



Steel Overhead Sign Truss Standards

•Revised 11-2024; Changed Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, "Series 2015" to "Series 2023".
•Revised 06-2025; This sheet reissued, sheet format update.
•steeloverheadsigntruss.dgn - SOST-01-11 - This sheet issued 09-2011.

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STEEL OVERHEAD SIGN TRUSS STANDARDS

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Anchor-Bolt Nut Tightening Procedure:

- 1) This work shall be performed only on days with winds less than 15 mph. All tightening of the nuts is to be done in the presence of the Inspector. Once the tightening procedure is started it must be completed on all of the base plate nuts without pause or delay.
- 2) Properly sized wrenches designed for tightening nuts and/or bolts shall be used to avoid rounding or other damage to the nuts. Adjustable end wrenches or pipe wrenches shall not be used.
- 3) Base plate, anchor bolts and nuts are to be free of any dirt or debris.
- 4) Apply stick wax or bees wax to the threads and bearing surfaces of the anchor bolts, nuts and washers.
- 5) Tighten top nuts so they fully contact the base plate. Tighten leveling nuts to snug-tight condition. Snug tight is defined as the full effort of one person on a wrench with a length equal to 21 inches. Apply force as close to the end of the wrench as possible. Pull firmly by leaning back and using entire body weight on the end of the wrench until the nut stops rotating. Use a minimum of two separate passes of tightening. Sequence the tightening in each pass so that the nut on the opposite side, to the extent possible, will be subsequently tightened until all nuts in that pass have been tightened.
- 6) Tighten top nuts to snug tight as described for the leveling nuts.
- 7) Match-mark the top nuts and base plate using paint, crayon or other approved means to provide a reference for determining the relative rotation of the nut and base plate during tightening. Using a striking or hydraulic wrench, further tighten the top nuts in two passes as listed below. Sequence the tightening in each pass so that the nut on the opposite side, to the extent possible, will be subsequently tightened until all nuts in that pass have been turned. Do not rotate the leveling nut during the top nut tightening.

Anchor-Bolt Size	First Pass	Second Pass	Total Rotation
1½"Ø	⅓ Turn	⅓ Turn	⅔ Turn

- 8) Lubricate, place and tighten the jam nuts to snug tight.

Galvanized Steel Notes:

All steel chords, diagonals and struts shall comply with ASTM A53 Grade B, Type E or S; the American Petroleum Institute (API) 5L Grade B; ASTM A500 Grade B; ASTM A500 Grade C; ASTM A1085; API 5L Grade X42; or API 5L Grade X52. These members designated as steel pipe shall have a minimum yield strength of 35 ksi.

All steel posts shall comply with ASTM A500 Grade B, ASTM A500 Grade C, ASTM A1085, API 5L Grade X42 or API 5L Grade X52. These members designated as hollow structural sections (HSS) shall have a minimum yield strength of 42 ksi.

All steel angles, bars and plates shall comply with ASTM A36, ASTM A572 Grade 50, ASTM A709 Grade 36 or ASTM A709 Grade 50. All steel W-sections shall comply with ASTM A992, ASTM A36, ASTM A572 Grade 50, ASTM A709 Grade 36, ASTM A709 Grade 50, or ASTM A709 Grade 50S. All steel bar grating sections including bearing bars, cross bars and banding bars shall comply with ASTM A1011 Type 2.

Steel welding shall be in accordance with the current edition of the AWS Specifications D1.1, Structural Welding Code—Steel.

Ultrasonic testing shall be performed on the post-to-base-plate complete-joint-penetration groove welds.

All steel sections shall be hot-dipped galvanized after fabrication in accordance with ASTM A123. Provide vent holes for galvanizing. Show location and size of vent holes on shop drawings.

Galvanized Steel Fastener Notes:

Galvanized steel fasteners shall be in accordance with Article 2408.03, S and Article 4187.01, C, 2 of the Standard Specifications. Regular nuts and jam nuts shall be ASTM A563 Grade DH heavy hex. Regular nuts may be substituted for jam nuts. Lock washers shall not be substituted for jam nuts. ASTM A449 Type 1 bolts or ASTM F3125 Grade A325-T Type 1 bolts may be substituted for ASTM F3125 Grade A325 Type 1 bolts where necessary to assure proper bolt length and thread length. Unless otherwise noted on the plans, galvanized steel fasteners shall be tensioned by turn-of-nut method.

