## Illinois Tollway Standard Drawing Revisions

### Section F  Sign Structure

<table>
<thead>
<tr>
<th>Standard</th>
<th>Modification Summary</th>
<th>Effective: 03-01-2021</th>
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</thead>
<tbody>
<tr>
<td>F1</td>
<td>Overhead Sign Structure Span Type Structure Details</td>
<td></td>
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<tr>
<td></td>
<td>Sheet 1 Update Design Loading, Design Specifications and set P and L dimensions as maximums</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 4 Increased drilled shaft depth for longer span median foundations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 5 Increased drilled shaft depth for longer span median foundations.</td>
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<tr>
<td>F4</td>
<td>Overhead Sign Structure Cantilever Type Structure Details</td>
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<td></td>
<td>Sheet 1 Update Design Loading and Design Specifications</td>
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</tr>
<tr>
<td></td>
<td>Sheet 2 Change member size - vertical diagonal, 25' span to 3&quot;XS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 2 Change member size - horizontal diagonal, 50' span to 5&quot;XXS</td>
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<tr>
<td></td>
<td>Sheet 4 Update Detail 7 notation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 10 Update Limit on DMS Overhang beyond Truss</td>
<td></td>
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<tr>
<td>F6</td>
<td>Overhead Sign Structure Sign, Luminaire and Beacon Supports</td>
<td></td>
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<tr>
<td></td>
<td>Sheet 1 Update Design Loading and Design Specifications</td>
<td></td>
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<tr>
<td>F9</td>
<td>Breakway Sign Support Details</td>
<td></td>
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<tr>
<td></td>
<td>Sheet 1 Update Design Loading and Design Specifications</td>
<td></td>
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<tr>
<td></td>
<td>Sheet 2 Update Foundation and Fuse Plate Bolt Tables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 5 New sheet with tables for sign spacing</td>
<td></td>
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<tr>
<td>F13</td>
<td>Overhead Sign Structure Monotube Type (Steel) Mainline Structure Details</td>
<td></td>
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<tr>
<td></td>
<td>Sheet 4 Update Design Loading and Design Specifications</td>
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<tr>
<td></td>
<td>Sheet 6 Increase v(E) and v1(E) bars to #11</td>
<td></td>
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<tr>
<td></td>
<td>Sheet 7 Change v1(E) bar callout to #11</td>
<td></td>
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<tr>
<td></td>
<td>Sheet 8 Increase d3(E) bar length length to 2'-5&quot;</td>
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<td>F14</td>
<td>Overhead Sign Structure Butterfly Type Structure Details</td>
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<td>Sheet 1 Update Design Loading and Design Specifications</td>
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<td>F15</td>
<td>Overhead Sign Structure Monotube Type (Steel) Structure Details for AET Ramp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 4 Update Design Loading and Design Specifications</td>
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<tr>
<td></td>
<td>Sheet 7 Increase d3(E) bar length length to 2'-5&quot;</td>
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<td>F16</td>
<td>Overhead Sign Structure Monotube Type (Steel) Structure Details for Cash-IPO Ramp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 3 Update Design Loading and Design Specifications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 6 Increase d3(E) bar length length to 2'-5&quot;</td>
<td></td>
</tr>
<tr>
<td>F17</td>
<td>Overhead Sign Structure Span Type (Steel) Structure Details</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 1 Update Design Loading and Design Specifications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sheet 13 New details for OSHA compliant tie off connections</td>
<td></td>
</tr>
<tr>
<td>F19</td>
<td>Noise Abatement Wall Mounted Sign Support</td>
<td></td>
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<tr>
<td></td>
<td>Sheet 1 Add material note for partial threaded studs</td>
<td></td>
</tr>
</tbody>
</table>

| | New Sheet | Retired Standard |
OVERHEAD SIGN STRUCTURE
SPAN TYPE
STRUCTURE DETAILS
STANDARD F1-11
NOTES:

1. SEE SHEET 3 OF THIS SERIES FOR GENERAL NOTES AND DESIGN CRITERIA.

2. FOR SIGN STRUCTURE BASE PLATE DETAIL, SEE SHEET 2 OF THIS SERIES.

3. REFERENCE ILLINOIS TOLLWAY STANDARD DRAWING C5 FOR GUTTER SLOPE.

4. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS, DO NOT CUT推薦

5. COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS.

6. PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF THE BARRIER AND TOP FACE OF GUTTER.
## SIDE ELEVATION

- **Concrete Column**: BONDED CONSTRUCTION JOINT
- **Concrete Beam**: SEE NOTE 10

### SIDE VIEW

- **BONDED CONSTRUCTION JOINT**
- **SEE NOTE 10**

### VIEW B-B

- **Concrete Column**
- **Concrete Beam**

### SECTION C-C

- **Concrete Column**
- **Concrete Beam**

### TABLE G: DESIGN TABLE FOR DRILLED SHAFTS IN COHESIVE SOILS

<table>
<thead>
<tr>
<th>Bar</th>
<th>Min. Lap</th>
<th>Top</th>
<th>Bottom</th>
<th>Max.</th>
<th>B</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>#4</td>
<td>2'-7&quot;</td>
<td>18&quot;</td>
<td>6&quot;</td>
<td>12&quot;</td>
<td>18&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>#5</td>
<td>2'-0&quot;</td>
<td>21&quot;</td>
<td>6&quot;</td>
<td>21</td>
<td>18&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>#8</td>
<td>2'-0&quot;</td>
<td>37.3</td>
<td>6&quot;</td>
<td>10,800</td>
<td>12&quot;</td>
<td>16&quot;</td>
</tr>
</tbody>
</table>

### Notes:

1. **Concrete Column**
   - **Concrete Beam**: SEE SIDE ELEVATION
2. **Concrete Column**
   - **Concrete Beam**: SEE TABLE G
3. **Concrete Column**
   - **Concrete Beam**: SEE NOTE 10
4. **Concrete Column**
   - **Concrete Beam**: SEE NOTE 10

### Additional Information:

- **Concrete Column**: BONDED CONSTRUCTION JOINT
- **Concrete Beam**: SEE NOTE 10

### Bar List - Each Foundation

<table>
<thead>
<tr>
<th>Bar</th>
<th>Min. Lap</th>
<th>Top</th>
<th>Bottom</th>
<th>Max.</th>
<th>B</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>#4</td>
<td>2'-7&quot;</td>
<td>18&quot;</td>
<td>6&quot;</td>
<td>12&quot;</td>
<td>18&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>#5</td>
<td>2'-0&quot;</td>
<td>21&quot;</td>
<td>6&quot;</td>
<td>21</td>
<td>18&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>#8</td>
<td>2'-0&quot;</td>
<td>37.3</td>
<td>6&quot;</td>
<td>10,800</td>
<td>12&quot;</td>
<td>16&quot;</td>
</tr>
</tbody>
</table>

### General Details:

- **Concrete Column**: BONDED CONSTRUCTION JOINT
- **Concrete Beam**: SEE NOTE 10

**Overhead Sign Structure Cantilever Type Structure Details**

**Standard F4-12**
**Side Elevation**

**PLAN**

**SECTION D-D**

**NOTES:**
1. See sheet 6 of this series for additional notes.
2. Grade beam and drilled shaft dimensions, details, quantities and bar list are shown on sheet 5 of this series.
3. Seal exposed surface of 1/2" preformed joint filler with black asphalt and silicone sealed 1/8" deep and mud 1/4" below surface of concrete.
4. As-received anchor bars will be epoxy grouted to the column, provide 10% minimum embedment, install anchors according to standard specifications. Better than 10", locate grade beam prior to drilling, do not grout grade beam reinforcing, install anchors.
5. Coordinate correct size, location and quantity with electrical plans, conduits shall be placed to miss reinforcement bars, do not cut reinforcement bars.
6. Protective coat shall be applied to traffic and top faces of crashwall.

**BAR LIST - CRASHWALL**

<table>
<thead>
<tr>
<th>BAR</th>
<th>SIZE</th>
<th>LENGTH</th>
<th>NUMBER</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>v4(E)</td>
<td>#5</td>
<td>1'-0&quot;</td>
<td>14</td>
<td>12'-2&quot;</td>
</tr>
<tr>
<td>v3(E)</td>
<td>#5</td>
<td>2'-0&quot;</td>
<td>24</td>
<td>11'-2&quot;</td>
</tr>
</tbody>
</table>

**TABLE H: DESIGN TABLE FOR CRASHWALL**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>SHAPE #</th>
<th>NUMBER</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1'-0&quot;</td>
<td>(TYP)</td>
<td>14</td>
<td>12'-2&quot;</td>
</tr>
<tr>
<td>2'-0&quot;</td>
<td>(TYP)</td>
<td>24</td>
<td>11'-2&quot;</td>
</tr>
</tbody>
</table>

**CONCRETE CLASS SI**

**OVERHEAD SIGN STRUCTURE**

**CANTILEVER TYPE**

**STRUCTURE DETAILS**
NOTE:
DAMPER: ONE DAMPER PER TRUSS, IN 31 LBS. STOCKBRIDGE-TYPE 20" MINIMUM BETWEEN ENDS OF WEIGHTS.

