DES CHK: G. SCHMITZ DATE: 07/19
 CHK BY: G. SCHMITZ DATE: 10/19



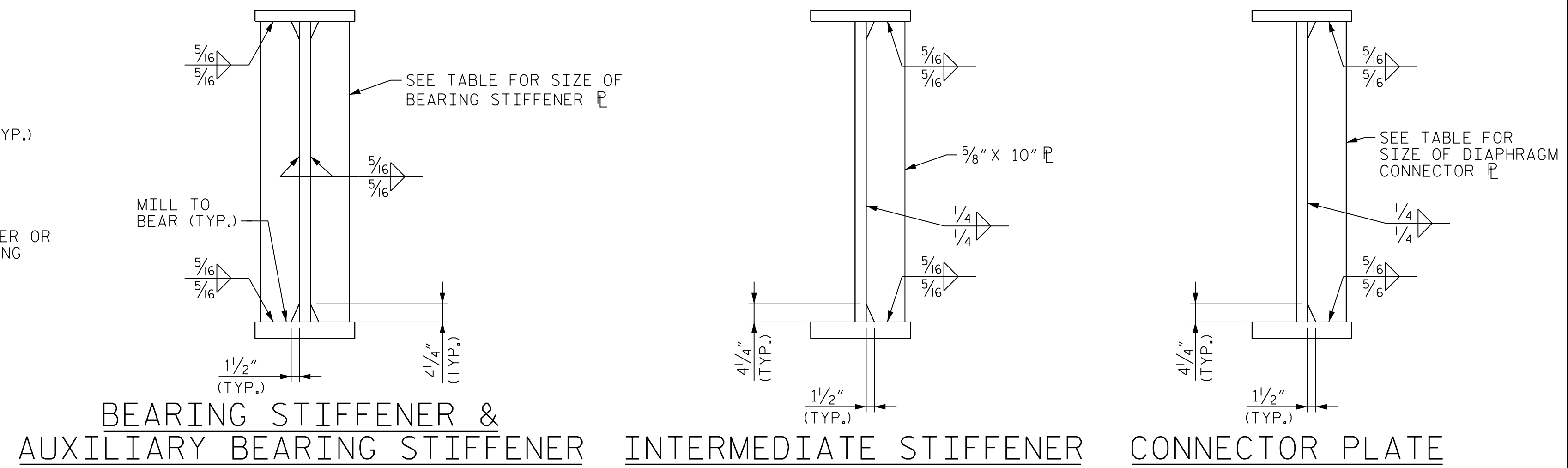
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+



END DIAPHRAGMS (D1)



BEARING STIFFENER & AUXILIARY BEARING STIFFENER

INTERMEDIATE STIFFENER

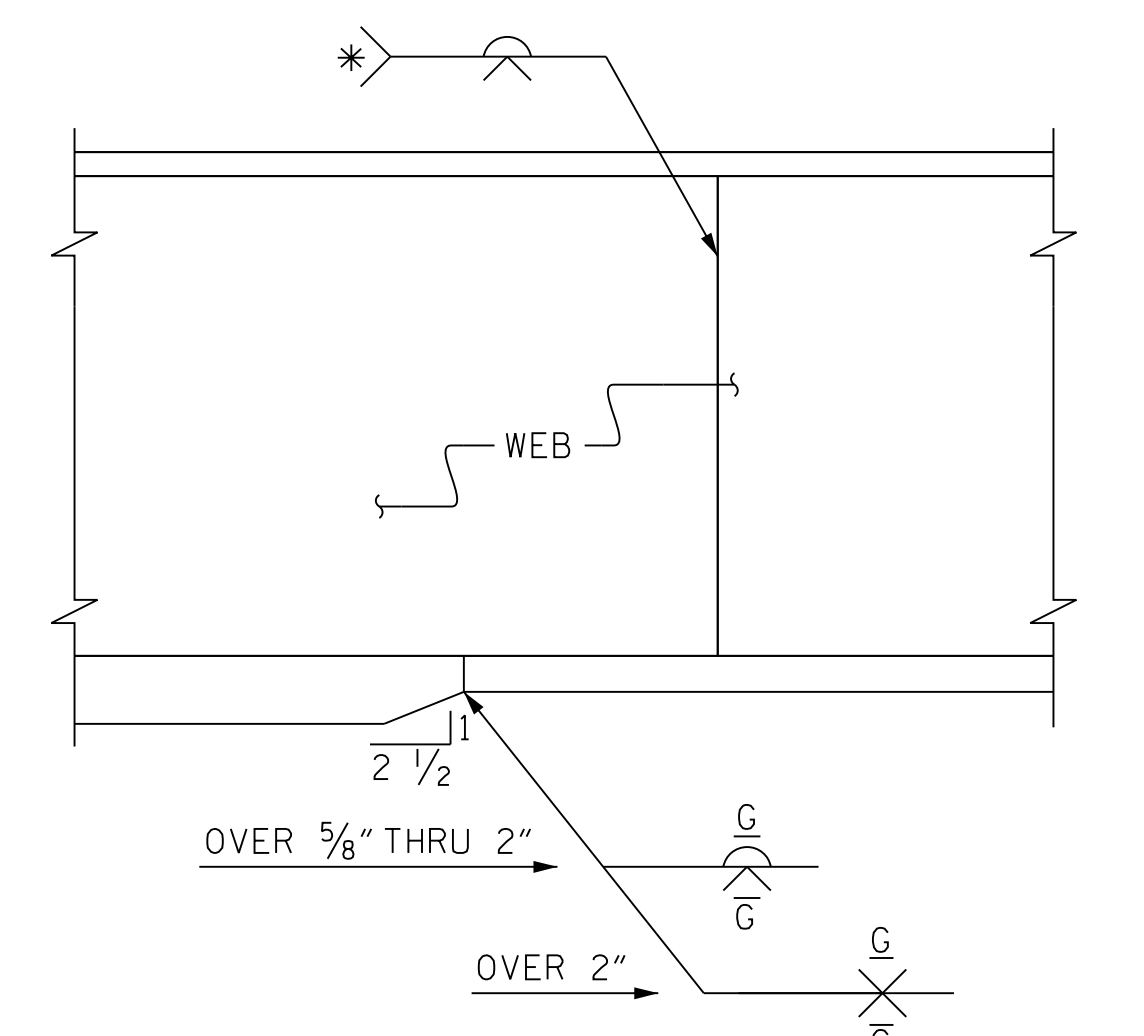
CONNECTOR PLATE

NOTE: BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOT. FLANGE

BEARING STIFFENERS & AUXILIARY BEARING STIFFENERS	
SIZE	LOCATIONS *
PL 1/8" x 11"	END BENT 1, BENTS 1, 2, 6 & 7
PL 1/2" x 16 1/2"	BENTS 3 & 4
PL 7/8" x 10"	BENT 5 BK, BENT 5 AH, END BENT 2

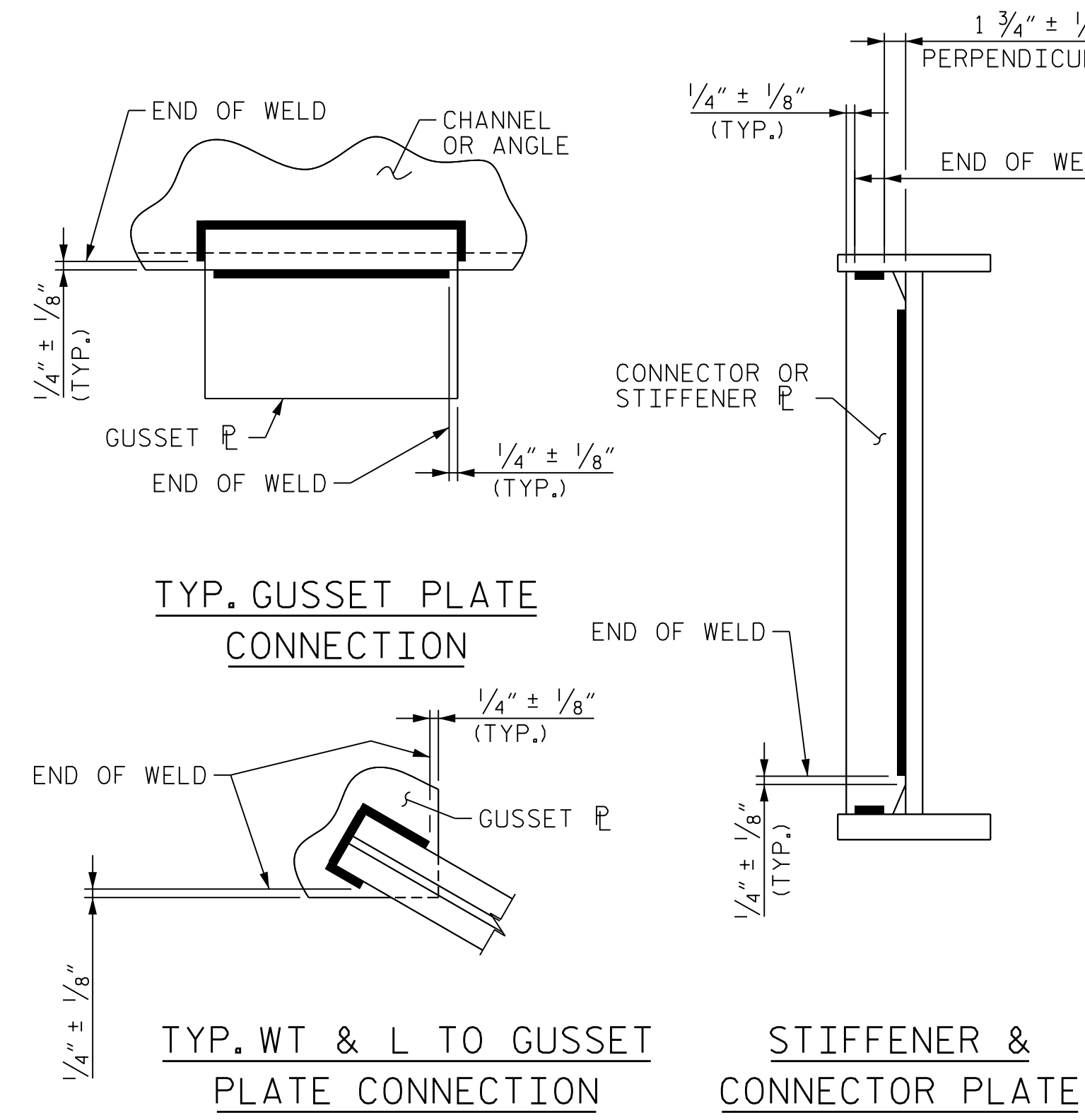
* NOTE: BK = BACK STATION
AH = AHEAD STATION

DIAPHRAGM CONNECTOR PLATES	
MAXIMUM FLANGE PLATE WIDTH	MIN. SIZE
≤ 32"	5/8" x 8 1/2"
34", 36" OR 40"	3/4" x 10"

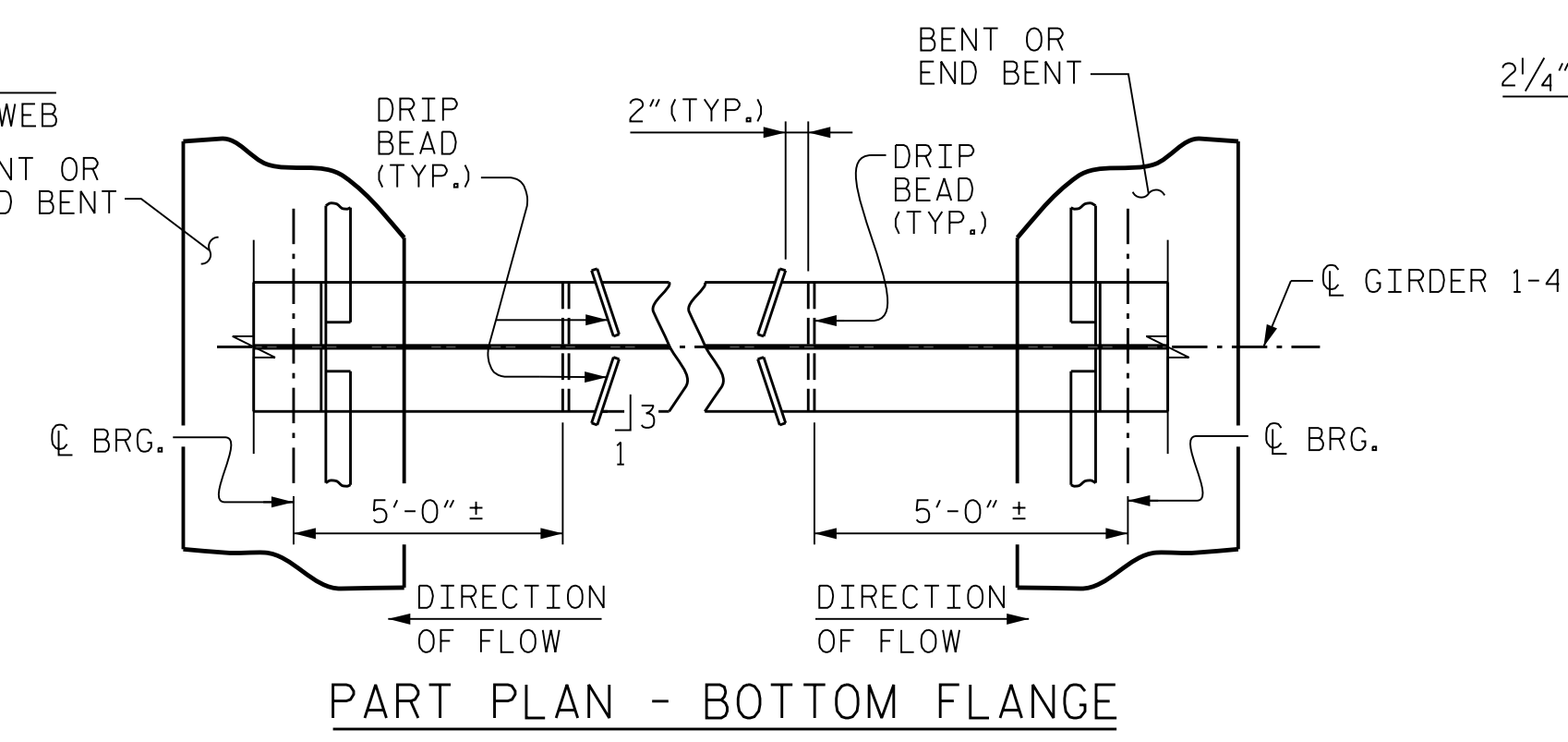


TYPICAL FLANGE AND WEB BUTT JOINT
SHOP SPLICE DETAILS

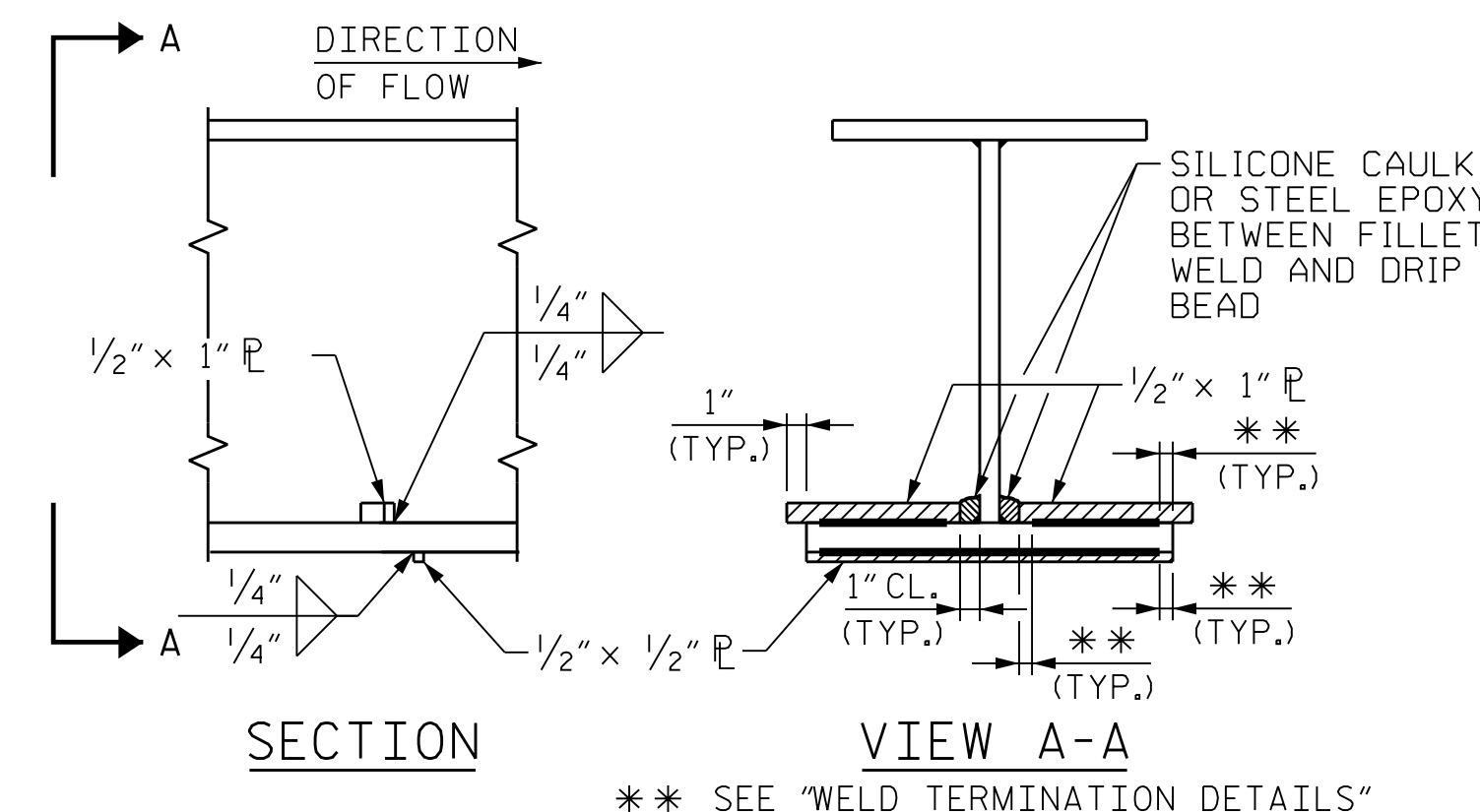
* GRIND SMOOTH AND FLUSH ON OUTER FACE OF EXTERIOR BEAMS/ GIRDERS.



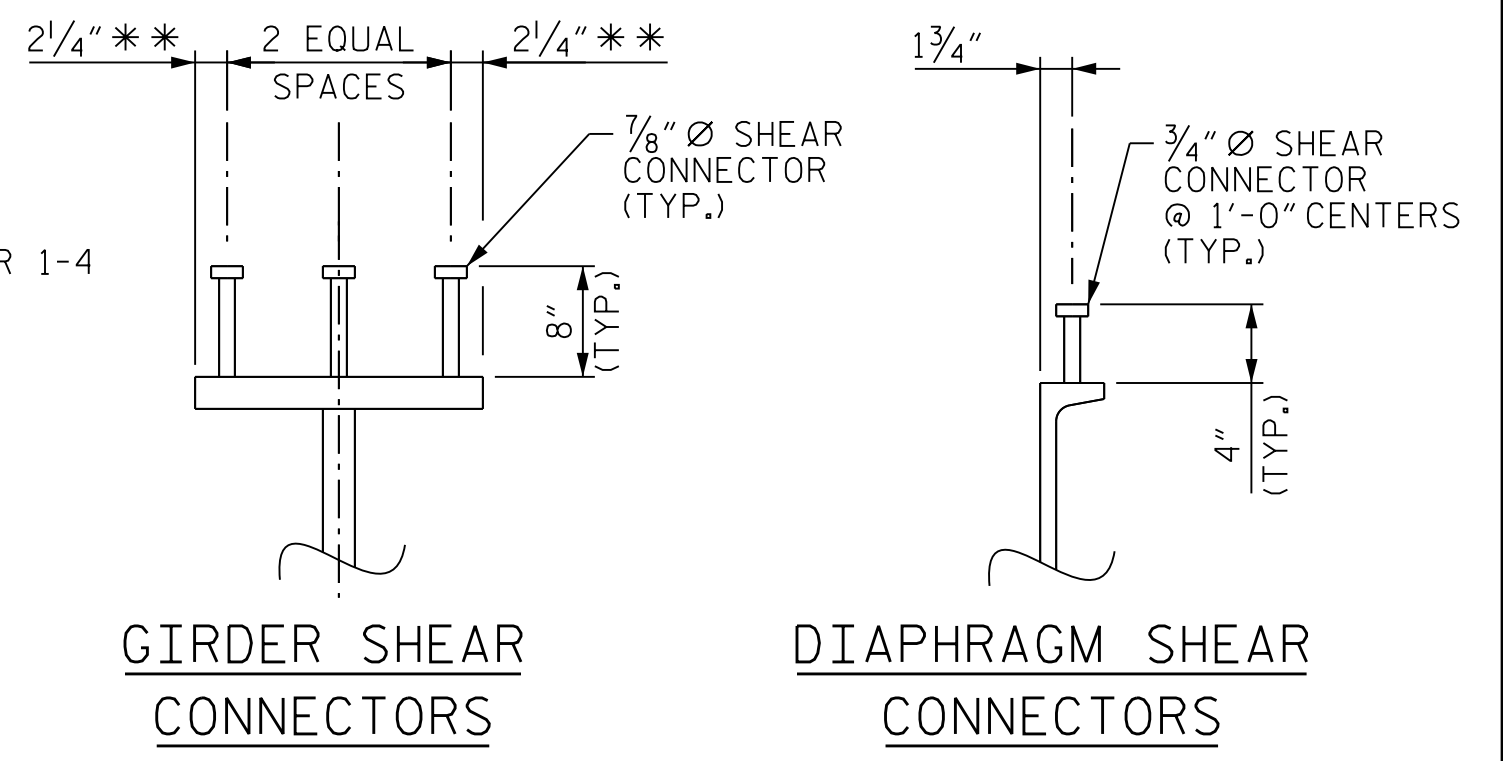
WELD TERMINATION DETAILS



PART PLAN - BOTTOM FLANGE



SECTION
VIEW A-A
** SEE "WELD TERMINATION DETAILS"



SHEAR CONNECTOR DETAILS

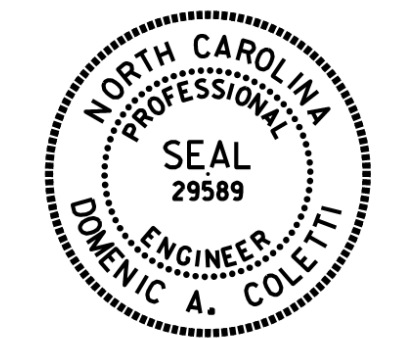
** FOR SPACING OF SHEAR CONNECTORS ON TOP PLATE OF FIELD SPLICES, SEE "SUPERSTRUCTURE BOLTED FIELD SPLICE DETAILS" SHEETS.

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS



10/15/2021

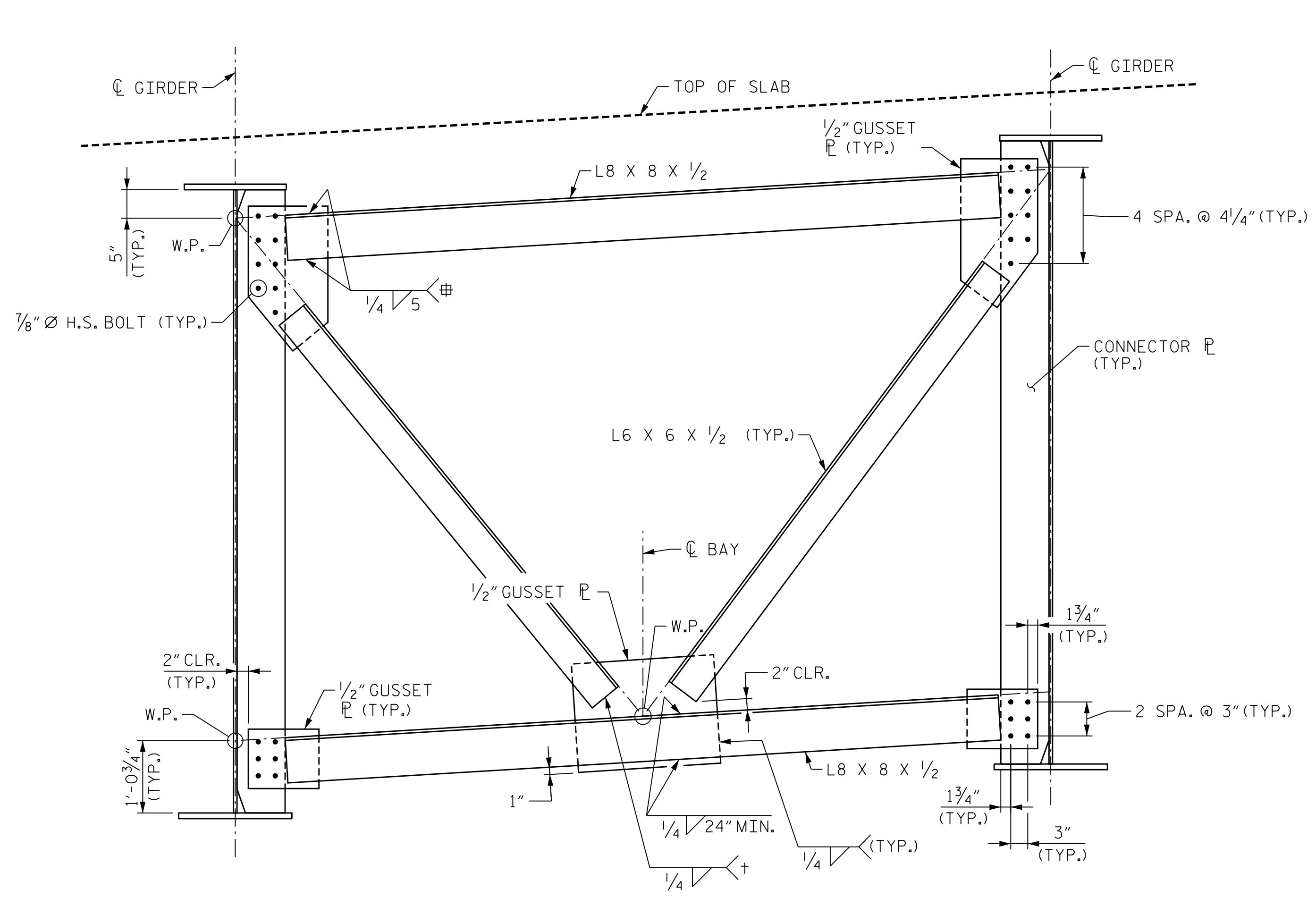
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DES BY: G. SCHMITZ	DATE: 07/19	DWG BY: B. PETERSON	DATE: 07/19
DES CHK: D. OLDS	DATE: 08/19	CHK BY: G. SCHMITZ	DATE: 09/19



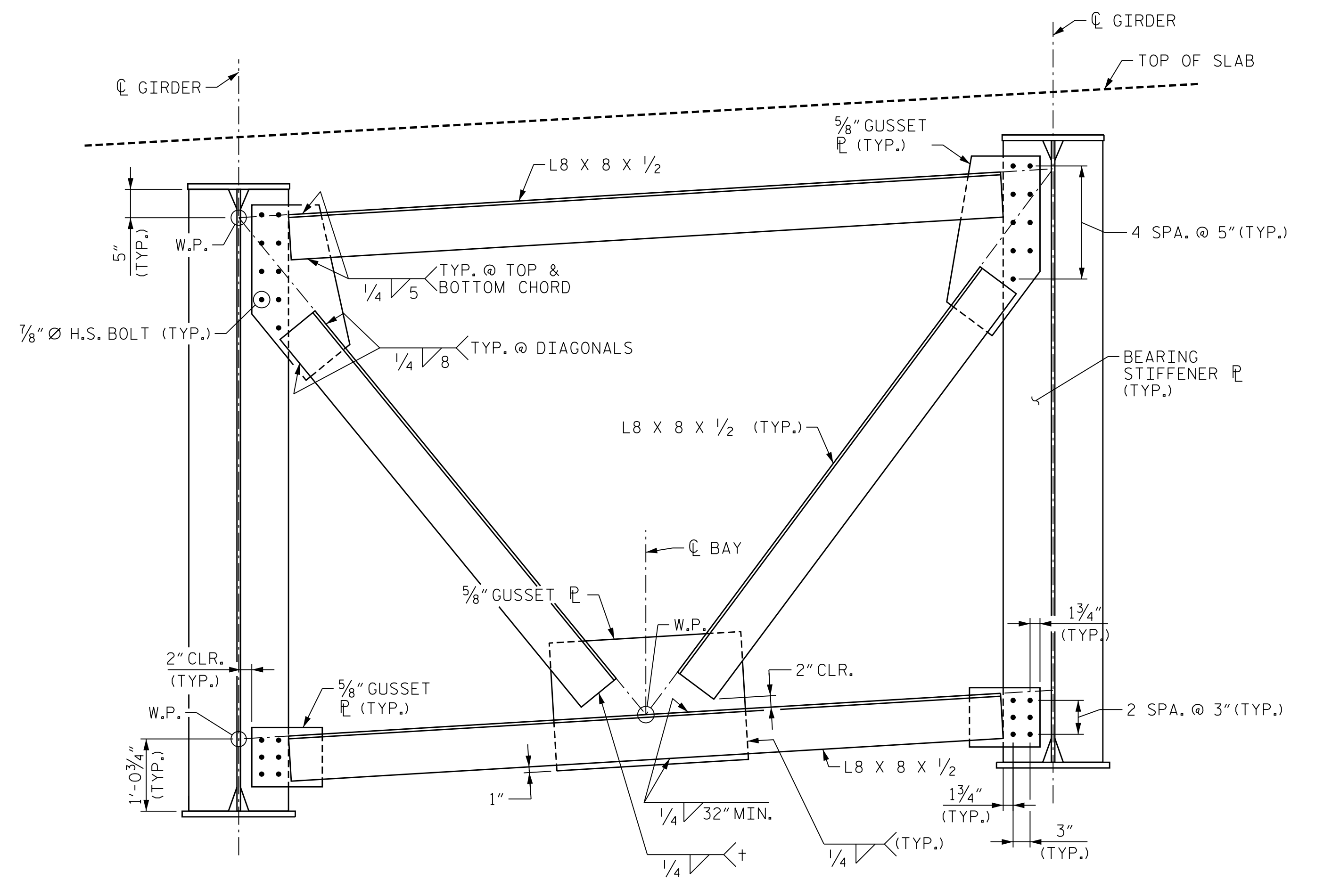
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REVISIONS						SHEET NO. S06-037 TOTAL SHEETS 129
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2	--	--	4	--	--	

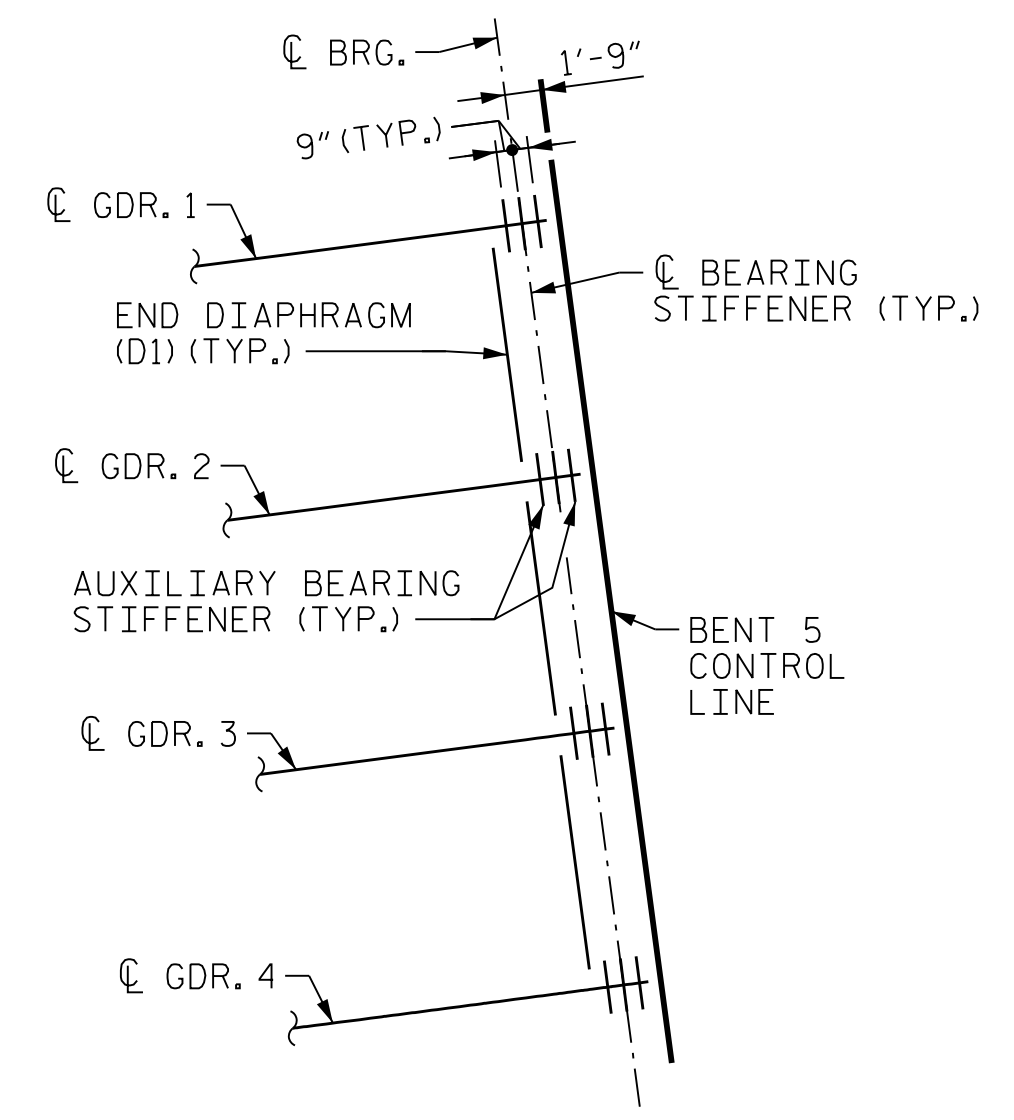


INTERMEDIATE DIAPHRAGMS (D2)

⊕ = TYP. ALONG SIDES OF ALL ANGLES
 † = TYP. @ ENDS OF ALL ANGLES

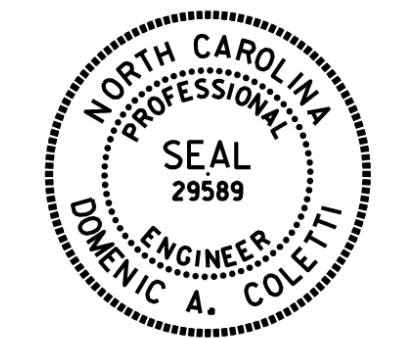


BENT DIAPHRAGMS (D3)



AUXILIARY BEARING STIFFENER DETAIL

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 3



Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS**

REVISIONS					
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1	--	--	3	--	--
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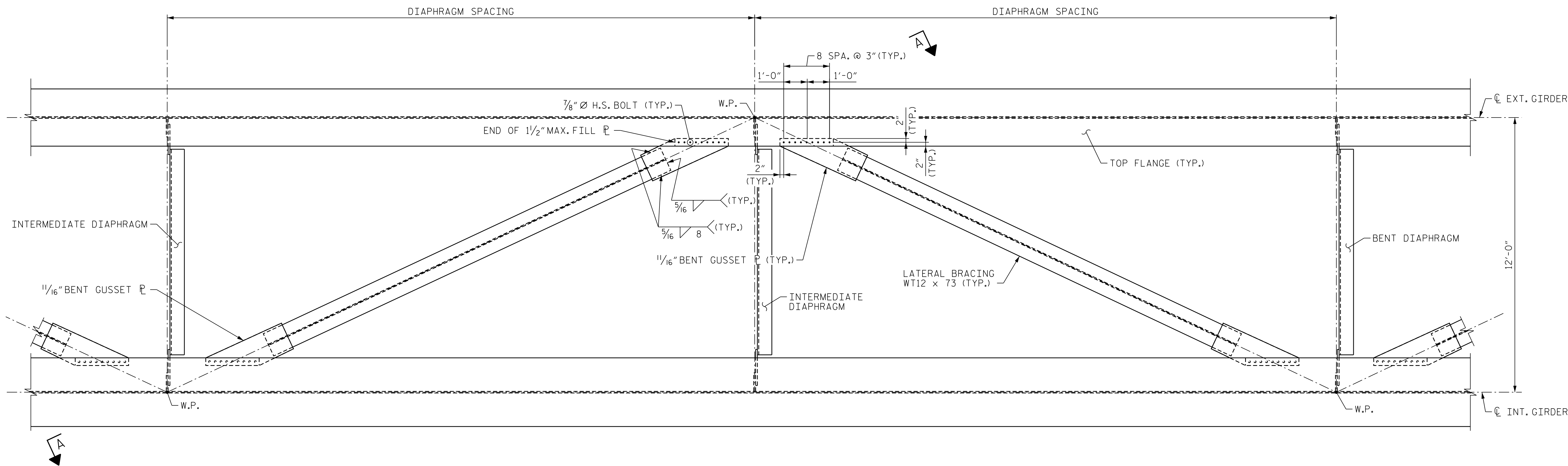
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 TOTAL SHEETS 129



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 UNLESS ALL SIGNATURES COMPLETED

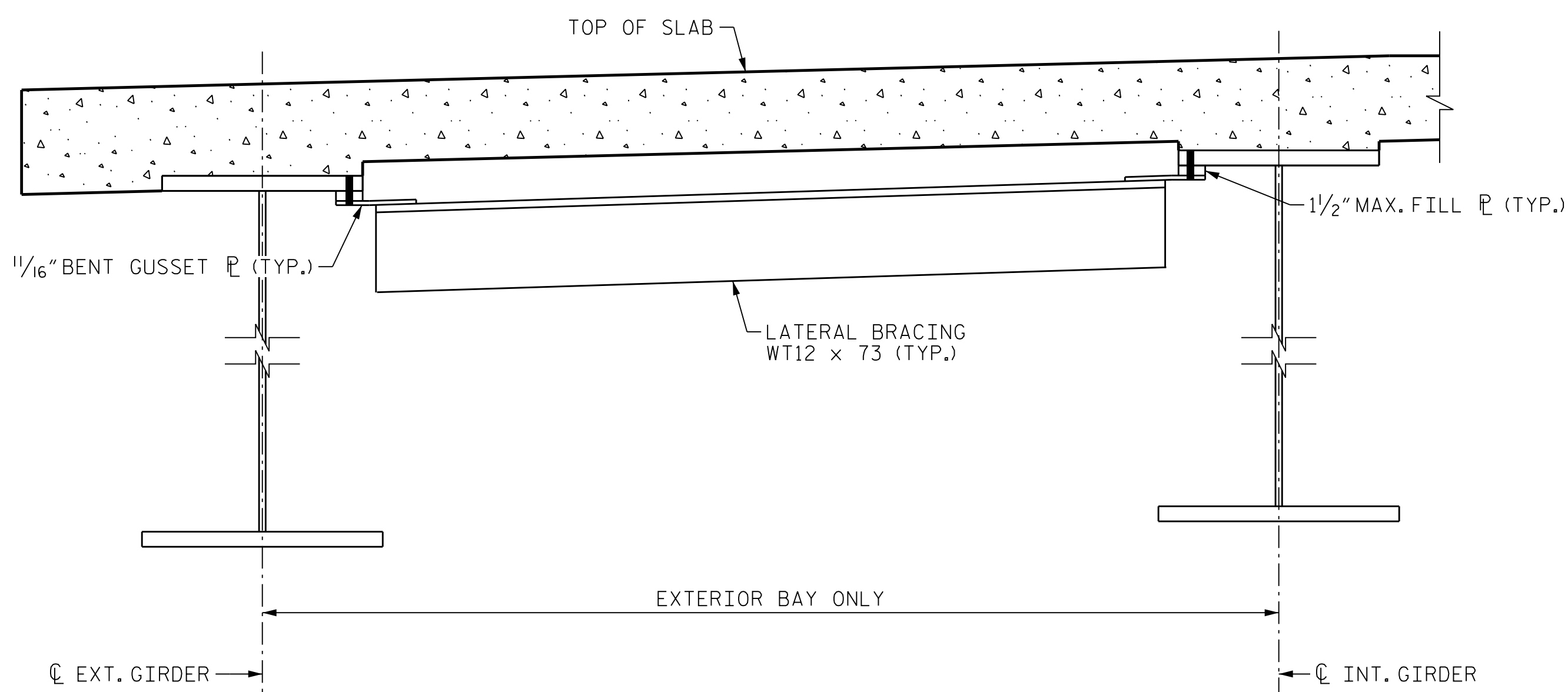
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DES BY: <u>G. SCHMITZ</u>	DATE: <u>07/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>07/19</u>
DES CHK: <u>D. OLDS</u>	DATE: <u>07/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>09/19</u>



PART PLAN - TOP FLANGE LATERAL BRACING

GIRDER 1 AND GIRDER 2 SHOWN, GIRDER 3 AND GIRDER 4 SIMILAR
SEE SHEET "SUPERSTRUCTURE FRAMING PLAN, UNIT 1" FOR LOCATIONS



SECTION A-A

NOTES

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

TOP FLANGE LATERAL BRACING DETAILED IS PROVIDED TO ASSIST IN LIMITING GIRDER DISPLACEMENT DUE TO WIND FORCES DURING ERECTION AND PROVIDE STABILITY DURING DECK POURING.

THE 7/8" Ø HIGH STRENGTH BOLTS SHALL HAVE THE THREADS EXCLUDED FROM SHEAR PLANES.