U-Bolt Notes:

U-bolts may be made of galvanized steel or stainless steel and shall be in accordance with Article 4187.01, C, 2 of the Standard Specifications. Washers, regular nuts and jam nuts shall use the same alloy properties as those of the U-bolts specified. Regular nuts may be substituted for jam nuts. Lock washers shall not be substituted for jam nuts.

Anchor Bolt Notes:

All anchor bolt materials and galvanizing shall be in accordance with Article 4187.01, C, 3 of the Standard Specifications.

Bending or welding of anchor bolts shall not be allowed.

Specifications:

Design:
AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Series of 2013 with interims.

Construction:
Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.

Design Stresses:

Design stresses for materials are in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Series of 2013 with interims.
Reinforcing steel in accordance with AASHTO Standard Specifications for Highway Bridges, Series of 2002, Section 8, Grade 60.
Concrete in accordance with AASHTO Standard Specifications for Highway Bridges, Series of 2002, Section 8, f'c = 4.0 ksi.

General Notes:

All steel overhead bridge-type sign trusses are designed for 30 lb/ft² wind pressure on support members, 30 lb/ft² on signs and 40 lb/ft² on dynamic message signs (DMS). Each DMS is limited to a weight of 5000 lbs., a width of 32'-0", a height of 10'-0", and a depth of 4'-0". A maximum of one DMS shall be mounted to each overhead truss. A DMS shall not be mounted to any truss with a span exceeding 100 feet without prior review and approval by the Iowa D.O.T. Bridges and Structures Bureau. No additional signs shall be mounted to a truss supporting a DMS.

Shop drawings shall be submitted by the Contractor in accordance with Article 1105.03 of the Standard Specifications.

Shop drawings shall indicate left and right truss supports.

Clear distance from face of concrete to the nearest reinforcing bar shall be 2" unless otherwise shown.


Keyway dimensions shown on the plans are based on nominal dimensions unless stated otherwise. In addition, the bevel used on the keyway shall be limited to a maximum of 10 degrees from vertical.

Steel overhead sign trusses shall not be used on bridges without the approval of the Bridges and Structures Bureau.

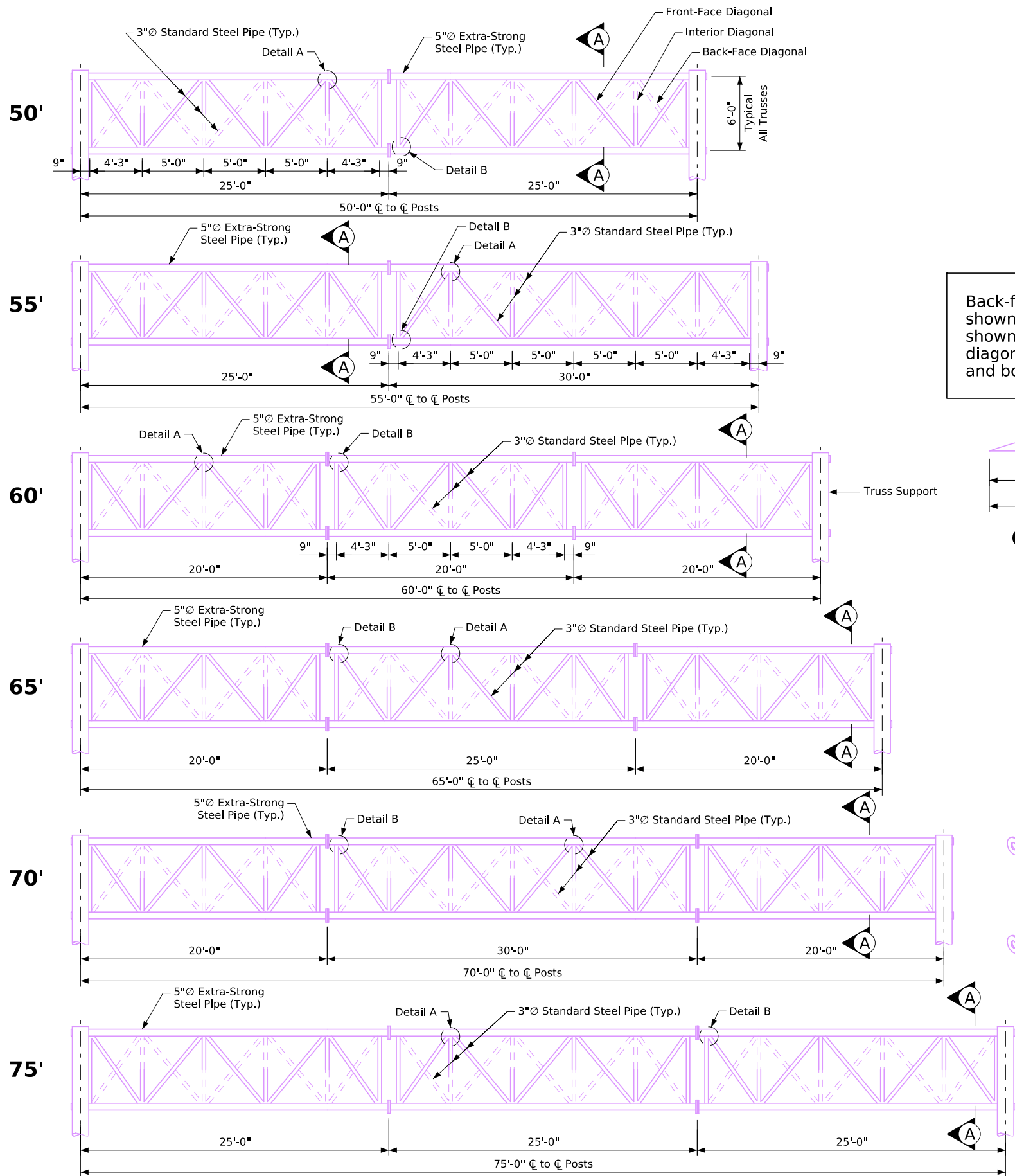
Structural Alignment/Tolerance Notes:

The precise installation and alignment of all components of the overhead sign truss and its supports shall be considered essential. The Contractor shall submit documentation to the Engineer showing that the various components have been measured and are located within the tolerances listed below.

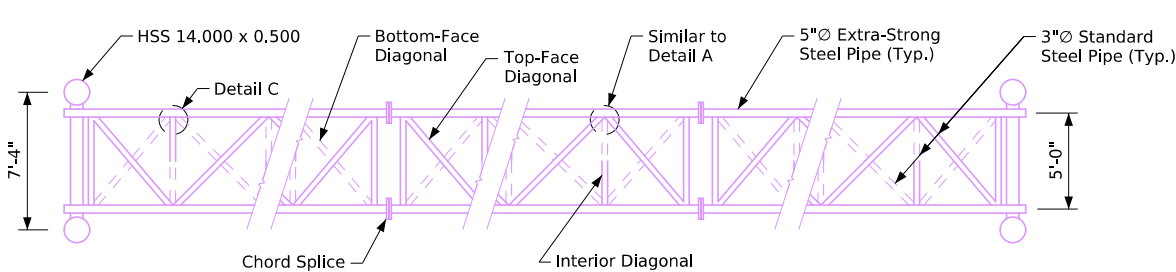
- 1) Each foundation shall be accurately located, with the center of the two anchor bolt groups not more than 1 inch from the plan location in direction parallel with the truss and not more than 1 inch from the plan location in the direction perpendicular to the truss.
- 2) The two foundations shall be parallel. The distance (along the overhead truss) between the centers of front anchor bolt groups and the distance (along the overhead truss) between centers of rear anchor bolt groups shall not differ by more than 1 inch.
- 3) Anchor bolt groups shall be located accurately with centers of adjacent groups in each foundation within ⅜ inch of the plan distance apart.
- 4) Anchor bolts shall be plumb within ¼ inch per foot from vertical.
- 5) Anchor bolts shall project above top of foundation within ¼ inch of the plan dimension.
- 6) Each truss support post shall be plumb within ¼ inch per foot of vertical in two perpendicular directions.
- 7) Stick-out of each truss lower chord shall be within 3 and 5½ inches measured from outer U-bolt to inside of chord stop ring.
- 8) The overhead truss shall be square within support posts. the horizontal lines between chords shall be level within ⅛ inch per foot of horizontal, and the vertical lines between chords shall be plumb within ⅛ inch per foot of vertical.

