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<td>Aluminum truss details for truss type I-A, II-A &amp; III-A</td>
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<td>OS4-A-8a</td>
<td>12&quot; Dia. pipe support frame for type III-A aluminum truss</td>
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<tr>
<td>OS4-F1</td>
<td>Foundation details (6&quot; dia. pipe, drilled shaft)</td>
<td>08/21/2013</td>
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<td>OS4-F2</td>
<td>Foundation details (8&quot; dia. pipe, drilled shaft)</td>
<td>08/21/2013</td>
</tr>
<tr>
<td>OS4-F3</td>
<td>Foundation details (10&quot; dia. pipe, drilled shaft)</td>
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<td>General plan and elevation</td>
<td>08/21/2013</td>
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<td>OS-F1</td>
<td>Foundation details (6&quot; dia. pipe, spread footing)</td>
<td>08/21/2013</td>
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<td>OS-F2</td>
<td>Foundation details (8&quot; dia. pipe, spread footing)</td>
<td>08/21/2013</td>
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<td>OS-F3</td>
<td>Foundation details (10&quot; dia. pipe, spread footing)</td>
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<td>Foundation details (12&quot; dia. pipe, spread footing)</td>
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<td>Design Type</td>
<td>Exterior Units (E)</td>
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<td>No. Panels per Unit</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

**SECTION B-B**

1. Splicing flanges shall be attached to each truss unit with the truss shop assembled to center sheet. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external wedges or blocks shall be used to assure flanges unit remaining wedges are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.

**ISOMETRIC VIEW**

*Typical Truss Unit*

ASTM B221*Alloy 6061 Tempered T6

**SPLICING FLANGES**

ASTM B221, Alloy 6061-T6

or ASTM B221, Alloy 6061-T651

"Flange I.D. must be the same as bolt diameter."

**CAMBER DIAGRAM**

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

**CAMBER ATTAINMENT EXAMPLES:**

- 2 units
- 3 units
- 4 units

Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)

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

**TRUSS TYPES II-A & III-A**

**TRUSS TYPES I-A & III-A**

See Table

---

*Note:

Units shall be aligned 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.

See Table
Hexagon locknut and washer (top), leveling nut and washer (bottom). Galvanize per AASHTO M232. Nuts shall each be tightened per AASHTO M232. Nuts, washer (bottom). Galvanize (top), leveling nut and Hexagon locknut and washer stainless steel banding.

After erection with ½'' lap. Secure to base plate AWG. No. 16 with a minimum wire diameter of ½'' maximum opening with a Grade Wire Cloth, 3'' wide, Stainless Steel Standard Base.

Parallel to type. 2'' for 1'' rods 1½''} holes

For W, see Base Sheet OS-A-6.

Drain hole (See neoprene pad.

Notes:

1. 2'' edge distance
2. Threaded 4''
3. W -'"'
4. D = Outside Diameter of Chord.

SADDLE SHIM DETAIL

Anchor rod shall conform to ASTM F1554 Grade X50. Galvanize upper 12'' minimum per AASHTO M232. No welding shall be permitted on rods.

TYPE III-A TRUSS

12'' PIPE SUPPORT FRAME DETAILS

Notes:

For Type III-A Truss spans greater than 150 ft. and up to 350 ft.:

1. ½'' # rod, 2'' # holes
2. 2½'' edge distance
3. Base (6) 3½'' x 1½'' x 1½''

1½'' # rod (1)

All Thread = NC

ASTM B209    Alloy 6061-T651

ASTM B26     Alloy 356-F

(Base Sheet OS-A-2.)

Drain hole (See neoprene pad.

Notes:


For anchor rod size and placement, top and bottom 3 hoops minimum for grounding.*

Approved clamps type 6’’ (|3’’ ) 9’’ wire or cable #6 copper

Shaft Concrete Foundations. shall be included in Drilled conduit, caps and clamps 9’-0’’. Cost of rod, cable, ground rod driven into ground 6’’ (Cu. Yds.)

Elevation (Top)

SECTION A-A

For anchor rod size and placement, see Support Frame Details Sheet.

- Anchor rod should be ground or fixed to bright metal at clamp and cable connection location.

DETAILS FOR 6’’ $ SUPPORT FRAME

TYPE I-A TRUSS
For anchor rod size and placement, and cable connection location.

Anchor rod shall be ground or welded to bright metal at clamp.

*3 hoops minimum for grounding*

Approved clamps:
- Type I-A Truss
- Type I-B Truss

#6 copper wire or cable shall be included in Drilled Shaft Concrete Foundation.

