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<tr>
<th>CELL / MODEL NAME</th>
<th>DESCRIPTION</th>
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<tr>
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<td>General plan and elevation</td>
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<td>Alternate steel walkway details for DMS</td>
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<td>Steel truss details for truss types I-S, II-S, and III-S</td>
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<td>10&quot; diameter pipe support frame for steel truss</td>
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<td>2/17/2017</td>
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<td>OS4-S-8aA</td>
<td>12&quot; diameter pipe support frame details</td>
<td>2/17/2017</td>
</tr>
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</table>
OS-S-10

STEVILL WALKWAY DETAILS

1. No back gouge.
ALTERNATE SAFETY CHAIN ATTACHMENT

FOR HANDRAIL JOINT

(With Sign Present)

Items not shown same as "SIDE ELEVATION" of "Handrail Details".

Drill and ream for 5/8" bolt with washer and hexagon locknut.

Drill 5/8" OD hole for hex head bolts, each with nut and two washers.

6x9 web

1 1/2" x 2 1/2" x 7" each location. (Approx.) 3'-10" chain required for each location. (Approx.)

FIELD CUT ENDS OF LIGHT SUPPORT CHAINS SHALL BE FREE OF BURRS OR HAZARDOUS PROJECTIONS AND COATED WITH ZINC-RICH PRIMER OR EQUIVALENT.

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**Alternate Safety Chain Attachment**

- **Handrail Details**
  - 1/2" pipe 304L stainless steel pipe
  - 1-1/2" minimum gap
  - 1" flat head bolt (3 per rail)
  - 3/8" chain (3" long)
  - Stainless steel vis specials
  - Grating tie downs

- **Front Elevation**
  - 1/2" pipe 304L stainless steel pipe
  - 1" flat head bolt (3 per rail)
  - 3/8" chain (3" long)
  - Sign panel

- **Side Elevation**
  - 1/2" pipe 304L stainless steel pipe
  - 1" flat head bolt (3 per rail)
  - 3/8" chain (3" long)
  - Sign panel

**Alternate Safety Chain Attachment (Showing safety chain w/o sign)**

- 2'-10" pipe 304L stainless steel pipe
- 2'-10" chain (3" long)
- 3/8" chain (3" long)
- Sign panel

- **Safety Chain**
  - One required for each end of each walkway.

**Specifications**

- 304L stainless steel pipe
- Flat head bolts
- 3/8" chain
- Vis specials

**Notes**

- Details shown similar to "Safety Chain Details" (Walkway omitted for clarity)
- Use 304L stainless steel chain, approximately 12 links per foot.

**Additional Details**

- Horizontal handrail member shall be continuous thru 1/2" pipe. Provide 5/16" hole in 1/2" pipe for 5/16" bolt. Field drill 5/16" hole in horizontal rail member. Provide washer and locknut for bolt. Use 5/16" eyebolts in 5/16" holes on top rail at ends only.
- Field drill 5/16" hole for 5/16" eyebolt. Provide washer and locknut.
- Drill 3/8" hole for 3/8" ring-grip quick release bolt with washer and hexagon locknut.
- All rail ends grind smooth.

**Drawings**

- Front Elevation
- Side Elevation
- Plan at Handrail Joint
- Section P-P
- Details at Handrail Joint
FOR TRUSS TYPES I-S, II-S AND III-S
OVERHEAD SIGN STRUCTURES - STEEL TRUSS DETAILS

(Upper Chord- each end of each unit only)

(Lower Chord-all panel points)

Horizontal Diagonal
(One shown - Typ. all panel points)

Horizontal
(See Note 5)

Vertical
(Chord)

See Note 4

"217"

Even number of panels/interior unit required.

Diagonal
(Each end of
vertical typ.

Even or odd number of panels/exterior units allowed.

