NOTE:

1. Work this Index in conjunction with SPAN SIGN STRUCTURE DATA TABLES in the Plans and Index 11300.

2. Handholes at the pole base are required for DMS Structures. Refer to Index 18300 for Handhole Details.

3. Shop Drawings are required.

   Obtain Shop Drawing approval prior to fabrication. Include the following:
   A. Upright Pipe height (C & B) and foundation elevations: Verify minimum clearances of the sign panel over the roadway.
   B. Height of the foundation above adjacent ground.
   C. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
   D. Method to be used to provide the required parabolic camber (see Camber Diagram).
   E. Handholes at pole base (when required).

4. Materials:

   A. Sign Structure:
      a. Upright and Chords (Steel Pipe): API-5L-X42, 42 ksi yield or ASTM A500, Grade B (Min).
      b. Steel Angles and Plates: ASTM A709 grade 36
      c. Weld Material: E70XX
   B. Bolts, Nuts and Washers:
      a. High Strength Bolts: ASTM F3123, Grade A325, Type 1
      b. Nuts: ASTM A563 Grade DH Heavy-Hex
      c. Washers: ASTM F436, Type 1, one under turned elements
   C. Anchor Bolts, Nut & Washers:
      a. Anchor Bolt: ASTM F1554 Grade 55, threaded full length
      b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per bolt)
   D. Upright Cap:
      a. Plast Washers: ASTM A123, 12 per bolt
   E. Concrete:
      a. Concrete: Class IV (Drilled Shaft)

5. Fabrication:

   A. Welding: Specification Section 460-6.4
   B. Chord Splices: Minimum splice spacing is three truss panel lengths apart and three truss panel lengths from the uprights.
   C. Upright splice: Not allowed
   D. Structural bolt hole diameters: Bolt diameter plus 0.16
   E. Anchor bolt hole diameters: Bolt diameter plus 0.16
   F. Hot Dip Galvanize after fabrication.
   G. Shop assemble the entire structure after galvanizing to validate/document alignment and clearance for bolted connections as well as contact between connecting plates. Take remedial action, if necessary, prior to shipment.
   H. Disassemble as necessary and secure components for shipment.

6. Coatings:

   A. Bolts, Nuts and Washers: ASTM F3123
   B. All other steel, including Plate Washers, hot dip galvanize: ASTM A123

7. Construction:

   A. Construct foundation in accordance with Specification Section 455-6.4
   B. Prior to erection, record the as-built anchor locations and submit to the Engineer.
   C. Provide a parabolic camber with the required upward deflection as shown on the Camber Diagram.
   D. Tighten nuts and bolts in accordance with Specification Section 700.
   E. Install Aluminum Sign Panels as shown on the Elevation drawing per Production Plan.
   F. After installation, place wire screen between top of foundation and bottom of backplate in accordance with Specification Section 649-6.

TABLES in the Plans and Index 11300.

1. Work this Index in conjunction with SPAN SIGN STRUCTURE DATA TABLES in the Plans and Index 11300.

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3. Shop Drawings are required.

   Obtain Shop Drawing approval prior to fabrication. Include the following:
   A. Upright Pipe height (C & B) and foundation elevations: Verify minimum clearances of the sign panel over the roadway.
   B. Height of the foundation above adjacent ground.
   C. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
   D. Method to be used to provide the required parabolic camber (see Camber Diagram).
   E. Handholes at pole base (when required).

4. Materials:

   A. Sign Structure:
      a. Upright and Chords (Steel Pipe): API-5L-X42, 42 ksi yield or ASTM A500, Grade B (Min).
      b. Steel Angles and Plates: ASTM A709 grade 36
      c. Weld Material: E70XX
   B. Bolts, Nuts and Washers:
      a. High Strength Bolts: ASTM F3123, Grade A325, Type 1
      b. Nuts: ASTM A563 Grade DH Heavy-Hex
      c. Washers: ASTM F436, Type 1, one under turned elements
   C. Anchor Bolts, Nut & Washers:
      a. Anchor Bolt: ASTM F1554 Grade 55, threaded full length
      b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per bolt)
   D. Upright Cap:
      a. Plast Washers: ASTM A123, 12 per bolt
   E. Concrete:
      a. Concrete: Class IV (Drilled Shaft)

5. Fabrication:

   A. Welding: Specification Section 460-6.4
   B. Chord Splices: Minimum splice spacing is three truss panel lengths apart and three truss panel lengths from the uprights.
   C. Upright splice: Not allowed
   D. Structural bolt hole diameters: Bolt diameter plus 0.16
   E. Anchor bolt hole diameters: Bolt diameter plus 0.16
   F. Hot Dip Galvanize after fabrication.
   G. Shop assemble the entire structure after galvanizing to validate/document alignment and clearance for bolted connections as well as contact between connecting plates. Take remedial action, if necessary, prior to shipment.
   H. Disassemble as necessary and secure components for shipment.