Concrete shall be placed monolithically, without construction joints.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer’s written permission.

Concrete shall be placed immediately, without construction joints.

Permanent metal forms or other shielding may not be left in place below that elevation, except in cases where they are required to prevent future damage.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6'' below finished ground line. Cost included in Drilled Shaft Concrete Foundation.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6'' below finished ground line. Cost included in Drilled Shaft Concrete Foundation.

**NOTE:**
- The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the job site. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.
- If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions of the “B” and “F” are revised by more than 12” by the Contractor, “as-built” plans shall be prepared and submitted to the District Bureau of Operations for future reference.
- Concrete shall be placed per Article 502 of Standard Specifications and prior to erection of support column.
- Permanent metal forms or other shielding may not be left in place below that elevation, except in cases where they are required to prevent future damage.

**BAR LIST - EACH FOUNDATION**

<table>
<thead>
<tr>
<th>Bar</th>
<th>(E)</th>
<th>Number</th>
<th>Size</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>#4</td>
<td>v</td>
<td>16</td>
<td>#9</td>
<td>Length less 5''</td>
</tr>
</tbody>
</table>

**NOTES:**
- Concrete shall be placed immediately, without construction joints.
- Permanent metal forms or other shielding may not be left in place below that elevation, except in cases where they are required to prevent future damage.
- Concrete shall be placed per Article 502 of Standard Specifications and prior to erection of support column.
- Permanent metal forms or other shielding may not be left in place below that elevation, except in cases where they are required to prevent future damage.

**END VIEW**

**SIDE ELEVATION**

**PLAN**

**SECTION A-A**

**DETAILS FOR 8'' # SUPPORT FRAME**

**CLASS C5 CONCRETE**

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**OVERHEAD SIGN STRUCTURES**

**DRILLED SHANK DETAILS**

**FILE NAME**

**USER NAME**

**PLOT SCALE**

**PLOT DATE**

**CHECKED**

**DRAWN**

**CHECKED**

**DESIGNED**

**REVISED**

**REVISED**

**REVISED**

**REVISED**

**DEPARTMENT OF TRANSPORTATION**

**STATE OF ILLINOIS**

**COUNTY**

**TOTAL SHEETS**

**SHEET NO.**

**CONTRACT NO.**

**F.A.**

**RTE.**

**SECTION**

**ILLINOIS FED. AID PROJECT**

**TOTAL**

**SHEETS**
For anchor rod size and placement, and cable connection location.

Anchor rod shall be ground or filed to bright metal at clamp top and bottom 3 hoops minimum.

Shaft Concrete Foundations. shall be included in Drilled conduit, caps and clamps 9'-0''. Cost of rod, cable, ground rod driven into ground ¾" x 10'-0'' copper weld for grounding.*

Approved clamps type.

#6 copper wire or cable (Top)

Elevation

Number Structure

Top Elevation

Bottom Elevation

Top Elevation

Bottom Elevation

4

4

4

4

BAR LIST - EACH FOUNDATION

<table>
<thead>
<tr>
<th>Bar Number</th>
<th>Size</th>
<th>Length</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

NOTES:
The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Uncertified Compressive Strength (Qu) of at least 125 psi, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific design.

If the conditions encountered differ from those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions 'B' or 'F' are revised by more than 12'' by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints. Concrete shall be placed per Article 502 of Standard Specifications and prior to erection of support column.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission. A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6'' below finished grade line. Cost included in Drilled Shaft Concrete Foundation.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission. A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6'' below finished grade line. Cost included in Drilled Shaft Concrete Foundation.
The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the job site. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific design.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

Concrete shall be placed monolithically, without construction joints. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed without construction joints. Special mixes shall be placed per Article S02E of Standard Specifications and prior to excavation of support column. A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Unified Shaft Concrete Foundation.

For anchor rod size and placement, see Support Frame Detail Sheet.

* Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.
**Anchor rod shall be ground or tied to bright metal or cage and code connection location.**

- **Bar p(E)**
- **m(E)**
- **n(E)**
- **s(E)**
- **h(E)**

3'-0''} x 8'-0'' copper weld

#5 m(E), typ.

Cost included in Drilled Shaft Concrete Foundation.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to entrance.

