

INDEX

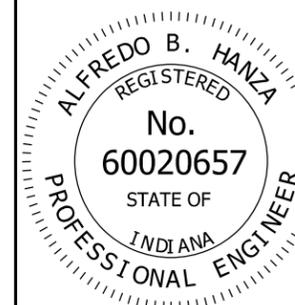
SHEET NO.	SUBJECT
1	Index
2	Plan & Elevation
3	Isometric Views
4	Panel Dimensions, Spans 36' thru 83'
5	Panel Dimensions, Spans 84' thru 130'
6	Member Sizes and Camber
7	Connection Details
8	Connection and Welding Details
9	Chord Flange Details
10	Top Cap and Chord End Plate Details
11	Sign Attachment Details
12	Base Plate, Anchor Bolt, and I.D. Tag Details
13	Handhole Details
14	Drilled Shaft Foundation
15	Spread Foundation

INDIANA DEPARTMENT OF TRANSPORTATION

TRI-CHORD SIGN STRUCTURE  
DRAWING INDEX

SEPTEMBER 2013

STANDARD DRAWING NO. E 802-TCSS-01

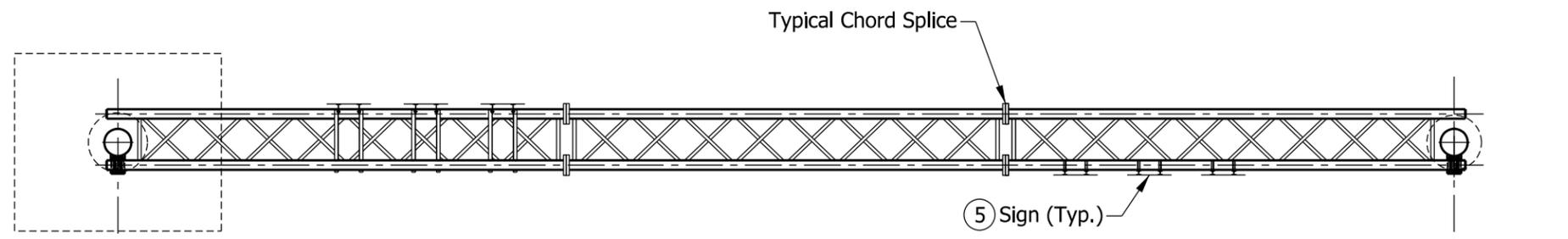


*/s/ Alfredo B. Hanza*                      02/22/13

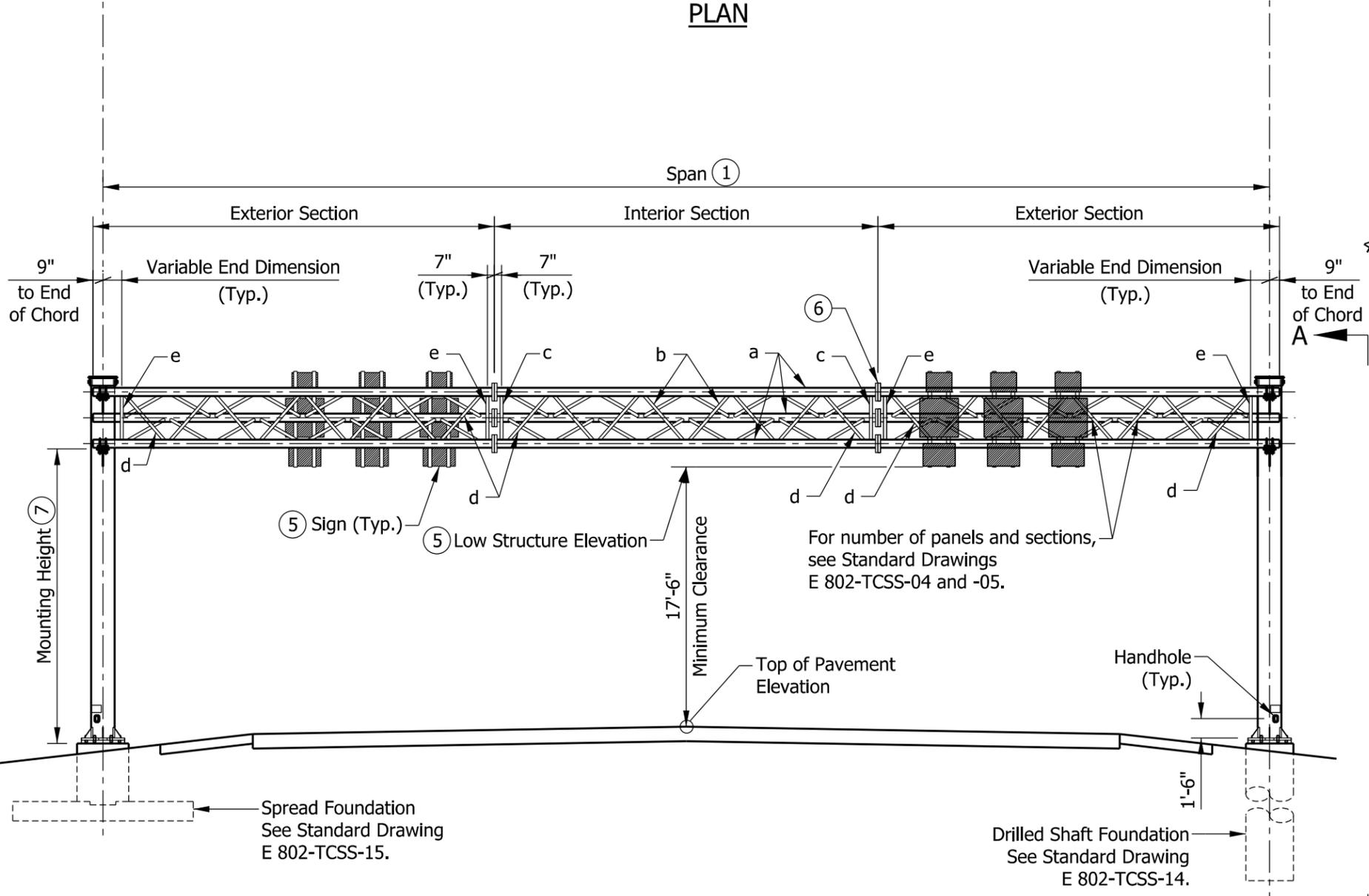
DESIGN STANDARDS ENGINEER                      DATE

*/s/ Mark A. Miller*                      03/27/13

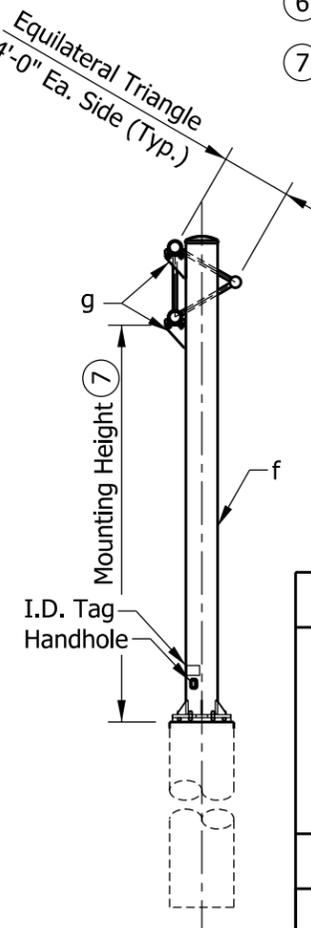
CHIEF ENGINEER                      DATE



**PLAN**



**ELEVATION**



**ELEVATION A-A**

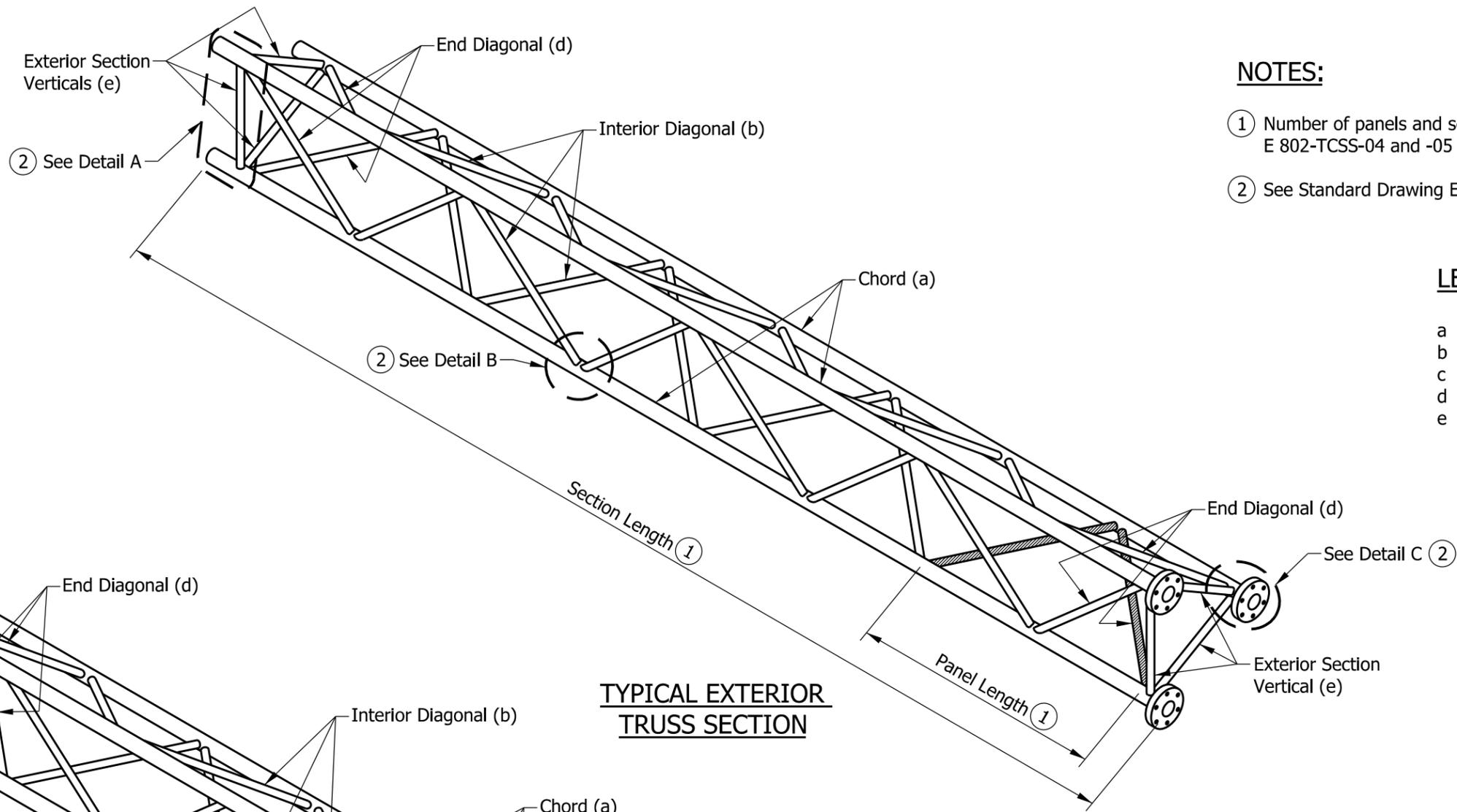
**NOTES:**

- ① Tri-chord truss structures are for various maximum sign areas and span lengths. See Standard Drawings E 802-TCSS-04 through -06 for panel dimensions, member sizes, and camber.
- 2. Maximum deviation of any chord from a straight line in any section shall be less than 1/8". Maximum horizontal deviation over the entire length of the tri-chord truss shall be less than 3/8" from a straight line.
- 3. See Standard Drawings E 802-TCSS-07 and -08 for connection and welding details.
- 4. See Standard Drawing E 802-TCSS-12 for base plate, anchor bolt, and I.D. tag details.
- ⑤ See Standard Drawing E 802-TCSS-11 for sign attachment details.
- ⑥ See Standard Drawing E 802-TCSS-09 for chord flange details.
- ⑦ Maximum mounting height is 23'-0".

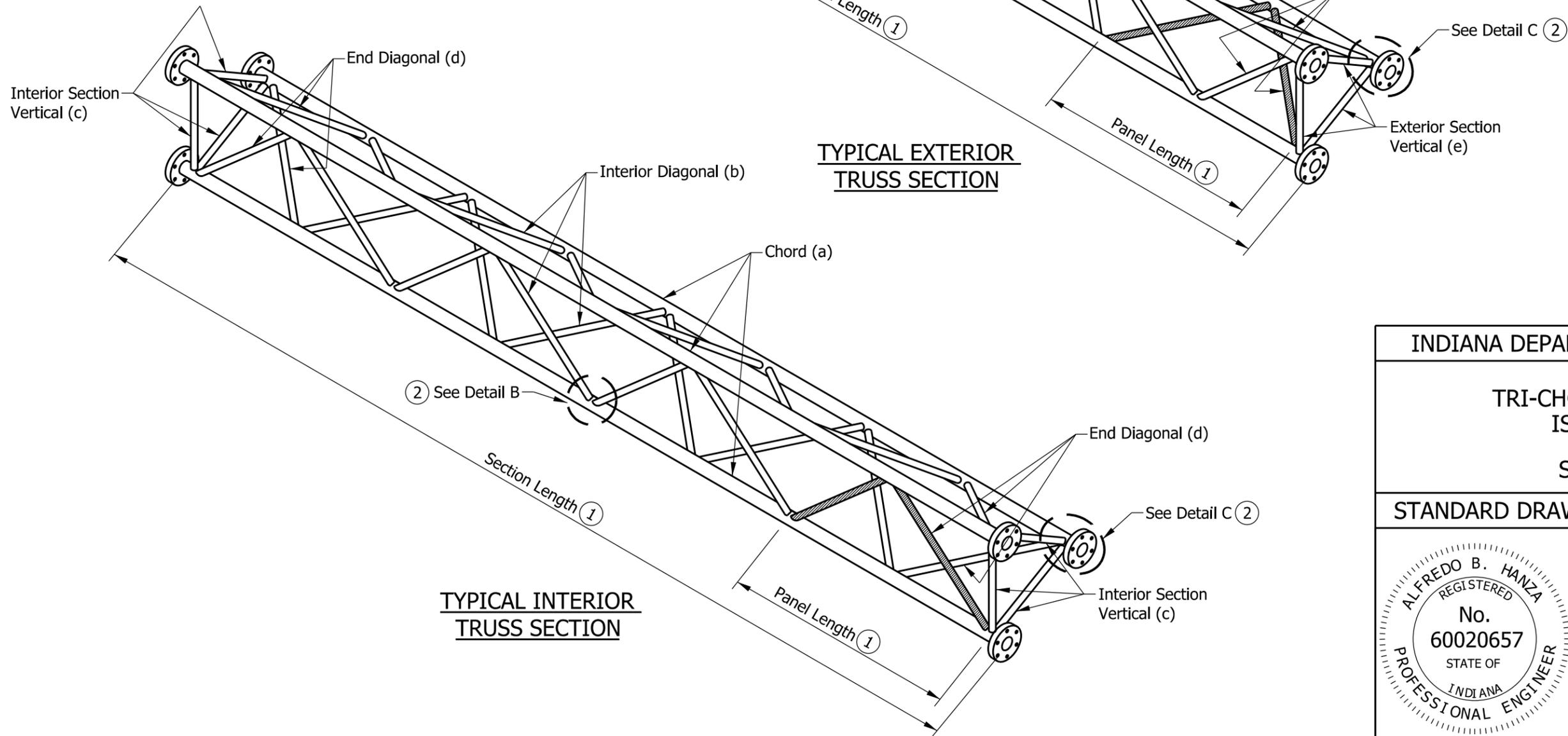
**LEGEND:**

- a - Chord
- b - Interior Diagonal
- c - Interior Section Vertical
- d - End Diagonal
- e - Exterior Section Vertical
- f - Column
- g - W-Beam Supports

