
ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

(Please provide all information — Incomplete forms will be returned)

Contact Information:

Date: May 12, 2022

Originator: Rick Jenkins

Phone: (850) 414-4355

Email: Rick.Jenkins@dot.state.fl.us

Standard Plans:

Index Number: 700-041

Sheet Number (s): 1, 2, and 5 of 5

Index Title: Span Sign Structure

Summary of the changes:

Sheet 1: Updated Notes to General Notes; Added New General Note 1 - "Meet the requirements of Specification 700"; Deleted Notes 4 through 7; Moved Note 5.B and 5.C to Sheet 5 Notes; Renumbered Notes.

Sheet 2: Added note 6 detailing the weld pattern of the 'BD' and 'CD' plates indicating that they should be welded in a star pattern; Changed dimension 'DF' extents in Base Plate Connection detail to match calculations.

Sheet 3: Updated line work on Section A-A to correctly reflect correct geometry; Added (See Note 1) to 'LG'/'RG' and to 'LE'/'RE' welds.

Sheet 4: Update member orientations in Truss Front Elevation to reflect correct geometry.

Sheet 5: Added General Note 5.B and 5.C as New Note 2 - "Chord Splices: Minimum splice spacing is three truss panel lengths apart and three truss panel lengths from the uprights when panel lengths are 10'-0" or less. Chord Splices may be either the Standard Splice or the Alternate Splice, but not both on the same structure." and Note 3 - "Upright splice: Not allowed unless the upright exceeds available mill lengths (35' - 40')."

Commentary / Background:

The 700 Index Series is being edited to remove material information and other information that is located in the Standard Specifications. Revisions are being made to Specification Sections 700, 962 and 965 in conjunction with these changes; Updating for errors and clarity.

Sheet 2: This process is to help prevent residual stress buildup in base plate connection to prevent cracking.

Other Affected Offices / Documents: (Provide name of person contacted)

- | Yes | No | |
|-------------------------------------|-------------------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Other Standard Plans – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | FDOT Design Manual – Dewayne Carver |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Basis of Estimates Manual – Ryan Gray |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Standard Specifications – Daniel Strickland |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Approved Product List – Missy Hollis |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Construction – Jason Russell |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Maintenance – Deanna Hutchison |

Origination Package Includes: (Submit package to Rick Jenkins)

- | Yes | N/A | |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Redline Mark-ups |
| <input type="checkbox"/> | <input type="checkbox"/> | Revised or Proposed Standard Plan Instruction (SPI) |
| <input type="checkbox"/> | <input type="checkbox"/> | Other Support Documents |

Implementation:

- | | |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/> | Design Bulletin (Interim) |
| <input type="checkbox"/> | DCE Memo |
| <input type="checkbox"/> | Program Mgmt. Bulletin |
| <input checked="" type="checkbox"/> | FY-Standard Plans (Next Release) |

Contact the Roadway Design Office for assistance in completing this form

Email to: Rick Jenkins rick.jenkins@dot.state.fl.us and Darren Martin darren.martin@dot.state.fl.us

ADDED NEW NOTE 1: Meet the requirements of Specification 700.

UPDATED: GENERAL NOTES:

1. NOTES:

- 2. ~~Work this Index in conjunction with SPAN SIGN STRUCTURE DATA TABLES in the Plans and Index 700-030.~~
- 3. ~~Handholes at the pole base are required for DMS Structures. Refer to Index 700-090 for Handhole Details.~~
- 4. ~~Shop Drawings are required.~~

Obtain Shop Drawing approval prior to fabrication. Include the following:

- A. Upright Pipe height ('C' & 'B') and foundation elevations: Verify dimensions in the field prior to submittal to ensure minimum vertical clearances of the sign panel over the roadway.
- B. Height of the foundation above adjacent ground.
- C. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
- D. Method to be used to provide the required parabolic camber (see Camber Diagram).
- E. Handholes at pole base (when required).

4. Materials:

- A. Sign Structure:
 - a. Upright and Chords (Steel Pipe): API 5L X42 PSL2, 42 ksi yield or ASTM A500, Grade B (Min.)
 - b. Steel Angles and Plates: ASTM A709 grade 36
 - c. Weld Material: E70XX
- B. Bolts, Nuts and Washers:
 - a. High Strength Bolts: ASTM F3125, Grade A325, Type 1
 - b. Nuts: ASTM A563, Grade DH Heavy-Hex
 - c. Washers: ASTM F436, Type 1, one under turned element
- C. Anchor Bolts, Nuts and Washers
 - a. Anchor Bolts: ASTM F1554 Grade 55
 - b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per bolt)
 - c. Plate Washers: ASTM A36 (2 per bolt)
- D. Concrete: Class IV (Drilled Shaft)
- E. Reinforcing Steel: Specification 415

5. Fabrication:

- ~~A. Welding: Specification 460-6.4~~
- B. Chord Splices: Minimum splice spacing is three truss panel lengths apart and three truss panel lengths from the uprights when panel lengths are 10'-0" or less. Chord Splices may be either the Standard Splice or the Alternate Splice, but not both on the same structure.**
- C. Upright splice: Not allowed unless the upright exceeds available mill lengths (35' - 40').**
- ~~D. Structural bolt hole diameters: Bolt diameter plus 1/16"~~
- ~~E. Anchor bolt hole diameters: Bolt diameter plus 1/2"~~
- ~~F. Hot Dip Galvanize after fabrication.~~
- ~~G. Shop assemble the entire structure after galvanizing to validate/document alignment and clearance for bolted connections as well as contact between connecting plates. Take remedial action, if necessary, prior to shipment.~~
- ~~H. Disassemble as necessary and secure components for shipment.~~

6. Coatings:

- A. Bolts, Nuts and Washers: ASTM F2329
- B. All other steel, including Plate Washers, hot dip galvanize: ASTM A123

7. Construction:

- A. Construct foundation in accordance with Specification 455 Drilled Shaft, except payment is included in the cost of the structure.
- ~~B. Prior to erection, record the as-built anchor locations and submit to the Engineer.~~
- 5. C. Provide a parabolic camber with the required upward deflection as shown on the Camber Diagram.**
- ~~D. Tighten nuts and bolts in accordance with Specification 700. Split-Lock Washers are not permitted.~~
- ~~E. Install Aluminum Sign Panels as shown in the Plans.~~
- ~~F. After installation, place wire screen between top of foundation and bottom of baseplate in accordance with Specification 649-6.~~

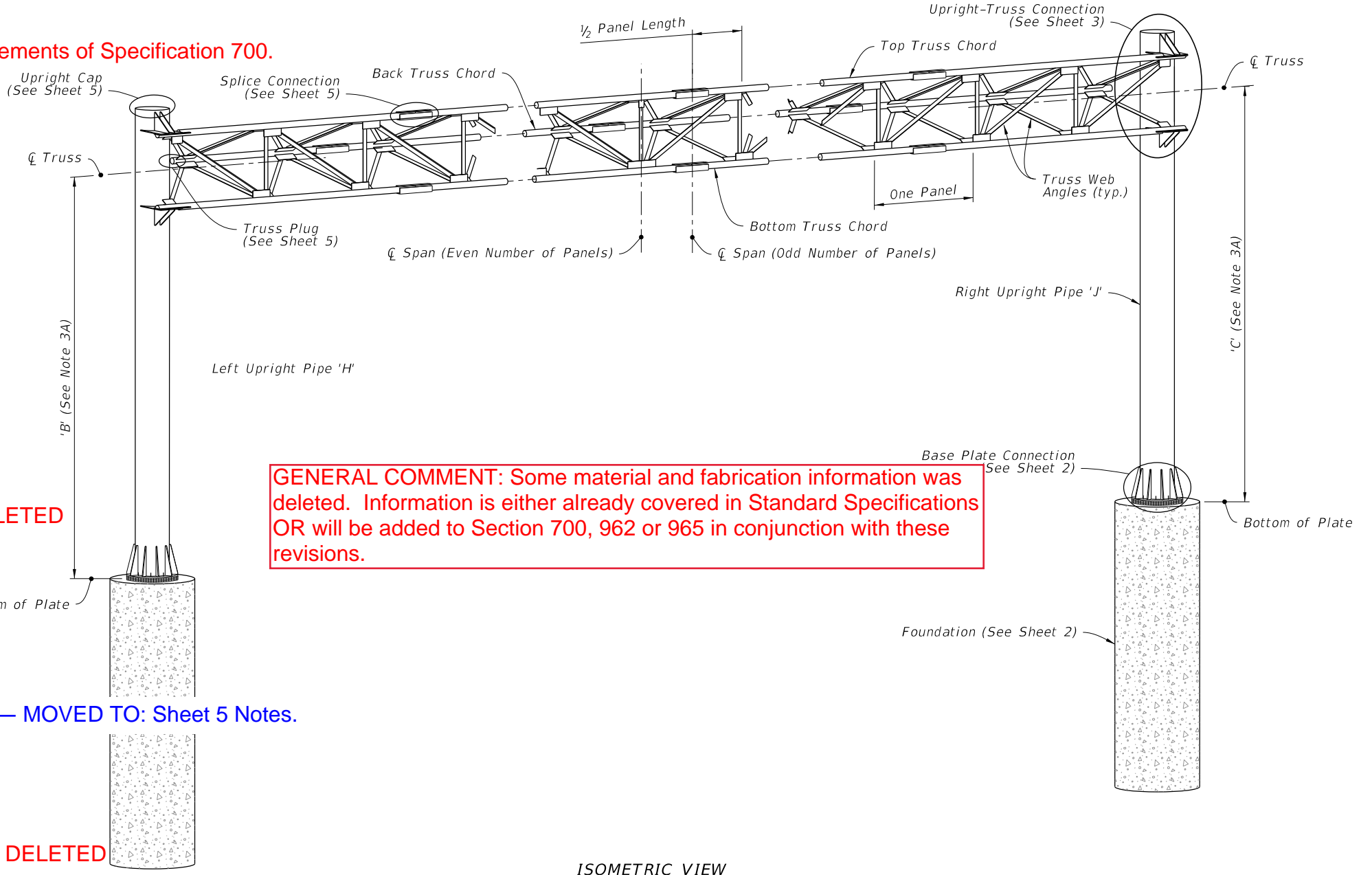
DELETED

DELETED

DELETED

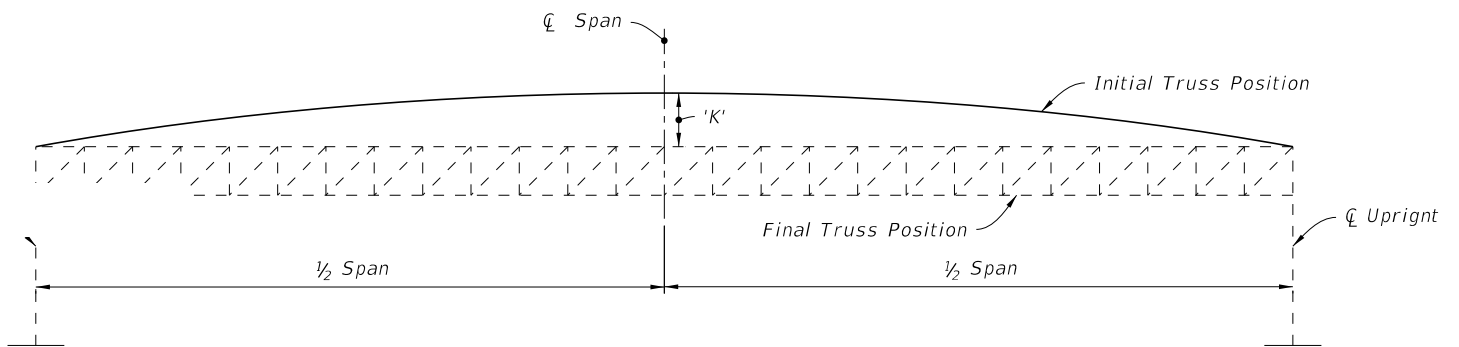
MOVED TO: Sheet 5 Notes.

GENERAL COMMENT: Some material and fabrication information was deleted. Information is either already covered in Standard Specifications OR will be added to Section 700, 962 or 965 in conjunction with these revisions.