SEE TABLE C ON SHEET 2 OF THIS SERIES
**NOTES:**

1. DMS TYPE 2W - WALK-IN SHALL BE ATTACHED TO TRUSS AS CLOSE TO PANEL JOINTS AS POSSIBLE.

2. VERIFY SIGN SUPPORT MEMBER LENGTH PRIOR TO FABRICATION.

3. DMS TYPE 2W - WALK-IN MANUFACTURER SHALL DESIGN, PROVIDE AND INSTALL HORIZONTAL MOUNTING MEMBERS. VERTICAL SPACING OF HORIZONTAL MEMBERS SHALL BE DESIGNED BY DMS TYPE 2W - WALK-IN MANUFACTURER. VERIFY VERTICAL SPACING WITH HOLEs FOR STAINLESS STEEL U-BOLT.

**TABLE 1: SIGN SUPPORT TABLE**

<table>
<thead>
<tr>
<th>SIGN WIDTH</th>
<th>NUMBER OF SIGN SUPPORTS REQUIRED</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>32'-0&quot;</td>
<td>6</td>
</tr>
</tbody>
</table>

**TABLE 2: DMS TYPE 2W - WALK-IN TABLE**

<table>
<thead>
<tr>
<th>TRUSS LENGTH</th>
<th>HEIGHT</th>
<th>WIDTH</th>
<th>DEPTH</th>
<th>MAXIMUM WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>18'-0&quot;</td>
<td>5'-0&quot;</td>
<td>2'-0&quot;</td>
<td>5'-0&quot;</td>
<td>4200 LBS.</td>
</tr>
<tr>
<td>22'-5&quot;</td>
<td>5'-0&quot;</td>
<td>2'-0&quot;</td>
<td>5'-0&quot;</td>
<td>4200 LBS.</td>
</tr>
<tr>
<td>26'-6&quot;</td>
<td>5'-0&quot;</td>
<td>2'-0&quot;</td>
<td>5'-0&quot;</td>
<td>4200 LBS.</td>
</tr>
<tr>
<td>30'-7&quot;</td>
<td>5'-0&quot;</td>
<td>2'-0&quot;</td>
<td>5'-0&quot;</td>
<td>4200 LBS.</td>
</tr>
</tbody>
</table>

**SECTION A-A**

DMS TYPE 2W - WALK-IN SUPPORT DETAIL

**PLAN**

- DMS TYPE 2W - WALK-IN
- DMS TYPE 2W - WALK-IN CABINET

**VERTICAL SPACING WITH HOLES FOR STAINLESS STEEL U-BOLT.**
TYPICAL FRONT ELEVATION

NO BRACKET AND GRATING Dimensions are nominal and may vary based on actual DMS Type 2W - Walk-In dimensions plus Manufacturer's Mounting Devices. For Section B-B, See Sheet 11 of This Series.

SPACE WALKWAY BRACKETS AND SIGN BRACKETS WITHIN LIMITS SHOWN. a = 12'' MAXIMUM, 4'' MINIMUM (END OF WALKWAY GRATING TO TOP OF NEAREST SUPPORT BRACKET)
b = 0'' MINIMUM TO 6'' MAX.
c = 0'' MINIMUM TO 6'' MAX.
d = 0'' MINIMUM TO 6'' MAX.

PLACE ALL SIGN AND WALKWAY BRACKETS AS CLOSE TO PANEL POINTS AS PRACTICAL FOR SECTION B-B, SEE SHEET 11 OF THIS SERIES.

NOTES:

WEIGHT PLAN DEPICTS TRUSS VARIATION. WALKWAY MAY BE LOCATED AT RIGHT OR LEFT END OF TRUSS.

For Section B-B, See Sheet 11 of This Series.

Walkway and Truss Grating width dimensions are nominal and may vary ± 1/8'' based on Available Standard Width.

PLACE ALL SIGN AND WALKWAY BRACKETS AS CLOSE TO PANEL POINTS AS PRACTICAL. FOR SECTION B-B, SEE SHEET 11 OF THIS SERIES.

WALKWAY AND HANDRAIL SKETCH

PLANT WALKWAY AND HANDRAIL SKETCH

SAFETY CHAIN, TYP.

*Bracket and Grating Dimensions are nominal and may vary based on actual DMS Type 2W - Walk-In dimensions plus Manufacturer's Mounting Devices. Place all sign and walkway brackets as close to panel points as practical.

WALKWAY SUPPORT ONLY

h = 6'-0'' MAXIMUM (~ TO ~ SIGN AND/OR WALKWAY SUPPORT BRACKETS, W6X9)

Section B-B, See Sheet 11 of This Series.

Top of W6x9 Sign Bracket

Top of W6x9 Walkway Bracket

Design Length (L)

Length

g = 12'' MAXIMUM, 4'' MINIMUM (END OF WALKWAY GRATING TO TOP OF NEAREST SUPPORT BRACKET)

h = 6'-0'' MAXIMUM (~ TO ~ SIGN AND/OR WALKWAY SUPPORT BRACKETS, W6X9)

Design Length (L)

c = 0'' MINIMUM TO 6'' MAX.

d = 0'' MINIMUM TO 6'' MAX.

DATE 3/31/2014

APPROVED:

CHIEF ENGINEERING OFFICER

Points as Practical.

WALKWAY AND HANDRAIL SKETCH

PHOTOGRAPHIC DETAIL

WALKWAY AND SUPPORT TRUSS

- WALK-IN LENGTH

WALKWAY AND HANDRAIL SKETCH

PLANT WALKWAY AND HANDRAIL SKETCH

SAFETY CHAIN, TYP.

*Bracket and Grating Dimensions are nominal and may vary based on actual DMS Type 2W - Walk-In dimensions plus Manufacturer's Mounting Devices. Place all sign and walkway brackets as close to panel points as practical.

WALKWAY SUPPORT ONLY

h = 6'-0'' MAXIMUM (~ TO ~ SIGN AND/OR WALKWAY SUPPORT BRACKETS, W6X9)

Section B-B, See Sheet 11 of This Series.

Top of W6x9 Sign Bracket

Top of W6x9 Walkway Bracket

Design Length (L)

Length

g = 12'' MAXIMUM, 4'' MINIMUM (END OF WALKWAY GRATING TO TOP OF NEAREST SUPPORT BRACKET)

h = 6'-0'' MAXIMUM (~ TO ~ SIGN AND/OR WALKWAY SUPPORT BRACKETS, W6X9)

Design Length (L)

c = 0'' MINIMUM TO 6'' MAX.

d = 0'' MINIMUM TO 6'' MAX.

DATE 3/31/2014

APPROVED:

CHIEF ENGINEERING OFFICER

Points as Practical.
**Notes:**

1. Install standard force-fit end caps on each 1/4" end plates with 3/8" cap, and grind smooth all rail ends.


3. 3/8" x 3/16" bolt thru horizontal rail member, provide locknut and two stainless steel washers for bolt. Use 3/16" eyebolts in 1/4" holes on top rail at ends only.

4. One required for each end of walkway.

**Structure Details:**

- Cantilever type
- Overhead sign structure
- CANTILEVER STRUCTURE DETAILS

**Dimensions:**

- 12' x 3' x 7'
- 1'-2"
- 1'-6"
- 2'-10"

**Materials:**

- 7/8" stainless steel pin
- Stainless steel release self-locking ring-grip quick drill hole
- Stainless steel pin chain ring hole for 3/8" plate
- 3/8" stainless steel chain
- Stainless steel quick drill for 1/2" hole in angle
- Stainless steel pin chain ring
- Hex head bolt
- Nut and two stainless steel washers.
- Steel ring each end 6" long, with 1/4" stainless steel chain.
- Steel pipe 1" STD. TYP.
- Steel ring each end 6" long, with 1/4" stainless steel chain.
- Steel ring each end 6" long, with 1/4" stainless steel chain.
- Steel ring each end 6" long, with 1/4" stainless steel chain.

**Detail:**

- Handrail Details
- Alternate Safety Chain Attachment
- Side Elevation
- Front Elevation
- Side Elevation (showing safety chain w/o sign)
- Alternate Safety Chain Attachment

**Specifications:**

- Dimensions plus manufacturers on actual DMS type 2W - walk-in
- Dimensions plus manufacturers on actual DMS type 2W - walk-in
- Dimensions plus manufacturers on actual DMS type 2W - walk-in
- Dimensions plus manufacturers on actual DMS type 2W - walk-in
- Dimensions plus manufacturers on actual DMS type 2W - walk-in

**Artwork:**

- Sections, details, and elevations of handrail and safety chain attachment.
- Plans and elevations of handrail and safety chain attachment.
- Details of handrail and safety chain attachment.
- Elevations of handrail and safety chain attachment.
- Plans of handrail and safety chain attachment.