<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>									
<b>TRI-CHORD SIGN STRUCTURE PLAN AND ELEVATION</b>									
SEPTEMBER 2013									
STANDARD DRAWING NO.	E 802-TCSS-02								
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; border-bottom: 1px solid black;">/s/ <i>Alfredo B. Hanza</i></td> <td style="width: 30%; border-bottom: 1px solid black;">02/22/13</td> </tr> <tr> <td style="font-size: small;">DESIGN STANDARDS ENGINEER</td> <td style="font-size: small;">DATE</td> </tr> <tr> <td style="border-bottom: 1px solid black;">/s/ <i>Mark A. Miller</i></td> <td style="border-bottom: 1px solid black;">03/27/13</td> </tr> <tr> <td style="font-size: small;">CHIEF ENGINEER</td> <td style="font-size: small;">DATE</td> </tr> </table>	/s/ <i>Alfredo B. Hanza</i>	02/22/13	DESIGN STANDARDS ENGINEER	DATE	/s/ <i>Mark A. Miller</i>	03/27/13	CHIEF ENGINEER	DATE
/s/ <i>Alfredo B. Hanza</i>	02/22/13								
DESIGN STANDARDS ENGINEER	DATE								
/s/ <i>Mark A. Miller</i>	03/27/13								
CHIEF ENGINEER	DATE								



**TYPICAL EXTERIOR TRUSS SECTION**



**TYPICAL INTERIOR TRUSS SECTION**

**NOTES:**

- ① Number of panels and sections varies. See Standard Drawings E 802-TCSS-04 and -05 for recommended dimensions.
- ② See Standard Drawing E 802-TCSS-08 for Details A, B, and C.

**LEGEND:**

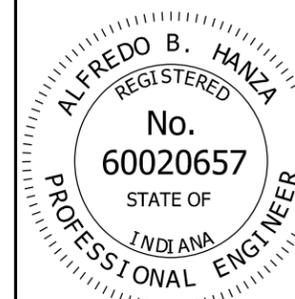
- a - Chord
- b - Interior Diagonal
- c - Interior Section Vertical
- d - End Diagonal
- e - Exterior Section Vertical

INDIANA DEPARTMENT OF TRANSPORTATION

TRI-CHORD SIGN STRUCTURE  
ISOMETRIC VIEWS

SEPTEMBER 2013

STANDARD DRAWING NO. E 802-TCSS-03



/s/ Alfredo B. Hanza      02/22/13  
DESIGN STANDARDS ENGINEER      DATE

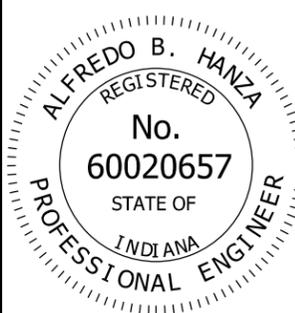
/s/ Mark A. Miller      03/27/13  
CHIEF ENGINEER      DATE

**RECOMMENDED PANEL DIMENSIONS FOR TRI-CHORD (36' THROUGH 83')**

SPAN	EXTERIOR SECTIONS					INTERIOR SECTIONS				
	SPAN-TRUSS LENGTH (FT)	NO. OF EXT. SEC.	NO. OF EXT. PANELS PER SEC.	VARIABLE END DIMENSION	PANEL LENGTH	SECTION LENGTH	NO. OF INT. SEC.	NO. OF INT. PANELS PER SEC.	PANEL LENGTH	SECTION LENGTH
36	2	5	1'-2"	3'-3"	18'-9"					
37	2	5	1'-3"	3'-4"	19'-3"					
38	2	5	1'-4"	3'-5"	19'-9"					
39	2	5	1'-5"	3'-6"	20'-3"					
40	2	5	1'-6"	3'-7"	20'-9"					
41	2	5	1'-7"	3'-8"	21'-3"					
42	2	6	1'-5"	3'-2"	21'-9"					
43	2	6	1'-5"	3'-3"	22'-3"					
44	2	6	1'-5"	3'-4"	22'-9"					
45	2	6	1'-5"	3'-5"	23'-3"					
46	2	7	1'-5"	3'-0"	23'-9"					
47	2	7	1'-4"	3'-1"	24'-3"					
48	2	7	1'-6 1/2"	3'-1 1/2"	24'-9"					
49	2	7	1'-5 1/2"	3'-2 1/2"	25'-3"					
50	2	7	1'-4 1/2"	3'-3 1/2"	25'-9"					
51	2	7	1'-7"	3'-4"	26'-3"					
52	2	7	1'-6"	3'-5"	26'-9"					
53	2	7	1'-5"	3'-6"	27'-3"					
54	2	7	1'-4"	3'-7"	27'-9"					
55	2	7	1'-6 1/2"	3'-7 1/2"	28'-3"					
56	2	7	1'-5 1/2"	3'-8 1/2"	28'-9"					
57	2	7	1'-4 1/2"	3'-9 1/2"	29'-3"					
58	2	7	1'-7"	3'-10"	29'-9"					
59	2	6	1'-4"	3'-0"	20'-8"	1	6	3'-0"	19'-2"	
60	2	6	1'-5 1/2"	3'-1/2"	21'-1/2"	1	6	3'-1/2"	19'-5"	
61	2	6	1'-7"	3'-1"	21'-5"	1	6	3'-1"	19'-8"	
62	2	6	1'-8 1/2"	3'-1 1/2"	21'-9 1/2"	1	6	3'-1 1/2"	19'-11"	
63	2	6	1'-10"	3'-2"	22'-2"	1	6	3'-2"	20'-2"	
64	2	6	1'-7"	3'-3"	22'-5"	1	6	3'-3"	20'-8"	
65	2	6	1'-8 1/2"	3'-3 1/2"	22'-9 1/2"	1	6	3'-3 1/2"	20'-11"	
66	2	6	1'-10"	3'-4"	23'-2"	1	6	3'-4"	21'-2"	
67	2	6	1'-7"	3'-5"	23'-5"	1	6	3'-5"	21'-8"	
68	2	6	1'-8 1/2"	3'-5 1/2"	23'-9 1/2"	1	6	3'-5 1/2"	21'-11"	
69	2	6	1'-10"	3'-6"	24'-2"	1	6	3'-6"	22'-2"	
70	2	6	1'-9"	3'-2 1/2"	22'-4"	1	8	3'-2 1/2"	26'-10"	
71	2	6	1'-5"	3'-3 1/2"	22'-6"	1	8	3'-3 1/2"	27'-6"	
72	2	6	1'-6"	3'-4"	22'-10"	1	8	3'-4"	27'-10"	
73	2	6	1'-7"	3'-4 1/2"	23'-2"	1	8	3'-4 1/2"	28'-2"	
74	2	6	1'-8"	3'-5"	23'-6"	1	8	3'-5"	28'-6"	
75	2	6	1'-4"	3'-6"	23'-8"	1	8	3'-6"	29'-2"	
76	2	6	1'-5"	3'-6 1/2"	24'-0"	1	8	3'-6 1/2"	29'-6"	
77	2	6	1'-6"	3'-7"	24'-4"	1	8	3'-7"	29'-10"	
78	2	6	1'-7"	3'-7 1/2"	24'-8"	1	8	3'-7 1/2"	30'-2"	
79	2	6	1'-8"	3'-8"	25'-0"	1	8	3'-8"	30'-6"	
80	2	6	1'-4"	3'-9"	25'-2"	1	8	3'-9"	31'-2"	
81	2	6	1'-5"	3'-9 1/2"	25'-6"	1	8	3'-9 1/2"	31'-6"	
82	2	6	1'-6"	3'-10"	25'-10"	1	8	3'-10"	31'-10"	
83	2	6	1'-7"	3'-10 1/2"	26'-2"	1	8	3'-10 1/2"	32'-2"	

**NOTES:**

1. All panels on a truss shall be the same length. The minimum panel length is 3'-0" and the maximum is 4'-0".
2. A single interior unit shall have an even number of panels to maintain the pattern of the diagonals.
3. Use minimum number of sections for each truss. Keep the maximum section length at 35'-0".
4. See Standard Drawing E 802-TCSS-05 for required camber.

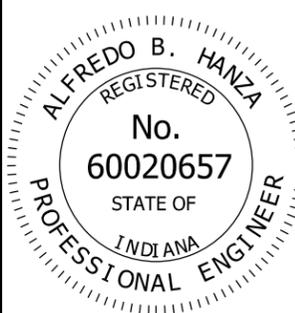
<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>									
<b>TRI-CHORD SIGN STRUCTURE PANEL DIMENSIONS SPANS 36' THRU 83' SEPTEMBER 2013</b>									
<b>STANDARD DRAWING NO.</b>	<b>E 802-TCSS-04</b>								
	<table> <tr> <td><i>/s/ Alfredo B. Hanza</i></td> <td align="right">02/22/13</td> </tr> <tr> <td>DESIGN STANDARDS ENGINEER</td> <td align="right">DATE</td> </tr> <tr> <td><i>/s/ Mark A. Miller</i></td> <td align="right">03/27/13</td> </tr> <tr> <td>CHIEF ENGINEER</td> <td align="right">DATE</td> </tr> </table>	<i>/s/ Alfredo B. Hanza</i>	02/22/13	DESIGN STANDARDS ENGINEER	DATE	<i>/s/ Mark A. Miller</i>	03/27/13	CHIEF ENGINEER	DATE
<i>/s/ Alfredo B. Hanza</i>	02/22/13								
DESIGN STANDARDS ENGINEER	DATE								
<i>/s/ Mark A. Miller</i>	03/27/13								
CHIEF ENGINEER	DATE								

**RECOMMENDED PANEL DIMENSIONS FOR TRI-CHORD (84' THROUGH 130')**

SPAN	EXTERIOR SECTIONS					INTERIOR SECTIONS			
	SPAN-TRUSS LENGTH (FT)	NO. OF EXT. SEC.	NO. OF EXT. PANELS PER SEC.	VARIABLE END DIMENSION	PANEL LENGTH	SECTION LENGTH	NO. OF INT. SEC.	NO. OF INT. PANELS PER SEC.	PANEL LENGTH
84	2	6	1'-8"	3'-11"	26'-6"	1	8	3'-11"	32'-6"
85	2	6	1'-9"	3'-11 1/2"	26'-10"	1	8	3'-11 1/2"	32'-10"
86	2	6	1'-10"	4'-0"	27'-2"	1	8	4'-0"	33'-2"
87	2	7	1'-6 1/2"	3'-8 1/2"	28'-10"	1	8	3'-8 1/2"	33'-10"
88	2	7	1'-7"	3'-9"	29'-2"	1	8	3'-9"	31'-2"
89	2	7	1'-7 1/2"	3'-9 1/2"	29'-6"	1	8	3'-9 1/2"	31'-6"
90	2	7	1'-8"	3'-10"	29'-10"	1	8	3'-10"	31'-10"
91	2	7	1'-8 1/2"	3'-10 1/2"	30'-2"	1	8	3'-10 1/2"	32'-2"
92	2	8	1'-8"	3'-8"	32'-4"	1	8	3'-5 1/2"	28'-10"
93	2	8	1'-8"	3'-8 1/2"	32'-8"	1	8	3'-6"	29'-2"
94	2	8	1'-8"	3'-9"	33'-0"	1	8	3'-6 1/2"	29'-6"
95	2	8	1'-8"	3'-9 1/2"	33'-4"	1	8	3'-7"	29'-10"
96	2	8	1'-8"	3'-10"	33'-8"	1	8	3'-7 1/2"	30'-2"
97	2	8	1'-8"	3'-10 1/2"	34'-0"	1	8	3'-8"	30'-6"
98	2	8	1'-8"	3'-11"	34'-4"	1	8	3'-8 1/2"	30'-10"
99	2	8	1'-8"	3'-11 1/2"	34'-8"	1	8	3'-9"	31'-2"
100	2	8	1'-8"	4'-0"	35'-0"	1	8	3'-9 1/2"	31'-6"
101	2	8	1'-10 1/2"	3'-1 1/2"	28'-2 1/2"	1	7	3'-1 1/2"	23'-1 1/2"
102	2	8	1'-9"	3'-2"	28'-5"	1	7	3'-2"	23'-4"
103	2	8	1'-7 1/2"	3'-2 1/2"	28'-7 1/2"	1	7	3'-2 1/2"	23'-7 1/2"
104	2	8	1'-6"	3'-3"	28'-10"	1	7	3'-3"	23'-11"
105	2	8	1'-4 1/2"	3'-3 1/2"	29'-0 1/2"	1	7	3'-3 1/2"	24'-2 1/2"
106	2	8	1'-10 1/2"	3'-3 1/2"	29'-6 1/2"	1	7	3'-3 1/2"	24'-2 1/2"
107	2	8	1'-9"	3'-3 1/2"	29'-9"	1	7	3'-4"	24'-6"
108	2	8	1'-7 1/2"	3'-4 1/2"	29'-11 1/2"	1	7	3'-4 1/2"	24'-9 1/2"
109	2	8	1'-6"	3'-5"	30'-2"	1	7	3'-5"	25'-1"
110	2	8	1'-8 1/4"	3'-5 1/4"	30'-6 1/4"	1	7	3'-5 1/4"	25'-2 3/4"
111	2	8	1'-10 1/2"	3'-5 1/2"	30'-5 1/4"	1	7	3'-5 1/2"	25'-4 1/2"
112	2	8	1'-9"	3'-6"	31'-1"	1	7	3'-6"	25'-8"
113	2	8	1'-7 1/2"	3'-6 1/2"	31'-3 1/2"	1	7	3'-6 1/2"	25'-11 1/2"
114	2	8	1'-6"	3'-7"	31'-6"	1	7	3'-7"	26'-3"
115	2	8	1'-8 1/4"	3'-7 1/4"	31'-10 1/4"	1	7	3'-7 1/4"	26'-4 3/4"
116	2	8	1'-10 1/2"	3'-7 1/2"	32'-2 1/2"	1	7	3'-7 1/2"	26'-6 1/2"
117	2	8	1'-9"	3'-8"	32'-5"	1	7	3'-8"	26'-10"
118	2	8	1'-7 1/2"	3'-8 1/2"	32'-7 1/2"	1	7	3'-8 1/2"	27'-1 1/2"
119	2	8	1'-6"	3'-9"	32'-10"	1	7	3'-9"	27'-5"
120	2	8	1'-8 1/4"	3'-9 1/4"	33'-2 1/4"	1	7	3'-9 1/4"	27'-6 3/4"
121	2	8	1'-10 1/2"	3'-9 1/2"	33'-6 1/2"	1	7	3'-9 1/2"	27'-8 1/2"
122	2	8	1'-9"	3'-10"	33'-9"	1	7	3'-10"	28'-0"
123	2	8	1'-9"	3'-5 1/2"	30'-9"	1	8	3'-9 1/2"	31'-6"
124	2	8	1'-11"	3'-5 1/2"	30'-11"	1	8	3'-10"	31'-10"
125	2	8	1'-9"	3'-6"	31'-1"	1	8	3'-10 1/2"	32'-2"
126	2	8	1'-7"	3'-6 1/2"	31'-3"	1	8	3'-11"	32'-6"
127	2	8	1'-9"	3'-7"	31'-9"	1	8	3'-11"	32'-6"
128	2	8	1'-11"	3'-7 1/2"	32'-3"	1	8	3'-11"	32'-6"
129	2	8	1'-9"	3'-8"	32'-5"	1	8	3'-11 1/2"	32'-10"
130	2	8	1'-7"	3'-8 1/2"	32'-7"	1	8	4'-0"	33'-2"