ISOMETRIC VIEW

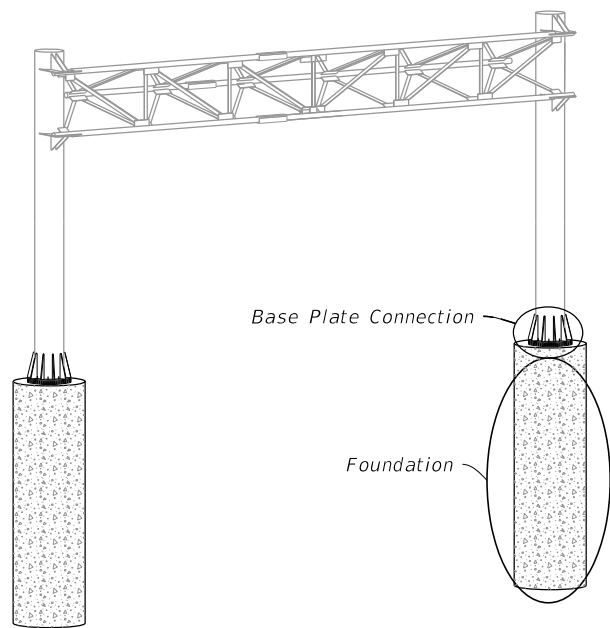
SPAN SIGN ASSEMBLY



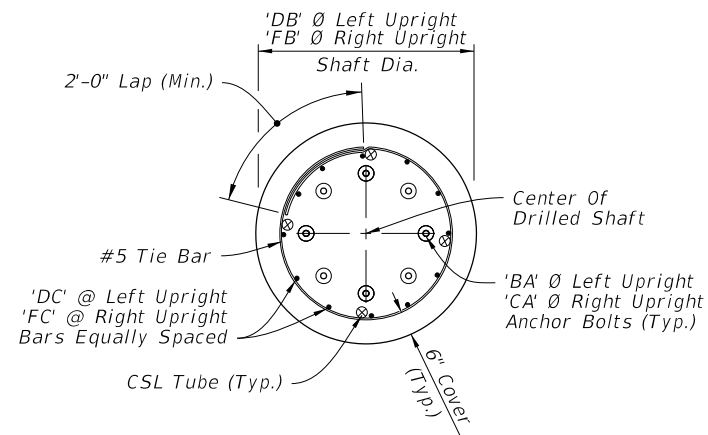
CAMBER DIAGRAM

9/28/2021 9:43:50 AM

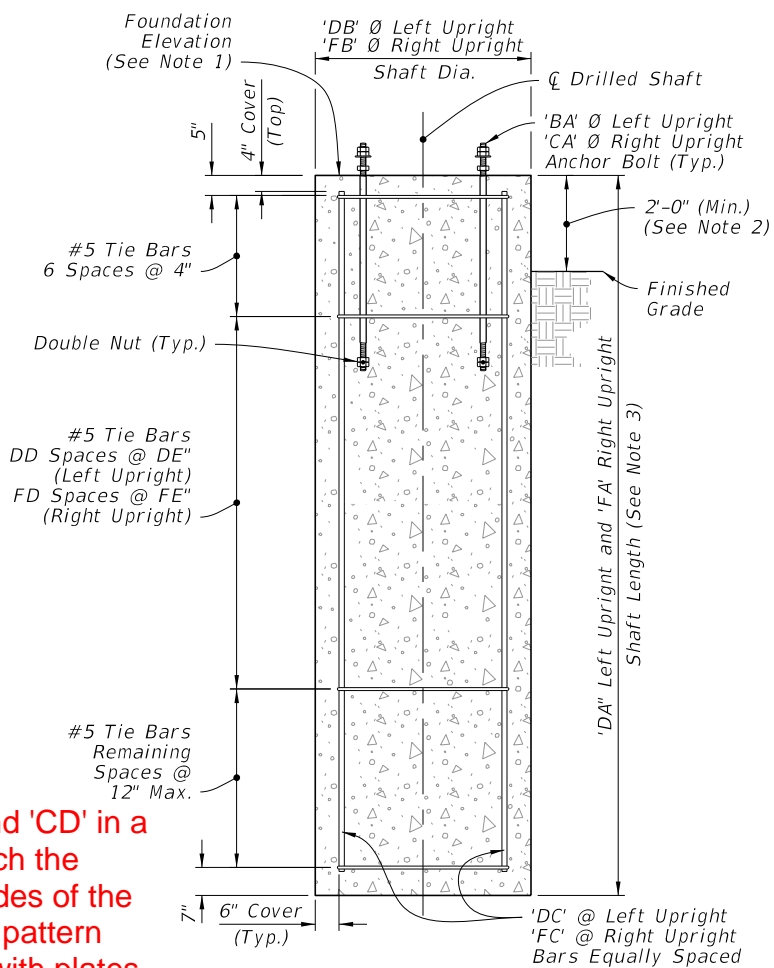
LAST REVISION	11/01/22	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	SPAN SIGN STRUCTURE	INDEX 700-041	SHEET 1 of 5
---------------	----------	--------------	----------------------------------	---------------------	------------------	-----------------



SPAN SIGN ASSEMBLY



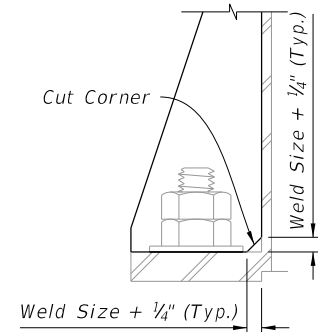
PLAN



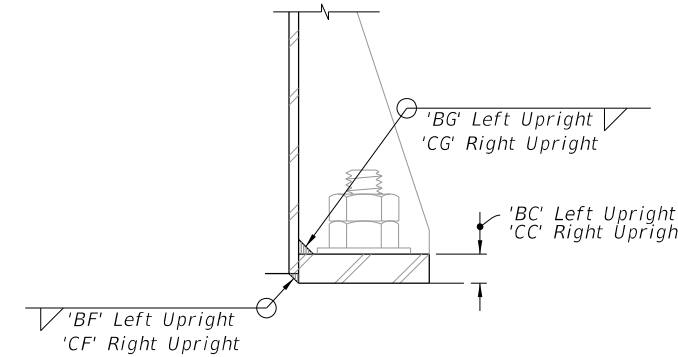
ELEVATION

DRILLED SHAFT

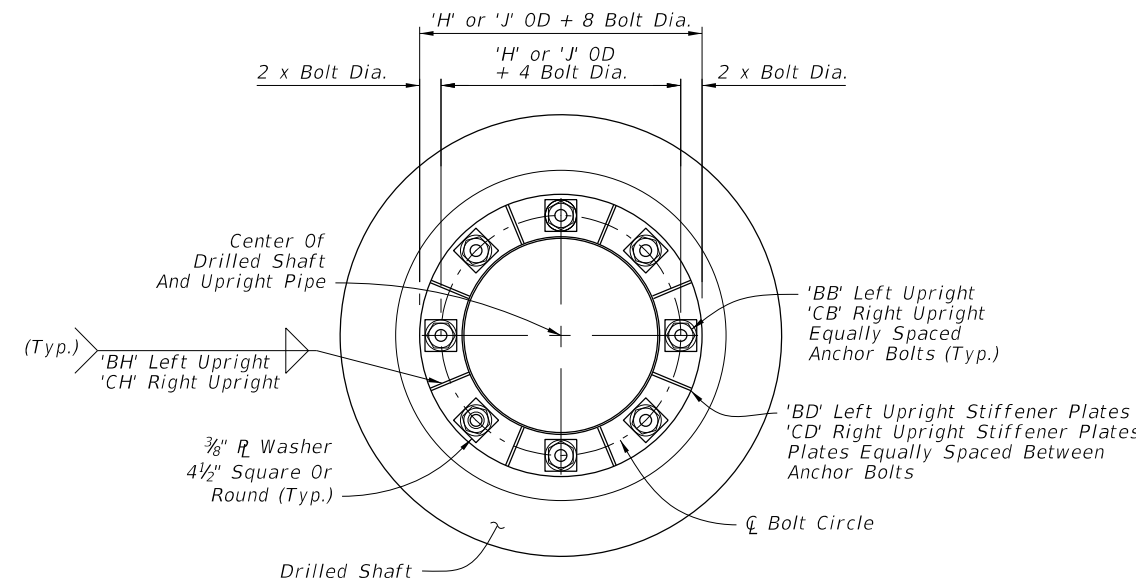
FOUNDATION



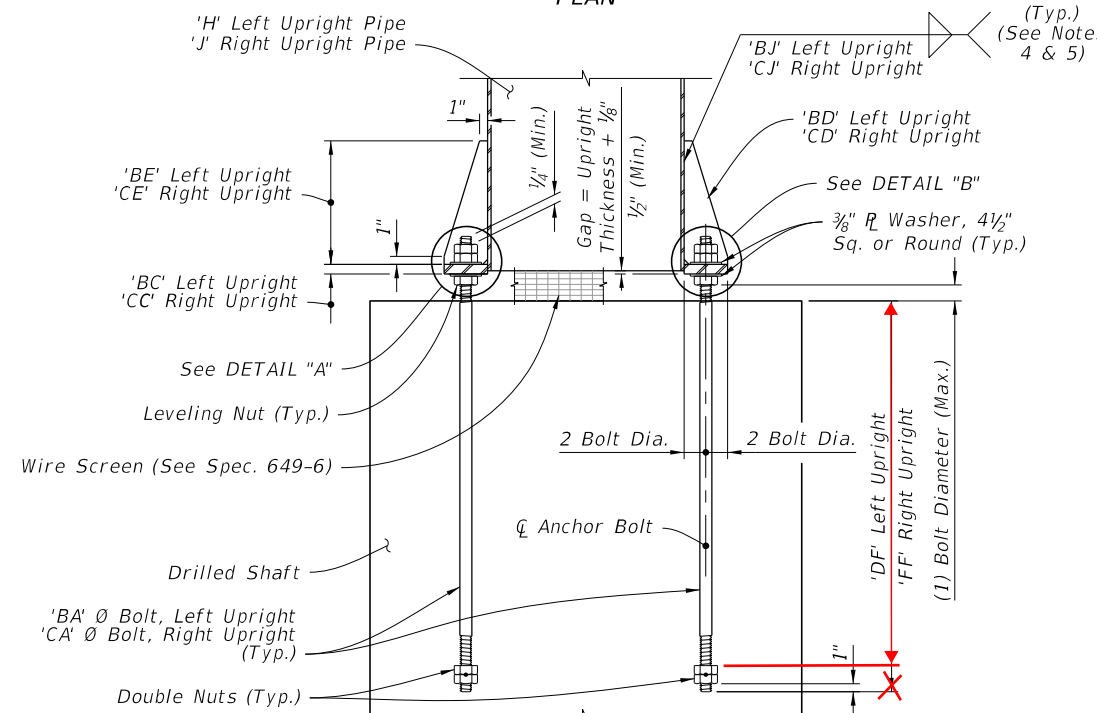
DETAIL "A"



DETAIL "B"



PLAN



ELEVATION

BASE PLATE CONNECTION

- NOTES:**
1. See Traffic Plans for elevation at top of Foundation.
 2. Install Drilled Shaft with a 2'-0" minimum from top elevation of the drill shaft to the finished grade, unless specified otherwise in the plans.
 3. The shaft length is based on 2'-0" height above finished grade.
 4. Wrap fillet weld around the stiffener termination on the tube wall (Typ.).
 5. After galvanizing, provide magnetic particle testing on 100% of upright fillet welds.

6. **ADDED NOTE 6: 6. Weld plates 'BD' and 'CD' in a star pattern. A star pattern is one in which the plates on opposite and near opposite sides of the pole circle are successively welded in a pattern resembling a star. For an 8 plate circle with plates sequentially numbered 1 to 8, weld the plates in the following order: (1, 5, 7, 3, 8, 4, 6, 2).**