**Approvals:**

- Chief Engineering Office (date: 3-31-2014)

**Sheet Information:**

- Sheet 12 of 12
- 12-1-2014
**SIGN AND LUMINAIRE SUPPORT DETAIL**

**NOTES:**
1. SIGN PANEL SHALL BE ATTACHED TO TRUSS AS CLOSE TO PANEL JOINTS AS POSSIBLE.
2. SIGN & LUMINAIRE SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN SIGN STRUCTURE IS TO BE ILLUMINATED.
3. BEACON SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN FLASHING IS REQUIRED.
4. WF4x1.79 AND 4"x2" CHANNEL SHALL BE 6061-T6 ALUMINUM.
5. WELDS MUST BE IN ACCORDANCE WITH AWS D1.2.
6. LUMINAIRE SUPPORTS TO BE INSTALLED ON THE 4"x2" CHANNEL.
7. THE C.G. OF THE LUMINAIRE SHALL NOT EXCEED 6" VERTICALLY OR HORIZONTALLY FROM WHERE IT ATTACHES ON THE 4"x2" CHANNEL.
8. THE MAXIMUM WEIGHT FOR THE LUMINAIRE SHALL BE 15LBS.
9. BEACON IS REQUIRED.
10. BEACON SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN FLASHING IS REQUIRED.
11. WELDS MUST BE IN ACCORDANCE WITH AWS D1.2.
12. LUMINAIRES SHALL NOT HAVE A PROJECTED AREA FOR WIND LOADS LARGER THAN SHOWN.
## Foundation Table

<table>
<thead>
<tr>
<th>Post</th>
<th>Reinforcement</th>
<th>Sub Post</th>
<th>Bolt Size and Torque</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>T1</th>
<th>T2</th>
<th>A</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1B</td>
<td>#3</td>
<td>6&quot;</td>
<td>2 - 5/8&quot; x 5/8&quot; LG</td>
<td>6&quot;</td>
<td>2/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
</tr>
<tr>
<td>M1C</td>
<td>#3</td>
<td>6&quot;</td>
<td>2 - 5/8&quot; x 5/8&quot; LG</td>
<td>6&quot;</td>
<td>2/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
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<td>1/5&quot;</td>
<td>1/5&quot;</td>
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</tr>
<tr>
<td>M1D</td>
<td>#3</td>
<td>6&quot;</td>
<td>2 - 5/8&quot; x 5/8&quot; LG</td>
<td>6&quot;</td>
<td>2/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
</tr>
<tr>
<td>M1E</td>
<td>#3</td>
<td>6&quot;</td>
<td>2 - 5/8&quot; x 5/8&quot; LG</td>
<td>6&quot;</td>
<td>2/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
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<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
<td>1/5&quot;</td>
</tr>
</tbody>
</table>

## Base Connection Data Table

<table>
<thead>
<tr>
<th>Post</th>
<th>Sign Panel Height (H)</th>
<th>Equiv. Torque Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1A</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
</tr>
<tr>
<td>M1B</td>
<td>1'-0&quot;</td>
<td>750&quot; = 62.5' #</td>
</tr>
<tr>
<td>M1C</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
</tr>
<tr>
<td>M1D</td>
<td>1'-0&quot;</td>
<td>750&quot; = 62.5' #</td>
</tr>
<tr>
<td>M1E</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
</tr>
</tbody>
</table>

## Procedure for Assembly of Base Connection

1. Assemble post to stub with ALL bolts and one of the three flat washers on each bolt, tighten plates as shown.
2. Washers may be used between plates to level post.
3. Tighten bolts in base plate in a systematic order to the required torque.
4. Loosen each bolt and retension to the required torque in same order as initial tightening.
5. Burrs or center punch any points at junction of bolt and nut to prevent nut from loosening.

## Fuse Plate Bolt Size Table

<table>
<thead>
<tr>
<th>Post</th>
<th>Sign Panel Height (H)</th>
<th>Equiv. Torque Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1A</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
</tr>
<tr>
<td>M1B</td>
<td>1'-0&quot;</td>
<td>750&quot; = 62.5' #</td>
</tr>
<tr>
<td>M1C</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
</tr>
<tr>
<td>M1D</td>
<td>1'-0&quot;</td>
<td>750&quot; = 62.5' #</td>
</tr>
<tr>
<td>M1E</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
</tr>
</tbody>
</table>

## Procedure for Fuse Plate Bolt Tightening

All friction fuse bolts shall be tightened in the shop as approved by the engineer according to one of the following methods:

1. Turn-of-Nut Tightening.
2. Tightening by use of a direct tension indicator.
3. The above methods of installation and tightening shall conform to the latest issue of the specification for structural joints using A325 or A490 bolts. For slip-critical connections as issued by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.

Tightening shall be to such a degree as to obtain the following minimum residual tension in each bolt:

<table>
<thead>
<tr>
<th>H</th>
<th>Min. Residual Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1'-0&quot;</td>
<td>11,050</td>
</tr>
<tr>
<td>1'-0&quot;</td>
<td>11,050</td>
</tr>
<tr>
<td>1'-0&quot;</td>
<td>11,050</td>
</tr>
<tr>
<td>1'-0&quot;</td>
<td>11,050</td>
</tr>
</tbody>
</table>

## Foundation Table continued

<table>
<thead>
<tr>
<th>Post</th>
<th>Fusion Plate Bolt Size Table</th>
<th>Sign Panel Height (H)</th>
<th>Equivalent Torque Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1A</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
<td></td>
</tr>
<tr>
<td>M1B</td>
<td>1'-0&quot;</td>
<td>750&quot; = 62.5' #</td>
<td></td>
</tr>
<tr>
<td>M1C</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
<td></td>
</tr>
<tr>
<td>M1D</td>
<td>1'-0&quot;</td>
<td>750&quot; = 62.5' #</td>
<td></td>
</tr>
<tr>
<td>M1E</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
<td></td>
</tr>
</tbody>
</table>

## Base Connection Data Table continued

<table>
<thead>
<tr>
<th>Post</th>
<th>Sign Panel Height (H)</th>
<th>Equivalent Torque Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1A</td>
<td>1'-0&quot;</td>
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</tr>
<tr>
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<td>1'-0&quot;</td>
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</tr>
<tr>
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<td>1'-0&quot;</td>
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</tr>
<tr>
<td>M1E</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
</tr>
</tbody>
</table>

## Fuse Plate Bolt Size Table continued

<table>
<thead>
<tr>
<th>Post</th>
<th>Sign Panel Height (H)</th>
<th>Equivalent Torque Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1A</td>
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<td>M1B</td>
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<tr>
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</tr>
<tr>
<td>M1E</td>
<td>1'-0&quot;</td>
<td>450&quot; = 37' #</td>
</tr>
</tbody>
</table>
NOTES:

1. SEE SIGN INSTALLATION SCHEDULE IN CONTRACT PLANS FOR DIMENSIONS.
2. THE DIMENSIONS OF ALL POSTS FOR GROUND MOUNTED SIGNS ARE BASED ON DESIGN CROSS SECTIONS. THE CONTRACTOR SHALL VERIFY REQUIRED POST LENGTHS IN THE FIELD. PAG EXCLUDING SHOP DRAWINGS AND POST FABRICATION TO MAINTAIN THE CLEARANCES SHOWN.
3. SIGN FOUNDATION ELEVATIONS TO BE BASED ON FINISHED SLOPES.
4. ANY ADDITIONAL SIGN TO BE ADDED LATER MUST BE SUPPORTED BY THE EXISTING SIGN PANEL AND NOT THE SIGN POST. MINIMUM CLEARANCES SHALL BE MAINTAINED.
5. SIGNS THAT ARE PLACED WELL OUTSIDE THE CLEAR ZONE MAY BE INSTALLED WITH A MINIMUM VERTICAL ELEVATION OF 5 FEET, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE HORIZONTAL ELEVATION OF THE NEAR EDGE OF TRAVELED ROADWAY.
6. MINIMUM HEIGHT OF LOWEST POST SHALL BE 7'-0" MEASURED BETWEEN STUB PROJECTION AND HINGE JOINT.
7. FOR TWO POSTS SPACED LESS THAN 7 FEET APART, EACH POST SHALL HAVE A MASS LESS THAN 18 lb/ft².
8. WHEN THE TOTAL COMBINED WEIGHT OF THE TWO POSTS LOCATED WITHIN 7 FEET OF EACH OTHER EXCEEDS 600 lbs., THE SIGN SHALL BE PLACED WELL OUTSIDE THE CLEAR ZONE OR BE SHIELDED FROM VEHICLE IMPACT.
NOTES:
1. See sign installation schedule in contract plans for dimensions.
2. The dimensions of all posts for ground mounted signs are based on design cross sections. The contractor shall verify required post lengths in the field, prior to submitting shop drawings and post fabrication to maintain the clearances shown.
3. Sign foundation elevations to be based on finished slopes.
4. Any additional sign to be added later must be supported by the existing sign panel and not the sign post. Minimum clearances shall be maintained.
5. Signs that are placed well outside the clear zone may be installed with a minimum height of 5 feet, measured vertically from the bottom of the sign to the horizontal elevation of the near edge of traveled roadway.
6. Minimum height of lowest post shall be 7'-0" measured between stub projection and hinge joint.
7. For two posts spaced less than 7 feet apart, each post shall have a mass less than 18 lbs.:
8. When the total combined weight of the two posts located within 7 feet of each other exceeds 600 lbs., the sign shall be placed well outside the clear zone or be shielded from vehicular impact.
### POST SIZE W10x22