Interior Diagonal
(See Note 5)

Horizontal Diagonal
(Upper Chord- each end of each unit only)

(Lower Chord-all panel points)

Horizontal
(See Note 3)

Upper Front Chord

Type I-S 4'-0"

Type II-S 4'-6"

Type III-S 5'-0"

Type III-S 5'-0"

"±9"

End Detail

See Support

Reverse direction of interior diagonals at alternate panels.

"T" on Support Frame Details

"Ø" drain hole in drive-fit cap installed after galvanizing. (Typ. at non-splice ends of chords)

3½" end dimension may vary by ±1½" to provide uniform panel spacing (P).

Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-S or 4'-0" and 5'-6" for Types II-S and III-S.

Vertical Diagonals in front and back face shall alternate inclination.

Hidden lines show wind bracing alternates direction between planes of top and bottom chords.

All diagonals shall be offset from the panel point based on the following: offset shall provide a 3½" minimum to 1½" maximum clearance between diagonal and any other diagonal, horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

Galvanizing vent holes of adequate size shall be provided on underside at each end of truss members except chords. Alternately, holes may be provided in wall of chords. All vent holes shall be drilled and de-burred, typ.

Contractor must use standard drive-fit cap to close end.
**6" PIPE TRUSS SUPPORT DETAILS**

- One butt welded joint is allowed only on one post per support frame. If used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.

---

**SECTION A-A**

As an alternative to bolts, may use galvanized drive-fit caps installed after galvanizing frame.

**SECTION B-B**

For Foundation Details see Base Sheet OS-F1, or OS4-F1.

---

**OVERHEAD SIGN STRUCTURES**

Support Design loads:

See Base Sheet OS-5-1 for design and loading criteria.

Load combinations checked include:

- 100% wind normal to sign, 30% parallel to sign
- 60% wind normal to sign, 30% parallel to sign
- 50% wind normal to sign, 30% parallel to sign
- 50% wind normal to sign, 30% parallel to sign

In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500µ in or less.

Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred. Typ.

Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication.

Painting is not permitted. See Base Sheet OS-5-1.

See General Notes for fasteners.

This standard may be utilized for special short span and/or short end support applications subject to verification of maximum loads and capacities by the designer.

Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

"H" based on 15'-0" or actual sign height, whichever is greater.

---

**STATE OF ILLINOIS**

DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES

SUPPORT FRAME FOR TYPE I-S STEEL

<table>
<thead>
<tr>
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<th>Station</th>
<th>Support</th>
<th>H</th>
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<tr>
<td></td>
<td></td>
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</tbody>
</table>
ANCHOR ROD DETAIL

Typ. Col-Base

Base ø holes
For U-bolts

100 lb.-ft. minimum torque.

Typ. Col-Base

Anchor plate

Provide 2 uncoated nuts per rod.

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.

FIELD DRILL "16" Ø holes
Touch up holes with galvanizing paint.

SADDLE SHIM DETAIL

Saddle shim.

Provide 1 nut per rod. Deform thread or use chemical thread lock to secure.

Positioning plate(s)

At each location, provide ½" thick positioning plates and use the additional nuts to be used with leveling nuts to maintain anchor bolts position during concrete placement.

Stainless Steel Standard:

Grade Wire Cloth, 3" wide, 3/8" maximum opening with a minimum wire diameter of AWG No. 16 with a minimum 2" lap. Secure to base plate after erection with ½" stainless steel banding.

Specify a neoprene pad.

Anchor plate

Contractor's property. Cost included in Drilled Shaft Concrete Foundation.

SECTION D-D

Anchor rods shall be cut to fit slope of pipe.

Stainless Steel Standard:

Grade Wire Cloth, 3" wide, 3/8" maximum opening with a minimum wire diameter of AWG No. 16 with a minimum 2" lap. Secure to base plate after erection with ½" stainless steel banding.

Specify a neoprene pad.

Anchor plate

Contractor's property. Cost included in Drilled Shaft Concrete Foundation.

6" ø pipe support frame details

Type I-S steel truss

6" ø pipe support frame details

Anchor rods shall be cut to fit slope of pipe.