6. Coatings:

   A. Bolts, Nuts and Washers: ASTM F3123
   B. All other steel, including Plate Washers, hot dip galvanize: ASTM A123

7. Construction:

   A. Construct foundation in accordance with Specification Section 455-6.4
   B. Prior to erection, record the as-built anchor locations and submit to the Engineer.
   C. Provide a parabolic camber with the required upward deflection as shown on the Camber Diagram.
   D. Tighten nuts and bolts in accordance with Specification Section 700.
   E. Install Aluminum Sign Panels as shown on the Elevation drawing per Production Plan.
   F. After installation, place wire screen between top of foundation and bottom of backplate in accordance with Specification Section 649-6.
NOTES:

1. See Traffic Plans for elevation at top of Foundation.

2. Install Drilled Shaft with a 2'-0" minimum from top elevation of the drill shaft to the finished grade, unless specified otherwise in the plans.

3. The shaft length is based on 2'-0" height above finished grade.

4. Wrap fillet weld around the stiffener termination on the tube wall (Typ).

1. See Traffic Plans for elevation at top of Foundation.

2. Install Drilled Shaft with a 2'-0" minimum from top elevation of the drill shaft to the finished grade, unless specified otherwise in the plans.

3. The shaft length is based on 2'-0" height above finished grade.

4. Wrap fillet weld around the stiffener termination on the tube wall (Typ).
SPAN SIGN ASSEMBLY

Upright-Truss Connection Detail

- Upright Pipe 1.5 x 'F' OD
- Gusset Plates (Typ.)
- Chord 'Truss Depth'
- Truss Web Angles
- See DETAIL "C" (Typ.)
- Bolts Rows Of 2 Equal (See Sheet 5)

Gusset Plate (Typ.)
- 'LD' (Left) or 'RD' (Right)
- 'LG' (Left) or 'RG' (Right)

NOTES:
1. Wrap fillet weld around the stiffener termination on the tube wall.
2. Truss Chord Bolts: 'LB' or 'RB' Hex Head Bolts 'LA' or 'RA'.
3. Right Upright Truss connection shown, Left Upright Truss connection similar.

SPAN SIGN STRUCTURE
SPAN SIGN ASSEMBLY

UPRIGHT CAP DETAIL

PLAN

1/2" OD/2  1/2" Bar

1/2" OD Plug

ELEVATION

UPRIGHT PIPE

9/16" x 1/2" x 1/4"

9/16" Ø Hole; Tack Weld 1/2 Hex Nut
(Chase Threads After Galvanizing)

SIDE ELEVATION

1/2" Plate (Cap)

1/4" x 1/2" x 1/4"

1/4" Thick Neoprene
Sleeve (Glued To The
Underside Of The Cap)

ALTERNATE SPLICE CONNECTION DETAIL

SIDE ELEVATION

SECTION D-D

Bolt Diameter | Distance (in) | Part
--- | --- | ---
A | B | C
\( \phi 1\) | 1/2" | 3/4" | 1/4"
\( \phi 2\) | 1/2" | 3/4" | 1/4"

SPLICE CONNECTION DETAIL

SPARE CONNECTION NOTE:
1. Only 6 bolts are shown in detail for clarity.
(One Half Each End Of Splice)

FRONT ELEVATION

1/2" Angle Shape

Evenly Spaced Similar

'PF' Bolts Required
6 Bolts Shown,
'PA' Required

'SA' Angle Shape

'E' OD/2

'OF' Bolt Diameter

Bolt Diameter

2" Hex Head Bolt With
Rubber Washer (Top
Leg of L Shape)

1/2" Plate (Cap)

1/4" x 1/2" x 1/4"

SIDE ELEVATION

'PC' + 3/4"

Flange Ø

Chord

6 Bolts Shown.
'PE' Bolts Required

Evenly Spaced Similar

FRONT ELEVATION

'SPICE CONNECTION DETAIL

'PC' + 3/4"

Flange Ø

Chord

6 Bolts Shown.
'PE' Bolts Required

Evenly Spaced Similar

SPARE CONNECTION NOTE:
1. Only 6 bolts are shown in detail for clarity.
(One Half Each End Of Splice)

FRONT ELEVATION

1/2" Angle Shape

Evenly Spaced Similar

'PF' Bolts Required
6 Bolts Shown,
'PA' Required

'SA' Angle Shape

'E' OD/2

'B' Bolt Diameter

Bolt Diameter

2" Hex Head Bolt With
Rubber Washer (Top
Leg of L Shape)

1/2" Plate (Cap)

1/4" x 1/2" x 1/4"

SIDE ELEVATION

'PC' + 3/4"

Flange Ø

Chord

6 Bolts Shown.
'PE' Bolts Required

Evenly Spaced Similar

FRONT ELEVATION

1/2" Angle Shape

Evenly Spaced Similar

'PF' Bolts Required
6 Bolts Shown,
'PA' Required

'SA' Angle Shape

'E' OD/2

'B' Bolt Diameter

Bolt Diameter

2" Hex Head Bolt With
Rubber Washer (Top
Leg of L Shape)

1/2" Plate (Cap)

1/4" x 1/2" x 1/4"

SIDE ELEVATION

'PC' + 3/4"

Flange Ø

Chord

6 Bolts Shown.
'PE' Bolts Required

Evenly Spaced Similar