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<td>OSC-S-2</td>
<td>Truss details</td>
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<td>OSC-S-3</td>
<td>Juncture details</td>
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<td>Type I-C-S truss support post</td>
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<td>Type II-C-S and III-C-S truss support post</td>
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<td>Walkway details</td>
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<td>OSC-S-6S</td>
<td>Alternate steel walkway details</td>
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<tr>
<td>OSC-S-D</td>
<td>Damping device</td>
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GENERAL NOTES

MATERIALS:
1. Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C.
2. If A500 pipe is substituted for A53, the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
3. If M270 Gr. 50W (M222) steel is proposed, approval of the Engineer as suitable for chemistry for plate to be used shall first be obtained.
4. The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 25 ft.-lbf. at 40° F. (Zone 2) before galvanizing.

PENDANT STEEL TRUSSES: All bolts noted as "high strength" (HS) must satisfy the requirements of AASHTO M68, ASTM A490, or an Engineer approved alternate.
1. A307 Gr. B. All lock nuts must have nylon or steel inserts. High strength bolt installation shall conform to Article 505.04 (2) of the Standard Specifications. Rotational capacity requirements of AASHTO M164 (ASTM A325), ASTM A449, or an Engineer approved alternate, and must have matching lock nuts and washers. All nuts, bolts, and washers must be hot dip galvanized per AASHTO M232.


LOADING: 90 MPH WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated load.

ALLOWABLE UNIT STRESSES:
1. Structural Steel - 20,000 p.s.i.
2. Reinforcing Steel - 20,000 p.s.i.
3. Class SI Concrete - 1400 p.s.i.

ALLOWABLE unit stresses due to wind load in combination with other forces, are increased L33.

MINIMUM CLEARANCES:
1. Vertical Roadway Clearance - 1' - 0" (AXE constructions)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code and the Standard Specifications.

TOTAL BILL OF MATERIAL

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<tr>
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<th>UNIT</th>
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<tr>
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<td>OVERHEAD SIGN STRUCTURE, CANTILEVER TYPE, II-C-S</td>
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<td>OVERHEAD SIGN STRUCTURE, CANTILEVER TYPE, III-C-S</td>
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<td>OVERHEAD SIGN WALNUT-CANTILEVER TYPE, I-C-S</td>
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<tr>
<td>SKILLED LABOR CONCRETE FOUNDATIONS</td>
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - GENERAL PLAN & ELEVATION - STEEL TRUSSES & STEEL POST

A. ELEVATION - STEEL TRUSSES & STEEL POST
ANCHOR ROD DETAIL

Anchor rods shall conform to ASTM F1554 Grade 250. Galvanize the upper 18" (minimum***) and associated AASHTO M291, Grade A, C or DH hex head nuts and hardened washers per AASHTO W145. No welding shall be permitted on rods.

Provide a nut at bottom, a hexagon locknut and washer above base plate. Provide 1 nut per rod.

Provide 4-3/8" \( \times \) 20 screws. Drill & tap for 4-3/8" \( \times \) 20 round head hot dip galvanized or stainless steel machine screws. (See cover details)

**18" is minimum to be galvanized. Entire rod may be galvanized at Contractor's option.

Anchor rods shall be attached to allowable tension criteria. Cost of testing included in Drilled Shaft Concrete Foundations.

Provide 4-3/8" \( \times \) 20 screws. Protect threads during concreting with tape, sleeves, or other means. Provide 4-3/8" \( \times \) 20 round head hot dip galvanized or stainless steel machine screws. (See cover details)

 PROVIDE 4-3/8" \( \times \) 20 ROUND HEAD HOT DIP GALVANIZED OR STAINLESS STEEL MACHINE SCREWS. (SEE COVER DETAILS)

DETAIL A

Steel bars may be bent welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, lap cut from 3" plate tracing direction vertically. All cut faces to be ground to ANSI Roughness of 500 in or less.

Butt welded joint in post is only allowed for post heights 96" over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

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

SIDE ELEVATION

HANDHOLE COVER

Provide 4-3/8" \( \times \) 20 screws. Chase thread after galvanizing.

For UT, tighten with 200 lb-ft minimum torque

Provide a nut at bottom, a hexagon locknut and washer above base plate.

Provide 4-3/8" \( \times \) 20 screws. (See cover details)

ANCHOR ROD DETAIL

Steel bars may be bent welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, lap cut from 3" plate tracing direction vertically. All cut faces to be ground to ANSI Roughness of 500 in or less.

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For UT, tighten with 200 lb-ft minimum torque

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Provide 4-3/8" \( \times \) 20 screws. (See cover details)

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Steel bars may be bent welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, lap cut from 3" plate tracing direction vertically. All cut faces to be ground to ANSI Roughness of 500 in or less.

Butt welded joint in post is only allowed for post heights 96" over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

Note: "H" based on 15'-0" or actual sign height, whichever is greater.
**Typical Front Elevation**

With lights and handrail omitted for clarity.

**Truss Grating Length (TGL)**

**Truss Grating Splice**

**Handrail Joint**

**Light fixture supports**

**Details F and G**

**Bracket Table**

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**Notes:**

- Space walkway brackets and sign brackets W6x9 for efficiency and within limits shown.
- If walkway bracket at safety chain location is behind sign, add angle to bracket. See alternate safety chain attachment on base sheet OSC-S-6S.
- For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet OSC-S-7S.
- For details of Handrail, handrail joint, safety chain and Details F and G, see Base Sheet OSC-S-8.