9/28/2021 9:43:51 AM

LAST REVISION	DESCRIPTION:
11/01/21	11/01/22

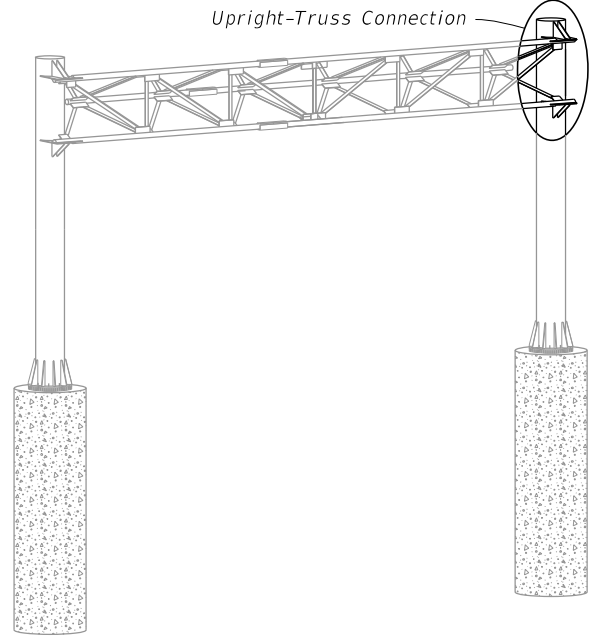


FY 2022-23
STANDARD PLANS

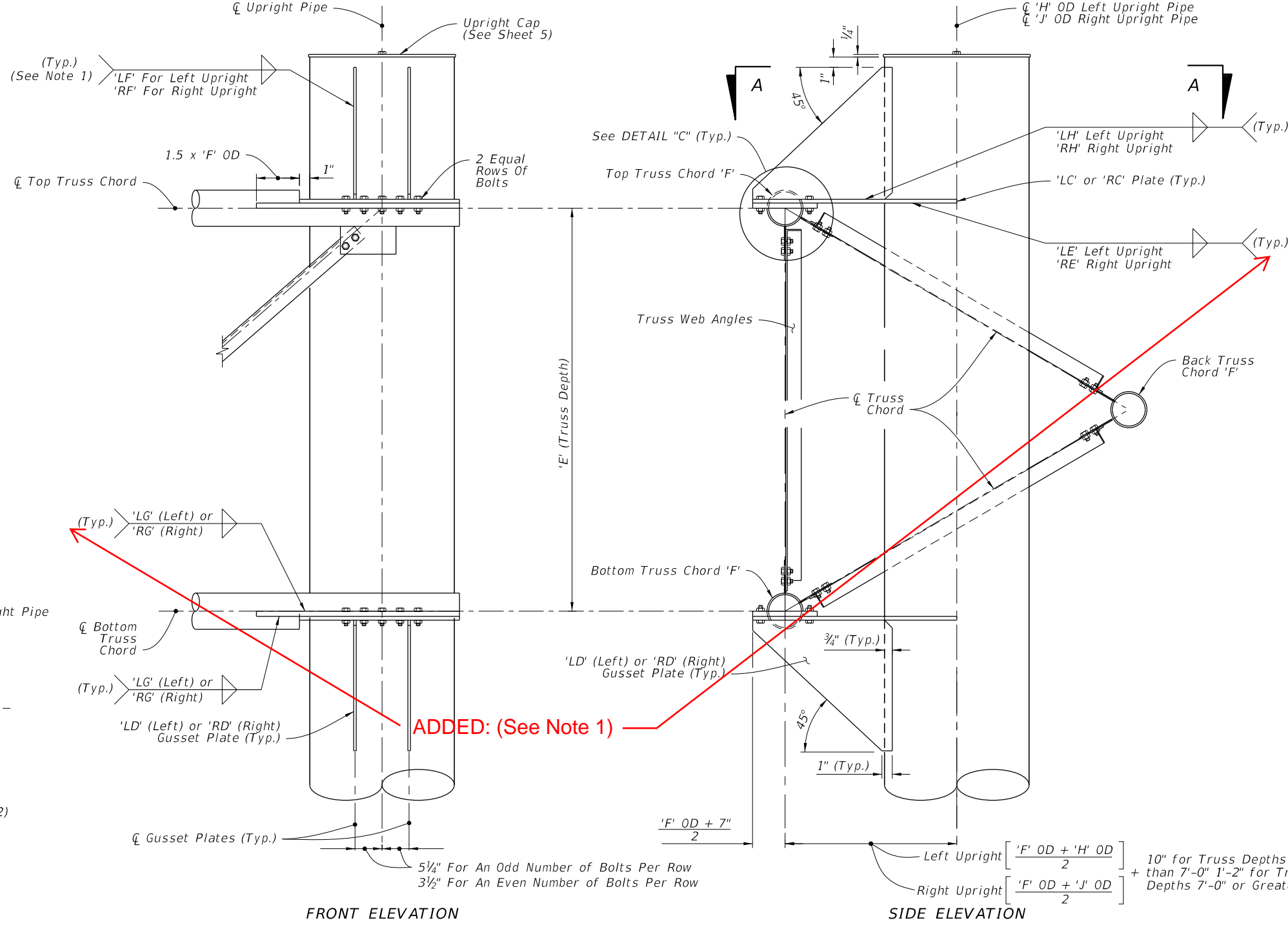
SPAN SIGN STRUCTURE

INDEX
700-041

SHEET
2 of 5



SPAN SIGN ASSEMBLY

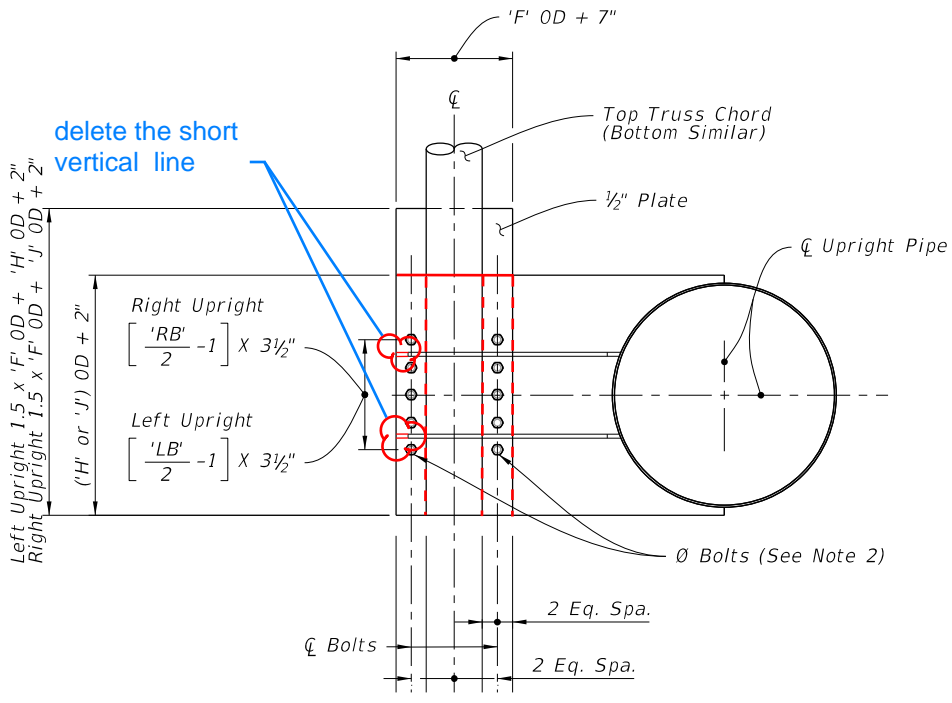


FRONT ELEVATION

SIDE ELEVATION

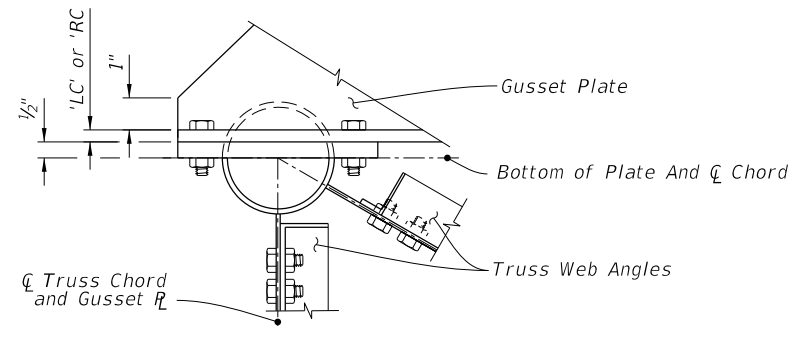
UPRIGHT-TRUSS CONNECTION DETAIL

(Web Members From Back Truss Chord Omitted For Clarity, See Note 3)



SECTION A-A

(With Gusset Plates And Web Angles Omitted For Clarity)



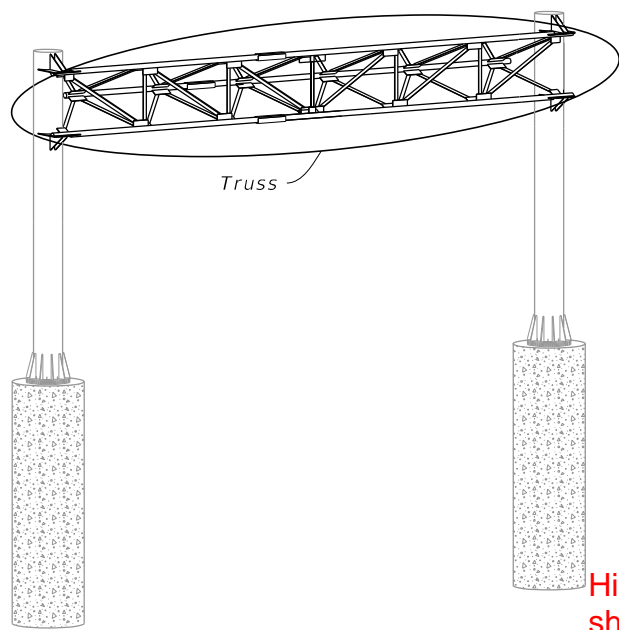
DETAIL "C"

NOTES:

1. Wrap fillet weld around the stiffener termination on the tube wall.
2. Truss Chord Bolts: 'LB' or 'RB' Hex Head Bolts 'LA' or 'RA' Ø.
3. Right Upright Truss connection shown, Left Upright Truss connection similar.

9/28/2021 9:43:52 AM

LAST REVISION	DESCRIPTION:
11/01/17	←
11/01/22	←



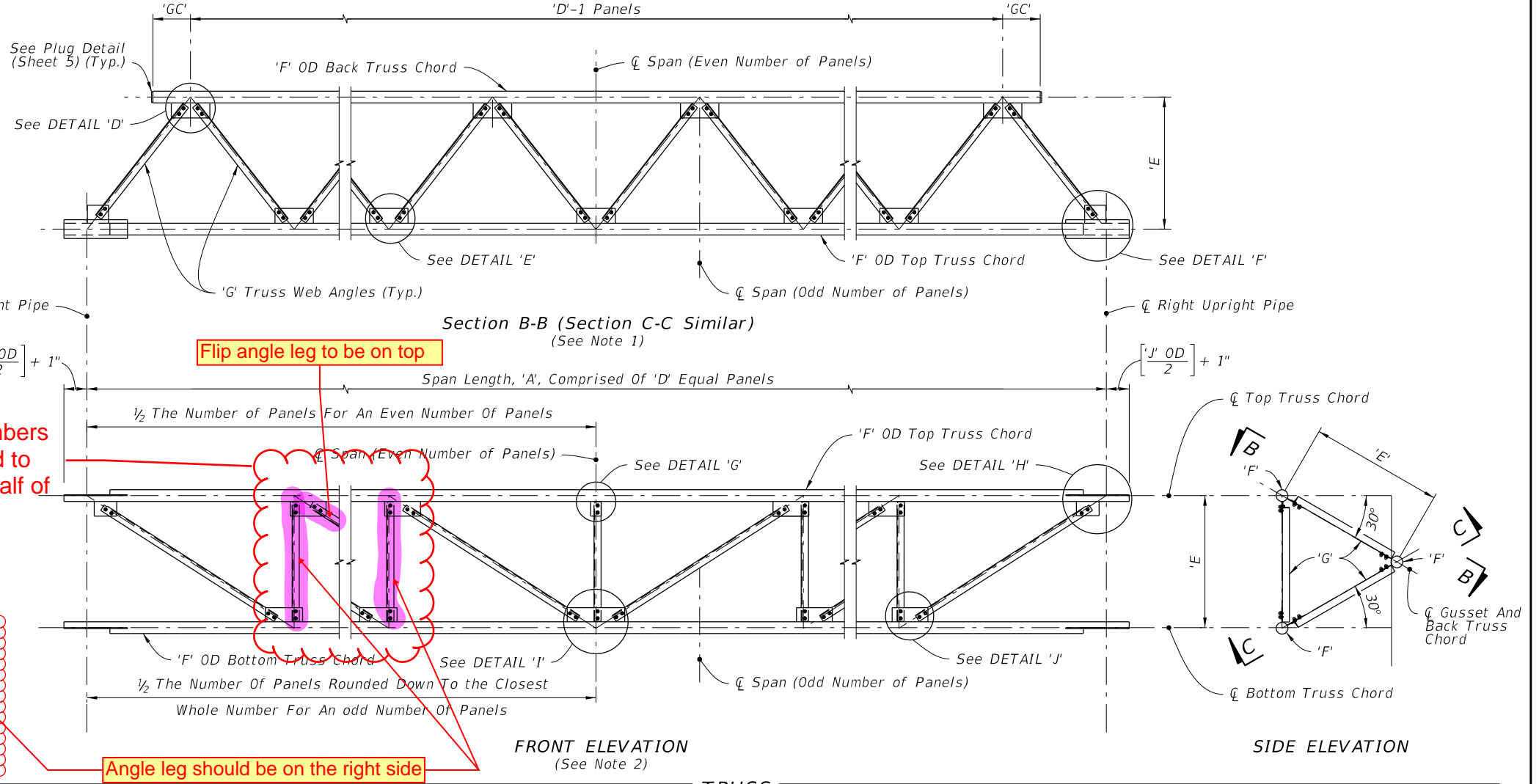
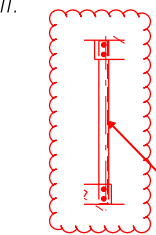
SPAN SIGN ASSEMBLY

NOTES:

1. Out-of-plane members are not shown for clarity.
2. Back truss chord and attached angles are not shown for clarity.
3. Wrap fillet weld around plate termination on the tube wall.