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

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS**



Dominic A. Coletti 10/15/2021

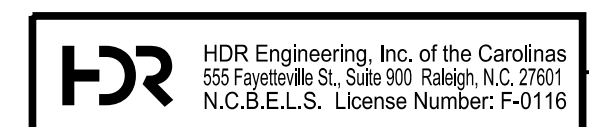
REVISIONS

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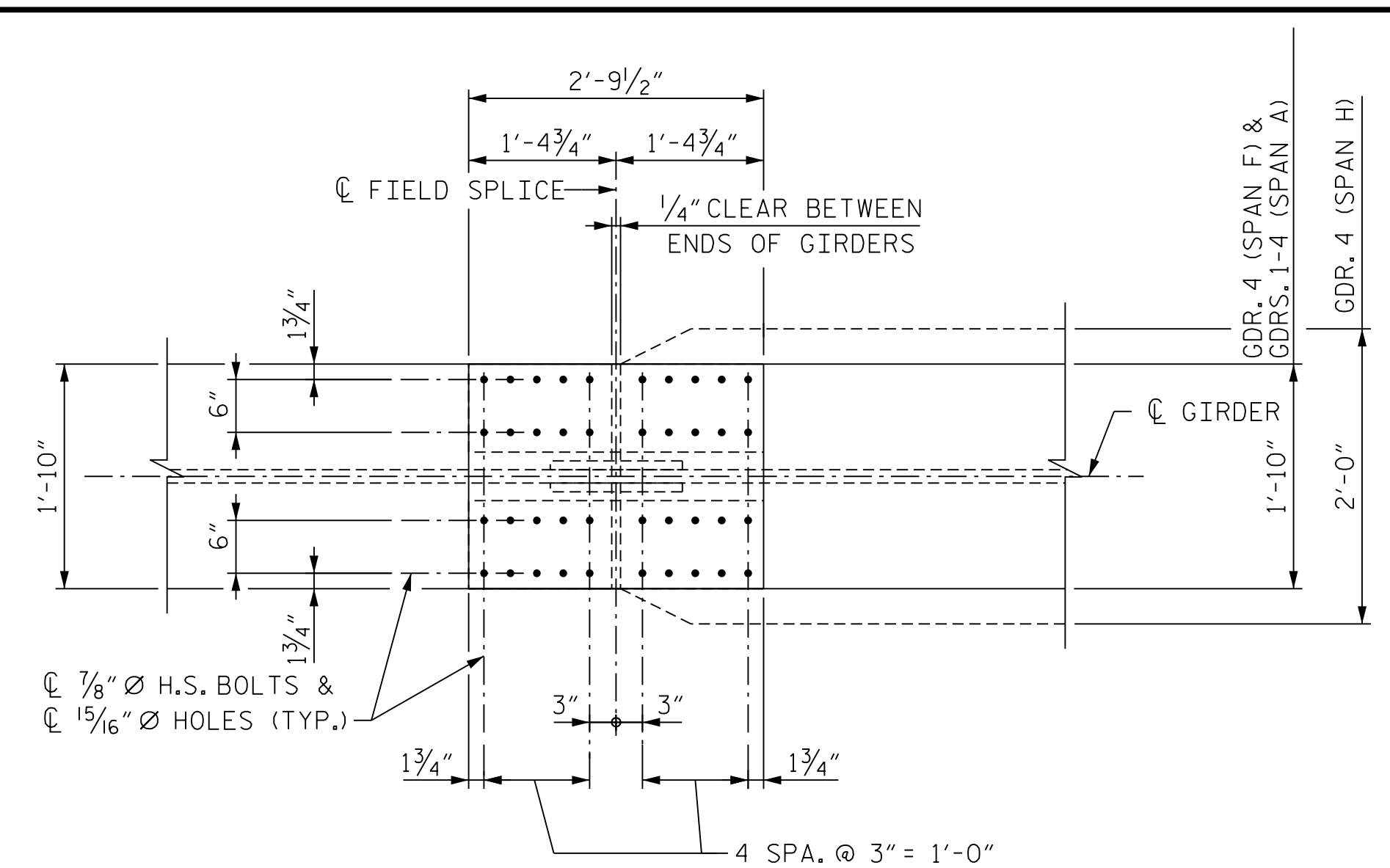
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S06-039
TOTAL SHEETS
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DES BY: G. SCHMITZ	DATE: 08/19	DWG BY: T. SAS	DATE: 08/19
DES CHK: D. OLDS	DATE: 08/19	CHK BY: G. SCHMITZ	DATE: 09/19

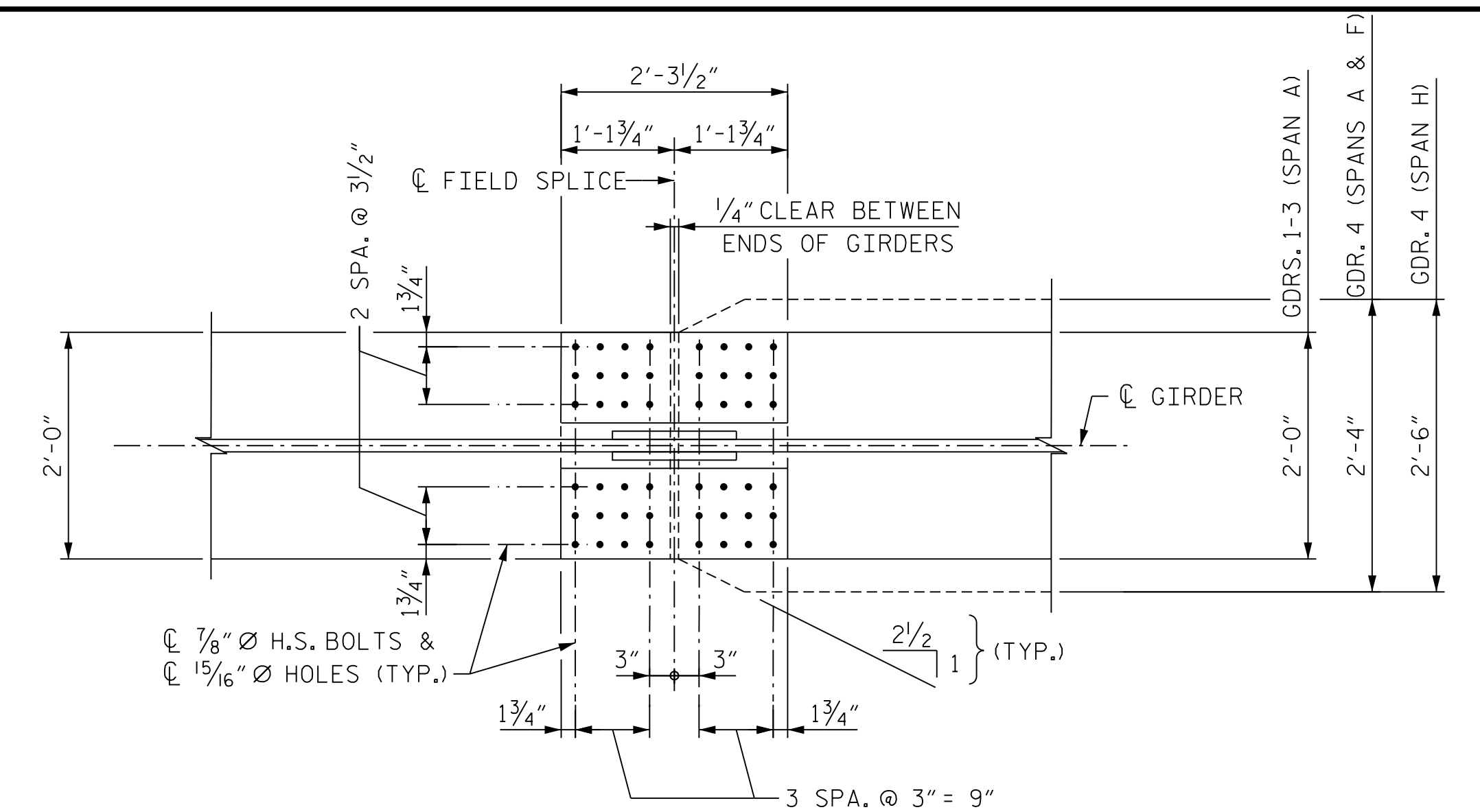


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UNLESS ALL SIGNATURES COMPLETED

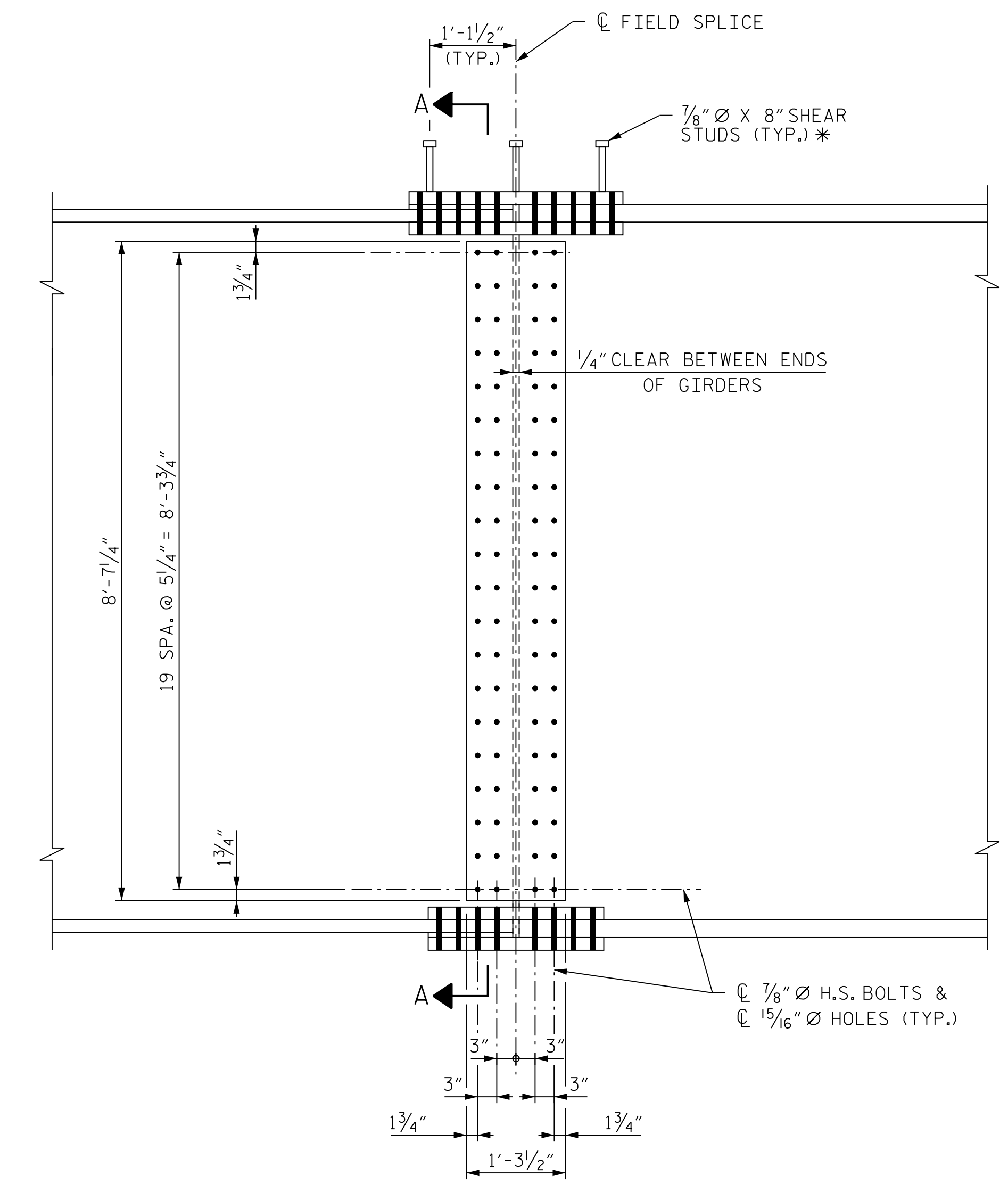


PLAN (TOP OF TOP FLANGE)
(STUDS NOT SHOWN FOR CLARITY)

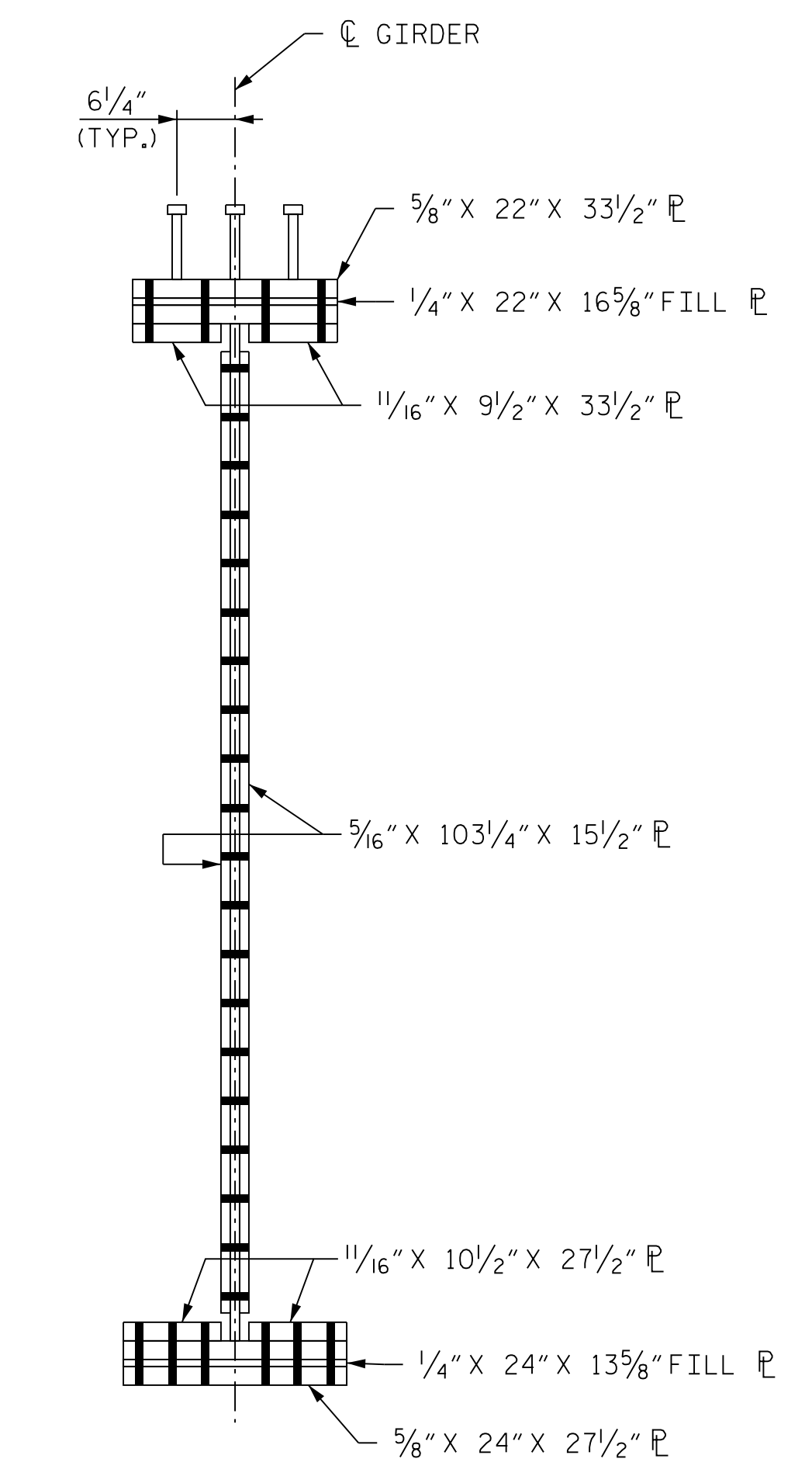
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



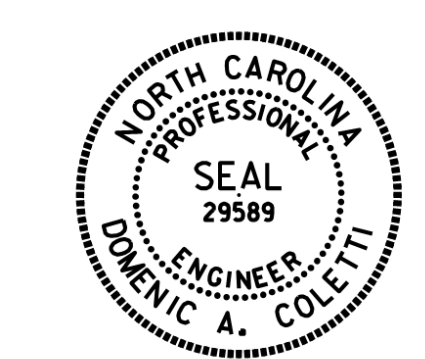
SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 1 OF 14

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 BOLTED FIELD SPLICE
 DETAILS - TYPE "A"**



Dominic A. Coletti 10/15/2021

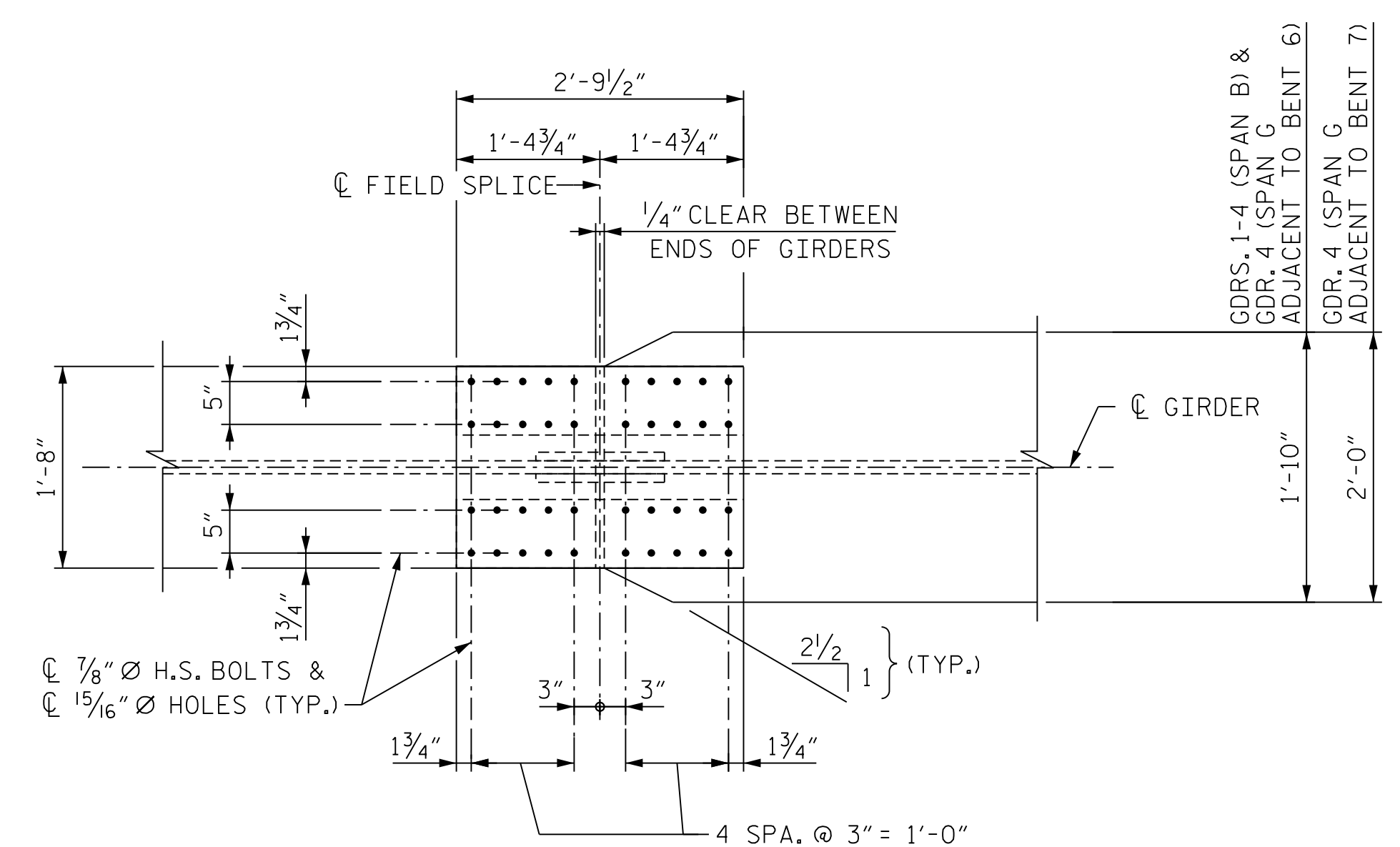
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	
2	--	--	4	--	--	

HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

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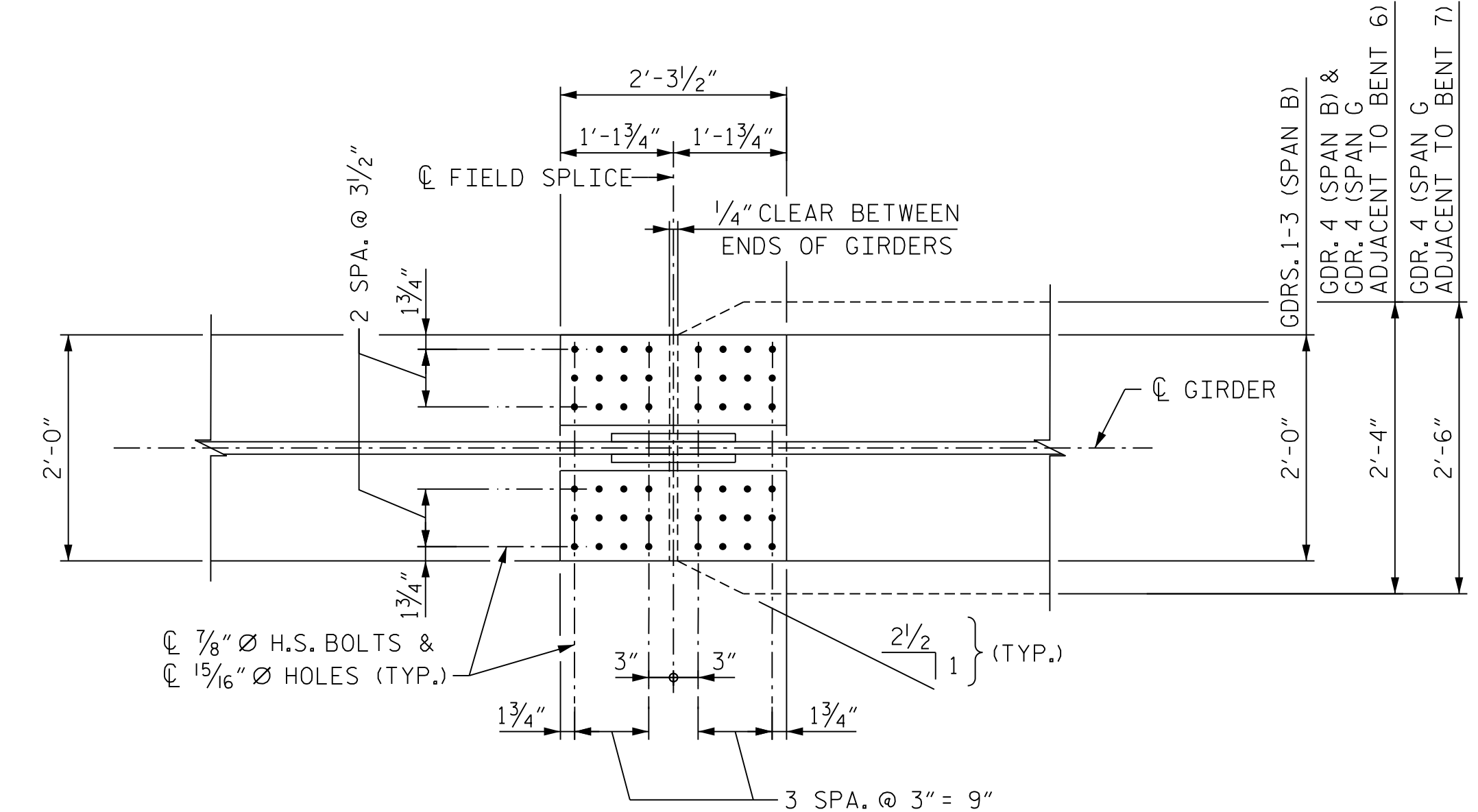
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DES BY: <u>G. SCHMITZ</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
DES CHK: <u>D. OLDS</u>	DATE: <u>08/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>09/19</u>

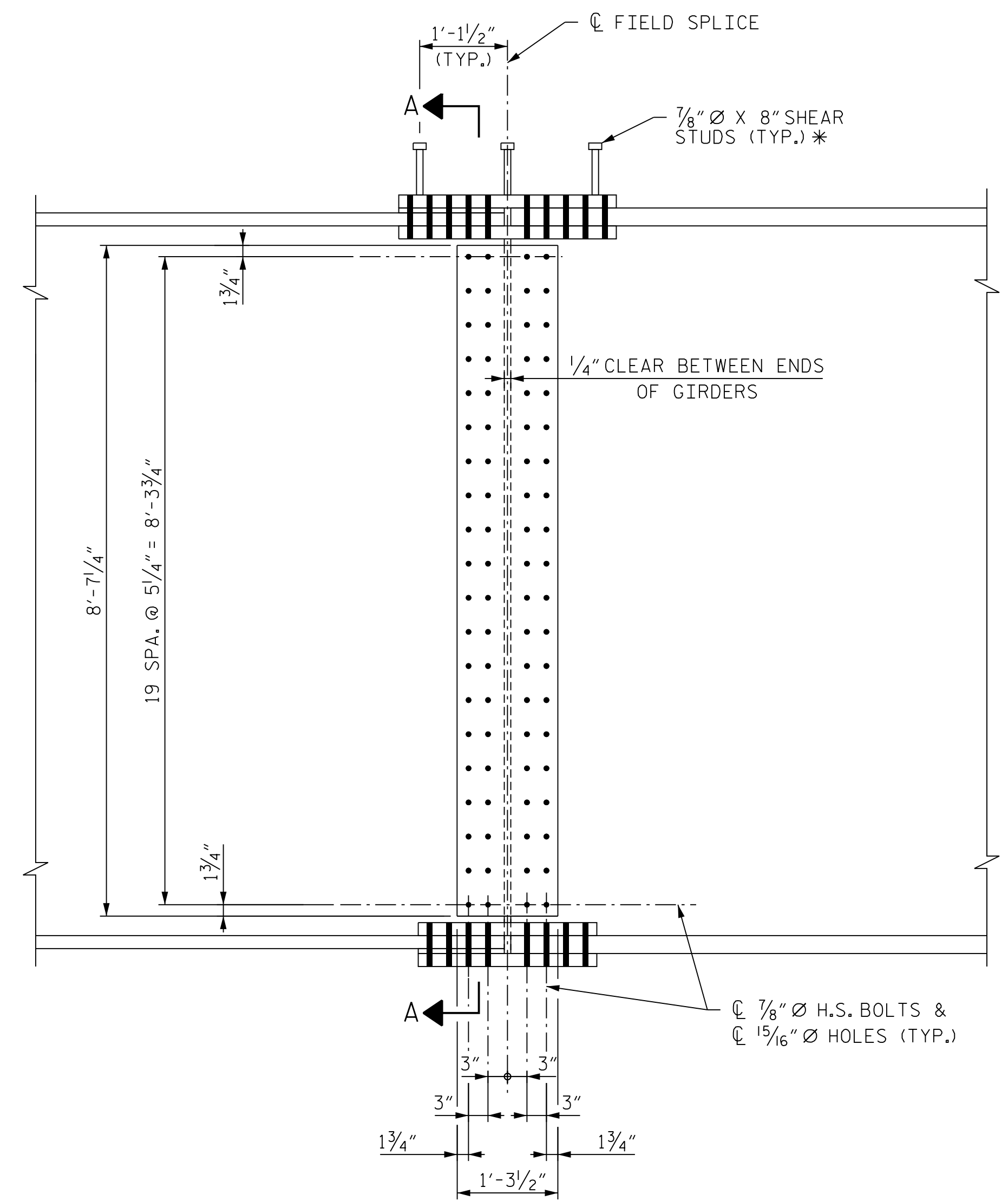


PLAN (TOP OF TOP FLANGE)
(STUDS NOT SHOWN FOR CLARITY)

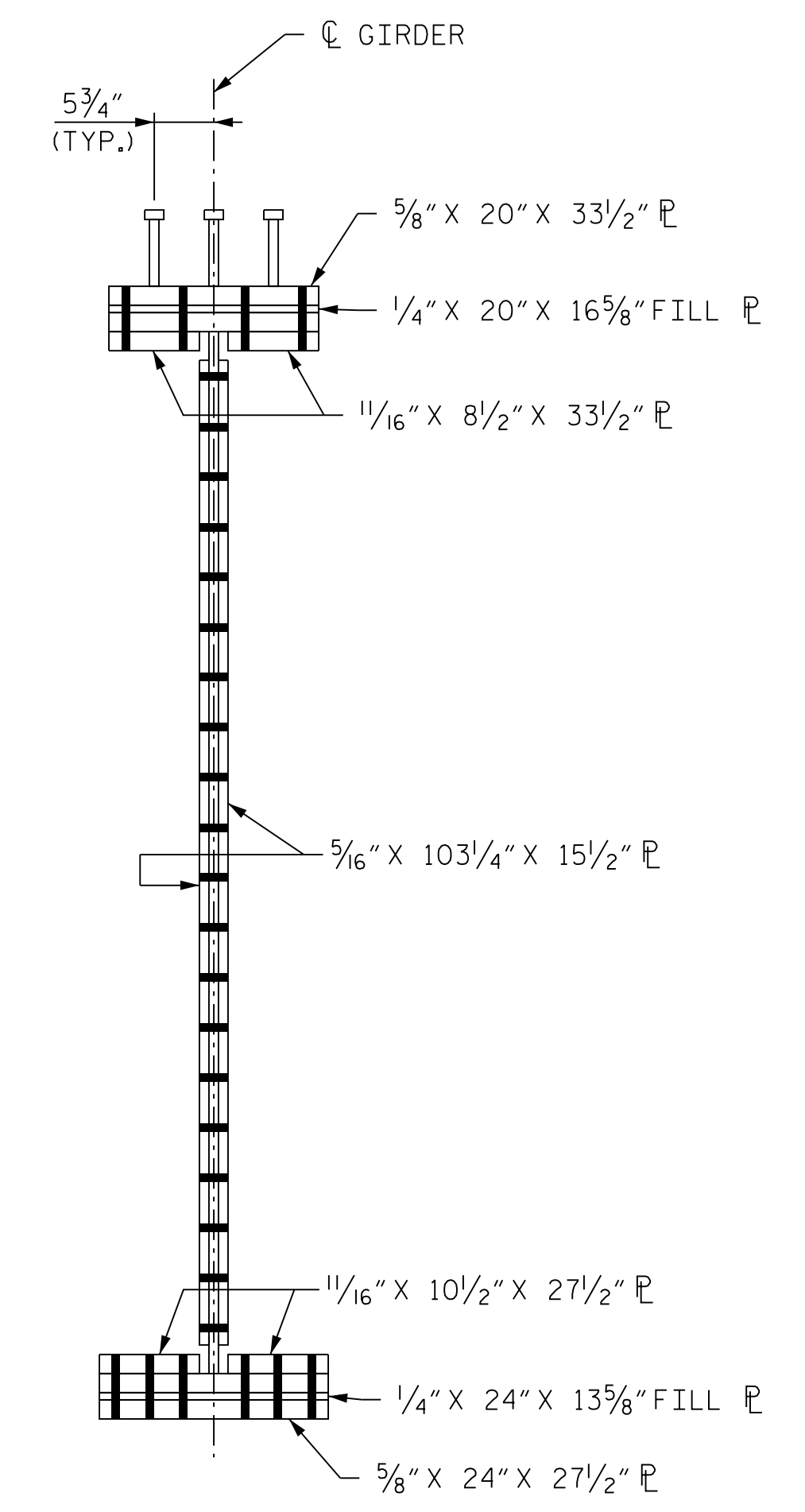
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PLAN (TOP OF BOTTOM FLANGE)



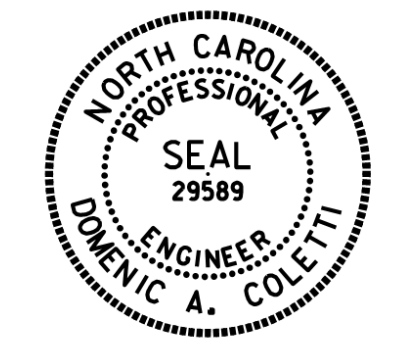
ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 14

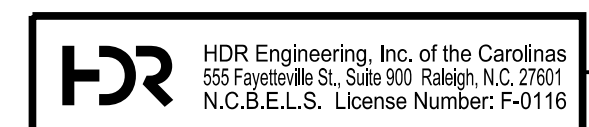


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 BOLTED FIELD SPLICE
 DETAILS - TYPE "B"**

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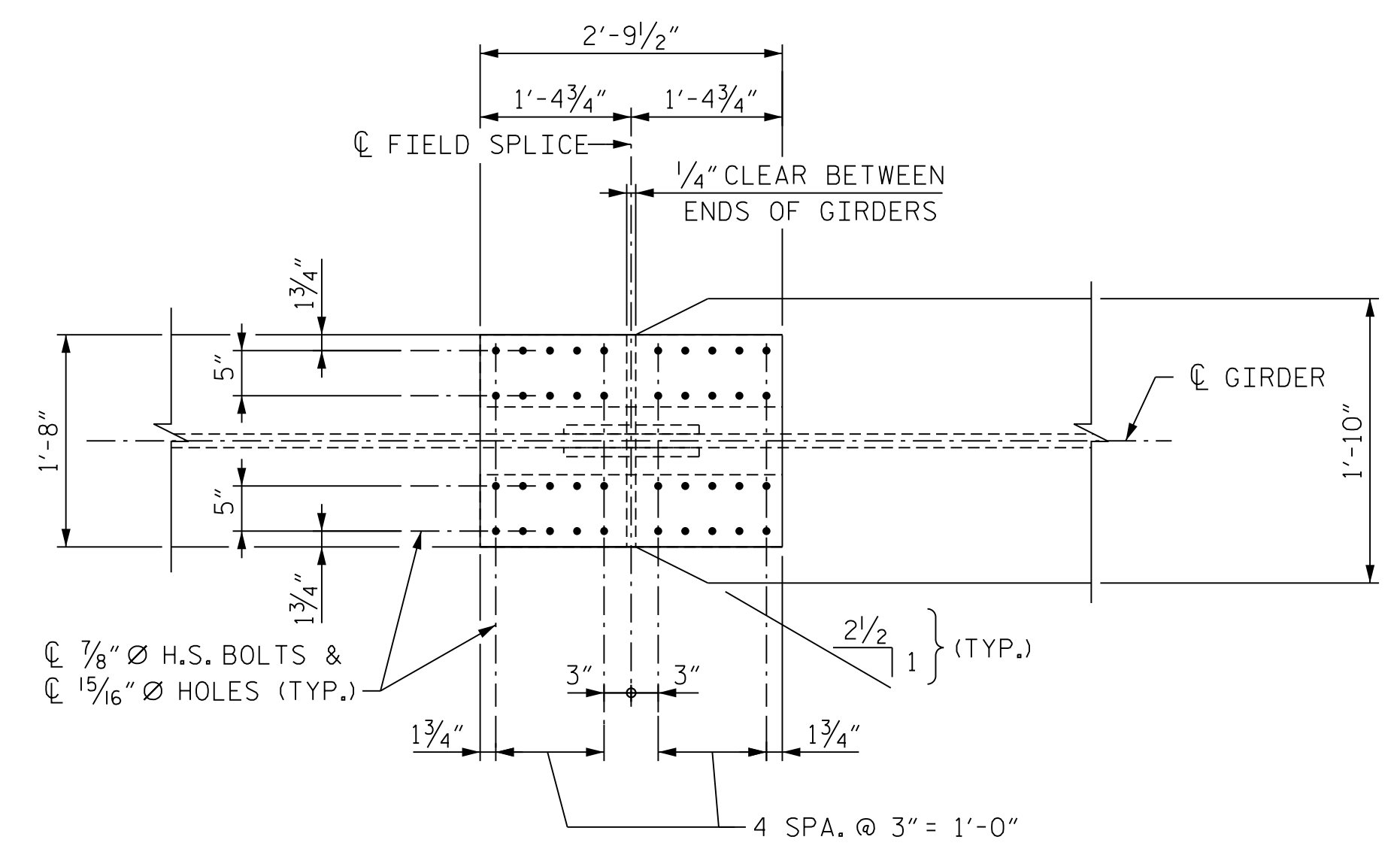
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DES CHK: D. OLDS	DATE: 08/19	CHK BY: G. SCHMITZ	DATE: 09/19



Domini A. Coletti 10/15/2021

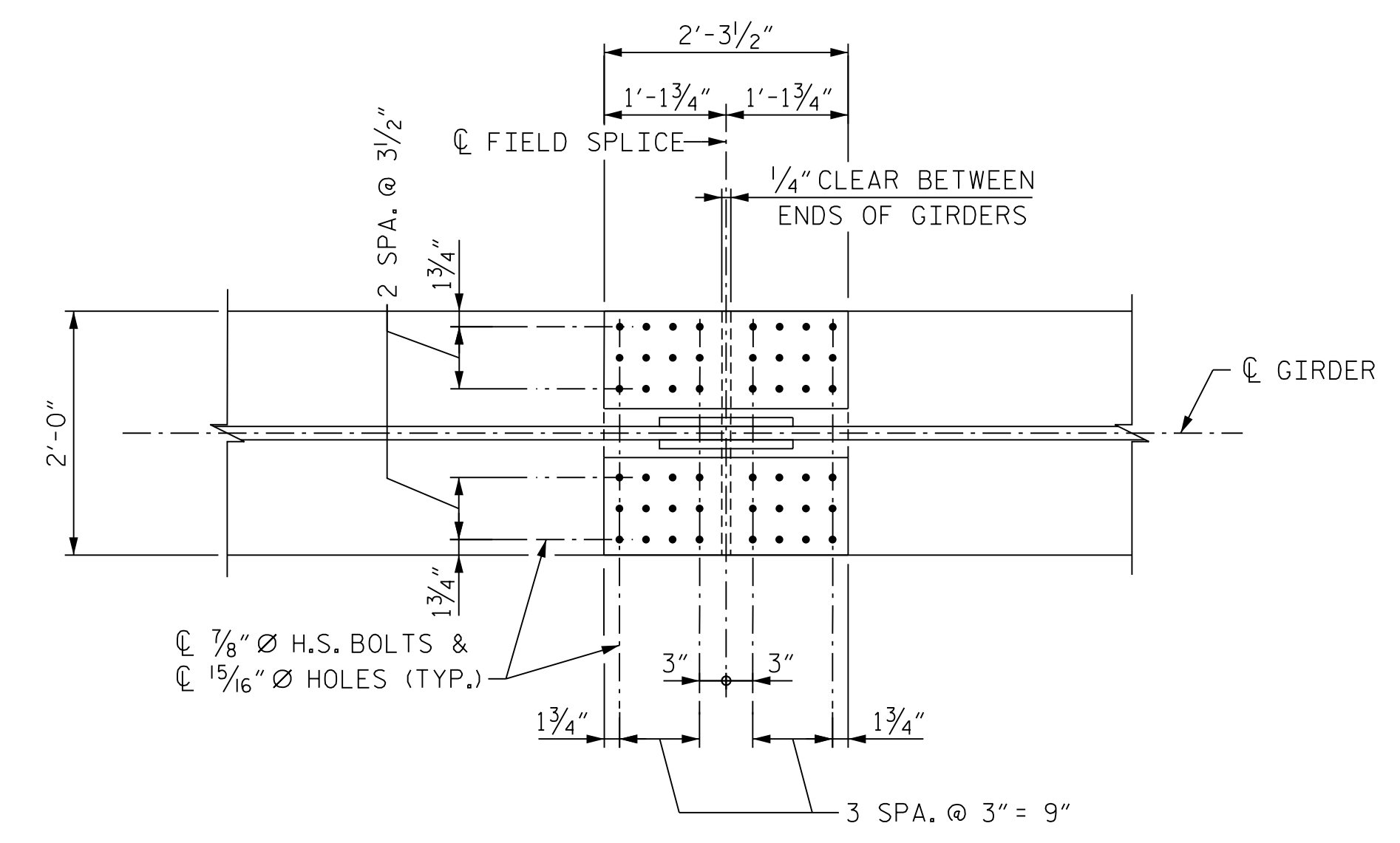
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 UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
1	--	--	3	--	--	129	
2	--	--	4	--	--	129	

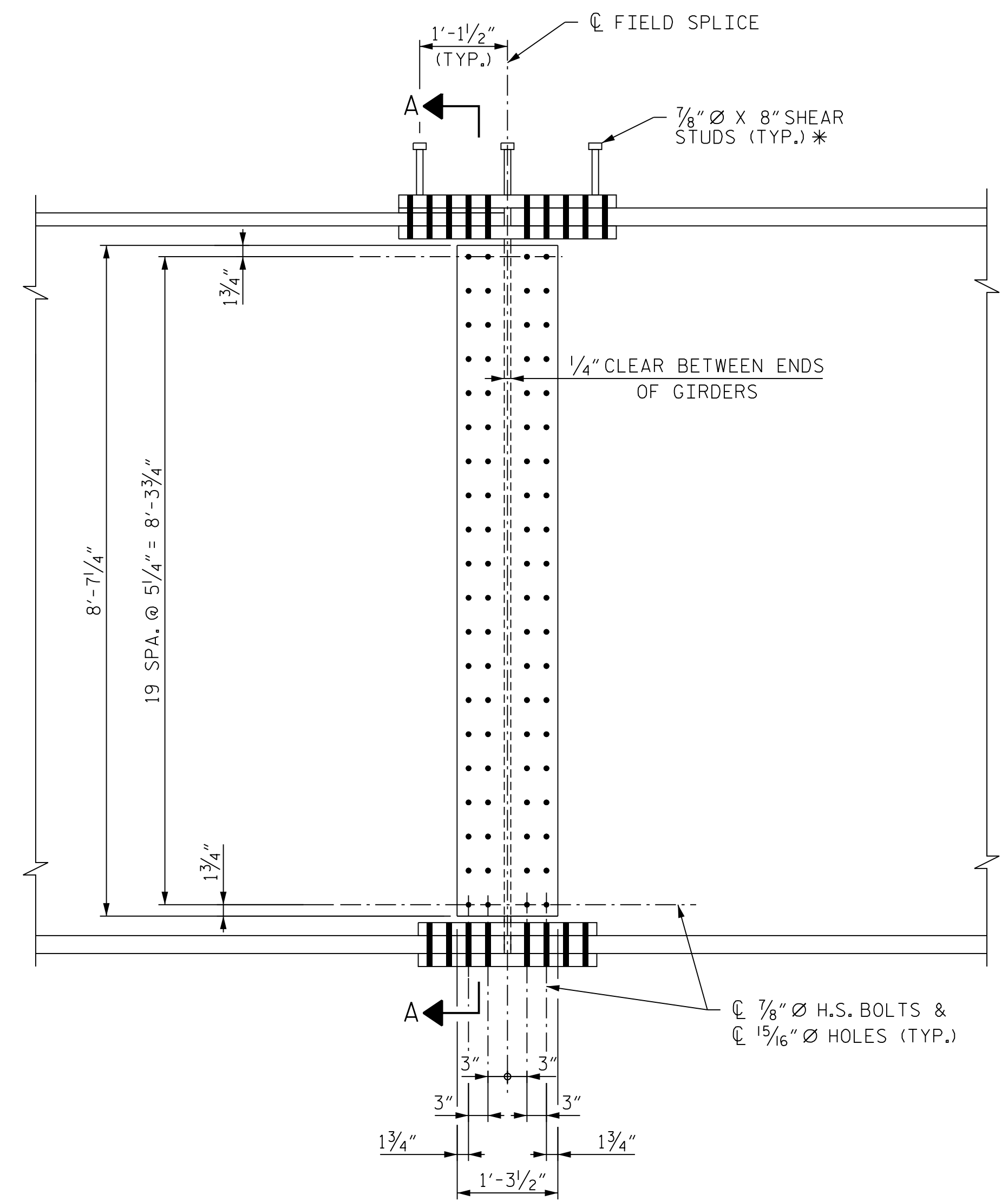


PLAN (TOP OF TOP FLANGE)
(STUDS NOT SHOWN FOR CLARITY)

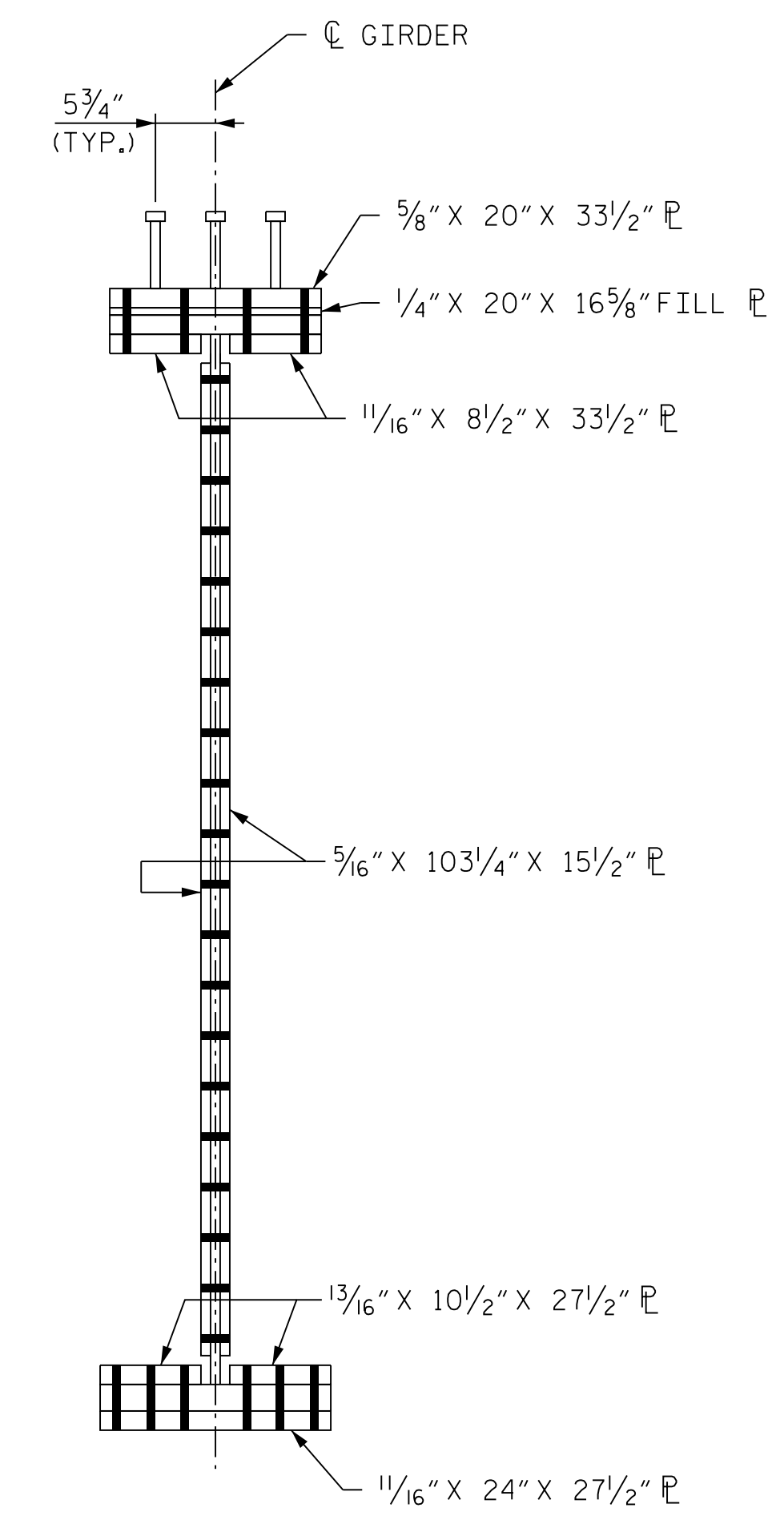
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PLAN (TOP OF BOTTOM FLANGE)



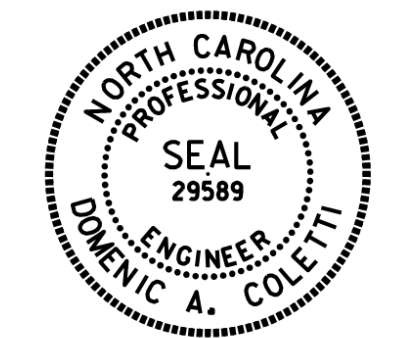
ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 3 OF 14

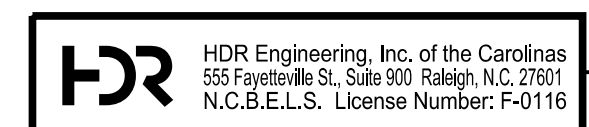


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 BOLTED FIELD SPLICE
 DETAILS - TYPE "C"**

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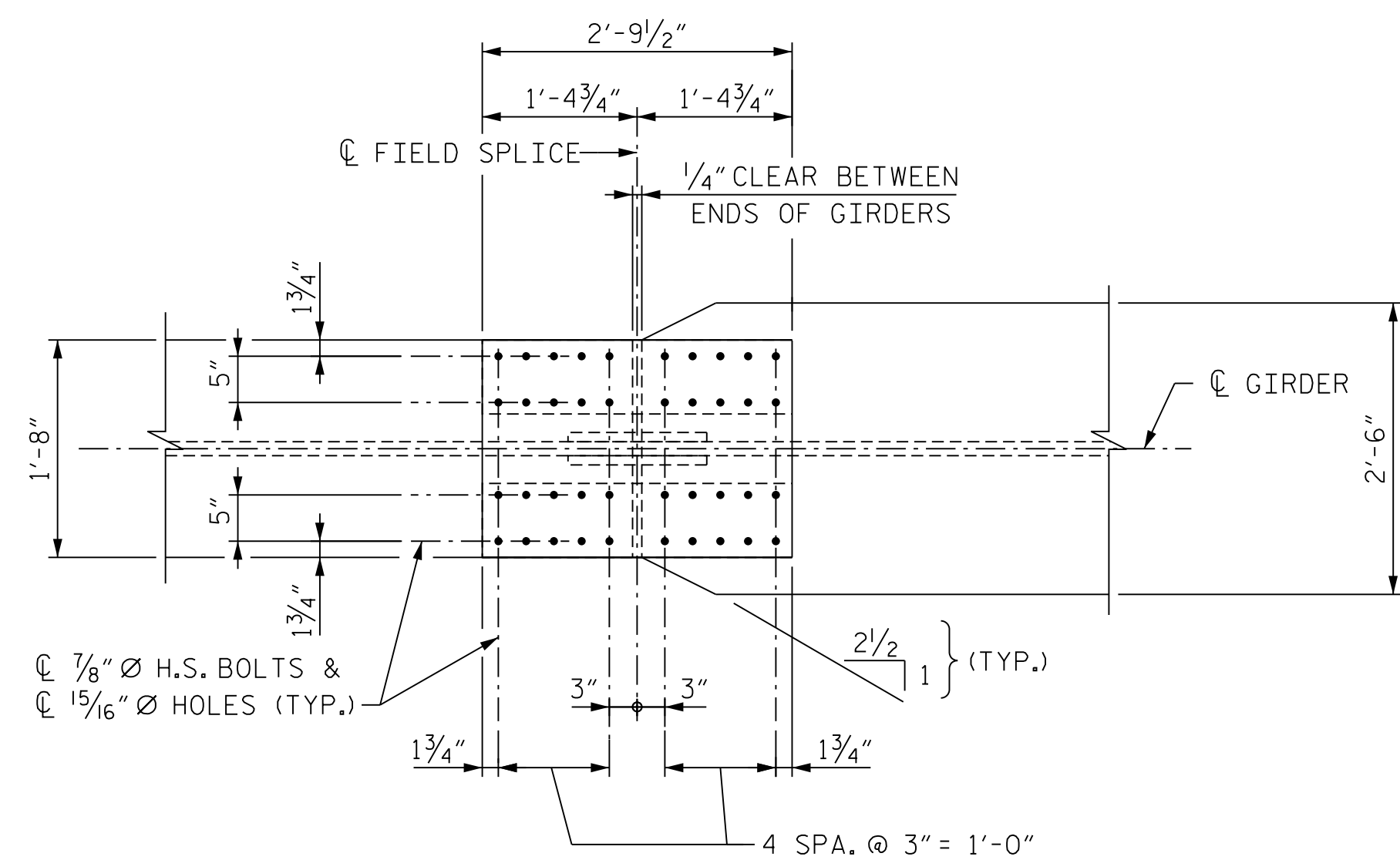
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DES CHK: <u>D. OLDS</u>	DATE: <u>08/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>09/19</u>