**NOTES:**

1. All panels on a truss shall be the same length. The minimum panel length is 3'-0" and the maximum is 4'-0".
2. A single interior unit shall have an even number of panels to maintain the pattern of the diagonals.
3. Use minimum number of sections for each truss. Keep the maximum section length at 35'-0".
4. See Standard Drawing E 802-TCSS-05 for required camber.

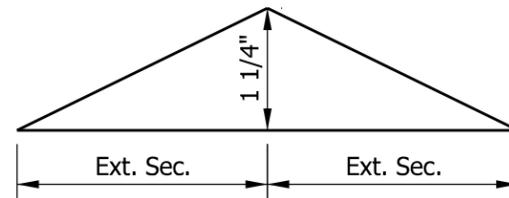
<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>	
<b>TRI-CHORD SIGN STRUCTURE                  PANEL DIMENSIONS                  SPANS 84' THRU 130'                  SEPTEMBER 2013</b>	
<b>STANDARD DRAWING NO.</b>	<b>E 802-TCSS-05</b>
	/s/ <i>Alfredo B. Hanza</i> 02/22/13 _____ DESIGN STANDARDS ENGINEER      DATE
	/s/ <i>Mark A. Miller</i> 03/27/13 _____ CHIEF ENGINEER      DATE

TRI-CHORD SIGN STRUCTURE MEMBER SIZES

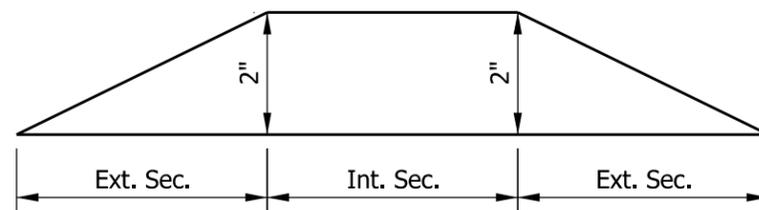
TRUSS TYPE	MAX SIGN AREA (SQ FT)	MAX MOUNTING HEIGHT, H	MAX SPAN (FT)	TRUSS MEMBERS										END SUPPORT MEMBERS		
				CHORD a		INT. DIAGONALS b		INT. SECTION VERT. c		END DIAGONALS d		EXT. SECTION VERT. e		COLUMN f		W-BEAM g
				DIAM. (IN.)	THICK (IN.)	DIAM. (IN.)	THICK (IN.)	DIAM. (IN.)	THICK (IN.)	DIAM. (IN.)	THICK (IN.)	DIAM. (IN.)	THICK (IN.)	DIAM. (IN.)	THICK (IN.)	
A	120	23'-0"	80	5.563	0.375	1.900	0.145	1.900	0.200	2.875	0.276	1.900	0.145	18.000	0.562	W 12 x 35
B			100	5.563	0.375	2.375	0.218	1.900	0.200	2.875	0.375	2.375	0.218	18.000	0.562	W 12 x 35
C			130	5.563	0.500	2.375	0.218	1.900	0.200	2.875	0.375	2.375	0.218	20.000	0.500	W 12 x 58
D	240	23'-0"	80	5.563	0.625	2.375	0.343	1.900	0.200	2.875	0.552	2.375	0.343	18.000	0.750	W 12 x 35
E			100	5.563	0.625	2.375	0.343	1.900	0.200	2.875	0.552	2.375	0.343	20.000	0.812	W 12 x 35
F			130	6.625	0.562	2.375	0.343	1.900	0.200	3.500	0.437	2.375	0.343	22.000	0.875	W 12 x 58

LEGEND:

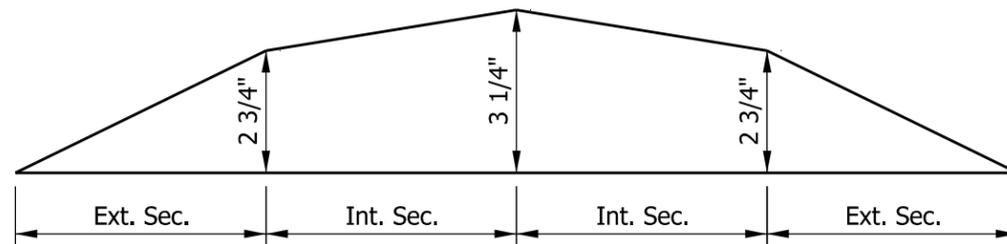
- a - Chord
- b - Interior Diagonal
- c - Interior Section Vertical
- d - End Diagonal
- e - Exterior Section Vertical
- f - Column
- g - W-Beam Support



CAMBER DIAGRAM (2-Section Truss)



CAMBER DIAGRAM (3-Section Truss)



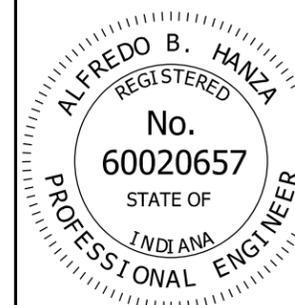
CAMBER DIAGRAM (4-Section Truss)

INDIANA DEPARTMENT OF TRANSPORTATION

TRI-CHORD SIGN STRUCTURE MEMBER SIZES AND CAMBER

SEPTEMBER 2013

STANDARD DRAWING NO. E 802-TCSS-06

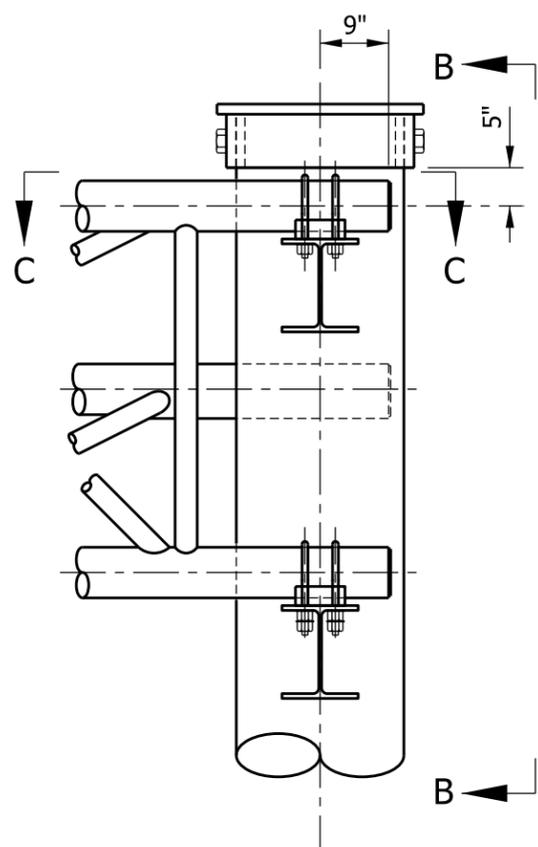


/s/ Alfredo B. Hanza 02/22/13

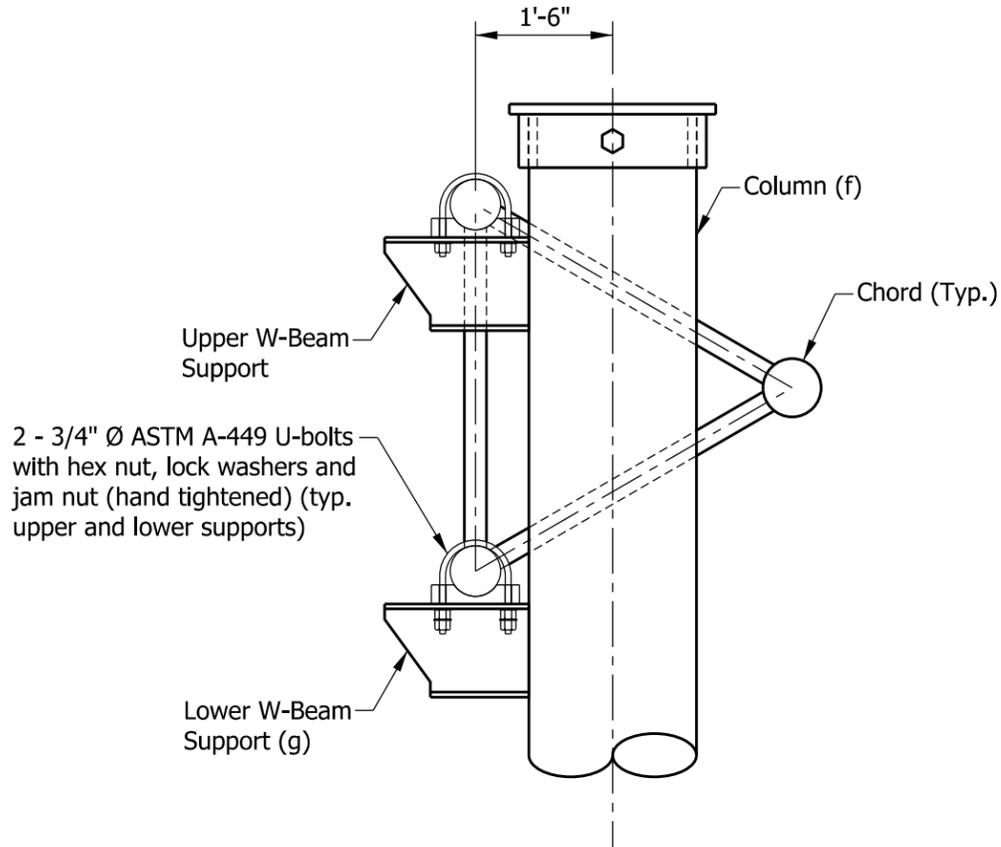
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 03/27/13

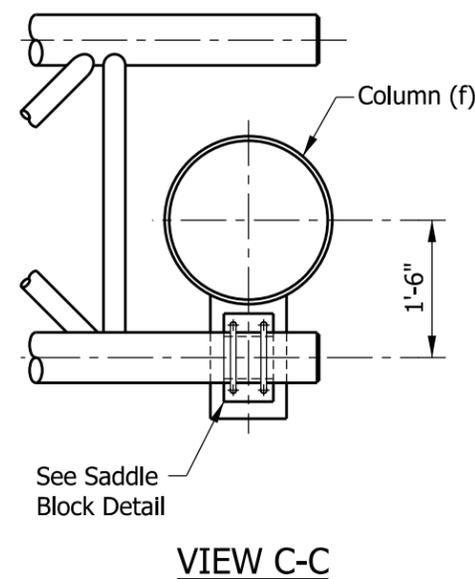
CHIEF ENGINEER DATE



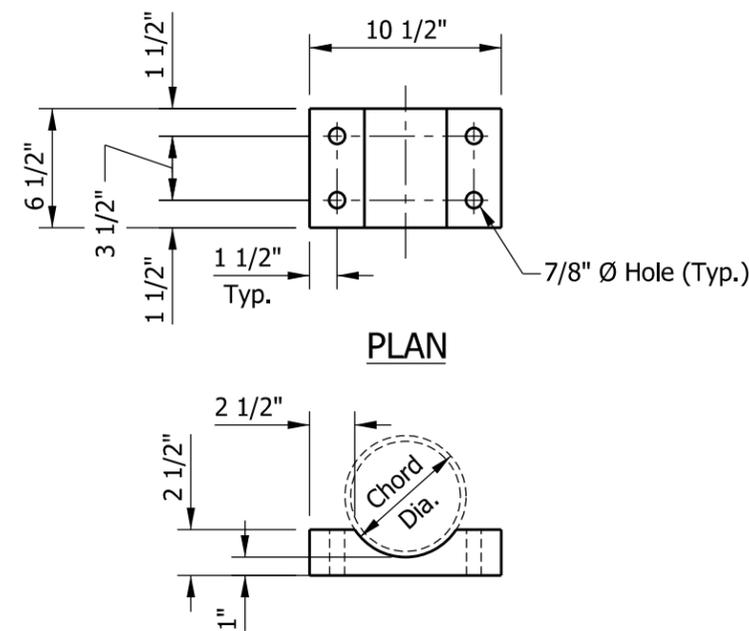
**TRUSS SEAT DETAIL**



**VIEW B-B**



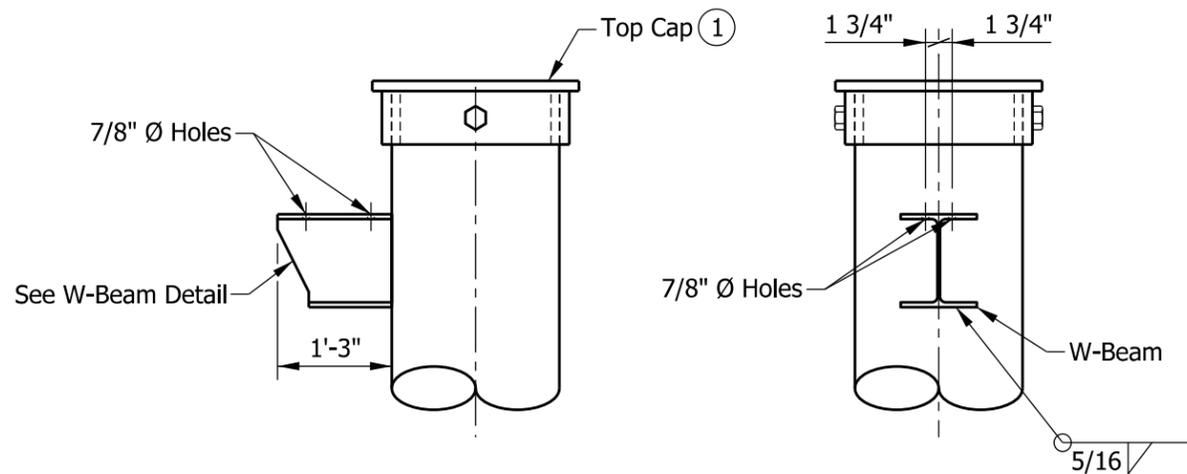
**VIEW C-C**



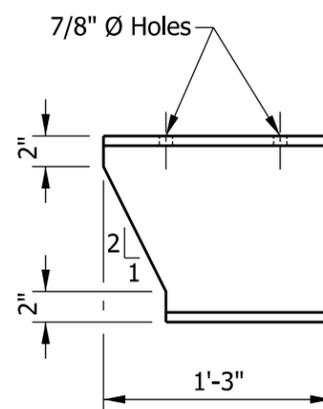
**SADDLE BLOCK DETAIL**

**NOTE:**

- ① See Standard Drawing E 802-TCSS-10 for top cap detail.