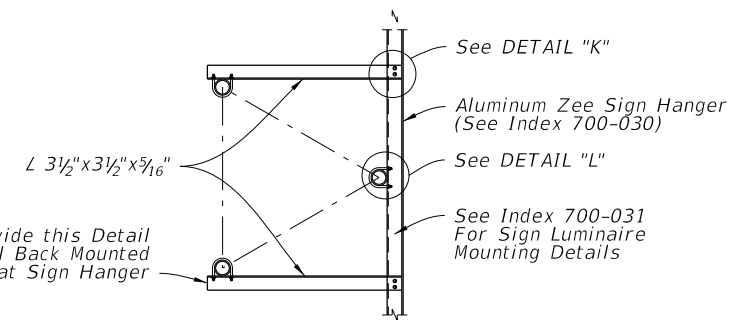
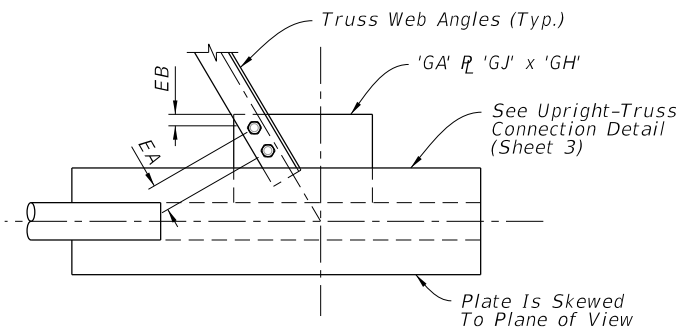
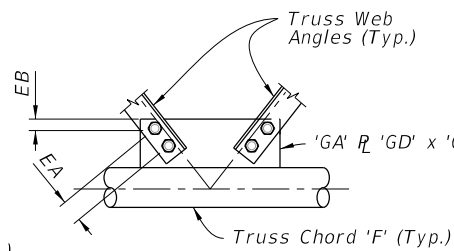
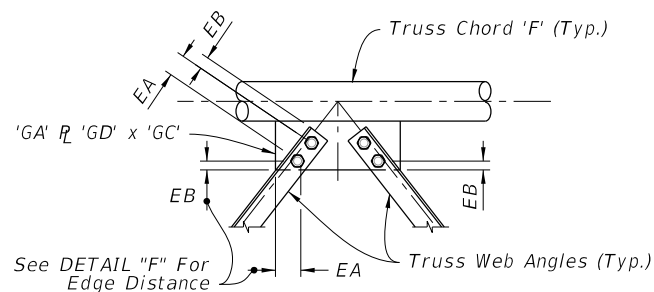
Bolt Diameter (in.)	Distance (in.)	
	EA	EB
1 1/4	4 3/8	2 1/4
1	3 1/2	1 3/4
7/8	3	1 1/2
3/4	2 1/2	1 1/4
5/8	2 1/4	1 1/8

Highlighted members should be flipped to mirror the right half of the truss.



Flip angle leg to be on top

Angle leg should be on the right side

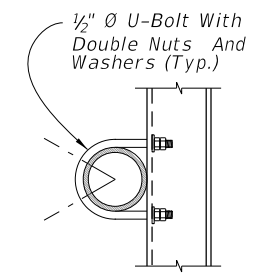
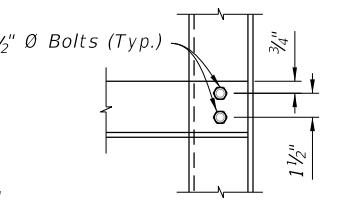
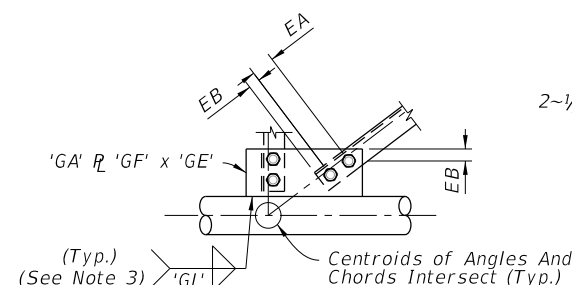
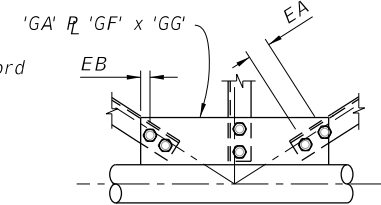
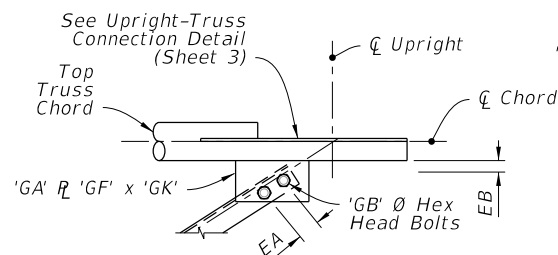
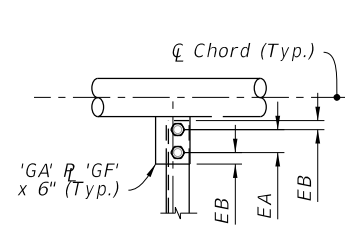


DETAIL 'D'

DETAIL 'E'

DETAIL 'F'

BACK-SIDE SIGN MOUNTING



DETAIL 'G'

DETAIL 'H'

DETAIL 'I'

DETAIL 'J'

DETAIL 'K'

DETAIL 'L'

9/28/2021 9:43:53 AM

LAST REVISION	DESCRIPTION:
11/01/17	REVISION
11/01/22	REVISION

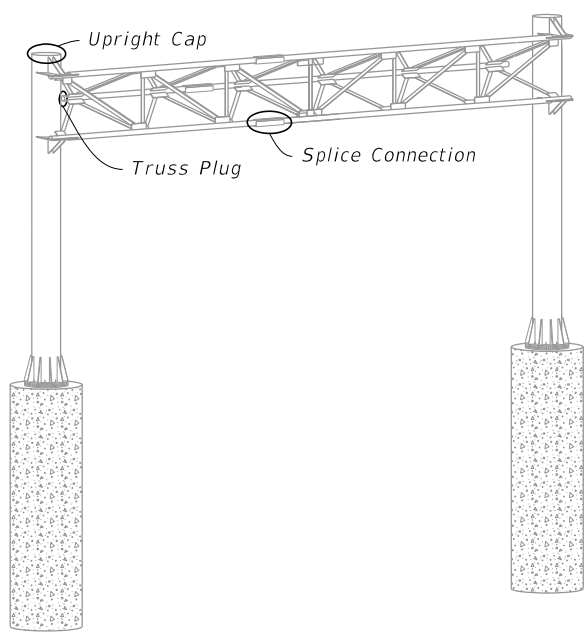


FY 2022-23
STANDARD PLANS

SPAN SIGN STRUCTURE

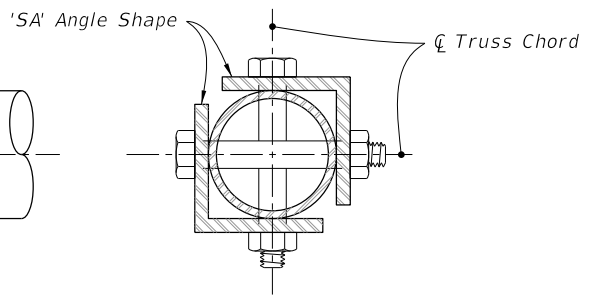
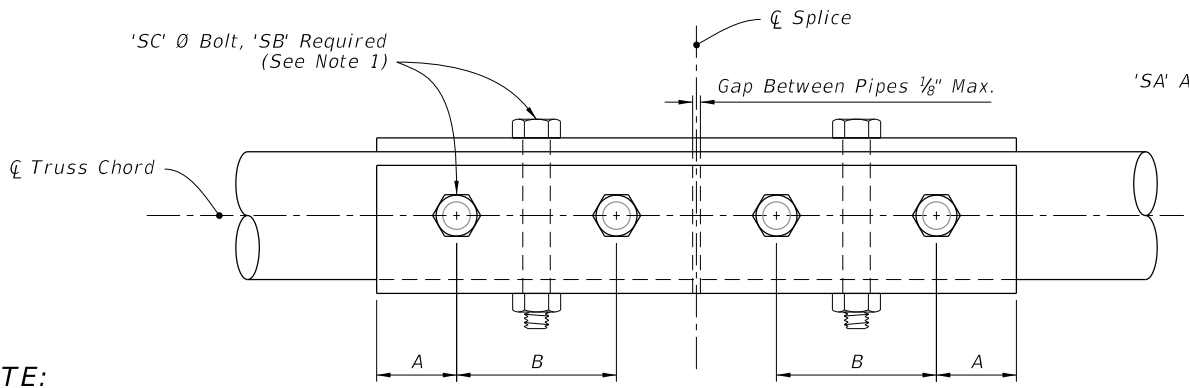
INDEX
700-041

SHEET
4 of 5



SPAN SIGN ASSEMBLY

Bolt Diameter (in.)	Distance (in.)	
	A	B
1	1 3/4	3 1/2
7/8	1 1/2	3
3/4	1 1/4	2 1/2



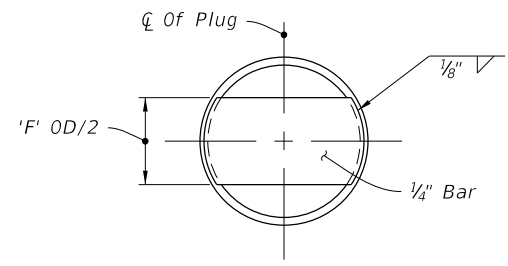
SIDE ELEVATION

SPLICE CONNECTION NOTE:

1. Only 6 bolts are shown in detail for clarity. (One Half Each End Of Splice)

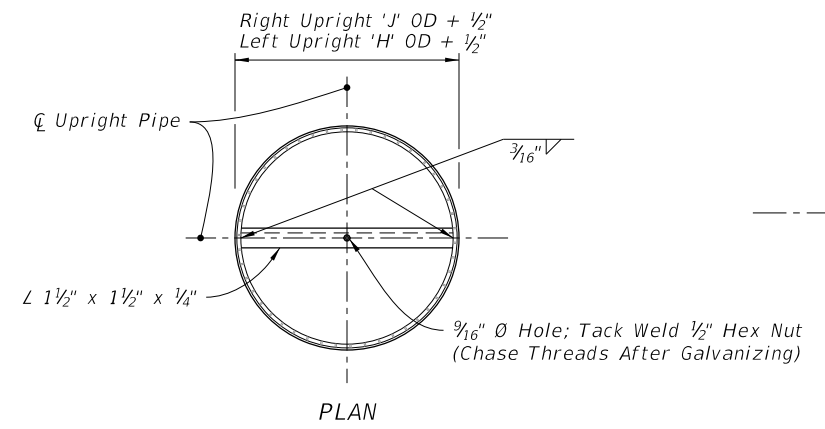
ADDED NOTES 2 AND 3:

- 2. Chord Splices: Minimum splice spacing is three truss panel lengths apart and three truss panel lengths from the uprights when panel lengths are 10'-0" or less. Chord Splices may be either the Standard Splice or the Alternate Splice, but not both on the same structure.
- 3. Upright splice: Not allowed unless the upright exceeds available mill lengths (35' - 40').