Dominic A. Coletti 10/15/2021

**DOCUMENT NOT CONSIDERED FINAL
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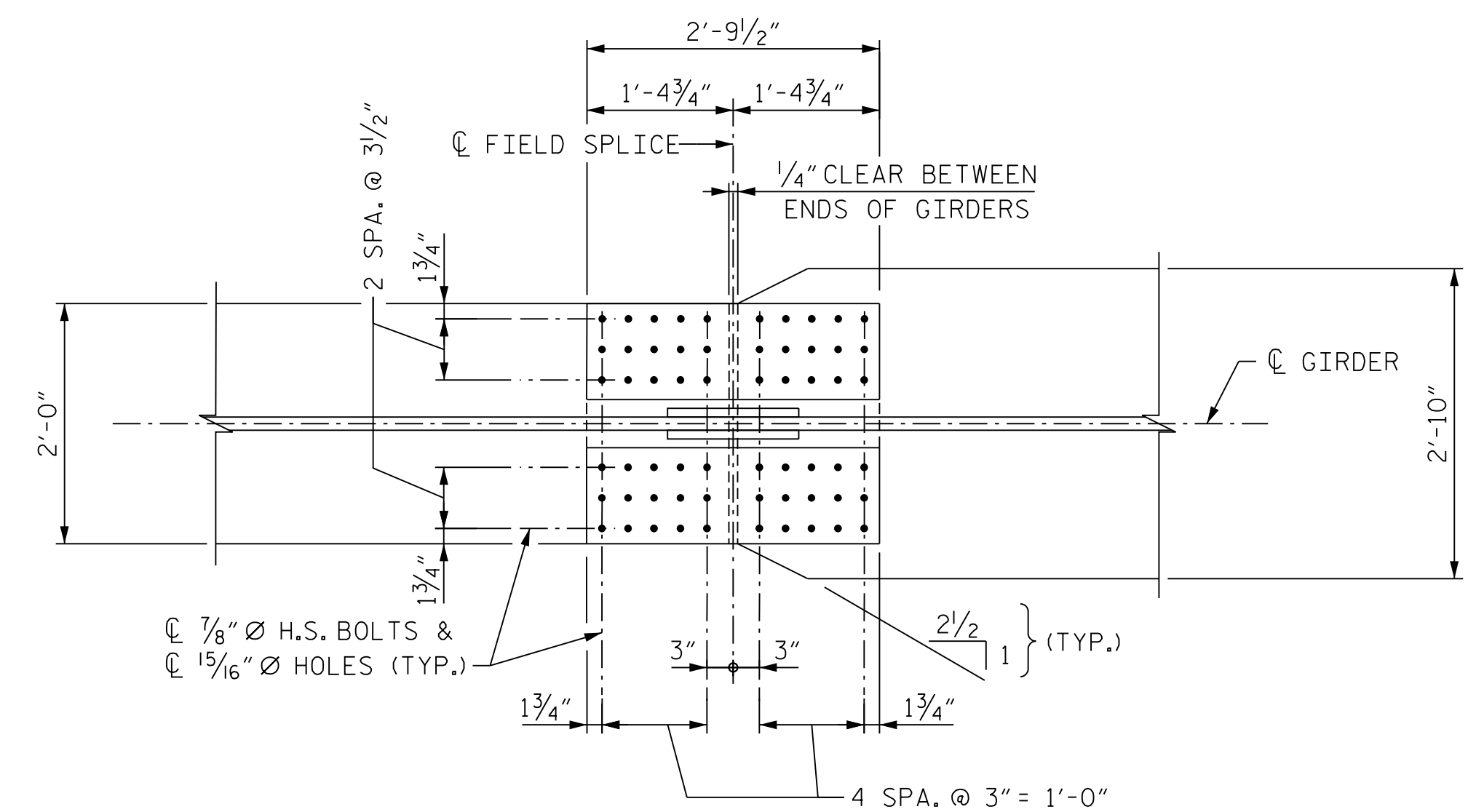
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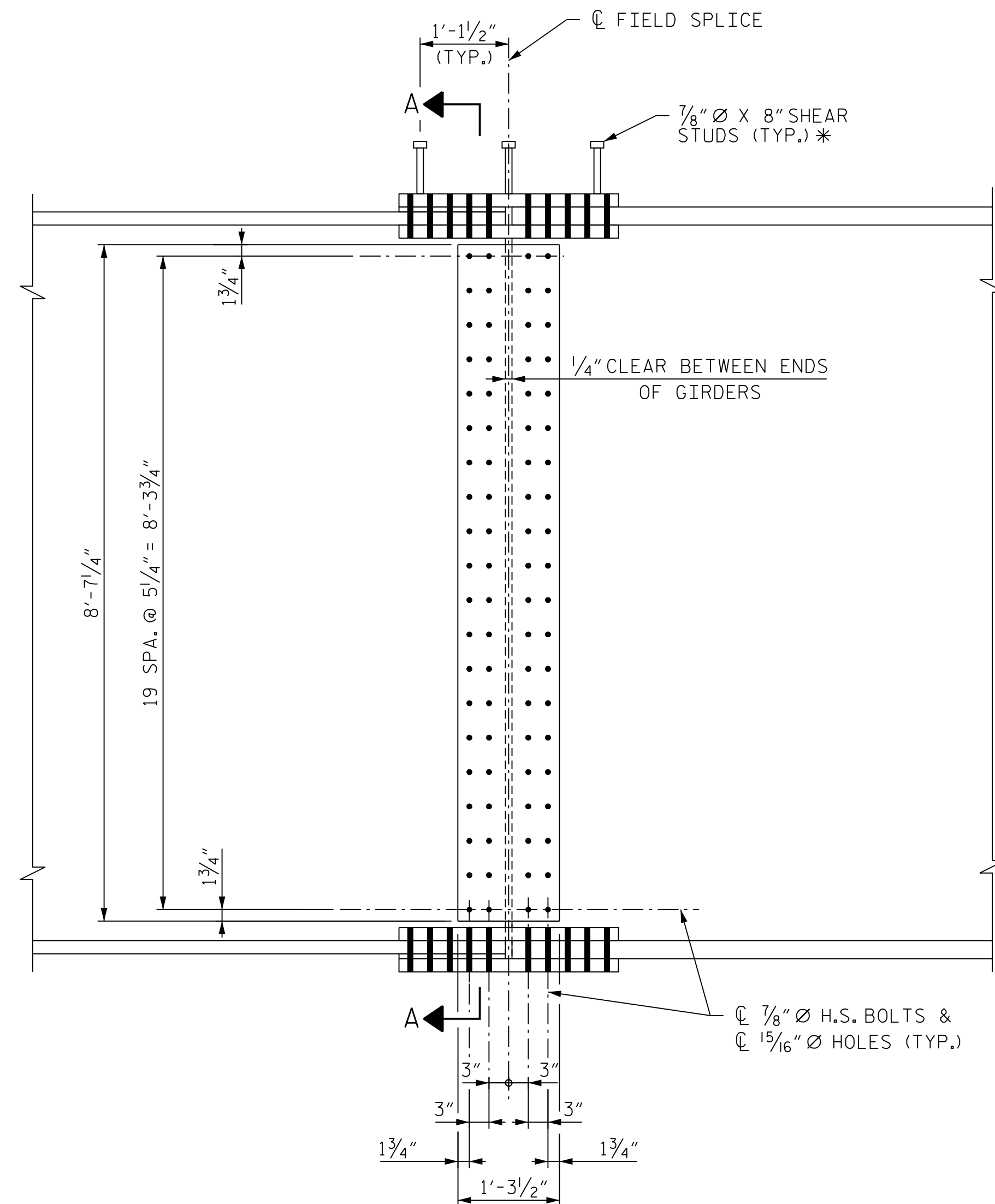
PLAN (TOP OF TOP FLANGE)

(STUDS NOT SHOWN FOR CLARITY)

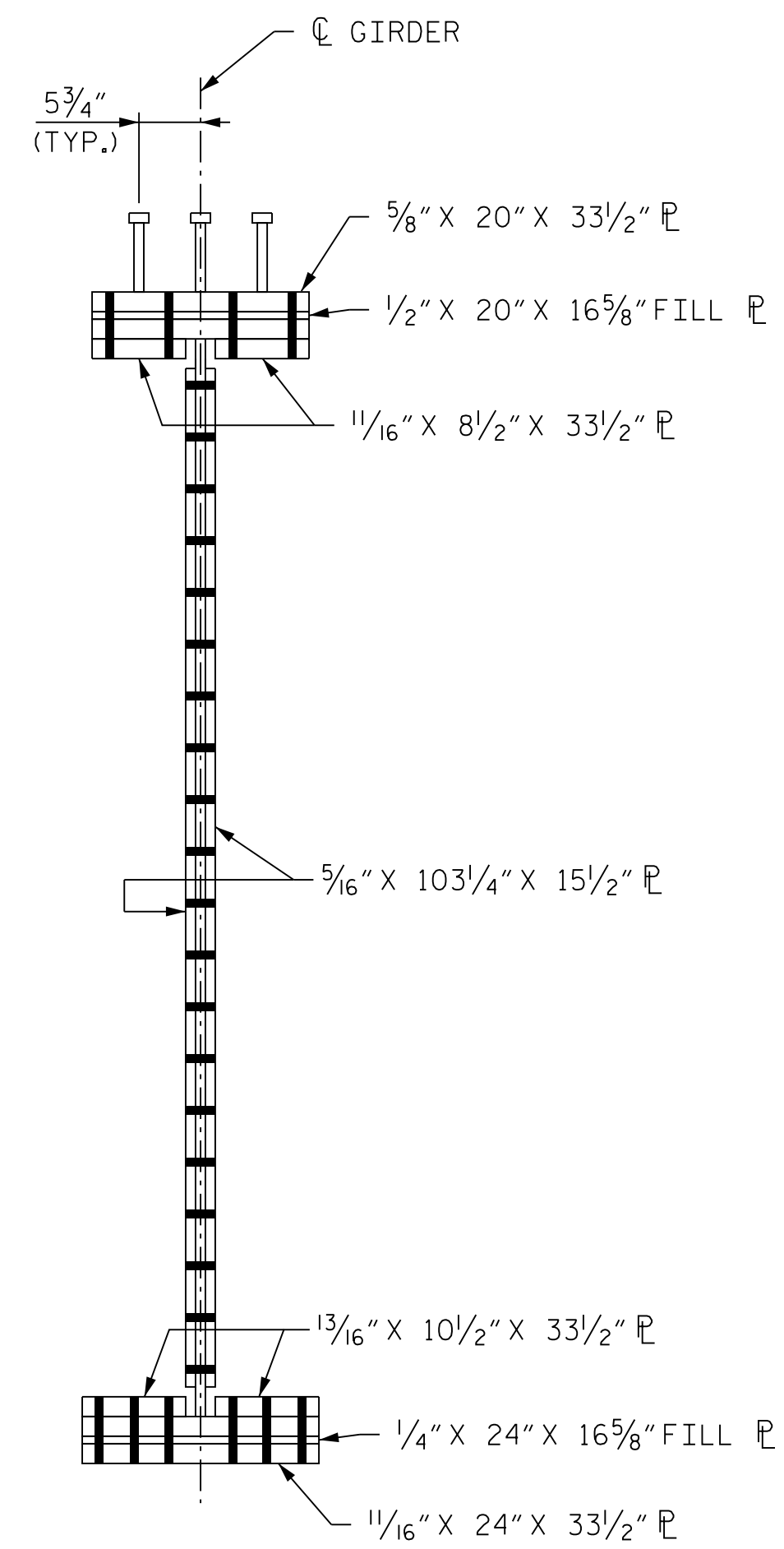
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS
MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

SHEET 4 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BOLTED FIELD SPLICE
DETAILS - TYPE "D"



Dominic A. Coletti 10/15/2021

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
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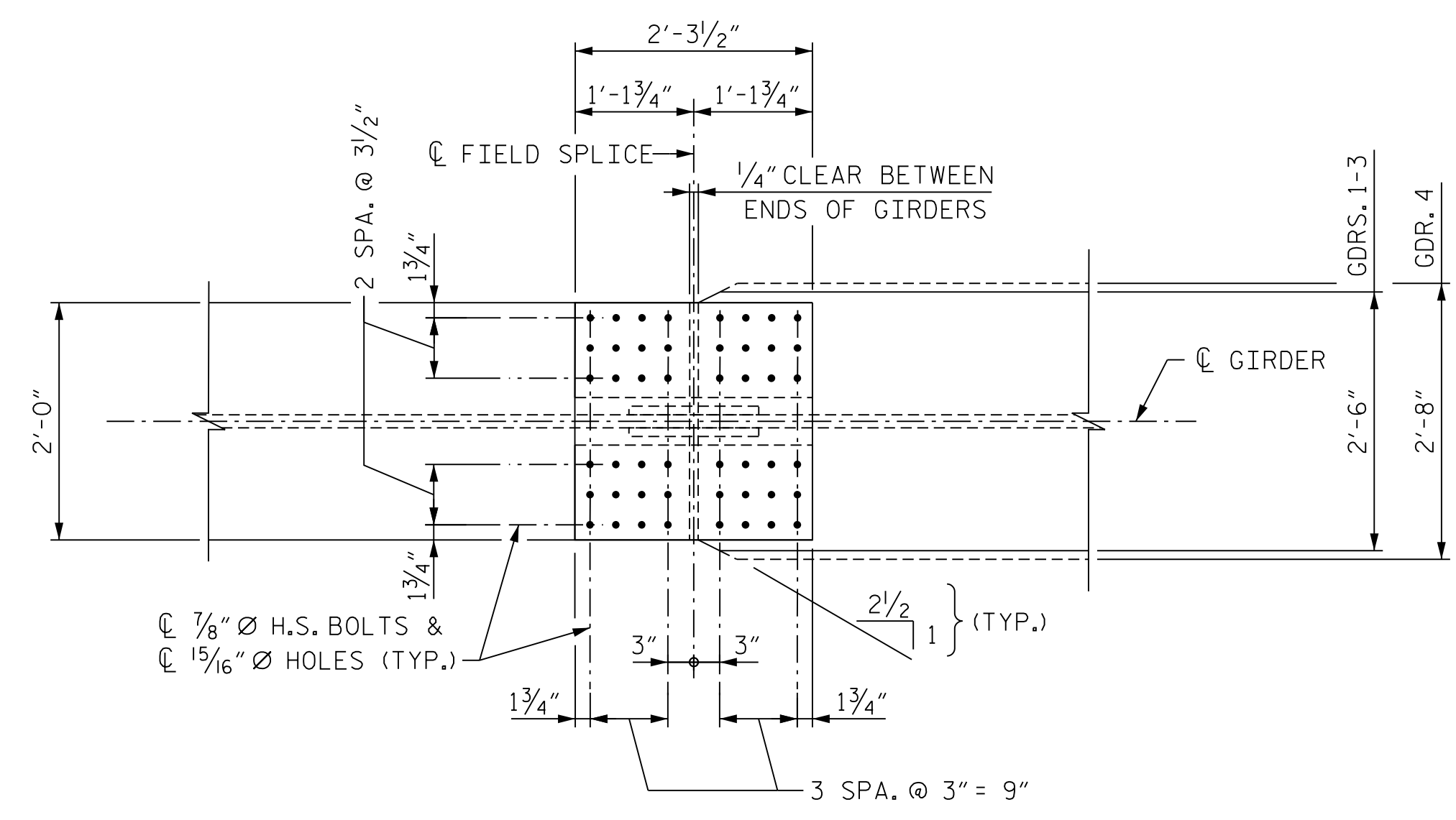
SHEET NO.
S06-043
TOTAL SHEETS
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UNLESS ALL SIGNATURES COMPLETED

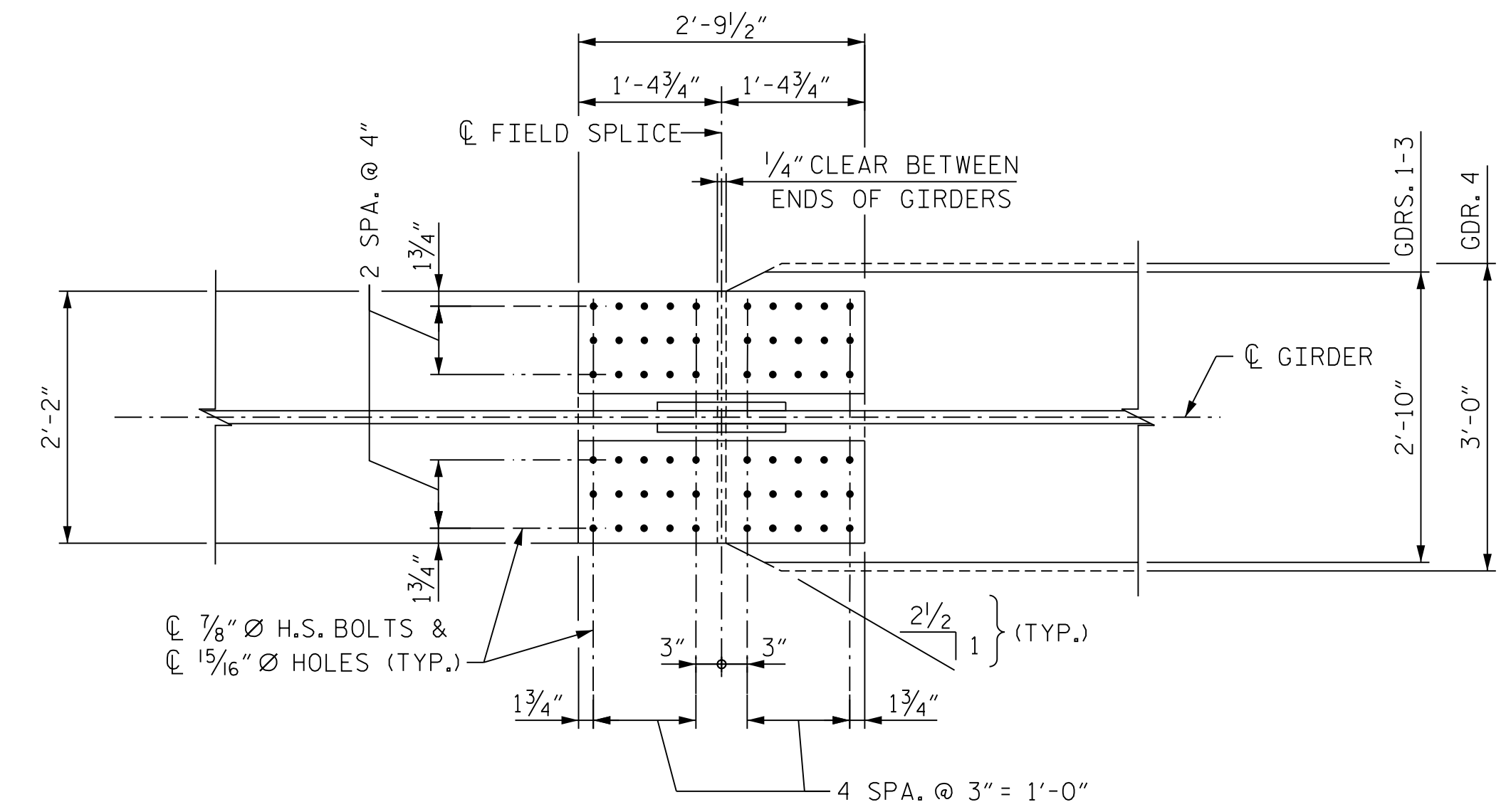
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DES CHK: D. OLDS DATE: 08/19
DWG BY: B. PETERSON DATE: 06/19
CHK BY: G. SCHMITZ DATE: 09/19

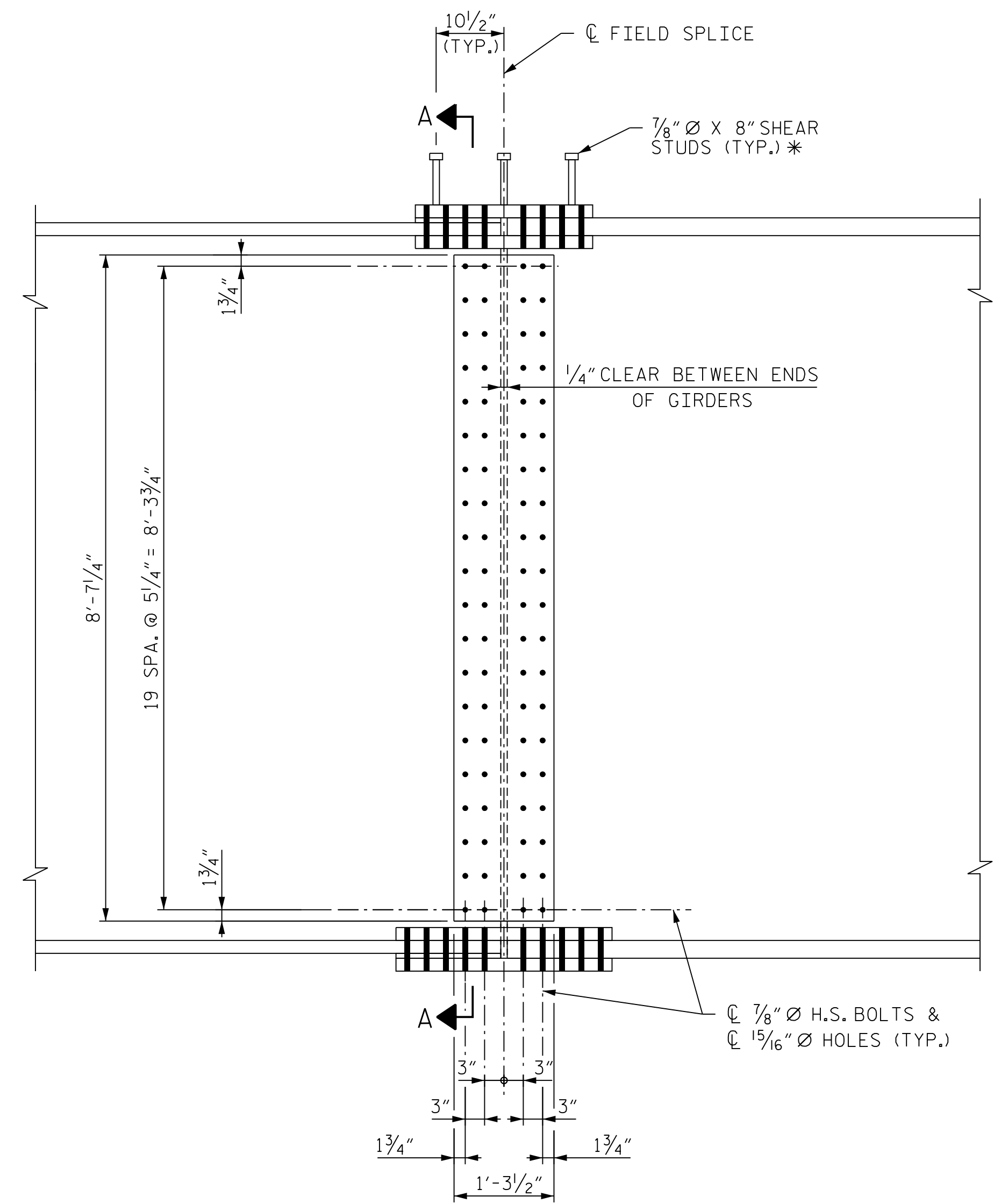


PLAN (TOP OF TOP FLANGE)
(STUDS NOT SHOWN FOR CLARITY)

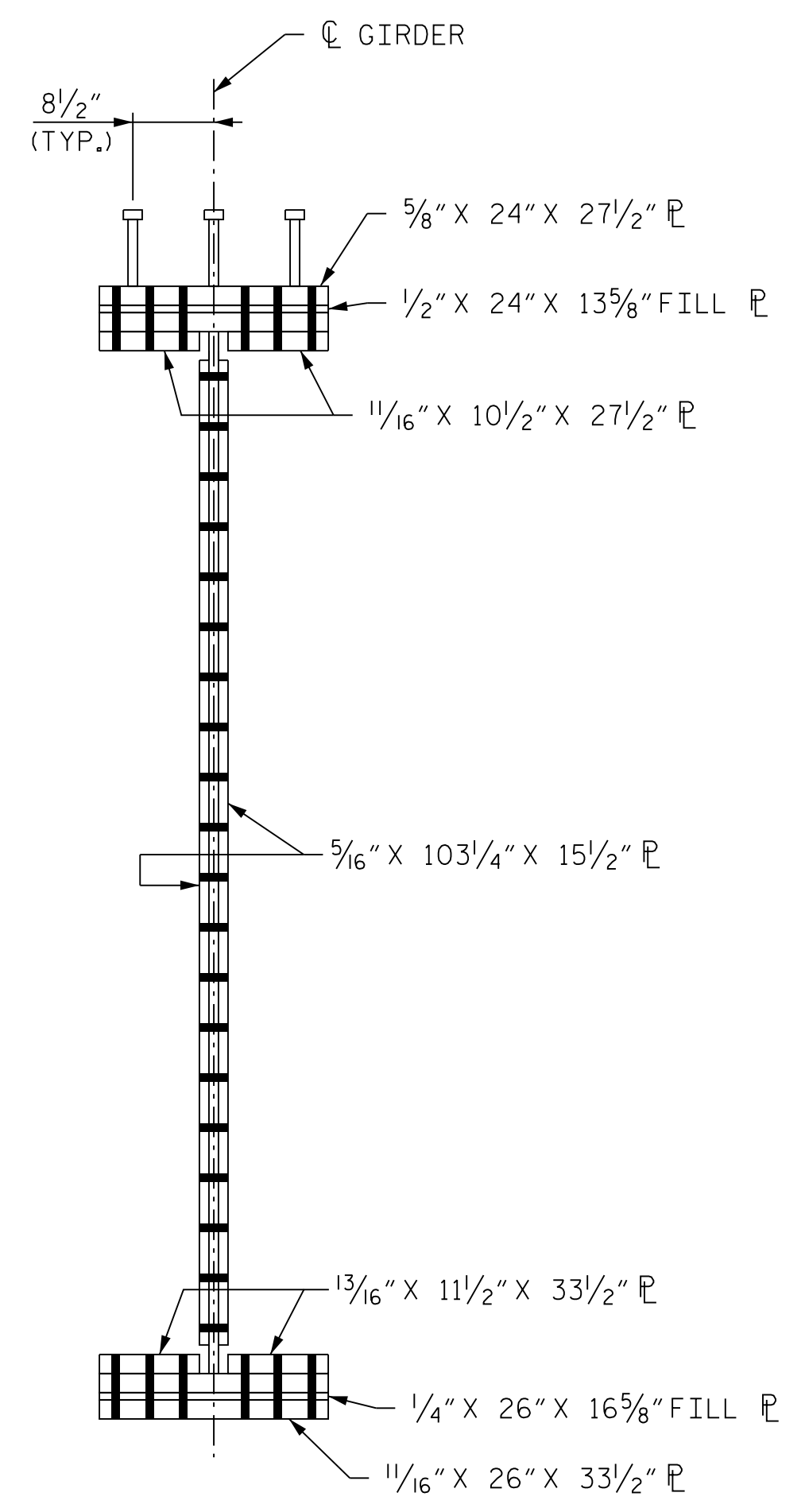
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



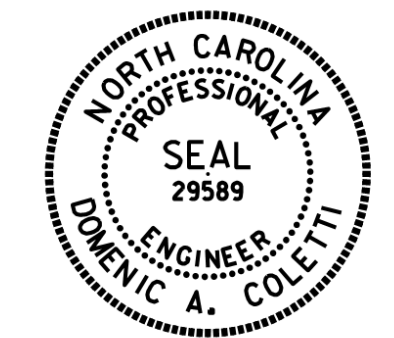
ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 5 OF 14



Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 BOLTED FIELD SPLICE
 DETAILS - TYPE "E"**

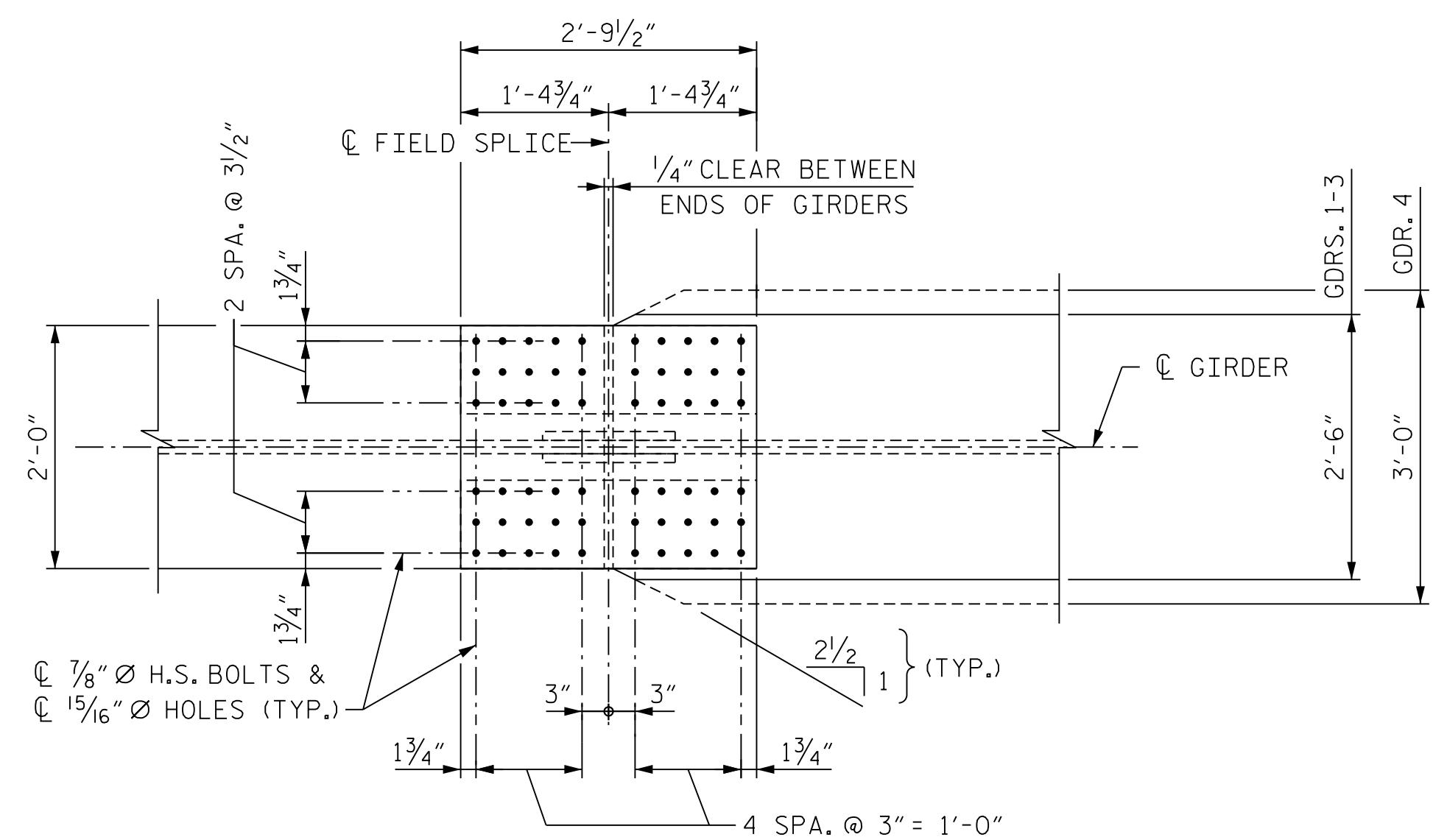
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**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

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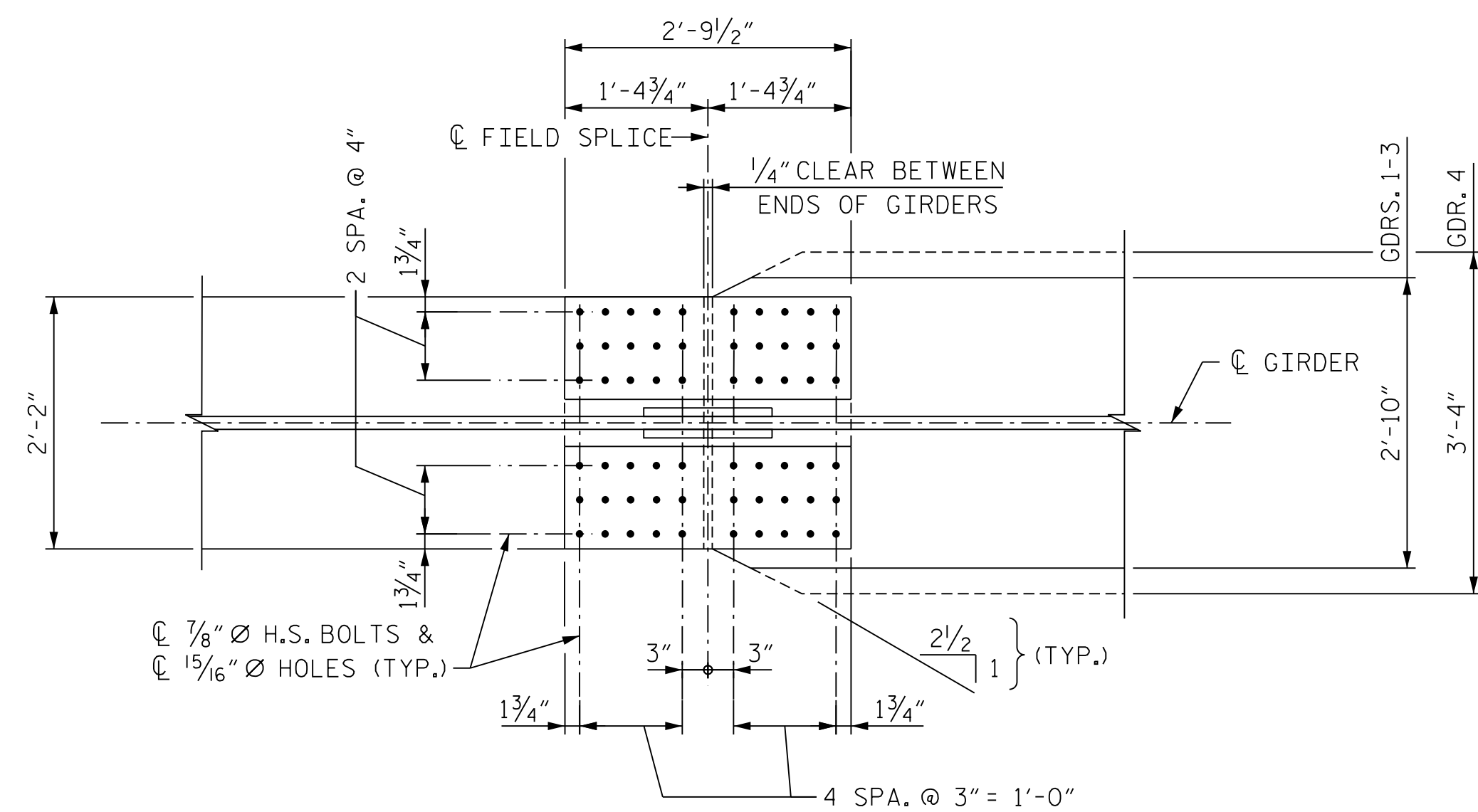
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DES CHK: <u>D. OLDS</u>	DATE: <u>08/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>09/19</u>



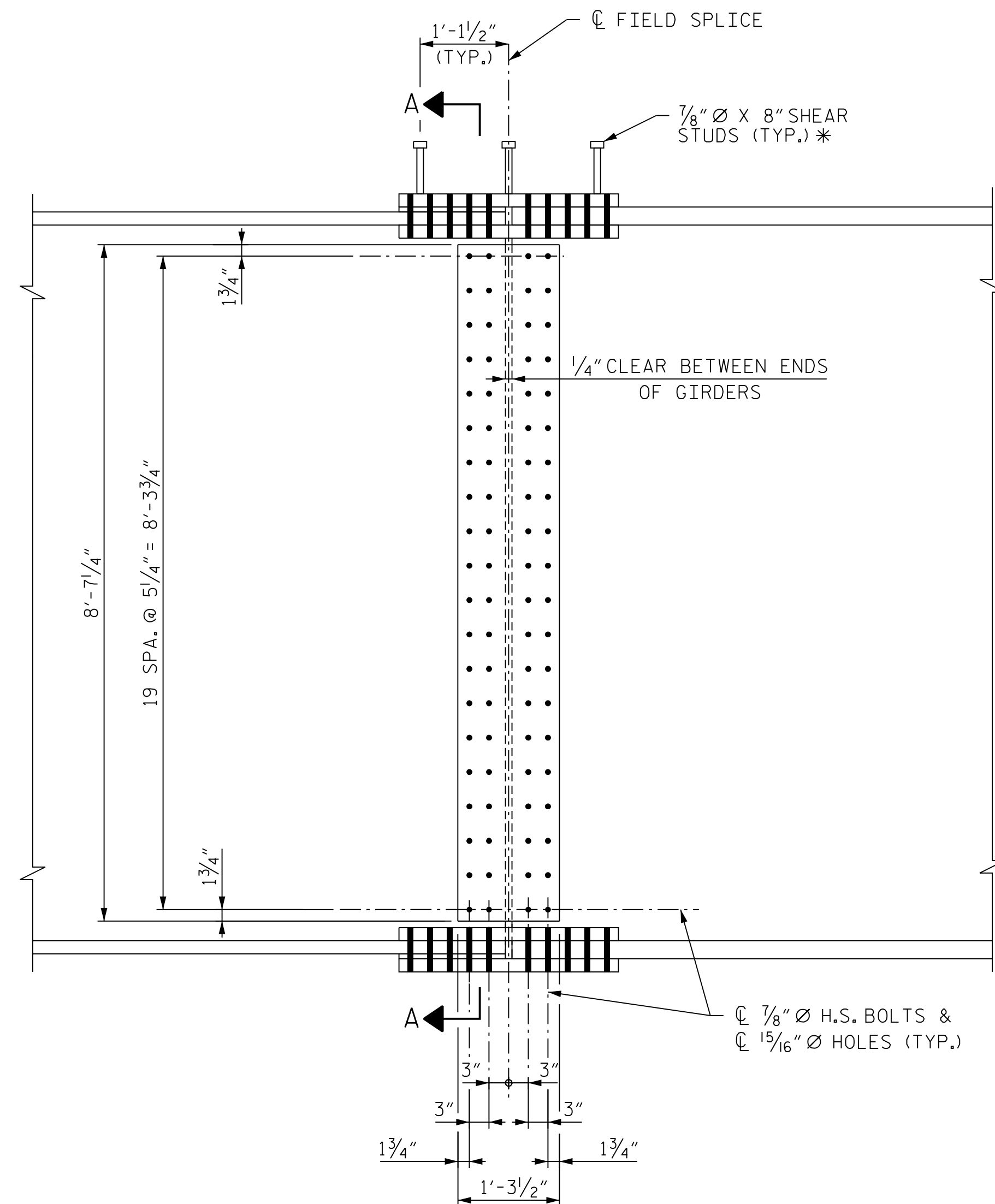
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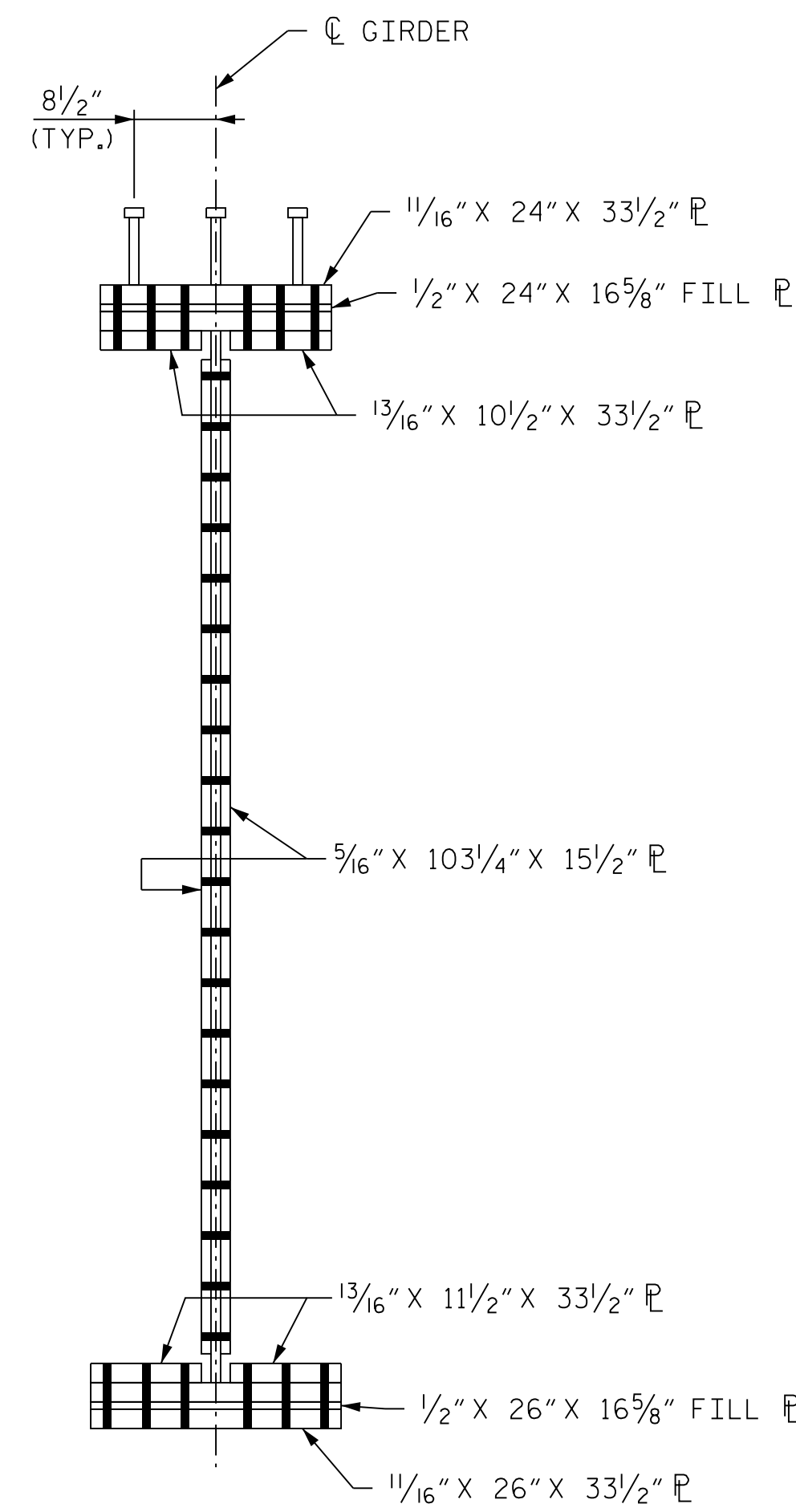
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

SHEET 6 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
BOLTED FIELD SPLICE
DETAILS - TYPE "F"**



