

**NOTES:**

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

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

- A. Upright Pipe height ('A') and Foundation elevations: Verify dimension 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. Chord Splices
- 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 Structural Plates and Bars: 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:
  - a. Spread Footing Concrete: Class IV
  - b. Drilled Shaft concrete: Class IV (Drilled Shaft)
- E. Reinforcing Steel: Specification 415

**5. Fabrication:**

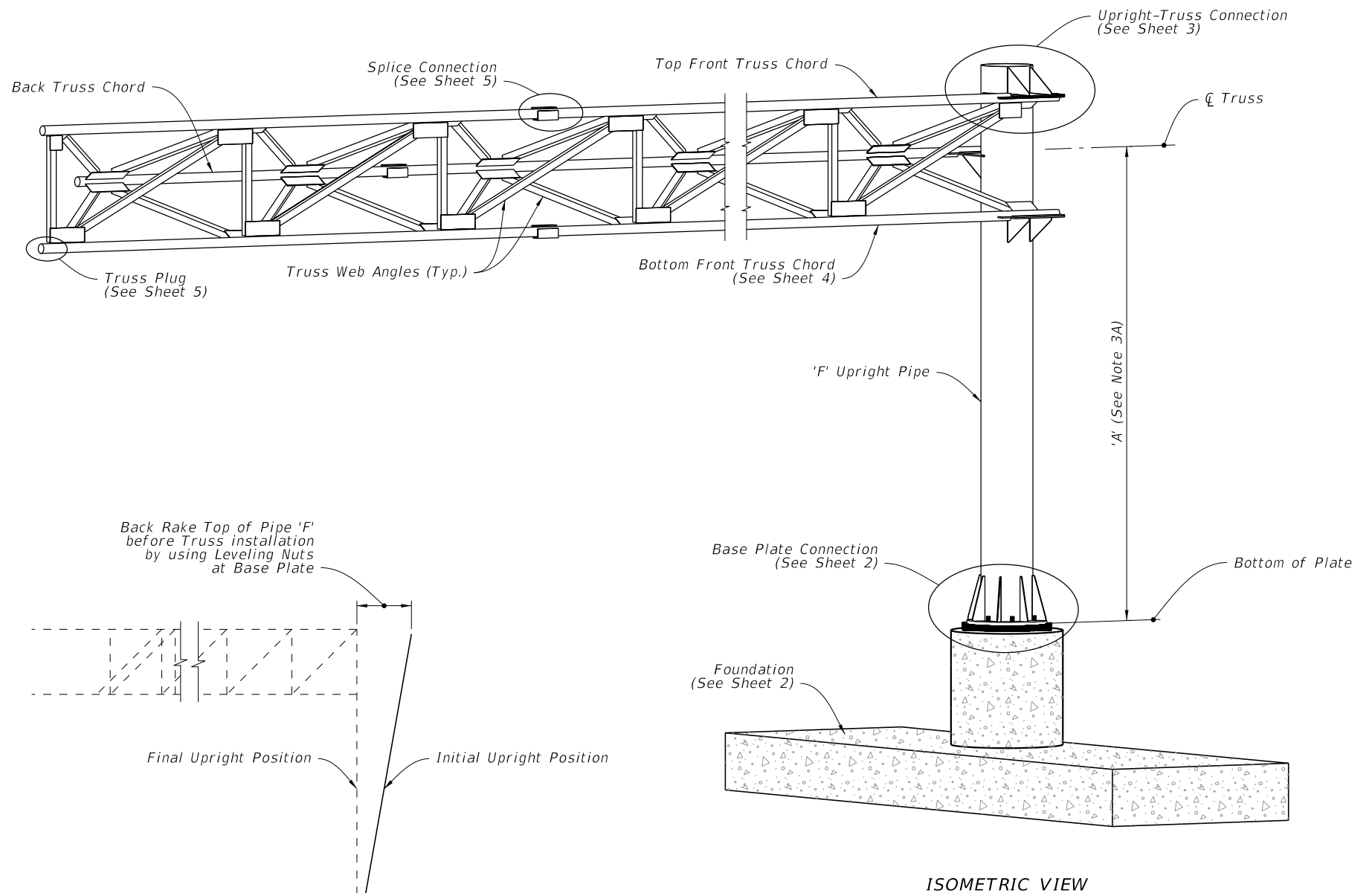
- A. Welding: Specification 460-6.4
- B. Chord Splices: "SD" Panel from upright is the closest panel in which a chord splice may be used. See Plans for CANTILEVER SIGN STRUCTURE DATA TABLE. Minimum splice spacing is two truss panel lengths apart.
- C. Upright splices: Not allowed
- D. Structural bolt 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, 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.
- C. Place backfill above spread footings prior to installation of the sign panels. Do not remove or reduce backfill without prior approval of the Engineer.
- 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. Place structural grout pad with drain between top of foundation and bottom of baseplate in accordance with Specification 649-7.




