

**ISOMETRIC VIEW**

TRUSS DATA					
TRUSS SPAN (FT)	NUMBER OF PANELS	END PANEL LENGTH (FT)	TRUSS DEPTH (CHORD-TO-CHORD) (FT)	BASE PLATE DIAMETER (IN)	*CAMBER AT MIDPOINT (IN)
50	5	10.0	6.0	38	$\frac{5}{8}$
55	6	7.5			$\frac{3}{4}$
60	6	10.0			$\frac{7}{8}$
65	7	7.5			1
70	7	10.0			$1\frac{1}{8}$
75	8	7.5			$1\frac{1}{8}$
80	8	10.0			$1\frac{1}{4}$
85	9	7.5			$1\frac{3}{8}$
90	9	10.0			$1\frac{1}{2}$
95	10	7.5			$1\frac{3}{4}$
100	10	10.0			$1\frac{7}{8}$
105	11	7.5	8	42	2
110	11	10.0			2
115	12	7.5			$2\frac{1}{8}$
120	12	10.0			$2\frac{1}{4}$
125	13	7.5			$2\frac{1}{2}$
130	13	10.0			$2\frac{3}{4}$
135	14	7.5			$2\frac{7}{8}$
140	14	10.0			$3\frac{1}{8}$

\*SEE CAMBER DIAGRAM SHEET 3

APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF DEVELOPMENT



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

**SIGN 360-C**

SHEET  
1 OF 10



NOTES:

1. THE DESIGN OF THIS STRUCTURE IS BASED ON THE AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 1ST EDITION, WITH INTERIM REVISIONS THROUGH 2022.
2. WELDING MUST BE IN ACCORDANCE WITH AWS D1.1 AS SPECIFIED IN 20SP-707A, STRUCTURAL STEEL AND ALUMINUM CONSTRUCTION.
3. MAXIMUM SIGN AREA IS 1200 SQUARE FEET. SIGNS MUST NOT PROJECT PAST THE ENDS OF THE TRUSS. MAXIMUM 6 FOOT SIGN PROJECTION ABOVE THE TOP CHORD.
4. FOR TRUSS LENGTHS 50 FEET TO 105 FEET, MINIMUM SIGN HEIGHT WITH ALUMINUM BEAM IS 7 FEET. FOR TRUSS LENGTHS 110 FEET TO 140 FEET, MINIMUM SIGN HEIGHT WITH ALUMINUM BEAM IS 9 FEET.
5. TYPE I SIGNS MUST NOT BE USED ON THE SAME TRUSS AS VARIABLE MESSAGE SIGNS.
6. GALVANIZING OF BOLT ASSEMBLIES SHALL BE IN ACCORDANCE WITH SUBSECTIONS 919.07.1 AND 906.07 OF THE MDOT STANDARD OF SPECIFICATIONS FOR CONSTRUCTION.
7. PROVIDE 15/16" DIAMETER HOLES FOR 7/8" DIAMETER HIGH STRENGTH (HS) BOLTS FOR ALL CONNECTIONS UNLESS OTHERWISE STATED. PROVIDE HIGH STRENGTH BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH SUBSECTION 906.07 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
8. TIGHTEN ALL HIGH STRENGTH (HS) BOLTS BY THE TURN OF NUT METHOD PER SUBSECTION 707.03.E.6 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, EXCEPT AT CHORD SPLICE CONNECTIONS. CHORD SPLICE CONNECTIONS MUST BE TIGHTENED TO A SNUG TIGHT CONDITION PER SUBSECTION 707.03.E.6 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
9. DO NOT LIFT THE TRUSS BY THE WEB MEMBERS.
10. FIELD SPLICES MAY BE PLACED ALONG THE TRUSS CHORD TO FACILITATE FABRICATION. PLACE FIELD SPLICE 1'-6" MINIMUM TO THE GUSSET PLATE EDGE. ANY DEVIATION FROM THE DETAILS SHOWN ON THIS TYPICAL WILL REQUIRE APPROVAL BY THE ENGINEER IN WRITING BEFORE FABRICATION.
11. ALL WELDS MUST BE INSPECTED IN ACCORDANCE WITH SUBSECTION 707.03.D.12 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, EXCEPT MINIMUM MT INSPECTION FREQUENCY IS INCREASED TO 25 PERCENT.
12. SEE CURRENT MDOT SIGN SUPPORT TYPICAL PLAN SIGN-340-SERIES FOR SIGN FOUNDATION.
13. SEE CURRENT MDOT SIGN SUPPORT TYPICAL PLAN SIGN-700-SERIES FOR SIGN CONNECTION.
14. COLUMN SECTIONS MUST BE ASTM A53, GRADE B OR API-5L-X42. SECTIONS FOR 50 FEET TO 105 FEET TRUSSES MUST BE 24" BY 0.969". SECTIONS FOR 110 FEET TO 140 FEET TRUSSES MUST BE 24" BY 1.219". CHORD SECTIONS MUST BE ASTM A500 GRADE B 6 5/8" x 0.432 OR ASTM A519-4140 ANNEALED 6" x 0.375.
15. WEB ANGLES MUST BE ASTM A709, GRADE 36 OR ASTM A36 L5" X 5" X 7/16" OR L5" X 5" X 1/2". STEEL PLATES MUST BE ASTM A709, GRADE 36 OR 50, ASTM A36, OR ASTM A572 GRADE 50.
16. THE ESTIMATED WEIGHT OF THE TRUSS IS 195 LBS/FT.
17. DURING THE ERECTION PROCESS THE MINIMUM NUMBER OF BOLTS REQUIRE TO BE INSTALL PRIOR TO LETTING TRAFFIC RESUME UNDER THE ERECTED TRUSS MUST BE: 2 BOLTS MINIMUM PER CHORD-COLUMN CONNECTION PLATE FOR SPAN LENGTHS BETWEEN 50' AND 105', AND 4 BOLTS MINIMUM PER CHORD-COLUMN CONNECTION PLATE FOR SPAN LENGTHS BETWEEN 110' AND 140'. NO SIGNS SHALL BE ERECTED UNTIL ALL BOLTS ARE INSTALLED.
18. BASE PLATE WARPAGE MUST NOT EXCEED 1/16 INCH PER FOOT.
19. CJP WELDS ON OPTIONAL COLUMN AND ARM SPLICES SHALL BE GROUND SMOOTH. ANY GRINDING OF WELDS IS TO BE DONE PRIOR TO GALVANIZATION. WELDING SHALL BE IN ACCORDANCE WITH SECTION 707 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
20. SELECT SEALANT FOR PERIMETER OF BACKING BAR PLATE FROM THE QUALIFIED PRODUCTS LIST. PROVIDE SEALANT IN CAULKING TUBES.
21. CHARPY V-NOTCH TESTING IS REQUIRED FOR THE COLUMN UPRIGHT IN ACCORDANCE WITH THE AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION, WITH INTERIM REVISIONS THROUGH 2022.