Stainless Steel Standard:

Grade Wire Cloth, 3" wide, 3/8" maximum opening with a minimum wire diameter of AWG No. 16 with a minimum 2" lap. Secure to base plate after erection with ½" stainless steel banding.

Specify a neoprene pad.

Anchor plate

Contractor's property. Cost included in Drilled Shaft Concrete Foundation.
As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.

Detail D

Provide 3½" x 4½" cover. Provide 4-½" Ø holes in cover for ½-20 round head hot dip galvanized or stainless steel machine screws. (See cover details)

Lower Handhole (See Detail D)

Backfill shall be placed prior to erection of support frame

Overhead Sign Structures

Support Design Loads:

Load combinations checked include deadload plus:
- 100% wind normal to sign, 20% parallel to sign
- 40% wind normal to sign, 30% parallel to sign

- In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to AWS Roughness of 50g1 in or less.
- Galvanizing vent holes of adequate size shall be provided on underside of each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, 1×.
- Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-S-1.
- See General Notes for Fasteners.
- Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.
- 'Y' based on 15'-0" or actual sign height, whichever is greater.

8" Ø PIPE TRUSS SUPPORT FRAME

** One butt welded joint is allowed only on one post per support frame. It used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or PT tension criteria at Contractor's expense.

Support Frame for Type I-S Steel Truss

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

05-S-4
2-17-2017

05-S-4
2-17-2017

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR TYPE I-S STEEL TRUSS

Support Design Loads:
See Base Sheet OS-S-1 for design and loading criteria.

Load combinations checked include deadload plus:
- 100% wind normal to sign, 20% parallel to sign
- 40% wind normal to sign, 30% parallel to sign

- In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to AWS Roughness of 50g1 in or less.
- Galvanizing vent holes of adequate size shall be provided on underside of each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, 1×.
- Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-S-1.
- See General Notes for Fasteners.
- Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.
- 'Y' based on 15'-0" or actual sign height, whichever is greater.

Support Design Loads:
See Base Sheet OS-S-1 for design and loading criteria.

Load combinations checked include deadload plus:
- 100% wind normal to sign, 20% parallel to sign
- 40% wind normal to sign, 30% parallel to sign

- In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to AWS Roughness of 50g1 in or less.
- Galvanizing vent holes of adequate size shall be provided on underside of each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, 1×.
- Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-S-1.
- See General Notes for Fasteners.
- Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.
- 'Y' based on 15'-0" or actual sign height, whichever is greater.
Drilled Shaft Foundation

SECTION B-B

Ribs shall be cut to fit slope of pipe

SECTION C-C

Field drill 1/4" holes

Touch-up holes with galvanizing paint

Brass hole (See

Base Sheet OS-S-4)

1/4" fabric or

neoprene pad

DETAIL C

SADDLE SHIM DETAIL

Saddle shim

ANCHOR ROD DETAIL

ANCHOR ROD DETAIL

Spreader FOOTING FOUNDATION

CONTRACT NO. IG-S-4A

2-17-2017

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR I-S STEEL TRUSS

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PROJECT NO.

DEGREE

REVIEW

CHECKED

DESIGNED

REVISED

FILE NAME

OS-S-4A

FILE NAME

OS-S-4A

FILE NAME

OS-S-4A

FILE NAME

OS-S-4A

FILE NAME

OS-S-4A
As an alternative to bolts, may use galvanized drive-fit caps installed after galvanizing frame.

**SECTION A-A**

As an alternative to bolts, may use galvanized drive-fit caps installed after galvanizing frame.

**SECTION B-B**

**OVERHEAD SIGN STRUCTURES**

**SUPPORT FRAME FOR STEEL TRUSS**

**SIDE ELEVATION**

**10" Ø PIPE TRUSS SUPPORT FRAME**

- One butt welded joint is allowed only on one post per support frame. If used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or UT inspection.