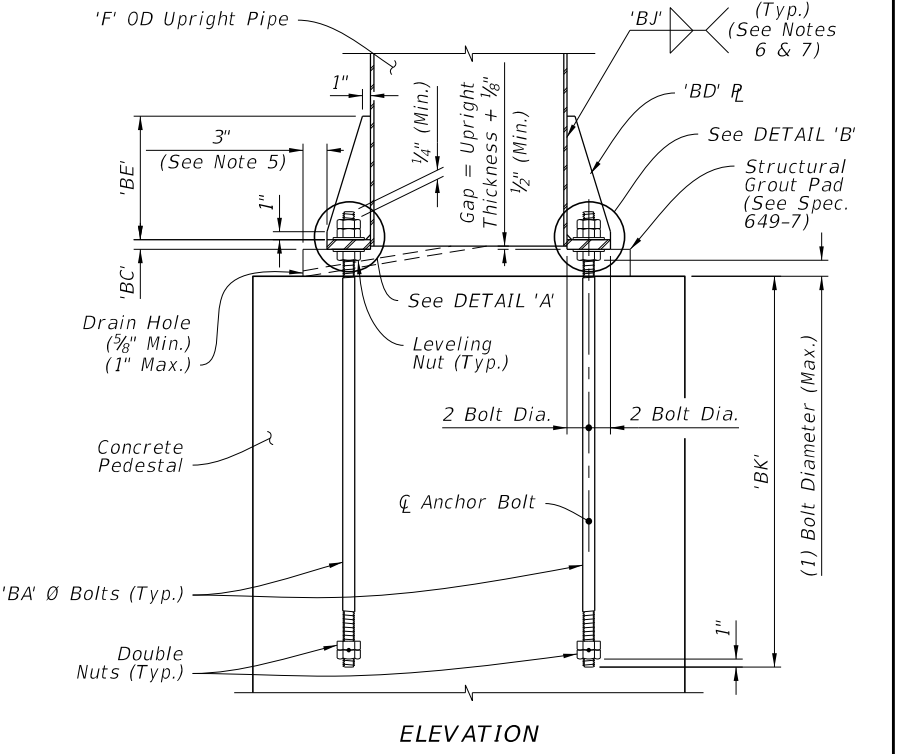
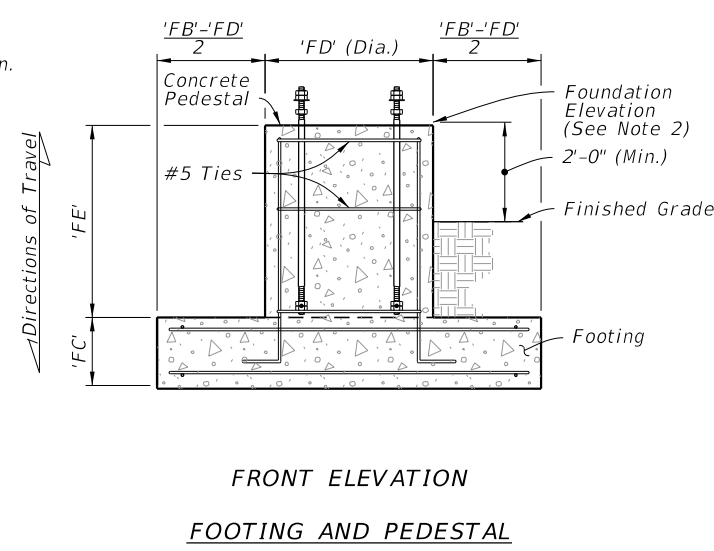
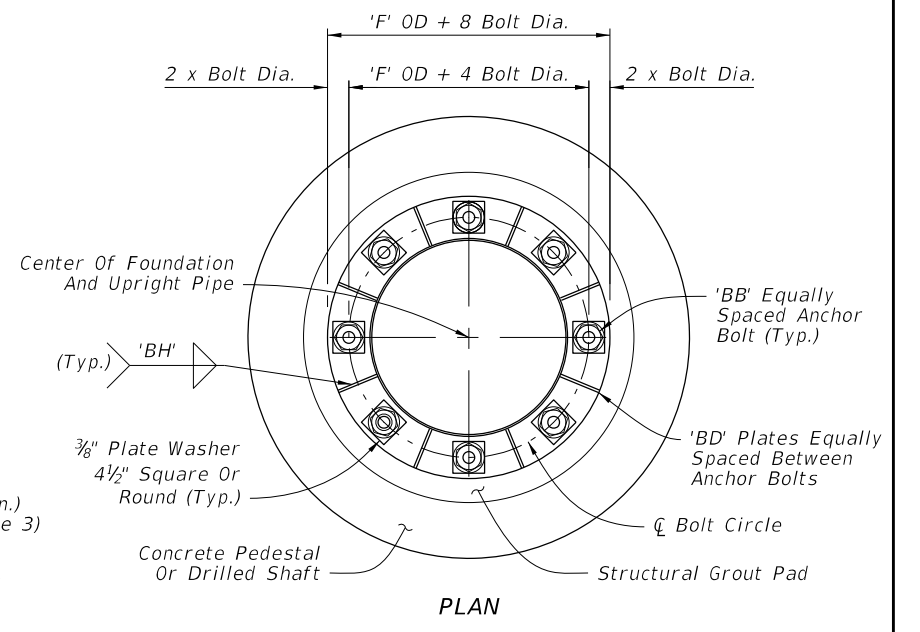
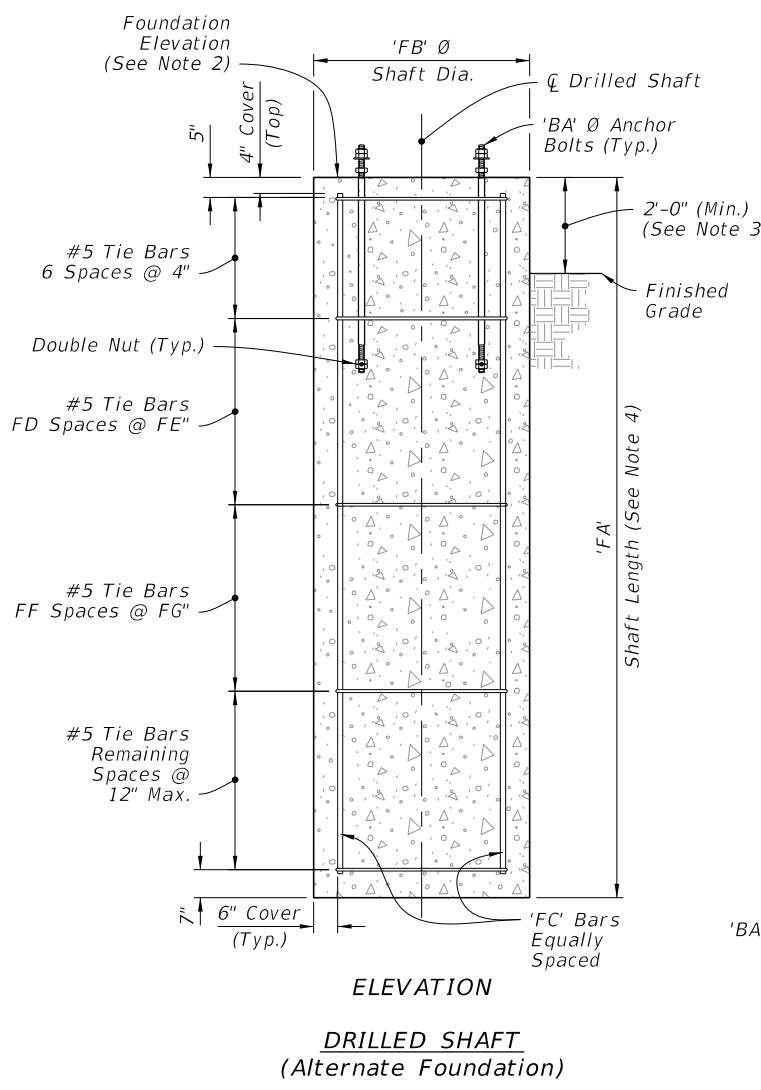
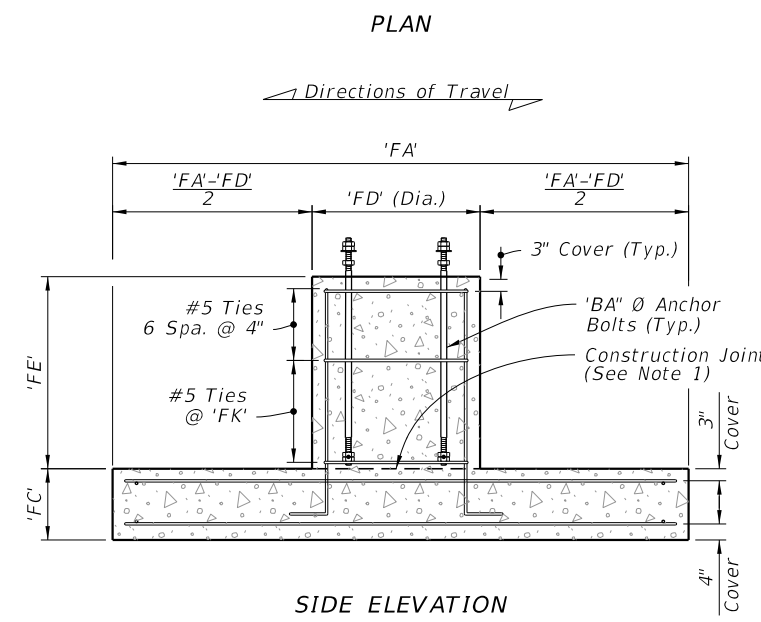