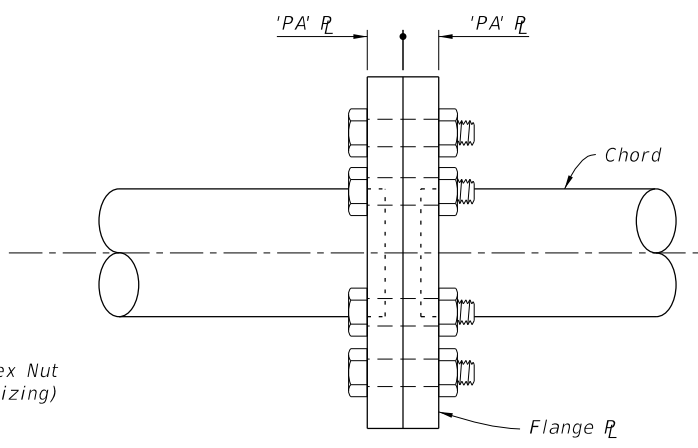


(Each End Of Back Truss Chord)

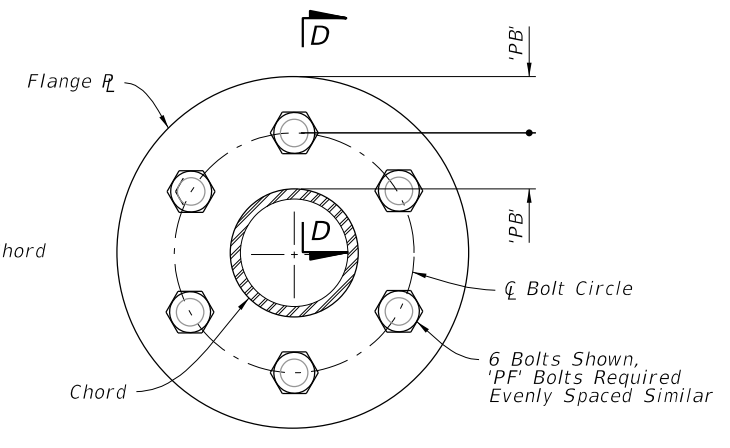
TRUSS PLUG DETAIL



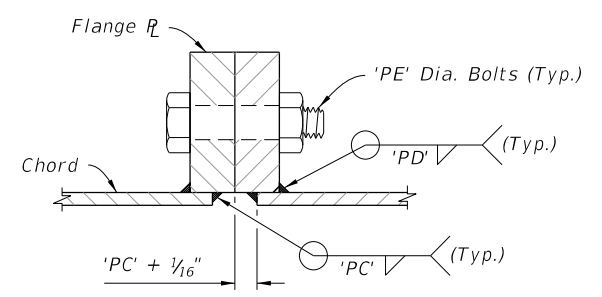
PLAN



FRONT ELEVATION

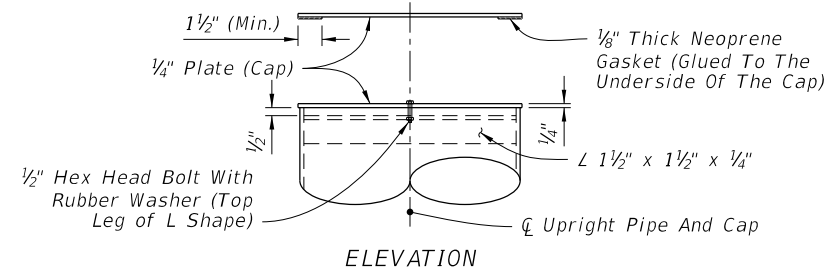


SIDE ELEVATION



SECTION D-D

ALTERNATE SPLICE CONNECTION DETAIL



ELEVATION

UPRIGHT CAP DETAIL

9/28/2021 9:43:54 AM

LAST REVISION	11/01/22	DESCRIPTION:		FY 2022-23 STANDARD PLANS	SPAN SIGN STRUCTURE	INDEX 700-041	SHEET 5 of 5
---------------	----------	--------------	--	------------------------------	---------------------	------------------	-----------------

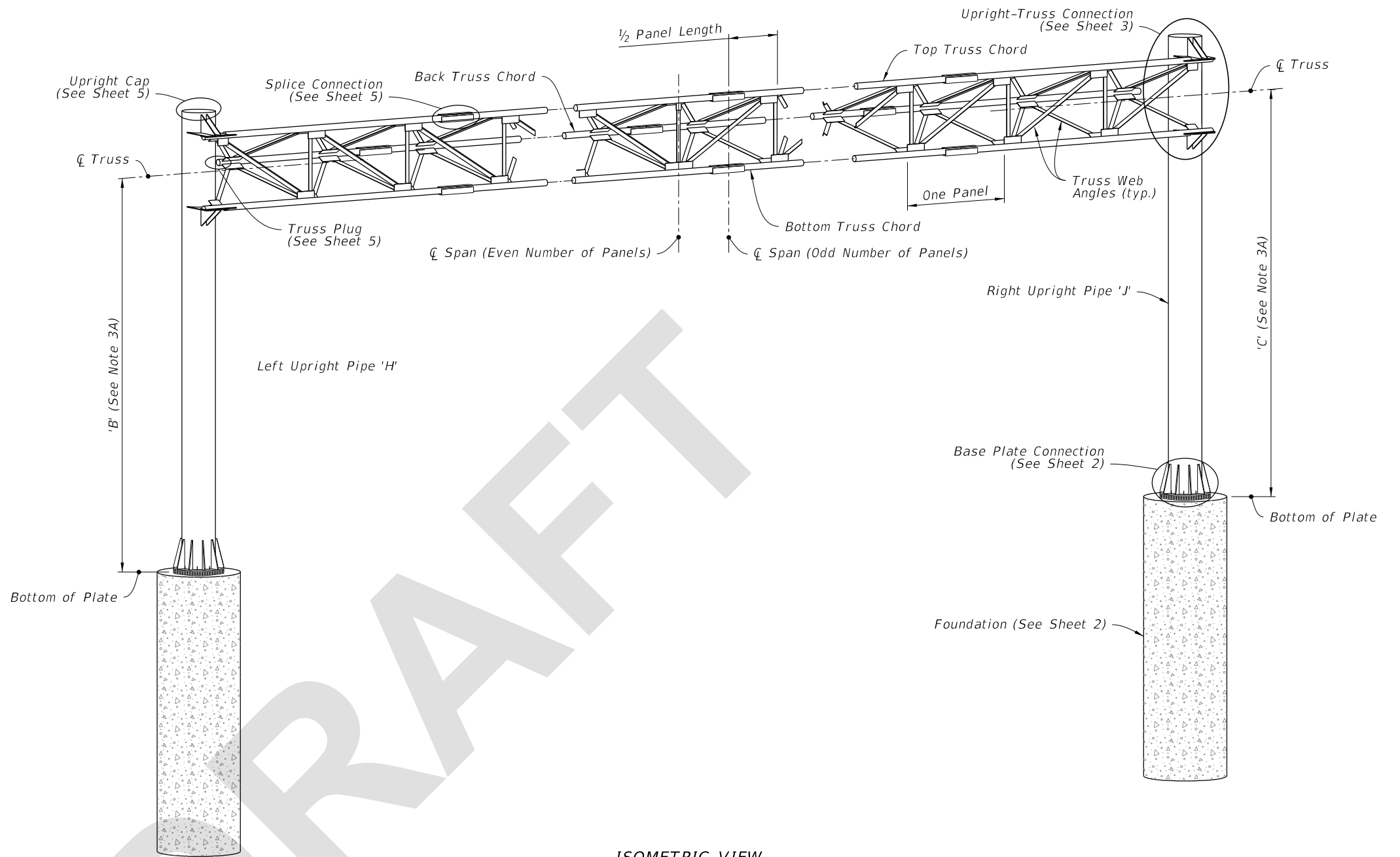
GENERAL NOTES:

1. Meet the requirements of Specification 700.
2. Work this Index in conjunction with SPAN SIGN STRUCTURE DATA TABLES in the Plans and Index 700-030.
3. Handholes at the pole base are required for DMS Structures. Refer to Index 700-090 for Handhole Details.
4. Shop Drawings are required.

Obtain Shop Drawing approval prior to fabrication. Include the following:

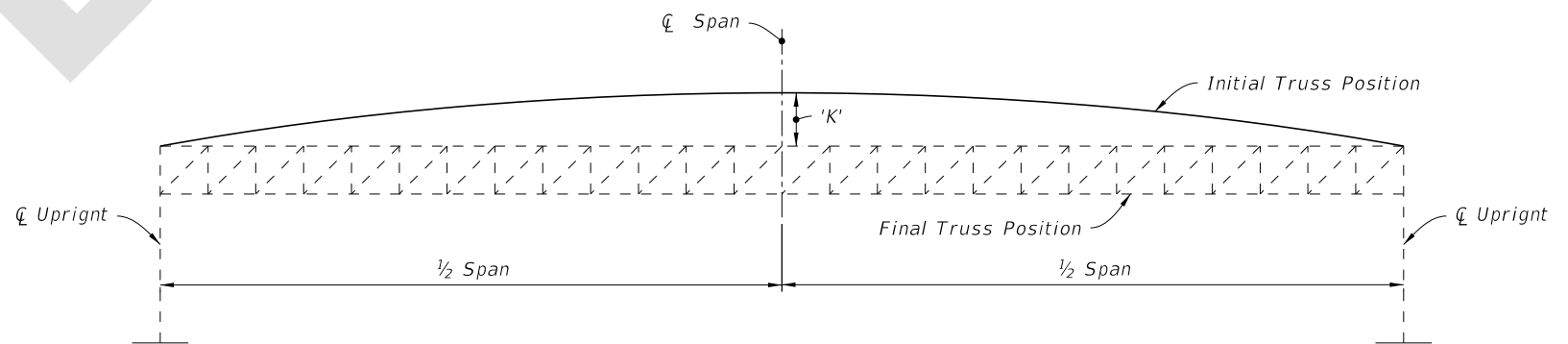
- A. Upright Pipe height ('C' & 'B') and foundation elevations: Verify dimensions in the field prior to submittal to ensure minimum vertical clearances of the sign panel over the roadway.
- B. Height of the foundation above adjacent ground.
- C. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
- D. Method to be used to provide the required parabolic camber (see Camber Diagram).
- E. Handholes at pole base (when required).

5. Provide a parabolic camber with the required upward deflection as shown on the Camber Diagram.




ISOMETRIC VIEW

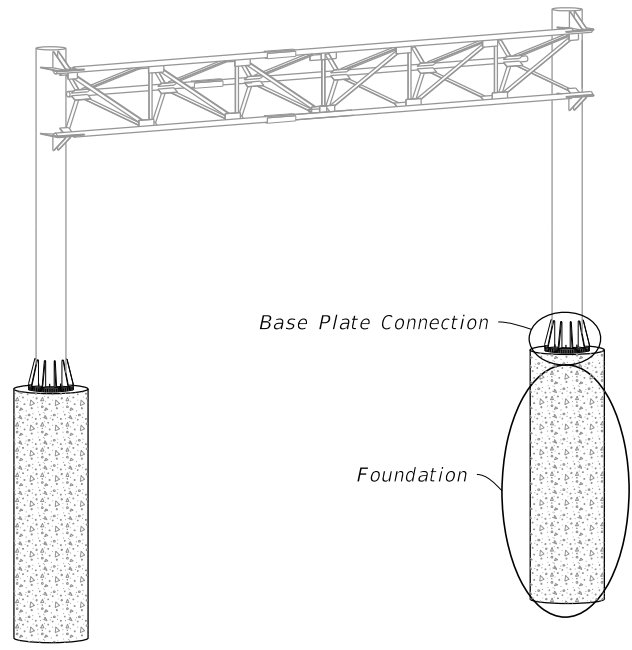
SPAN SIGN ASSEMBLY



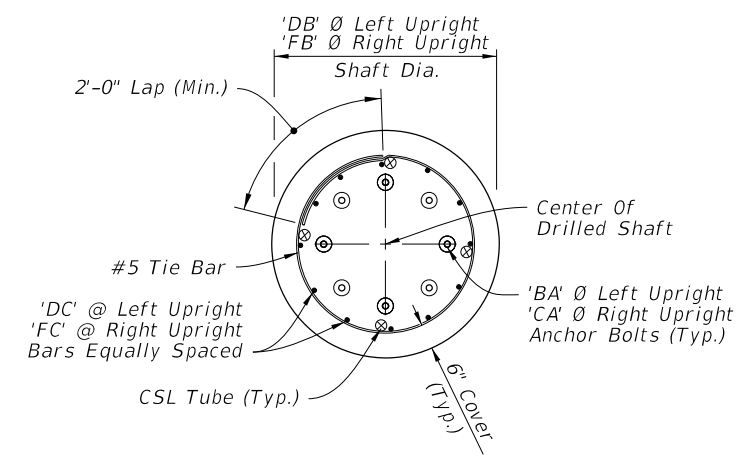
CAMBER DIAGRAM

8/10/2022 3:19:13 PM

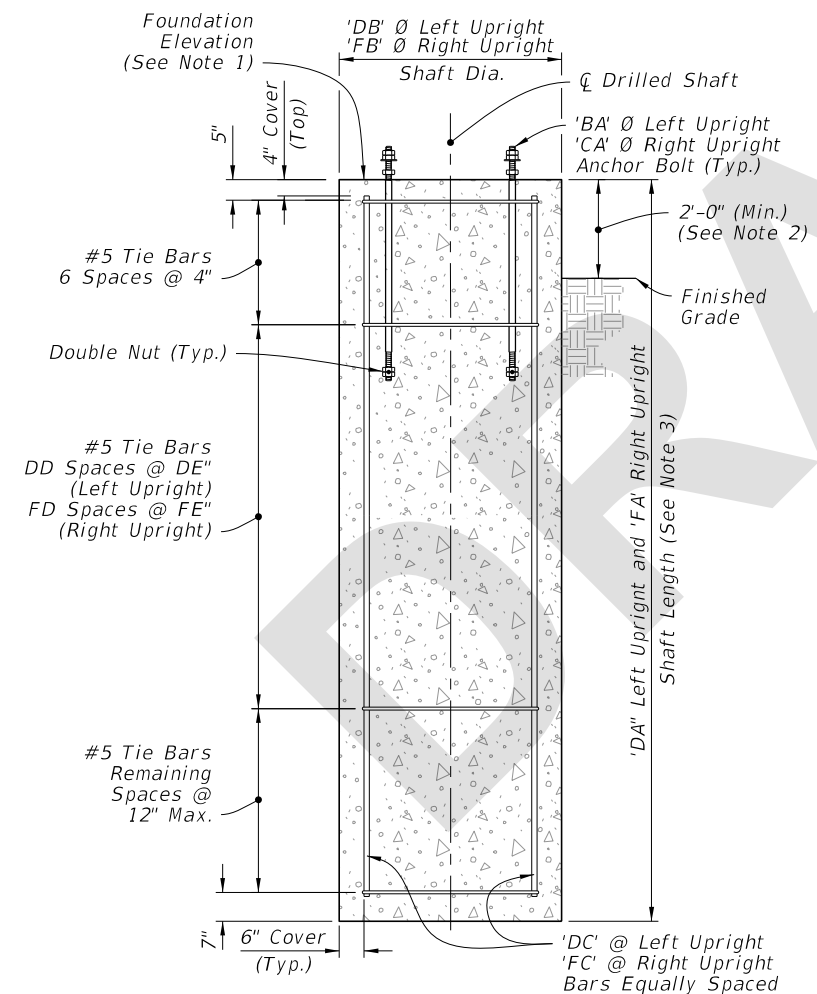
LAST REVISION 11/01/22	REVISION	DESCRIPTION:	 FY 2023-24 STANDARD PLANS	SPAN SIGN STRUCTURE	INDEX 700-041	SHEET 1 of 5
---------------------------	----------	--------------	---	---------------------	------------------	-----------------