DESIGN MAXIMUM LOADS AT THE TOP OF THE FOUNDATION

TRUSS SPAN (FT)	COMBINATION	AXIAL LOAD (LBS)	MOMENT (IN-LBS)	SHEAR (LBS)	TORQUE (IN-LBS)
50 - 105	SERVICE	20,400	4,435,900	12,900	207,100
	STRENGTH	25,500	821,300	7,400	228,800
	EXTREME	22,400	10,662,200	28,600	261,300
110 - 140	SERVICE	27,600	5,519,700	17,500	483,600
	STRENGTH	34,500	1,381,900	12,500	517,900
	EXTREME	30,400	12,843,400	35,300	627,100



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

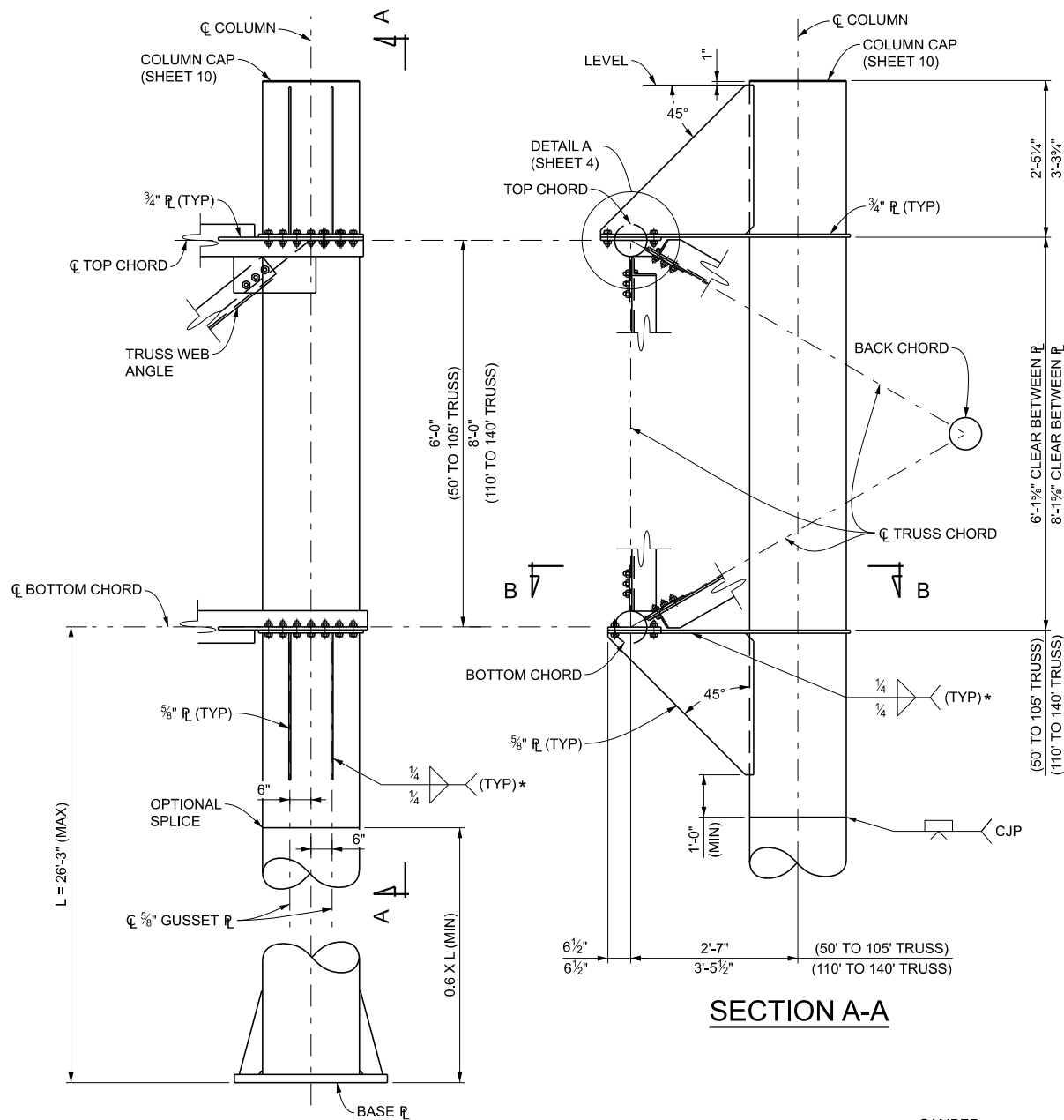
(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