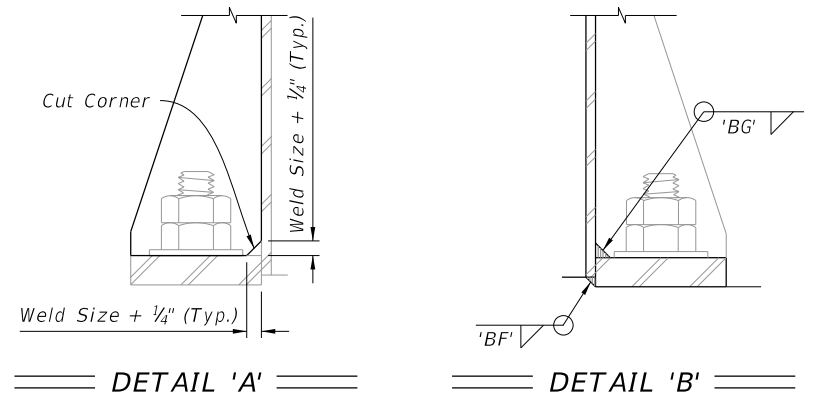
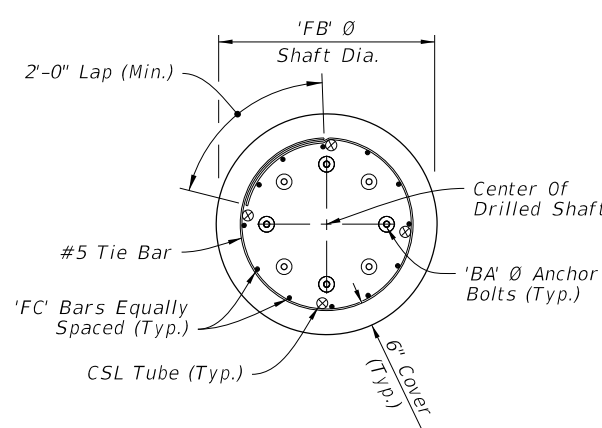
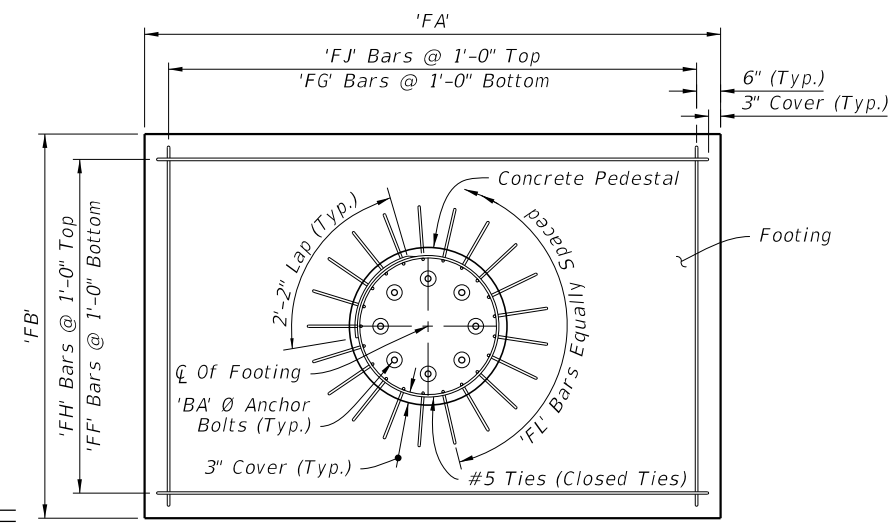
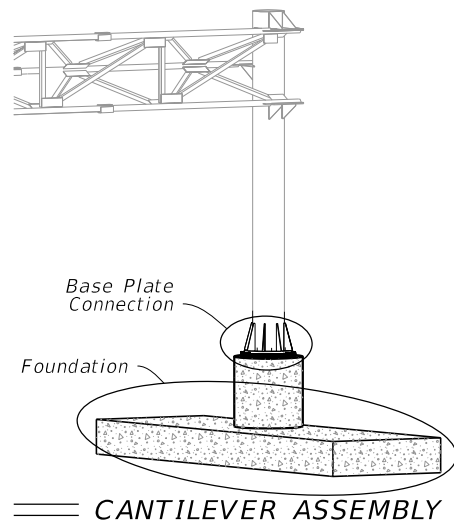
CAMBER DIAGRAM