5. Permanent metal forms or other shielding may not be left in place below the lower conduit entrance.

6. Cost of rod, cage, conduit, caps and straps shall be included in Drilled Shaft Concrete Foundation.

**State of Illinois**

**Department of Transportation**

**MEDIAN SUPPORT FOUNDATION DETAILS II**

**Plan**

**Side Elevation**

**End View**

**Notes:**

- The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 125 ksi, which must be determined by previous soil investigations at the job site.
- The foundation dimensions shown will be included in the plans and the foundation dimensions shown shall be the result of site specific design.
- If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified.
- Dimensions "B" or "F" are realized by more than 12" by the Contractor. "As-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.
- No conductive or decomposable forms shall be used below the lower conduit entrance.
- Perimeter metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.
- Concrete shall be placed monolithically, without construction joints.
- Anchor rods not shown.
- **Bar p(E)**
- **m(E)**
- **n(E)**
- **s(E)**
- **h(E)**

**Bar List - Each Foundation**

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<tr>
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<th>Length</th>
<th>Shape</th>
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<td>Bar Spiral</td>
<td>#5</td>
<td>10'-0''</td>
<td>3'-0''</td>
</tr>
<tr>
<td>#5</td>
<td>Bar Spiral</td>
<td>#5</td>
<td>12'-0''</td>
<td>3'-0''</td>
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<td>#5</td>
<td>Bar Spiral</td>
<td>#5</td>
<td>11'-3''</td>
<td>3'-0''</td>
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<td>Bar Spiral</td>
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<td>10'-0''</td>
<td>3'-0''</td>
</tr>
<tr>
<td>#5</td>
<td>Bar Spiral</td>
<td>#5</td>
<td>12'-0''</td>
<td>3'-0''</td>
</tr>
<tr>
<td>#5</td>
<td>Bar Spiral</td>
<td>#5</td>
<td>12'-0''</td>
<td>3'-0''</td>
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<tr>
<td>#5</td>
<td>Bar Spiral</td>
<td>#5</td>
<td>10'-0''</td>
<td>3'-0''</td>
</tr>
<tr>
<td>#5</td>
<td>Bar Spiral</td>
<td>#5</td>
<td>12'-0''</td>
<td>3'-0''</td>
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</table>

**Notes:**

1. Anchor rod shall be ground or tied to bright metal or cage and code connection location.

2. Foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 125 ksi, which must be determined by previous soil investigations at the job site.

3. The foundation dimensions shown will be included in the plans and the foundation dimensions shown shall be the result of site specific design.

4. If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified.

5. Dimensions "B" or "F" are realized by more than 12" by the Contractor. "As-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

6. No conductive or decomposable forms shall be used below the lower conduit entrance.

7. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

8. Concrete shall be placed monolithically, without construction joints.

9. Anchor rods not shown.

10. Perimeter metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

11. Concrete shall be placed monolithically, without construction joints.

12. Anchor rods not shown.

13. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

14. Concrete shall be placed monolithically, without construction joints.

15. Anchor rods not shown.

16. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

17. Concrete shall be placed monolithically, without construction joints.

18. Anchor rods not shown.

19. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

20. Concrete shall be placed monolithically, without construction joints.

21. Anchor rods not shown.

22. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

23. Concrete shall be placed monolithically, without construction joints.

24. Anchor rods not shown.
**ELEVATION**

**TYPICAL INTERIOR UNIT**

Even number of panels/interior unit required.

**ELEVATION**

**TYPICAL EXTERIOR UNIT**

Even or odd number of panels/exterior units allowed.

**SECTION A-A**

Contractor may alternatively use standard aluminum drive-fit cap to close end. 5/8" # drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)

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

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

Vertical Diagonals in front and back face shall alternate.

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

All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a ¾" minimum to 1" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walking brackets.

1. Contractor may use standard aluminum drive-fit cap to close end. 5/8" # drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
2. Panel spacing (P) may vary by 1½" to provide uniform panel spacing (P).
3. Vertical Diagonals in front and back face shall alternate.
4. Hidden lines show wind bracing alternates direction between planes of top and bottom chords.
5. All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a ¾" minimum to 1" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walking brackets.
After erection with 2'' lap. Secure to base plate AWG No. 16 with a minimum wire diameter of maximum opening with a Grade Wire Cloth, 3'' wide, Stainless Steel Standard Base.

- 4'' hole in each base plate
- 1'' x 1'' holes

** Alternate detail of welding coil to base plate first, then snap inside corner of rib. Furnish cage weld on rib 1/4'' from snap.

D = Outside Diameter of Chord.

** PROVIDE 2 UNCOATED NUTS PER ROD. NUTS SHALL BE "SNUG TIGHT" AGAINST ANCHOR PLATE.

All Threaded Rods shall be tightened to 200 lb.-ft. minimum torque. Nuts shall each be tightened against base plate with 200 lb.-ft. minimum torque.