06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		Steel Overhead Sign Truss	
		September, 2011	
		Index and Notes 50'-130' Spans	SOST-01-11

•Revised 03-2019: Replaced note identifier asterisk with encircled number to improve readability. Updated Bridge Engineer signature.
•Revised 06-2025: This sheet reissued, sheet format update.
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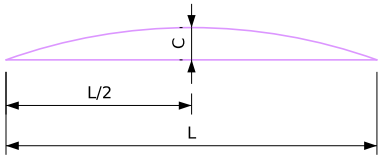
Part Elevation Views
Gusset plates not shown



Part Top View

Interior diagonals have same orientation at chord splice locations

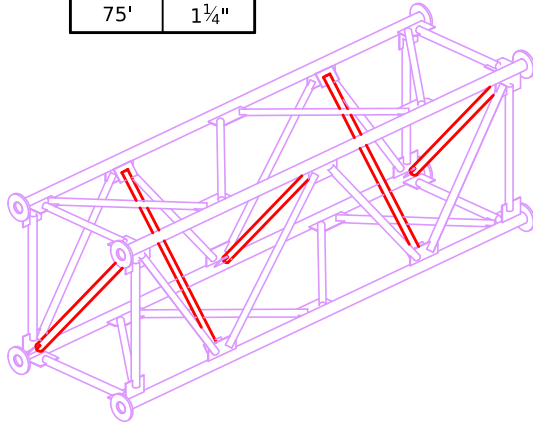
Back-face diagonals and bottom-face diagonals are shown with dashed lines. Interior diagonals are shown solid near the front face and top face. Interior diagonals are shown dashed towards the back face and bottom face.



Camber Diagram

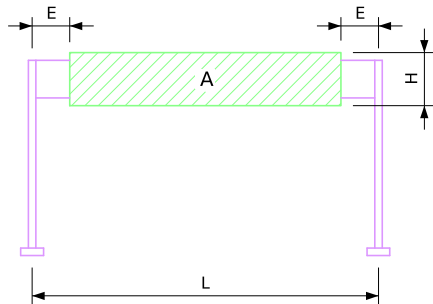
Span L	Camber C
50'	$\frac{3}{4}"$
55'	$\frac{3}{4}"$
60'	$\frac{7}{8}"$
65'	1"
70'	$1\frac{1}{8}"$
75'	$1\frac{1}{4}"$

① Signs that are horizontally offset from center of truss are permitted if same maximum sign height and maximum sign area parameters are used and end distances are greater than or equal to minimum end distance 'E' shown in table.



Isometric View
Typical Truss Unit


Interior diagonals shown in red for clarity



Sign Area for Steel Overhead Sign Truss
Centered ①

Allowable Sign Area				
Centered ①				
Span L	Max. Sign Height H	Min. End Dist. E		Max. Sign Area A
50'	19'-0"	5'-0"		760 S.F.
55'	19'-0"	5'-0"		855 S.F.
60'	19'-0"	5'-0"		950 S.F.
65'	19'-0"	7'-6"		950 S.F.
70'	19'-0"	10'-0"		950 S.F.
75'	19'-0"	12'-6"		950 S.F.
65'	14'-9"	5'-0"		811 S.F.
70'	14'-9"	5'-0"		885 S.F.
75'	14'-9"	5'-6"		944 S.F.