<table>
<thead>
<tr>
<th>POST MAX SPACING</th>
<th>SIGN DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>3'-0&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>5'-0&quot;</td>
<td>5'-0&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>9'-0&quot;</td>
<td>10'-0&quot;</td>
</tr>
</tbody>
</table>

### POST SIZE W14x38

<table>
<thead>
<tr>
<th>POST MAX SPACING</th>
<th>SIGN DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>3'-0&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>5'-0&quot;</td>
<td>5'-0&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>9'-0&quot;</td>
<td>10'-0&quot;</td>
</tr>
</tbody>
</table>

### POST SIZE W14x50

<table>
<thead>
<tr>
<th>POST MAX SPACING</th>
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</tr>
</thead>
<tbody>
<tr>
<td>3'-0&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>5'-0&quot;</td>
<td>5'-0&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>9'-0&quot;</td>
<td>10'-0&quot;</td>
</tr>
</tbody>
</table>

### Post MAX SPACING

<table>
<thead>
<tr>
<th>POST SIZE W14x26</th>
</tr>
</thead>
<tbody>
<tr>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>10'-0&quot;</td>
</tr>
</tbody>
</table>

### SIGN DEPTH

<table>
<thead>
<tr>
<th>CLEAR HEIGHT</th>
<th>POST MAX SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>3'-0&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>4'-0&quot;</td>
<td>4'-0&quot;</td>
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<tr>
<td>5'-0&quot;</td>
<td>5'-0&quot;</td>
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<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>7'-0&quot;</td>
<td>7'-0&quot;</td>
</tr>
</tbody>
</table>

### BREAKAWAY SIGN SUPPORT DETAILS

NOTES:

1. CLEAR HEIGHT SHALL BE TAKEN AS THE DISTANCE BETWEEN THE STUB PROJECTION AND THE BOTTOM OF THE SIGN PANEL.
GROUND MOUNT SIGN POSITIONING

TANGENT SECTION

CURVE SECTION

TANGENT SECTION

MEDIAN BARRIER SIGN POSITIONING

CURVE SECTION

LEGEND

DIRECTION OF TRAFFIC

SECTION WITH GUTTER

SECTION WITHOUT GUTTER

NOTE:
- Top of Median Barrier
- Paved Shoulder
GENERAL NOTES:

1. ALL ANCHOR BOLTS FOR MEDIAN BARRIER MOUNT DETAIL SHALL BE ⅜" DIA. RED HEAD "TRUBOLT" OR APPROVED EQUAL.
2. ALL DIMENSIONS ARE IN INCHES UNLESS SHOWN OTHERWISE.
3. FOLLOWING ARE THE STEPS FOR FASTENING THE MILEPOST MARKER SIGN PANEL. ALL MOUNTING DETAILS SHOWN ON THIS SHEET APPLY:
   - CENTER ALL FASTENERS ON THE SIGN PANEL.
   - THE DISTANCE BETWEEN SUCCESSIVE FASTENERS SHALL NOT EXCEED 2'-0".
   - CENTER THE ⅜" DIA. BOLT IN THE MIDDLE OF THE SIGN.
   - START AND FINISH THE FASTENER SPACING USING A MINIMUM OF 3" TO A MAXIMUM OF 6" FROM THE TOP AND BOTTOM EDGE OF THE SIGN PANEL.
4. USE THE SAME ATTACHMENT FOR BACK TO BACK MILEPOST MARKER SIGN.
5. DISTANCE FROM THE EDGE OF SHOULDER TO THE BOTTOM OF THE MILEPOST MARKER SIGN SHALL BE A MINIMUM OF 4'-0" REGARDLESS OF BARRIER TYPE.
6. THE TOP SECTION SHALL BE TELESCOPED INTO THE BASE SECTION 12 INCHES AND FASTENED TOGETHER.
7. FOR ATTACHMENT TO BRIDGE PARAPET USE BARRIER WALL MOUNT DETAIL. ONLY ONE PANEL REQUIRED WHEN ATTACHED TO PARAPET ALONG OUTSIDE SHOULders.
8. FOR ATTACHMENT TO BRIDGE PARAPET USE BARRIER WALL MOUNT DETAIL. ONLY ONE PANEL REQUIRED WHEN ATTACHED TO PARAPET ALONG OUTSIDE SHOULders.
9. BASE AND POST ASSEMBLY SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASTHO M111 OR AS SPECIFIED IN THE SPECIAL PROVISION.

DISTANCE FROM THE EDGE OF SHOULDER TO THE BOTTOM OF THE MILEPOST MARKER SIGN SHALL BE A MINIMUM OF 4'-0" REGARDLESS OF BARRIER TYPE.

MILEPOST MARKER

TELESCOPING STEEL POSTS

GROUND MOUNT DETAIL

BARRIER MOUNT DETAIL

BARRIER MOUNT DETAIL 2

ONE POST INSTALLATION

STANDARD F11-06

ILLINOIS RAILWAY
NOTES:
1. SEE PLANS FOR SIGN SIZE AND LOCATION.
2. MAXIMUM PLAZA SIGN LENGTH IS 36 FT.
   AREA IS 108 SQ. FT.

SEE PLANS FOR SIGN SIZE AND LOCATION.

MAXIMUM PLAZA SIGN LENGTH IS 36 FT.
MAXIMUM PLAZA SIGN AREA IS 108 SQ. FT.

NOTE:

TOLL PLAZA PLAN

TOLL PLAZA ELEVATION

SECTION A-A
NOTEs:
1. FOUNDATIONS FOR PLAZA FRAMES ARE SHOWN ON SHEETS 6 AND 7 OF THIS SERIES.
2. FOR SECTIONS A-A, H-H, K-K, BASE PLATE SKIRT AND HAND HOLE DETAILS, SEE SHEET 5 OF THIS SERIES.
3. FOR SECTIONS P-P SEE SHEET 5 OF THIS SERIES.
4. PROVIDE CAMBER AT MIDSPAN OF STRUCTURE.
5. DISCONTINUE 3/8" SQUARE BAR TO ALLOW 3/8" U-BOLT INSTALLATION.
6. WORK WITH THIS SHEET TO OVERCOME STRUGGLING ENTRANCE MONOTUBE TYPE (STEEL) MAINLINE SUMMARY AND TOTAL BILL OF MATERIAL SHEET.
GENERAL NOTES:
2. After adjustments to local frame beam and ensure adequate vertical clearance, attach all top and leveling nuts against the base plate with a minimum surface of 200 gage. Then place stainless steel washers around the perimeter of the base plate, secure to base plate with stainless steel banding.
3. Reinforcement bars designated "F" shall be epoxy coated.
5. Reinforcement bars designated "E" shall be epoxy coated.

DESIGN LOADING:
- Wind Load Criterion
  - Basic Wind Speed = 120 M.P.H.
  - K = 1.00
  - I = 1.00
- Ice = 3 P.S.F. (applied with a factor of 1.0 for strength I only)
- Equipment Load = 60,000 P.S.I.
- Equipment Load = 4,000 P.S.I.
- Equipment Load = 3,500 P.S.I.

EQUIPMENT LOADS:
- Camera Assembly Mounting Hardware, 40 lb.
- Antenna Mounting Hardware, 24 lb.

DESIGN STRESSES FOR REINFORCED CONCRETE:
- $f_y$ = YIELD STRENGTH OF REINFORCEMENT BARS (GRADE 60)
- $f'c$ = COMPRESSIVE STRENGTH OF CONCRETE AT 14 DAYS (CLASS DS)
- $f'c$ = COMPRESSIVE STRENGTH OF CONCRETE AT 14 DAYS (CLASS SI)

FOUNDATION:
- Minimum unconfined compressive strength of all layers of cohesive soils shall be 1.25 tons/sq.ft. at plaza frames.