Dominic A. Coletti 10/15/2021

REVISIONS

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

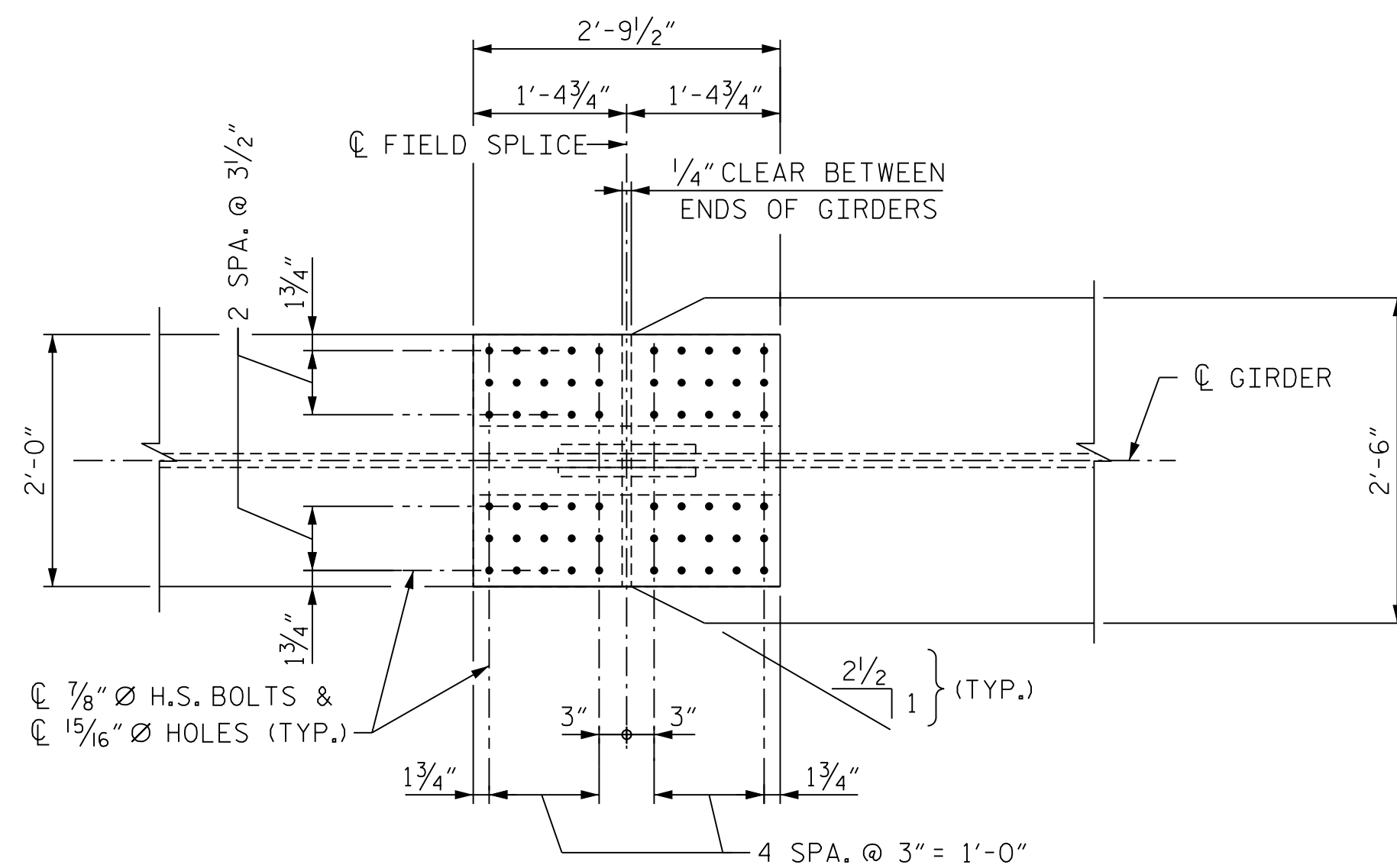
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TOTAL SHEETS 129



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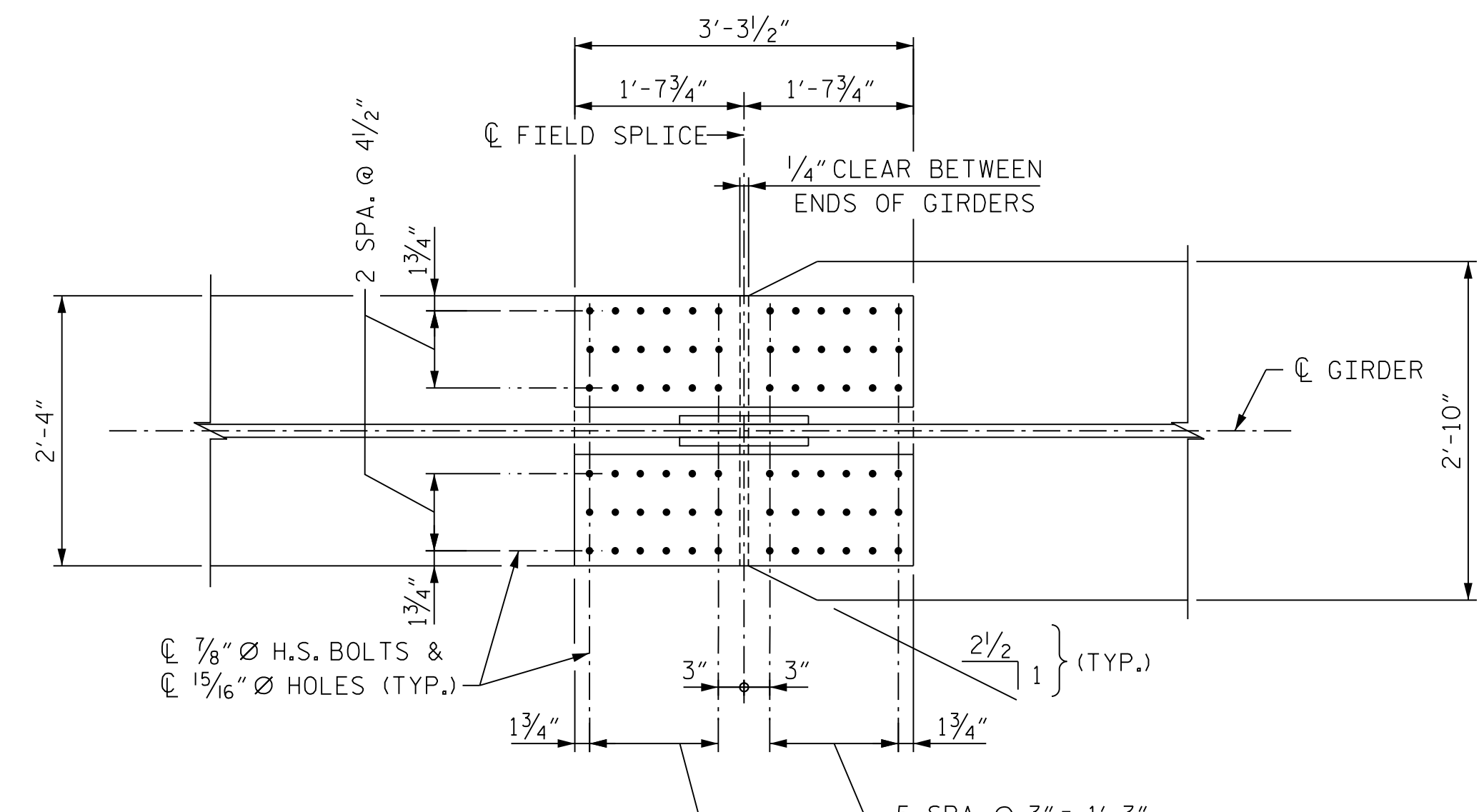
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DES BY: <u>G. SCHMITZ</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
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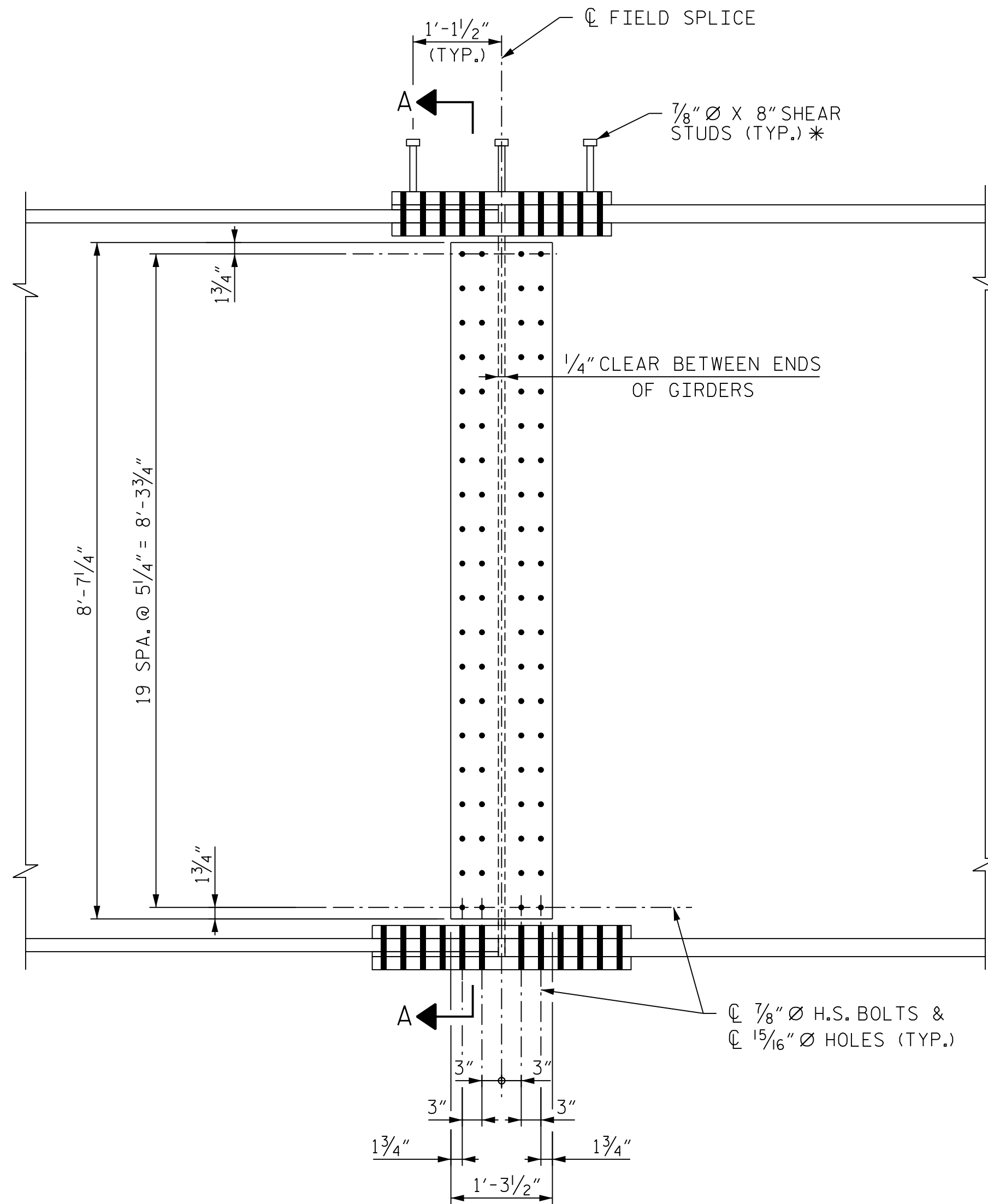


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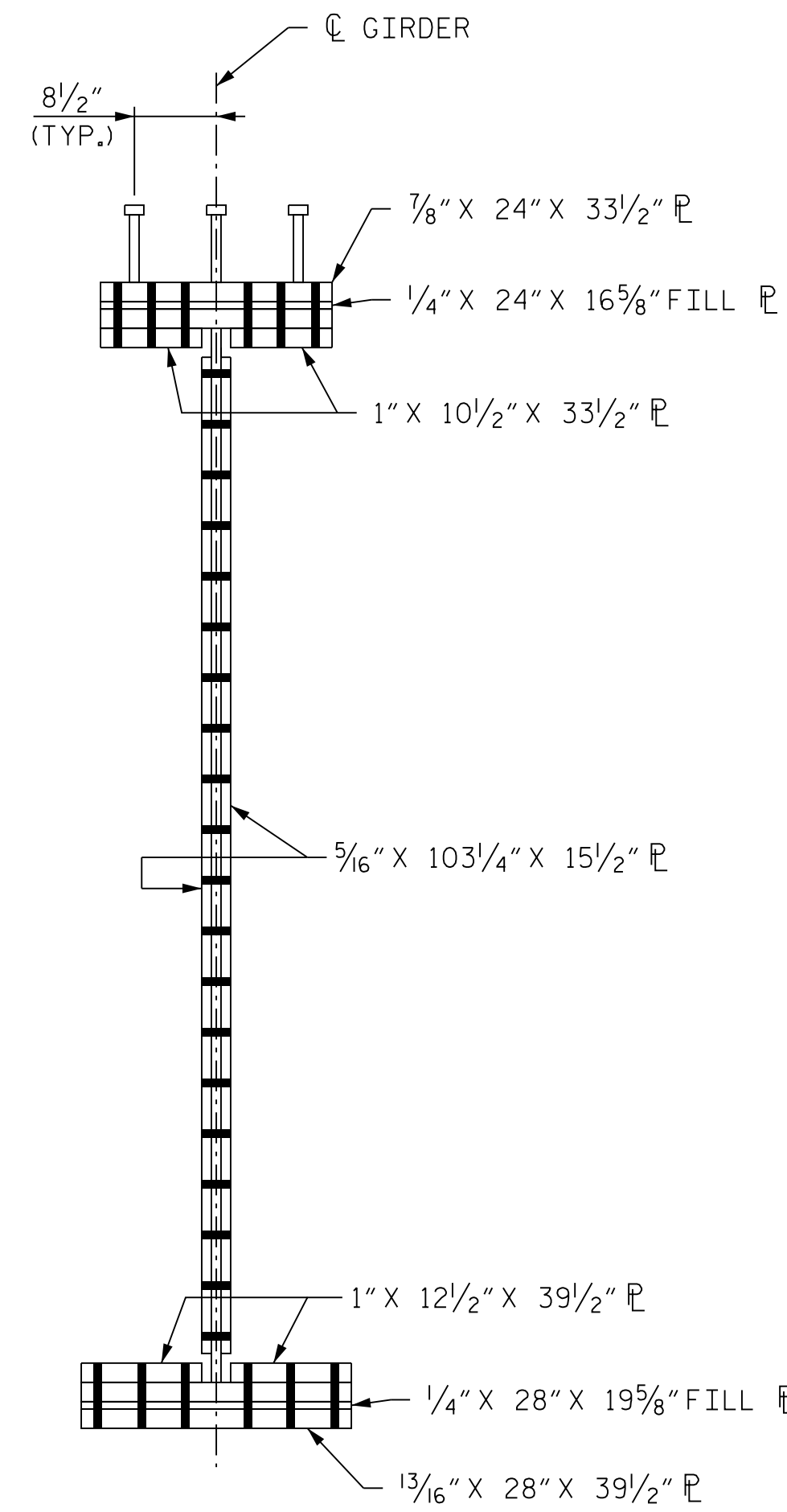
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

SHEET 7 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
BOLTED FIELD SPLICE
DETAILS - TYPE "G"**



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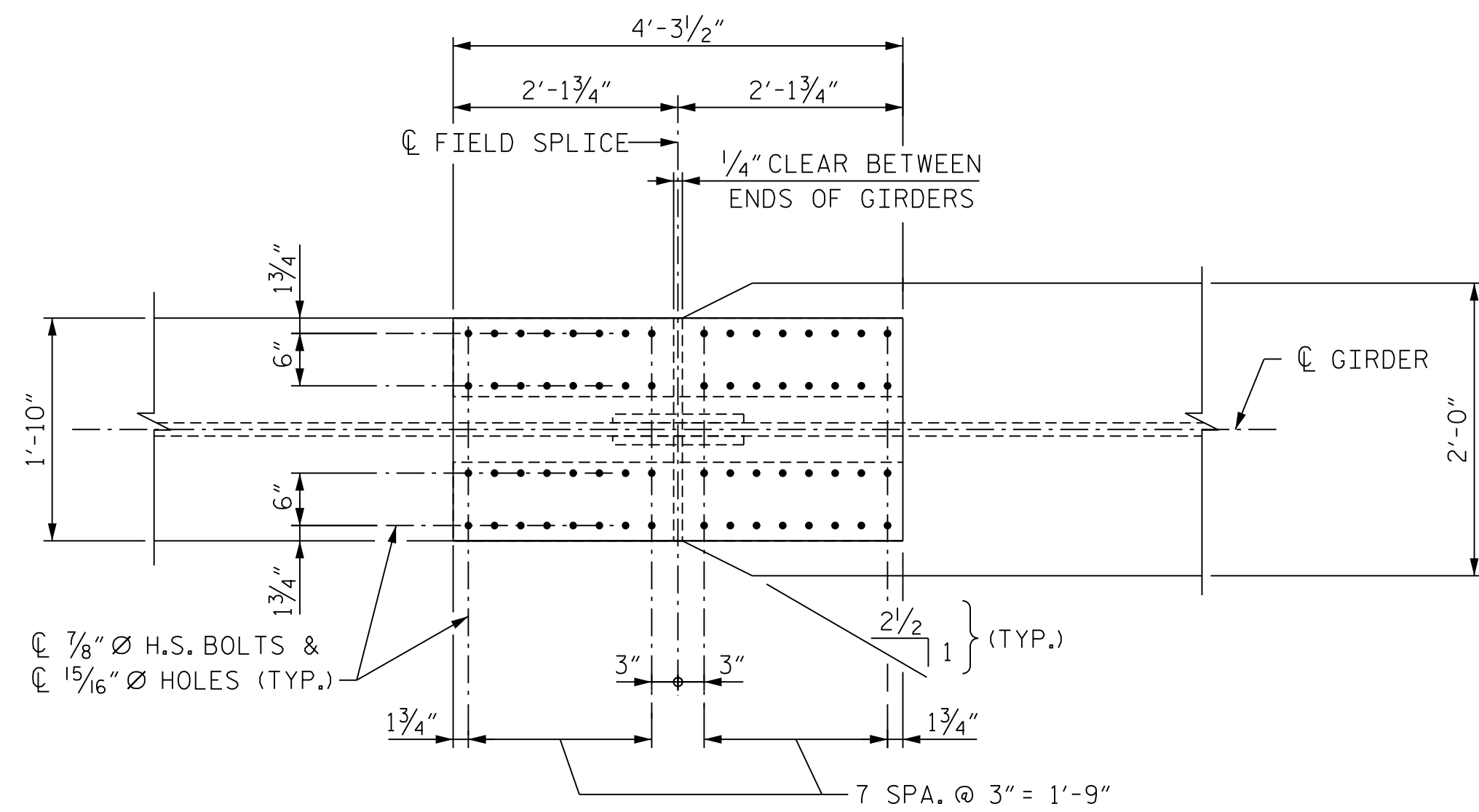
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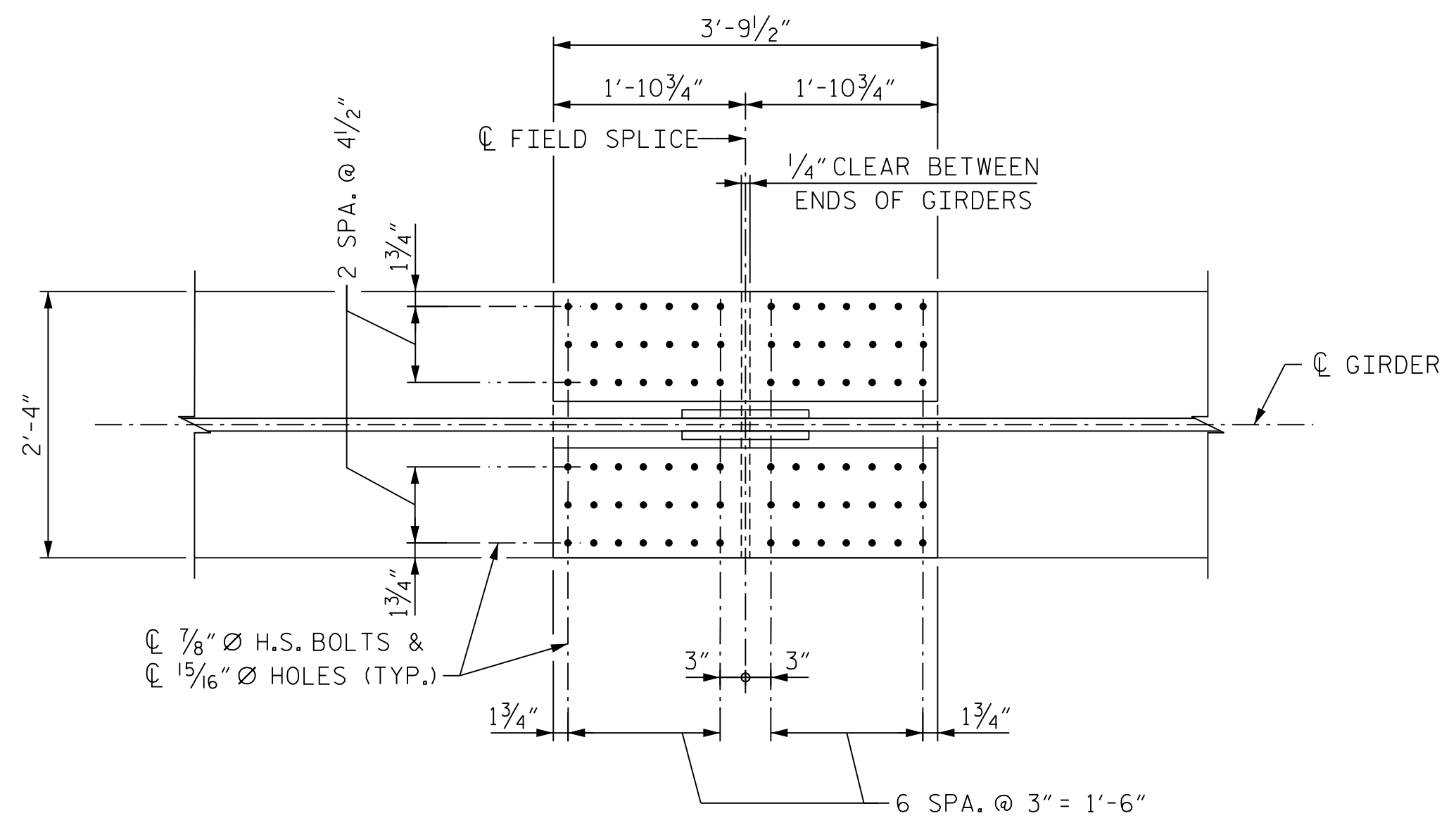
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UNLESS ALL SIGNATURES COMPLETED**

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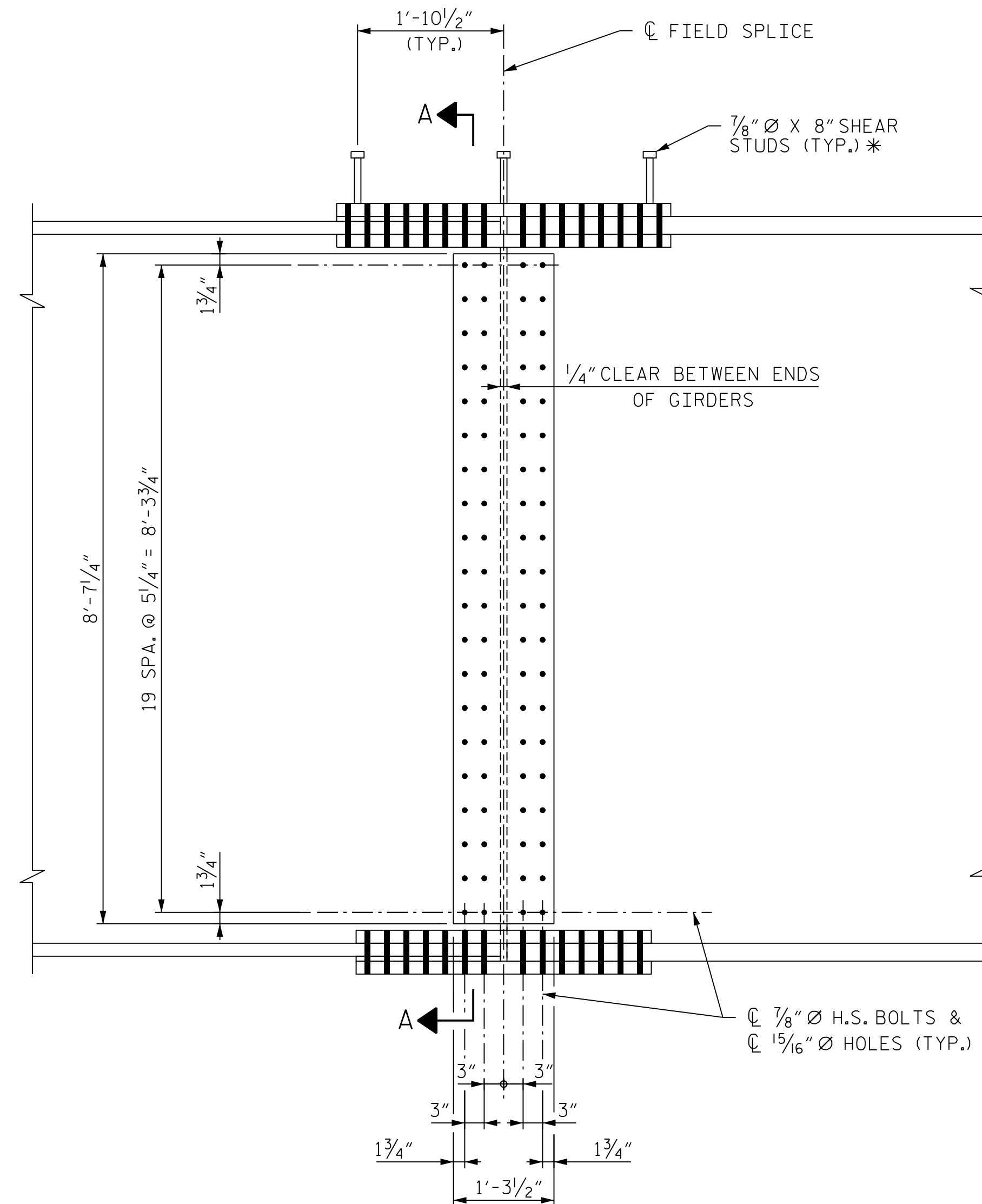


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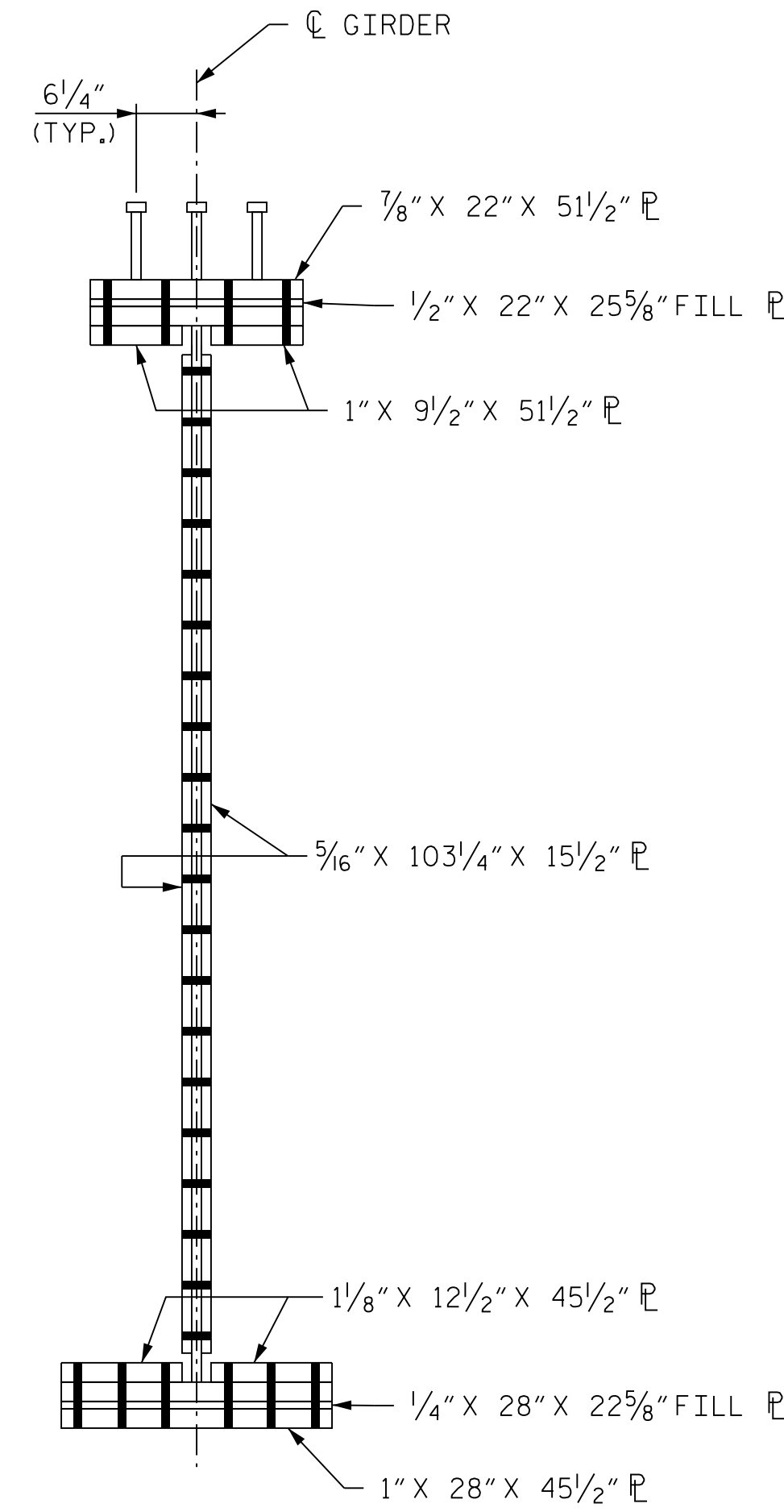


PLAN (TOP OF BOTTOM FLANGE)

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



ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

SHEET 8 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BOLTED FIELD SPLICE
DETAILS - TYPE "H"



Dominic A. Coletti 10/15/2021

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
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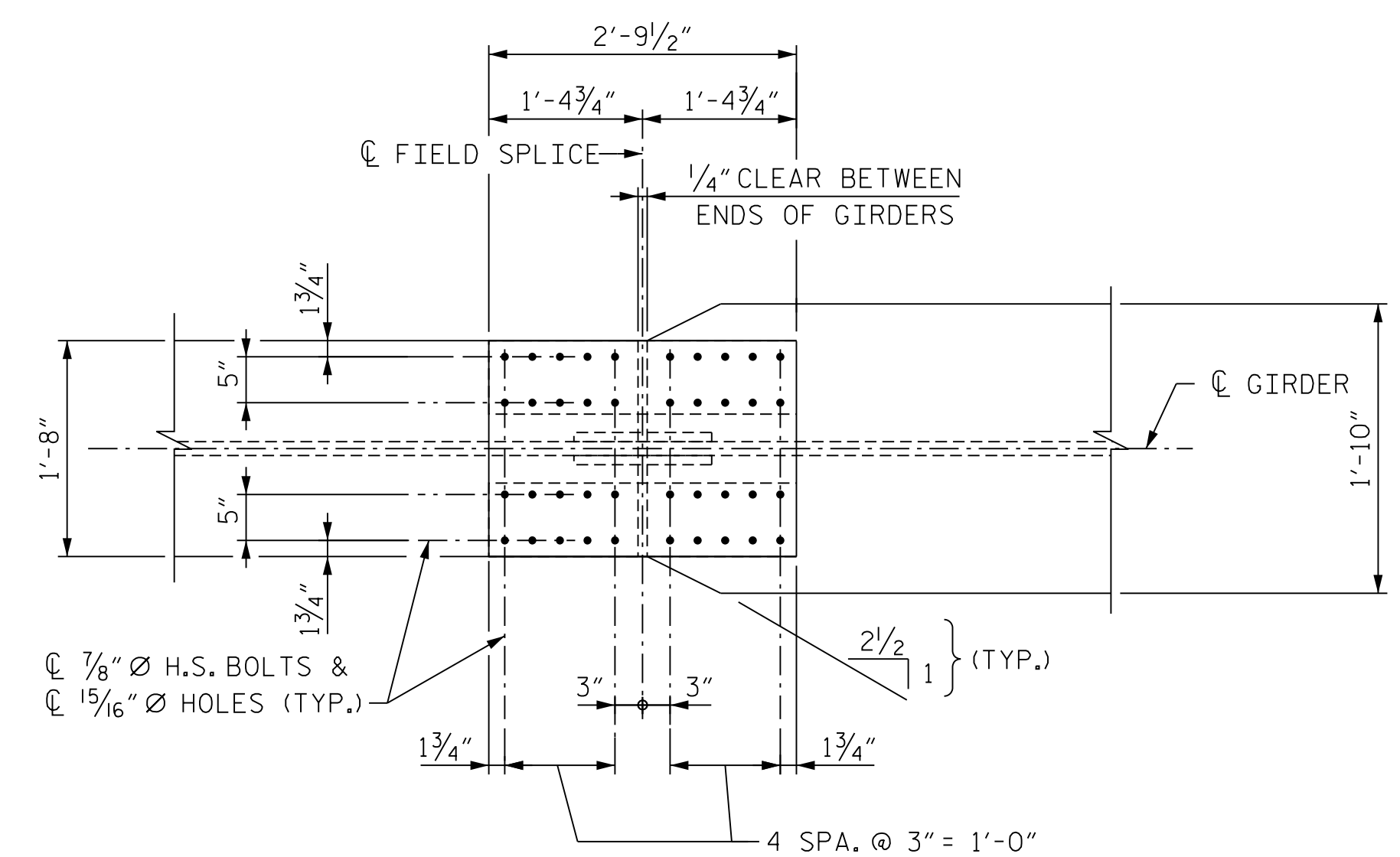
SHEET NO. S06-047
TOTAL SHEETS 129



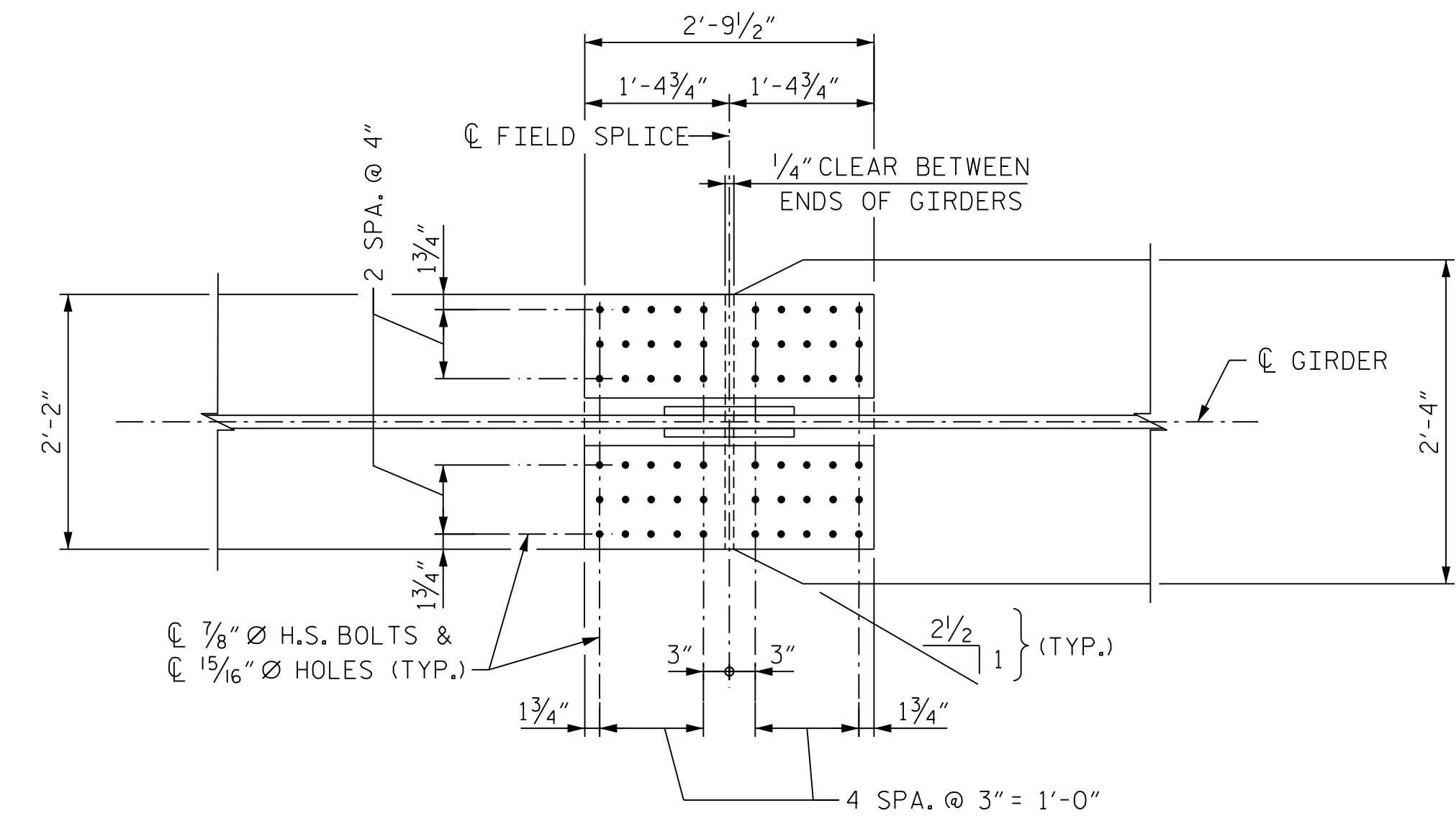
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DES CHK: D. OLDS	DATE: 08/19	CHK BY: G. SCHMITZ	DATE: 09/19

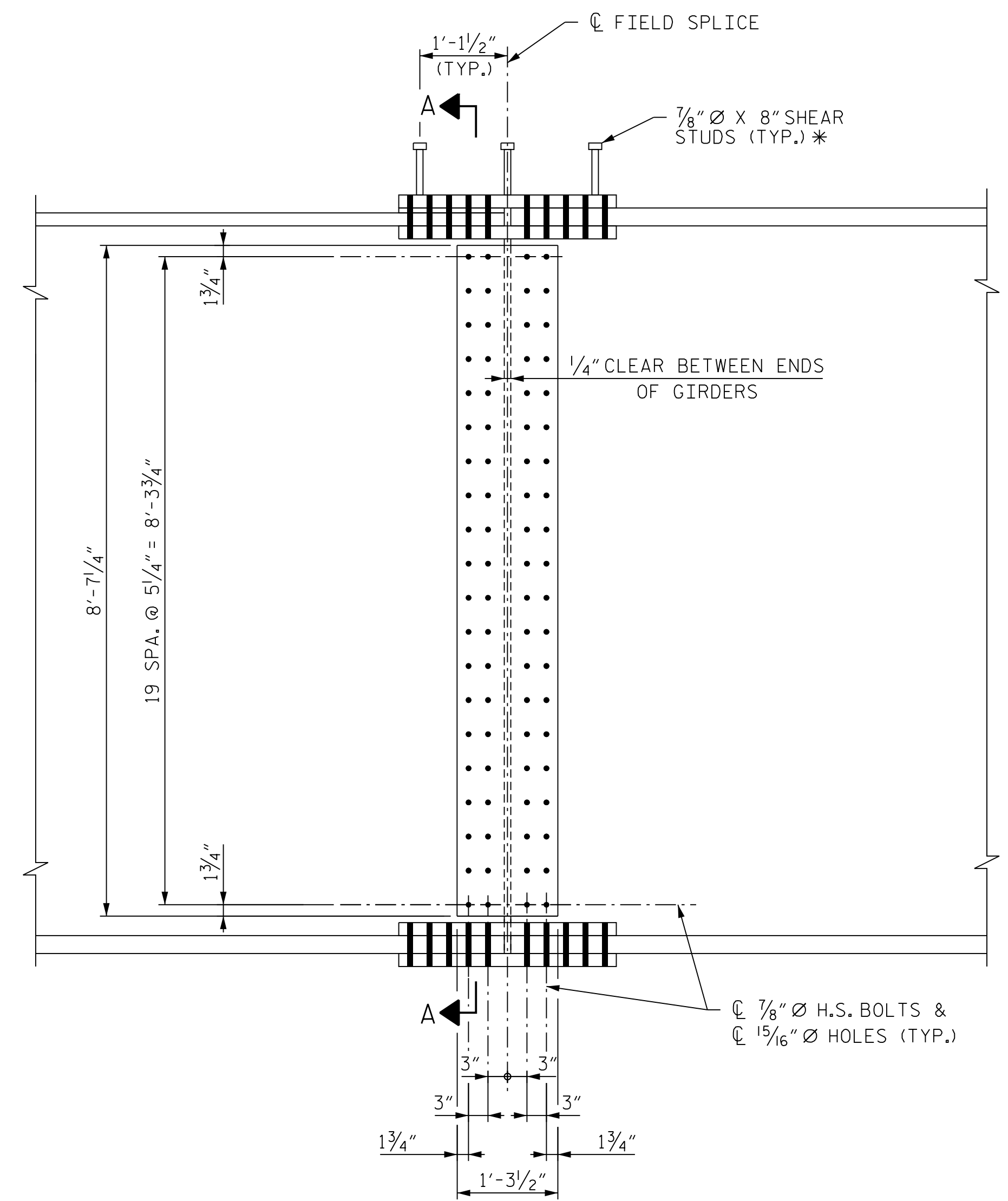


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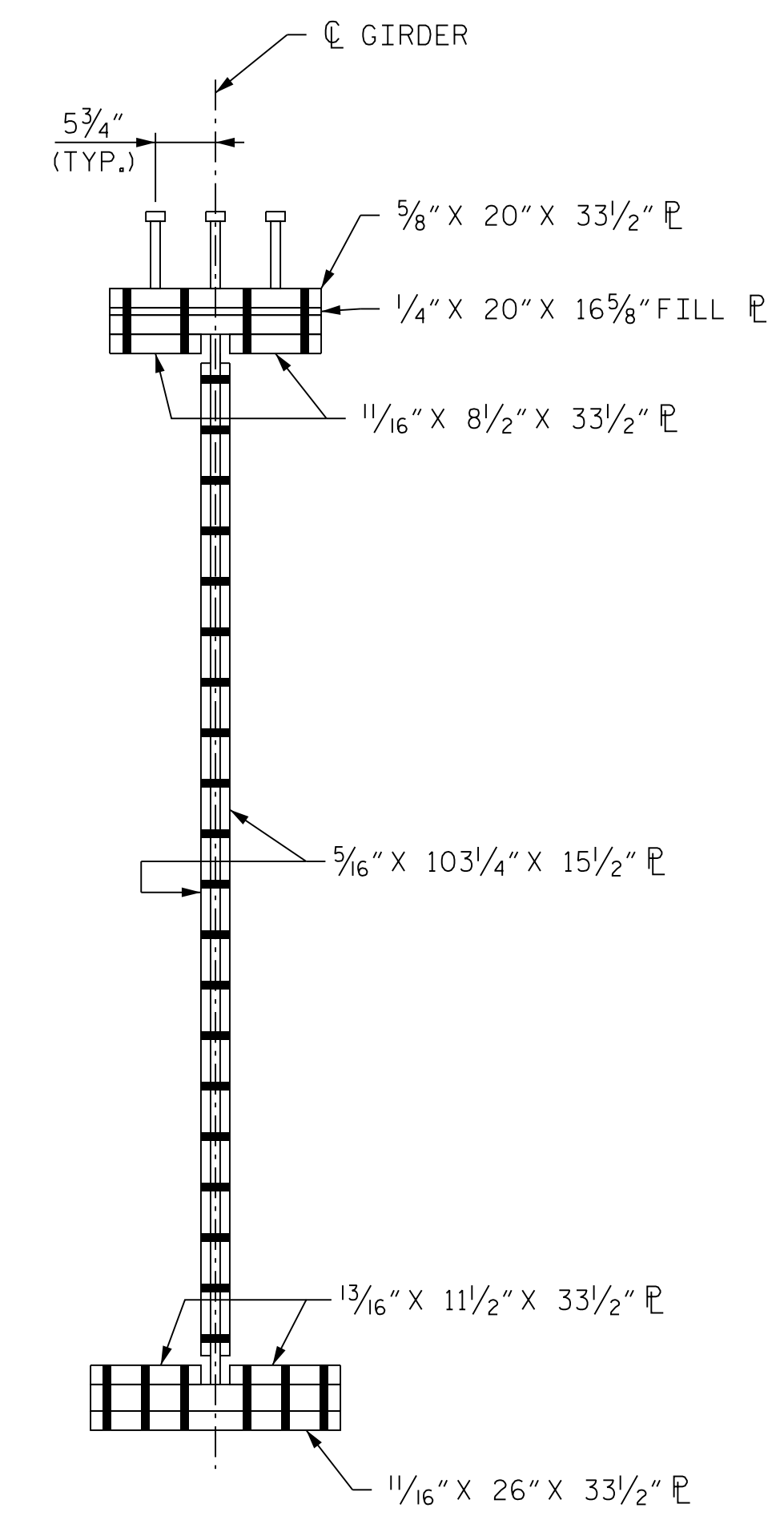


PLAN (TOP OF BOTTOM FLANGE)

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



ELEVATION



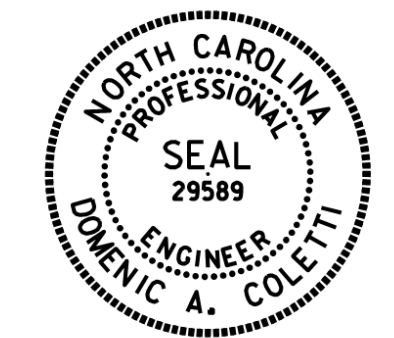
SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 9 OF 14

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

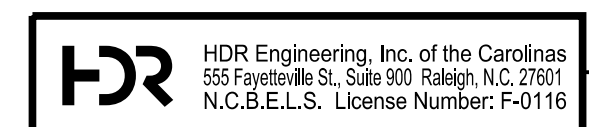
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 BOLTED FIELD SPLICE
 DETAILS - TYPE "I"**