SIGN 360-C

SHEET  
2 OF 10

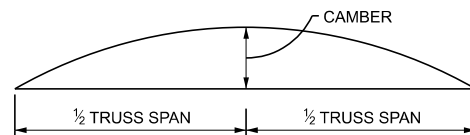




## RIGHT COLUMN TRUSS CONNECTION DETAIL

WEB MEMBERS AND CONNECTION PLATES OMITTED FOR CLARITY  
(LEFT COLUMN SIMILAR)

## SECTION A-A



## CAMBER DIAGRAM



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

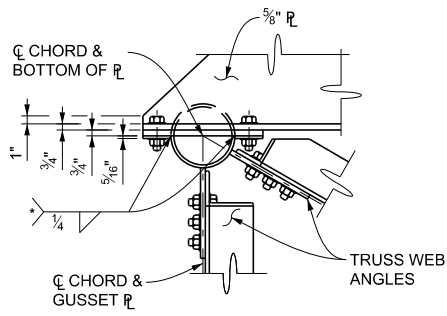
(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

SIGN 360-C

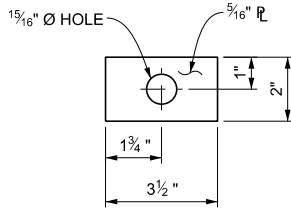
SHEET  
3 OF 10



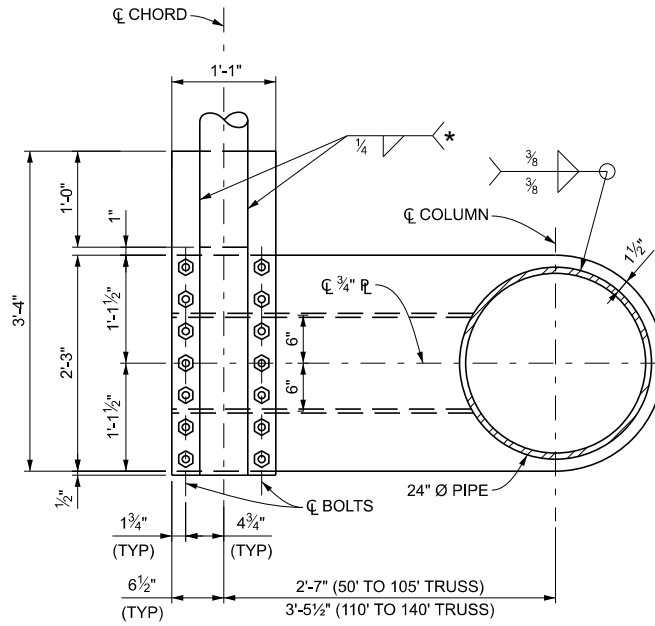


### DETAIL A

\* TOP AND BOTTOM CHORD



### PLATE WASHER DETAIL

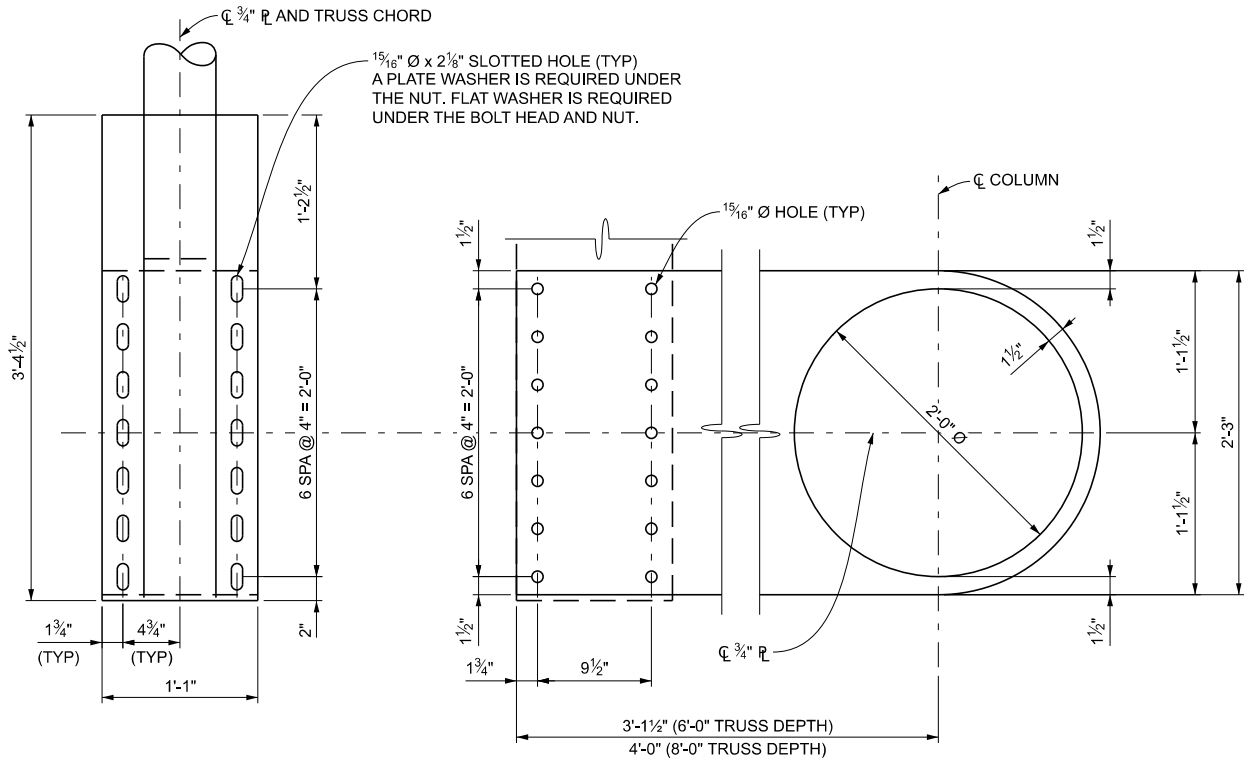


### SECTION B-B

WEB MEMBERS AND CONNECTION PLATES OMITTED FOR CLARITY.