- Provide 2 uncoated nuts per rod.
- Deform thread per rod. Deform thread or use chemical thread coat to secure.

Anchor rods shall conform to ASTM F654 Grade 105. Galvanizes upper 12'' minimum per AASHTO M232. No welding shall be permitted on rods.
**DETAIL A**

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

**SECTION A-A**

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

**5'-4'' hex nuts (ASTM A307)**

For geometry See Detail D

**8'' 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 (tension criteria) at Contractor's expense.

**HANDBOLES COVERS**

In lieu of fabricated handhole frame as shown, may cut from 8'' plates to desired dimensions. All cut faces to be ground to ANSI Roughness of 500 μ in or less.

Galvanizing vent holes of adequate size shall be provided on underside of handhole covers. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.

Steel pipe, plates, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.

**Support Design Loads** See Base Sheet OS-A-1 for design and loading criteria.

Load combinations checked include deadload plus, at 100% while erected to sign, 25% parallel to sign, 15% wind normal to sign, 30% parallel to sign.

Load combinations checked include deadload plus 50% while erected to sign, 20% parallel to sign, 100% wind normal to sign, 30% parallel to sign, 30% parallel to sign.

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

See General Notes for fasteners, dimensions, tolerances, etc.
200 lb.-ft. minimum torque. Nuts shall each be tightened against base plate with AASHTO M232. Nuts, washers (bottom), galvanized, leveling nut and hexagon locknut and washer (top), stainless steel banding. After erection with 2" lap. Secure to base plate with 1/4" dia. minimum wire diameter of Grade 105. Galvanize upper 12'' minimum per AASHTO M232. No welding shall be permitted on rods.

At each location, provide 6 threaded anchor rods. Provide an additional 6 nuts to maintain anchor bolts position during concrete placement. Provide 2 nuts per rod. Anchor plate shall be provisioned with a hole for each bolt. Anchor plate located in the same plane. Deform thread per rod. Use chemical thread locking compound’s property. Connect included concrete footing anchor plate to footing. Use chemical thread locking compound to secure.

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 0.5'' minimum per AASHTO M232. No welding shall be permitted on bolts. Provide 2 nuts per rod. Anchor bolts shall be provisioned with a hole for each bolt. Anchor plate located in the same plane. Deform thread per rod. Use chemical thread locking compound to secure.

Anchor plate located in the same plane. Deform thread per rod. Use chemical thread locking compound to secure.
Support Design Loads: See Base Sheet OS-A-1 for design and loading criteria.

Load combinations checked include deadload plus 30% wind normal to sign, 20% parallel to sign, and 50% wind normal to sign, 30% parallel to sign.

1. In lieu of fabricated handhole frame as shown, may cut with 90° intervals. All cut edges to be ground to ANSI Roughness of 500 μin or less.
2. Galvanizing vent holes of adequate size shall be provided on underside of each end of drawing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.
3. Steel pipes, plates, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Priming is not permitted. See Base Sheet OS-A-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 15'-0" or actual sign height, whichever is greater.

In addition to data, may use galvanized drive-Fit caps installed after galvanizing frame.

For Foundation Details, see base sheet OS-F3 (Spread Footing) or OS-F3 (Drilled Shaft).

**Note:** The information provided is in the form of a technical drawing and detailed specifications for a construction project, specifically focusing on the support of overhead sign structures. The drawing includes various sections, details, and tables that outline the dimensions, materials, and requirements for the project. The text is integrated into the diagram to highlight specific instructions and notes for installation and design considerations.
**SECTION C-C**

- **Positioning Plate(s)**
  - Provide 2 uncoated nuts per rod.
  - Nuts shall be "snug tight" against base plate.

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

- **10" Pipe Support Frame Details**
  - Pipe Support Frame Details - Aluminum Truss

**SECTION D-D**

- **Anchor Rod Detail**
  - Drilled Shaft Foundation
  - Provide 2 uncoated nuts per rod.
  - Nuts shall be "snug tight" against anchor plate.

**SECTION B-B**

- **Saddle Shim Detail**
  - For W, see Saddle Sheet (OS-A-6).
  - Deform thread per rod. Provide 1 nut per rod. Deform thread or use chemical thread lock to secure.

**DETAIL B**

- Anchor plate
  - Provide 2 uncoated nuts per rod.
  - Nuts shall be "snug tight" against anchor plate.

**DETAIL C**

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

**BASE**

- `1" x 1" x 1'-8" x 1'-8"

- **Ribs**
  - Each base plate shall have 6"} hole in each base plate.