**END ELEVATION**
 Anchors shall be cut to fit slope of pipe. **Alternate detail if welding col. to base plate first, then add inside corner of ribs. Terminate weld on rib 1/4 from top.**

**SADDLE SHIM DETAIL**

- 8" Ø hole in each base plate
- Parallel to 1/8 of truss
- Section B-B

**ANCHOR ROD DETAIL**

- 5/8" UBolts: Provide washers and hexagonal locknuts. (2 required)
- Saddle shim: W8 x 28
- Field drill 1/2" Ø holes
- Touch up holes with galvanizing paint.
- Drain hole (See Base Sheet OS-S-23)
- W fabric or neoprene pad
- Section C-C

**10" Ø PIPE SUPPORT FRAME DETAILS**

- Anchor rods shall conform to ASTM F1554 Grade 105.
- Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**OVERHEAD SIGN STRUCTURES**

**SUPPORT FRAME DETAILS STEEL TRUSS**

**ANCHOR PLATE**

- Anchor plate
- All Thread = NC (National Coarse)
- Provide 2 uncoated nuts per rod
- Anchor plate
- All Thread = NC (National Coarse)
- Provide 1 nut
- Per rod: Deform thread or use chemical thread lock to secure.

**POSITIONING PLATE(S)**

- At each location, provide (3) thick positioning plates and six (6) additional nuts to be used with leveling nuts to maintain anchor bolts position during concrete placement.
- 1/8" plate and extra nuts become Contractor's property. Cost included in "Drilled Shaft Concrete Foundations".
- Provide 1 nut per rod: Deform thread or use chemical thread lock to secure.

**DEPARTMENT OF TRANSPORTATION**

**STATE OF ILLINOIS**

**OVERHEAD SIGN STRUCTURES**

**SUPPORT FRAME DETAILS STEEL TRUSS**

**ANCHOR PLATE**

- Anchor plate
- All Thread = NC (National Coarse)
- Provide 2 uncoated nuts per rod
- Anchor plate
- All Thread = NC (National Coarse)
- Provide 1 nut
- Per rod: Deform thread or use chemical thread lock to secure.

**POSITIONING PLATE(S)**

- At each location, provide (3) thick positioning plates and six (6) additional nuts to be used with leveling nuts to maintain anchor bolts position during concrete placement.
- 1/8" plate and extra nuts become Contractor's property. Cost included in "Drilled Shaft Concrete Foundations".
- Provide 1 nut per rod: Deform thread or use chemical thread lock to secure.
**STEEL WALKWAY DETAILS**

**OVERHEAD SIGN STRUCTURES**

Support Frame

Traffic

Traffic

Traffic

- Walkway support only
- Top of W6x9
- Sign bracket
- Top of W6x9
- Support and sign bracket
- Sign panels: For inclusions, see sign detail sheets.

**Support Frame**

- Equal To
- Less Than or Equal To
- Brackets
- Number

**WALKWAY AND HANDRAIL SKETCH**

(Mood plan beneath truss varies)

- Walkway and Truss Grating width dimensions are nominal and may vary ±0.5 based on available standard widths.

**BRACKET TABLE**

<table>
<thead>
<tr>
<th>Sign Width</th>
<th>Number of Brackets Required</th>
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</thead>
<tbody>
<tr>
<td>Greater Than</td>
<td>Less Than or Equal To</td>
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<tr>
<td>8'-0&quot;</td>
<td>2</td>
</tr>
<tr>
<td>14'-0&quot;</td>
<td>3</td>
</tr>
<tr>
<td>20'-0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>26'-0&quot;</td>
<td>5</td>
</tr>
</tbody>
</table>

**Notes:**
- Space W6x9 walkway brackets and sign brackets W6x9 for efficiency and within limits shown:
- f = 12" maximum, A minimum (End of sign to G of nearest bracket)
- g = 12" maximum, 6" minimum (End of walkway grating to G of nearest support bracket)
- h = 6'-0" maximum (L to G sign and/or walkway support brackets, W6x9)
- k = 2" maximum gap between adjacent walkway grating sections and handrail ends

- If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet 05-S-11

- Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.