ISOMETRIC VIEW

CANTILEVER SIGN ASSEMBLY

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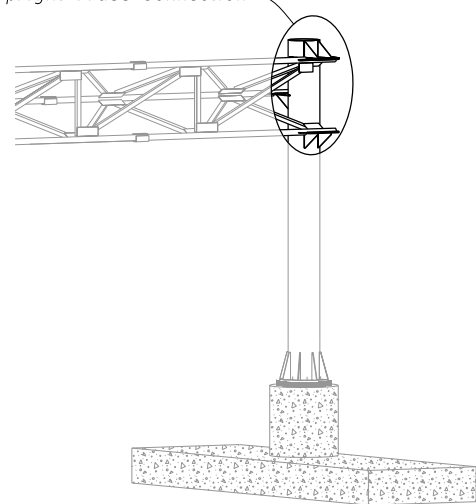
- NOTES:**
1. Construction joint allowed, roughen surface to 1/4" minimum amplitude prior to pour.
  2. See Traffic Plans for elevation at top of Foundation.
  3. Install Drilled Shaft with a 2'-0" minimum from top elevation of the drilled shaft to the finished grade, unless specified otherwise in the plans.
  4. The shaft length is based on 2'-0" height above finished grade.
  5. Structural Grout Pad dimension may be modified to be less than 3" where the footprint of the Structural Grout Pad does not provide adequate clearance for accessibility considerations.
  6. Wrap fillet weld around the stiffener termination on the tube wall.
  7. Provide ultrasonic testing for Lamellar Tearing when wall thickness exceeds 1/2"

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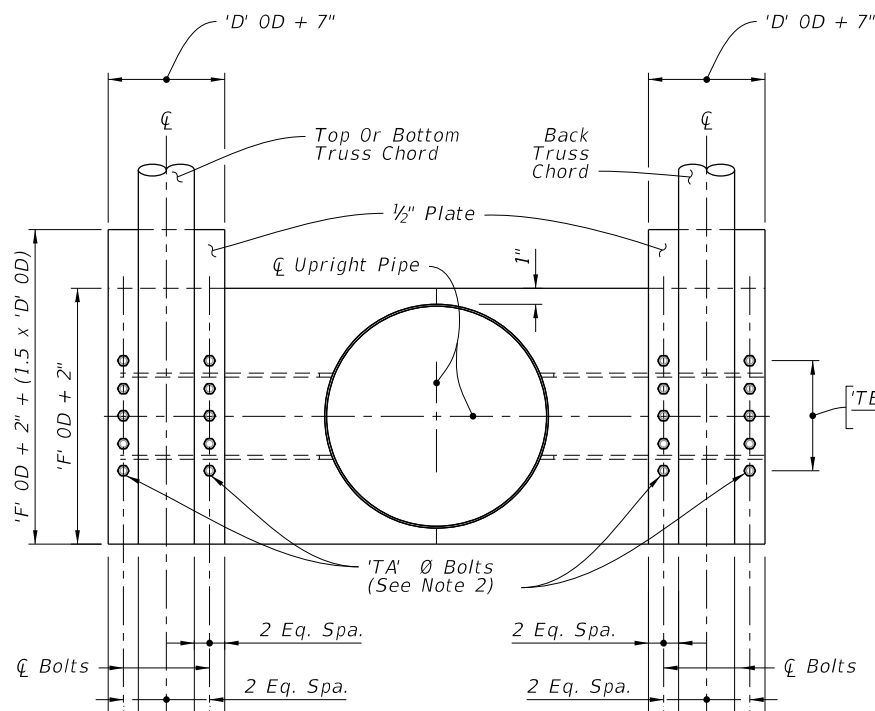
**FOUNDATION**      **BASE PLATE CONNECTION**