- **Anchor Rod**
  - Provide 2 uncoated nuts per rod.
  - Nuts shall be "snug tight" against anchor plate.

**DETAIL A**

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

**Anchor Rod Detail**

- Drilled Shaft Foundation
  - Provide 2 uncoated nuts per rod.
  - Nuts shall be "snug tight" against anchor plate.

**SECTION B-B**

- **Saddle Shim Detail**
  - For W, see Saddle Sheet (OS-A-6).
  - Deform thread per rod. Provide 1 nut per rod. Deform thread or use chemical thread lock to secure.

**DETAIL B**

- Anchor plate
  - Provide 2 uncoated nuts per rod.
  - Nuts shall be "snug tight" against anchor plate.

**DETAIL C**

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

**SECTION D-D**

- **Anchor Rod Detail**
  - Drilled Shaft Foundation
  - Provide 2 uncoated nuts per rod.
  - Nuts shall be "snug tight" against anchor plate.

**DETAIL B**

- Anchor plate
  - Provide 2 uncoated nuts per rod.
  - Nuts shall be "snug tight" against anchor plate.

**DETAIL C**

- Anchor plate
  - Spread Footing Foundation
  - Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.
**ASTM B308, Alloy 6061-T6**

| Top of WF(A-N)4x1.79 | Top of WF(A-N)4x3.06 | Sign panels. For location, see sign detail sheets.

---

**WALKWAY AND HANDRAIL DETAILS**

**PLAN WALKWAY AND HANDRAIL SKETCH**

<table>
<thead>
<tr>
<th><strong>BRACKET TABLE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sign Width</strong></td>
</tr>
<tr>
<td>8'-0&quot;</td>
</tr>
<tr>
<td>14'-0&quot;</td>
</tr>
<tr>
<td>20'-0&quot;</td>
</tr>
<tr>
<td>26'-0&quot;</td>
</tr>
<tr>
<td>32'-0&quot;</td>
</tr>
</tbody>
</table>

Notes:
- Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within tolerances.
- a = 12" maximum, 4" minimum (End of sign to E of nearest bracket)
- b = 12" maximum, 4" minimum (End of walkway grating to E of nearest support bracket)
- c = 6" maximum gap (~ to ~ of sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
- h = 6'-0" maximum (~ to ~ of nearest support bracket)

**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. Inverted joints, grating, and light support splices placed as needed.

**TABLE**

<table>
<thead>
<tr>
<th>Structure</th>
<th>Status</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>Walkway Grating and Handrail Lengths</th>
</tr>
</thead>
</table>

Notes:
- Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within tolerances.
- a = 12" maximum, 4" minimum (End of sign to E of nearest bracket)
- b = 12" maximum, 4" minimum (End of walkway grating to E of nearest support bracket)
- c = 6" maximum gap (~ to ~ of sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
- h = 6'-0" maximum (~ to ~ of nearest support bracket)

**TRAFFIC**

Traffic (road plan beneath truss varies)

Traffic (road plan beneath truss varies)

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

**Handrail and truss grating width dimensions are nominal and may vary ± 1/2" based on available standard widths.**

**WALKWAY AND HANDRAIL SKETCH**

(Top plan beneath truss varies)

**BRACKET TABLE**

<table>
<thead>
<tr>
<th><strong>Sign Width</strong></th>
<th><strong>Less Than or Equal To</strong></th>
<th><strong>Number of Brackets Required</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>8'-0&quot;</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>14'-0&quot;</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>20'-0&quot;</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>26'-0&quot;</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>32'-0&quot;</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Notes:
- Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within tolerances.
- a = 12" maximum, 4" minimum (End of sign to E of nearest bracket)
- b = 12" maximum, 4" minimum (End of walkway grating to E of nearest support bracket)
- c = 6" maximum gap (~ to ~ of sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
- h = 6'-0" maximum (~ to ~ of nearest support bracket)

**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. Inverted joints, grating, and light support splices placed as needed.
Maximum DMS weight = 5000 lbs. 4'-2'' maximum cabinet depth includes depth of cabinet plus connection to WF6x5.40. 6'-0'' maximum (~ to ~ sign and/or walkway support brackets, WF6x5.40 support bracket). 