DESIGN SPECIFICATIONS:

CONSTRUCTION SPECIFICATIONS:

REINFORCEMENT BARS DESIGNATED "F" SHALL BE EPOXY COATED.
OVERHEAD SIGN STRUCTURE
MONOTUBE TYPE (STEEL)
MAINLINE STRUCTURE DETAILS

SECTION A-A

VIEW B-B

VIEW C-C

SECTION D-D

NOTES:
1. Anchor bolt assembly detail, anchor plate detail, and bar bending diagrams and quantities are shown on Sheet 6 of this series.
2. See Sheet 6 of this series for additional notes.
3. Site grounding electrode system to be provided as indicated on the plans.

LEGEND:
EQ. SPA. - EACH FACE
ELE. - EACH END
SHEET 7 OF 8
APPROVED: 3-31-2014
REDESIGNED TO 2013 AASHTO LTS
STANDARD F13-06
OVERHEAD SIGN STRUCTURE
BUTTERFLY TYPE
STRUCTURE DETAILS

1. **General Notes:**
   - Work on this sheet with different sign structure material type (steel, aluminum, and other types of material sheets).
   - After adjustments to levels, take the necessary action for the structure.

2. **Design Loading:**
   - Design loading criteria for the structure.
   - The design loading criteria should be used in the structure.
   - The design loading criteria should be used in the structure.

3. **Construction Specifications:**
   - All materials, except as shown, fabrication, erection, and construction shall be in accordance with the standard specifications.

4. **LOADING:**
   - Load shall be applied in accordance with the standard specifications.

5. **DESIGN SPECIFICATIONS:**
   - Design specifications for structural supports for overhead signs, luminaires, and traffic signals.

6. **CONCRETE:**
   - Concrete column, beam, and slab details are defined in accordance with the American Concrete Institute specifications.

**Fabrication Notes:**
- All structural steel shall be ASTM A572 Grade 50 or equivalent.
- All structural steel shall conform to ASTM A572 Grade 50 or equivalent.
- All structural steel plates and sheet shall conform to ASTM A572 Grade 50 or equivalent.
- All structural steel elements shall be in accordance with the standard specifications.

**Elevation Notes:**
- Elevation A = Elevation at point of minimum vertical clearance.
- Elevations B and C shall be in accordance with the standard specifications.

**General Notes:**
- The design wind loading criteria for the structure are defined in accordance with the Standard Specifications.

**Erection Notes:**
- Erectionshall conform to the standard specifications.

**Fabrication Notes:**
- All structural steel shall be ASTM A572 Grade 50 or equivalent.
- All structural steel shall conform to ASTM A572 Grade 50 or equivalent.
- All structural steel plates and sheet shall conform to ASTM A572 Grade 50 or equivalent.
- All structural steel elements shall be in accordance with the standard specifications.

**Design Wind Loading Diagram:**
- Design wind loading diagram for the structure.

**Load Table:**
- Design load table for the structure.

**General Notes:**
- Work on this sheet with different sign structure material type (steel, aluminum, and other types of material sheets).
- After adjustments to levels, take the necessary action for the structure.

**Design Loading:**
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**Construction Specifications:**
- All materials, except as shown, fabrication, erection, and construction shall be in accordance with the standard specifications.

**LOADING:**
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**General Notes:**
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- The design loading criteria should be used in the structure.
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**LOADING:**
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**Elevation Notes:**
- Elevation A = Elevation at point of minimum vertical clearance.
- Elevations B and C shall be in accordance with the standard specifications.

**General Notes:**
- The design wind loading criteria for the structure are defined in accordance with the Standard Specifications.

**Erection Notes:**
- Erectionshall conform to the standard specifications.

**Fabrication Notes:**
- All structural steel shall be ASTM A572 Grade 50 or equivalent.
- All structural steel shall conform to ASTM A572 Grade 50 or equivalent.
- All structural steel plates and sheet shall conform to ASTM A572 Grade 50 or equivalent.
- All structural steel elements shall be in accordance with the standard specifications.

**Design Wind Loading Diagram:**
- Design wind loading diagram for the structure.

**Load Table:**
- Design load table for the structure.
**ANCHOR BOLT DETAIL**

Anchor bolts shall conform to American National Standard A325M Grade 5.5 or ASTM A325M Grade 5.5. Galvanize the upper 1'-8" (minimum 18"") and associated AASHTO M314 Grade 55 or ASTM A325M Grade 5.5 anchor bolts. No bending shall be permitted on bolts.

Provide a nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor bolt shall be ultrasonically tested in root area as per A325M. Should any rejectable flaws exist in the upper 18" of bolt, the anchor bolt shall be condemned. AASHTO M314 Grade 55 or ASTM A325M Grade 5.5 anchor bolts shall be provided using a nut at bottom, a hexagon locknut and washer above base plate, and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor bolt shall be ultrasonically tested in root area as per A325M. Should any rejectable flaws exist in the upper 18" of bolt, the anchor bolt shall be condemned. AASHTO M314 Grade 55 or ASTM A325M Grade 5.5 anchor bolts shall be provided using a nut at bottom, a hexagon locknut and washer above base plate, and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor bolt shall be ultrasonically tested in root area as per A325M. Should any rejectable flaws exist in the upper 18" of bolt, the anchor bolt shall be condemned.

**DETAIL 5**

* New bars may be bent bent top and bent bottom on 3". In lieu of bent bars, bending frame as shown, may cut from 3" plate bending direction vertically, all cut faces to be ground to and smoothness of 0.5" on less.

**NOTE**

1. The grounding electrode system to be provided as indicated on plans.
2. SEE PLAN SHEETS FOR TYPE, SIZE AND NUMBER OF CONDUITS.

**POSITIONING PLATE/ANCHOR BLOCK**

Utilize positioning plate and temporary nuts to position anchor bolts. Position concrete column, plate, extra nuts and other positionerade as indicated on plans.

**HANDHOLE COVER**

Provide a nut for ¾" hex screws. Drill and tap bar frame ¾" x 2" flat for ¾" - 20 screws. Provide a nut to secure. Deform thread or use chemical thread lock to secure. Deform thread or use chemical thread lock to secure.
NOTES:
1. SIDE ELEVATION AND PLAN VIEW ARE SHOWN FOR FOUNDATION LOCATED IN PAVED ROADWAY MEDIAN.
2. SEE SHEET 5 OF THIS SERIES FOR REINFORCEMENT DETAILS.
3. COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.

FOUNDATION LOCATED IN PAVED ROADWAY MEDIAN

SECTION D-D

OVERHEAD SIGN STRUCTURE
BUTTERFLY TYPE
STRUCTURE DETAILS

STANDARD F14-06
DEVICE ~ DAMPING

HOLE "}...

HOLES IN MOUNTING TUBE AND STAINLESS STEEL WASHERS, TYP.

WITH HOT DIP GALVANIZED LOCKNUTS "} STAINLESS STEEL U-BOLT

2'', TYP.

DEVICE ~ TOP CHORD

PLAN DETAIL

ELEVATION

STEEL BUTTERFLY SIGN STRUCTURE

NOTE:

DAMPER: ONE DAMPER PER TRUSS. (31 LBS. STOCKBRIDGE-TYPE)

29'' MINIMUM BETWEEN ENDS OF WEIGHTS). ONE DAMPER PER TRUSS. (31 LBS. STOCKBRIDGE-TYPE)

29'' MINIMUM BETWEEN ENDS OF WEIGHTS). ONE DAMPER PER TRUSS. (31 LBS. STOCKBRIDGE-TYPE)

29'' MINIMUM BETWEEN ENDS OF WEIGHTS). ONE DAMPER PER TRUSS. (31 LBS. STOCKBRIDGE-TYPE)

29'' MINIMUM BETWEEN ENDS OF WEIGHTS). ONE DAMPER PER TRUSS. (31 LBS. STOCKBRIDGE-TYPE)
NOTES:
1. SPACE SIGN BRACKETS WERE FOR EFFICIENCY AND ARE NOT LISTS SHOWN.
2. f = 12" MAXIMUM, 4" MINIMUM (END OF SIGN TO CENTER OF NEAREST BRACKET).
3. h = 6'-0" MAXIMUM (~ TO ~ SIGN SUPPORT BRACKETS, W6X9)
4. MAXIMUM DMS TYPE 2 PATTERN HEIGHT = 9'.
5. DMS TYPE 2 MISMATCHED SMALL DESIGN AND SUPPLY HARDWARE FOR CONNECTION TO W6X9. BOLTS SHALL BE STAINLESS STEEL OR HOT DIP GALVANIZED.
6. MAXIMUM DMS TYPE 2 WEIGHT = 5000 LBS.