- Handrail joint, grating, and light support splices placed as needed.

- Truss grating to facilitate inspection shall run full length (center to center of support frames) ±12" on overhead trusses.

- Cost of truss grating is included in "Overhead Sign Structure"
If walkway is required left of the DMS cabinet, a=7'-8" and b=walkway lengths. If walkway is not required left of the DMS cabinet, b=0 and a is dimension from left support frame to left end of cabinet.

Top of W6x9 walkway support and sign brackets.

Top of W6x9 walkway support only.

With handrail omitted for clarity.

Bracket and grating dimensions are nominal and will vary based on actual DMS cabinet dimensions plus manufacturer's mounting devices.

Walkway and Truss Grating width dimensions are nominal and may vary ±9/" based on available standard widths.

With handrail omitted for clarity.

Bracket and grating dimensions are nominal and will vary based on actual DMS cabinet dimensions plus manufacturer's mounting devices.

Notes:
- Space W6x9 walkway brackets and sign brackets for efficiency and within limits shown:
  - f = 12" maximum, 4" minimum (End of sign to q of nearest bracket)
  - g = 12" maximum, 4" minimum (End of walkway grating to q of nearest support bracket)
  - h = 6"-0" maximum (q to q of nearest sign and/or walkway support brackets, W6x9)
- Maximum DMS weight = 5000 lbs. 4'-2" maximum cabinet depth includes depth of cabinet plus connection to WF6x5.40.
- Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
- Place all sign and walkway brackets as close to panel points as practical.
- Handrail and walkway splices placed as needed.

For Section B-B and Grating Splice Details, see Base Sheet OS-S-10-DMS. For Handrail Splice Details, see Base Sheet OS-S-11-DMS.
**ALTERNATE STEEL WALKWAY DETAILS**

**OVERHEAD SIGN STRUCTURES**

Walkway support only

Top of W6x9

Sign Bracket

Top of W6x9 walkway support and sign bracket

Top of W6x9 walkway

Sign panels. Location, see sign detail sheet(s).

**Sign Panels. For location, see sign detail sheet(s).**

Lighting fixtures. (If required)

Length as required for light fixture supports.

**Walkway and Grating**

W6x9

Greater Than 8'-0"

1'-0"

2'-0"

3'-0"

4'-0"

5'-0"

6'-0"

For Section B-B, see Base Sheet OS-S-10.

Handrail Joint

See OS-S-11 Details F and G

For Details T and W, Section B-B and Grating Splice Details, see Base Sheet OS-S-11.

For Handrail Details, see Base Sheet OS-S-11.

**Note:**

Details shown are considered equal alternatives to the Steel Walkway on Base Sheet OS-S-9, and may be substituted by Contractor at no change in contract cost.

**Space W6x9 walkway brackets and sign brackets for efficiency and within limits shown:**

- f = 12" maximum, 4" minimum (End of sign to (of nearest bracket)
- g = 18" maximum, 6" minimum (End of walkway grating to (of nearest support bracket)
- h = 0'-0" maximum gap (to nearest bracket, see Alternate Safety Chain Attachment on Base Sheet OS-S-11)
- k = 2" maximum gap between adjacent walkway grating sections and handrail ends

**For Handrail Details, see Base Sheet OS-S-11.**

**SECTION A-A**

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints. Place all sign and walkway brackets as close to panel points as practical. Grating, handrail and light support splices placed as needed.

**SECTIONS B-B**

Walkway and Truss Grating width dimensions are nominal and may vary ±5/8" based on available standard widths.

**Truss grating to facilitate inspection shall run full length (center to center of support frames) ±1/2" on overhead trusses.**

Cost of truss grating is included in "Overhead Sign Structure".