**Bracket Table**

| Structure Number | Station | \(a\) | \(b\) | \(c\) | \(L_1\) | Way
day Grating and Handrail Lengths |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- Space walkway brackets WF6x5.40 for efficiency and within limits shown.
- \(h\) = 6'-0'' maximum (Or support brackets, WF6x5.40)
- \(g\) = 12'' minimum (End of walkway grating to \(E\) of nearest support bracket) 
- \(f\) = 12'' minimum (End of sign to \(E\) of nearest bracket)
- \(d\) = 12'' minimum (End of sign to \(E\) of nearest support bracket, WF6x5.40)

Maximum DMS weight = 5000 lbs. 4'-2'' maximum cabinet depth includes depth of cabinet plus connection to WF6x5.40. For Section B-B and Grating Splice Details, see Base Sheet OS-A-10-DMS. For Handrail Splice Details, see Base Sheet OS-A-11-DMS.
Typical Front Elevation

- With signs and numerals specified for clarity.
- For Section B-B, see Data Sheet OS-A-10.
- 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".

Walkway and Handrail Sketch
- Steel plan beneath truss varied.
- Sign panels. For location, see sign detail sheet(s).
- Cost of truss grating is included in "Overhead Sign Structure".
- For Section B-B, see Base Sheet OS-A-10.

Walkway and Truss Grating
- Aluminium Plank

Note:
- Details shown are considered equal alternatives to the Aluminium Walkway on Base Sheet OS-A-9, and may be substituted by Contractor at no change in contract cost.
- Walkway and Truss Grating with dimensions are nominal and may vary 1/2" based on available standard widths.
- Handrail joints, grating, and light support splices placed as needed.
- Place all sign and walkway brackets as close to panel points as practical.
- Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
- Handrail and walkway grating sections and may vary 1/2" based on available standard widths.
Engineer's review and approval.

Alternate materials may be used subject to the details not shown same as Detail T.

Aluminum Grating

2'-0'' Standard

Topped with WF(A-N)4x3.06

Continuous Truss Grating

2'-0'' by 2'-0'' by 2'-0''

Shim(s) on top of WF(A-N)4x3.06

Aluminum Grating

2'-0'' Standard

Detail C

ELEVATION END VIEW

Main bearing bars

Cross bars

Continuous Truss Grating

1'-4''

Shim(s) on top of WF(A-N)4x3.06

Aluminum Grating

2'-0'' Standard

Handrail hinge

Continuous handrail hinge

Flanged Grating Ends

Handrail splice location

Lengths of horizontal and horizontal pipes beyond adjustment provided by shims. Thicker shims may be used subject to shims performing properly.

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

Stainless steel shims shall be placed as shown in Detail T to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.

Cross bars shall conform to ASTM B221 Alloy 6565-T5 or T42 and spaced on 4'' centers.

Cross bars shall be 1'' x 1'' on 4'' centers and conform to ASTM B221 Alloy 6565-T5 or T42.

Here is a table summarizing the specifications:

<table>
<thead>
<tr>
<th>Structure Number</th>
<th>Station</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on actual height of highest sign given on OS-A-11.
Engineer's review and approval.

Alternate materials may be used subject to the same as Detail T.

See Detail T

Truss grating

Typ. 3
3 sides
(Walkway grating)

DETAIL C

Aluminum Grating

2'-0'' Standard

Walkway grating

W6x5.40 behind signs

ELEVATION

SHIM DETAIL

General Message Sign Cabinet

Pier connected about E Truss

Close spacing along WF6x5.40

Truss grating

DETAIL T

Main bearing bars

Cross bars


cross bars shall be 2'' x 1'' x 8'' welded to handrail posts to protect locations that contact grating.

Main bearing bars shall meet the following requirements:

Main bearing bars shall be w/ A-N 4'' on 4'' centers and conform to ASTM B578Alloy 6061-T6. Cross bars shall be 2'' x 1'' x 8'' on 4'' centers and conform to ASTM B2021 Alloys 6065-T75 or 6061-T6.

Aluminum Grating with modified sections for main bearing bars shall meet the following requirements:

Main bearing bars shall be 2'' x 1'' on 4'' centers and conform to ASTM B578Alloy 6061-T6. Cross bars shall be 2'' x 1'' x 8'' on 4'' centers and conform to ASTM B2021 Alloys 6065-T75 or 6061-T6.

Structure number

Station

A
B
C
D

Specifications for Standard Aluminum Grating

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

Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes being alignment provided by angles. Thicker shims may be used subject to shims being in position properly.

If Handrail Joint present, weld angle to WF(A-N)4 and 2'' extension bars. (See Base Sheet OS-A-12)

If g ra tin g

W6x5.40 behind signs

Main bearing bars shall be w/ 2'' x 1'' on 4'' centers and conform to ASTM B578Alloy 6065-T6. Cross bars shall be 2'' x 1'' x 8'' on 4'' centers and conform to ASTM B2021 Alloys 6065-T75 or 6061-T6.