BRACKET TABLE

<table>
<thead>
<tr>
<th>Width</th>
<th>Sign from Center of Panel Points (in)</th>
<th>Number of Holes (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8'-0&quot;</td>
<td>8'-0&quot;</td>
<td>5</td>
</tr>
<tr>
<td>8'-0&quot;</td>
<td>8'-0&quot;</td>
<td>6</td>
</tr>
<tr>
<td>8'-0&quot;</td>
<td>8'-0&quot;</td>
<td>6</td>
</tr>
</tbody>
</table>

TYPICAL FRONT ELEVATION

PLACE ALL SIGN BRACKETS AS CLOSE TO PANEL POINTS AS PRACTICAL.

OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE STRUCTURE DETAILS

STANDARD F14-06

DATE: 3-17-2014

CHIEF ENGINEERING OFFICER

APPROVED

3'-31-2014
AET RAMP TOLL PLAZA PLAN

AET RAMP TOLL PLAZA ELEVATION

**NOTE:**
1. SEE CONTRACT PLANS FOR SIGN SIZE AND LOCATION.
2. PROVIDE ENTRANCE AND EXIT MONOTUBE FRAME STATIONS IN CONTRACT PLANS.

**SIGN TABLE**

<table>
<thead>
<tr>
<th>SIGN</th>
<th>MAXIMUM AREA</th>
<th>MAXIMUM LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAZA SIGN</td>
<td>24 SF.</td>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>TOLL OR PAY ONLINE SIGN</td>
<td>60 SF.</td>
<td>20'-0&quot;</td>
</tr>
</tbody>
</table>

**NOTE:**
1. SEE CONTRACT PLANS FOR SIGN SIZE AND LOCATION.
2. PROVIDE ENTRANCE AND EXIT MONOTUBE FRAME STATIONS IN CONTRACT PLANS.

**REVISIONS**
- 3-31-2016: REVISED FOUNDATION NOTE
- 3-31-2017: REVISED I-PASS ONLY SIGN
- 3-01-2019: UPDATE DESIGN LOADING AND DESIGN CRITERIA, AND INC. d3(E) BAR LENGTH
- 3-01-2020: UPDATED CONSTANT SLOPE BARRIER, REINFORCING DETAILS AND QUANTITIES FOR 3'-8"
- 3-01-2021: ADDED HANDHOLE, INSTALLATION & INSPECTION OF SPLICE & ANCHORS

**INSTRUCTIONS**
- PROVIDE AN ATTENUATOR, BARRIER WALL OR GUARDRAIL TERMINAL AS SHOWN ON PLANS.
NOTES:
1. SEE SHEET 2 OF THIS SERIES FOR SECTION S-S, FRAME BEAM AND ADJACENT NOTES.
2. SEE SHEET 3 OF THIS SERIES FOR SECTION S-S, FRAME BEAM AND ADJACENT NOTES.
3. SEE SHEET 4 OF THIS SERIES FOR SECTION S-S, FRAME BEAM AND ADJACENT NOTES.
4. SEE SHEET 5 OF THIS SERIES FOR SECTION S-S, FRAME BEAM AND ADJACENT NOTES.
5. SEE SHEET 6 OF THIS SERIES FOR SECTION S-S, FRAME BEAM AND ADJACENT NOTES.
6. SEE SHEET 7 OF THIS SERIES FOR SECTION S-S, FRAME BEAM AND ADJACENT NOTES.

CLEARANCE:

0'-6.5" MIN. CLEARANCE FROM LOWEST OBJECT AT TYPICAL HEIGHT.

3'-10" CONDUIT COUPLER, TYP.

5'-0" MAX.

5'-0" MAX.

1'-3" (TYP.) HANDHOLE.

FRAME COLUMN, TYP.

FRAME BEAM, TYP.

BASE PLATE, TYP.

BASE PLATE, TYP.

CROWN OR HIGHEST POINT OF ROADWAY CROSS-SECTION

SINGLE FACE BARRIER, TYP.

HSS 12.75x0.500

HSS 12.75x0.500

1'-6" MIN.

F R O M  L O W E S T  O B J E C T  A T T A C H E D

N O T E S :
DESIGN LOADING:

- Wind Load Criteria
  - Basic Wind Speed: 120 M.P.H.
  - Factor of Safety: 1.5
  - Sign Panel: 50 P.S.F.
  - Equivalency: 35 P.S.F.

- Ice Load: 3 P.S.F., applied with a factor of 1.2 for strength only

EQUIPMENT LOADS:

- Camera Assembly: 8 lb.
- Antenna Mounting Hardware: 20 lb.

DESIGN STRESSES FOR REINFORCED CONCRETE:

- Foundation:
  - Minimum Unconfined Compressive Strength, $f_{c}'$ for all layers of cohesive soils
  - Minimum Compressive Strength, $f_{c}$ for cohesive soils

STRUCTURAL STEEL:

- Reinforcement bars designated (E) shall be epoxy coated.
- Secure to base plate with stainless steel banding.
- Stainless steel mesh around the perimeter of the base plate.
- The base plate with a minimum torque of 200 lb.-ft.
- Place vertical clearance, tighten all top and leveling nuts against the foundation.

GENERAL NOTES:

- After adjustments to level beam and ensure adequate vertical clearance, provide all top and leveling nuts against the base plate with a minimum torque of 200 lb. Then, place stainless steel beam around the perimeter of the base plate, secure to base plate with stainless steel banding.
- Reinforcement bars designated (E) shall be epoxy coated.

DESIGN SPECIFICATIONS:


CONSTRUCTION SPECIFICATIONS:


NOTE:

- Minimum clearance of 4 ft. with camera manufacturer.

TOP OF PODIUM AT E通り (note: E is the antenna location)
SINGLE FACE BARRIER AND BARRIER BASE ELEVATION

FRAME COLUMN

CONCRETE STRUCTURES

BAR LIST - FOR ONE BARRIER

PAY LIMIT FOR FOUNDATION FOR OVERHEAD SIGN STRUCTURE

BASED ON DIMENSION "C" = 10" 
ELEVATION D
ELEV. B OR ELEV. C
ELEV. A OR THE FULL HEIGHT OF THE BARRIER.

PNEUMATIC CONCRETE MONOTUBE STRUCTURE DETAILS FOR AET RAMPS

NOTE 1:

1. PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC SHELVES AND THE ENTRANCE SIDE FACE RACE IN THE DESIGN OF THE GUTTER AND MONOTUBE FRAMES, SEE SHEET 6 OF THIS SERIES.

2. ELECTRICAL JUNCTION BOXES SHALL BE EXTENDED MOUNTED ON THE BACK FACE OF BARRIER.

3. THE PAY LIMIT FOR SINGLE FACE BARRIER FOUNDATION DETAILS FOR OVERHEAD SIGN STRUCTURE IS DETERMINED BASED ON THE DESIGN OF THE RAMP.

4. QUANTITIES FOR SINGLE FACE BARRIER ARE DETERMINED BASED ON THE PAY LIMIT FOR FOUNDATION FOR OVERHEAD SIGN STRUCTURE.

5. SEE OVERHEAD SIGN STRUCTURE ENTRANCE MONOTUBE TYPE CONCRETE formerly TIN SUMMARIES AND PAY LIMIT FOR MATERIALS IN CONTRACT PLANS FOR COMPLETE BILL OF MATERIALS.
NOTE:
1. SEE CONTRACT PLANS FOR SIGN SIZE AND LOCATION.
2. PROVIDE MONOTUBE FRAME SPACING IN CONTRACT PLANS.
3. PROVIDE MONOTUBE FRAME SPACING IN CONTRACT PLANS FOR SIGN PLACEMENT.

SIGN TABLE

<table>
<thead>
<tr>
<th>SIGN</th>
<th>MAXIMUM AREA</th>
<th>MAXIMUM LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAZA SIGN</td>
<td>24 S.F.</td>
<td>8'-0&quot;</td>
</tr>
<tr>
<td>I-PASS ONLY SIGN</td>
<td>20 S.F.</td>
<td>4'-0&quot;</td>
</tr>
<tr>
<td>CASH ONLY SIGN</td>
<td>20 S.F.</td>
<td>4'-0&quot;</td>
</tr>
</tbody>
</table>

CASH-IPO RAMP TOLL PLAZA PLAN

CASH-IPO RAMP TOLL PLAZA ELEVATION
NOTEs:
1. WORK THIS SHEET WITH OVERHEAD SIGN STRUCTURE MONOTUBE TYPE STEEL (CASH-IPO RAMP, SUMMARY AND TOTAL BILL OF MATERIAL SHEET).
2. FOUNDATION FOR MONOTUBE FRAME IS SHOWN ON SHEET 5 OF THIS SERIES.
4. SEE SHEET 3 OF THIS SERIES FOR SECTIONS P-P AND BASE PLATE SKIRT.
5. PROVIDE COVERER AT WORSSHIP OF STRUCTURE.
6. LOCATE OPTIONAL SLEEVED FIELD SPLICE NEAR MIDSPAN.
7. OMIT ANTENNA AND ANTENNA MOUNTING ASSEMBLY ABOVE CASH ONLY LANE.
8. HANDHOLE, TYP.
9. TYP.
10. HANDHOLE, TYP.
SINGLE FACE BARRIER FOUNDATION FOR PLAZA FRAMES

NOTE:
1. CONCRETE CONSIDER SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS, PROVIDE CONDUIT COUPLERS AS REQUIRED.
2. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT. CUTTING OF REINFORCEMENT SHALL NOT BE ALLOWED.
3. COSTS INCLUDED IN FOUNDATION FOR OVERHEAD SIGN STRUCTURE, CASH-IPO RAMP MONOTUBE TYPE.
4. PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC FACES AND TO THE TOP FLANGE OF BAR D.