**SUPPORT FRAMES**

**Support FRAME**

Walkway and Truss Grating

Each end

Safety Chain

Alternate angle

**WALKWAY AND HANDRAIL SKETCH**

Plan beneath truss varies

**BRACKET TABLE**

<table>
<thead>
<tr>
<th>Sign Width</th>
<th>Number of Brackets Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than 8'-0&quot;</td>
<td>1</td>
</tr>
<tr>
<td>8'-0&quot; to 10'-0&quot;</td>
<td>2</td>
</tr>
<tr>
<td>10'-0&quot; to 12'-0&quot;</td>
<td>3</td>
</tr>
<tr>
<td>12'-0&quot; to 14'-0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>14'-0&quot; to 16'-0&quot;</td>
<td>5</td>
</tr>
<tr>
<td>16'-0&quot; to 18'-0&quot;</td>
<td>6</td>
</tr>
</tbody>
</table>

**Candidate 3**

 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

**OVERHEAD SIGN STRUCTURES**

ALTERNATE STEEL WALKWAY DETAILS
DAMPING DEVICE
OVERHEAD SIGN STRUCTURES

Device
Damping
hole
8
3
14
Steel pipe
2"
Ø Std.

Tube
Cross
7
2
17
12"
12"

PLAN DETAIL "A"
Span between panel points
Top Chord
Span

PLAN DETAIL "B"
Span at panel point
Top Chord
Span

PLAN DETAIL "C"
Span at chord splice
Top Chord
Span and Splice

SECTION A-A
Cross tubes (Details "A" and "B") or
Horizontal (Detail "C")
W
-hole
2", typ.

SECTION B-B
Cross Tube
Horizontal
Damping Device

SECTION C-C
Horizontal
Damping Device

TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)

TUBE U-BOLT DETAIL
(Typical)

TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical - Detail "A" and "B")

Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.

NOTES
Diameter
See Plan Detail A, B, C.

Pipe included in Overhead Sign Structure...

29" minimum between ends of weights) Cost

Cost
One damper per truss. (31 Lbs. Stockbridge-Type - 2P minimum between ends of weights) Cost
**TRUSS UNIT TABLE**

<table>
<thead>
<tr>
<th>Structure Number</th>
<th>Station</th>
<th>Design Truss Type</th>
<th>Exterior Units (2)</th>
<th>Interior Unit</th>
<th>Upper &amp; Lower Chord</th>
<th>Verricos; Horizontals; Vertical, Horizontal, and Interior Diagonals</th>
<th>Camber Midspan</th>
<th>Splicing Flange</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>No. Panels per Unit</td>
<td>Length (ft)</td>
<td>Panel Length</td>
<td>No. Panels per Unit</td>
<td>Length (ft)</td>
<td>Panel Length</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECTION B-B**

1. Splicing Flanges shall be attached to each truss unit with the truss shop assembled in camber shown. Truss units shall be in proper alignment and flange surfaces shall be kept bolted into full contact before welding. Sufficient external webs or flanges shall be made to secure flanges until remaining webs are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field alignment.

**ISOMETRIC VIEW TYPICAL TRUSS UNIT**

- Splicing Flanges
- Upper & Lower Chords
- Verticals
- Horizontals
- Interiors

**Camber Diagram**

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

**Camber Attainment Examples:**

- Camber at midspan: 2 units, 3 units, 4 units
- 2/3 camber at midspan: 2 units, 3 units

Note: Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.

---

**TRUSS TYPES I-S, II-S, & III-S**

**TRUSS TYPES II-S & III-S**

---

**Splicing Flanges**

- Drill 8 holes
- Bolt diameter: larger than 16"

---

**File Name**

- **User Name**
- **Plot Scale**
- **Plot Date**
- **Checked**
- **Drawn**
- **Designed**
- **Revised**

**Department of Transportation**

**State of Illinois**

**F.A.**

**RTE.**

**Section**

**Illinois**

**F.A. Aid Project**

**Contract No.**

**Total**

**Sheets**

**Sheet No.**

**2-17-2017**
Galvanized frame.
Install after
at 90° intervals.

Chase threads after
welded to pipe.
at 90° intervals
4-
1
2
“ Ø holes
in cover for
1/2-20 round head hot dip galvanized or stainless steel machine screws.
(See cover details)

T-Galvanized Steel
Conduit: Thread
and tab both ends.