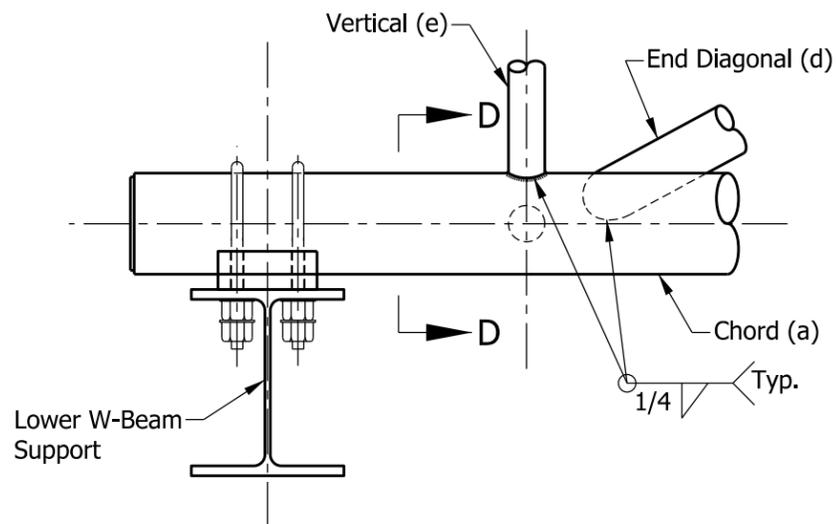
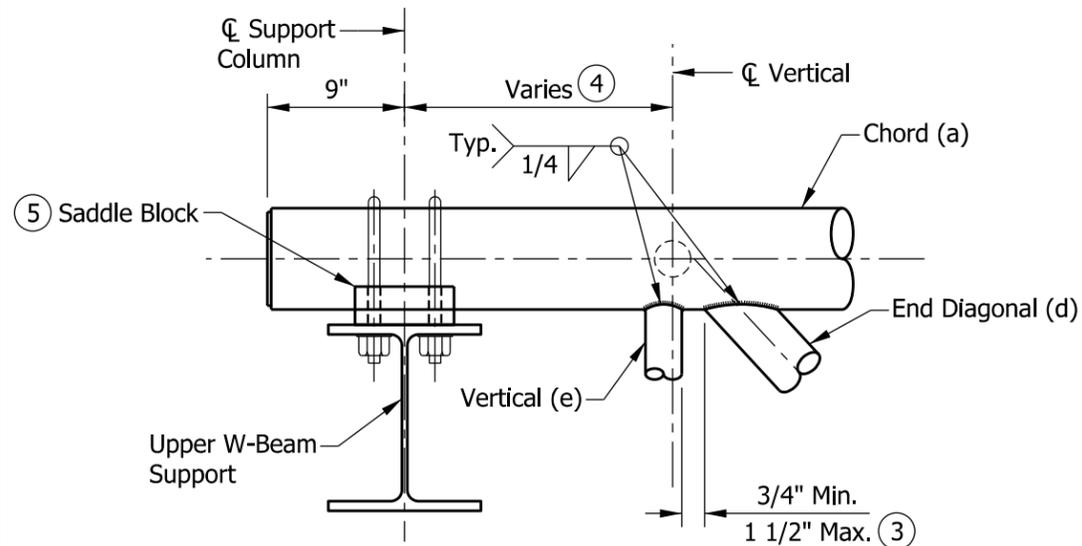
**TRUSS SEAT DETAIL**



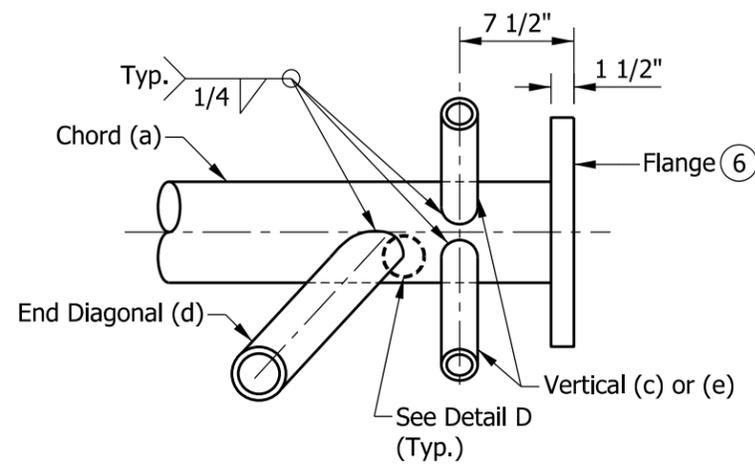
**W-BEAM DETAIL**

NOTE: Upper and lower W-beam details are the same.

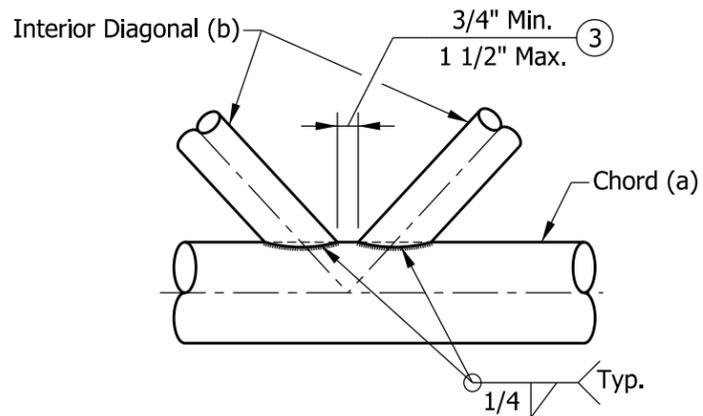
INDIANA DEPARTMENT OF TRANSPORTATION	
TRI-CHORD SIGN STRUCTURE CONNECTION DETAILS	
SEPTEMBER 2013	
STANDARD DRAWING NO.	E 802-TCSS-07
	/s/ Alfredo B. Hanza 02/22/13 DESIGN STANDARDS ENGINEER DATE
	/s/ Mark A. Miller 03/27/13 CHIEF ENGINEER DATE



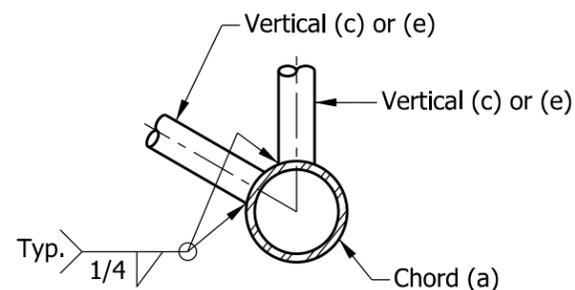
**DETAIL A**  
**SUPPORT END DETAIL FOR EXTERIOR SECTION**



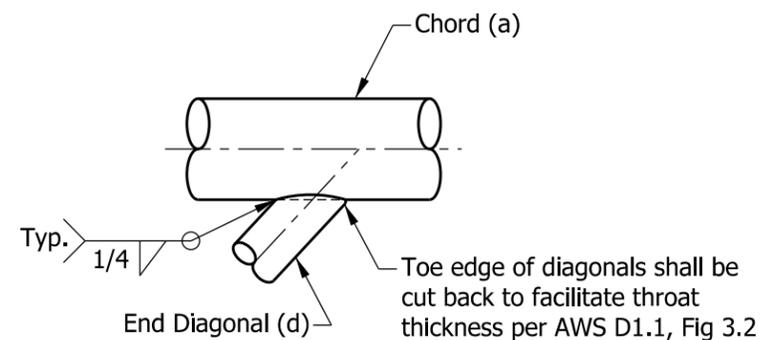
**DETAIL C**  
**TYPICAL PANEL CONNECTION**



**DETAIL B**  
**TYPICAL PANEL CONNECTION**



**SECTION D-D**  
**TYPICAL JOINT DETAILS**



**DETAIL D**

**NOTES:**

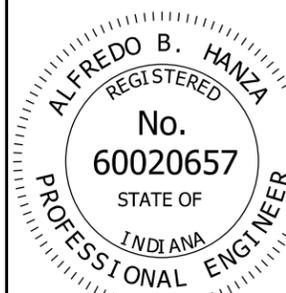
1. All bracing members shall be machined to provide a snug fit to the chord members along the entire edge of bracing members before welding.
2. See Standard Drawing E 802-TCSS-03 for member location and see Standard Drawing E 802-TCSS-06 for member sizes.
3. Vertical and horizontal diagonals shall be detailed for minimum offset from the panel point based on the following: offset shall provide a 3/4" minimum to 1 1/2" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs.
4. Variable end dimension. See Standard Drawings E 802-TCSS-04 and -05 for table of recommended dimensions.
5. See Standard Drawing E 802-TCSS-07 for saddle block details.
6. See Standard Drawing E 802-TCSS-09 for chord flange details.

INDIANA DEPARTMENT OF TRANSPORTATION

TRI-CHORD SIGN STRUCTURE  
CONNECTION AND WELDING DETAILS

SEPTEMBER 2013

STANDARD DRAWING NO. E 802-TCSS-08

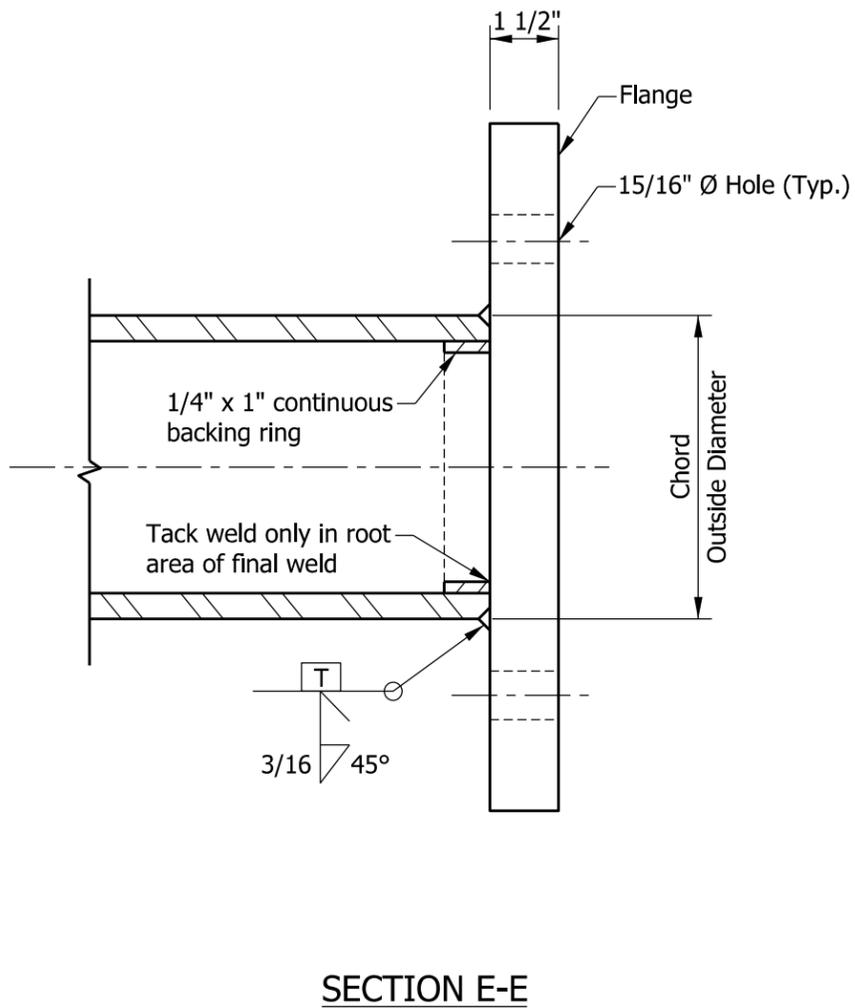
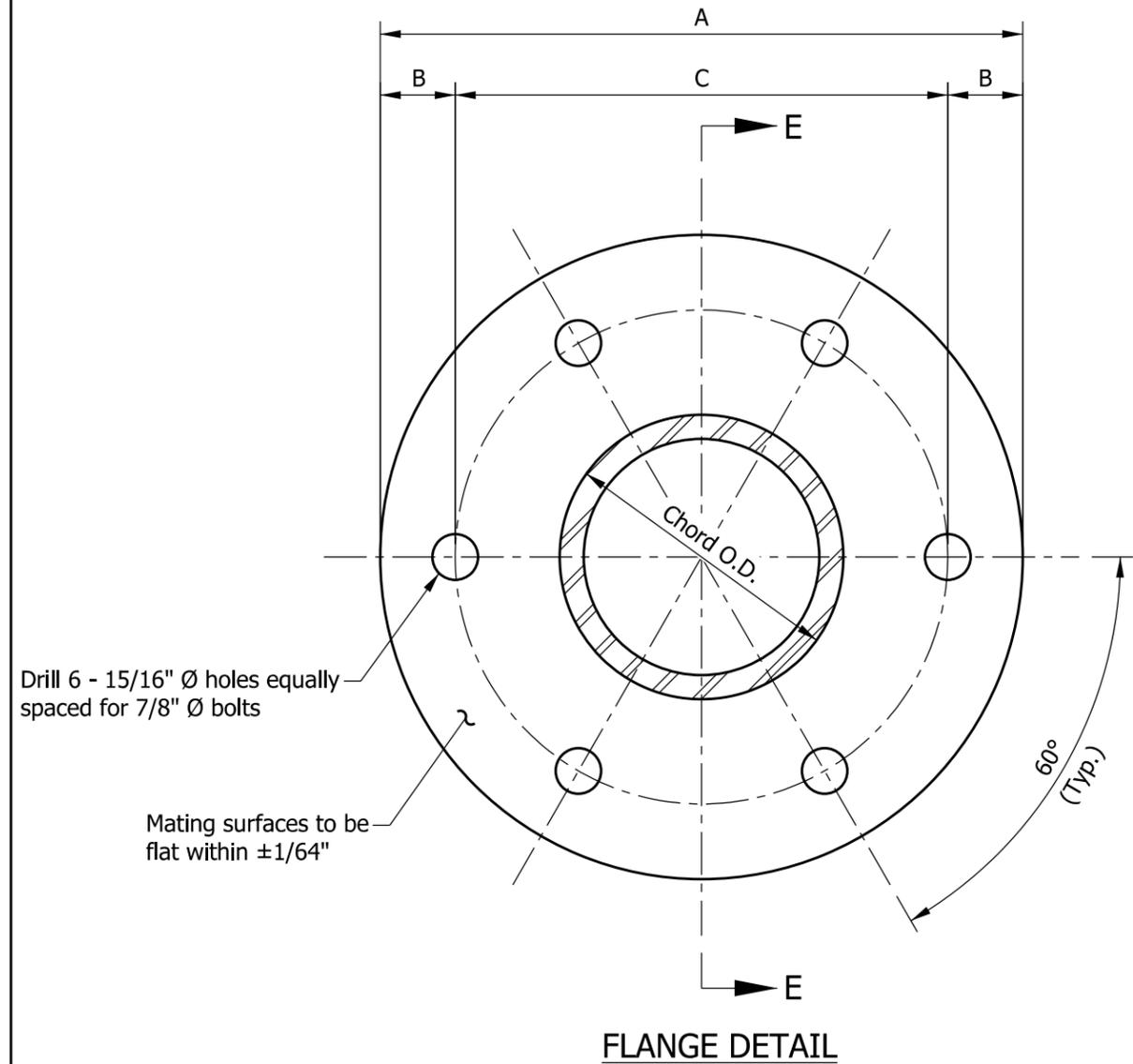