**Brackets Required**

- **G6x9:**
  - **5'-0''**:
    - **Greater Than or Equal To**: 1
    - **Less Than**: 0
    - **Number**: 1
  - **5'-6''**:
    - **Greater Than or Equal To**: 1
    - **Less Than**: 0
    - **Number**: 1
  - **6'-0''**:
    - **Greater Than or Equal To**: 1
    - **Less Than**: 0
    - **Number**: 1
  - **6'-6''**:
    - **Greater Than or Equal To**: 1
    - **Less Than**: 0
    - **Number**: 1

**Walkway Grating Splice**

**Handrail Joint**

**Sign Panel**

**Cantilever Sign Structures - Alternate Steel**

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**Bracket Table**

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<th>Sign Width</th>
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<td>6'-0''</td>
<td>1</td>
</tr>
<tr>
<td>6'-6''</td>
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</table>
Bar sizes for standard steel grating:

**WALKWAY GRATING**
- Main bearing bars: 1" x 1" on 16" centers.
- Cross bars: 1" x 1" on 4" centers.

**TRUSS GRATING**
- Main bearing bars: 1" x 1" on 16" centers.
- Cross bars: 1" x 1" on 4" centers.

Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.

When truss grating must be spliced, use suggested detail or other methods subject to the Engineer's review and approval. Locate splices to avoid interference between cross bars and bolt locations.

Tube to grating gap may vary from 0 to 1/2" (max.) to align walkway, allow for cantilever, etc.

If horizontal splice present, weld angle to W6x9 and 1/2" extension bars. (See Base Sheet OSC-S-8.)

Provide 2 washers and 2 hexagon U-bolts. (Shown)

Continuous handrail hinge:
- Flange type.
- 2" long, each with one flat washer under locknut.

No backgauge.

Based on actual sign height, D, given on OSC-S-5-L.

** DETAILS T**

Alternate materials may be used subject to the Engineer's review and approval. Locate splice to avoid interference between cross bars and bolt locations.

Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
**Truss & Truss Grating**

- **C** W6x9 for walkway only
- Minimum elevation for top of W6x9 bracket for field adjustments.
- Sign shall be even with top of the bracket.
- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- When truss grating must be spliced, use suggested details or other methods in accord with grating manufacturer's recommendation and subject to the Engineer's review and approval.
- **W6x9** holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.

**Walkway Details**

- **Steel plank, 1'-2'' wide**
- **Walkway Grating:** Steel plank, 1'-2'' wide
- **Truss Grating:** Steel plank, 1'-2'' wide

**Alternate Walkway Details**

- **WALKWAY GRATING CONTINUOUS AT WALKWAY GRATING SPLICE**

**SECTION B-B**

- **W6x9** holes in angles for \( \frac{1}{2} '' \) bolts.

**SECTION T-T** (Truss Grating Continuous)

- **Steel** L 2'' x 2 '' x 3'', typ.
- **Galvanized steel** L 2'' x 2 '' x 3'', typ.
- **Grating** sym.
- **Width** |\( \frac{1}{2} '' \) | (Truss grating splice)

**Alternates**

- Details not shown same as Section T-T. Details shown are considered equal alternatives to Standard Steel Walkway Details and may be substituted by Contractor at no change in contract cost.
- Alternates are considered equal alternatives to Standard Steel Walkway Details and may be substituted by Contractor at no change in contract cost.

**Details**

- **GALVANIZED STEEL WALKWAY GRATING**
- **Steel** L 2'' x 2 '' x 3'', typ.
- **Galvanized steel** L 2'' x 2 '' x 3'', typ.
- **Grating** sym.
- **Width** |\( \frac{1}{2} '' \) | (Truss grating splice)

**Sign Panel Placed Symmetrical about Truss**

- Based on actual sign height, D, given on OSC-S-1.
1. Horizontal handrail member shall be continuous thru 1'-6" pipe. Provide 1" # hole in 1/4" pipe for 1" # bolt. Field drill 1" # hole in horizontal rail member. Provide washer and locknut for bolt. Use 3" # eyebolts in 1" # holes on top rail of each unit.

2. For 1'-6'' chain, 3/16'' stainless steel chain, approximately 12 links per foot.

3. Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

4. Rail at ends only. Provide washer and hexagon locknut for bolt. Field drill 1/4'' hole in horizontal thru 1'' pipe. Provide 1/4'' hole in 1'' pipe.

5. Steel handrail shall be continuous thru light support channels. Provide 1'' # hole in 1/4'' pipe for 1'' # bolt. Field drill 1'' # hole in vertical leg to 1' pipe.

6. Light support shall be continuous thru light support channels. Provide 1/2'' # hole in 1/4'' pipe for 1/2'' # bolt. Field drill 1/2'' # hole in vertical leg to 1/2'' pipe.

7. Each side 4 (cut 2" x 2" x 7") minimum gap | 4'' minimum gap.
The foundation shown in this drawing is based on common cohesive soil conditions. The engineer shall determine the required revisions to the diameter, depth, reinforcement, or configuration of the foundation. If changes are required by the engineer, the drawing shall be updated accordingly.

For details of anchor rods and positioning templates see Truss Support Post Base Sheets OSC-S-4 and OSC-S-5.

Structure Number | Station | Truss Type | Diameter | Elevation Top | Elevation Bottom | Gv | A | B | F |
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
CANTILEVER SIGN STRUCTURES - DRILLED SHAFT
STEEL TRUSS & STEEL POST
PLAN DETAIL

SECTION A-A

DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL (Typical)

TOP CHORD TO CROSS TUBE U-BOLT DETAIL (Typical)

GENERAL NOTES

Dampers: One damper per truss. (2) Lb. Stockbridge-Type - 29" minimum between ends of weights.)