TOP CHORD SIMILAR

\* TOP AND BOTTOM CHORD



### CHORD-COLUMN CONNECTION PLATE DETAILS



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

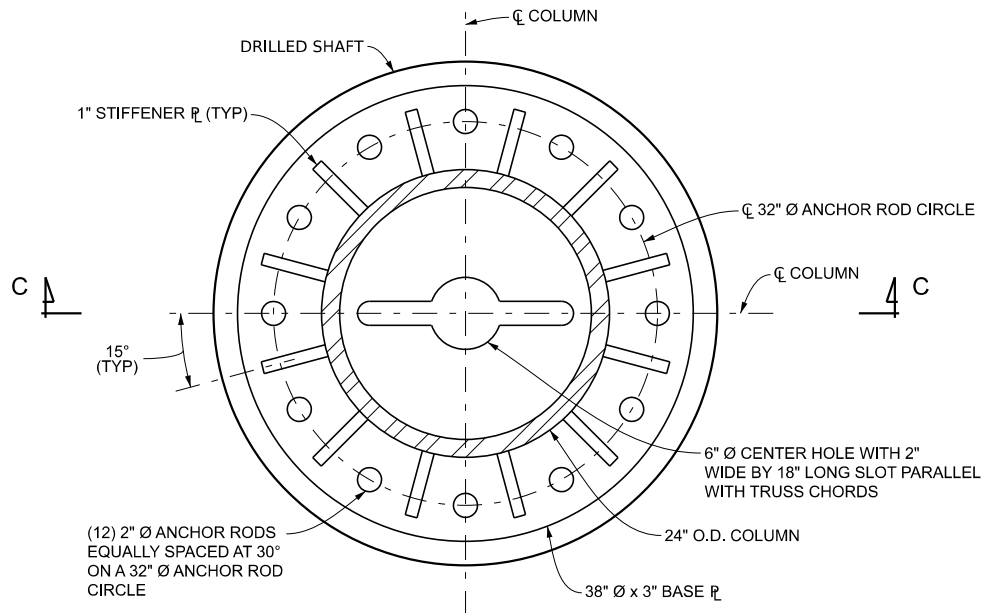
(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