Dominic A. Coletti 10/15/2021

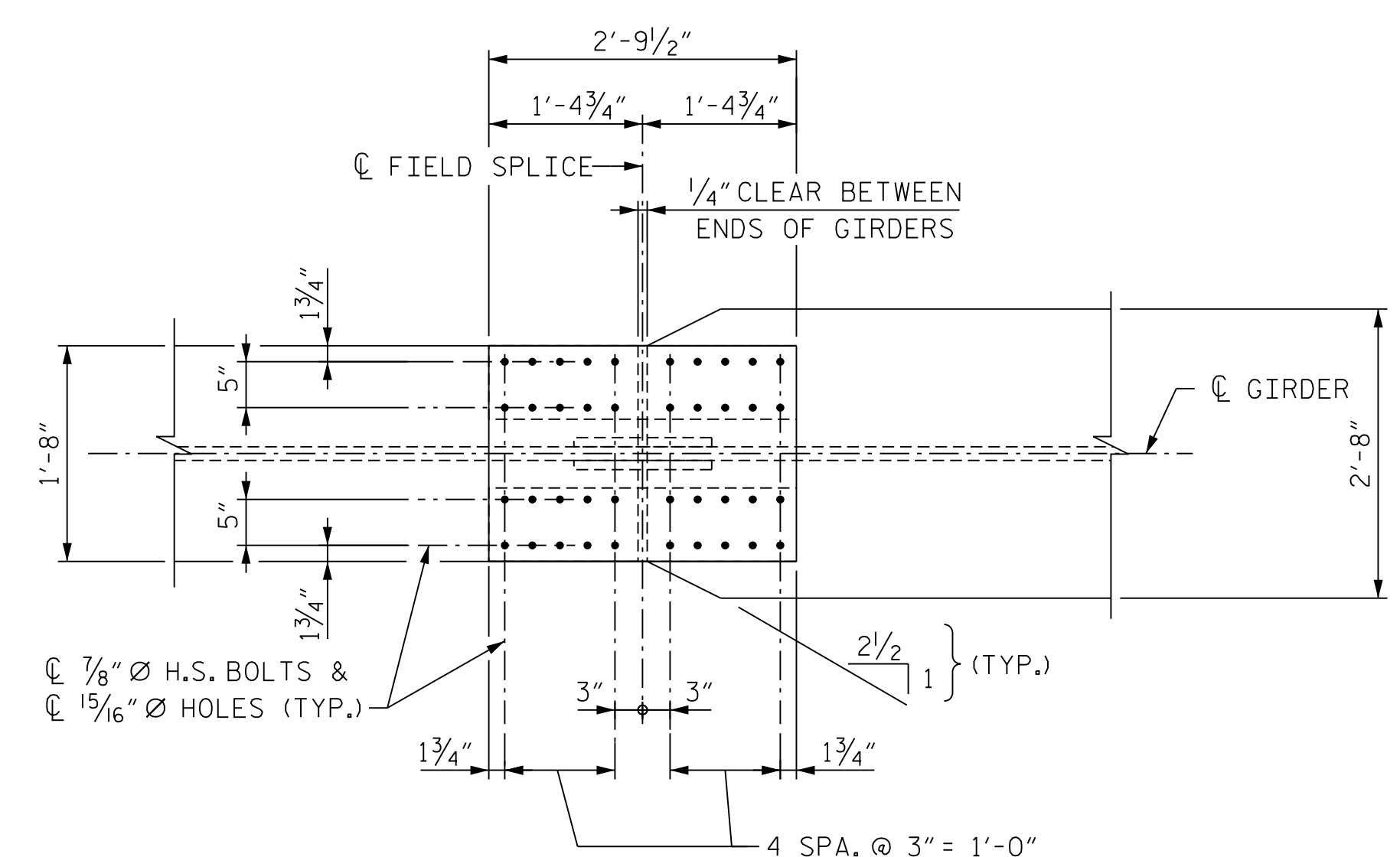
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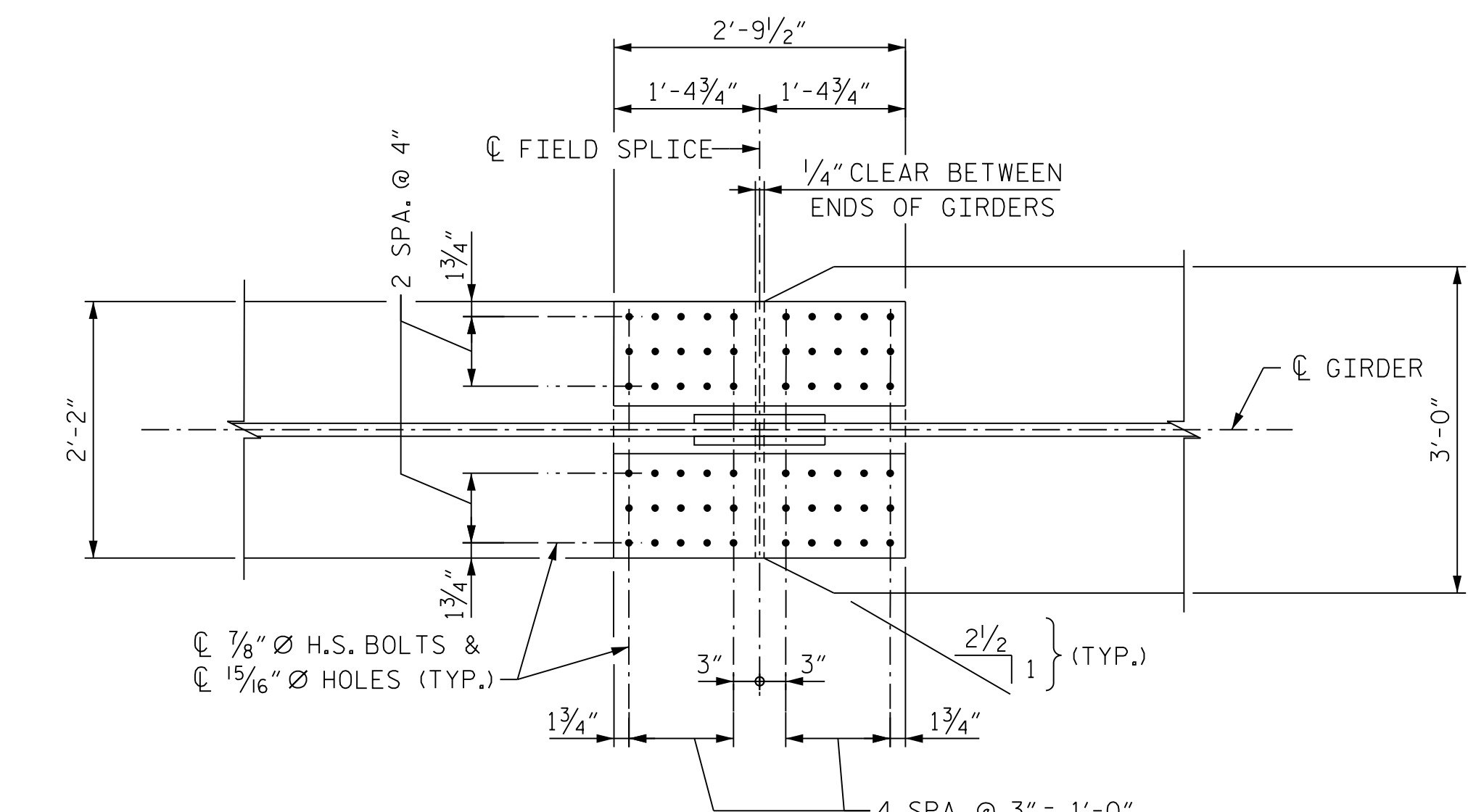
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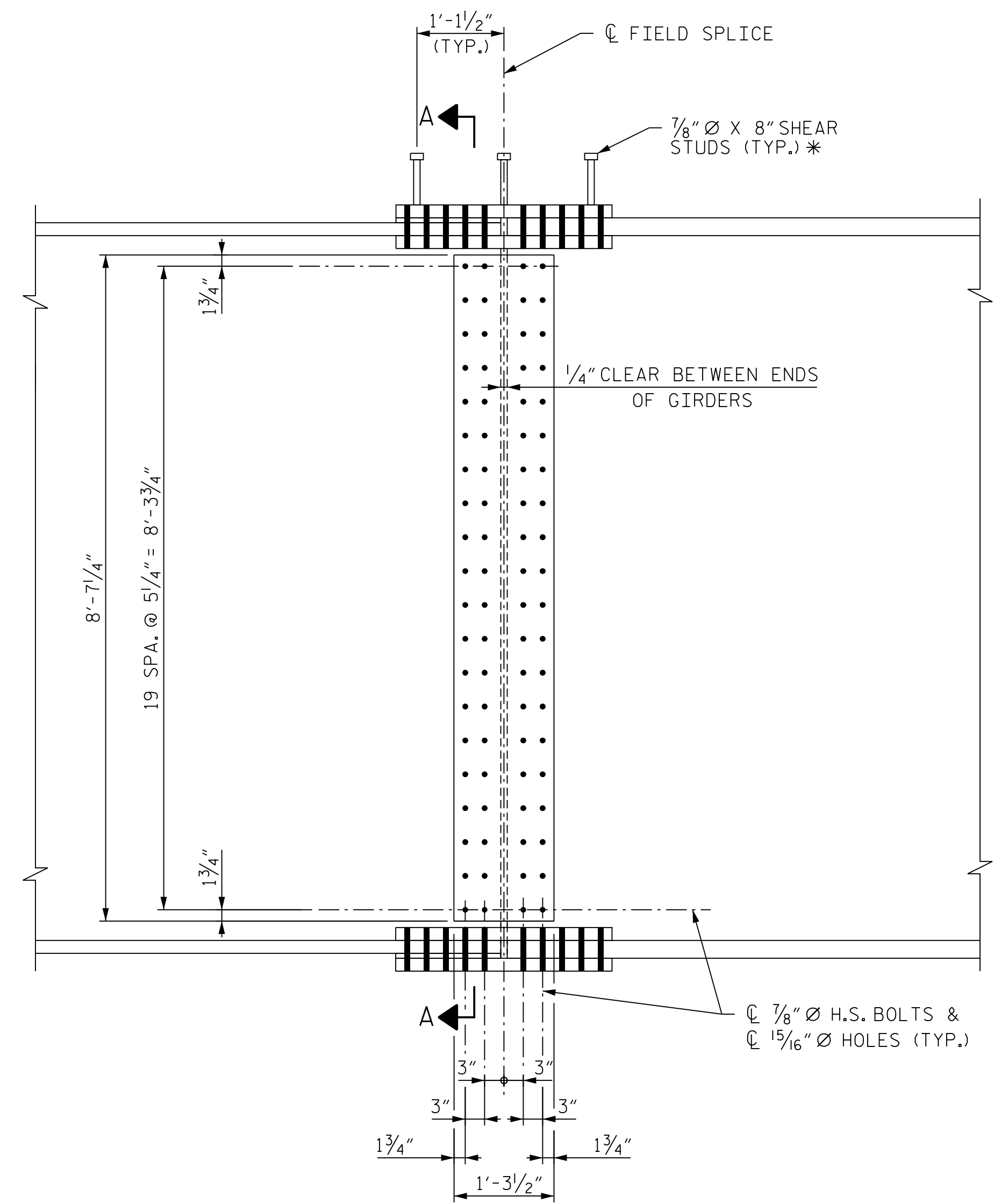


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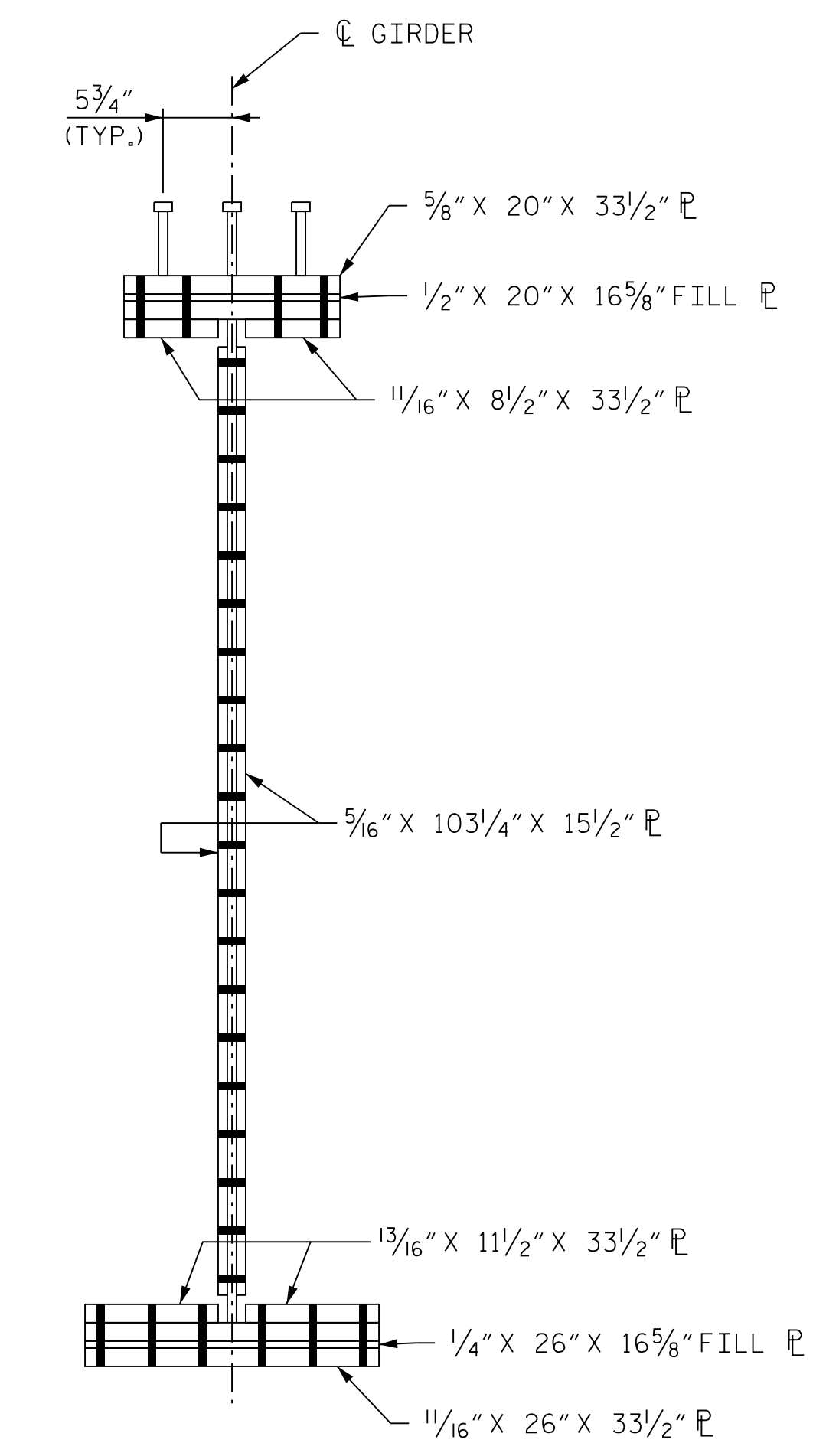
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-
SHEET 10 OF 14



Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
BOLTED FIELD SPLICE
DETAILS - TYPE "J"**

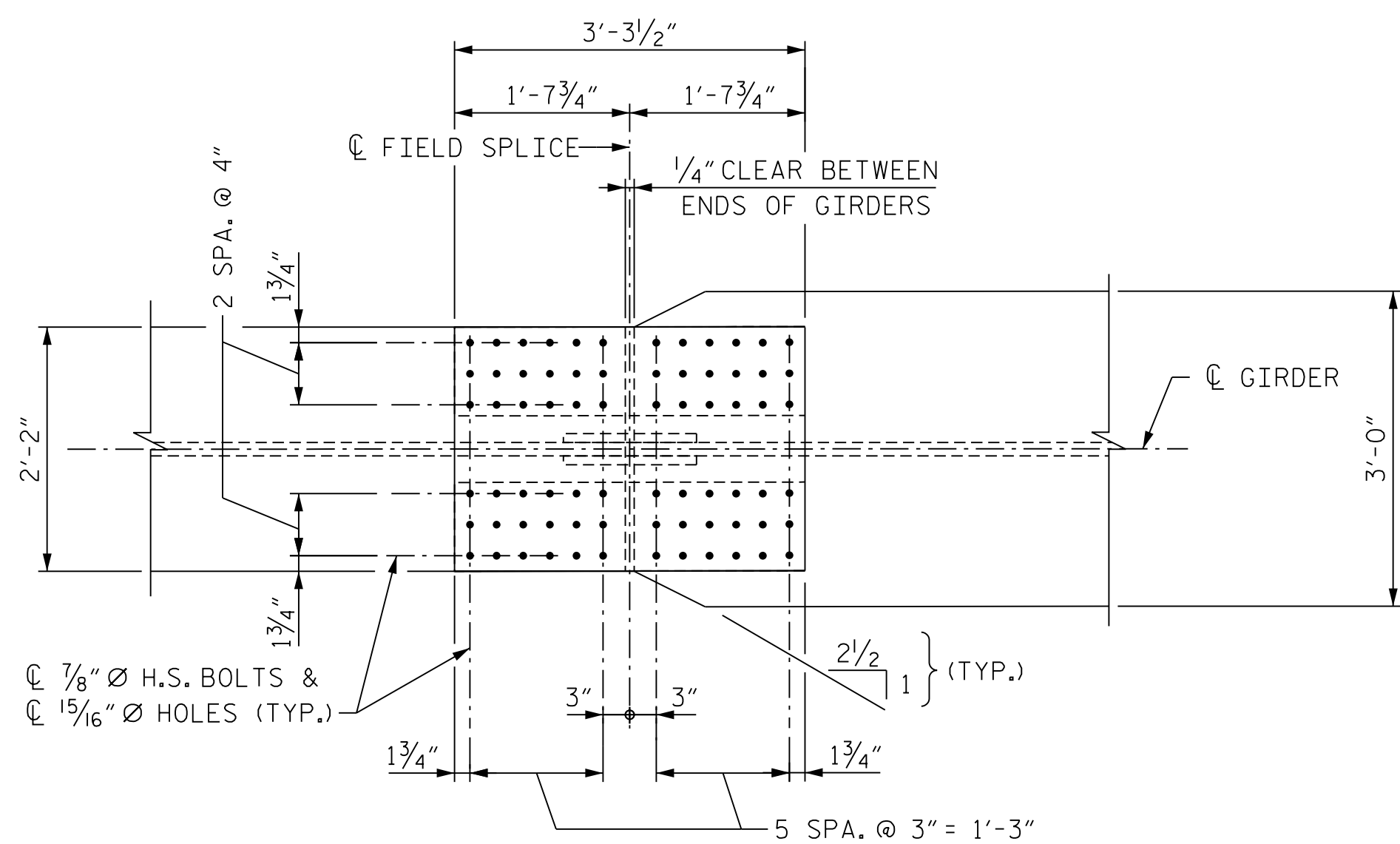
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NO.	BY:	DATE:	NO.	BY:	DATE:	
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N.C.B.E.L.S. License Number: F-0116

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UNLESS ALL SIGNATURES COMPLETED**

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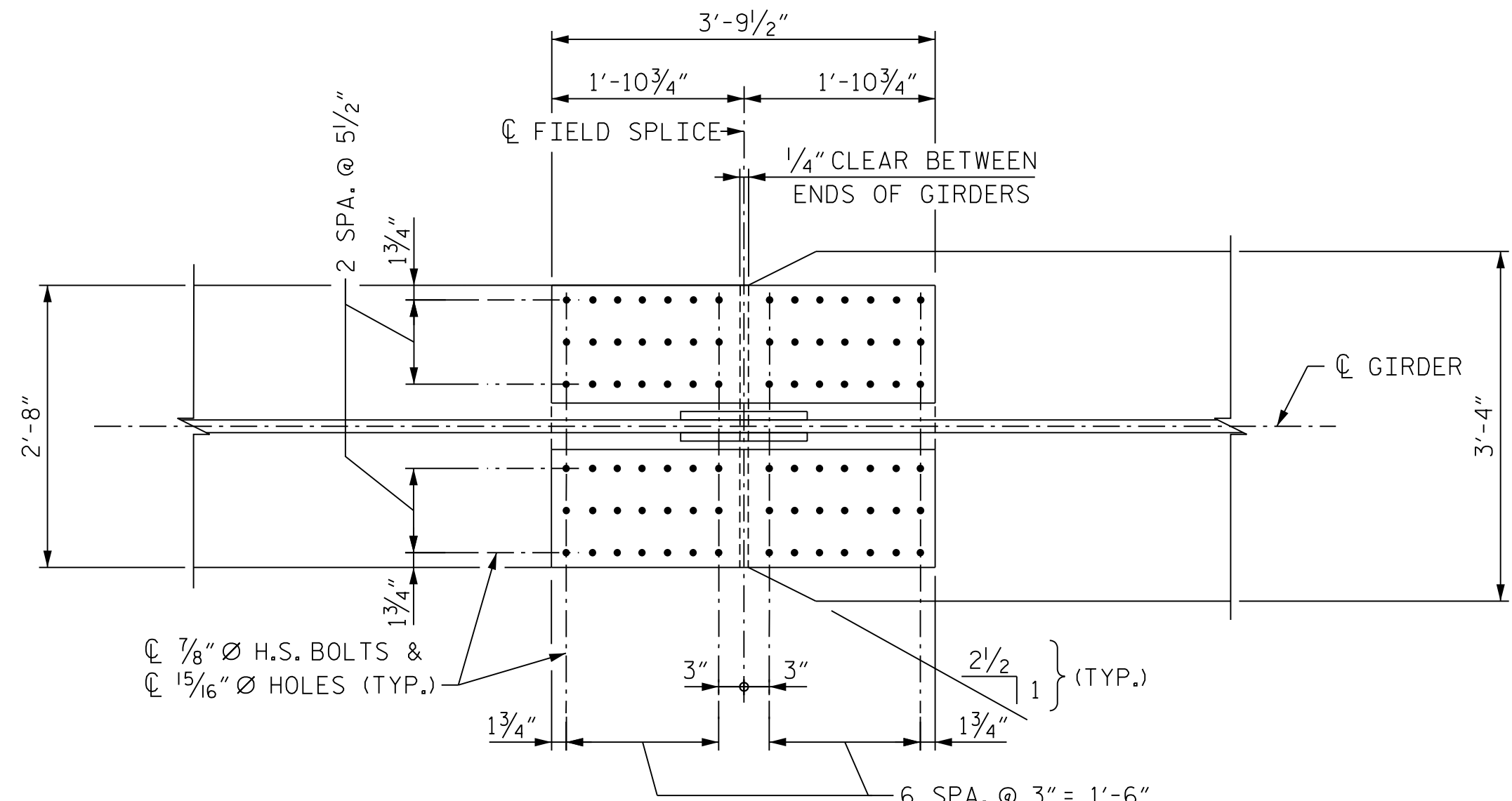
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DES CHK: <u>D. OLDS</u>	DATE: <u>08/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>09/19</u>



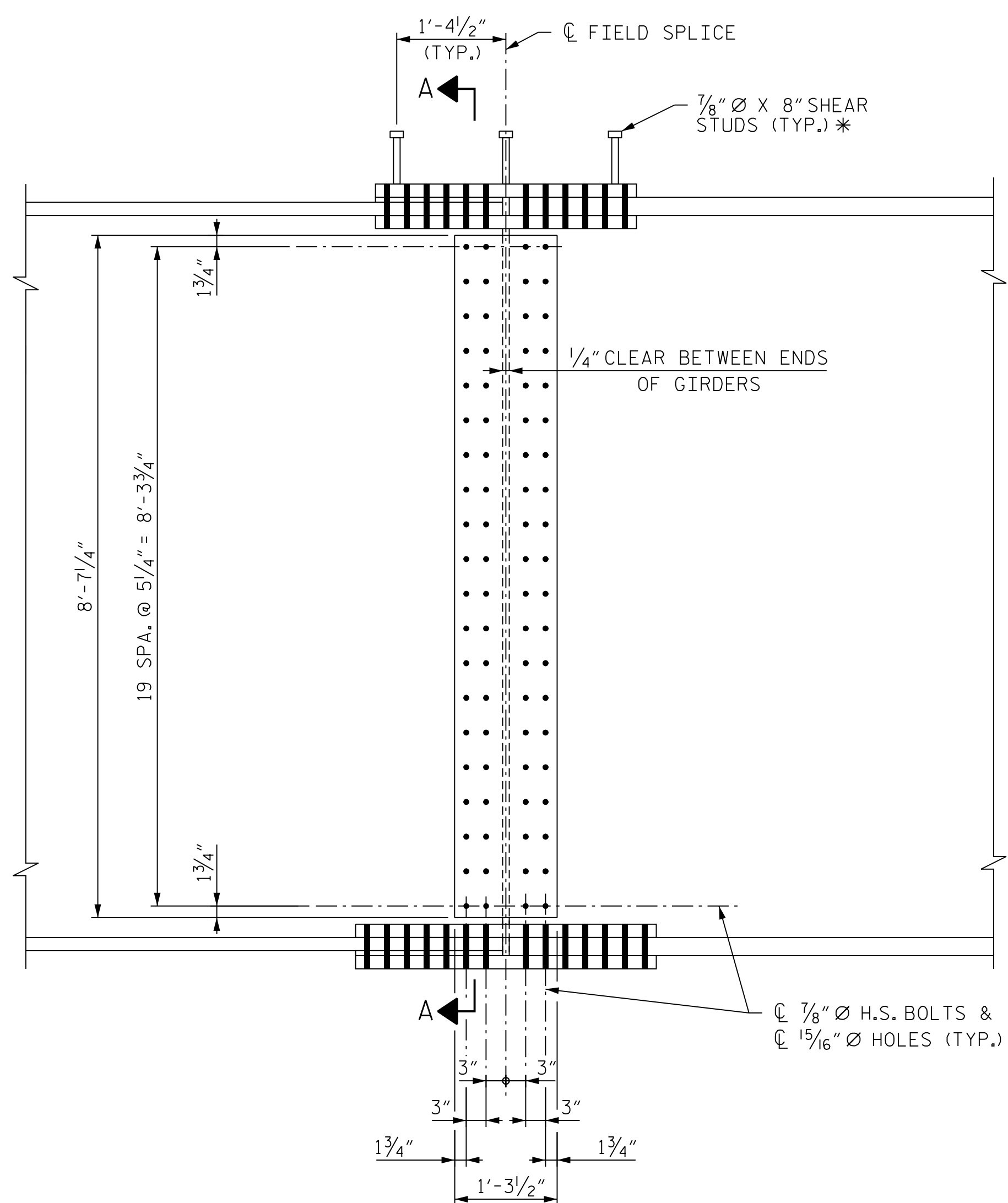
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(STUDS NOT SHOWN FOR CLARITY)

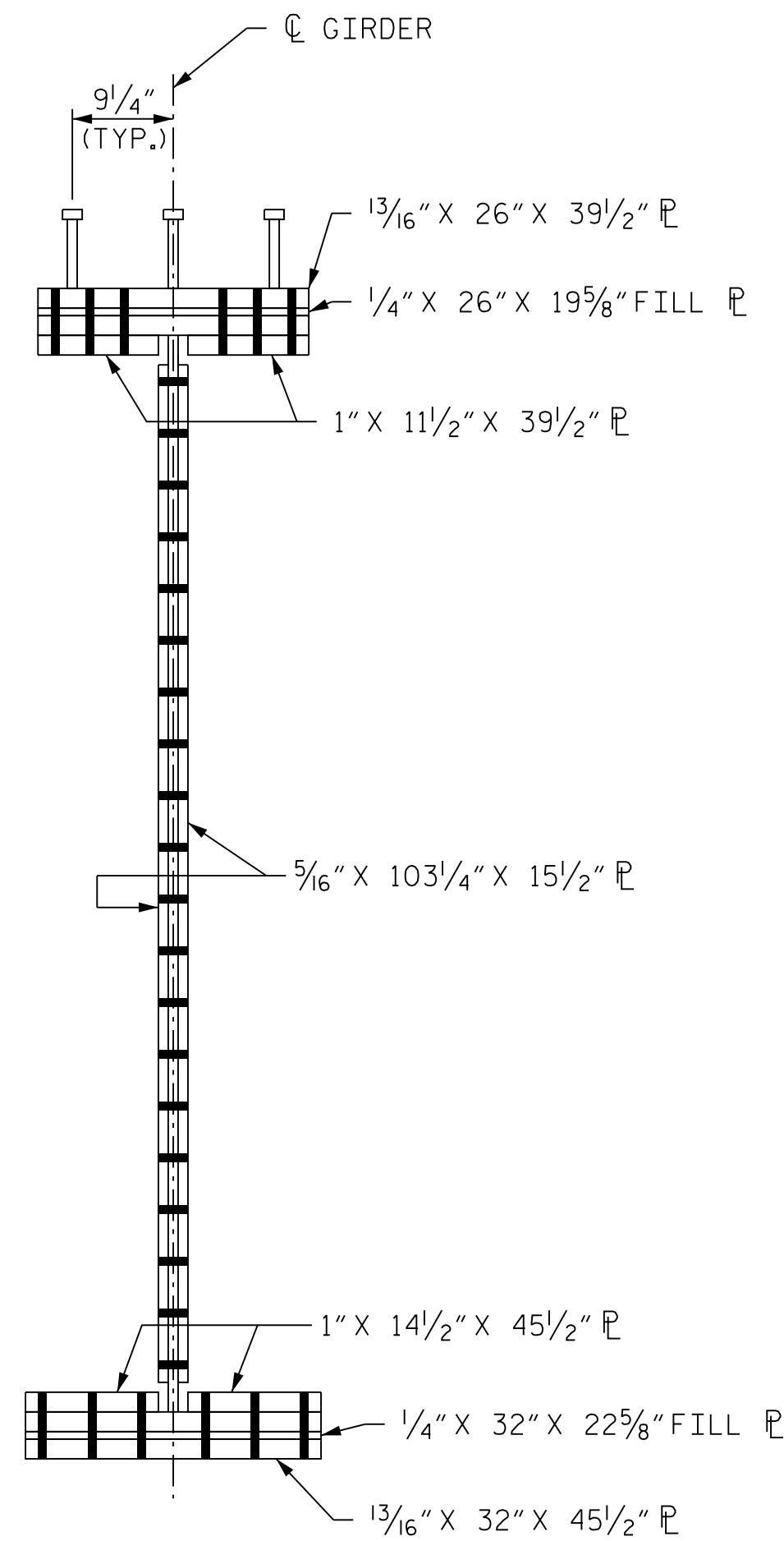
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS
MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

SHEET 11 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BOLTED FIELD SPLICE
DETAILS - TYPE "K"



Dominic A. Coletti 10/15/2021

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
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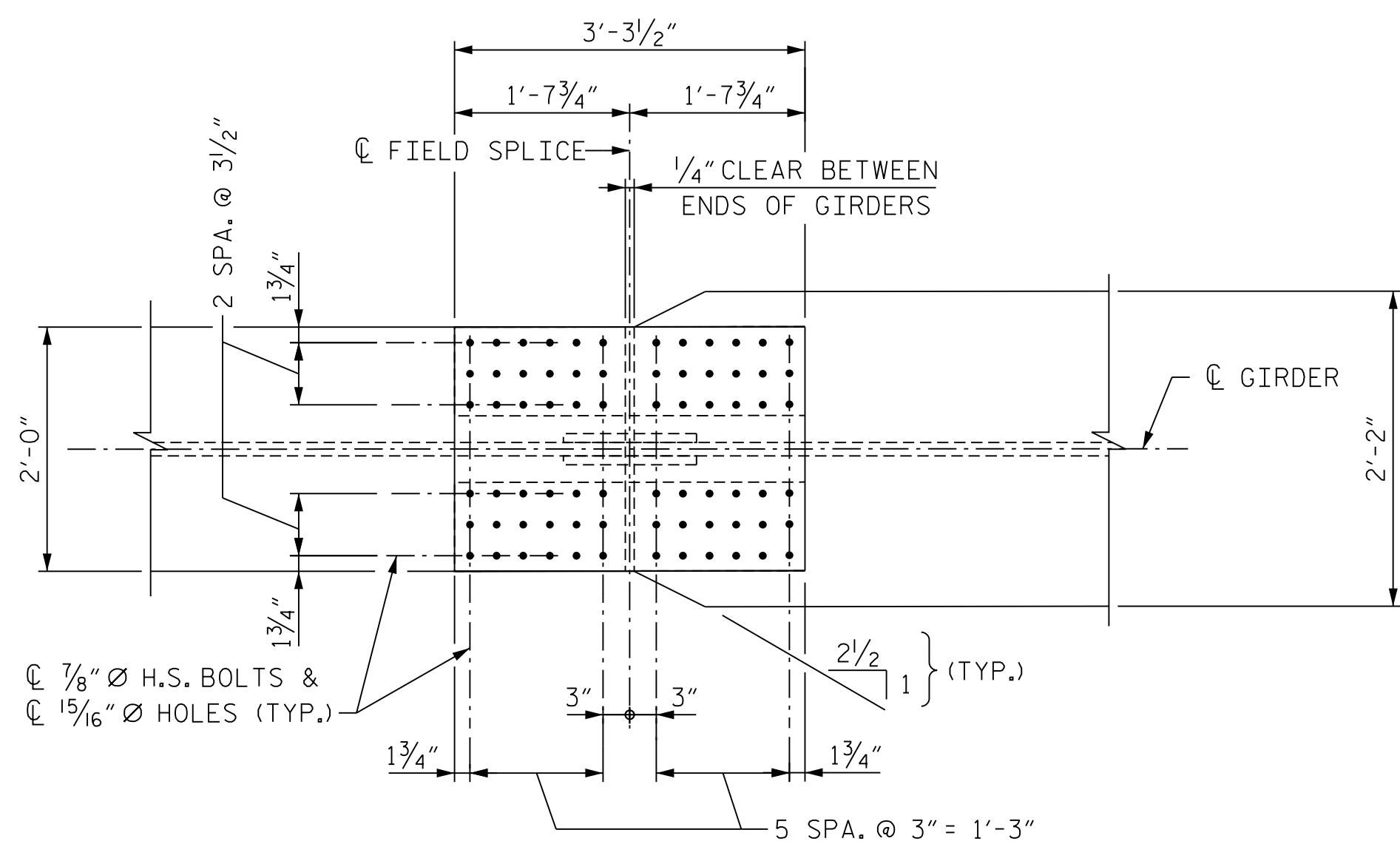
SHEET NO.
S06-050
TOTAL SHEETS
129



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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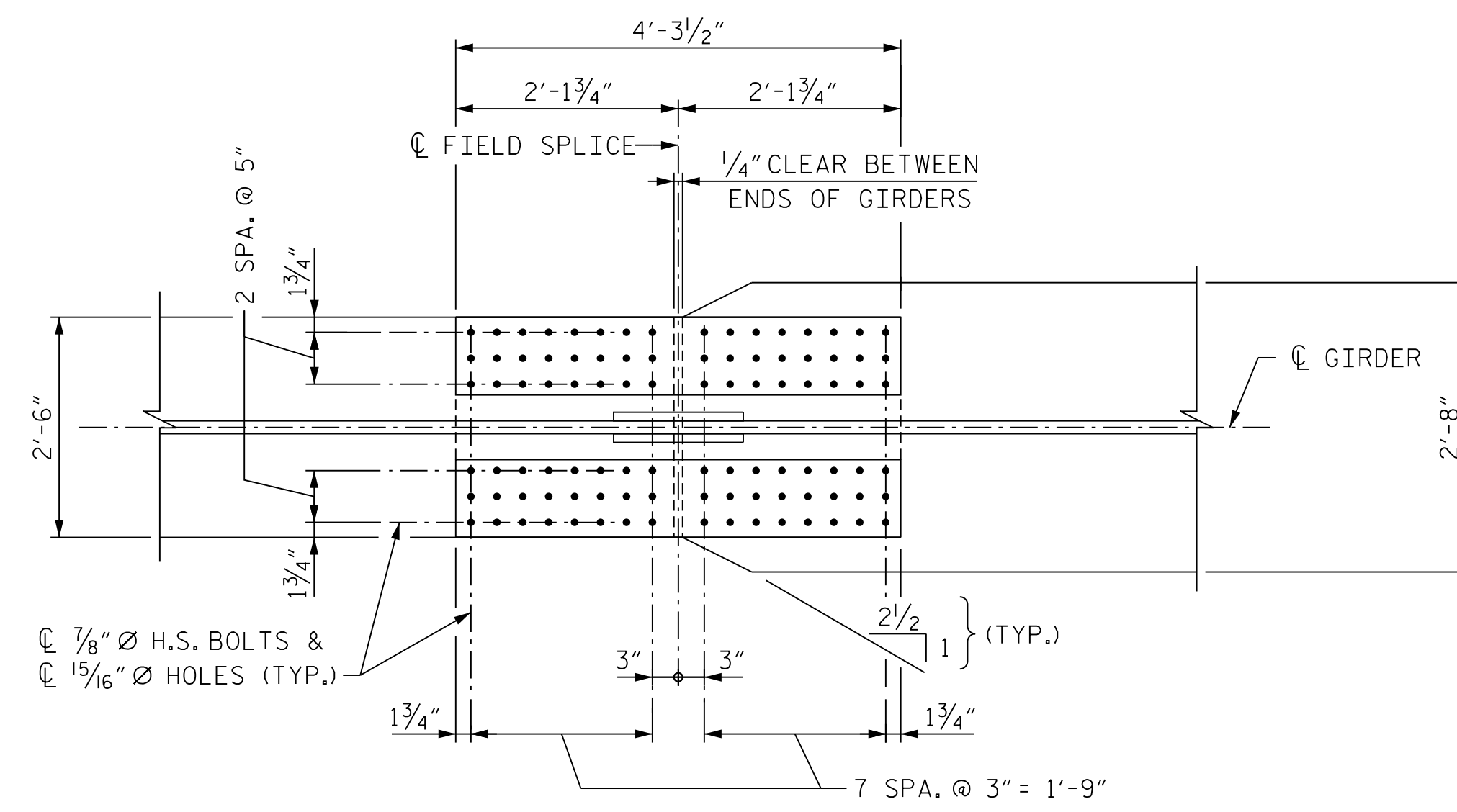
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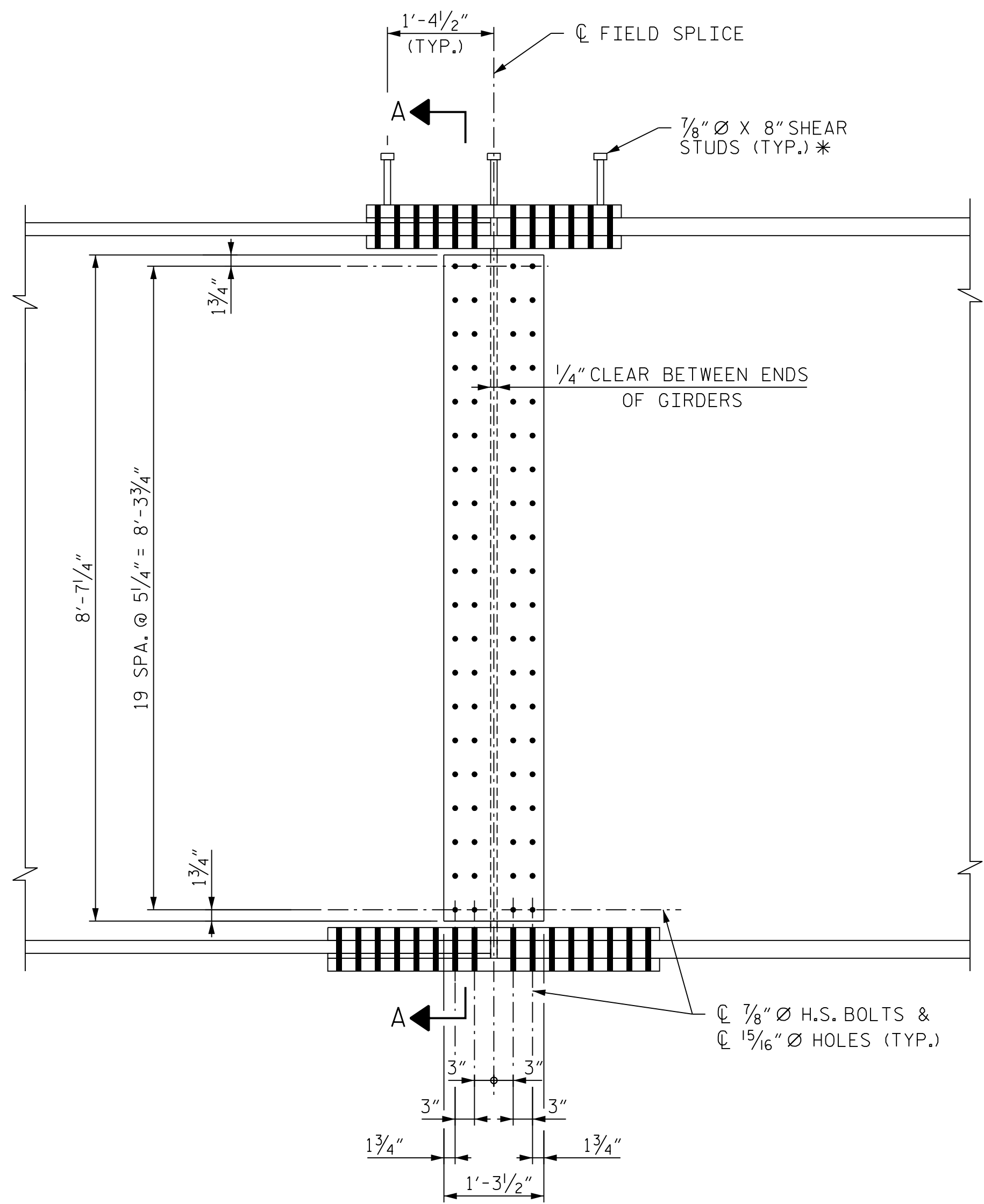
PLAN (TOP OF TOP FLANGE)

(STUDS NOT SHOWN FOR CLARITY)

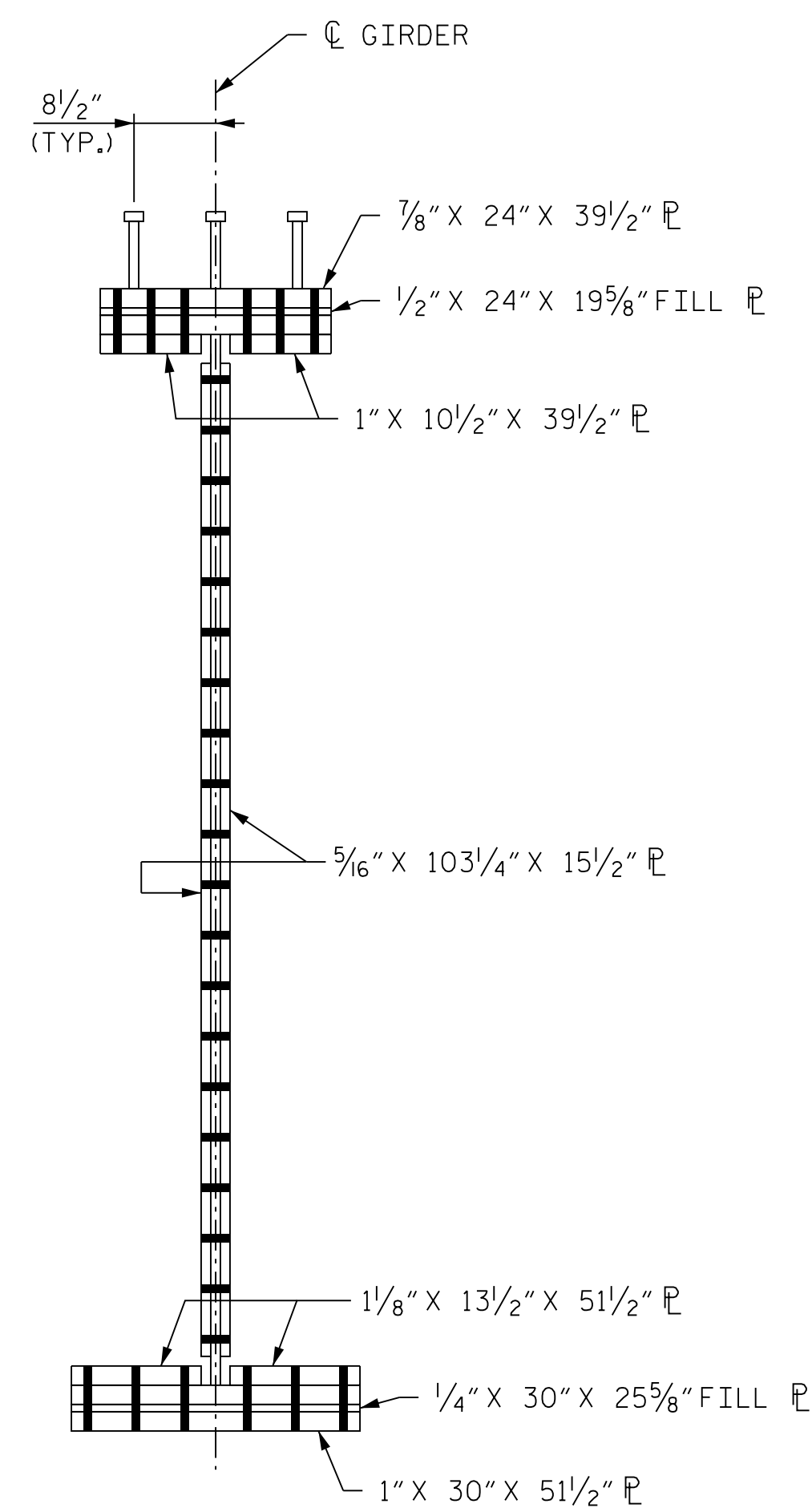
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

SHEET 12 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
BOLTED FIELD SPLICE
DETAILS - TYPE "L"**