Section C-C

ENGINEER

COUNTY

FED. AID PROJECT

USER NAME

REVISED

FILE NAME

OS-A-10-DMS

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES

ALTERNATE ALUMINUM WALKWAY DETAILS FOR DMS

Sheet

No.

REV.

CONTRACT NO.

TOTAL SHEETS

OVERHEAD EXIST STRUCTURES

ALTERNATE ALUMINUM WALKWAY DETAILS FOR DMS

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

2. Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes being alignment provided by angles. Thicker shims may be used subject to shims being in position properly.

3. If Handrail Joint present, weld angle to WF(A-N)4 and 2'' extension bars. (See Base Sheet OS-A-12)

4. If g ra tin g

5. Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes being alignment provided by angles. Thicker shims may be used subject to shims being in position properly.

6. If Handrail Joint present, weld angle to WF(A-N)4 and 2'' extension bars. (See Base Sheet OS-A-12)

7. Cabinet manufacturer must design and supply hardware for connection of cabinet to WF(A)-s. Bolts must be stainless steel or hot dip galvanized high strength per IDOT specifications.

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

Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure.

One damper per truss. (31 lbs. minimum. Stockbridge-Type)

Drawn: 6-1-12

See Plan Detail A, B, C, for truss damping device.
For anchor rod size and placement, see Support Frame Detail Sheet.

** Anchor rod shall be ground or tied to bright metal at clamp and cable connection location.

### Standard Specifications

- **Standard Specifications.**
- **502 of the frame, per Article**
- **erection of support**
- **placed prior to**
- **Backfill shall be**
- **Approved clamp**
- **wire or cable**
- **#6 copper**
- **and cap both ends.**
- **Conduit. Thread**
- **3'' Galvanized Steel**
- **for grounding**
- **Approved clamps**
- **(Top)**

#### Bar List - Each Foundation

<table>
<thead>
<tr>
<th>Bar</th>
<th>Number</th>
<th>Size</th>
<th>Length</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>t(E)</td>
<td>12</td>
<td>#5</td>
<td>11'-9''</td>
<td></td>
</tr>
<tr>
<td>u(E)</td>
<td>18</td>
<td>#4</td>
<td>4'-1''</td>
<td></td>
</tr>
<tr>
<td>v(E)</td>
<td>22</td>
<td>#5</td>
<td>4'-2''</td>
<td></td>
</tr>
<tr>
<td>v(E)</td>
<td>22</td>
<td>#5</td>
<td>2'-0''</td>
<td></td>
</tr>
<tr>
<td>w(E)</td>
<td>27</td>
<td>#5</td>
<td>2'-9''</td>
<td></td>
</tr>
</tbody>
</table>

#### Side Elevation

- **m in.**
- **4'-2''**
- **2'-0''**
- **2'-9''**
- **1'-9''**
- **2'-0''**
- **2'-9''**

#### End Elevation

- **m in.**
- **4'-6'', max.**
- **2'-0'', min.**
- **2'-9'', min.**
- **5'-0''**

#### SECTION A-A

- **9'-0''**
- **7'-0''**
- **9'-0''**

#### Note:

- The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.0 tsf, which must be determined by previous soil investigations at the job site. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.
- During construction, if footing length or width or wall height changes by more than 12", or if reinforcement is changed, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

### DETAILS FOR 6" Ø SUPPORT FRAME

#### Bar List - Each Foundation

<table>
<thead>
<tr>
<th>Bar</th>
<th>Number</th>
<th>Size</th>
<th>Length</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>t(E)</td>
<td>12</td>
<td>#5</td>
<td>11'-9''</td>
<td></td>
</tr>
<tr>
<td>u(E)</td>
<td>18</td>
<td>#4</td>
<td>4'-1''</td>
<td></td>
</tr>
<tr>
<td>v(E)</td>
<td>22</td>
<td>#5</td>
<td>4'-2''</td>
<td></td>
</tr>
<tr>
<td>v(E)</td>
<td>22</td>
<td>#5</td>
<td>2'-0''</td>
<td></td>
</tr>
<tr>
<td>w(E)</td>
<td>27</td>
<td>#5</td>
<td>2'-9''</td>
<td></td>
</tr>
</tbody>
</table>

#### State of Illinois

- **Department of Transportation**
- **Overhead Sign Structures**
- **Spread Footing Details**