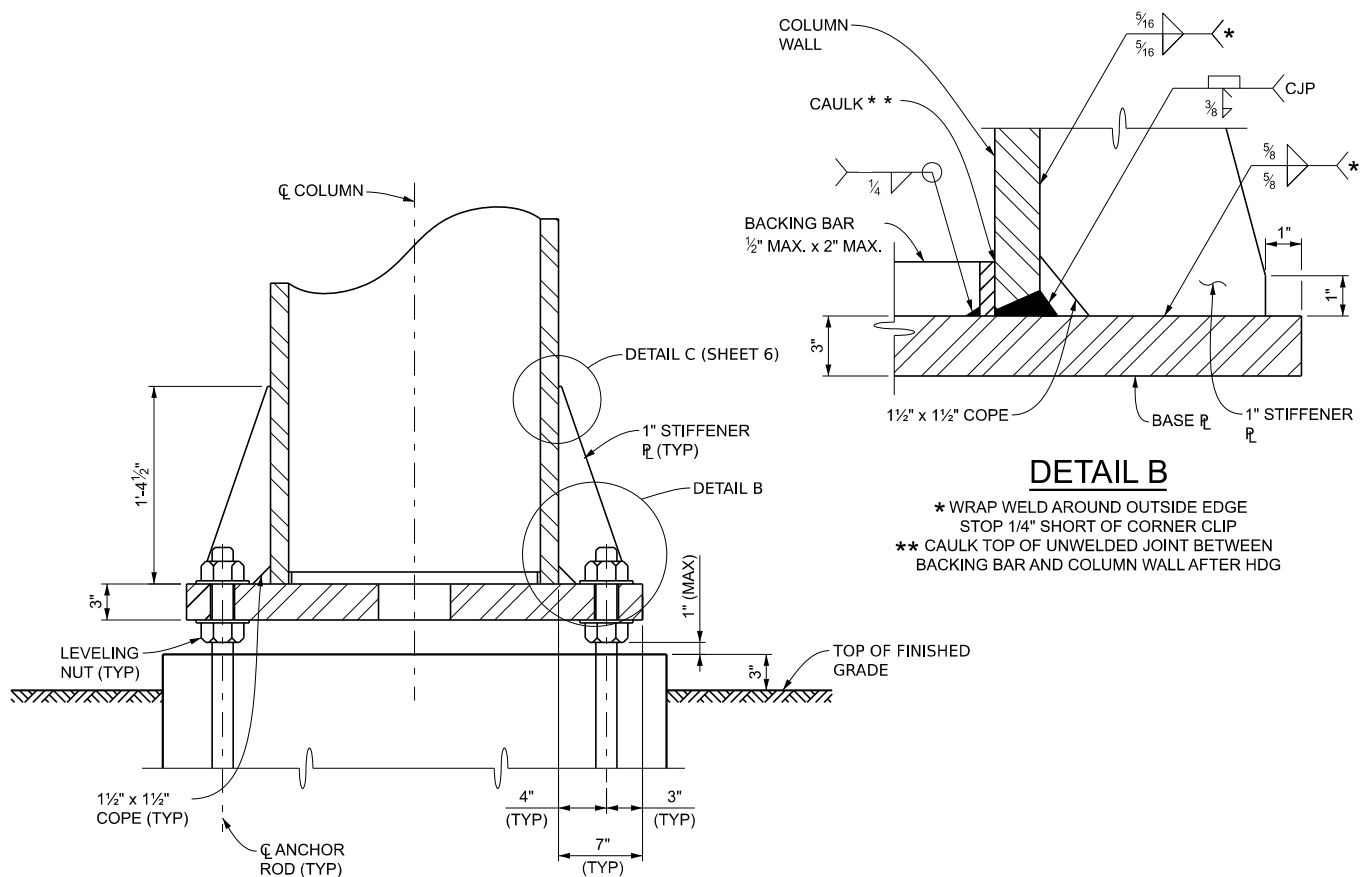
SIGN 360-C

SHEET  
4 OF 10





**PLAN VIEW 38" BASE PLATE DETAIL**



**SECTION C-C**

ELEVATION VIEW FOR 50' TO 105' TRUSS

**DETAIL B**

- \* WRAP WELD AROUND OUTSIDE EDGE  
STOP 1/4" SHORT OF CORNER CLIP
- \*\* CAULK TOP OF UNWELDED JOINT BETWEEN  
BACKING BAR AND COLUMN WALL AFTER HDG



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

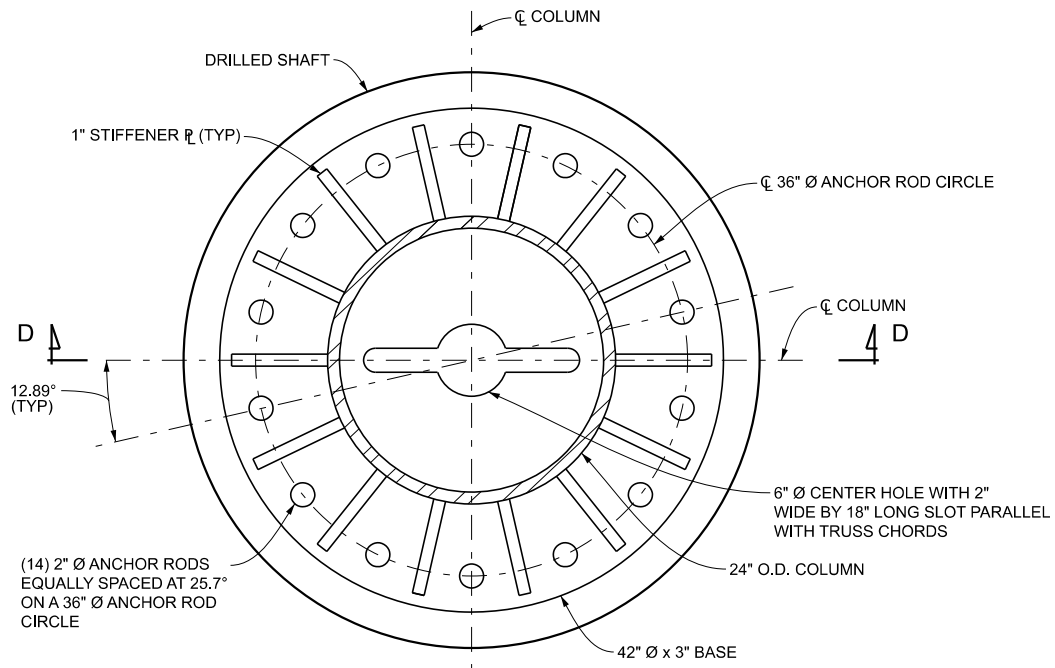
(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