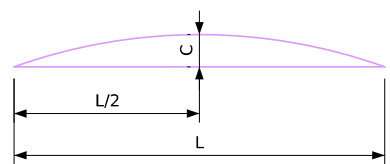
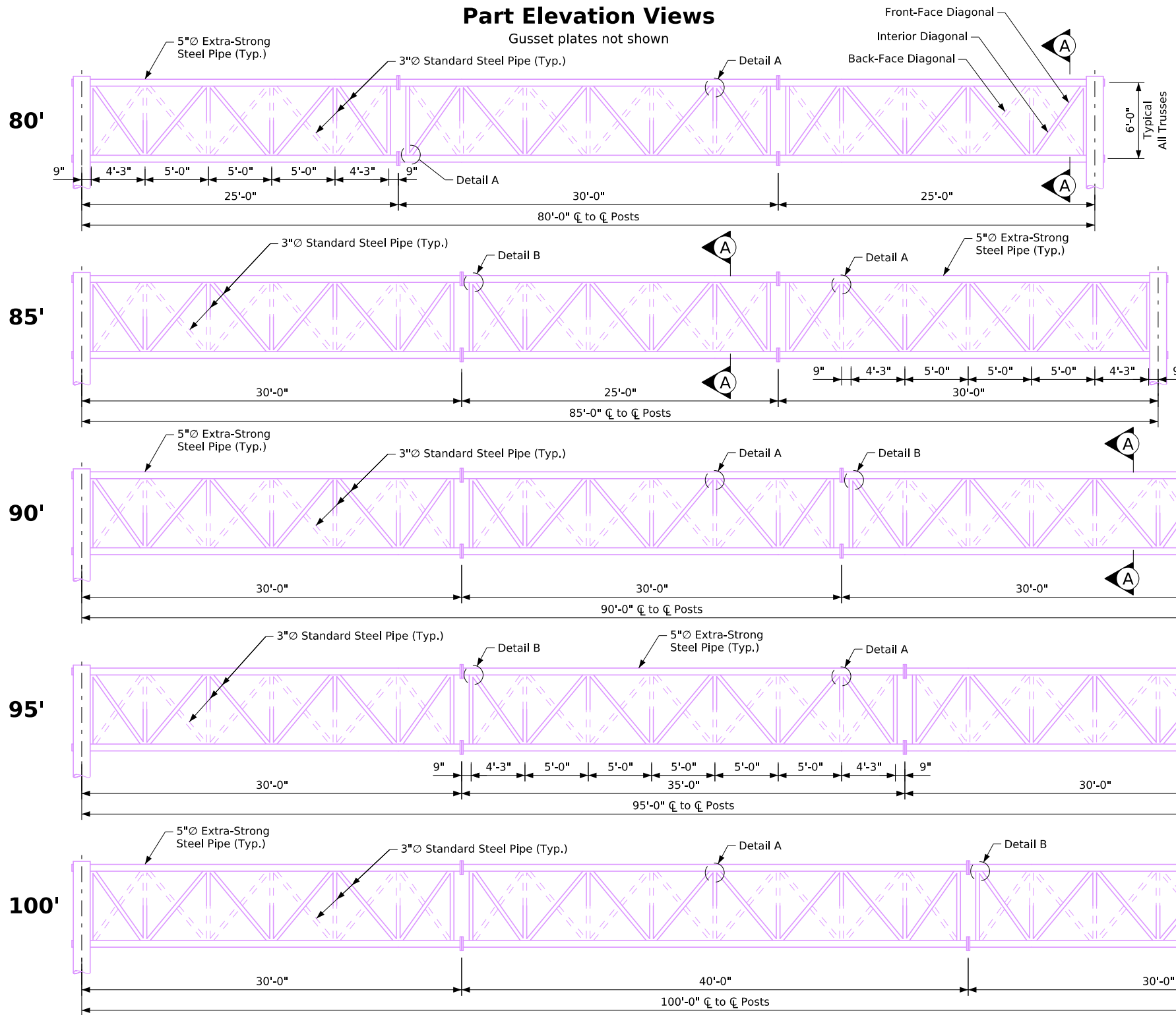
See Standard Sheet SOST-08-11 for Section A-A and Details A, B and C.

06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		Steel Overhead Sign Truss	
		September, 2011	
		Elevation Views for Truss Spans 50'-75' Spans	SOST-02-11

•Revised 03-2019: Updated Bridge Engineer signature.
•Revised 06-2025: This sheet reissued, sheet format update.
•steeloverheadsigntruss.dgn - SOST-03-11 - This sheet issued 09-2011.

Part Elevation Views

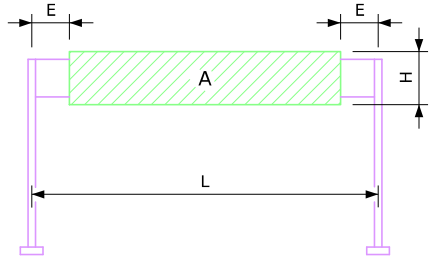
Gusset plates not shown



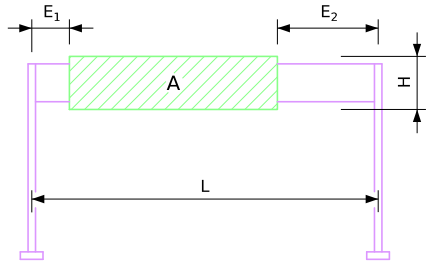
Camber Diagram

Span L	Camber C
80'	1 3/8"
85'	1 1/2"
90'	1 3/4"
95'	1 7/8"
100'	2 1/8"

Back-face diagonals and bottom-face diagonals are shown with dashed lines. Interior diagonals are shown solid near the front face and top face. Interior diagonals are shown dashed towards the back face and bottom face.