/s/ Alfredo B. Hanza 03/26/13

DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 03/27/13

CHIEF ENGINEER DATE

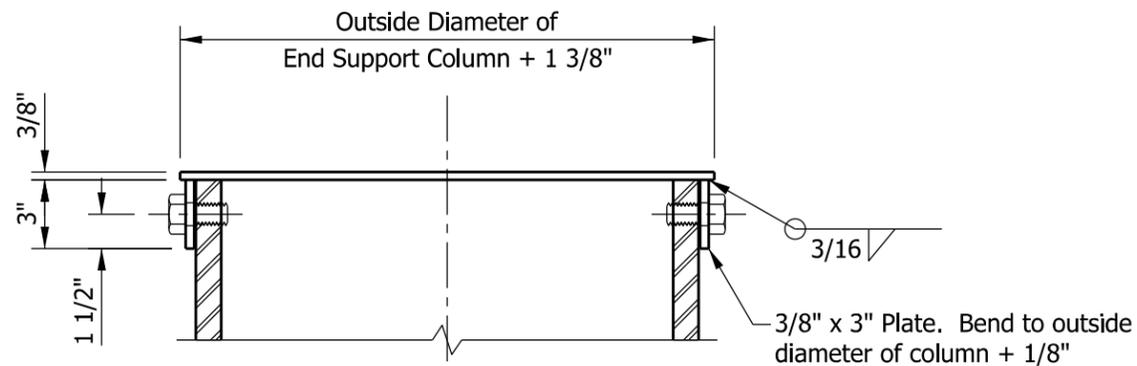


**NOTES:**

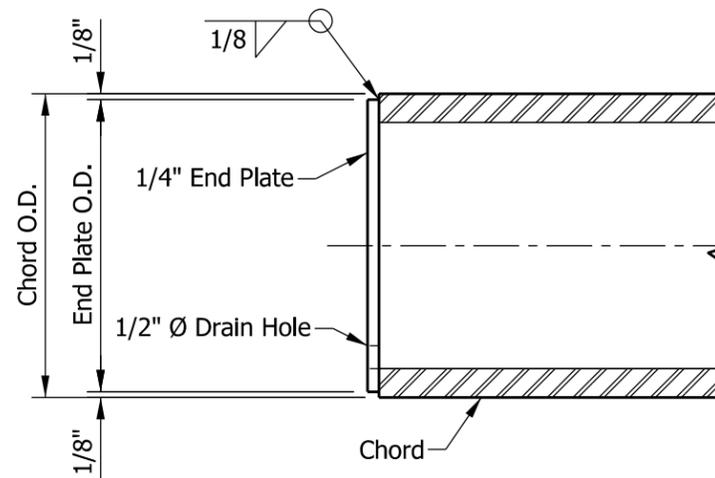
1. Mating surfaces to be flat within ±1/64". Flange shall be given additional finish if necessary to ensure contact between plates.
2. Use Type I ASTM A325 bolts with matching lock nuts. Lock nuts shall have steel inserts.
3. Bolts and lock nuts shall be hot dip galvanized in accordance with AASHTO M 232.
4. Install high strength bolts in accordance with 711.65.

DIMENSION TABLE				
TRUSS CHORD O.D.	BOLT SIZE	A	B	C
6.625"	7/8"	14"	2"	10"
5.625"	7/8"	13"	2"	9"

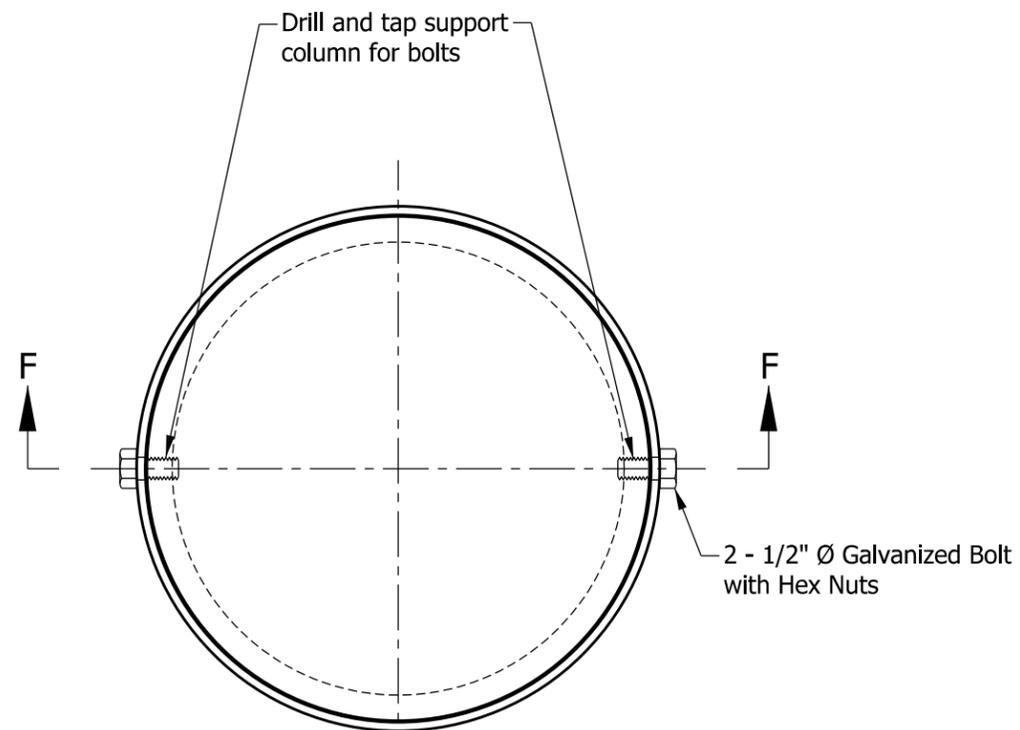
INDIANA DEPARTMENT OF TRANSPORTATION	
TRI-CHORD SIGN STRUCTURE CHORD FLANGE DETAILS	
SEPTEMBER 2013	
STANDARD DRAWING NO.	E 802-TCSS-09
	/s/ Alfredo B. Hanza 03/26/13 DESIGN STANDARDS ENGINEER DATE
	/s/ Mark A. Miller 03/27/13 CHIEF ENGINEER DATE



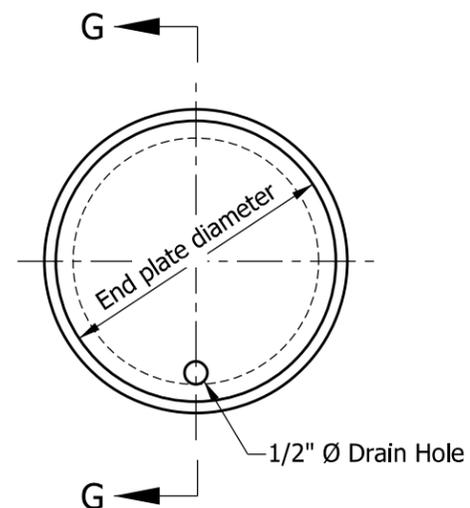
SECTION F-F



SECTION G-G



PLAN  
COLUMN TOP CAP DETAIL

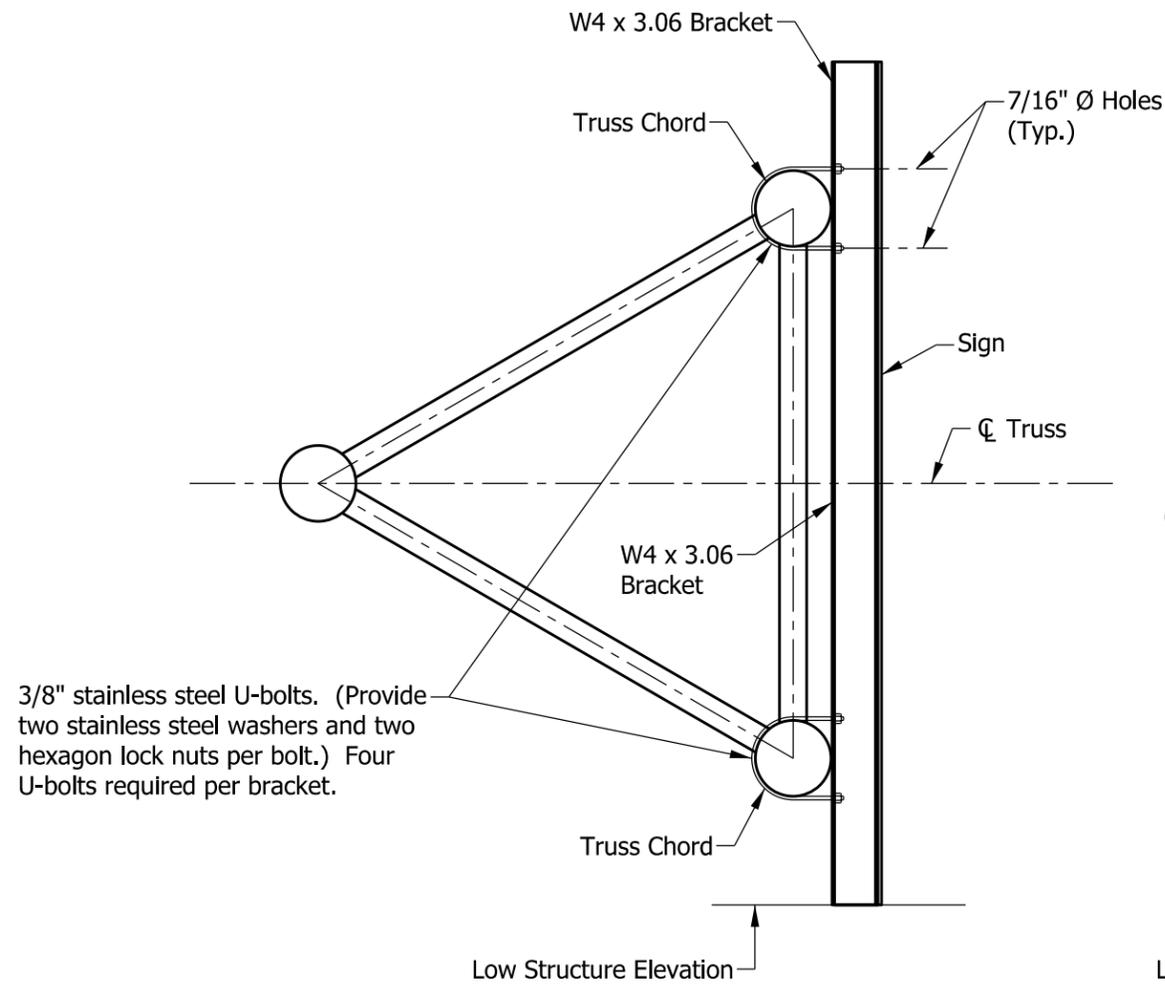


END VIEW  
CHORD END PLATE DETAIL

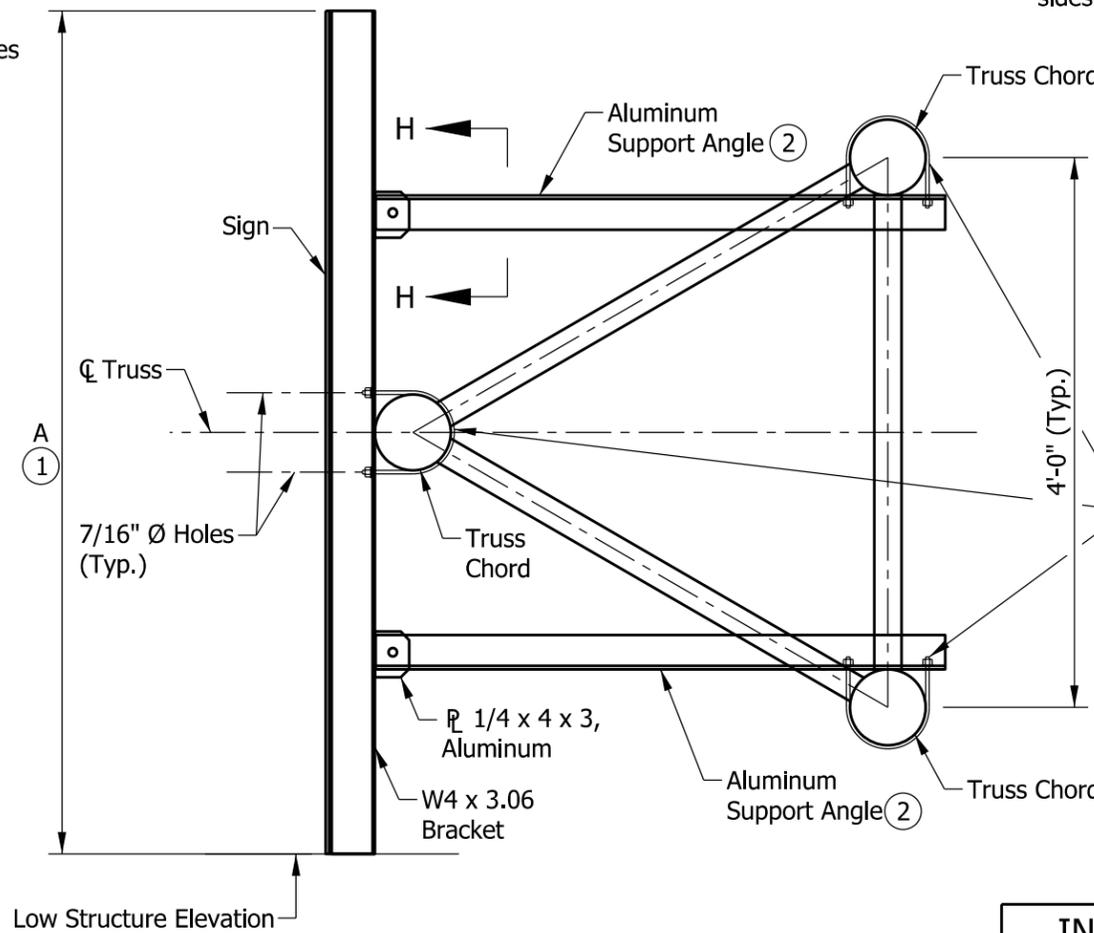
INDIANA DEPARTMENT OF TRANSPORTATION		
TRI-CHORD SIGN STRUCTURE TOP CAP AND CHORD END PLATE DETAILS		
SEPTEMBER 2013		
STANDARD DRAWING NO. E 802-TCSS-10		
	/s/ Alfredo B. Hanza	02/22/13
	DESIGN STANDARDS ENGINEER	DATE
	/s/ Mark A. Miller	03/27/13
	CHIEF ENGINEER	DATE