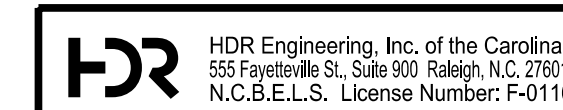


Dominic A. Coletti 10/15/2021

REVISIONS

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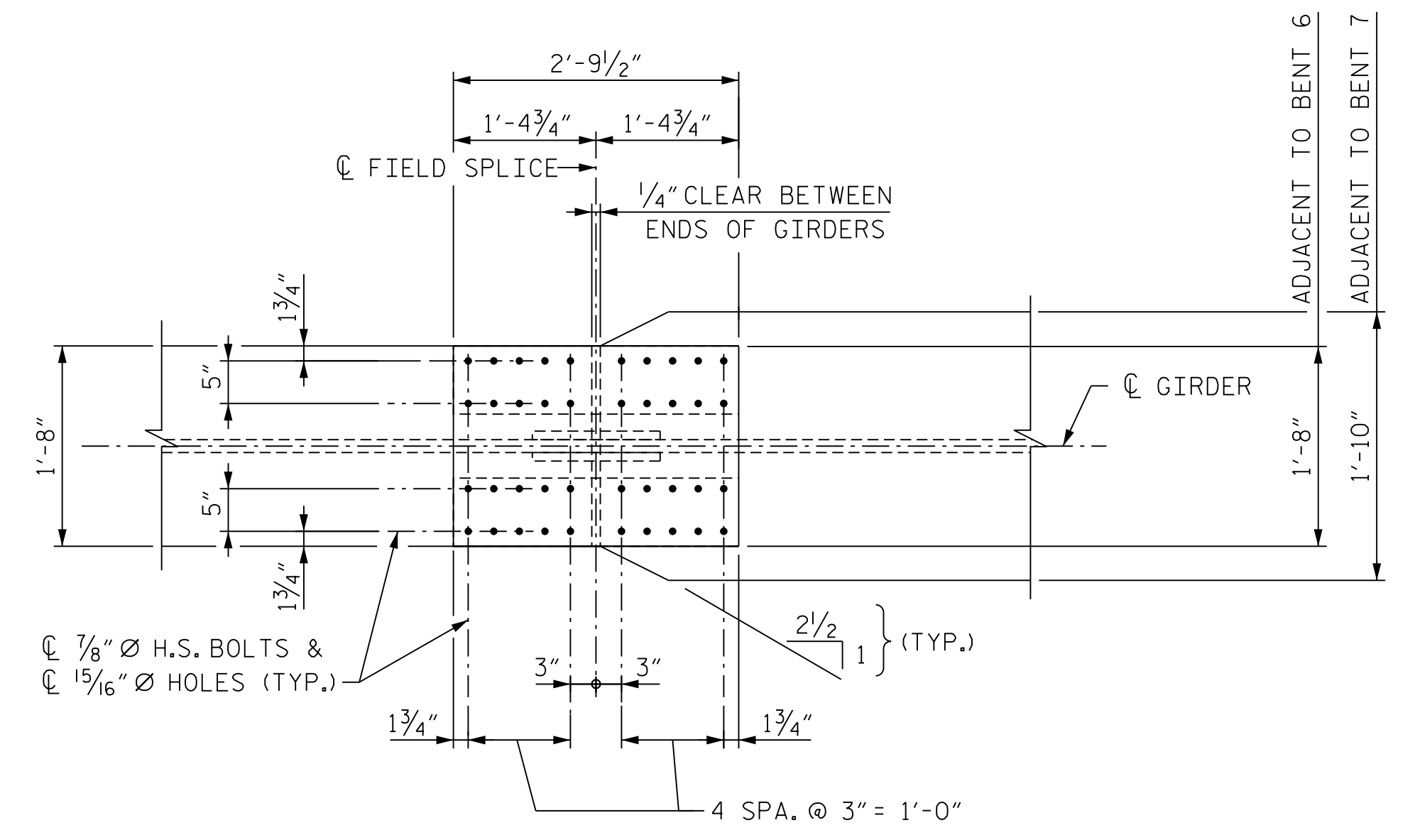
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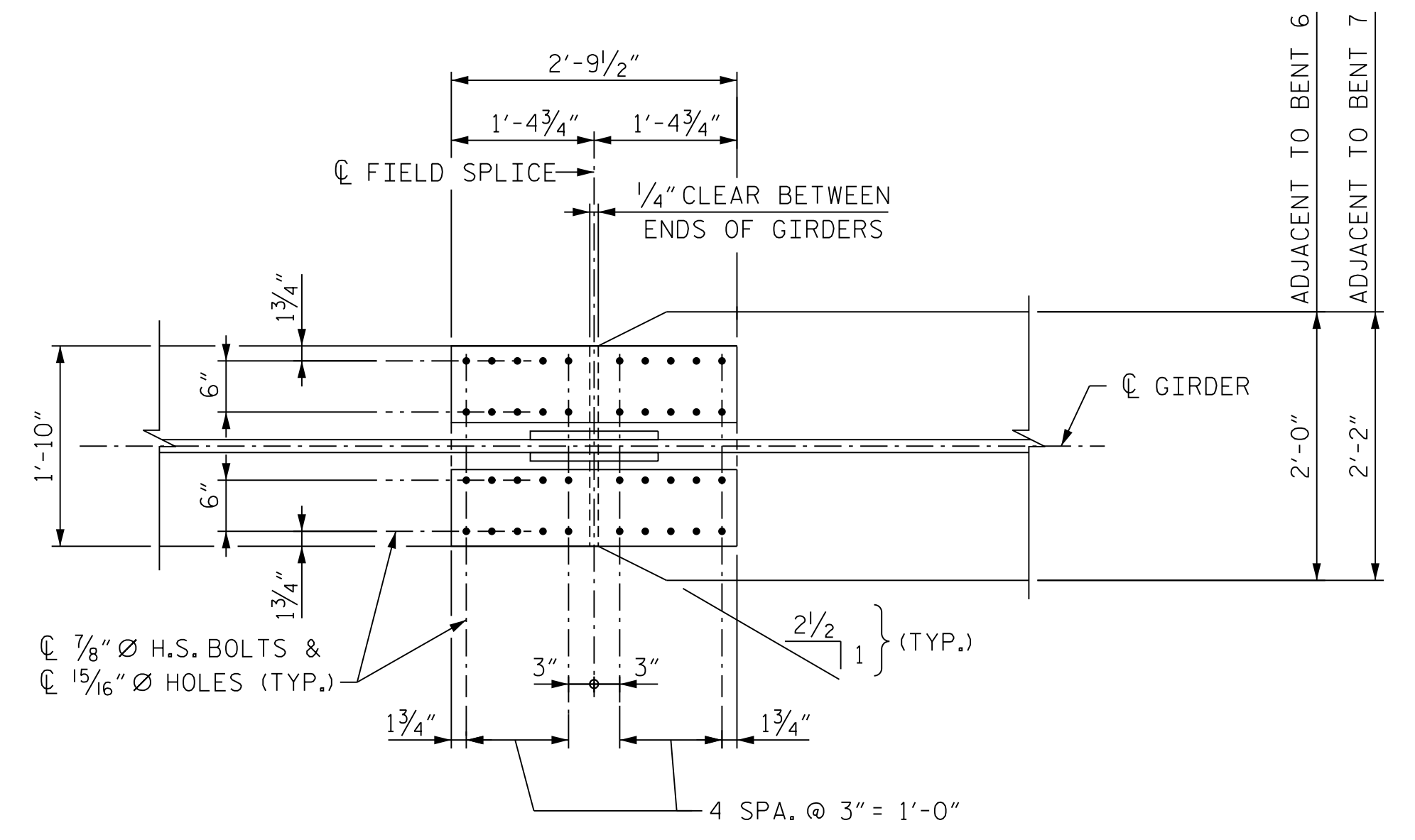
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DES BY: <u>G. SCHMITZ</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
DES CHK: <u>D. OLDS</u>	DATE: <u>08/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>09/19</u>

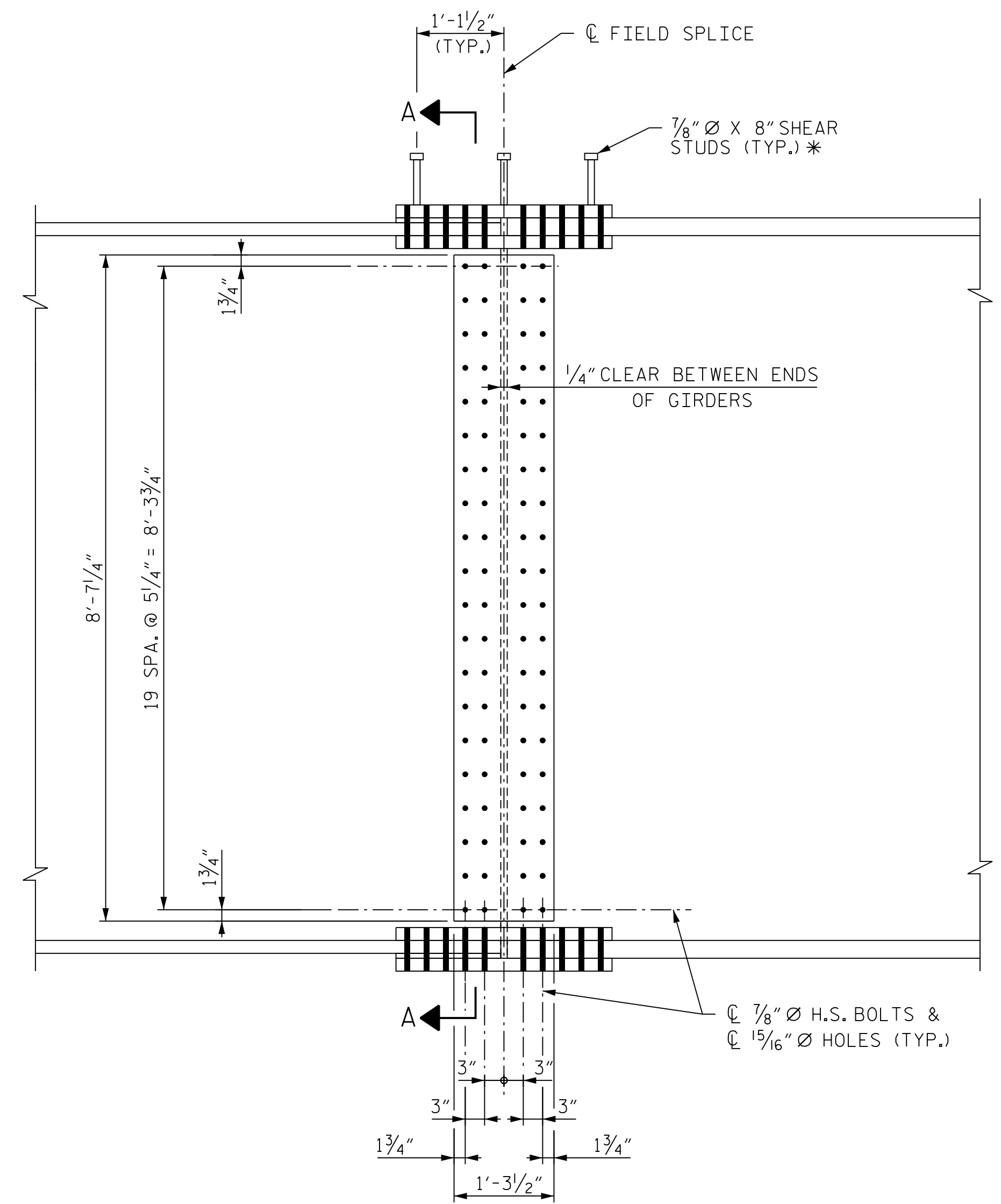


PLAN (TOP OF TOP FLANGE)
(STUDS NOT SHOWN FOR CLARITY)

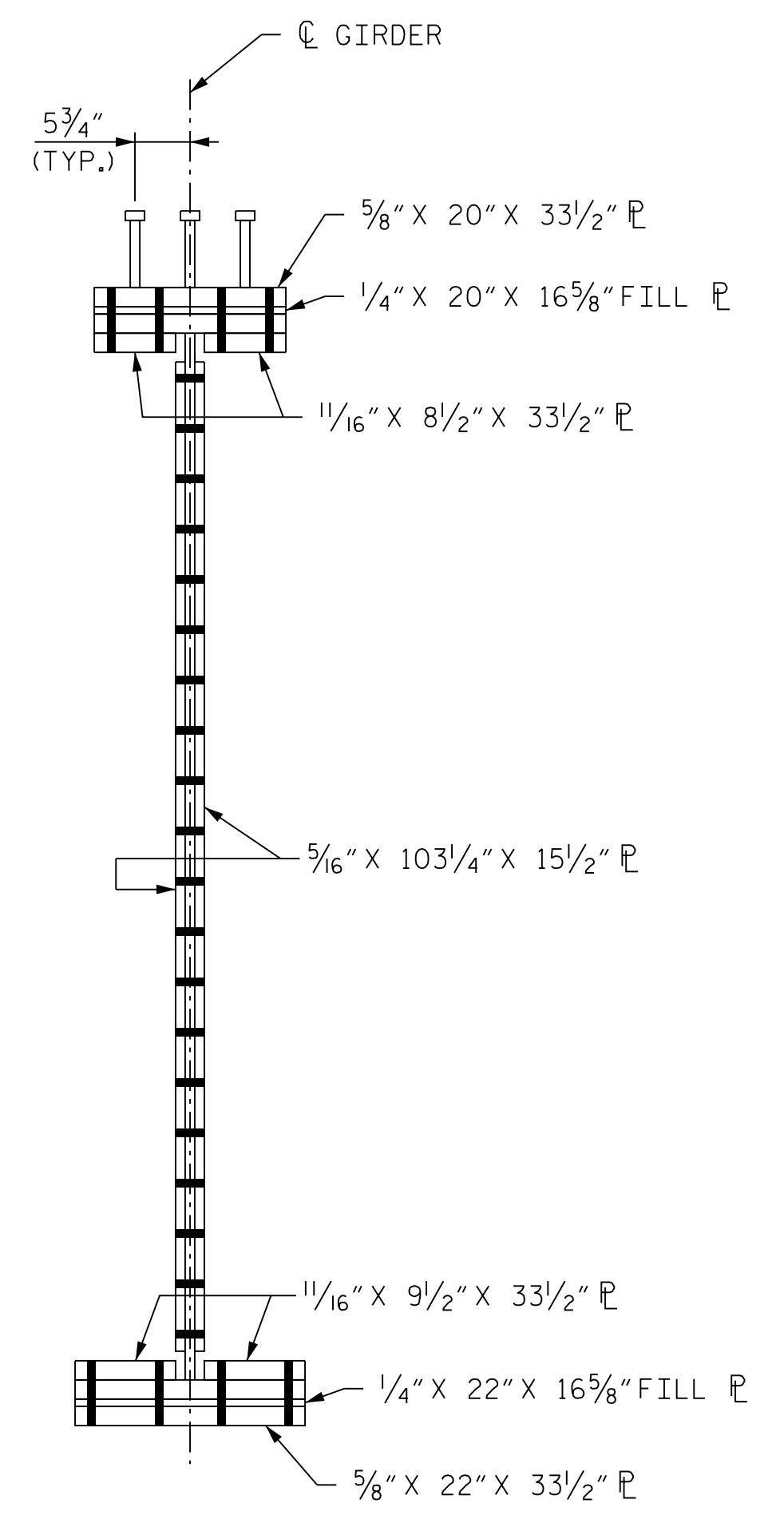
* = SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY



PLAN (TOP OF BOTTOM FLANGE)



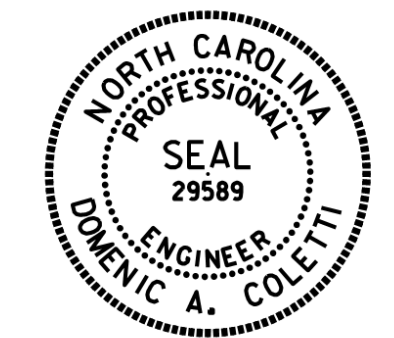
ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 13 OF 14



Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 BOLTED FIELD SPLICE
 DETAILS - TYPE "M"**

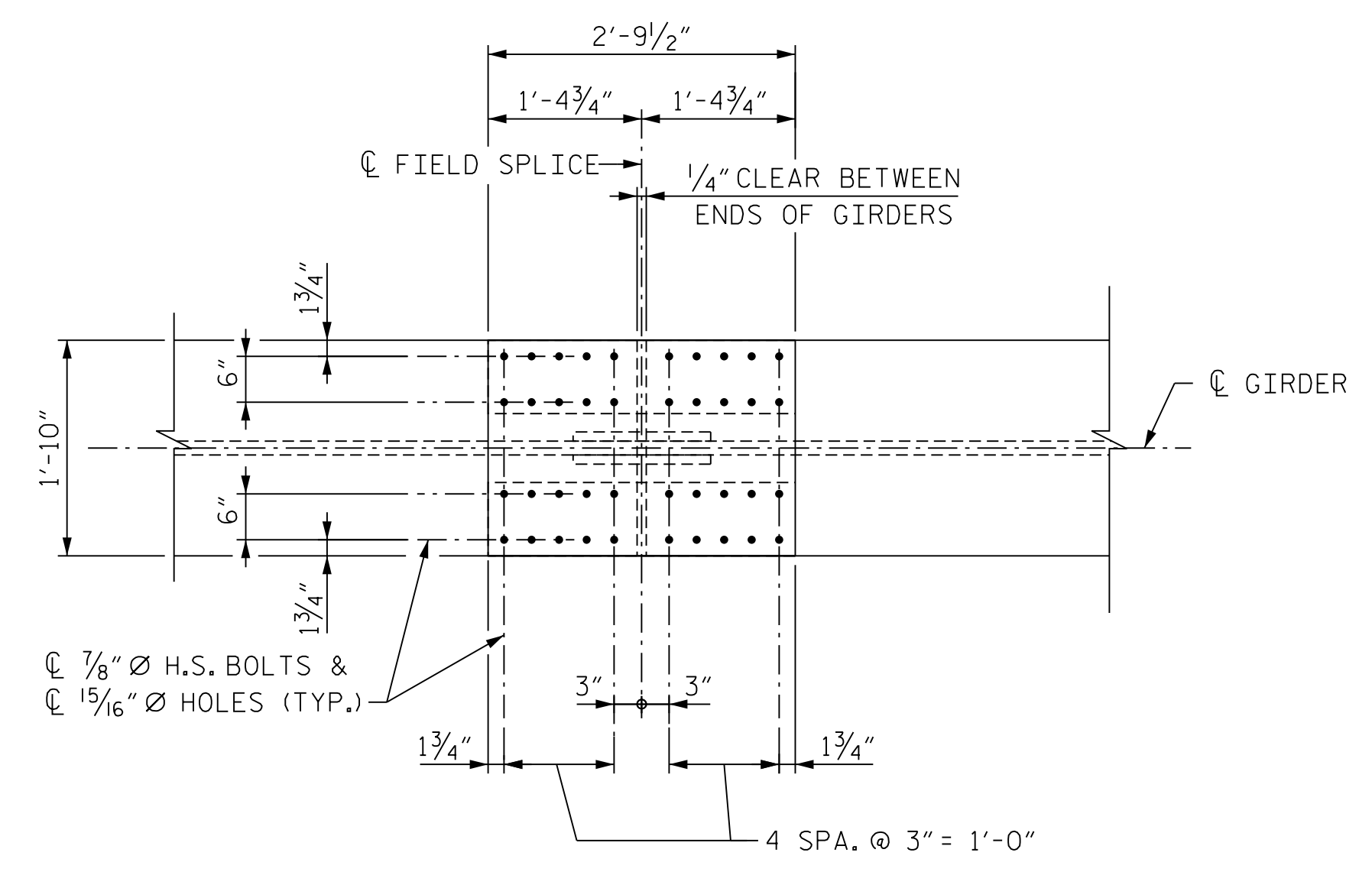
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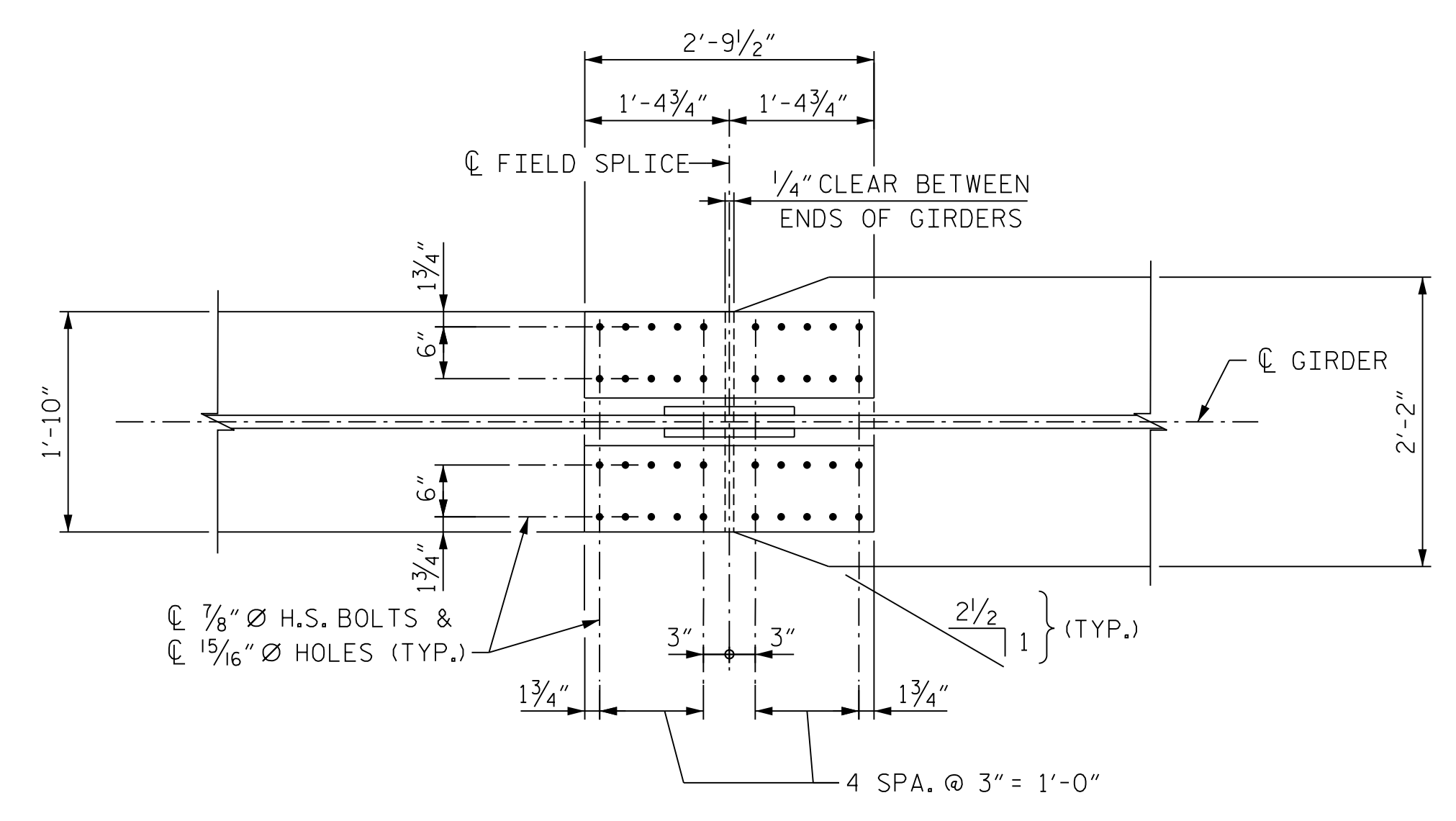
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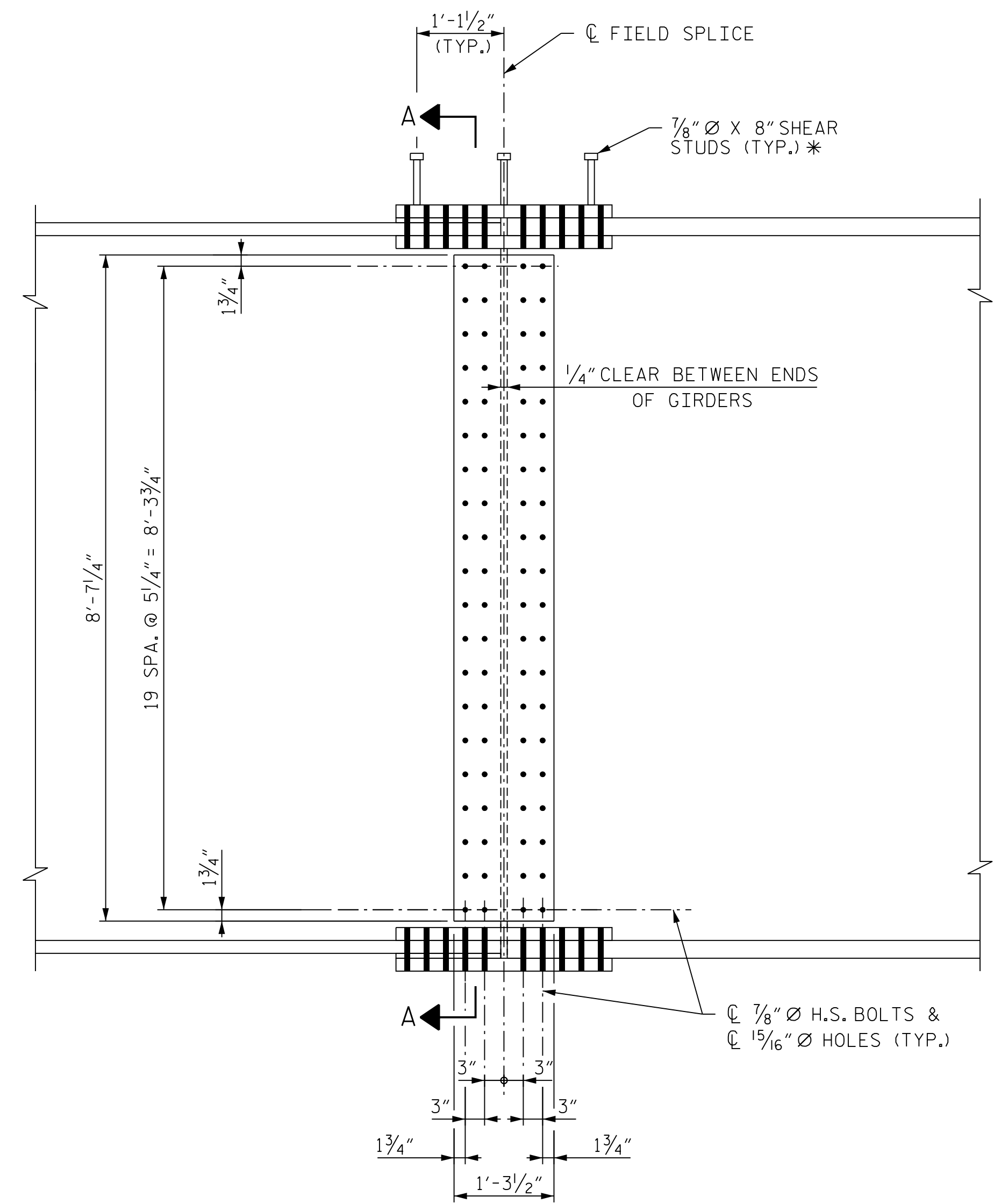


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(STUDS NOT SHOWN FOR CLARITY)

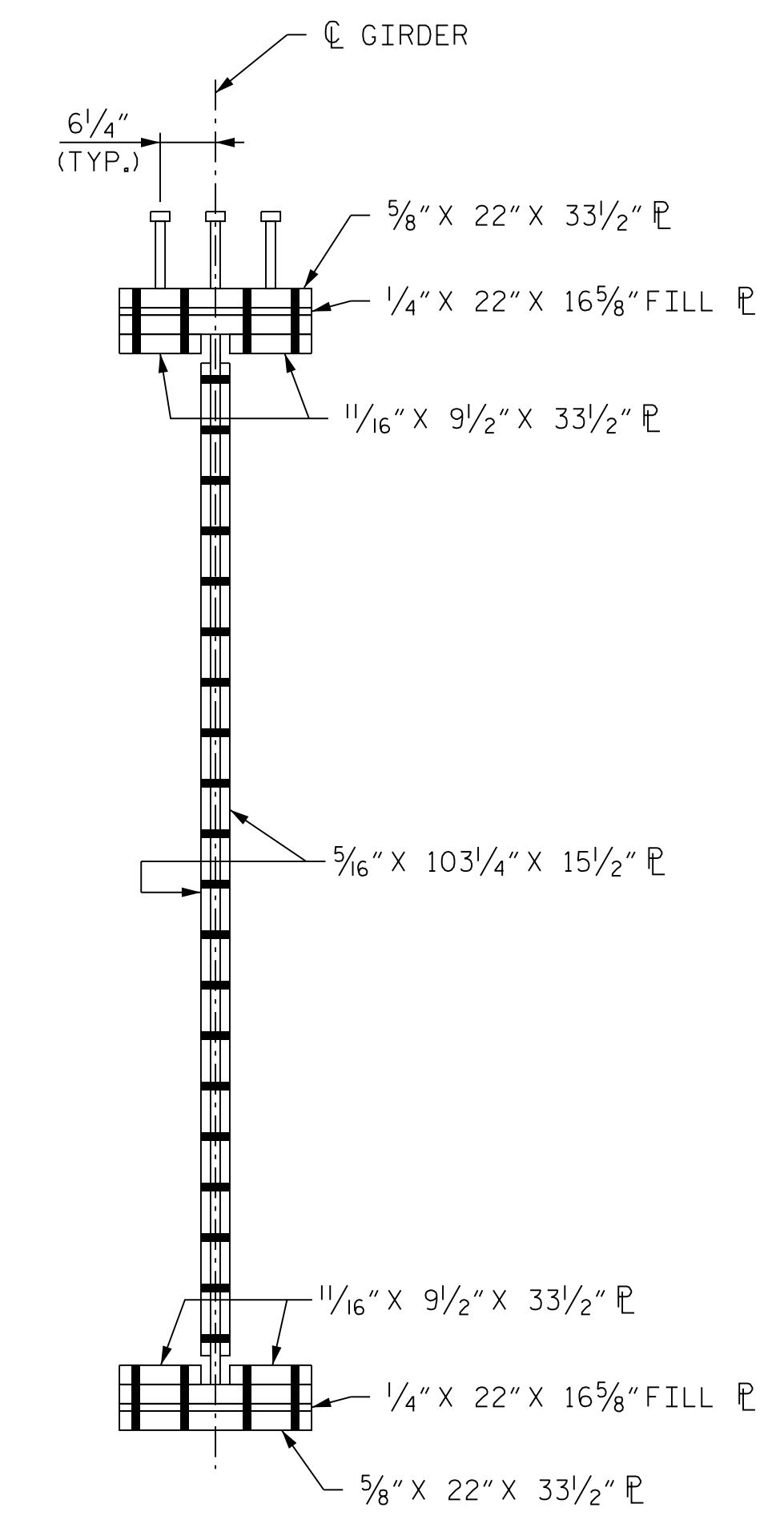


PLAN (TOP OF BOTTOM FLANGE)

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



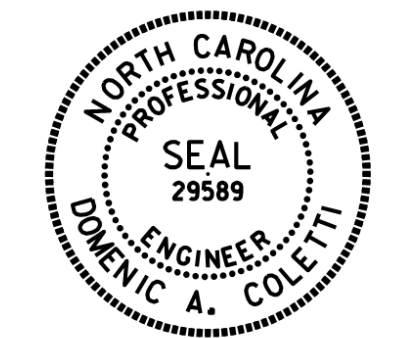
ELEVATION



SECTION A-A

NOTE
ORIENTATION OF PLAN AND ELEVATION VIEWS MAY VARY BASED ON FIELD SPLICE LOCATION

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 14 OF 14

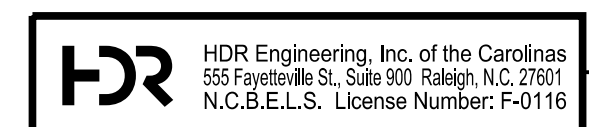


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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 BOLTED FIELD SPLICE
 DETAILS - TYPE "N"**

REVISIONS						SHEET NO. S06-053 TOTAL SHEETS 129
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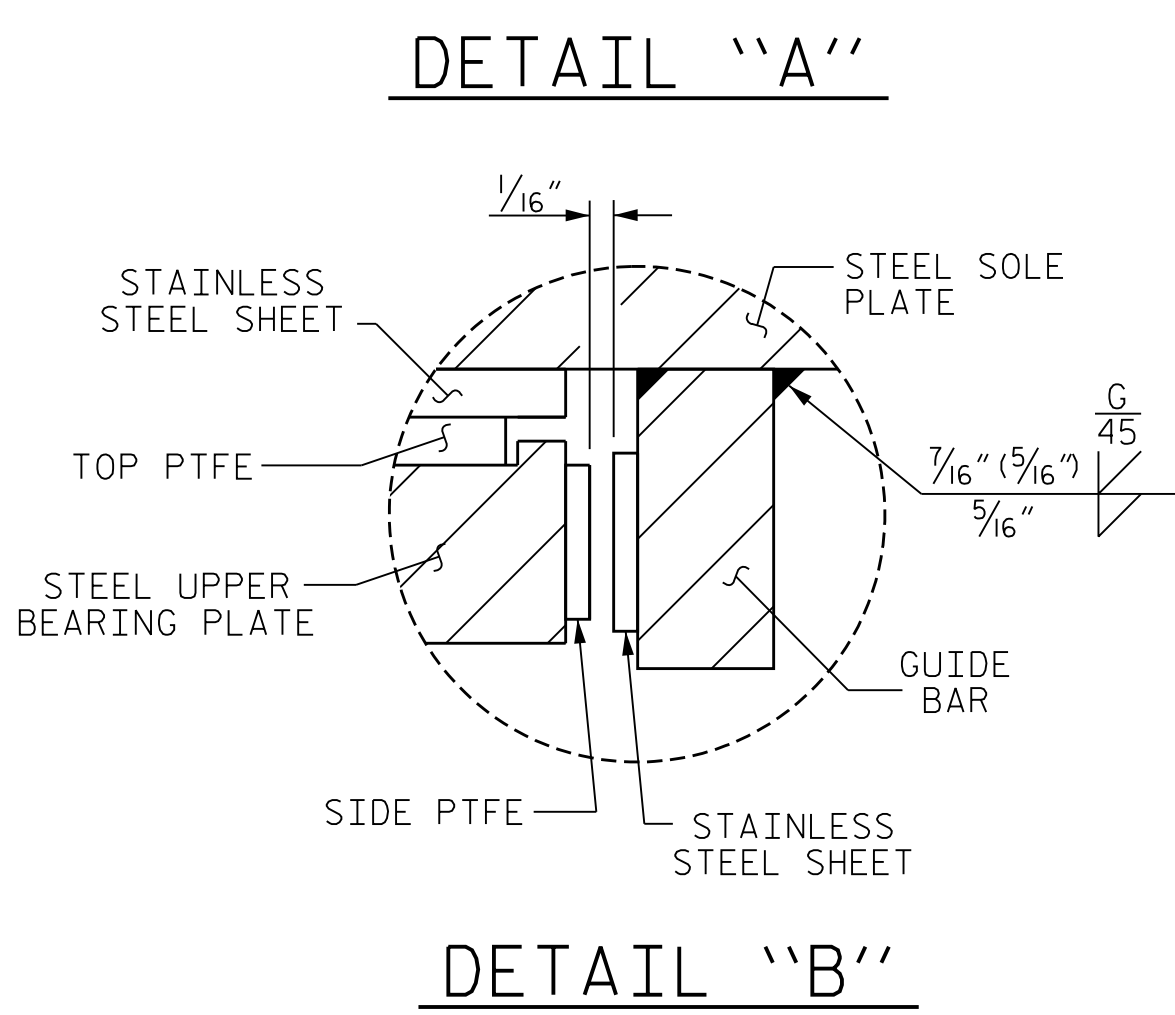
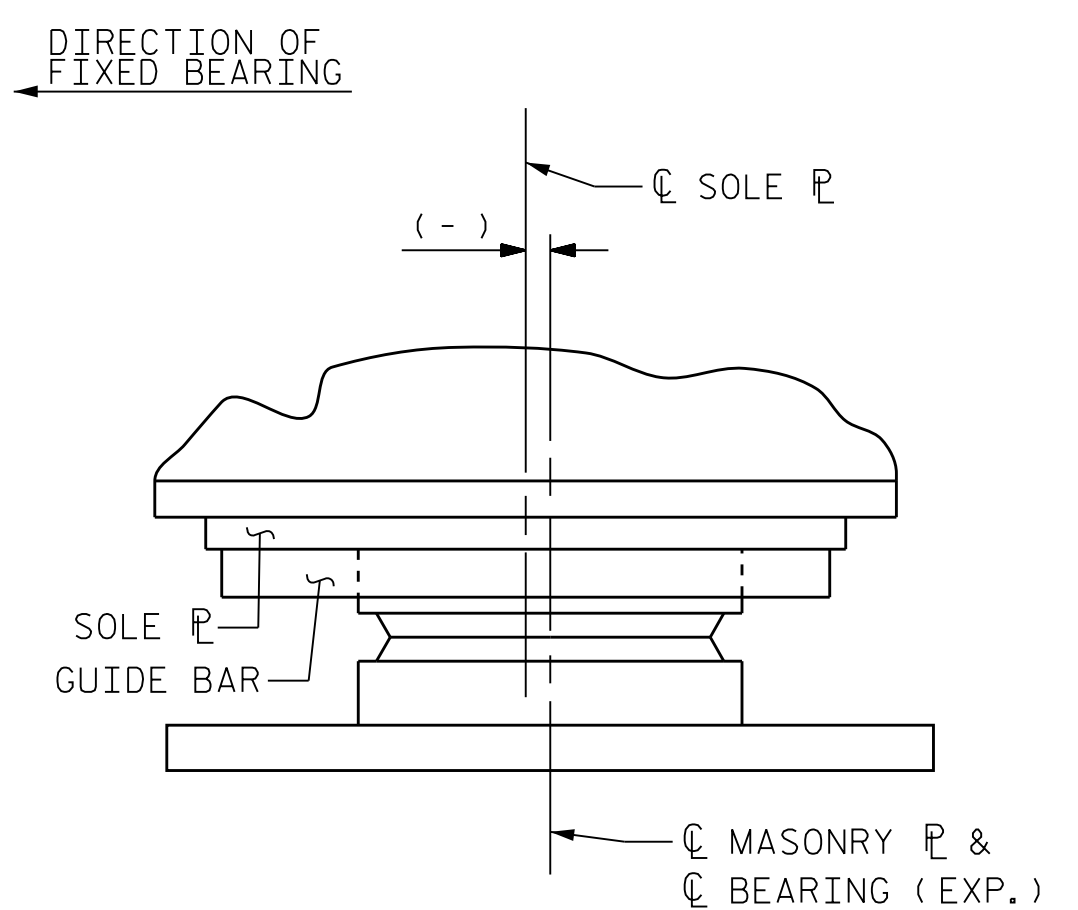
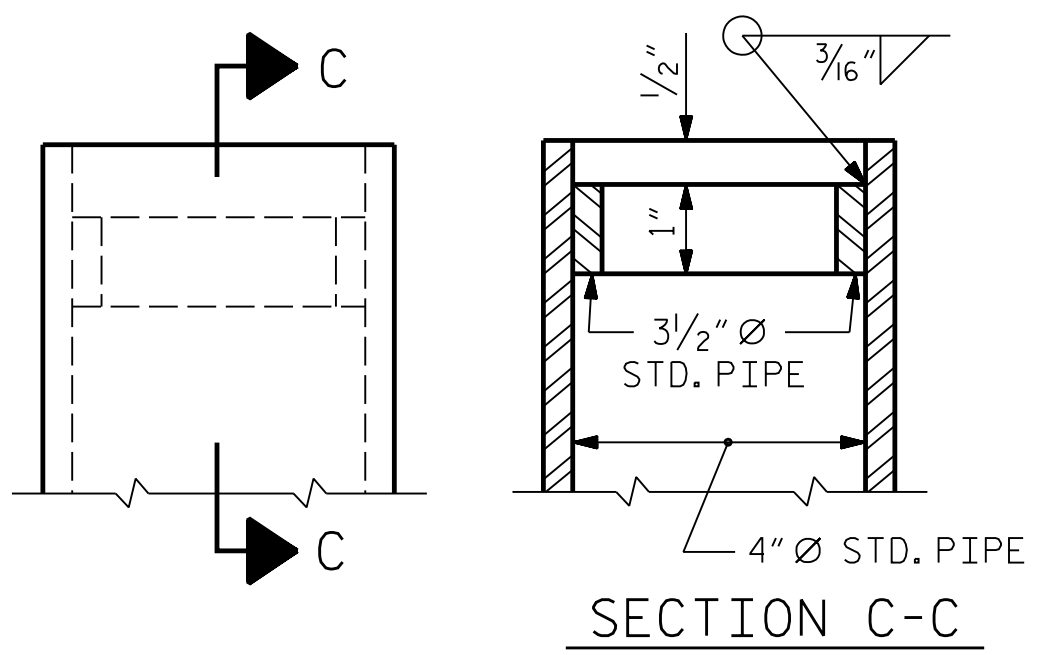
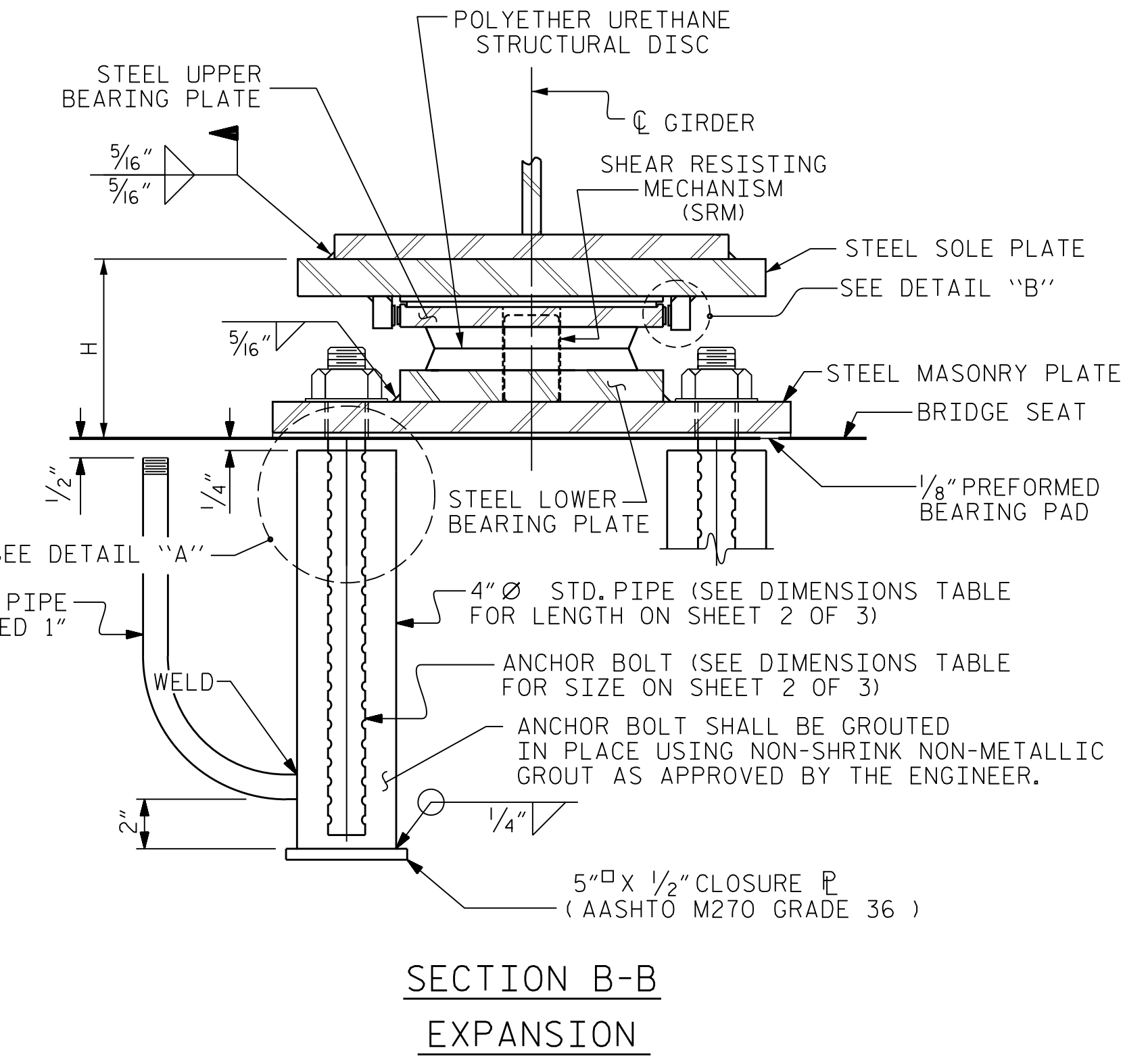
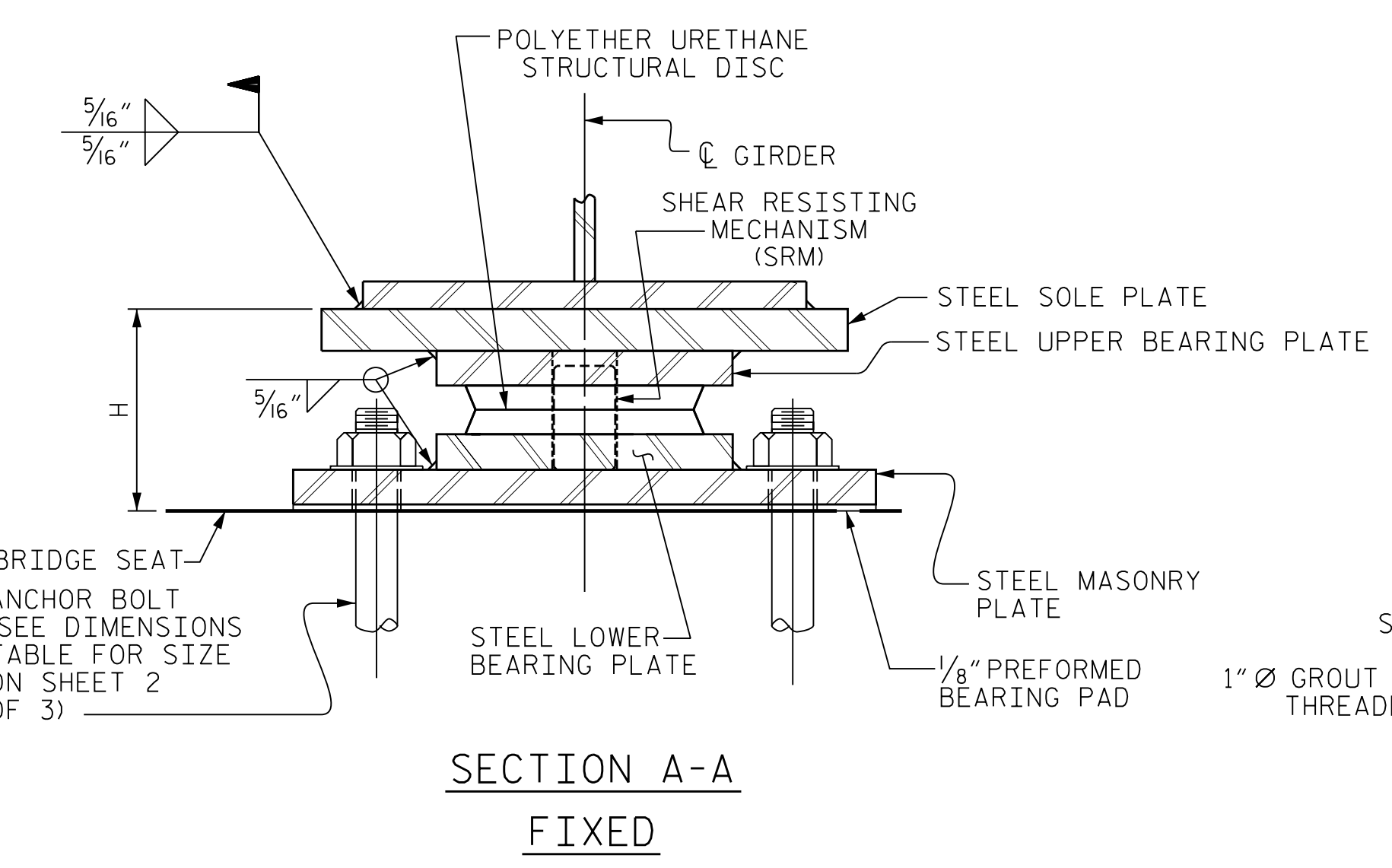
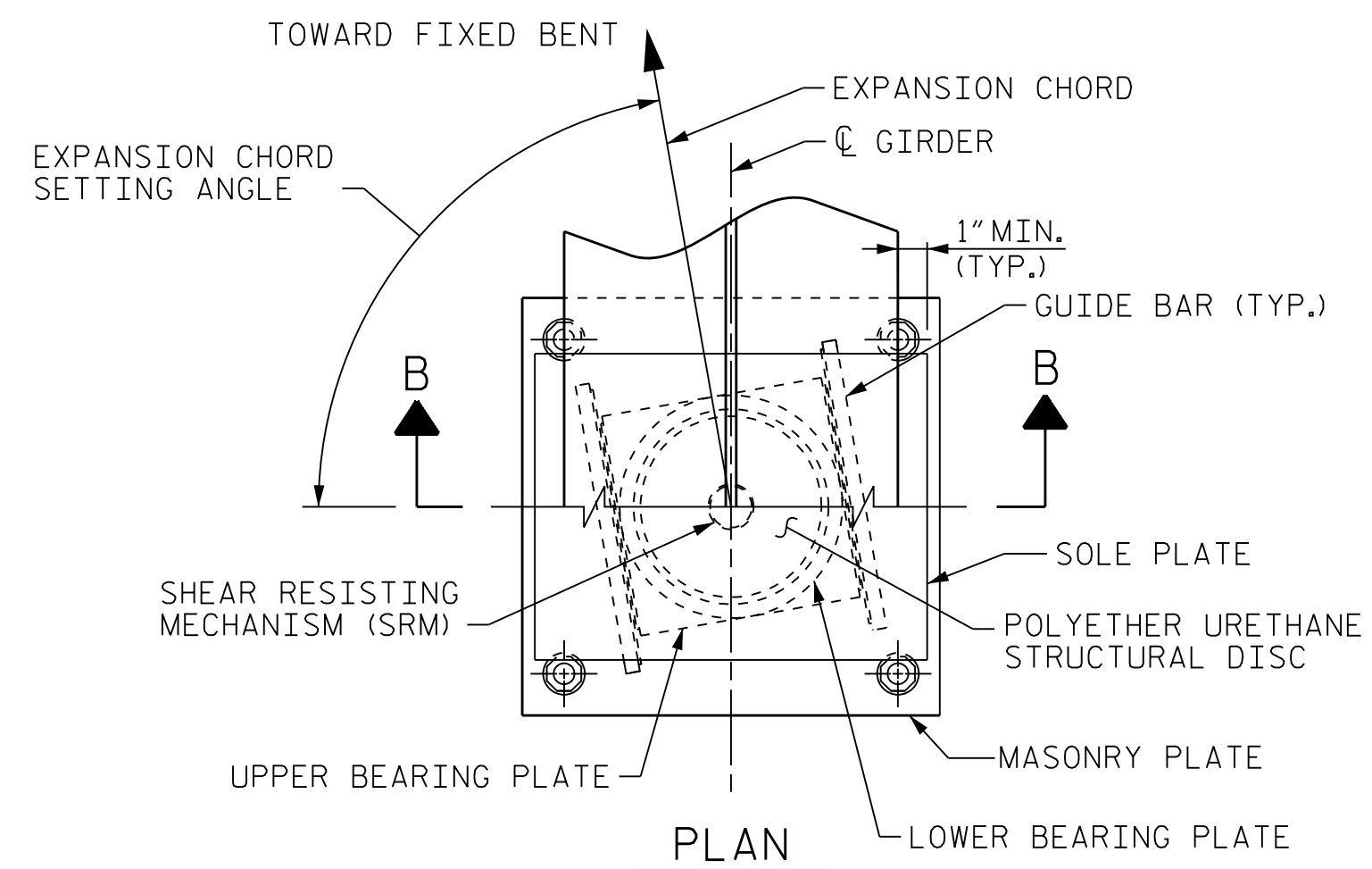
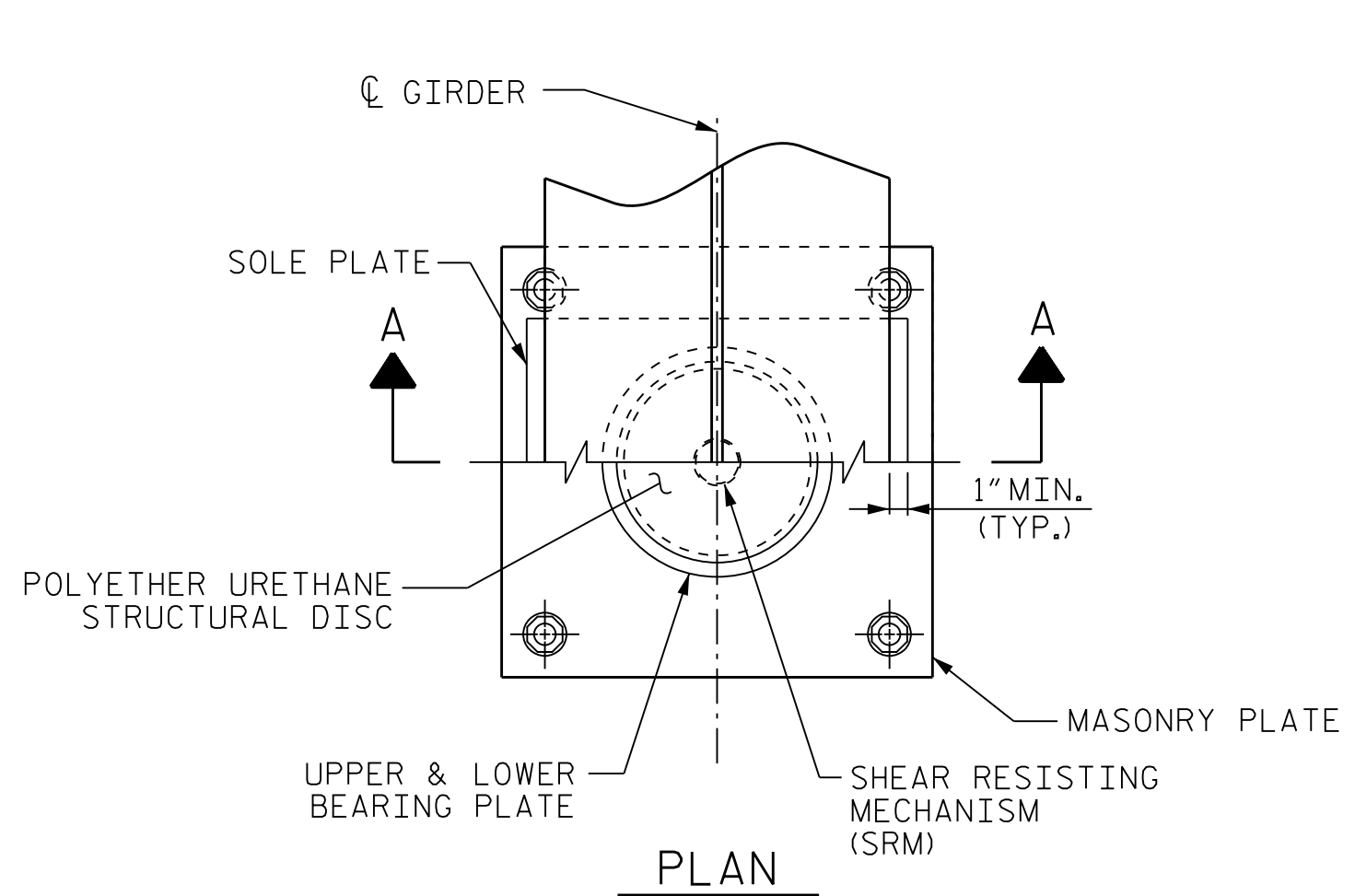