SPAN SIGN ASSEMBLY



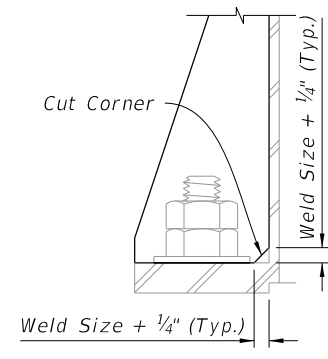
PLAN



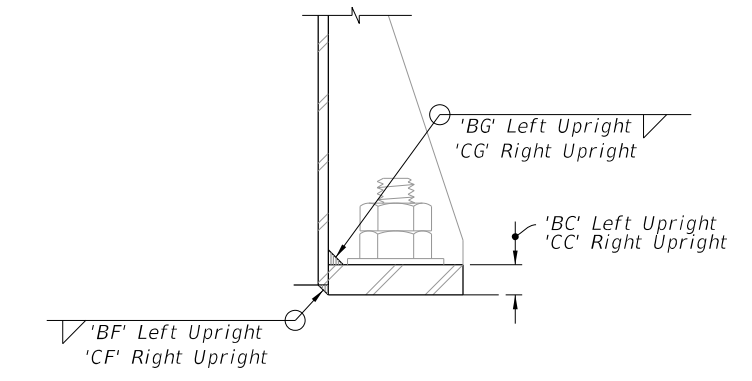
ELEVATION

DRILLED SHAFT

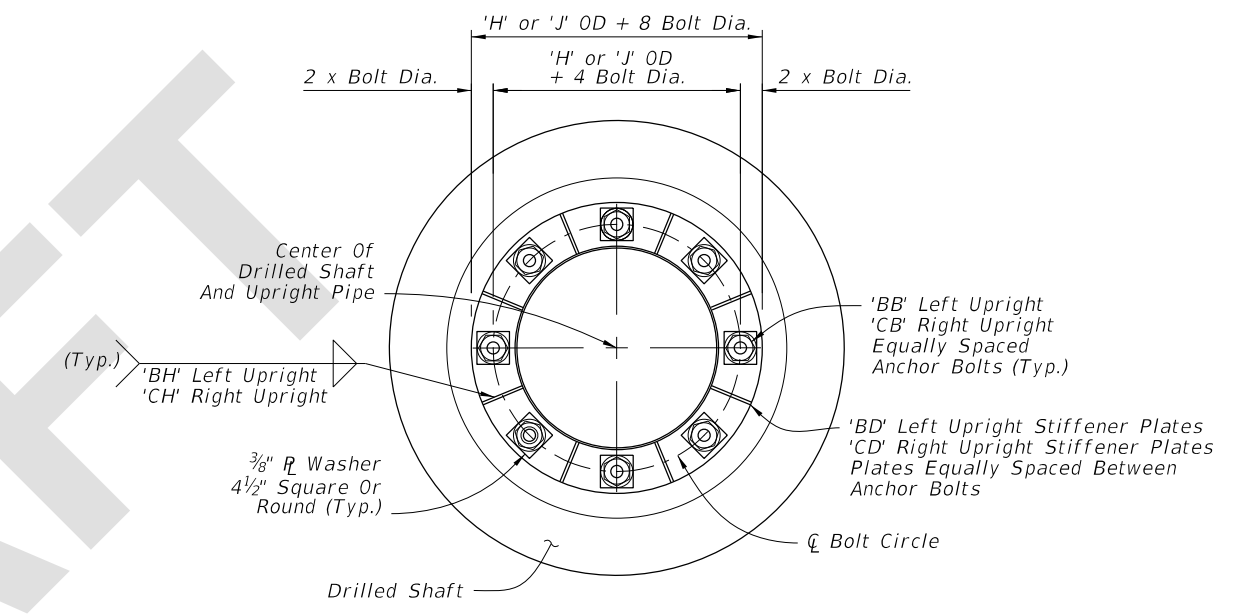
FOUNDATION



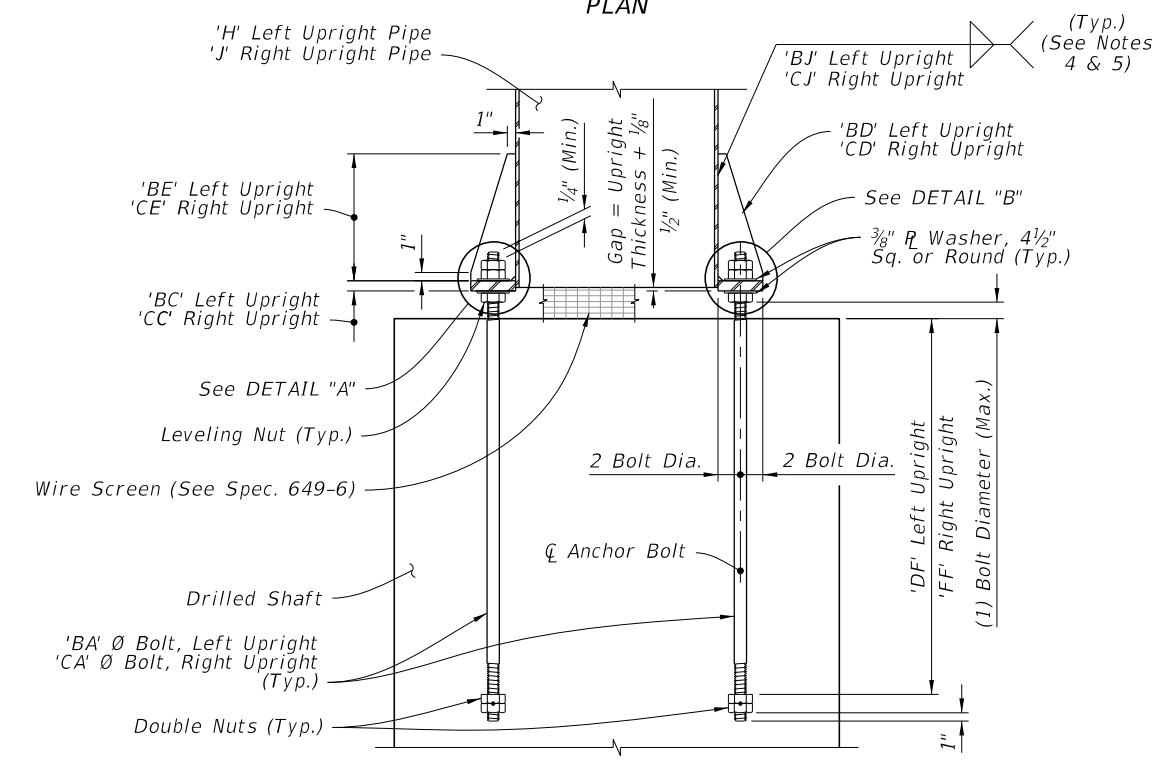
DETAIL "A"



DETAIL "B"



PLAN



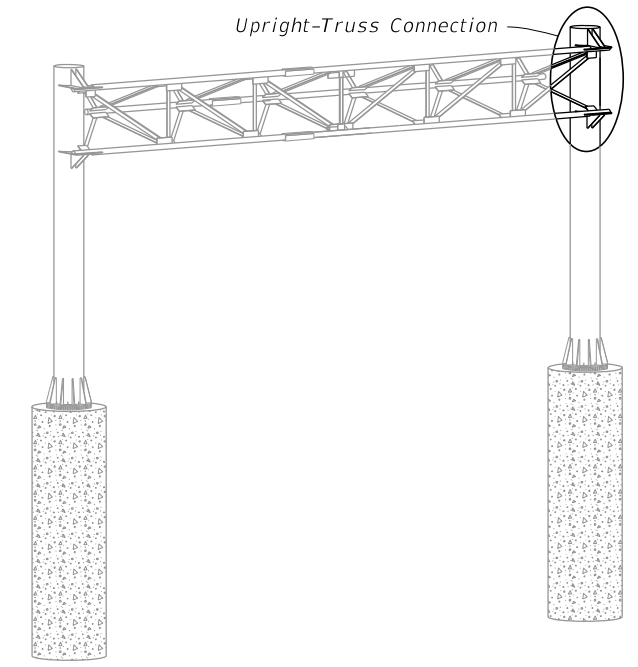
ELEVATION

BASE PLATE CONNECTION

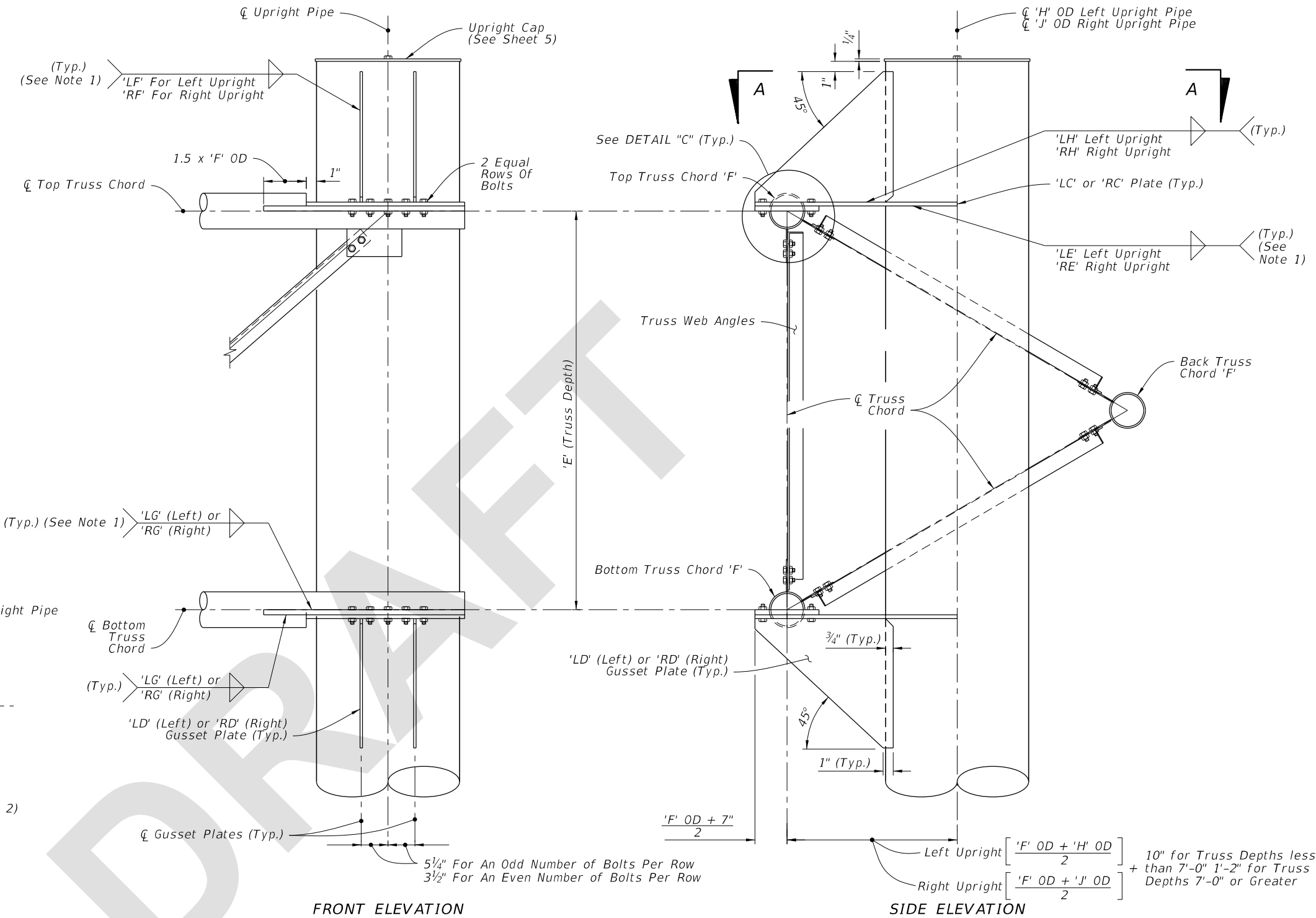
- NOTES:**
1. See Traffic Plans for elevation at top of Foundation.
 2. Install Drilled Shaft with a 2'-0" minimum from top elevation of the drill shaft to the finished grade, unless specified otherwise in the plans.
 3. The shaft length is based on 2'-0" height above finished grade.
 4. Wrap fillet weld around the stiffener termination on the tube wall (Typ).
 5. After galvanizing, provide magnetic particle testing on 100% of upright fillet welds.
 6. Weld plates 'BD' and 'CD' in a star pattern. A star pattern is one in which the plates on opposite and near opposite sides of the pole circle are successively welded in a pattern resembling a star. For an 8 plate circle with plates sequentially numbered 1 to 8, weld the plates in the following order: (1, 5, 7, 3, 8, 4, 6, 2).