**NOTES:**

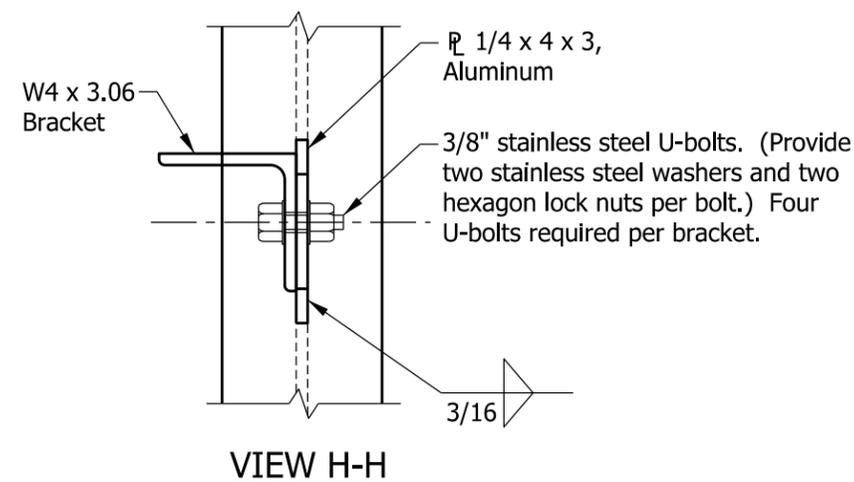
- ① Dimension A to be determined by Contractor to fit required signs.
- ② A minimum of two truss chord attachment points to be used for each bracket.
3. The chords shall be at the vertices of an equilateral triangle having sides of length 4'-0".



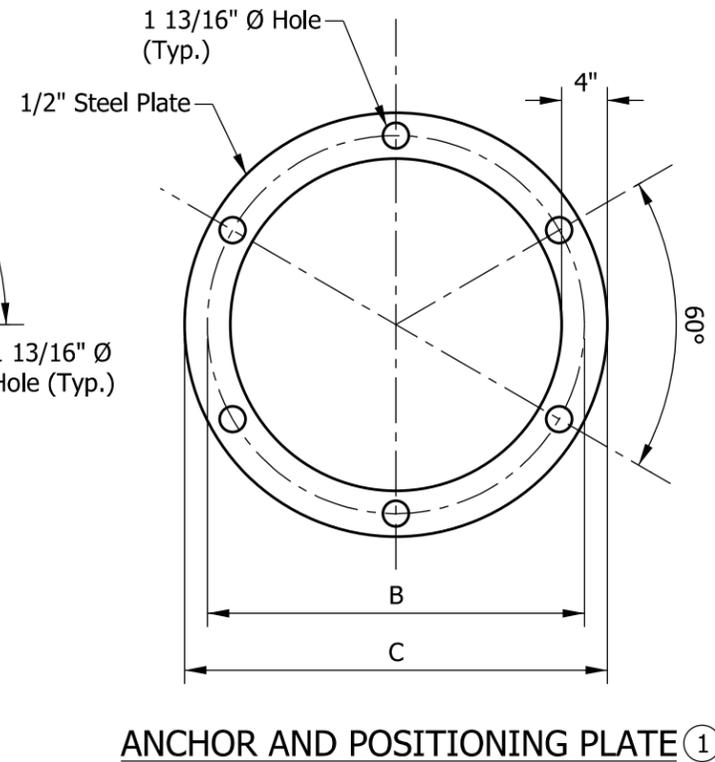
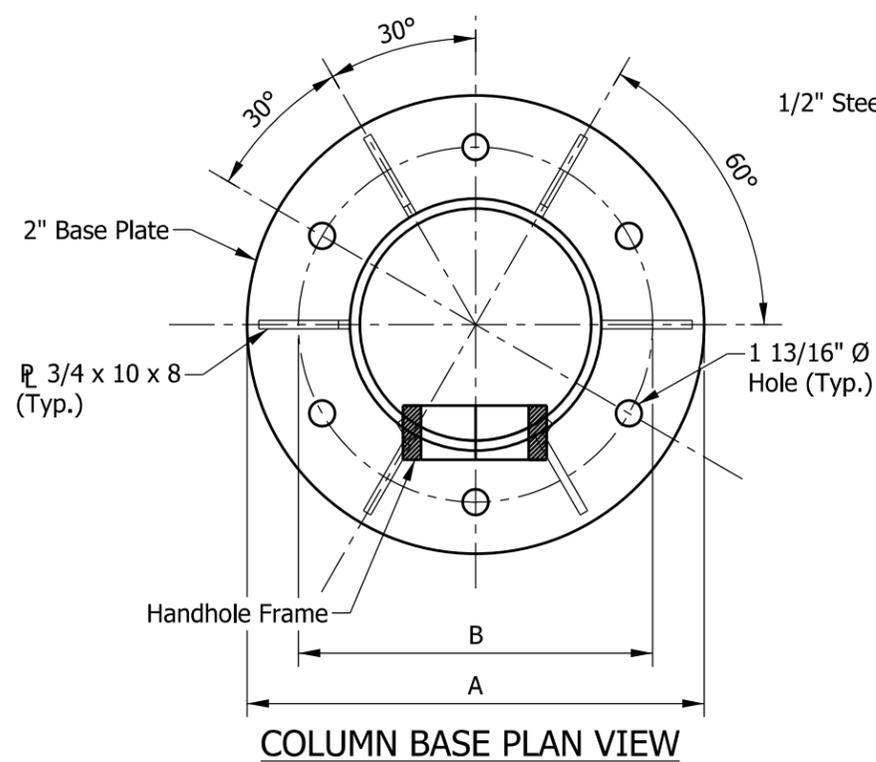
**FRONT SIGN MOUNTING DETAIL**



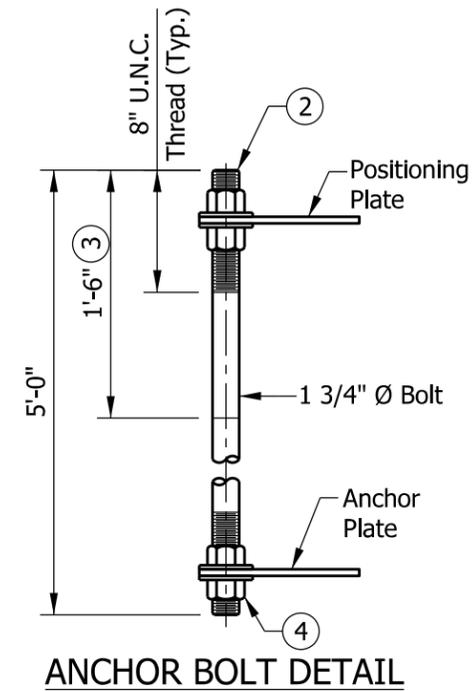
**REAR SIGN MOUNTING DETAIL**



INDIANA DEPARTMENT OF TRANSPORTATION	
TRI-CHORD SIGN STRUCTURE SIGN ATTACHMENT DETAILS	
SEPTEMBER 2013	
STANDARD DRAWING NO.	E 802-TCSS-11
	/s/ Alfredo B. Hanza      02/22/13 DESIGN STANDARDS ENGINEER      DATE
	/s/ Mark A. Miller      03/27/13 CHIEF ENGINEER      DATE



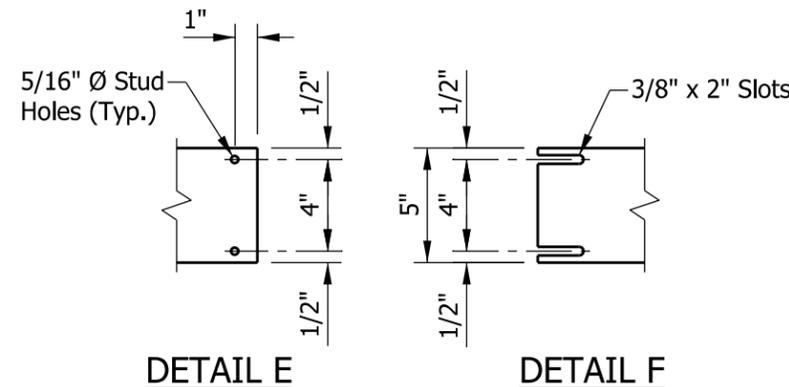
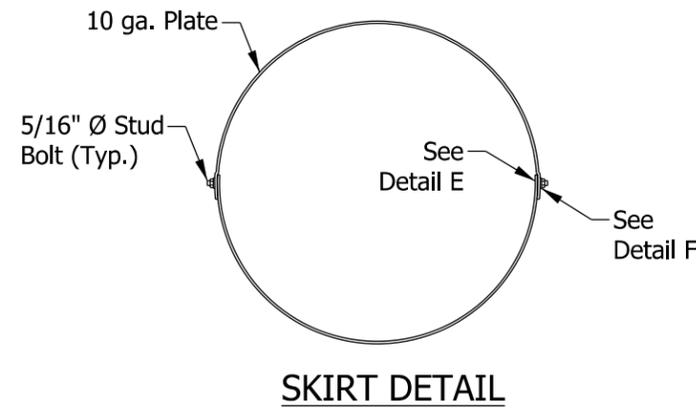
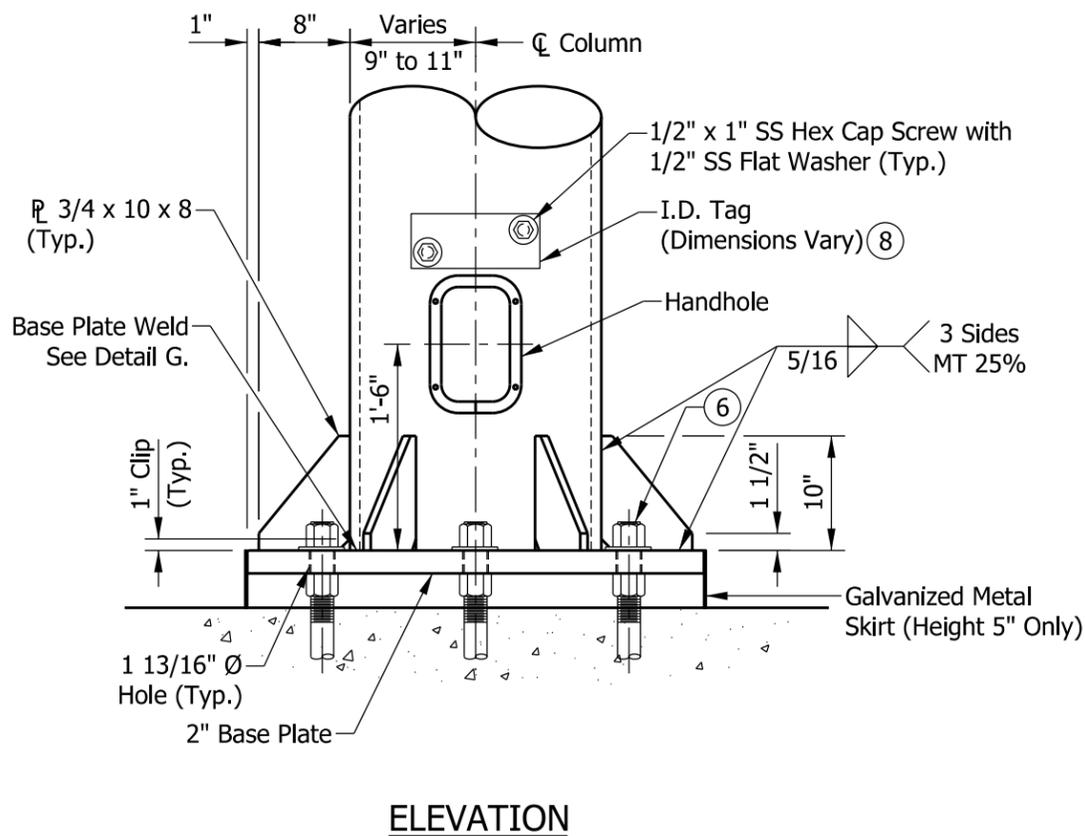
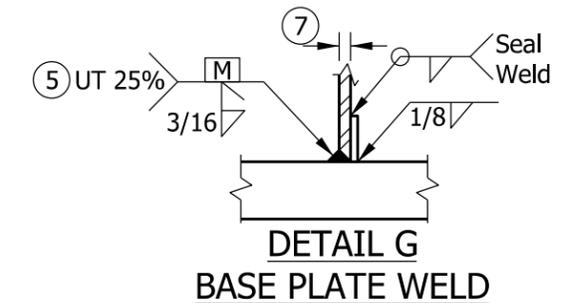
BASE PLATE DIMENSIONS			
COLUMN DIAMETER	A	B	C
18"	3'-0"	2'-3"	2'-7"
20"	3'-2"	2'-5"	2'-9"
22"	3'-4"	2'-7"	2'-11"