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Upright-Truss Connection

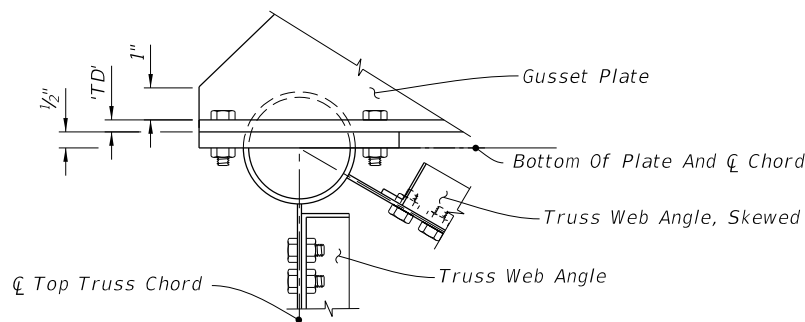


**CANTILEVER ASSEMBLY**

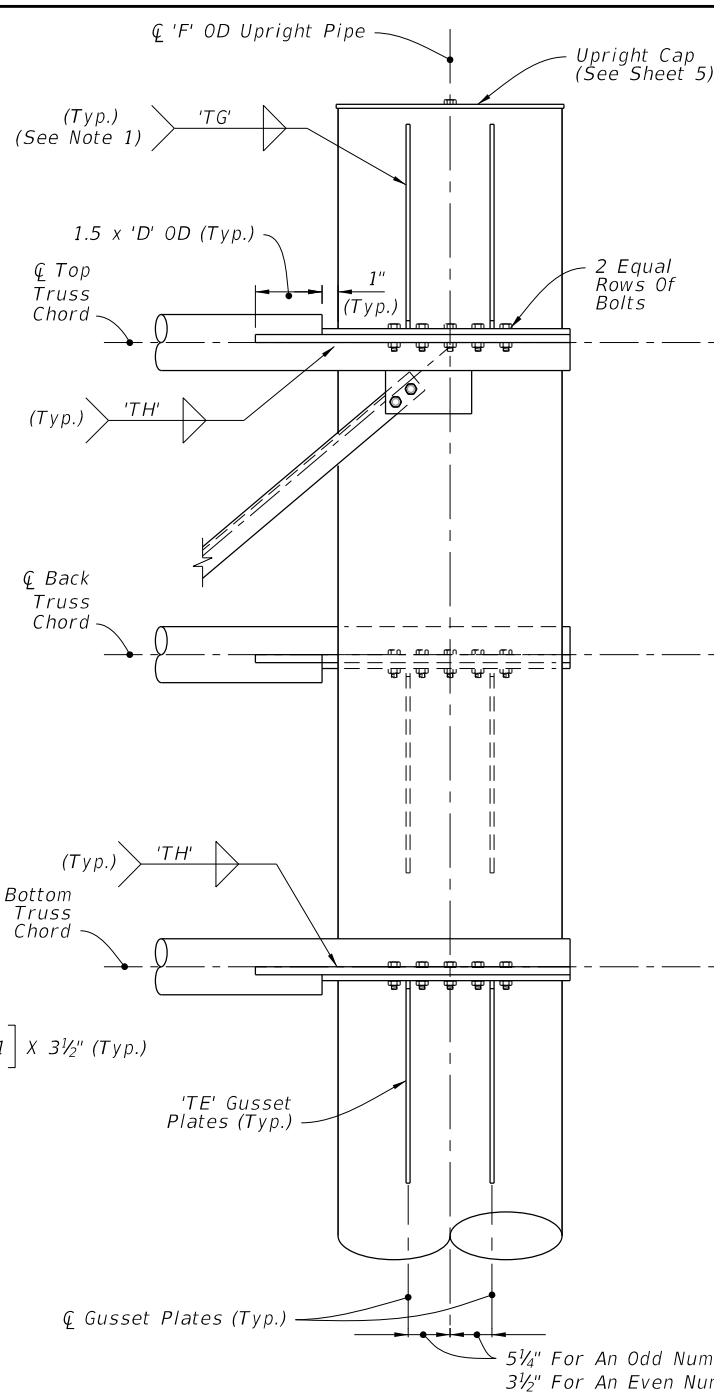


**SECTION A-A**

(With Gusset Plates And Web Angles Omitted For Clarity)

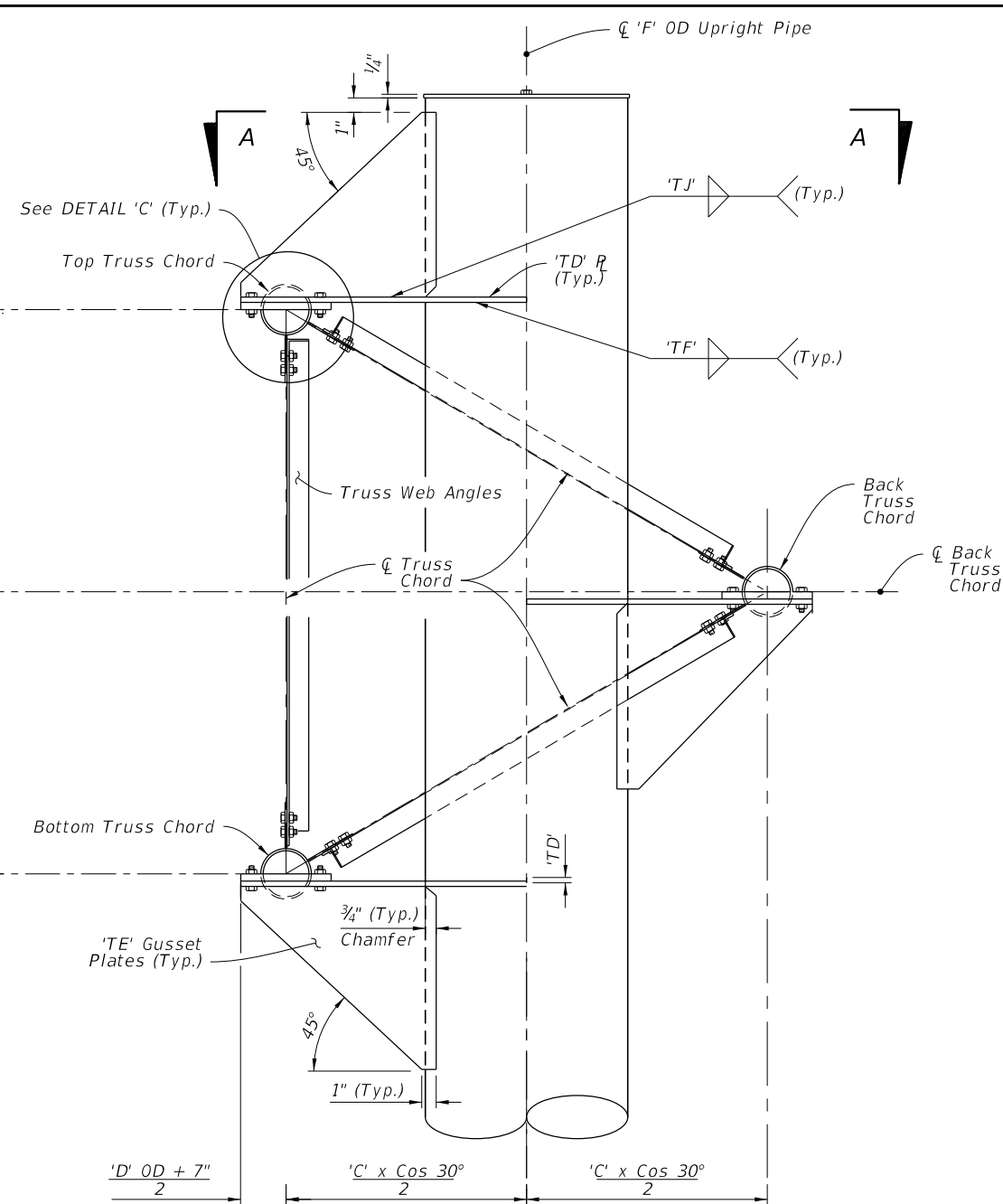


**DETAIL 'C'**



**FRONT ELEVATION**

5 1/4" For An Odd Numbers Of Bolts Per Row  
3 1/2" For An Even Numbers Of Bolts Per Row