Support Design Loads:
See Base Sheet OS-S-1 for design and loading criteria.

Load combinations checked include dead loads plus:

- 100% wind normal to sign, 20% parallel to sign
to 60% wind normal to sign, 30% parallel to sign

1.
In lieu of fabricated handhole frame as shown, may cut
from 2" plate (rolling direction vertical). All cut faces
be to ground to NPS Roughness of 300 finish or less.

2.
Galvanizing vent holes of adequate size shall be provided
on underside at each one of the pipes. Alternately,
holes may be provided in wall of pipe column. All vent
holes shall be drilled and de-burred, typ.

3.
Steel pipe, plate, carbon steel handhole covers and rolled
sections shall be hot dip galvanized after fabrication.

Painting is not permitted. See Base Sheet OS-S-1.

4. See General Notes for fasteners.

5. Dimensions shown are based on selection criteria in the
Sign Structures Manual. Nonstandard applications must
have dimensions verified or amended as appropriate.

6. "H" based on 19'-0" or actual sign height, whichever is greater.

For dynamic message sign installations, provide upper and lower
handholes in both legs of each support frame.

For Foundation Details
See Base Sheet OS-S-1A

# Hole Head

<table>
<thead>
<tr>
<th>Support Design Loads</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 100% wind normal to sign, 20% parallel to sign</td>
</tr>
<tr>
<td>2. 60% wind normal to sign, 30% parallel to sign</td>
</tr>
<tr>
<td>3. Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.</td>
</tr>
<tr>
<td>4. Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication.</td>
</tr>
<tr>
<td>5. Painting is not permitted. See Base Sheet OS-S-1.</td>
</tr>
<tr>
<td>6. &quot;H&quot; based on 19'-0&quot; or actual sign height, whichever is greater.</td>
</tr>
</tbody>
</table>

For Foundation Details
See Base Sheet OS-S-1A

**For Foundation Details:**
See Base Sheet OS-S-1A

<table>
<thead>
<tr>
<th><strong>Nominal Dia.</strong> (inch)</th>
<th><strong>Truss Chord</strong> (inch)</th>
<th><strong>Truss Diameter</strong> (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>W</strong></td>
<td><strong>H</strong></td>
<td><strong>S</strong></td>
</tr>
<tr>
<td>8</td>
<td>5'</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>5</td>
<td>3'-0&quot;</td>
<td>1'-6&quot;</td>
</tr>
<tr>
<td>3</td>
<td>2'-0&quot;</td>
<td>1'-3&quot;</td>
</tr>
<tr>
<td>4</td>
<td>1'-0&quot;</td>
<td>0'-9&quot;</td>
</tr>
</tbody>
</table>

**For Foundation Details:**
See Base Sheet OS-S-1A

<table>
<thead>
<tr>
<th><strong>Structure Number</strong></th>
<th><strong>12&quot; Ø Pipe-Type III-S Truss</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Truss Chord</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Truss Diameter</strong></td>
<td>5'</td>
</tr>
<tr>
<td><strong>Truss Length</strong></td>
<td>2'-0&quot;</td>
</tr>
</tbody>
</table>

**One butt welded joint is allowed only on one post per support frame. If used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.**
Ribs shall be cut to fit slope of pipe.

Positioning Plate(s)

At each location, provide 1⁄4" thick positioning plates and six (6) additional nuts to be used with leveling nuts to maintain anchor bolts position during concrete placement.

Anchor Rod Detail

Anchor rods shall conform to ASTM F1554 Grade 105. Gage upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.

Type III-S Steel Truss

12" Ø Pipe Support Frame Details

Notes:

For Type III-S Truss spans greater than 150 ft. and up to 160 ft.:

1 12" Ø rod, 2 Ø holes
2 12" edge distance
3 Base Ø 1½" x 1'-11" x 1'-11"