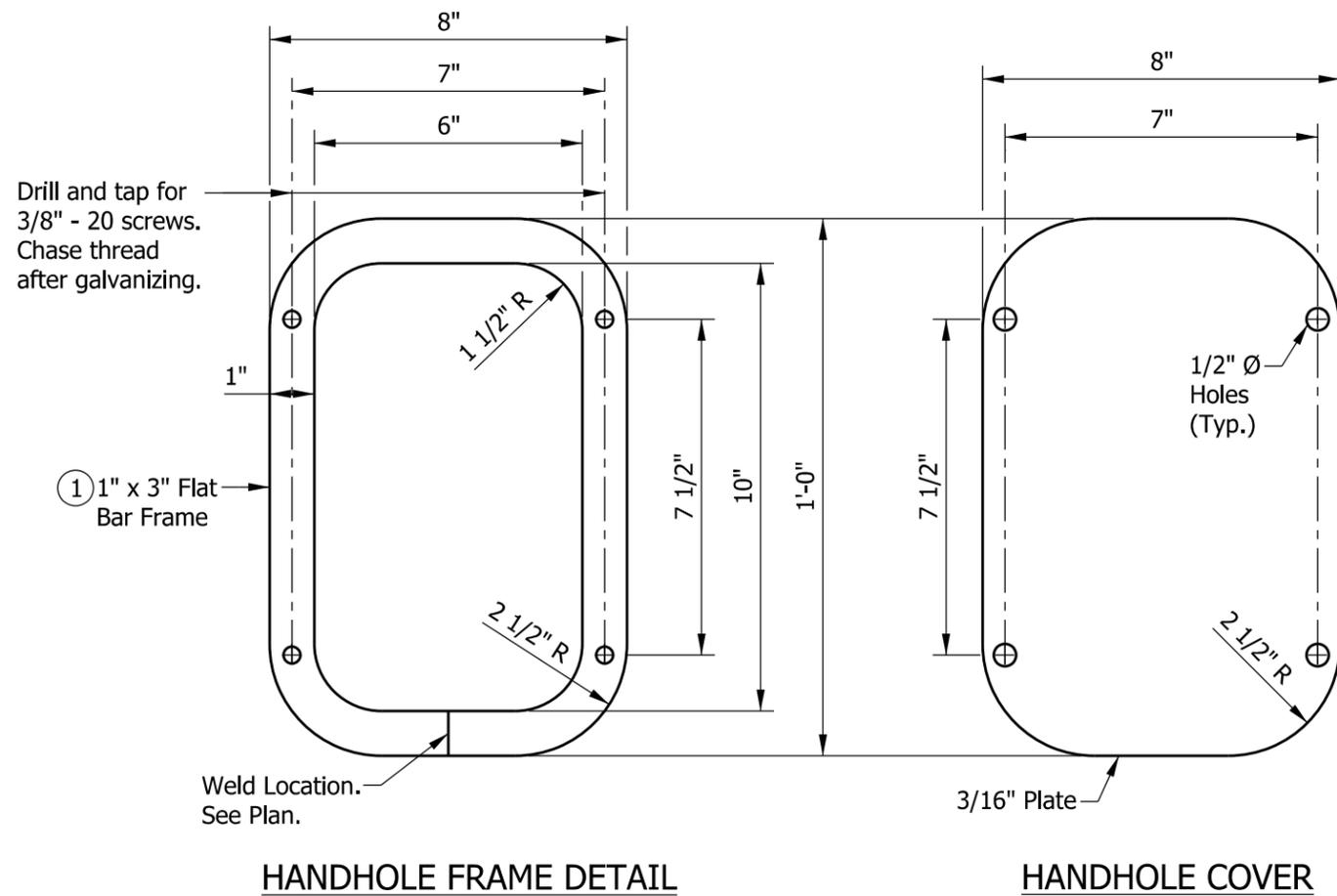
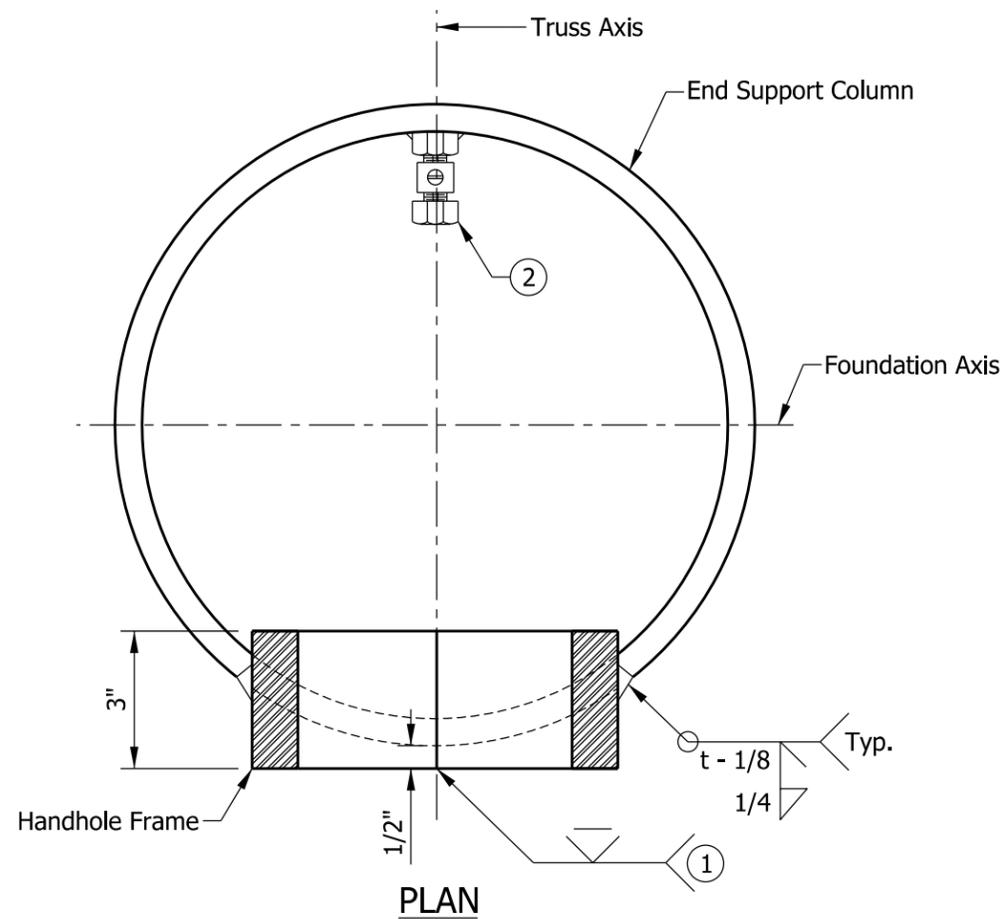
**NOTES:**

- ① Utilize temporary positioning plate and leveling nuts or other Engineer-approved methods to maintain anchor bolt alignment during concrete placement. Positioning plate and associated nuts shall be removed upon completion of the foundation.
- ② Protect threads during concreting with tape, sleeves, or other means.
- ③ 1'-6" is minimum to be galvanized. Entire bolt may be galvanized at Contractor's option.
- ④ Provide uncoated nut at bottom of anchor plate. Deform thread or use chemical thread lock to secure.
- ⑤ Use 1/4" x 1" minimum continuous backer ring. Tack weld only in root area of final weld. See Detail G this page for base plate weld detail.
- ⑥ Anchor bolt nuts shall be tightened against the base plate by turning the nut 1/6 turn (minimum) from snug tight condition.
- ⑦ See Standard Drawing E 802-TCSS-06 for column wall thickness.
- ⑧ I.D. tag is a 1/8" stainless steel plate with the following information stamped in 1/2" black letters:

Manufacturer \_\_\_\_\_, Drawing/Order # \_\_\_\_\_  
 Contract # \_\_\_\_\_, Structure Type \_\_\_\_\_  
 Fabrication Date \_\_\_\_\_, Structure Length \_\_\_\_\_  
 Column Mounting Height \_\_\_\_\_



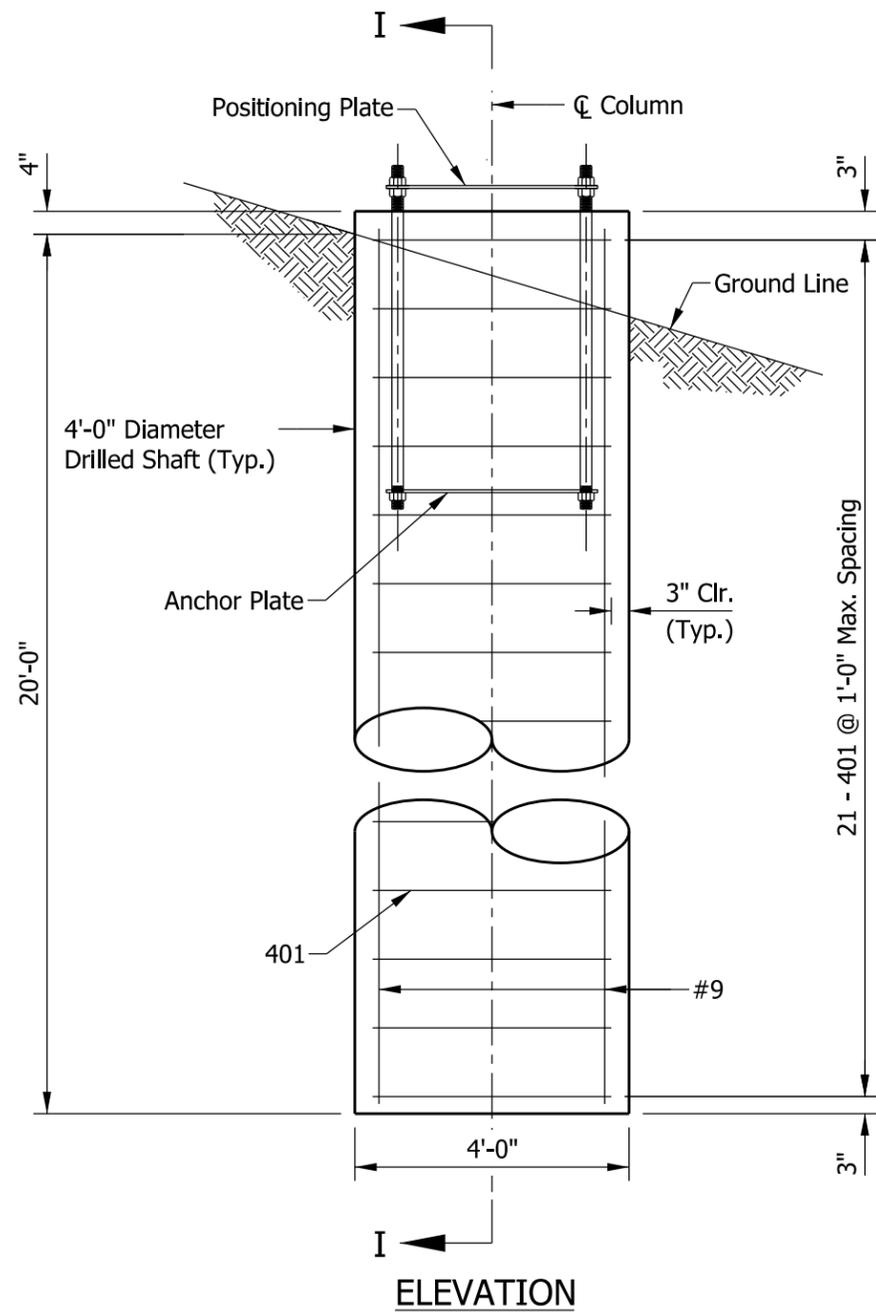
<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>	
<b>TRI-CHORD SIGN STRUCTURE BASE PLATE, ANCHOR BOLT, AND I.D. TAG DETAILS</b>	
<b>SEPTEMBER 2013</b>	
<b>STANDARD DRAWING NO.</b>	<b>E 802-TCSS-12</b>
	<i>/s/ Alfredo B. Hanza</i> 03/26/13
	DESIGN STANDARDS ENGINEER      DATE
	<i>/s/ Mark A. Miller</i> 03/27/13
	CHIEF ENGINEER      DATE



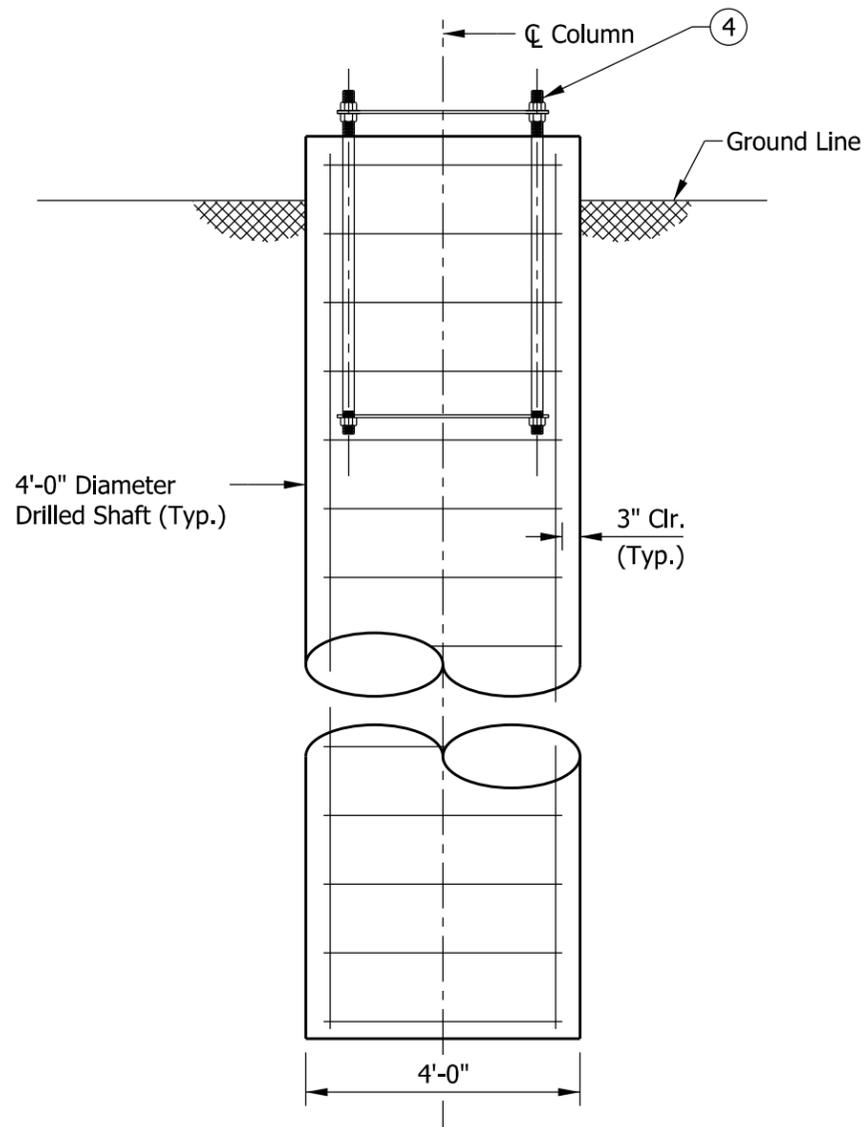
**NOTES:**

- (1) In lieu of fabricated handhole frame as shown, frame may be cut from 3" plate (rolling direction vertical).
- (2) Grounding clamp to be placed on far side of support directly opposite center of handhole.
3. See Standard Drawing E 802-TCSS-12 for handhole locations.