8/10/2022 3:19:13 PM

LAST REVISION 11/01/22	REVISION	DESCRIPTION:		FY 2023-24 STANDARD PLANS	SPAN SIGN STRUCTURE	INDEX 700-041	SHEET 2 of 5
---------------------------	----------	--------------	--	------------------------------	---------------------	------------------	-----------------



SPAN SIGN ASSEMBLY

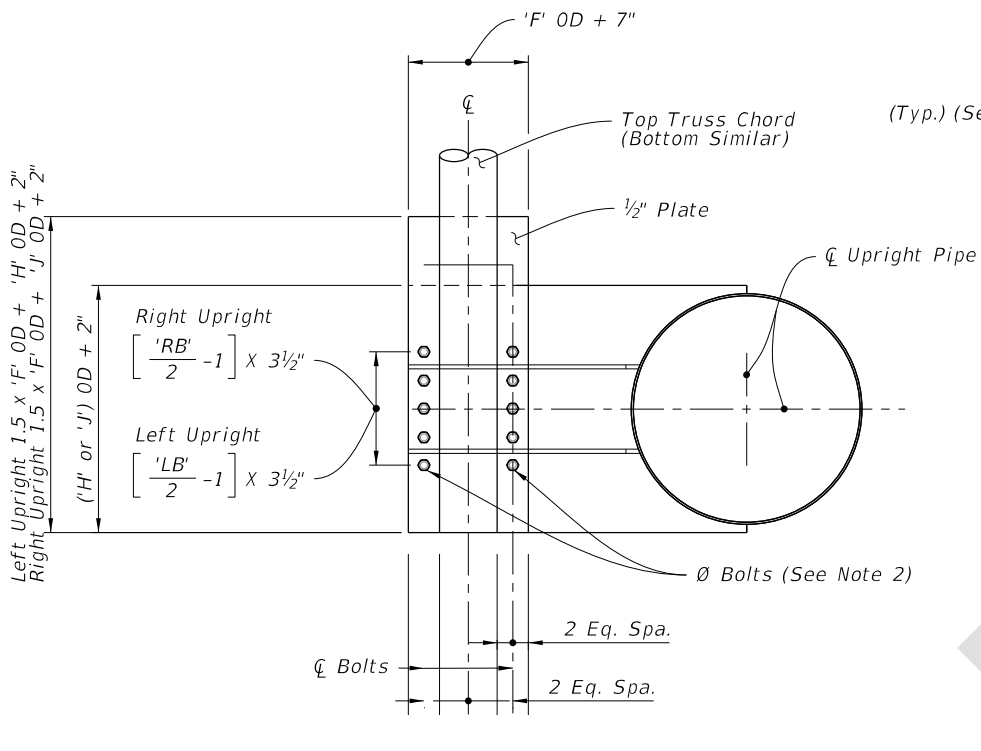


FRONT ELEVATION

SIDE ELEVATION

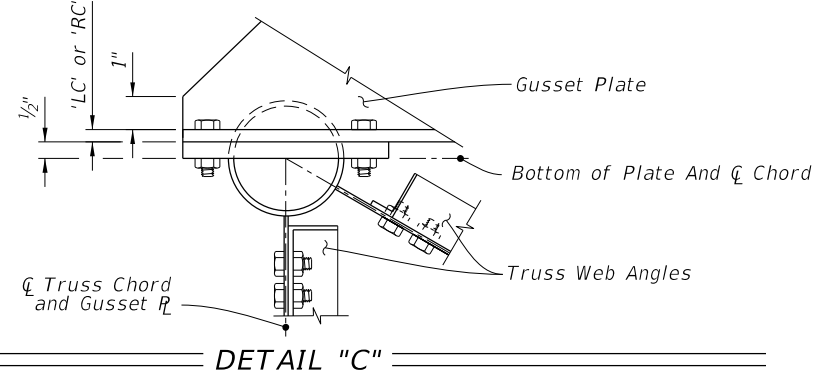
UPRIGHT-TRUSS CONNECTION DETAIL

(Web Members From Back Truss Chord Omitted For Clarity, See Note 3)



SECTION A-A

(With Gusset Plates And Web Angles Omitted For Clarity)



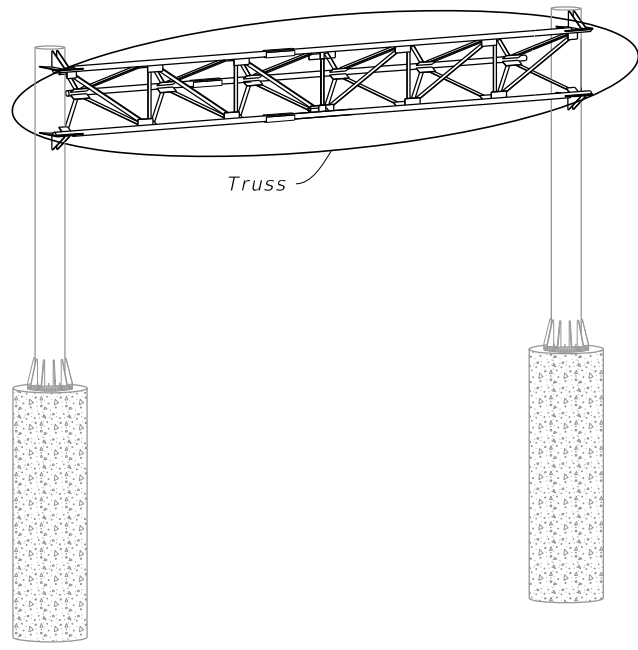
DETAIL "C"

NOTES:

1. Wrap fillet weld around the stiffener termination on the tube wall.
2. Truss Chord Bolts: 'LB' or 'RB' Hex Head Bolts 'LA' or 'RA' ϕ .
3. Right Upright Truss connection shown, Left Upright Truss connection similar.

8/10/2022 3:19:14 PM

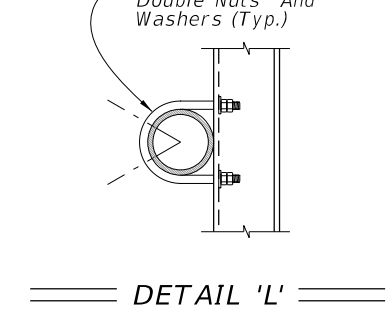
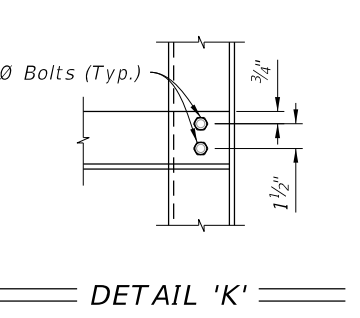
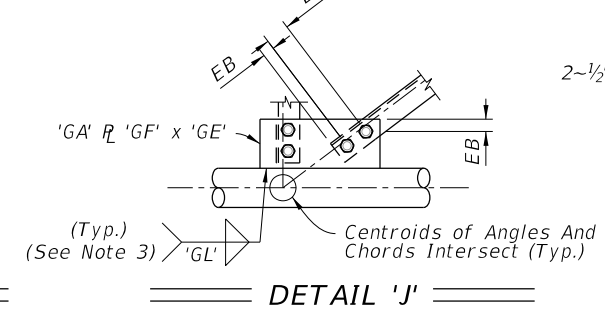
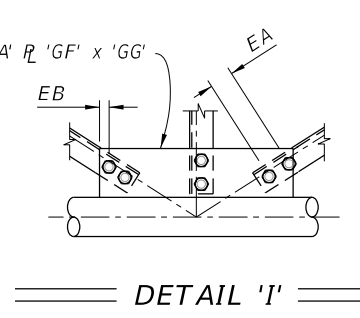
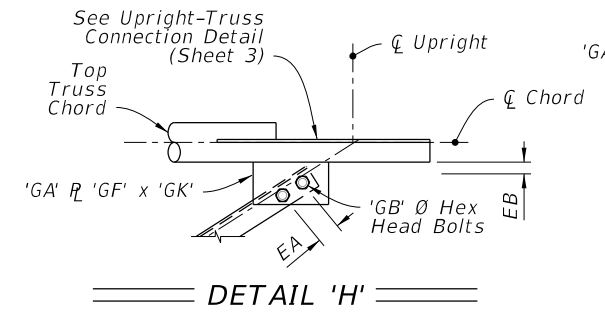
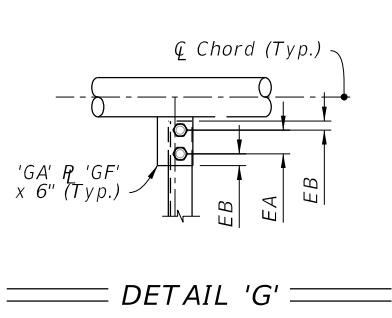
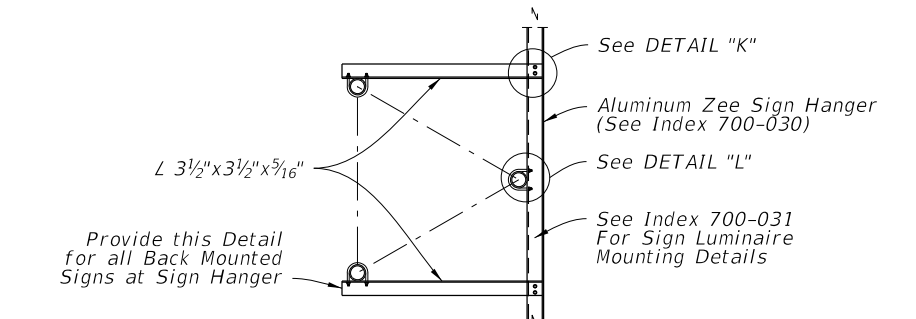
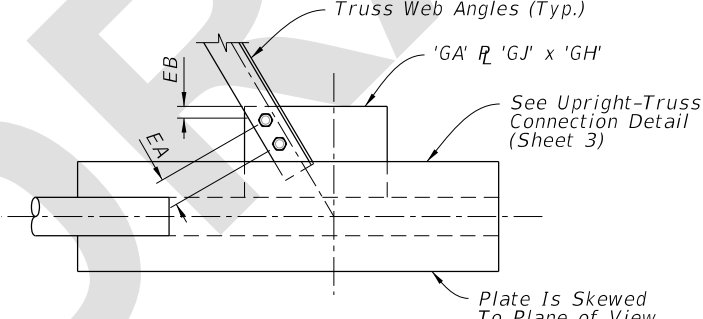
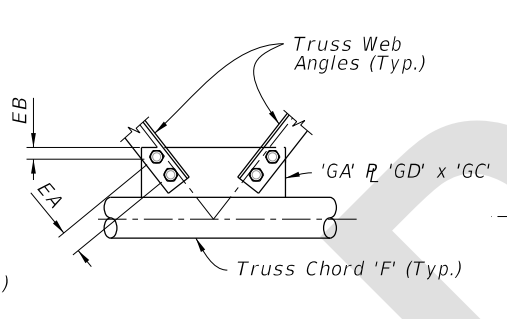
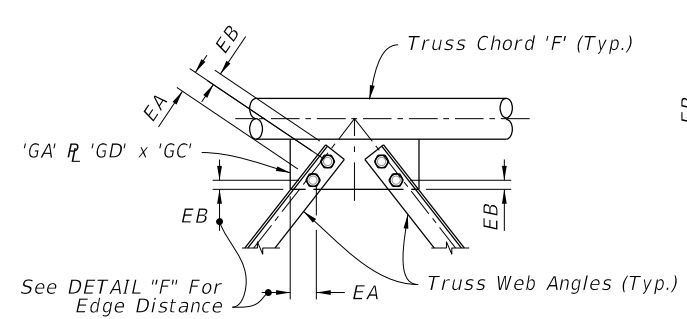
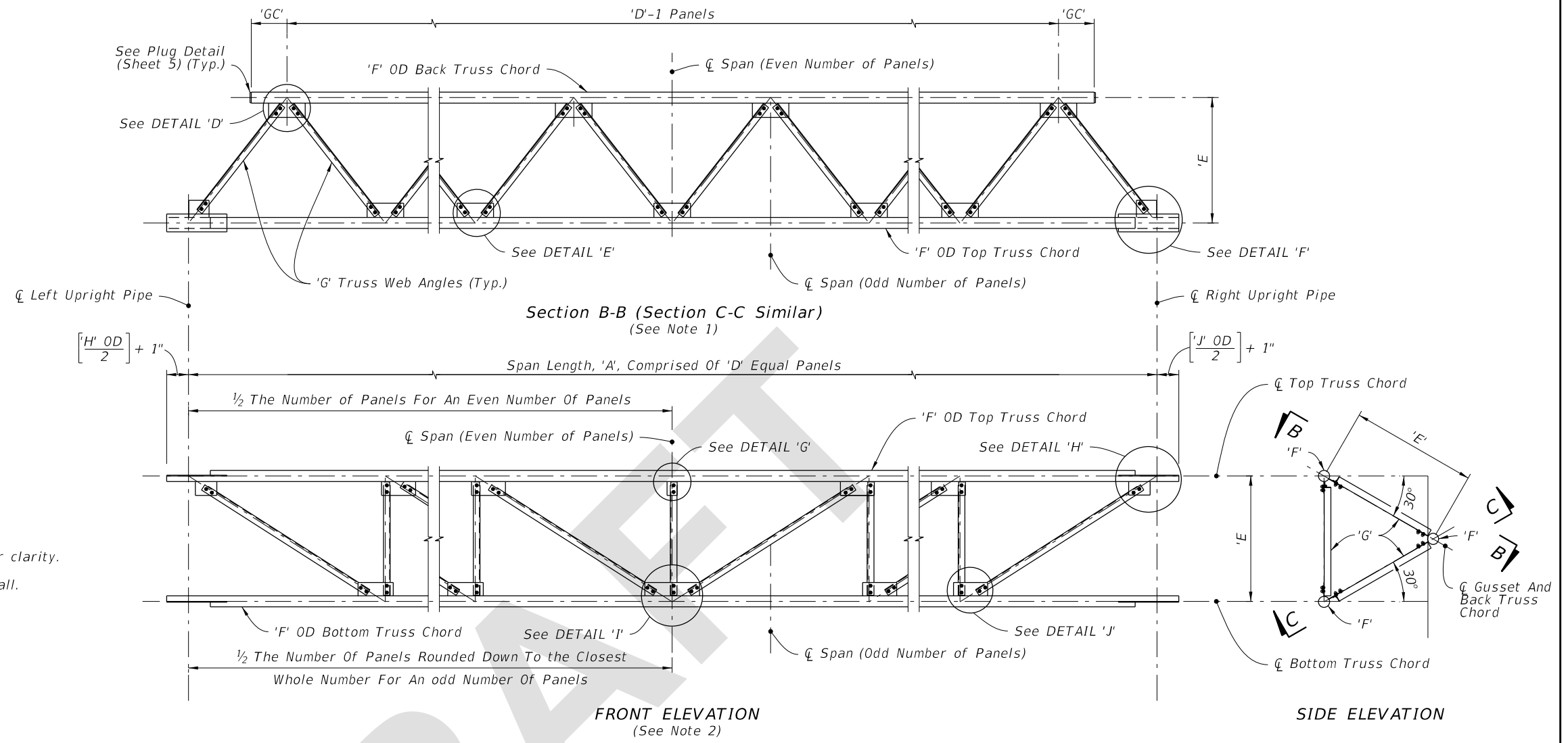
LAST REVISION 11/01/22	REVISION	DESCRIPTION:		FY 2023-24 STANDARD PLANS	SPAN SIGN STRUCTURE	INDEX 700-041	SHEET 3 of 5
---------------------------	----------	--------------	--	------------------------------	---------------------	------------------	-----------------