PLATE SETTING DATA (EXPANSION DISC BEARINGS)				
LOCATION	TEMPERATURE AT TIME OF SETTING			*
	45° F	60° F	90° F	
END BENT 1	-3/8"	0"	11/16"	-5/16"
BENT 3	-5/16"	0"	5/8"	1/16"
BENT 4	-5/8"	0"	15/16"	0"
BENT 5 BK	-15/16"	0"	1 1/8"	-7/16"
BENT 5 AHD	-1/2"	0"	15/16"	-1/4"
BENT 6	-1/4"	0"	9/16"	-1/16"
END BENT 2	-3/16"	0"	7/16"	-1/4"

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

TEMPERATURE SETTING DETAIL

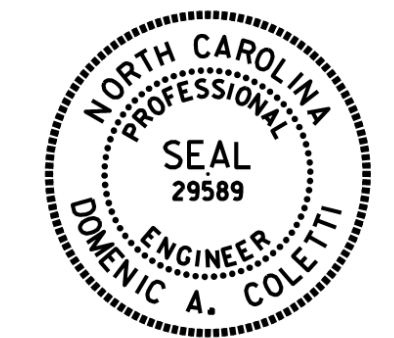
NOTES

- 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 1/4 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 RADIAN.
- SEE SHEET 2 OF 3 FOR SOLE PLATE DETAILS.
- SEE TABLE ON SHEET 2 OF 3 FOR BEARING AND MASONRY PLATE DESIGNATIONS, LOCATIONS, BEARING HEIGHTS, MASONRY PLATE DIMENSIONS, TOP OF SOLE PLATE SLOPE, LOADS AND MOVEMENTS.
- SEE SHEET 3 OF 3 FOR EXPANSION CHORD SETTING ANGLES.

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 DISC BEARING
 DETAILS**



10/15/2021

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
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SHEET NO. 506-054
 TOTAL SHEETS 129

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 DES CHK: D. OLDS DATE: 10/19
 DWG BY: B. PETERSON DATE: 10/19
 CHK BY: G. SCHMITZ DATE: 12/19

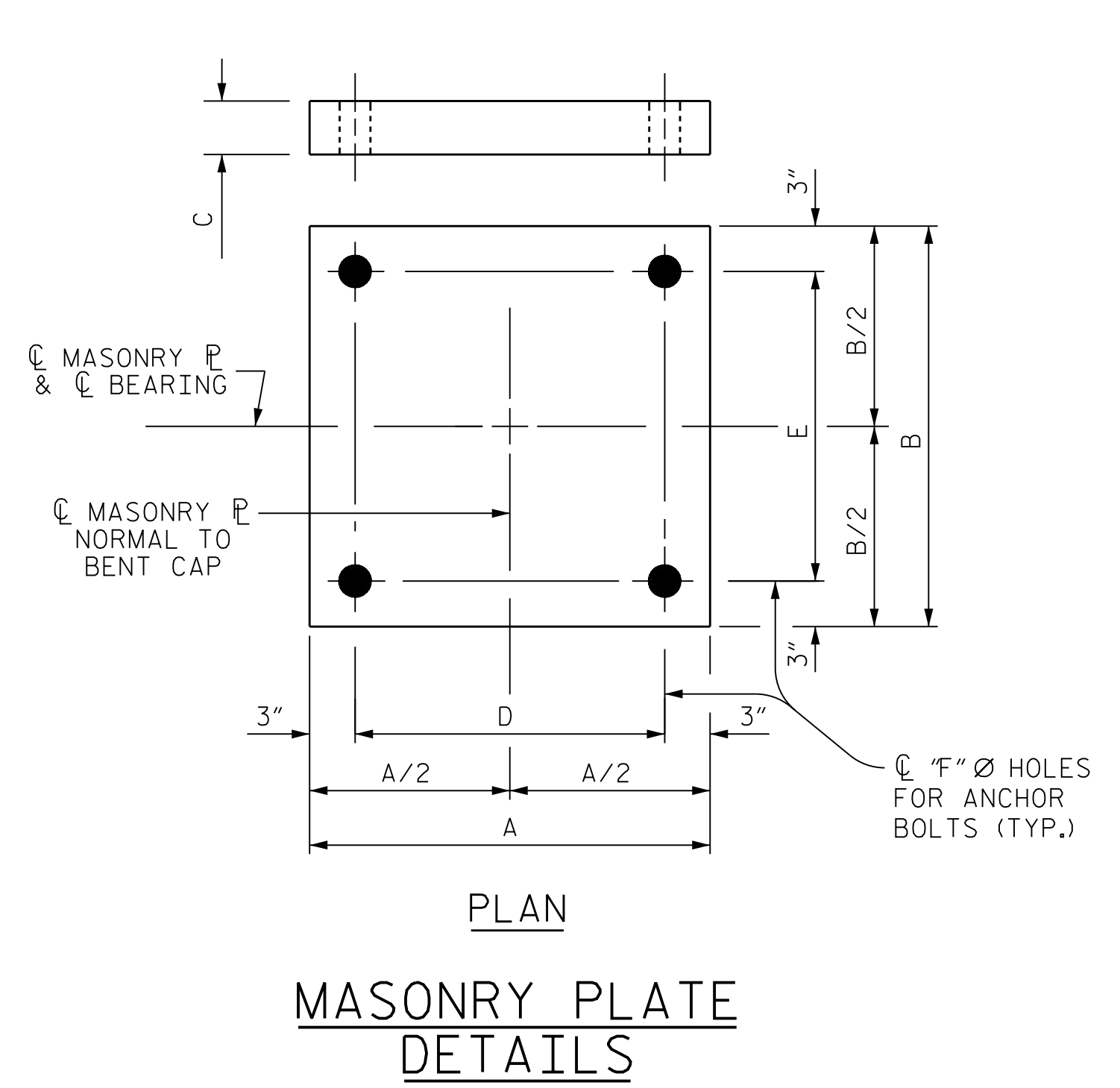


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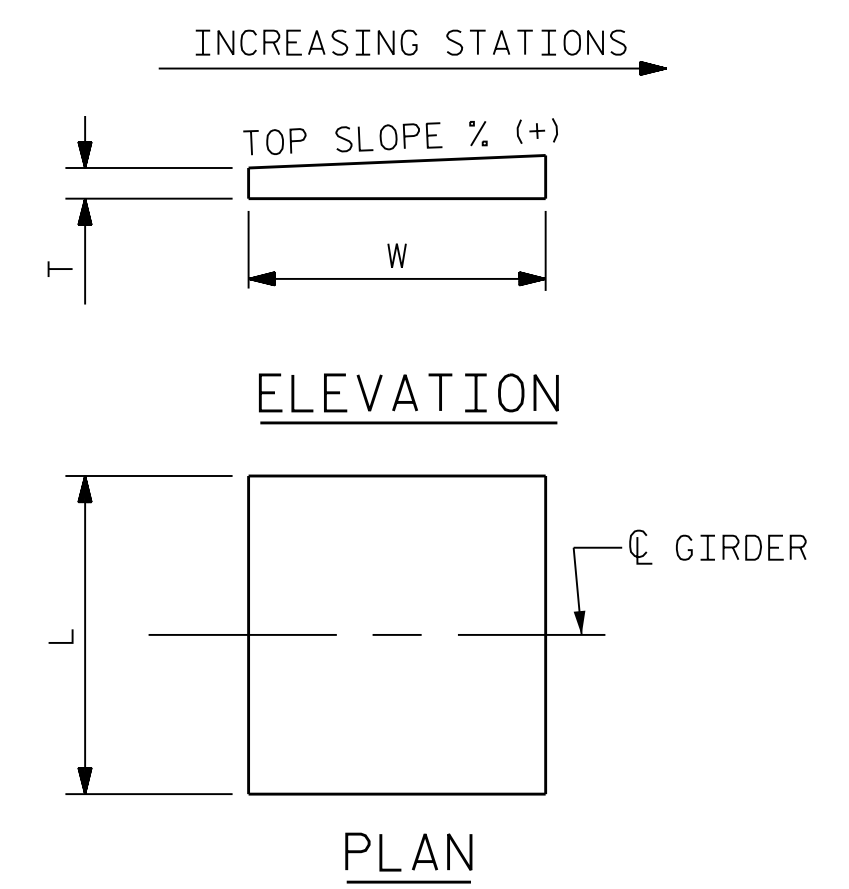
DESIGNATIONS		LOCATION	NUMBER OF BEARINGS	DIMENSIONS											LOADS AND MOVEMENT					
BEARINGS	MASONRY			BEARING	MASONRY PLATE						SOLE PLATE TOP SLOPE (%)	ANCHOR BOLT DIAMETER (IN.)	ANCHOR BOLT PROJECTION	TOTAL ANCHOR BOLT LENGTH	4" Ø STD. PIPE LENGTH	UNFACTORED VERTICAL LOAD (KIPS)			FACTORED HORIZONTAL LOAD (KIPS)	** ONE-WAY MOVEMENT
					H	A	B	C	D	E						F	DEAD	LIVE		
DB1 (EXP.)	M1	END BENT 1	4	6 1/4"	2'-3"	2'-3"	3/4"	1'-9"	1'-9"	1 15/16"	2.7500	1 1/2"	2 1/8"	1'-6"	1'-3 1/4"	192	24	140	72	2 3/8"
DB2 (FIX.)	M2	BENT 1	4	7 5/8"	2'-6"	2'-6"	1"	2'-0"	2'-0"	2 7/16"	2.7500	2"	2 1/2"	1'-10"	N/A	549	66	279	189	0"
DB3 (FIX.)	M3	BENT 2	4	7 3/8"	2'-4 1/2"	2'-4 1/2"	1"	1'-10 1/2"	1'-10 1/2"	2 7/16"	2.1600	2"	2 1/2"	1'-10"	N/A	461	55	280	164	0"
DB4 (EXP.)	M4	BENT 3	4	9 5/8"	3'-4"	3'-4"	1 1/4"	2'-10"	2'-10"	2 7/16"	0.7700	2"	2 1/2"	1'-10"	1'-6 1/4"	672	75	311	226	2 3/16"
DB5 (EXP.)	M5	BENT 4	4	10 1/8"	3'-8"	3'-8"	1 1/4"	3'-2"	3'-2"	2 11/16"	-1.0800	2 1/4"	2 3/4"	2'-1 1/2"	1'-9 1/4"	871	96	331	284	4 3/8"
DB6 (EXP.)	M6	BENT 5 BK	4	7"	2'-4 1/2"	2'-4 1/2"	3/4"	1'-10 1/2"	1'-10 1/2"	1 15/16"	-2.7500	1 1/2"	2 1/8"	1'-6"	1'-3 1/4"	276	33	166	98	6 5/16"
DB7 (EXP.)	M6	BENT 5 AHD	4	6 5/8"	2'-4 1/2"	2'-4 1/2"	3/4"	1'-10 1/2"	1'-10 1/2"	1 15/16"	-2.7600	1 1/2"	2 1/8"	1'-6"	1'-3 1/4"	169	21	138	65	3 3/16"
DB8 (EXP.)	M7	BENT 6	4	9 1/2"	3'-2"	3'-2"	1 1/4"	2'-8"	2'-8"	2 7/16"	-3.9300	2"	2 1/2"	1'-10"	1'-6 1/4"	585	70	283	200	1 13/16"
DB9 (FIX.)	M8	BENT 7	4	8 1/4"	2'-8"	2'-8"	1 1/4"	2'-2"	2'-2"	2 7/16"	-5.0000	2"	2 1/2"	1'-10"	N/A	610	73	287	207	0"
DB10 (EXP.)	M1	END BENT 2	4	6 1/2"	2'-3"	2'-3"	3/4"	1'-9"	1'-9"	1 15/16"	-5.0000	1 1/2"	2 1/8"	1'-6"	1'-3 1/4"	177	22	137	67	1 7/16"

** "ONE-WAY MOVEMENT" REPRESENTS THE FULL MOVEMENT RANGE EXPECTED TO OCCUR OVER A TEMPERATURE RANGE FROM 10° F TO 110° F. THE BEARING SOLE PLATE AND UPPER SLIDING SURFACE SHOULD BE CENTERED ON THE BEARING AT 60° F. SEE TABLE FOR "PLATE SETTING DATA" ON SHEET 1 OF 3 FOR SETTING DATA FOR OTHER TEMPERATURES.

▲ ANCHOR BOLT PROJECTION IS MEASURED ABOVE TOP OF BEARING SEAT CONCRETE.



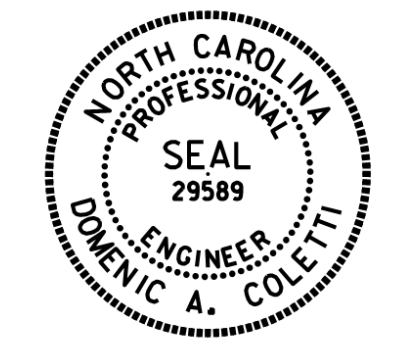
MASONRY PLATE DETAILS



NOTE: DIMENSIONS "L", "W", AND "T" SHALL BE DETERMINED BY THE BEARING MANUFACTURER. SET DIMENSION "L" SUCH THAT THE MINIMUM EDGE DISTANCE TO THE GIRDER FLANGE IS 1".

SOLE PLATE DETAILS

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 3



10/15/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 DISC BEARING
 DETAILS

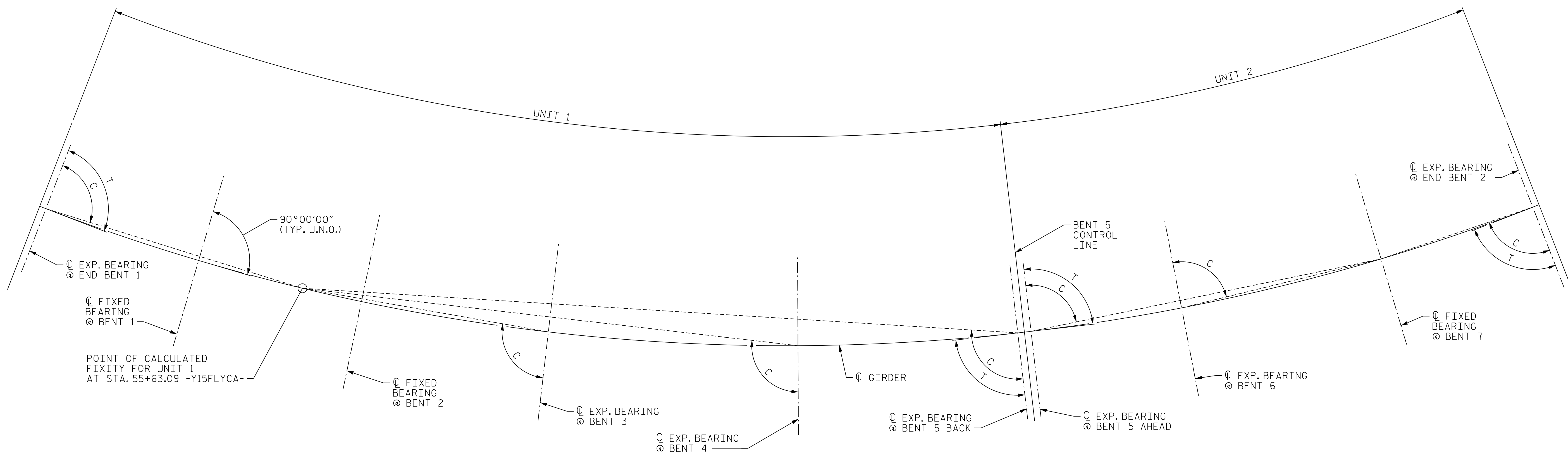
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DES CHK: D. OLDS	DATE: 10/19	CHK BY: G. SCHMITZ	DATE: 12/19

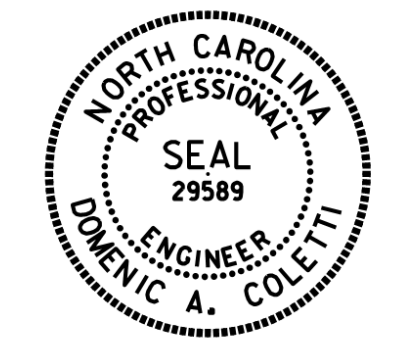


EXPANSION BEARING ORIENTATION DIAGRAM

EXPANSION CHORD SETTING ANGLES											
LOCATION	END BENT 1		BENT 3	BENT 4	BENT 5 (BACK)		BENT 5 (AHEAD)		BENT 6	END BENT 2	
	T	C	C	C	T	C	T	C	C	T	C
GIRDERS 1-4	89°55'46"	86°09'27"	93°27'14"	96°54'41"	90°02'36"	100°04'10"	89°57'24"	84°56'25"	87°09'36"	90°04'11"	92°20'38"

NOTES
 C = ANGLE FROM ϕ BRG TO EXPANSION CHORD
 T = ANGLE FROM ϕ BRG TO LOCAL TANGENT TO CURVE

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 3 OF 3

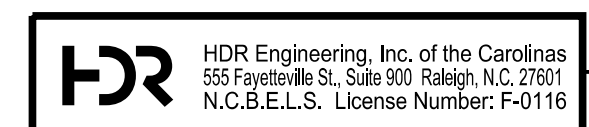


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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE DISC BEARING DETAILS

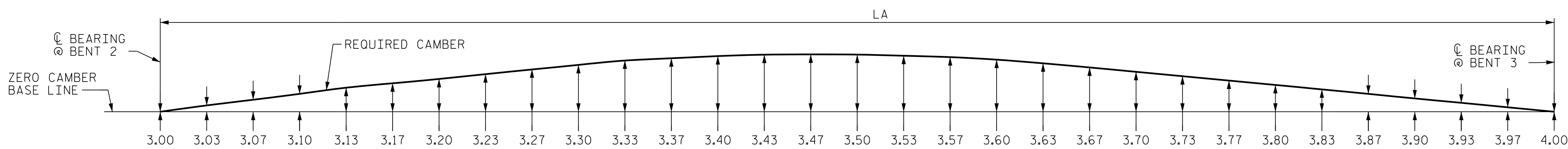
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DES CHK: <u>M. NEIHEISEL</u>	DATE: <u>10/19</u>	CHK BY: <u>G. SCHMITZ</u>	DATE: <u>12/19</u>



NOTES

SLOPE FOR THE ZERO CAMBER BASE LINE VARIES. VALUES GIVEN ARE AT THIRTIETH POINTS BETWEEN CENTERLINE OF BEARINGS. DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM). REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM). DOWNWARD DEFLECTION IS INDICATED WITH A "-" SIGN.

Table with 2 columns: GIRDER and LA. Values for girders 1, 2, 3, and 4.

Table for GIRDER 1 showing 30th points, deflection due to weight of girder, slab, barrier rail, total dead load, vertical curve ordinate, super-elevation ordinate, camber due to dissipation, and required camber.

Table for GIRDER 2 showing 30th points, deflection due to weight of girder, slab, barrier rail, total dead load, vertical curve ordinate, super-elevation ordinate, camber due to dissipation, and required camber.

Table for GIRDER 3 showing 30th points, deflection due to weight of girder, slab, barrier rail, total dead load, vertical curve ordinate, super-elevation ordinate, camber due to dissipation, and required camber.

Table for GIRDER 4 showing 30th points, deflection due to weight of girder, slab, barrier rail, total dead load, vertical curve ordinate, super-elevation ordinate, camber due to dissipation, and required camber.

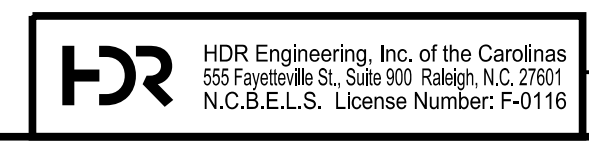
PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-

Professional seal for North Carolina Professional Engineer Dominic A. Coletti, No. 29589. Includes project name and sheet information.

Table for REVISIONS with columns for No., By, Date, and description of changes.

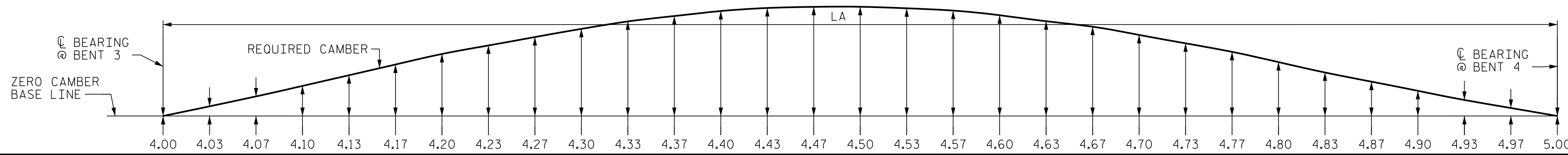
* = INCLUDES SLAB, BUILDUPS, AND STAY-IN-PLACE FORMS.
** = HEAT CURVING IS ALLOWED. CAMBER DISSIPATION DUE TO HEAT CURVING IS ZERO FOR ALL GIRDERS.

Table for drawing metadata including Designer (G. Schmitz), Designer's Check (D. Olds), Drafter (B. Peterson), and Drafter's Check (D. Olds) with dates.



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NOTES

SLOPE FOR THE ZERO CAMBER BASE LINE VARIES. VALUES GIVEN ARE AT THIRTIETH POINTS BETWEEN CENTERLINE OF BEARINGS. DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM). REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM). DOWNWARD DEFLECTION IS INDICATED WITH A "-" SIGN.

Table with 2 columns: GIRDER, LA. Values for girders 1, 2, 3, 4.

Table for GIRDERS 1, showing 30TH POINTS, DEFLECTION DUE TO WEIGHT OF GIRDER, DEFLECTION DUE TO WEIGHT OF SLAB, DEFLECTION DUE TO WT. OF BARRIER RAIL, TOTAL DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, SUPERELEVATION ORDINATE, CAMBER DUE TO DISSIPATION, and REQUIRED CAMBER.

Table for GIRDERS 2, showing 30TH POINTS, DEFLECTION DUE TO WEIGHT OF GIRDER, DEFLECTION DUE TO WEIGHT OF SLAB, DEFLECTION DUE TO WT. OF BARRIER RAIL, TOTAL DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, SUPERELEVATION ORDINATE, CAMBER DUE TO DISSIPATION, and REQUIRED CAMBER.

Table for GIRDERS 3, showing 30TH POINTS, DEFLECTION DUE TO WEIGHT OF GIRDER, DEFLECTION DUE TO WEIGHT OF SLAB, DEFLECTION DUE TO WT. OF BARRIER RAIL, TOTAL DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, SUPERELEVATION ORDINATE, CAMBER DUE TO DISSIPATION, and REQUIRED CAMBER.

Table for GIRDERS 4, showing 30TH POINTS, DEFLECTION DUE TO WEIGHT OF GIRDER, DEFLECTION DUE TO WEIGHT OF SLAB, DEFLECTION DUE TO WT. OF BARRIER RAIL, TOTAL DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, SUPERELEVATION ORDINATE, CAMBER DUE TO DISSIPATION, and REQUIRED CAMBER.

* = INCLUDES SLAB, BUILDUPS, AND STAY-IN-PLACE FORMS. ** = HEAT CURVING IS ALLOWED. CAMBER DISSIPATION DUE TO HEAT CURVING IS ZERO FOR ALL GIRDERS.

PROJECT NO. U-2579AB

FORSYTH COUNTY

STATION: 58+33.94 -Y15FLYCA-

SHEET 4 OF 8



Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE DEAD LOAD DEFLECTION AND CAMBER ORDINATES SPAN 'D'

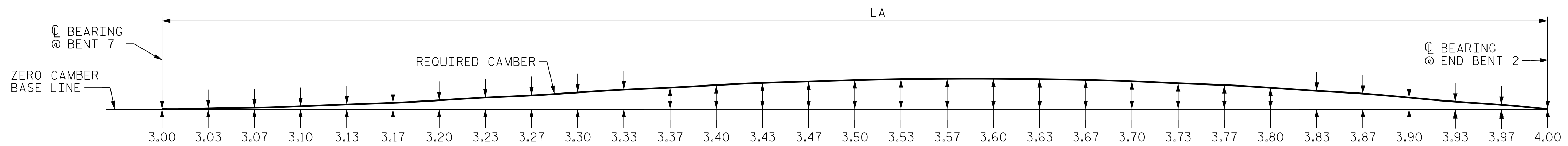
Table for REVISIONS with columns: NO., BY:, DATE:, NO., BY:, DATE: and SHEET NO. (TOTAL SHEETS 129)

DES BY: G. SCHMITZ DATE: 09/19 DWG BY: B. PETERSON DATE: 10/19 DES CHK: D. OLDS DATE: 09/19 CHK BY: D. OLDS DATE: 10/19

HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116

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Vertical text on the left side: PLOT DRIVER: NCDOT.pdf_color_eng-50.ppt USER: PETERSON DATE: 10/14/2021 TIME: 5:16:10 PM FILE: ... \SUPERS



NOTES

SLOPE FOR THE ZERO CAMBER BASE LINE VARIES. VALUES GIVEN ARE AT THIRTIETH POINTS BETWEEN CENTERLINE OF BEARINGS. DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM). REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM). DOWNWARD DEFLECTION IS INDICATED WITH A "-" SIGN.

Table with 2 columns: GIRDER and LA. Values: 1 (182.393'), 2 (183.361'), 3 (184.328'), 4 (185.295')

Table for GIRDER 1 showing 30th points, deflection due to weight of girder, slab, barrier rail, total dead load deflection, vertical curve ordinate, super-elevation ordinate, camber due to dissipation, and required camber.

Table for GIRDER 2 showing 30th points, deflection due to weight of girder, slab, barrier rail, total dead load deflection, vertical curve ordinate, super-elevation ordinate, camber due to dissipation, and required camber.

Table for GIRDER 3 showing 30th points, deflection due to weight of girder, slab, barrier rail, total dead load deflection, vertical curve ordinate, super-elevation ordinate, camber due to dissipation, and required camber.

Table for GIRDER 4 showing 30th points, deflection due to weight of girder, slab, barrier rail, total dead load deflection, vertical curve ordinate, super-elevation ordinate, camber due to dissipation, and required camber.

* = INCLUDES SLAB, BUILDUPS, AND STAY-IN-PLACE FORMS. ** = HEAT CURVING IS ALLOWED. CAMBER DISSIPATION DUE TO HEAT CURVING IS ZERO FOR ALL GIRDERS.

PROJECT NO. U-2579AB FORSYTH COUNTY STATION: 58+33.94 -Y15FLYCA-

SHEET 8 OF 8

Professional Engineer Seal for Dominic A. Coletti, License No. 29589, State of North Carolina, Raleigh. Text: SUPERSTRUCTURE DEAD LOAD DEFLECTION AND CAMBER ORDINATES SPAN 'H'

Table with 2 columns: NO. and BY: DATE: and 2 columns: NO. and BY: DATE: and a column: SHEET NO. Values: 1, 2, 3, 4, 506-064, TOTAL SHEETS 129

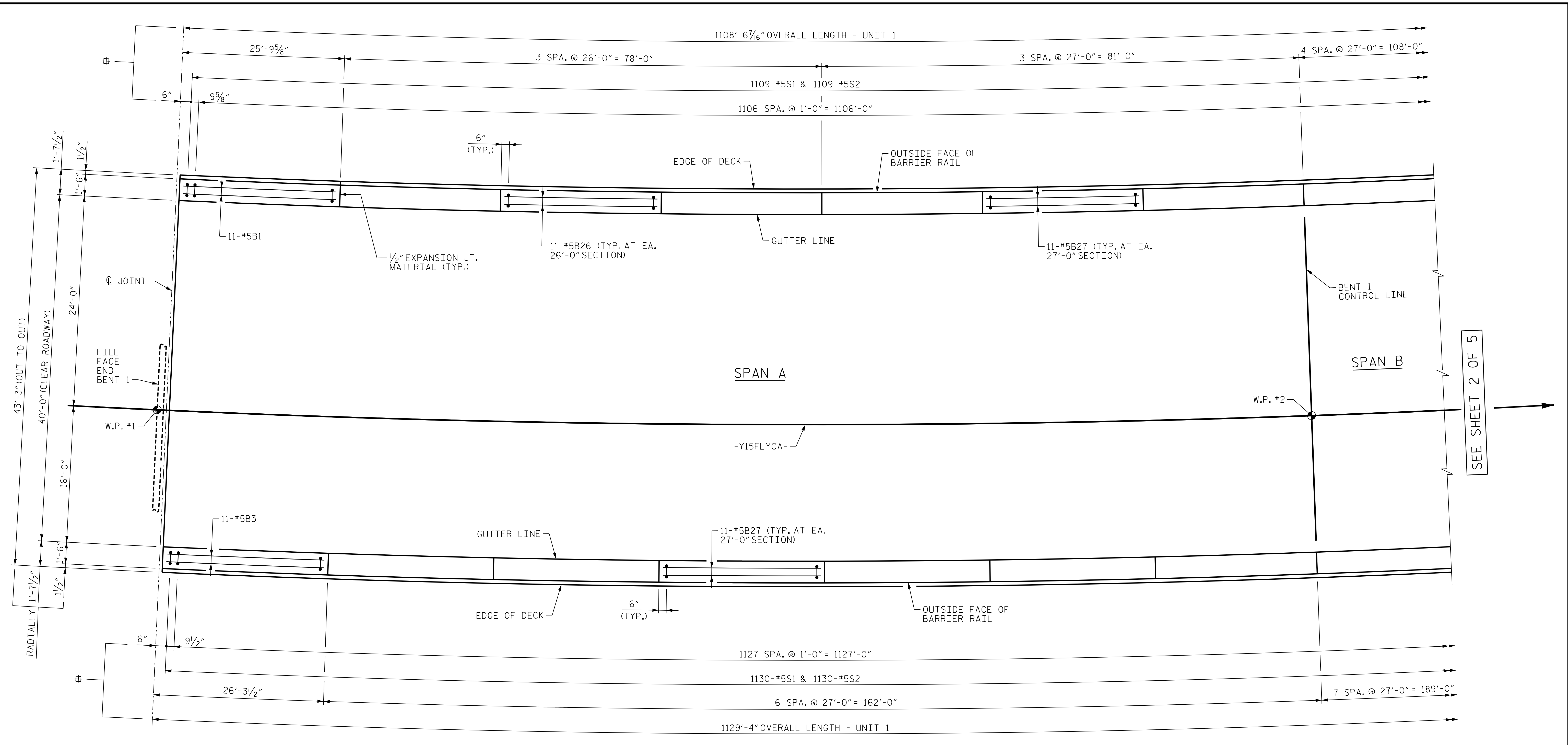
10/15/2021

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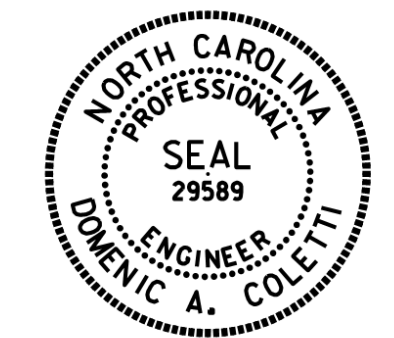


PARTIAL PLAN OF BARRIER RAIL - UNIT 1
 # = MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

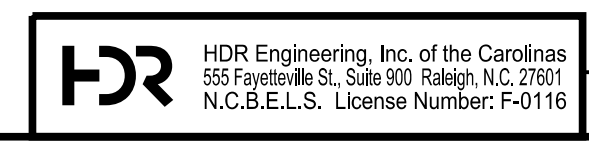
**SUPERSTRUCTURE
 CONCRETE BARRIER RAIL
 UNIT 1**



Dominic A. Coletti 10/15/2021

PLOT DRIVER: NCDOT_pdf_color_eng-50.ppt
 USER: PPETERSO DATE: 10/14/2021
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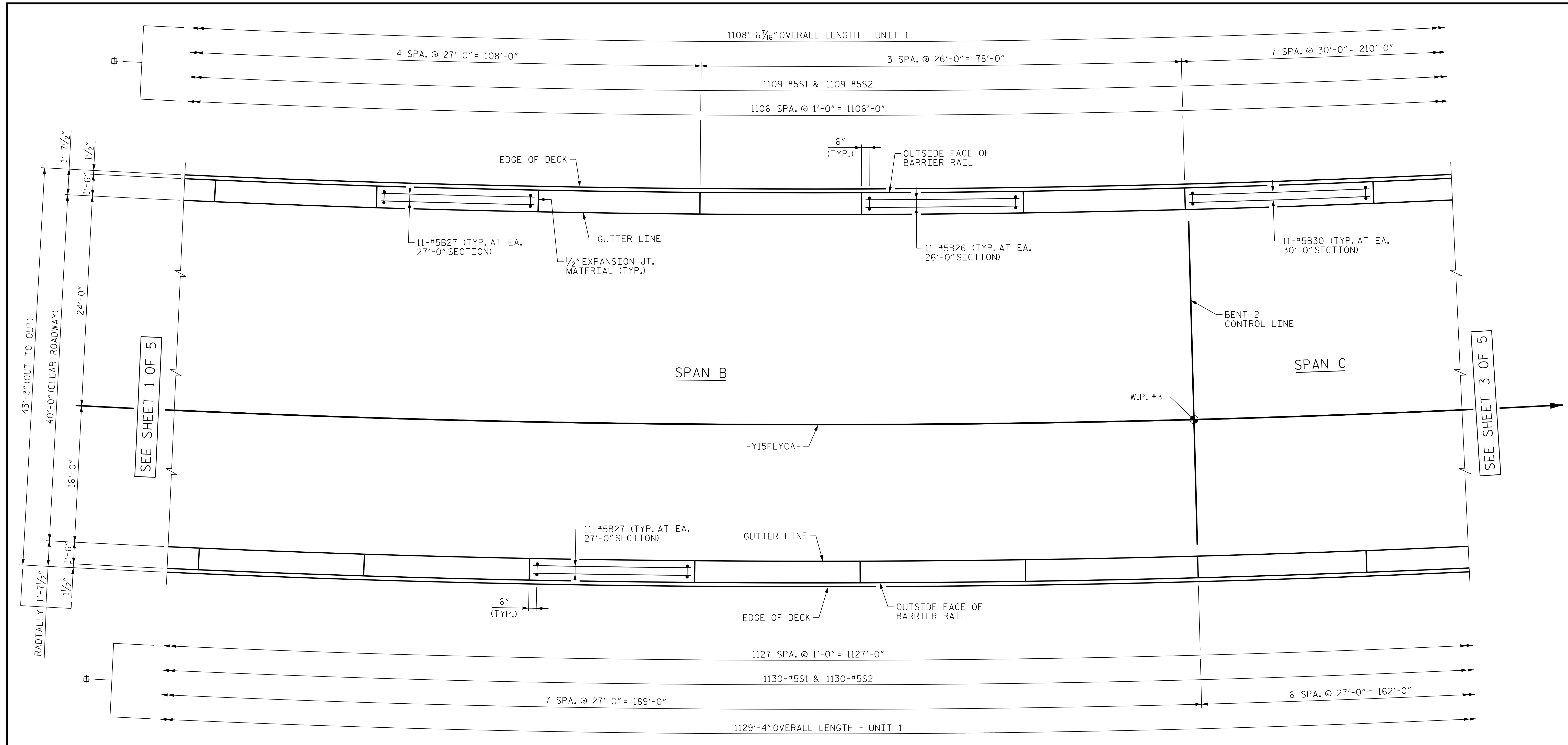
DES BY: <u>L. ZAMPETTI</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
DES CHK: <u>J. ROBERTS</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>12/19</u>



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REVISIONS						SHEET NO. S06-065 TOTAL SHEETS 129
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2	--	--	4	--	--	

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USER: PPETERSO DATE: 10/14/2021 TIME: 5:16:44 PM
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PARTIAL PLAN OF BARRIER RAIL - UNIT 1
 # = MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL

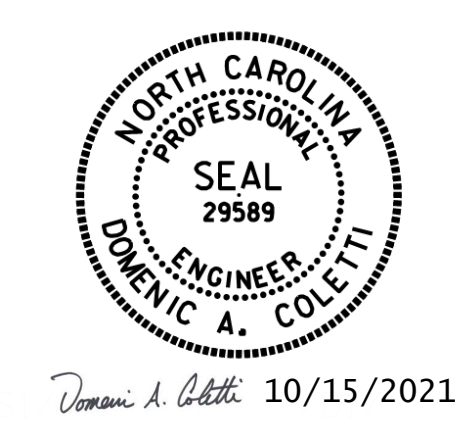
PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 CONCRETE BARRIER RAIL
 UNIT 1**