**SIDE ELEVATION**

**UPRIGHT-TRUSS CONNECTION DETAIL**

(Web Members From Back Truss Chord Omitted For Clarity)

**NOTE:**

1. Wrap fillet weld around the stiffener termination on the tube wall.
2. Truss Chord Bolts:
  - A. Top and Bottom: Install 'TC' hex head bolts.
  - B. Back: Install 'TB' hex head bolts.

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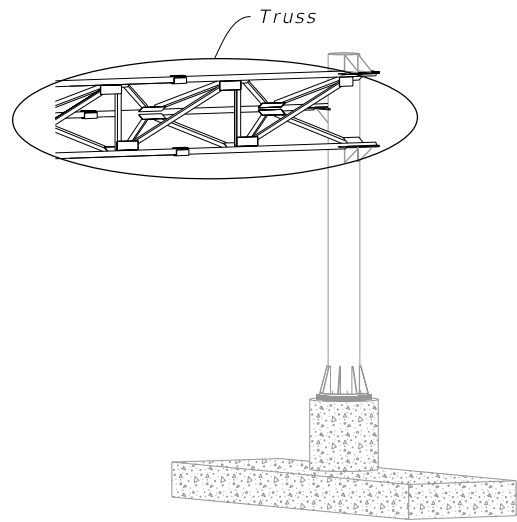


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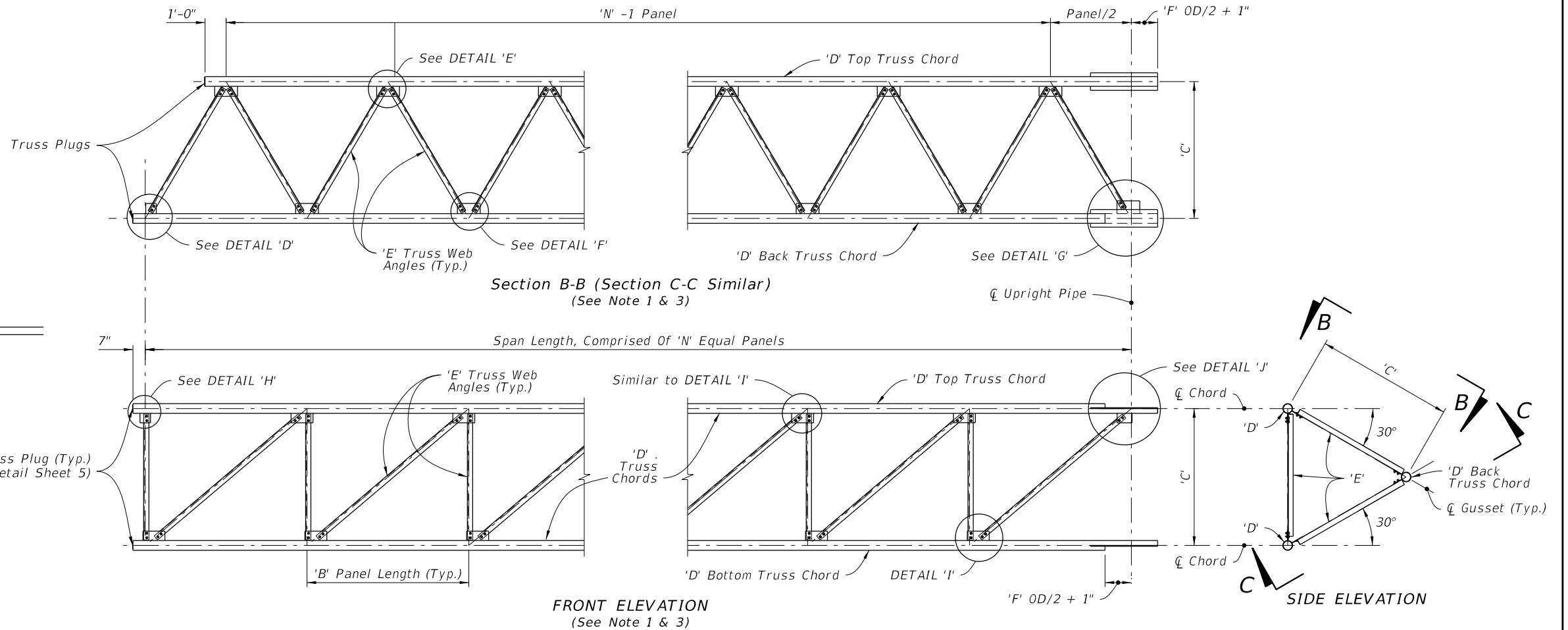
CANTILEVER SIGN STRUCTURE

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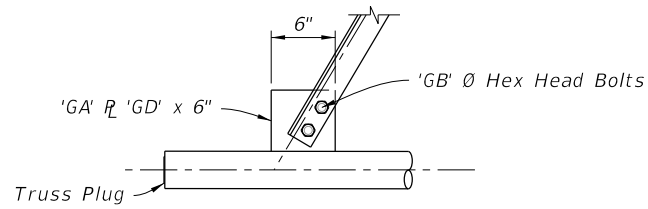
**CANTILEVER ASSEMBLY**



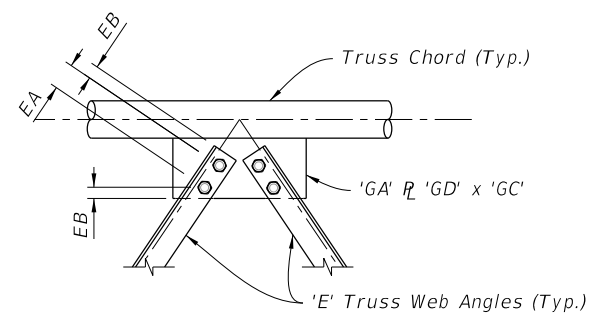
**TRUSS NOTES:**

1. Out-of-plane members are not shown for clarity.
2. Wrap fillet weld around plate termination on the tube wall.
3. Chord Splices not shown.