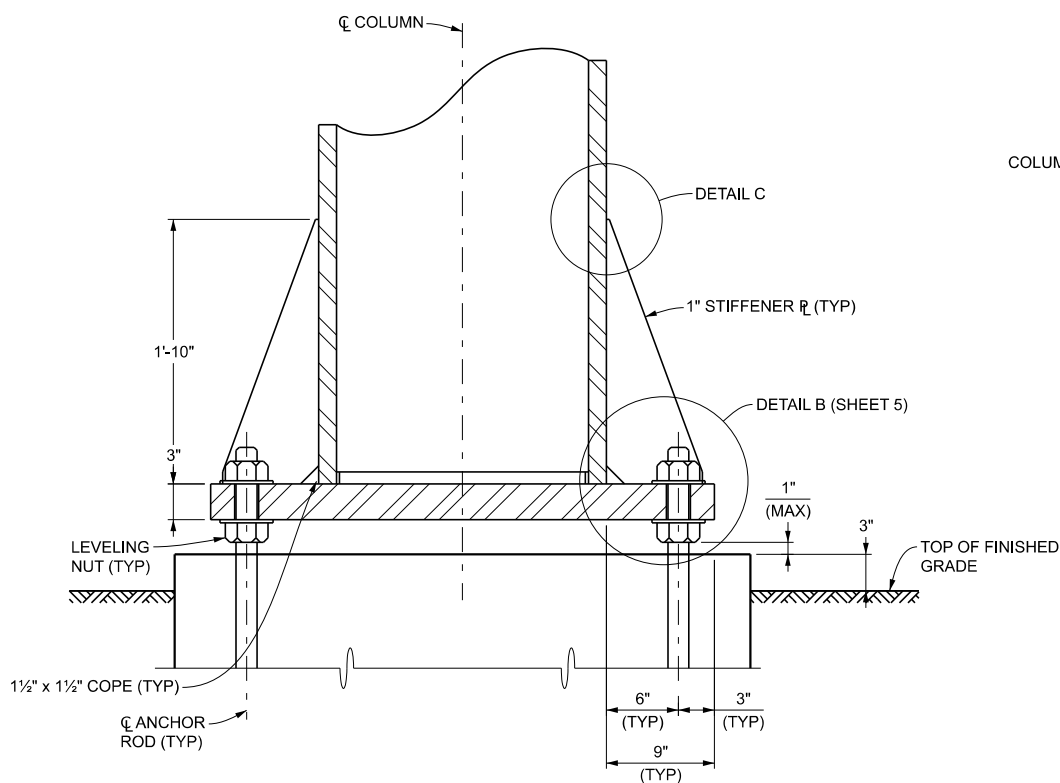
**SIGN 360-C**

SHEET  
5 OF 10

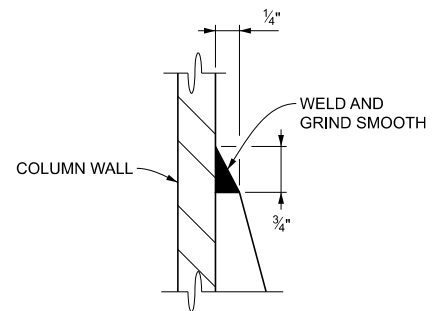




**PLAN VIEW 42" BASE PLATE DETAIL**



**SECTION D-D**  
ELEVATION VIEW FOR 110' TO 140' TRUSS



**DETAIL C**



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

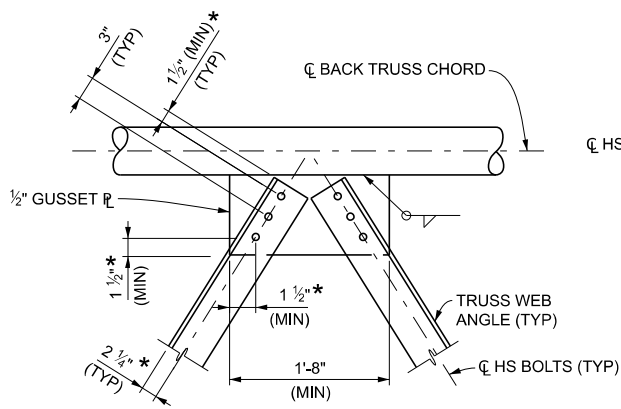
**SIGN 360-C**

SHEET  
6 OF 10

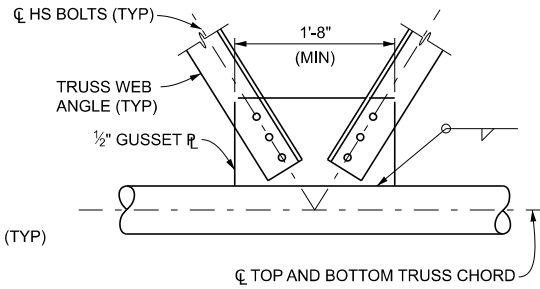




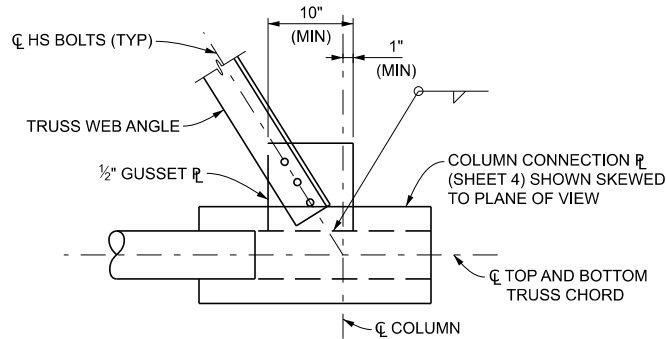