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

SHEET NO. 506-066
 TOTAL SHEETS 129

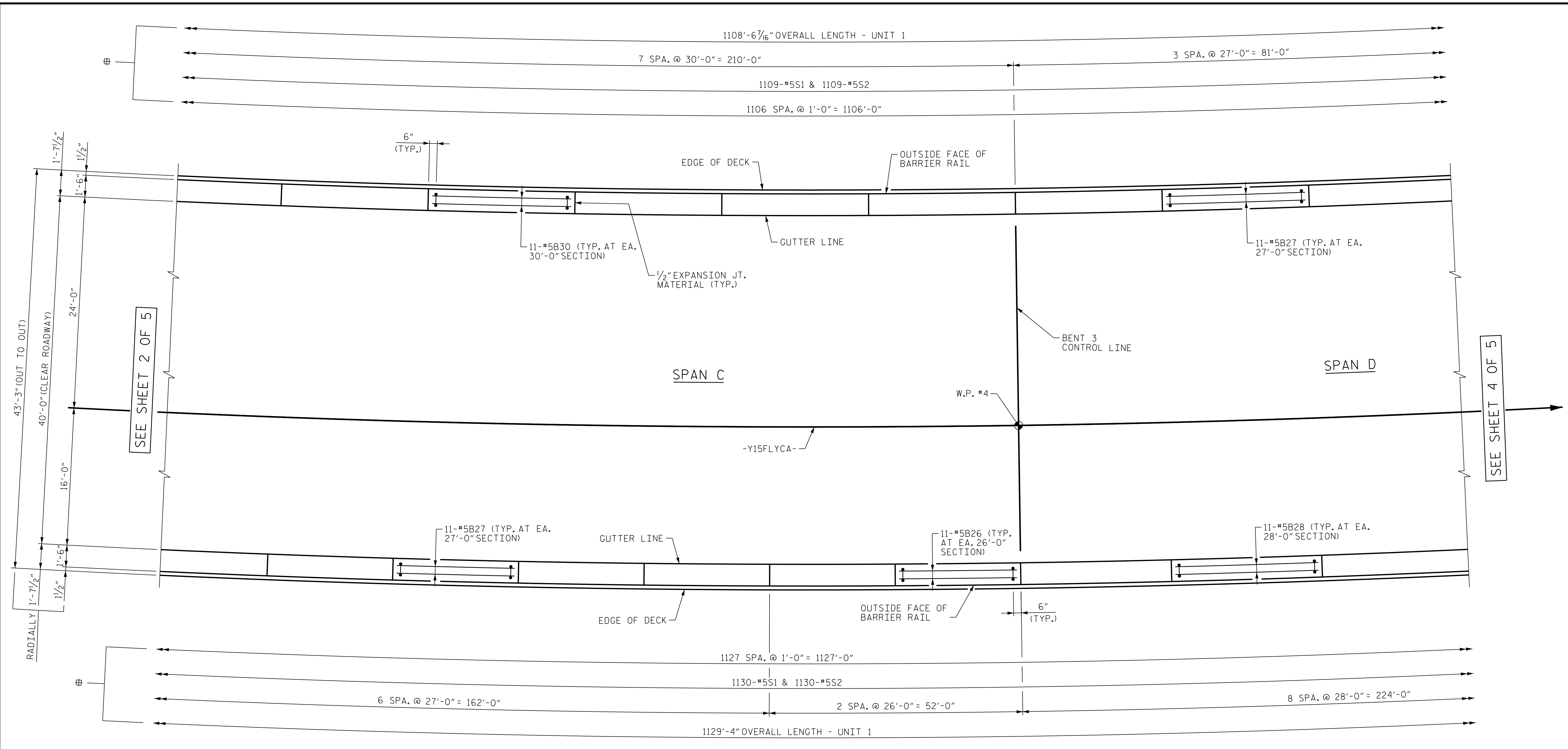


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DES CHK: <u>J. ROBERTS</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>12/19</u>



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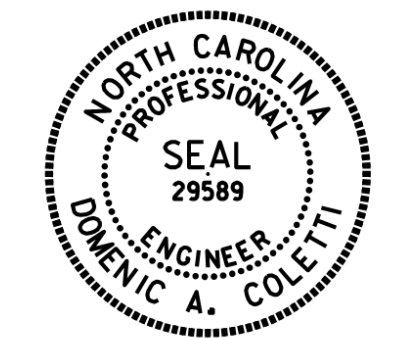


PARTIAL PLAN OF BARRIER RAIL - UNIT 1
 # = MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 3 OF 5

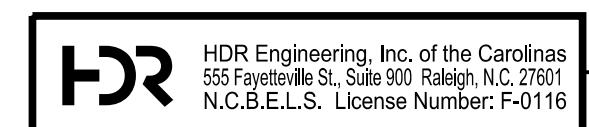
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 CONCRETE BARRIER RAIL
 UNIT 1**



Dominic A. Coletti 10/15/2021

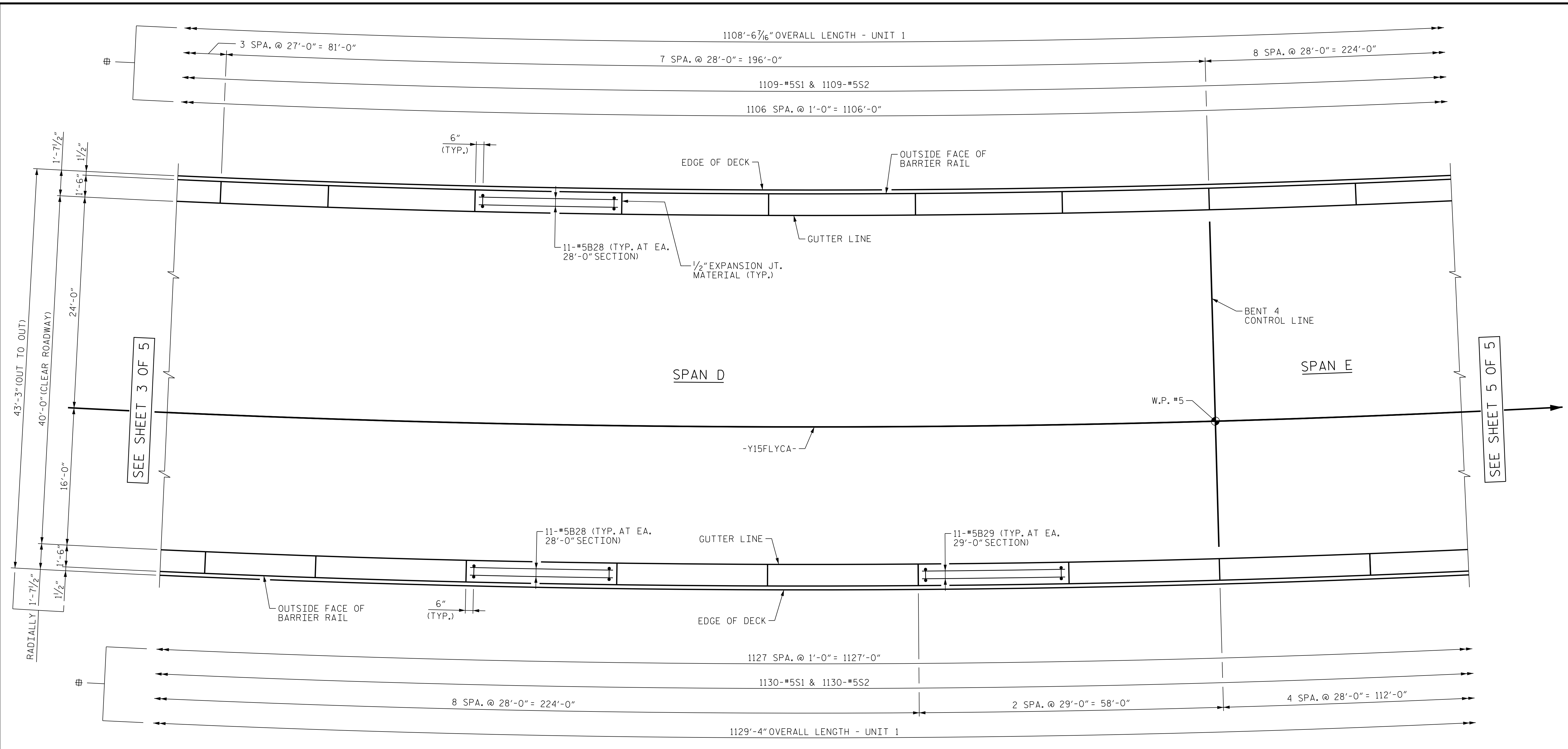
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DES CHK: <u>J. ROBERTS</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>12/19</u>



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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
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2	--	--	4	--	--	129	

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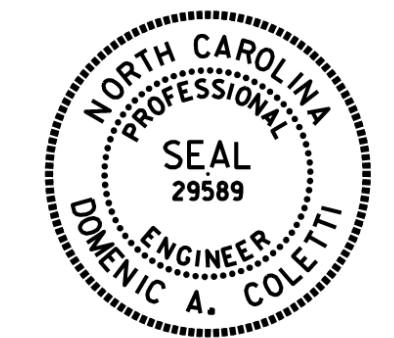


PARTIAL PLAN OF BARRIER RAIL - UNIT 1
 # = MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 4 OF 5

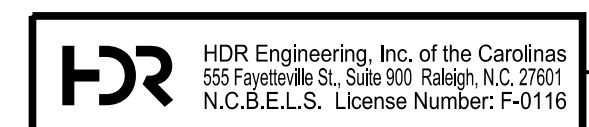
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 CONCRETE BARRIER RAIL
 UNIT 1**



Dominic A. Coletti 10/15/2021

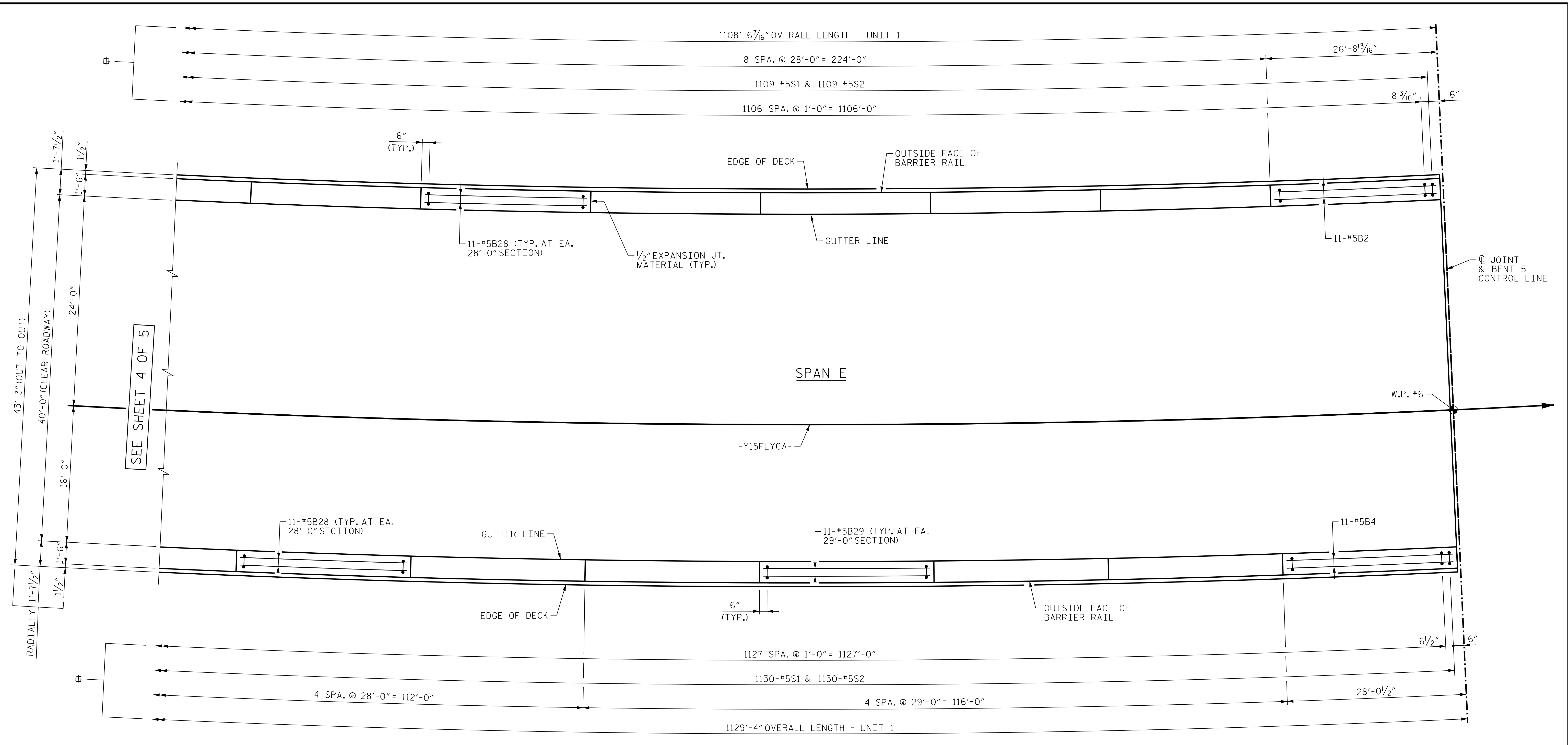
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DES CHK: <u>J. ROBERTS</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>12/19</u>



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REVISIONS						SHEET NO. 506-068 TOTAL SHEETS 129
NO.	BY:	DATE:	NO.	BY:	DATE:	
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PARTIAL PLAN OF BARRIER RAIL - UNIT 1
 # = MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL

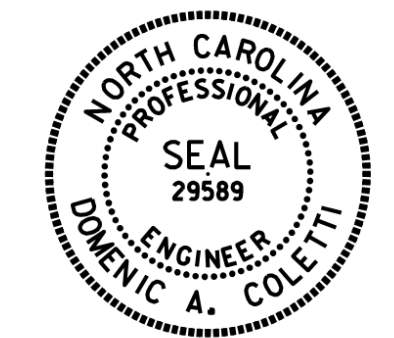
PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 CONCRETE BARRIER RAIL
 UNIT 1**

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

SHEET NO. 506-069
 TOTAL SHEETS 129



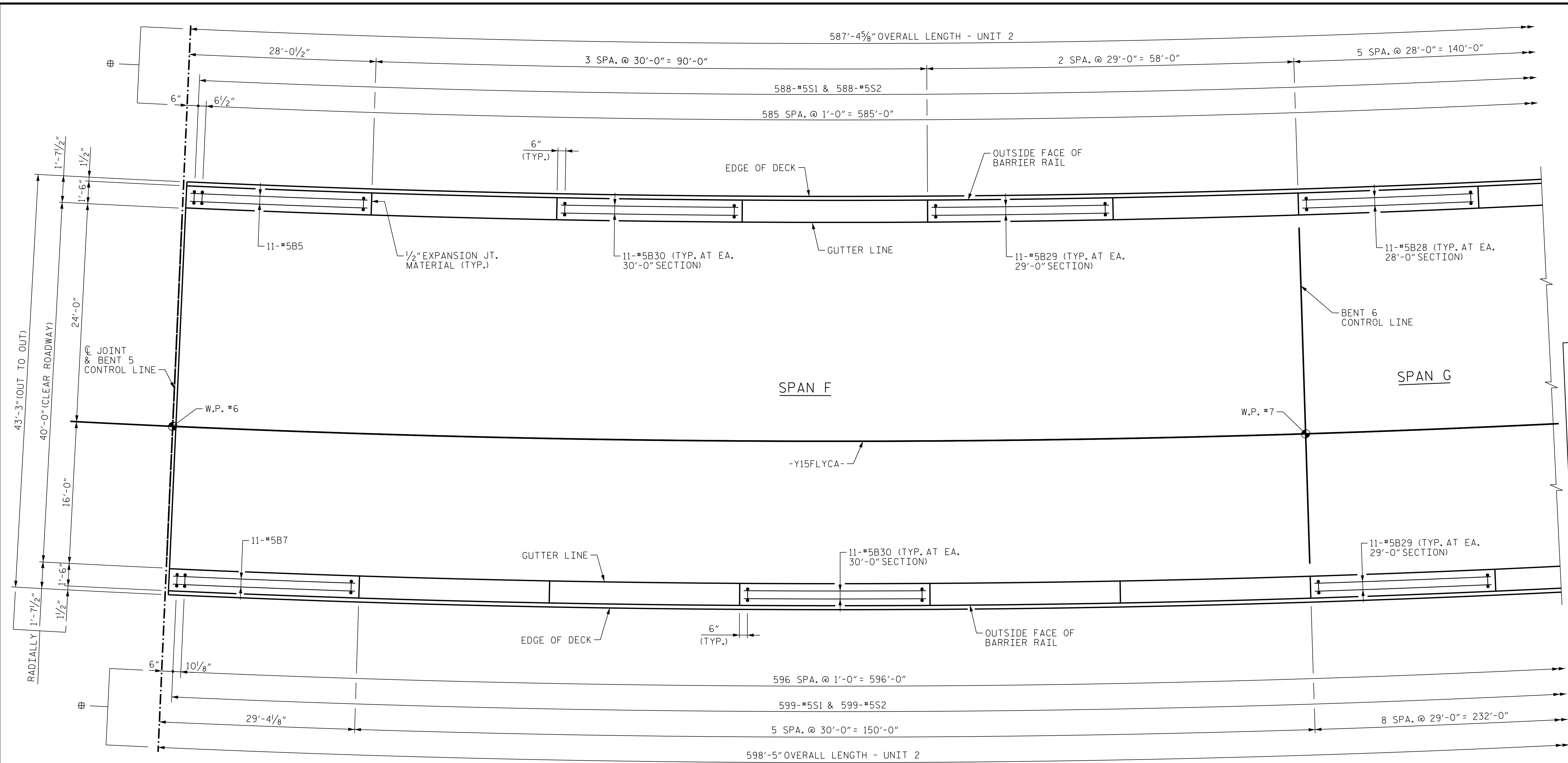
Dominic A. Coletti 10/15/2021

DES BY: <u>L. ZAMPETTI</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
DES CHK: <u>J. ROBERTS</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>12/19</u>



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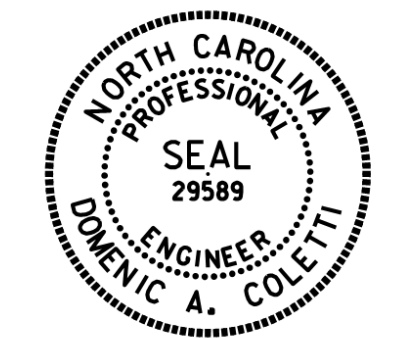
SEE SHEET 2 OF 3

PARTIAL PLAN OF BARRIER RAIL - UNIT 2
 # = MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 1 OF 3

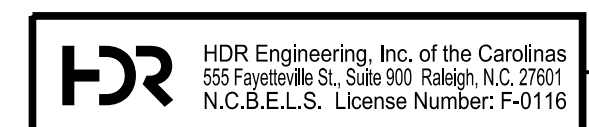
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 CONCRETE BARRIER RAIL
 UNIT 2**



Dominic A. Coletti 10/15/2021

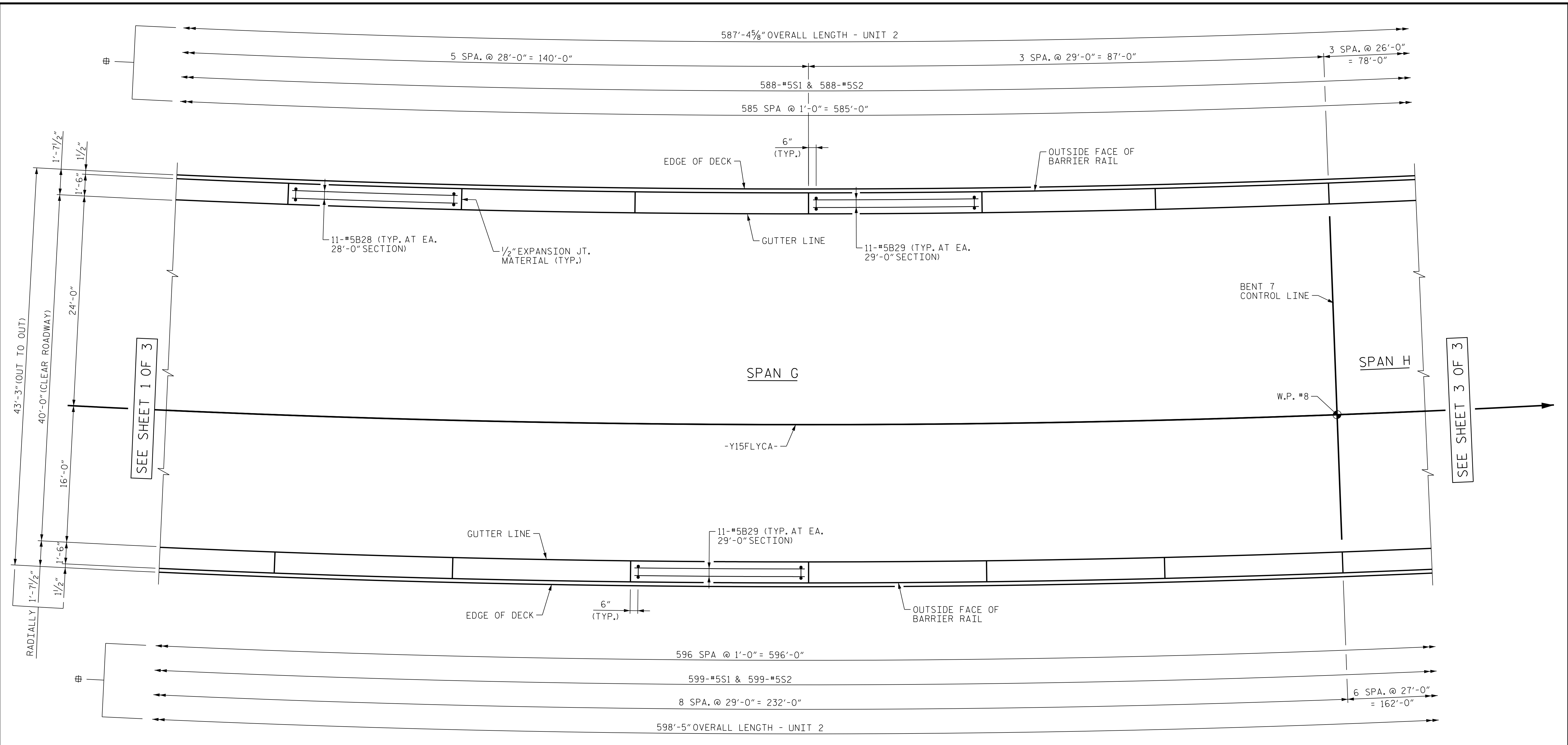
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DES CHK: <u>J. ROBERTS</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>12/19</u>



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REVISIONS						SHEET NO. 506-070 TOTAL SHEETS 129
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2	--	--	4	--	--	

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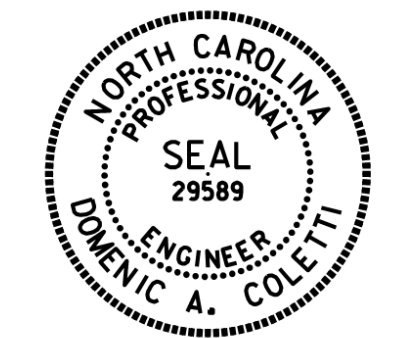


PARTIAL PLAN OF BARRIER RAIL - UNIT 2
 # = MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 CONCRETE BARRIER RAIL
 UNIT 2**



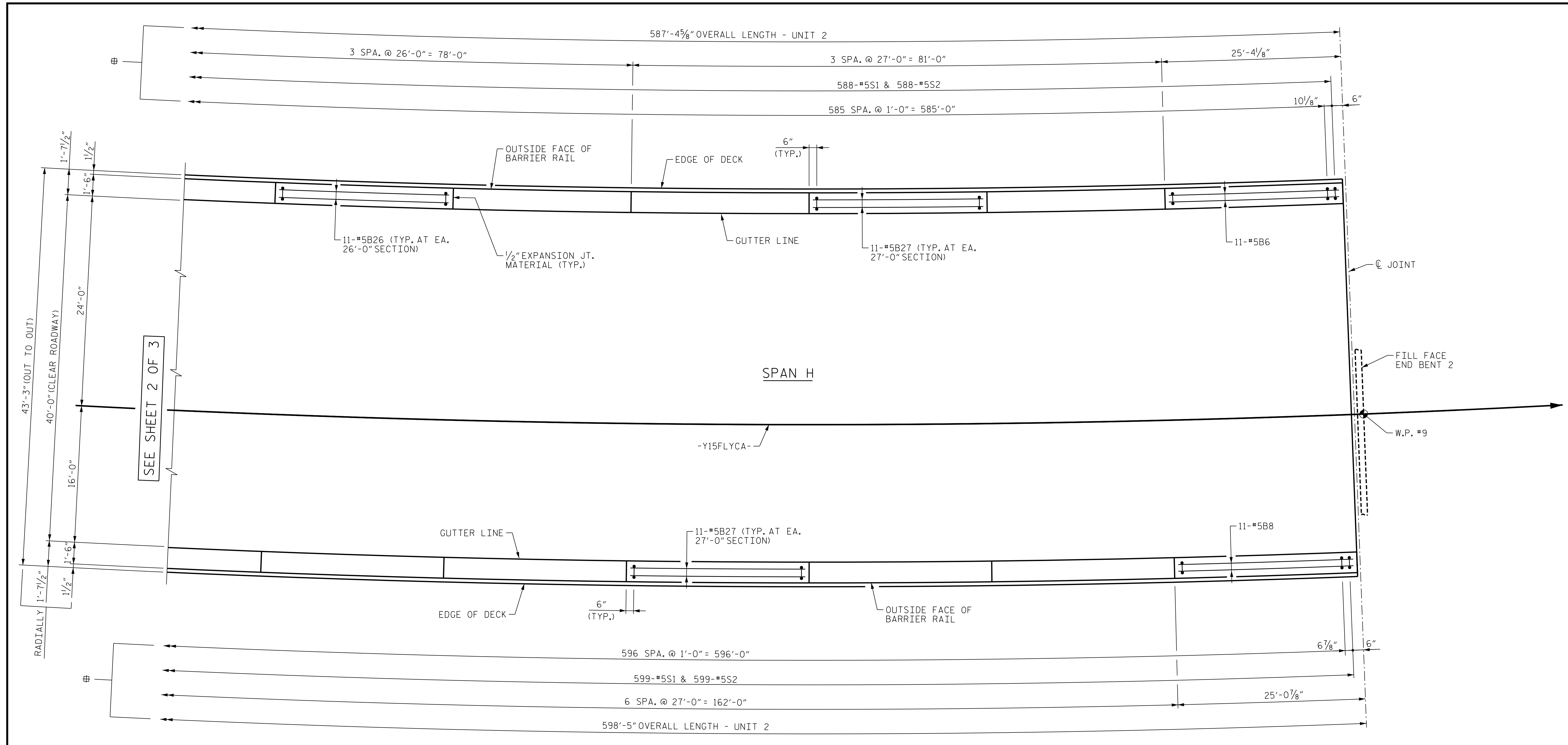
Dominic A. Coletti 10/15/2021

DES BY: <u>L. ZAMPETTI</u>	DATE: <u>06/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>06/19</u>
DES CHK: <u>J. ROBERTS</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>12/19</u>



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REVISIONS						SHEET NO. 506-071 TOTAL SHEETS 129
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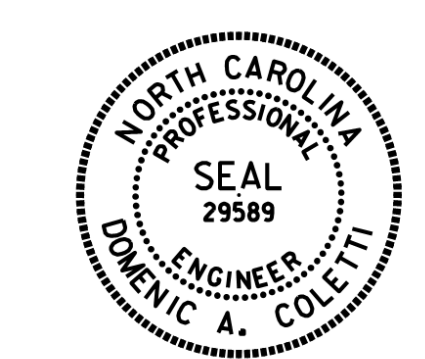


PARTIAL PLAN OF BARRIER RAIL - UNIT 2
 # = MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL

PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 58+33.94 -Y15FLYCA-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 CONCRETE BARRIER RAIL
 UNIT 2**



Dominic A. Coletti 10/15/2021

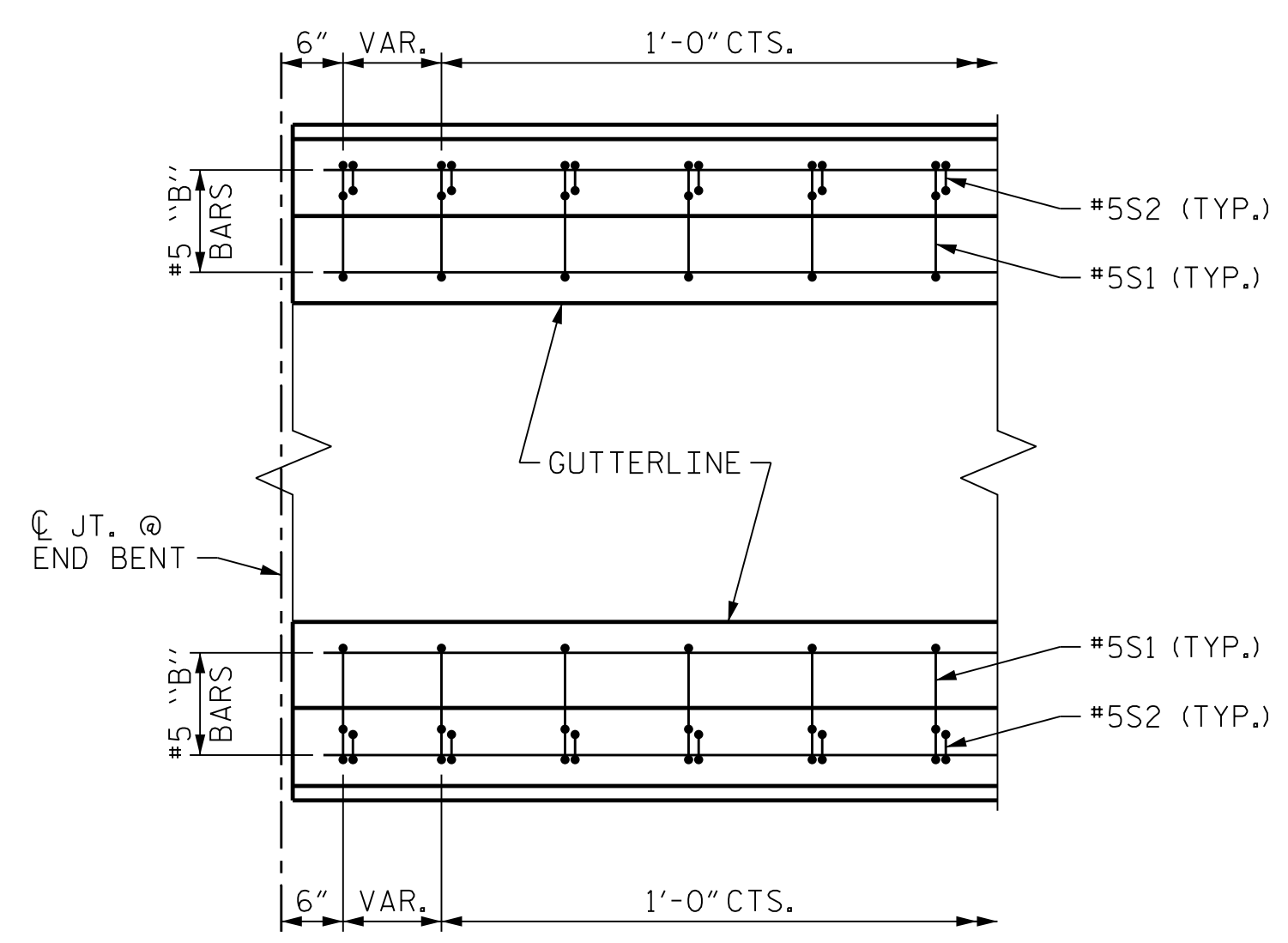
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DES CHK: <u>J. ROBERTS</u>	DATE: <u>06/19</u>	CHK BY: <u>S. NIFONG</u>	DATE: <u>12/19</u>

HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

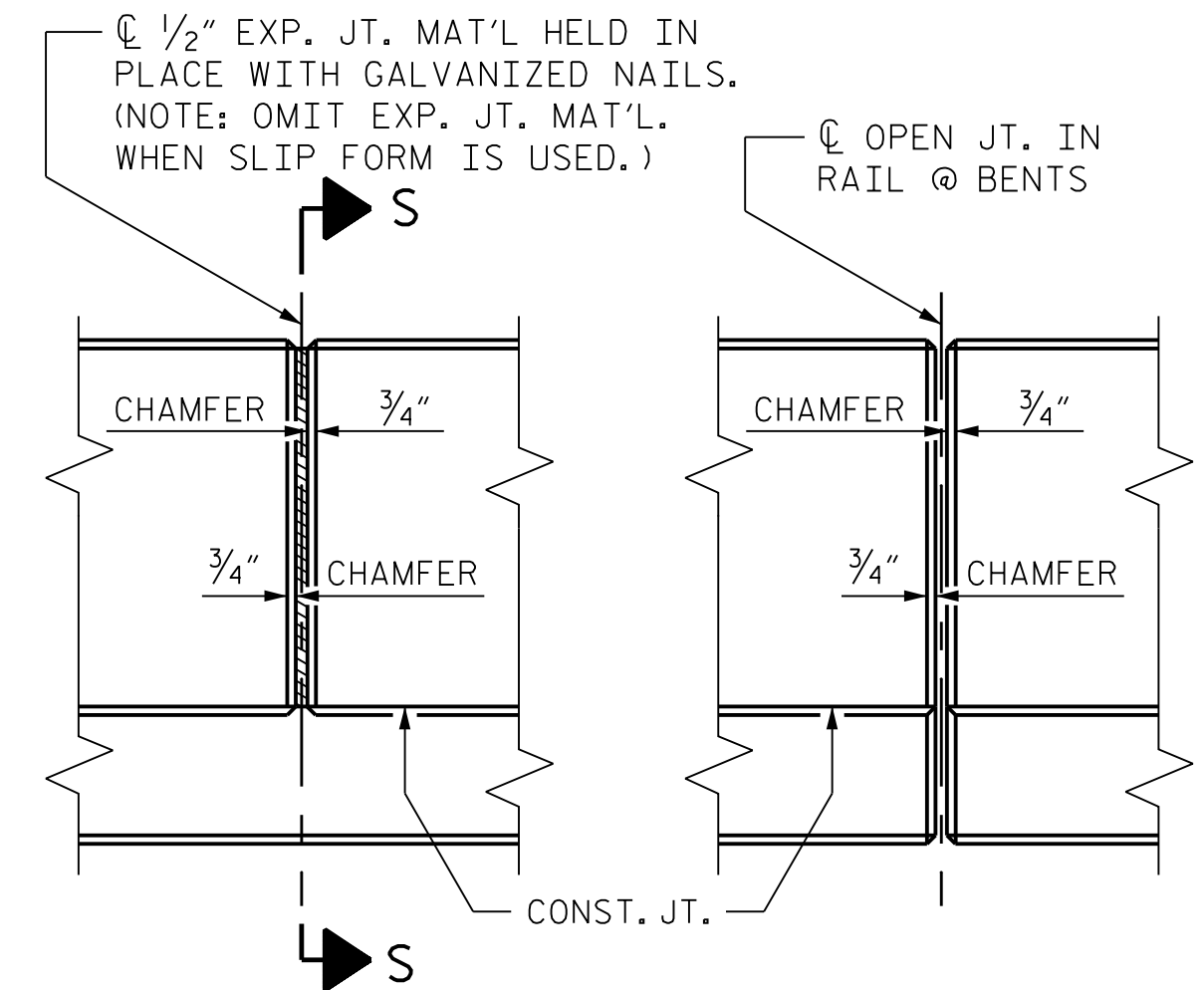
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PLAN
RAIL DETAILS AT EXPANSION JOINTS



ELEVATION AT EXPANSION JOINTS

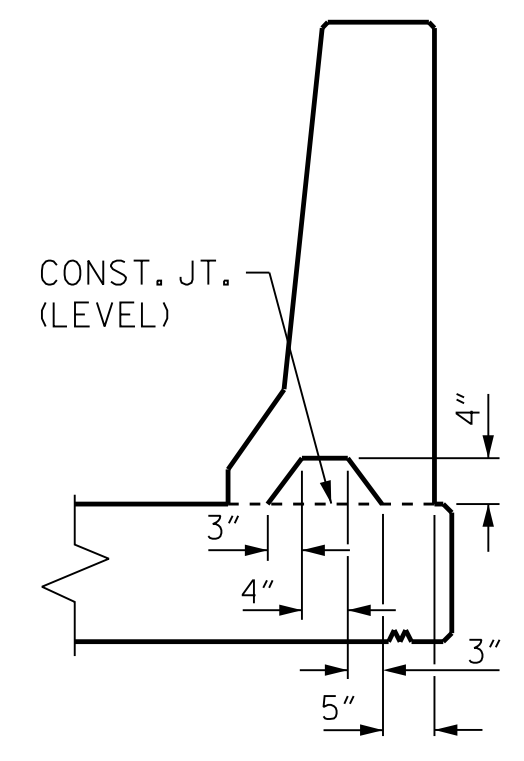
NOTES

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

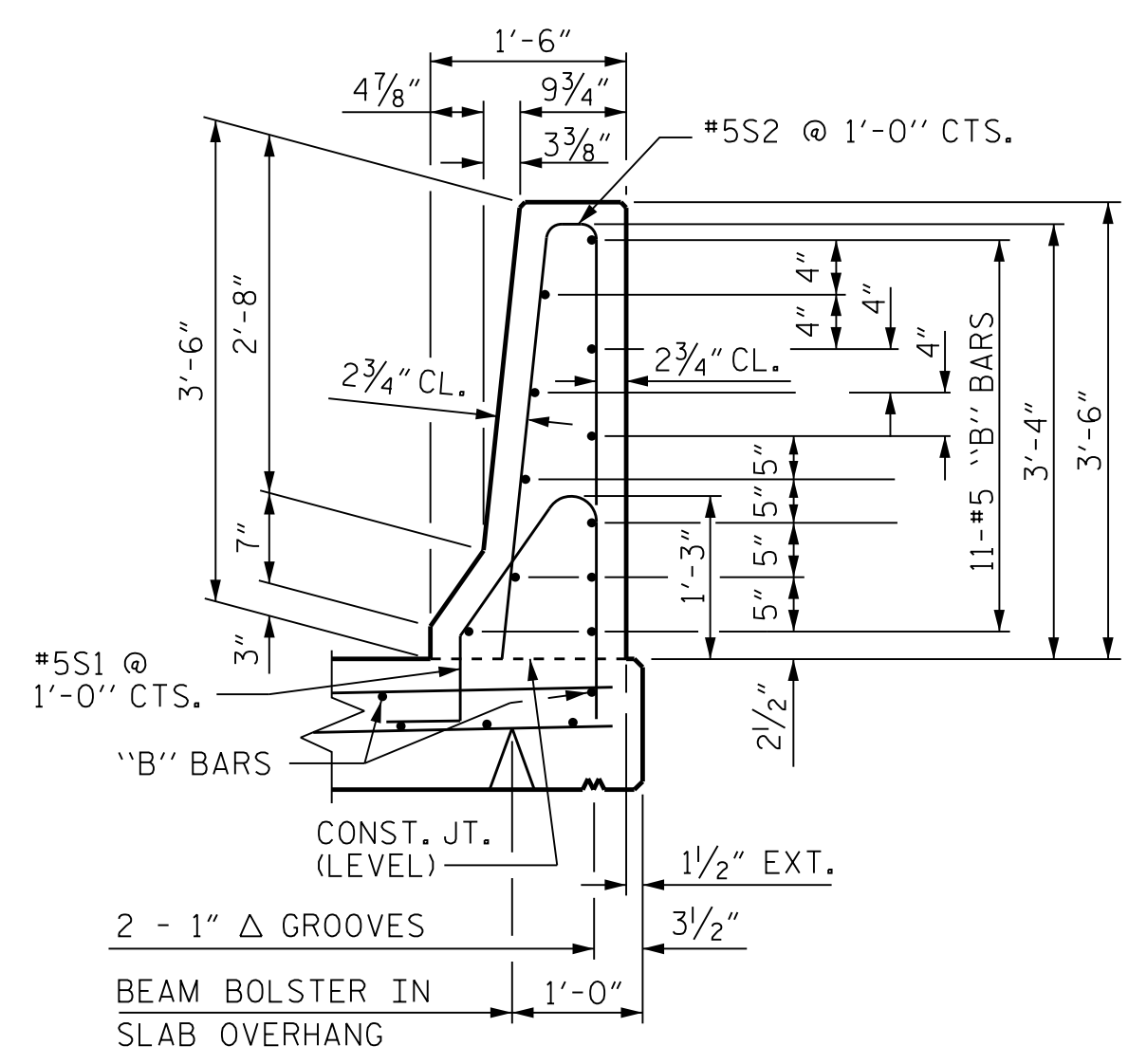
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

GROOVED CONTRACTION JOINTS, 1/2\"/>

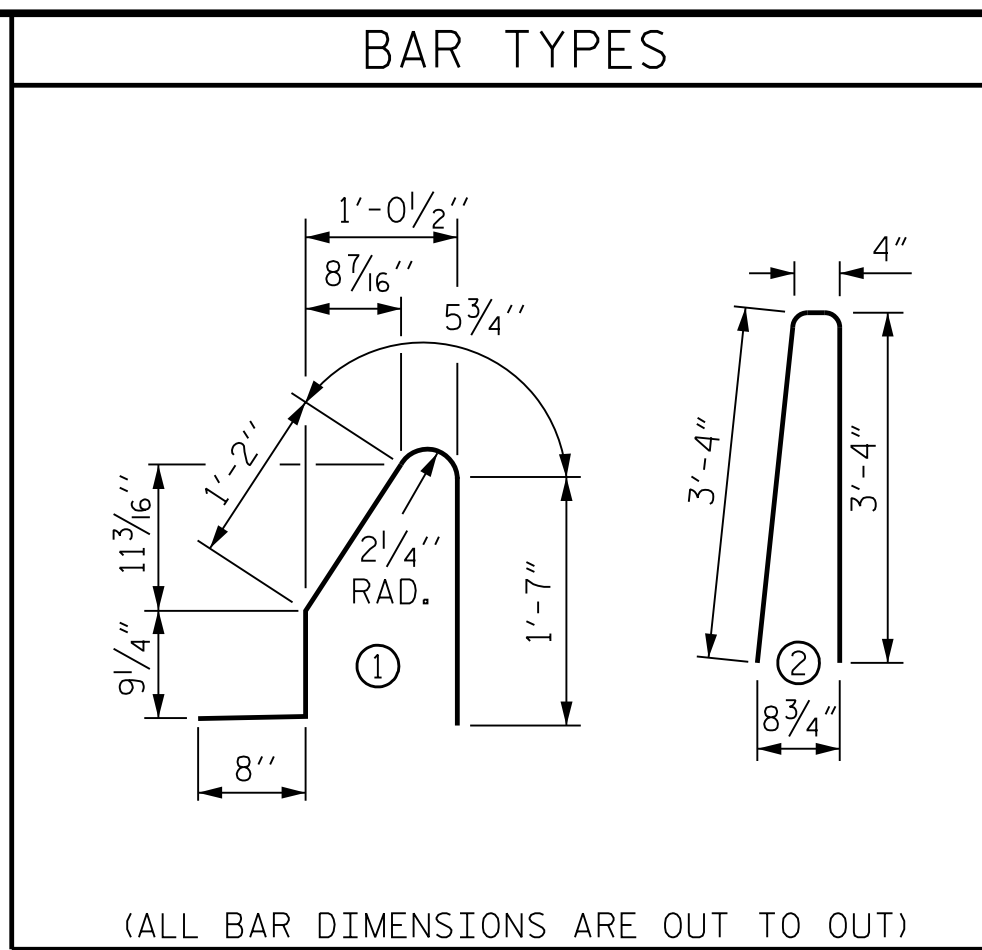
SEE "BRIDGE APPROACH SLAB" SHEETS FOR BARRIER RAIL CONSTRUCTED ON APPROACH SLABS AND END OF RAIL DETAILS.



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



SECTION THROUGH RAIL
BARRIER RAIL DETAILS



(ALL BAR DIMENSIONS ARE OUT TO OUT)

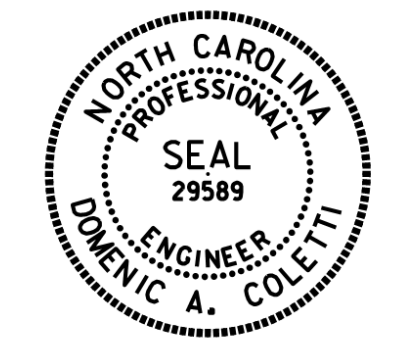
BILL OF MATERIAL					
FOR CONCRETE BARRIER RAIL ON BRIDGE DECK ONLY					
UNIT 1					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
*B1	11	#5	STR	25'-3"	290
*B2	11	#5	STR	26'-1"	300
*B3	11	#5	STR	25'-9"	296
*B4	11	#5	STR	27'-5"	315
*B26	88	#5	STR	25'-7"	2,349
*B27	319	#5	STR	26'-7"	8,845
*B28	297	#5	STR	27'-7"	8,545
*B29	66	#5	STR	28'-7"	1,968
*B30	77	#5	STR	29'-7"	2,376
*S1	2,239	#5	1	4'-8"	10,898
*S2	2,239	#5	2	7'-0"	16,347

*EPOXY COATED REINFORCING STEEL 52,529 LBS.
CLASS AA CONCRETE 304.1 CU. YDS.
CONCRETE BARRIER RAIL 2,237.9 LIN. FT.

UNIT 2					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
*B5	11	#5	STR	27'-5"	315
*B6	11	#5	STR	24'-11"	286
*B7	11	#5	STR	28'-9"	330
*B8	11	#5	STR	24'-7"	283
*B26	33	#5	STR	25'-7"	881
*B27	99	#5	STR	26'-7"	2,745
*B28	55	#5	STR	27'-7"	1,583
*B29	143	#5	STR	28'-7"	4,264
*B30	88	#5	STR	29'-7"	2,716

*EPOXY COATED REINFORCING STEEL 27,848 LBS.
CLASS AA CONCRETE 161.2 CU. YDS.
CONCRETE BARRIER RAIL 1,185.8 LIN. FT.

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 58+33.94 -Y15FLYCA-



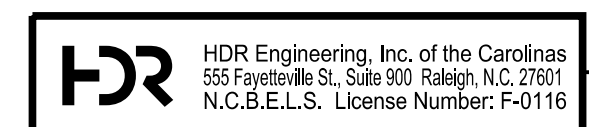
Dominic A. Coletti 10/15/2021

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
CONCRETE BARRIER
RAIL DETAILS**

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

SHEET NO. 506-073
TOTAL SHEETS 129



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PLOT DRIVER: NCDOT... PENTABLE: NCDOT... USER: PPETERSO... DATE: 10/14/2021... FILE: ... \SUPERS

DES BY: L. ZAMPETTI	DATE: 07/19	DWG BY: M. SELLS	DATE: 07/19
DES CHK: J. ROBERTS	DATE: 08/19	CHK BY: S. NIFONG	DATE: 12/19