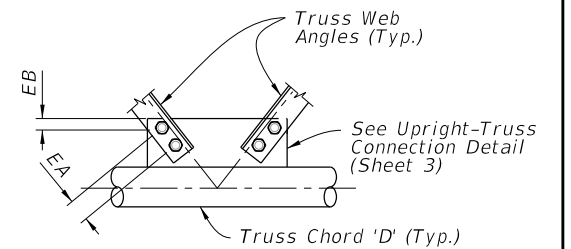
Bolt Size	Distance	
	EA	EB
1 1/4" Ø	4 3/8"	2 1/4"
1" Ø	3 1/2"	1 3/4"
7/8" Ø	3"	1 1/2"
3/4" Ø	2 1/2"	1 1/4"
5/8" Ø	2 1/4"	1 1/8"



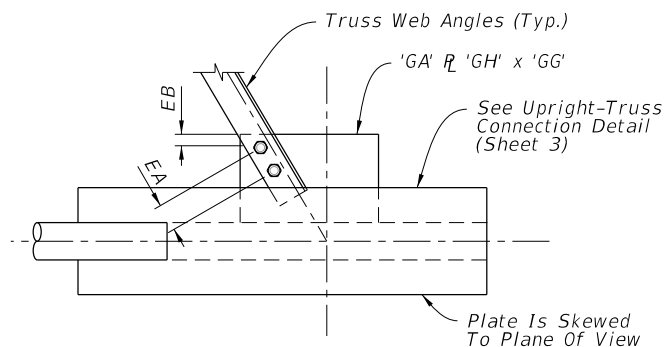
**DETAIL 'D'**



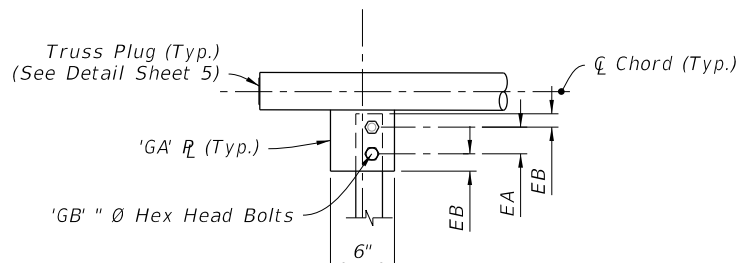
**DETAIL 'E'**



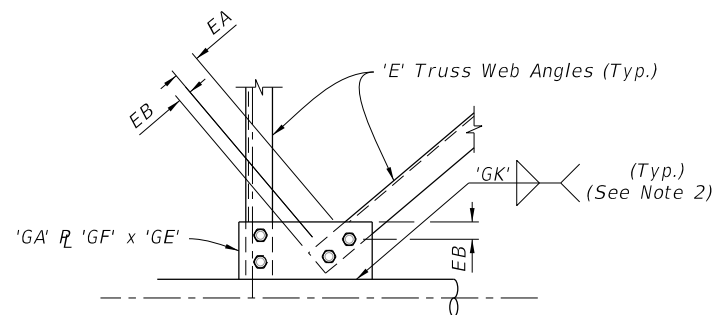
**DETAIL 'F'**



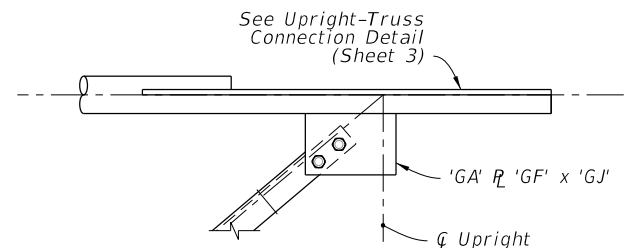
**DETAIL 'G'**



**DETAIL 'H'**



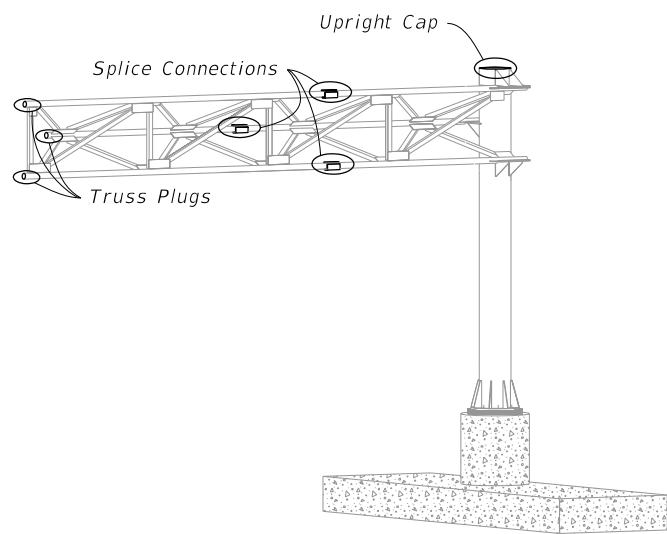
**DETAIL 'I'**



**DETAIL 'J'**

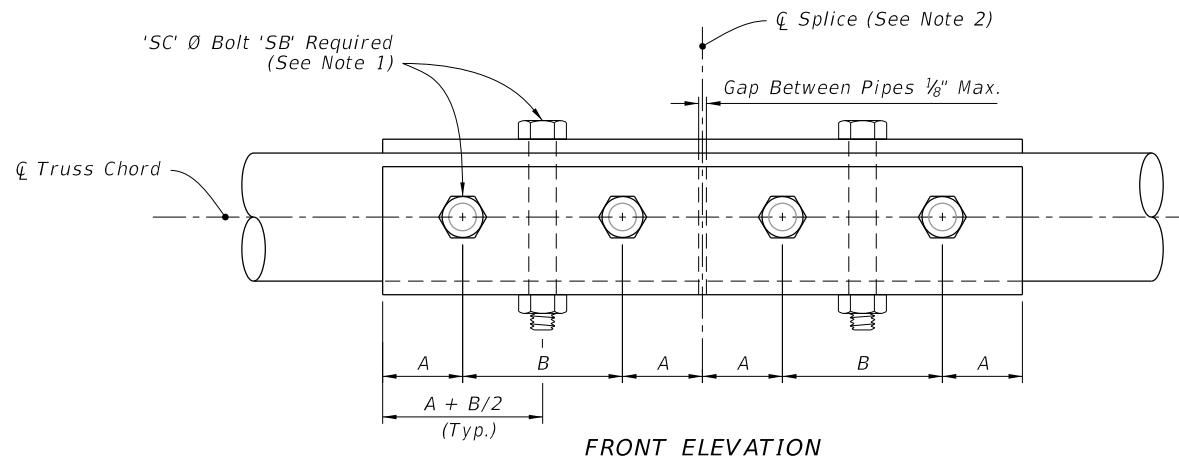
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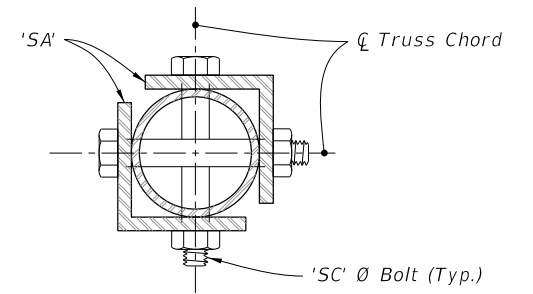