#### FILE NAME = USER NAME

#### Plot Scale =

#### PLOT DATE =

#### CHECKED =

#### DRAWN =

#### CHECKED =

#### DESIGNED =

#### REVISED =

#### DEPARTMENT OF TRANSPORTATION

#### STATE OF ILLINOIS

#### CONTRACT NO.

#### TOTAL SHEETS

#### SHEET NO.

#### STATE OF ILLINOIS

#### F.A.

#### RTE.

#### SECTION

#### FED. AID PROJECT

#### COUNTY

#### CONSTRUCTION

#### TOTAL

#### SHEETS

#### SHEET

#### NO.

#### CONTRACT NO.

#### DEPARTMENT OF TRANSPORTATION

#### STATE OF ILLINOIS

#### F.A.

#### RTE.

#### SECTION

#### FED. AID PROJECT

#### COUNTY

#### CONSTRUCTION

#### TOTAL

#### SHEETS

#### SHEET

#### NO.

#### CONTRACT NO.
For another rod size and placement, see Support Frame Detail Sheet.

Section A-A

Bar List - Each Foundation

<table>
<thead>
<tr>
<th>Bar</th>
<th>Number</th>
<th>Size</th>
<th>Length</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>v(E)</td>
<td>9-#5</td>
<td>at</td>
<td>12''</td>
<td>cts.</td>
</tr>
<tr>
<td>w(E)</td>
<td>19-#5</td>
<td>at</td>
<td>12''</td>
<td>cts.</td>
</tr>
<tr>
<td>t(E)</td>
<td>13-#5</td>
<td>at</td>
<td>1'-6''</td>
<td>cts.</td>
</tr>
</tbody>
</table>

Note:

The foundation details shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (US) of at least 1.0 tsf, which must be determined by previous soil investigations. The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (US) of at least 1.0 tsf, which must be determined by previous soil investigations. The footing length or width or wall height changes by more than 12", or if reinforcement is changed, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.
For anchor rod size and placement, see Support Frame Detail Sheet. **Anchor rod shall be ground or tied to bright metal of clamp and cable connection location.**

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Concrete Foundations.

**Bar List - Each Foundation**

<table>
<thead>
<tr>
<th>Bar</th>
<th>Number</th>
<th>Size</th>
<th>Length</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>t(E)</td>
<td>12</td>
<td>#5</td>
<td>14'-3&quot;</td>
<td><strong>v(E) or v(E)</strong></td>
</tr>
<tr>
<td>u(E)</td>
<td>18</td>
<td>#4</td>
<td>4'-1&quot;</td>
<td><strong>t(E)</strong></td>
</tr>
<tr>
<td>v(E)</td>
<td>28</td>
<td>#5</td>
<td>7'-3&quot;</td>
<td><strong>u(E)</strong></td>
</tr>
<tr>
<td>w(E)</td>
<td>28</td>
<td>#5</td>
<td>12&quot;</td>
<td><strong>v(E)</strong></td>
</tr>
<tr>
<td>w(E)</td>
<td>39</td>
<td>#5</td>
<td>3'-6&quot;</td>
<td><strong>t(E)</strong></td>
</tr>
</tbody>
</table>

*Length of t(E) bar = (Dim. M) - 6"

v (E) bar = (Dim. N) - 3"

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.0 tsf, which must be determined by previous soil investigations at the job site. When other conditions are indicated, the footing data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

During construction, if footing length or width or wall height change by more than 12", or if reinforcement is changed, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.
For anchor rod size and placement, see Support Frame Detail Sheet.

Anchor rod shall be ground or tied to bright metal of stamp and cable connection location.

* A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Concrete Foundations.

** Length of t(E) bar = (Dim. M) - 6''

v (E) bar = (Dim. N) - 3''

Note:

- The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.0 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

- During construction, if footing length or width or wall height change by more than 12'', or if reinforcement is changed, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

Details for 12'' Spread Footing Details

<table>
<thead>
<tr>
<th>Structure Number</th>
<th>Station</th>
<th>Left Foundation</th>
<th>Right Foundation</th>
<th>Class Sr Concrete (Cu. Yds.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Elevation Top</td>
<td>Elevation Bottom</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>W</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>W</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>W</td>
<td>W</td>
<td></td>
</tr>
</tbody>
</table>

** FILE NAME = USER NAME**

PLOT SCALE = PLOT DATE = CHECKED = DRAWN = CHECKED = DESIGNED = REVISED = DEPARTMENT OF TRANSPORTATION

STATE OF ILLINOIS

OVERHEAD SIGN STRUCTURES

SPREAD FOOTING DETAILS

CONTRACT NO.

TOTAL SHEETS

SHEET NO.

RTE. SECTION

COUNTY

F.A.

FED. AID PROJECT