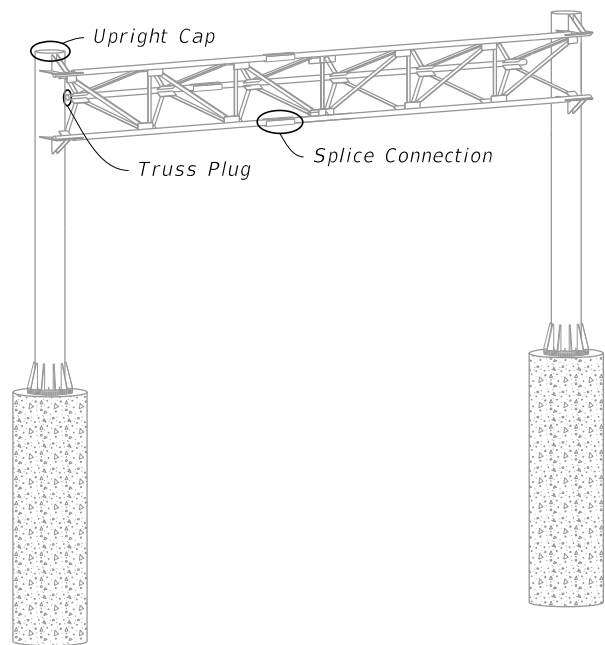
SPAN SIGN ASSEMBLY

- NOTES:**
1. Out-of-plane members are not shown for clarity.
 2. Back truss chord and attached angles are not shown for clarity.
 3. Wrap fillet weld around plate termination on the tube wall.

Bolt Diameter (in.)	Distance (in.)	
	EA	EB
1 1/4	4 3/8	2 1/4
1	3 1/2	1 3/4
7/8	3	1 1/2
3/4	2 1/2	1 1/4
5/8	2 1/4	1 1/8



8/10/2022 3:19:15 PM

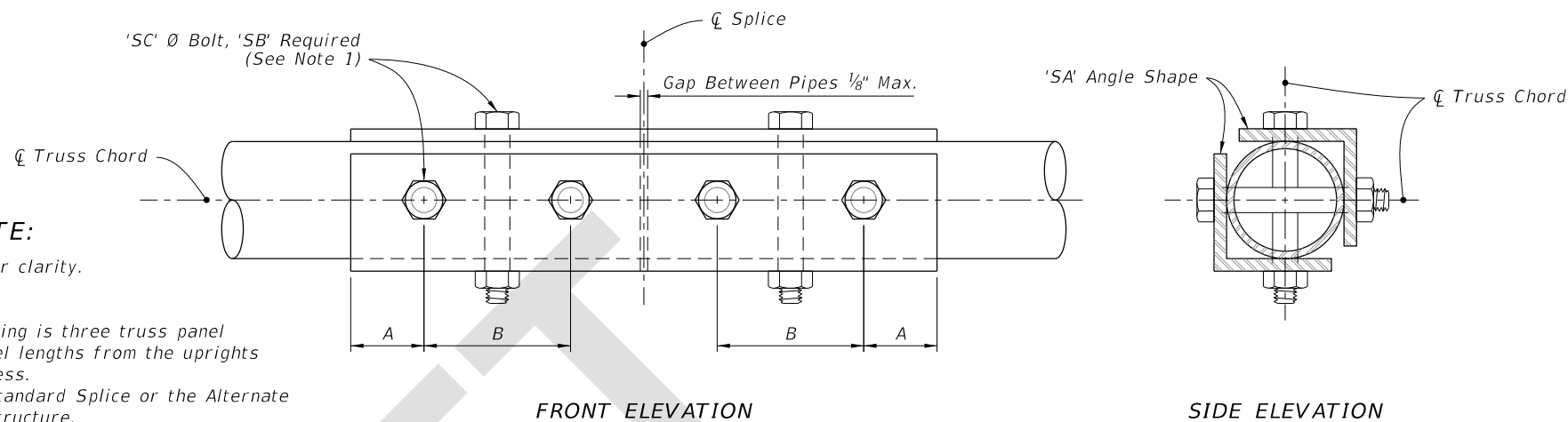


SPAN SIGN ASSEMBLY

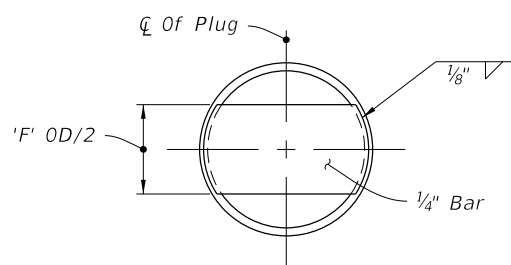
Bolt Diameter (in.)	Distance (in.)	
	A	B
1	1 3/4	3 1/2
7/8	1 1/2	3
3/4	1 1/4	2 1/2

SPLICE CONNECTION NOTE:

1. Only 6 bolts are shown in detail for clarity. (One Half Each End Of Splice)
2. Chord Splices: Minimum splice spacing is three truss panel lengths apart and three truss panel lengths from the uprights when panel lengths are 10'-0" or less. Chord Splices may be either the Standard Splice or the Alternate Splice, but not both on the same structure.
3. Upright splice: Not allowed unless the upright exceeds available mill lengths (35' - 40').

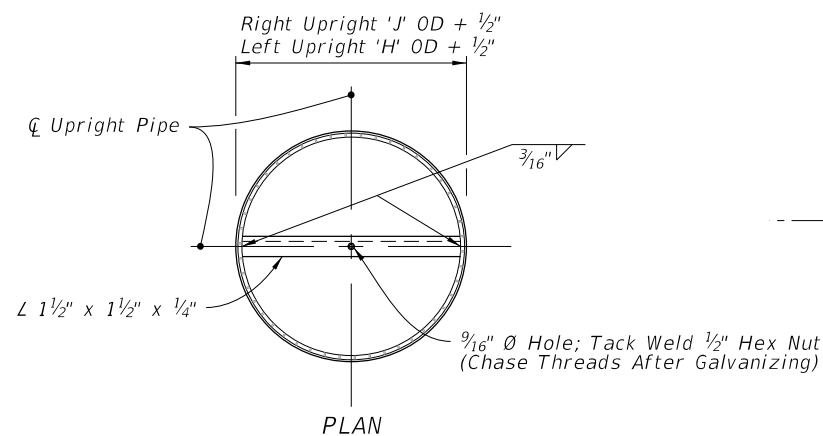


SPLICE CONNECTION DETAIL

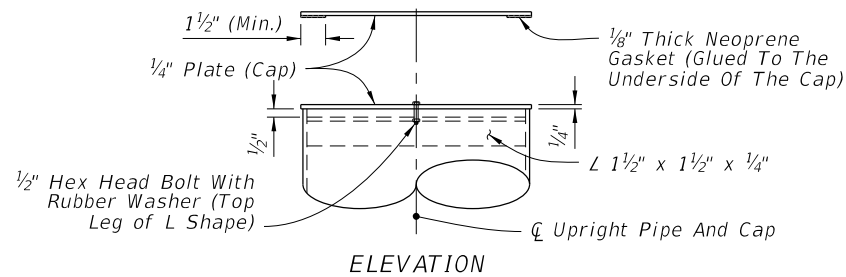


(Each End Of Back Truss Chord)

TRUSS PLUG DETAIL

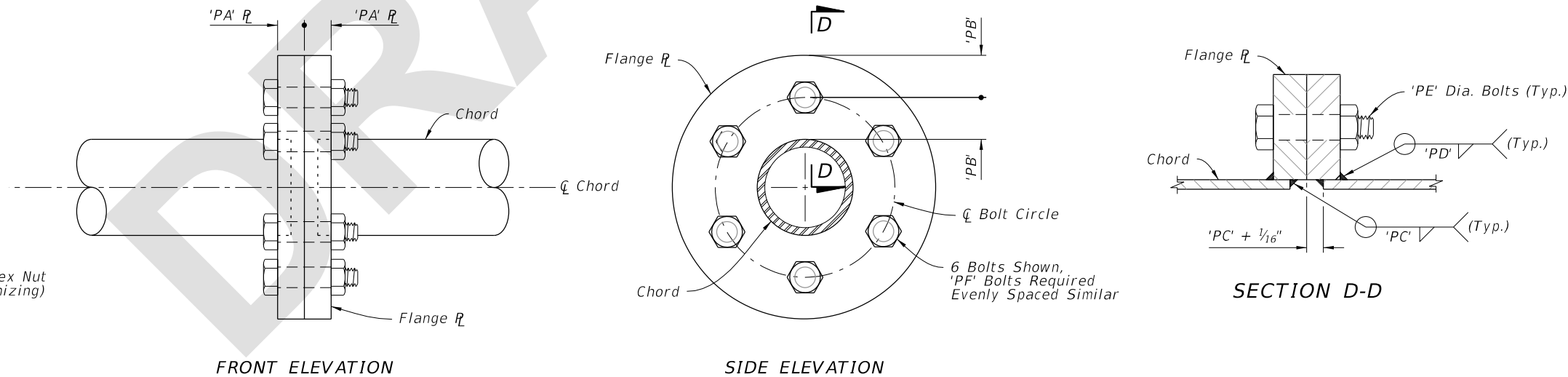


PLAN



ELEVATION

UPRIGHT CAP DETAIL



ALTERNATE SPLICE CONNECTION DETAIL

8/10/2022 3:19:16 PM