REINFORCEMENT BAR SCHEDULE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>ESTIMATED QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>#5</td>
<td>LB</td>
<td>4.4</td>
</tr>
<tr>
<td>#5</td>
<td>CU. YD.</td>
<td>3.8</td>
</tr>
<tr>
<td>#9</td>
<td>POUND</td>
<td>2.36</td>
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</table>

NOTE:
Quantities for single face barrier foundations are determined using "C" = 10", if dimension "C" is greater than 10", adjust bar length accordingly if "C" is greater than 10".
PAY LIMIT FOR SINGLE FACE BARRIER

PAY LIMIT FOR

6” 2’-10"

7’-2” R

2’-0” R

6’”

1’-2”

1’-0” R

4’

R

2’-0”

1’-2”

1’-0” R

4’

R

5’-8”

BAR LIST - ONE BARRIER

<table>
<thead>
<tr>
<th>BAR</th>
<th>NO.</th>
<th>SIZE</th>
<th>LENGTH</th>
<th>SHAPE</th>
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</table>

NOTES:

1. PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF THE BARRIER, GUTTER AND TO THE EXTERIOR FACE AT THE BEGINNING OF THE RAMP PAVE FOR THE FULL HEIGHT OF THE BARRIER.

2. ELECTRICAL JUNCTION BOXES SHALL BE EXTERIOR MOUNTED ON THE RAMP FACE (AT THE BEGINNING OF THE PLAZA PAVEMENT) FOR THE FULL HEIGHT OF THE BARRIER.

3. FOR SINGLE FACE BARRIER FOUNDATION DETAILS FOR MONOTUBE FRAMES, SEE SHEET 5 OF THIS SERIES.

4. QUANTITIES FOR SINGLE FACE BARRIER ARE OBTAINED USING "C" = 10" IF DIMENSION "C" IS GREATER THAN 10", ADJUST QUANTITIES ACCORDINGLY.

5. READ THIS SHEET WITH OVERHEAD SIGN STRUCTURE MONOTUBE TYPE STEEL FOR CASH-IPO RAMP CASH-IPO RAMP SUMMARY AND TOTAL BILL OF MATERIAL SHEET.

ESTIMATED QUANTITY

FOR ONE SINGLE FACE BARRIER

<table>
<thead>
<tr>
<th>UNIT</th>
<th>ITEM</th>
<th>ESTIMATED QUANTITY</th>
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CONCRETE STRUCTURES

<table>
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<th>ITEM</th>
<th>ESTIMATED QUANTITY</th>
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REINFORCEMENT BARS, EPOXY COATED

<table>
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<th>UNIT</th>
<th>ITEM</th>
<th>ESTIMATED QUANTITY</th>
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</table>

PROTECTIVE COAT

<table>
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<tr>
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<th>ITEM</th>
<th>ESTIMATED QUANTITY</th>
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</table>

SECTION A-A

SECTION B-B

SINGLE FACE BARRIER ELEVATION

INSIDE FACE OF RIGHT BARRIER IS SHOWN

ELEVATION OF LEFT BARRIER

INSIDE FACE OF RIGHT BARRIER

BONDED CONCRETE JOINT

BAR u4(E)

BAR d5(E)

BAR d4(E)

BAR d3(E)

BAR d2(E)

BAR d1(E)

SHEET 6 OF 6
OVERHEAD SIGN STRUCTURE
SPAN TYPE (STEEL)
STRUCTURE DETAILS

DATE APPROVED: 5-20-2014

STANDARD F17-06
NOTES:
1. If edges or fabricated handhole frame as shown, may cut pipe of "pipe fitting dimension" which all cut edges to be ground to ANSI roughness of 300 MAX. OR LESS.
2. Galvanized vent holes of adequate size shall be provided on underside of each end of bracing pipes. Additional holes may be provided in wall of pipe column, all vent holes shall be drilled and deburred. Use.
3. Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Sheet 1 of this series.
4. See general notes for fasteners.
5. Nonstandard applications shall have dimensions verified or amended as appropriate.
6. See Sheet 1 of this series for foundation details.
7. See Sheet 8 of this series for shoulder type foundation details.
8. See Sheet 9 of this series for shoulder barrier type foundation details when existing utility is present.

OVERHEAD SIGN STRUCTURE SPAN TYPE (STEEL) STRUCTURE DETAILS
STANDARD F17-06

AMENDED AS APPROPRIATE.

NONSTANDARD APPLICATIONS SHALL HAVE DIMENSIONS VERIFIED OR AMENDED AS APPROPRIATE.

SEE SHEET 9 OF THIS SERIES FOR MEDIAN BARRIER TYPE FOUNDATION DETAILS.
SEE SHEET 8 OF THIS SERIES FOR MEDIAN BARRIER TYPE FOUNDATION DETAILS.
SEE SHEET 7 OF THIS SERIES FOR SHOULDER TYPE FOUNDATION DETAILS.

SEE GENERAL NOTES FOR FASTENERS.

RECOMMENDATION:
PAINTING IS NOT PERMITTED. SEE SHEET 1 OF THIS SERIES.

SECTIONS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

STEEL PIPE, PLATE, CARBON STEEL HANDHOLE COVERS AND ROLLED
HOLES SHALL BE DRILLED AND DE-BURRED, TYP.

HOLES MAY BE PROVIDED IN WALL OF PIPE COLUMN. ALL VENT
HOLE IN COVER AND PLUG, AND 1" WHERE 1" PIPE COUPLING

GALVANIZING VENT HOLES OF ADEQUATE SIZE SHALL BE PROVIDED
FOR FOUNDATION DETAILS.

ON UNDERSIDE AT EACH END OF BRACING PIPES. ADDITIONAL

IN MORTAR TO FABRICATED HANDHOLE FRAME AS SHOWN, MAY CUT

PIECE OF "PIECE FITTING DIMENSION" WHICH ALL CUT EDGES TO BE

ANSI ROUGHNESS OF 500 MAX. OR LESS.

FLAT GRINDING TO ANSI ROUGHNESS OF 500 MAX. OR LESS.

FROM 2" PLATE (ROLLING DIRECTION VERTICAL). ALL CUT FACES
IN LIEU OF FABRICATED HANDHOLE FRAME AS SHOWN, MAY CUT

GALVANIZING VENT HOLES OF ADEQUATE SIZE SHALL BE PROVIDED
ON UNDERSIDE OF EACH END OF BRACING PIPES. ADDITIONAL
HOLE IN COVER FOR 1/2"-20 MOUTH HEAD NUT OR GALVANIZED
OF STAINLESS STEEL MACHINE SCREWS. SEE COVER DETAILS.

DRILL A TAP FOR 1/2"-20 SCREWS, INSTALL HEAD NUT AFTER GALVANIZING.

PROVIDE 1/2" X 4" COVER, PROVIDE 1/2" X 8 HOLES IN COVER FOR 1/2"-20 MOUTH HEAD NUT OR GALVANIZED OR STAINLESS STEEL MACHINE SCREWS. SEE COVER DETAILS.

PROVIDE 6" X 6" COVER, PROVIDE 6" X 8 HOLES IN COVER FOR 1/2"-20 MOUTH HEAD NUT OR GALVANIZED OR STAINLESS STEEL MACHINE SCREWS. SEE COVER DETAILS.
NOTES:

1. The foundation details shown are based on the presence of mostly cohesive soil conditions. Should the boring logs for the site indicate less than desirable conditions, the boring logs shall be included in the plans and the foundation dimensions shown shall be the result of site specific investigations. If foundations are required in soil which is different than those indicated, the contractor shall notify the engineer to determine if the foundation dimensions need to be modified.

2. All material, fabrication, and construction requirements shall be in accordance with Section 13 of the Illinois Tollway Supplemental Specifications.

3. Concrete shall be placed monolithically, without construction joints unless noted otherwise.

4. Backfill shall be placed per Sections 25 and 26 Standard Specifications in all concrete areas except bottom of grade beam and drilled shafts.

5. All rebar reinforcing steel shall be epoxy coated. Rebar shall be positioned so that there will be no interference between vertical reinforcement and anchor bolts.

6. Exposed rebar shall be protected with a concrete cover of at least 2" below the finished ground level. Permanent metal forms or other shielding shall not be left in place below the elevation of the engineer's written permission. Reinforcement shall be extended below concrete level in accordance with the engineer's written permission.