CANTILEVER ASSEMBLY

Bolt Size	Distance	
	A	B
1" Ø	1 3/4"	3 1/2"
7/8" Ø	1 1/2"	3"
3/4" Ø	1 1/4"	2 1/2"



FRONT ELEVATION

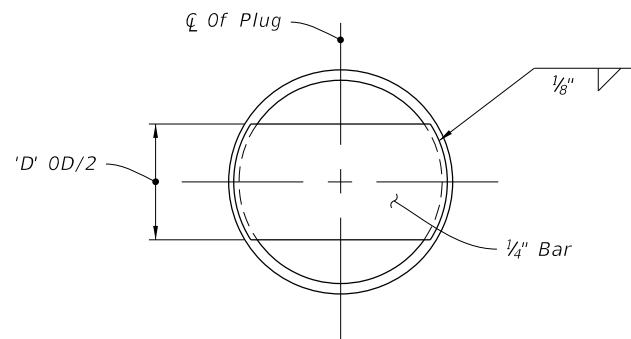


SIDE ELEVATION

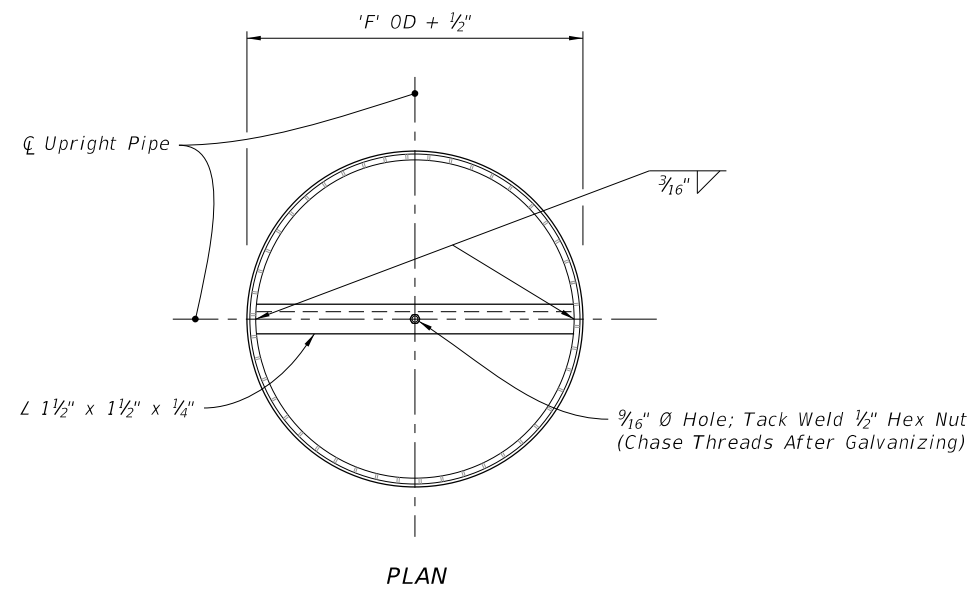
SPLICE CONNECTION DETAIL

SPLICE CONNECTION NOTES:

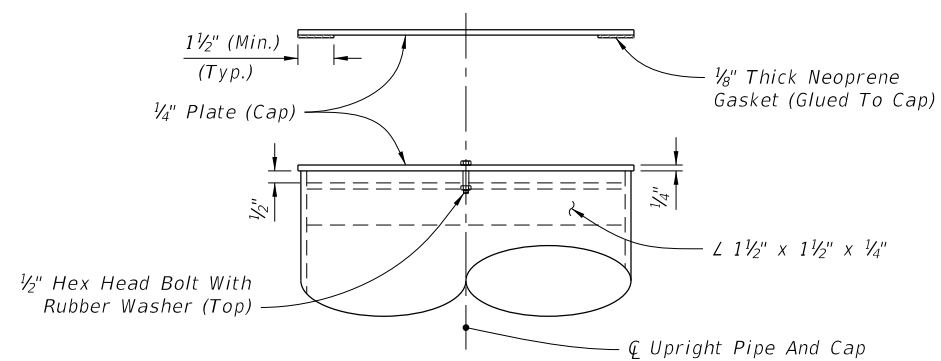
1. Only 6 bolts are shown in detail for clarity. (One Half Each Side Of Splice)
2. Splices are not permitted for trusses less than or equal to 40'. Splice optional for trusses greater than 40'.



TRUSS PLUG DETAIL



PLAN



ELEVATION

UPRIGHT CAP DETAIL

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