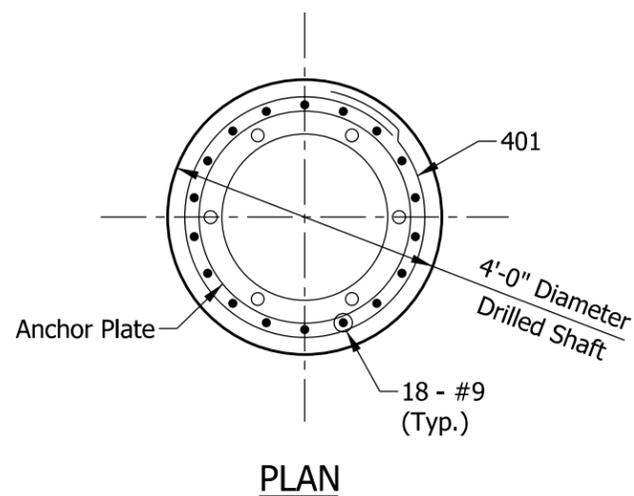
INDIANA DEPARTMENT OF TRANSPORTATION	
TRI-CHORD SIGN STRUCTURE HANDHOLE DETAILS	
SEPTEMBER 2013	
STANDARD DRAWING NO.	E 802-TCSS-13
	/s/ Alfredo B. Hanza 02/22/13 DESIGN STANDARDS ENGINEER DATE
	/s/ Mark A. Miller 03/27/13 CHIEF ENGINEER DATE



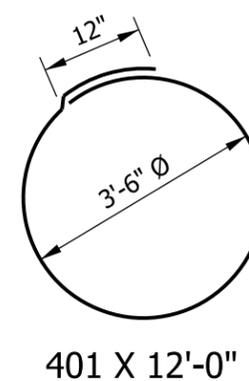
ELEVATION



SECTION I-I



PLAN



401 X 12'-0"

**NOTES:**

1. This standard foundation design is applicable for all tri-chord sign structures.
2. The design is based on clay soil with minimum unconfined shear strength of 750 psf or sandy soil with minimum friction angle of 30°.
3. All reinforcing bars to be epoxy coated.
- ④ See Standard Drawing E 802-TCSS-12 for anchor bolts.

BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
901	18	20'-0"	
Total #9			1224 LBS
#4	21	12'-0"	
Total #4			168 LBS
Total Epoxy-Coated Reinforcing Bars			1392 LBS
MISCELLANEOUS			
Concrete, Class A			9.5 CYS
Surface Seal			0.5 SYS

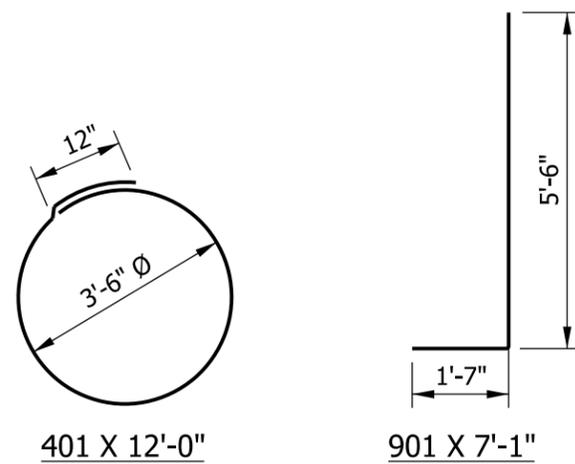
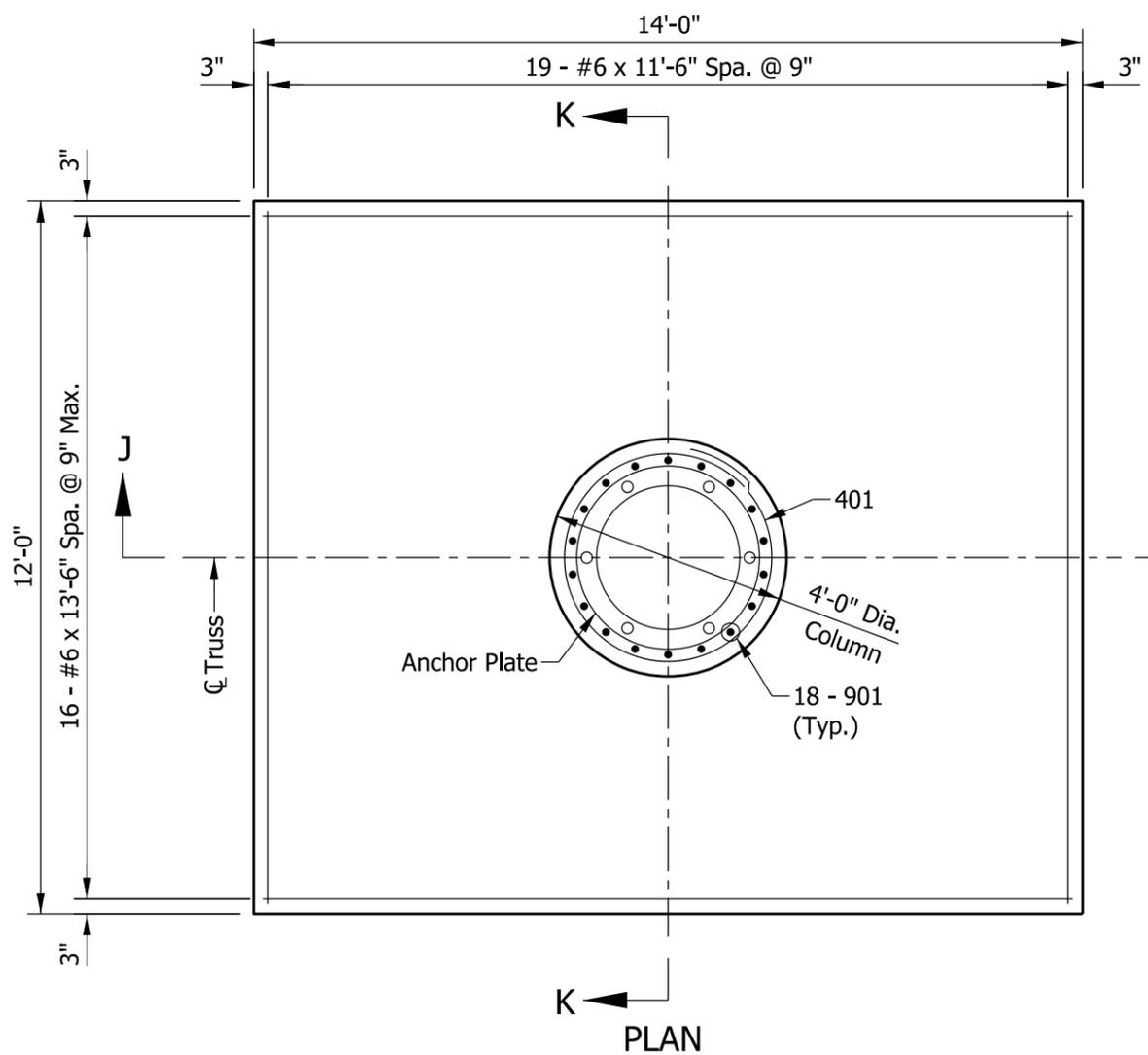
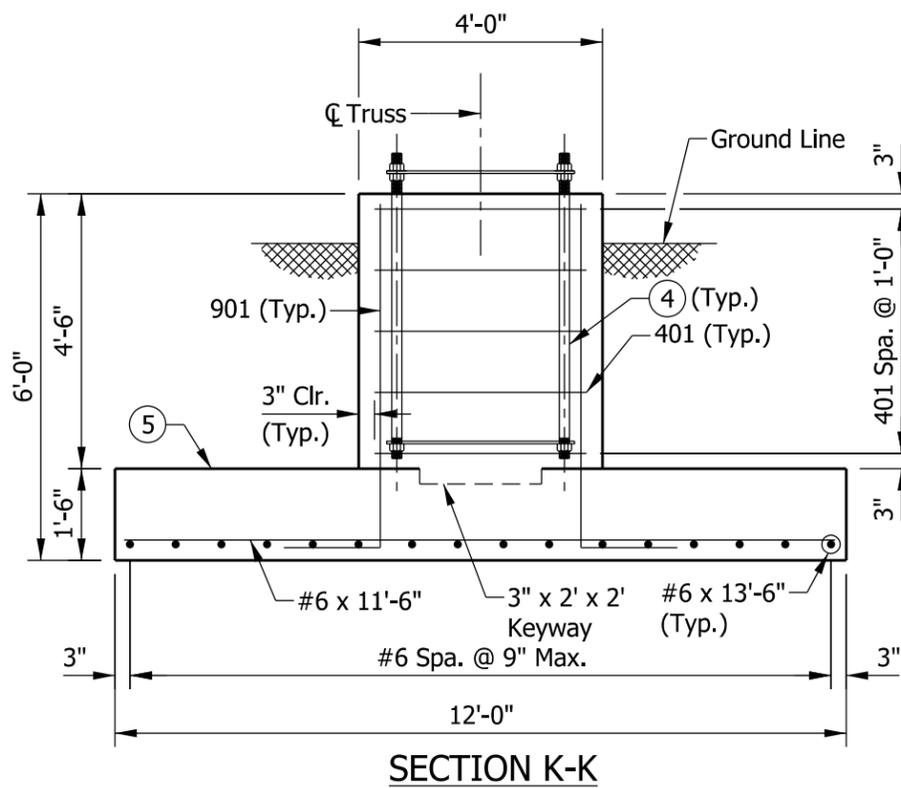
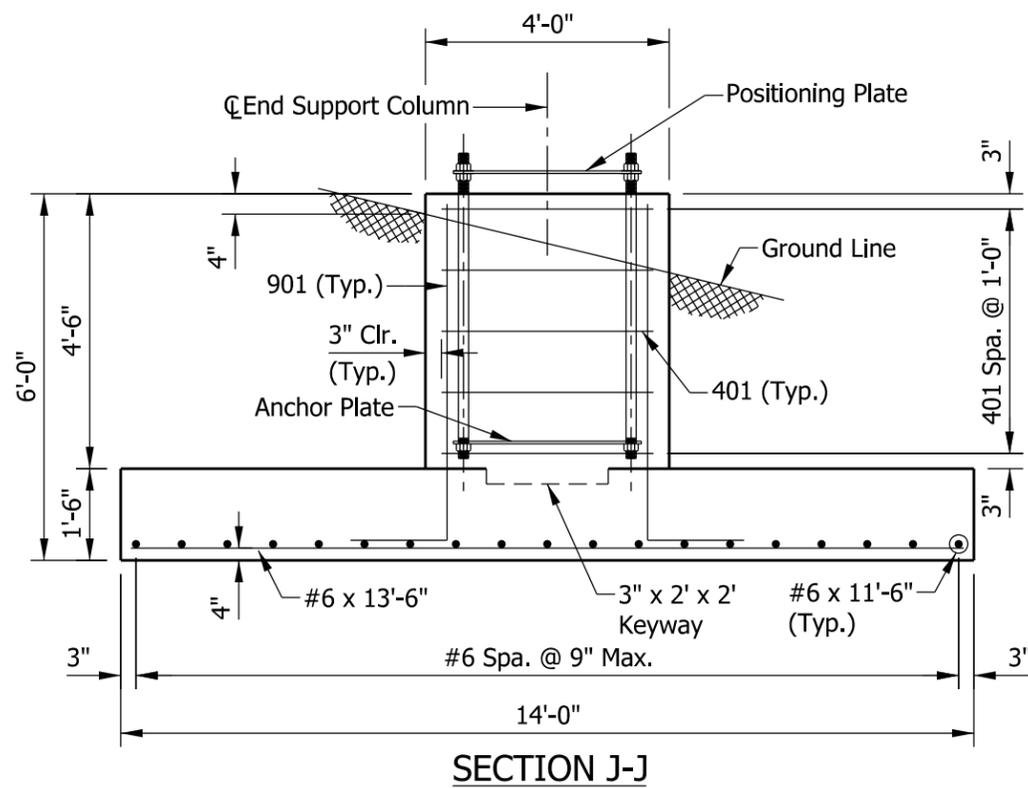
**INDIANA DEPARTMENT OF TRANSPORTATION**

**TRI-CHORD SIGN STRUCTURE  
DRILLED SHAFT FOUNDATION**

**SEPTEMBER 2013**

**STANDARD DRAWING NO. E 802-TCSS-14**

	/s/ <i>Alfredo B. Hanza</i> 02/22/13
	DESIGN STANDARDS ENGINEER      DATE
	/s/ <i>Mark A. Miller</i> 03/27/13
	CHIEF ENGINEER      DATE



**NOTES:**

1. This standard foundation design is applicable for all tri-chord sign structures.
2. The design is based on allowable gross soil bearing pressure of 1500 psf.
3. All reinforcing bars to be epoxy coated.
- ④ See Standard Drawing E 802-TCSS-12 for anchor bolts.
- ⑤ Top of the footing shall be a minimum of 4'-0" below the pavement or ground line.

BILL OF MATERIALS			
EPOXY-COATED REINFORCING BARS			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
901	18	7'-1"	
Total #9			434 LBS
#6	19	11'-6"	
#6	16	13'-6"	
Total #6			652 LBS
401	5	12'-0"	
Total #4			40 LBS
Total Epoxy-Coated Reinforcing Bars			1126 LBS
MISCELLANEOUS			
Concrete, Class A			11.4 CYS
Surface Seal			0.5 SYS

**INDIANA DEPARTMENT OF TRANSPORTATION**

**TRI-CHORD SIGN STRUCTURE  
SPREAD FOUNDATION**

**SEPTEMBER 2013**

**STANDARD DRAWING NO. E 802-TCSS-15**

	/s/ <i>Alfredo B. Hanza</i>	02/22/13
	DESIGN STANDARDS ENGINEER	DATE
	/s/ <i>Mark A. Miller</i>	03/27/13
	CHIEF ENGINEER	DATE