7. If necessary to increase slab or end support height above the limitations shown in Table 2, the height of the slab or end support on this sheet shall be increased up to 3'-3" without change to the drilled shaft design. Carbide beam reinforcement, concrete volume and length of anchor bolts shall be revised accordingly.

8. All materials, fabrication, and construction requirements shall be in accordance with Section 13 of the Illinois Tollway Supplemental Specifications.

9. Concrete shall be placed monolithically, without construction joints unless noted otherwise.

10. Backfill shall be placed per Sections 25 and 26 Standard Specifications in all concrete areas except bottom of grade beam and drilled shafts.

11. All rebar reinforcing steel shall be epoxy coated. Rebar shall be positioned so that there will be no interference between vertical reinforcement and anchor bolts.

12. Exposed rebar shall be protected with a concrete cover of at least 2" below the finished ground level. Permanent metal forms or other shielding shall not be left in place below the elevation of the engineer's written permission. Reinforcement shall be extended below concrete level in accordance with the engineer's written permission.

13. If necessary to increase slab or end support height above the limitations shown in Table 2, the height of the slab or end support on this sheet shall be increased up to 3'-3" without change to the drilled shaft design. Carbide beam reinforcement, concrete volume and length of anchor bolts shall be revised accordingly.

14. All materials, fabrication, and construction requirements shall be in accordance with Section 13 of the Illinois Tollway Supplemental Specifications.
**TYPICAL FRONT ELEVATION WITH WALKWAY BRACKETS FOR CLARITY.**

**BRACKET AND GRATING SPACINGS AND HEIGHTS MAY VARY BASED ON ACTUAL SIGN DIMENSIONS PLUS MANUFACTURER'S MOUNTING DEVICES.**

**NOTE:**

- SPACE WALKWAY BRACKETS AND SIGN BRACKETS FOR EFFICIENCY AND WITHIN LIMITS SHOWN.
- SIGN WIDTHS VARY BASED ON RETAILER'S MOUNTING DEVICES.
- 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.

**SECTION F-F**

MATERIAL 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 AND WALKWAY SPACED AS NEEDED.

**OVERHEAD SIGN STRUCTURE**

**SPAN TYPE (STEEL)**

**STRUCTURE DETAILS**

**STANDARD F17-06**
OVERHEAD SIGN STRUCTURE
SPAN TYPE (STEEL)
STRUCTURE DETAILS

SHEET 13 OF 13

DATE: 3-03-2021

APPROVED: G. V. Jones

1/2" DIA. ROD
R1.5
5" MIN

HOLE FOR †" SHACKLE
8"

MEMBER

TRUSS TYPICAL
INTERIOR ELEVATION
EVEN OR ODD NUMBER OF PANELS/INTERIOR UNITS ALLOWED.

CONNECTION
TYP. INTERIOR
CONNECTION
TYP. END

CONNECT BRACKET PLATE
FOR ATTACHMENT TO
WITH MIN 3-TON CAPACITY
ANCHOR SHACKLE PER SIDE
CLIPS. PROVIDE 1 BOLT TYPE
WITH MIN (3) WIRE ROPE
BACK 12" AND SECURE
THIMBLE, TURN ROPE
5/8" GALV. WIRE ROPE,
NOTE:
1. All fittings, fasteners, and other equipment shall be ANSI/ASME A193-B7 alloy steel unless otherwise indicated.
2. All threaded fasteners shall be ASTM F1913 stainless steel with a minimum ultimate tensile strength of 82,000 psi and a minimum yield strength of 60,000 psi.
3. All fasteners shall be galvanized per ASTM A153.
4. All sheet metal shall be galvanized per ASTM A653.
5. All structural steel shall conform to ASTM A992.
6. All concrete shall conform to ASTM C397.
7. All precast concrete shall conform to ASTM C568.
8. All bolts shall be ASTM A325 with a minimum ultimate tensile strength of 138,000 psi and a minimum yield strength of 105,000 psi.
9. All nuts shall be ASTM A194-2H with a minimum ultimate tensile strength of 138,000 psi and a minimum yield strength of 105,000 psi.
10. All washers shall be ASTM A194-2A with a minimum ultimate tensile strength of 138,000 psi and a minimum yield strength of 105,000 psi.

**MOUNTING BRACKET DETAIL**
- Maximum sign area: 20 sq ft
- Minimum to top of sign: 1'-0" to center line of open joint in wall
- Minimum to top of panel: 3'-6" max.

**STIFFENER PLATE DETAIL**
- 1" dia. hole (typ.)
- 1'-0" to panel
- 1'-0" to top of panel
- 3'-0" min.
- 3'-2" max.
- (Maximum sign area 32 sq ft)

**BASE PLATE DETAILS (POST CONNECTION)**
- 6" plate
- 1" dia. hole (typ.)
- maximum sign area 32 sq ft
- 1'-0" min.
- 3'-6" max.

**BASE PLATE DETAILS (PANEL CONNECTION)**
- 6" plate
- 1" dia. hole (typ.)
- maximum sign area 20 sq ft
- 1'-0" min.
- 3'-0" max.

**SUPPORTING CHANNEL DETAILS**
- 1" dia. hole (typ.)
- 1'-0" min.
- 3'-0" max.
- Maximum sign area 20 sq ft

**CONNECT TO PANEL**
- SUPPORTING CHANNEL
- CONNECTION TO POST
- SUPPORTING CHANNEL

DATE: 7-17-2020

APPROVED BY ENGINEER:

ILLINOIS TOLLWAY
MOUNTED SIGN SUPPORT

STANDARD F19-02
**NOTES:**

1. All anchor bolts for median barrier mounted sign support assembly shall be 3/8" dia. expansion anchors.

2. The top section shall be telescoped into the base section 12 inches and fastened together.

3. Design complies to the 2015 edition of the AASHTO standard specifications for highway signs, luminaires, and traffic signals with 2017 interim specifications related to design wind speeds of 54 gust with loads of 200 MPH plus 14% gust factor, and a wind importance factor of 0.3 (50 year mean recurrence interval) for the supporting structures.

4. No anchor bolt shall be placed closer than 12" from center line of median barrier joint.

5. Sign fabrication and installation shall be done in accordance with Illinois Tollway special provision "new installation".

6. Base and post assembly shall be hot dip galvanized after fabrication in accordance with AASHTO M111 or as specified in the special provision "telescoping steel sign support, barrier assembly".

7. All materials for the sign support assembly shall be included in the cost of "telescoping steel sign support, barrier assembly".

---

**DETAILS:**

**SIGN PANEL**

- **Width:** 36" max.
- **Height:** VARIES based on sign panel size.
- **Max. Width:** 2'-0".
- **Max. Height:** 2'-0".

**Sign Panel Area**

- **Max. Sign Area:** 20 SF max.

**Sign Supports**

- **Supporting Channel Details**
  - **Material:** STEEL.
  - **Profile:** 3" x 1'-0" (12 GA.).

**Supporting Channel Dimensions**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.500</td>
<td>3.000</td>
</tr>
<tr>
<td>B</td>
<td>0.750</td>
<td>3.000</td>
</tr>
<tr>
<td>C</td>
<td>1.000</td>
<td>3.000</td>
</tr>
</tbody>
</table>

**Sign Support Installation**

- **Max. Width:** 36" max. width.
- **Max. Height:** 2'-0".
- **Max. Width:** 7'-0".

**Splicing of Sign Supports**

- **Max. Width:** 36" max. width.
- **Max. Height:** 2'-0".

**Supporting Channel Details**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.500</td>
<td>3.000</td>
</tr>
<tr>
<td>B</td>
<td>0.750</td>
<td>3.000</td>
</tr>
<tr>
<td>C</td>
<td>1.000</td>
<td>3.000</td>
</tr>
</tbody>
</table>

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**Notes:**

1. Use a minimum of 2 members suggested 6" from top and bottom of sign panel, per installation with max. spacing of 3'-0".

2. Use a minimum of 2 members suggested 6" from top and bottom of sign panel, per installation with max. spacing of 3'-0".

3. Use a minimum of 2 members suggested 6" from top and bottom of sign panel, per installation with max. spacing of 3'-0".

4. Use a minimum of 2 members suggested 6" from top and bottom of sign panel, per installation with max. spacing of 3'-0".

5. Use a minimum of 2 members suggested 6" from top and bottom of sign panel, per installation with max. spacing of 3'-0".

6. Use a minimum of 2 members suggested 6" from top and bottom of sign panel, per installation with max. spacing of 3'-0".

7. Use a minimum of 2 members suggested 6" from top and bottom of sign panel, per installation with max. spacing of 3'-0".

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**Drawing Approval:**

[Signature]

[Date: 2-24-2020]

[Approved by: CHIEF ENGINEERING OFFICER]