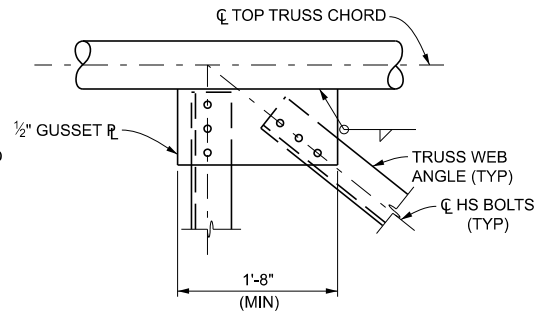
**DETAIL D**



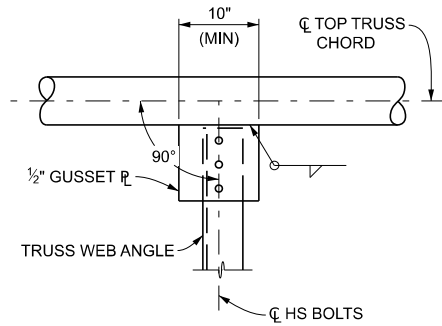
**DETAIL E**



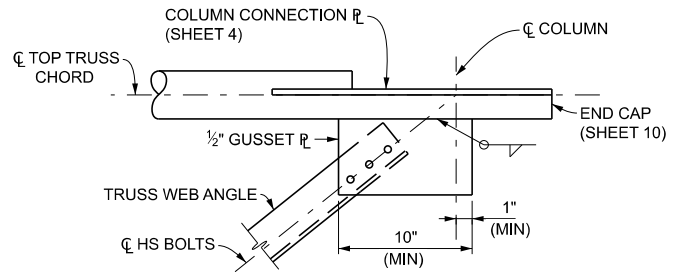
**DETAIL F**



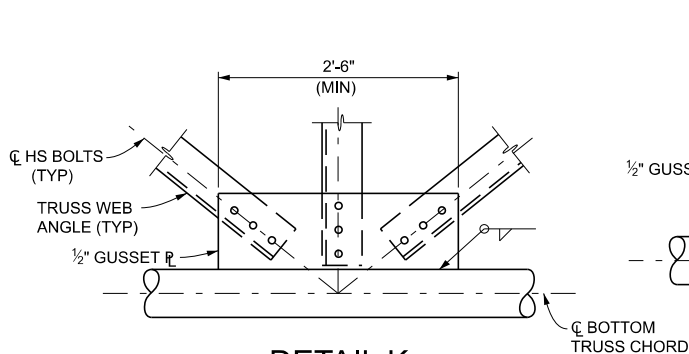
**DETAIL G**



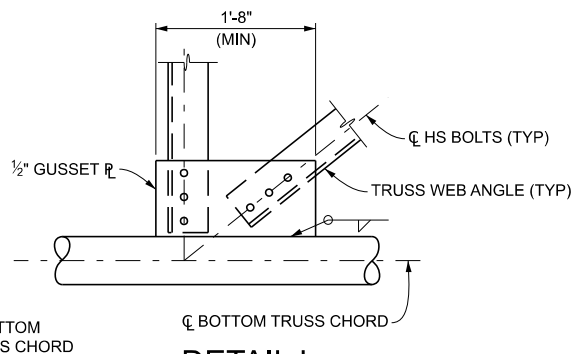
**DETAIL H**



**DETAIL J**



**DETAIL K**



**DETAIL L**



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

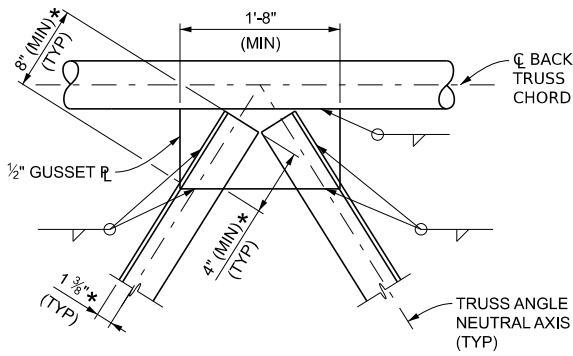
(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

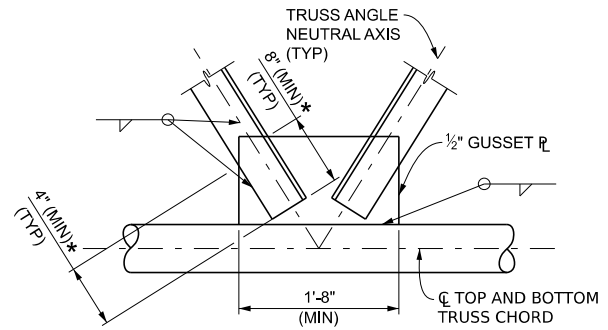
**SIGN 360-C**

SHEET  
8 OF 10

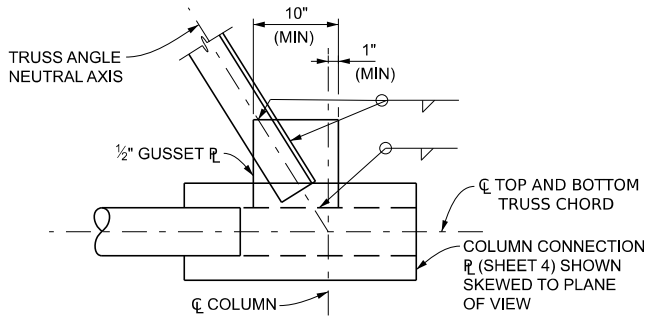




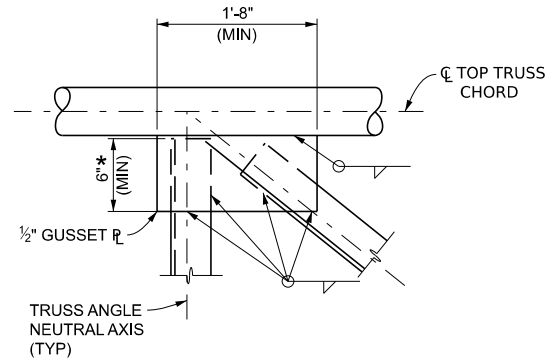
**ALTERNATE DETAIL D**



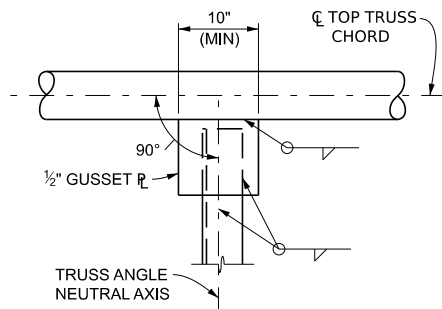
**ALTERNATE DETAIL E**



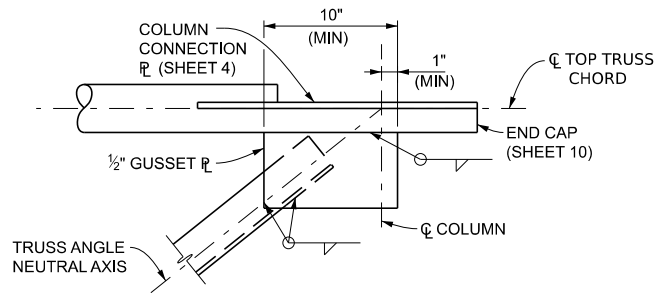
**ALTERNATE DETAIL F**



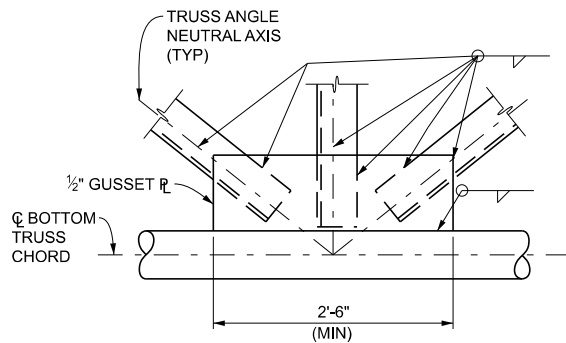
**ALTERNATE DETAIL G**



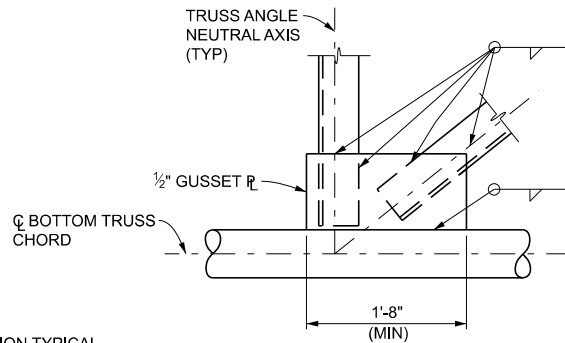
**ALTERNATE DETAIL H**



**ALTERNATE DETAIL J**



**ALTERNATE DETAIL K**



**ALTERNATE DETAIL L**

\* DIMENSION TYPICAL  
FOR ALL  
CONNECTION  
DETAILS.



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

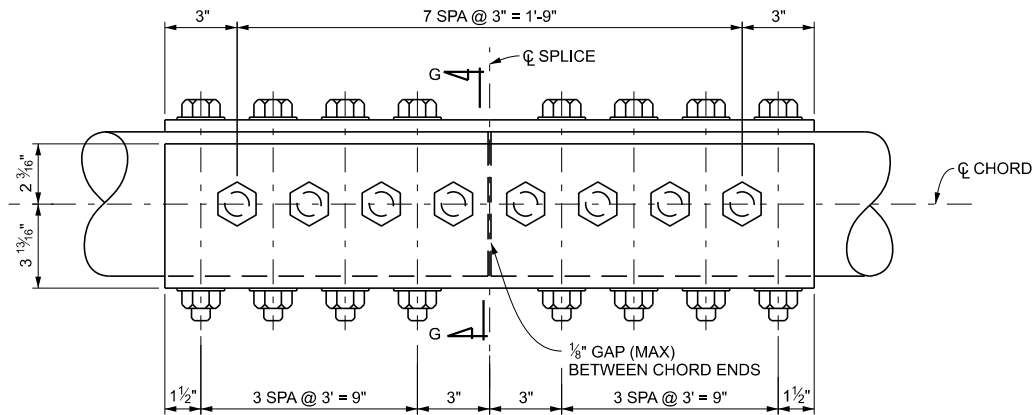
(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

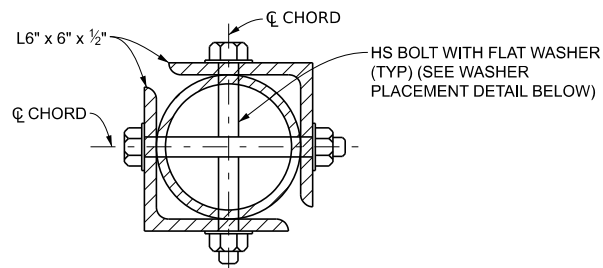
**SIGN 360-C**

SHEET  
9 OF 10



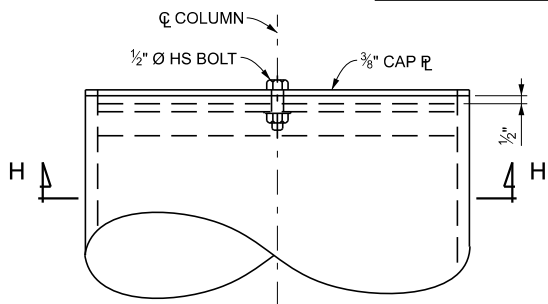


**ELEVATION**

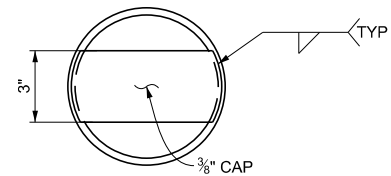


**SECTION G-G**

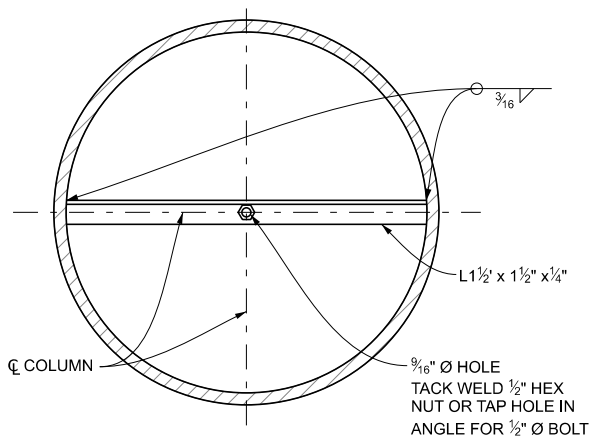
**CHORD SPLICE CONNECTION DETAILS**



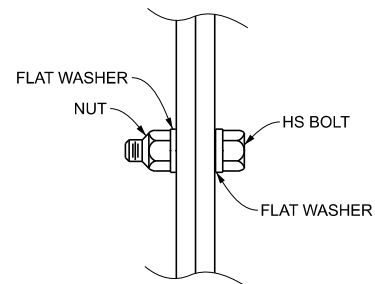
**COLUMN CAP DETAIL**



**END CAP DETAIL**



**SECTION H-H**



**DETAIL OF WASHER PLACEMENT**



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
STEEL TRUSS TYPE E  
(50FT - 140FT)

(SPECIAL DETAIL)  
FHWA APPROVAL

05/02/25  
PLAN DATE

**SIGN 360-C**

SHEET  
10 OF 10