Sign Area for
Steel Overhead
Sign Truss
Centered



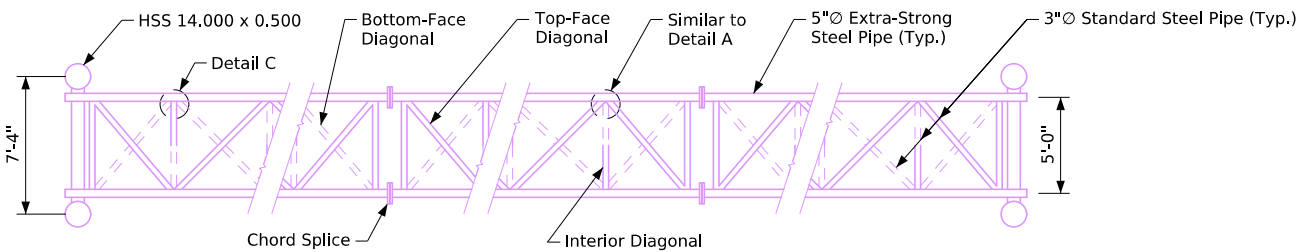
Sign Area for
Steel Overhead
Sign Truss
Offset

Sign offset may be mirrored (E₁ and E₂ values reversed).

See Standard Sheet SOST-08-11 for Section A-A and Details A, B and C.

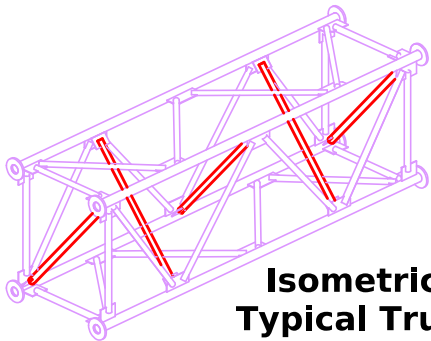
Allowable Sign Area

Centered				
Span	Max. Sign Height	Min. End Dist.		Max. Sign Area
L	H	E		A
80'	19'-0"	15'-0"		950 S.F.
85'	19'-0"	17'-6"		950 S.F.
90'	19'-0"	20'-0"		950 S.F.
95'	19'-0"	22'-6"		950 S.F.
100'	19'-0"	25'-0"		950 S.F.
80'	14'-9"	8'-0"		944 S.F.
85'	14'-9"	10'-6"		944 S.F.
90'	14'-9"	13'-0"		944 S.F.
95'	14'-9"	15'-6"		944 S.F.
100'	14'-9"	18'-0"		944 S.F.
85'	12'-0"	5'-0"		900 S.F.
90'	12'-0"	5'-6"		948 S.F.
95'	12'-0"	8'-0"		948 S.F.
100'	12'-0"	10'-6"		948 S.F.
Offset				
Span	Max. Sign Height	Min. Left End Dist.	Min. Right End Dist.	Max. Sign Area
L	H	E ₁	E ₂	A
80'	19'-0"	10'-0"	30'-0"	760 S.F.
85'	19'-0"	10'-0"	38'-0"	703 S.F.
90'	19'-0"	10'-0"	44'-0"	684 S.F.
95'	19'-0"	10'-0"	50'-0"	665 S.F.
100'	19'-0"	10'-0"	56'-0"	646 S.F.
85'	14'-9"	10'-0"	13'-0"	915 S.F.
90'	14'-9"	10'-0"	25'-0"	811 S.F.
95'	14'-9"	10'-0"	34'-0"	752 S.F.
100'	14'-9"	10'-0"	41'-0"	723 S.F.
100'	12'-0"	10'-0"	14'-0"	912 S.F.



Part Top View


Interior diagonals have same orientation at chord splice locations

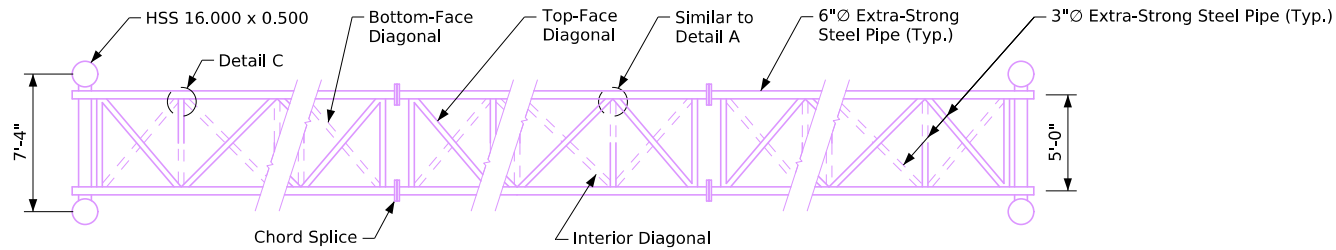


Isometric View
Typical Truss Unit

Interior diagonals shown in red for clarity

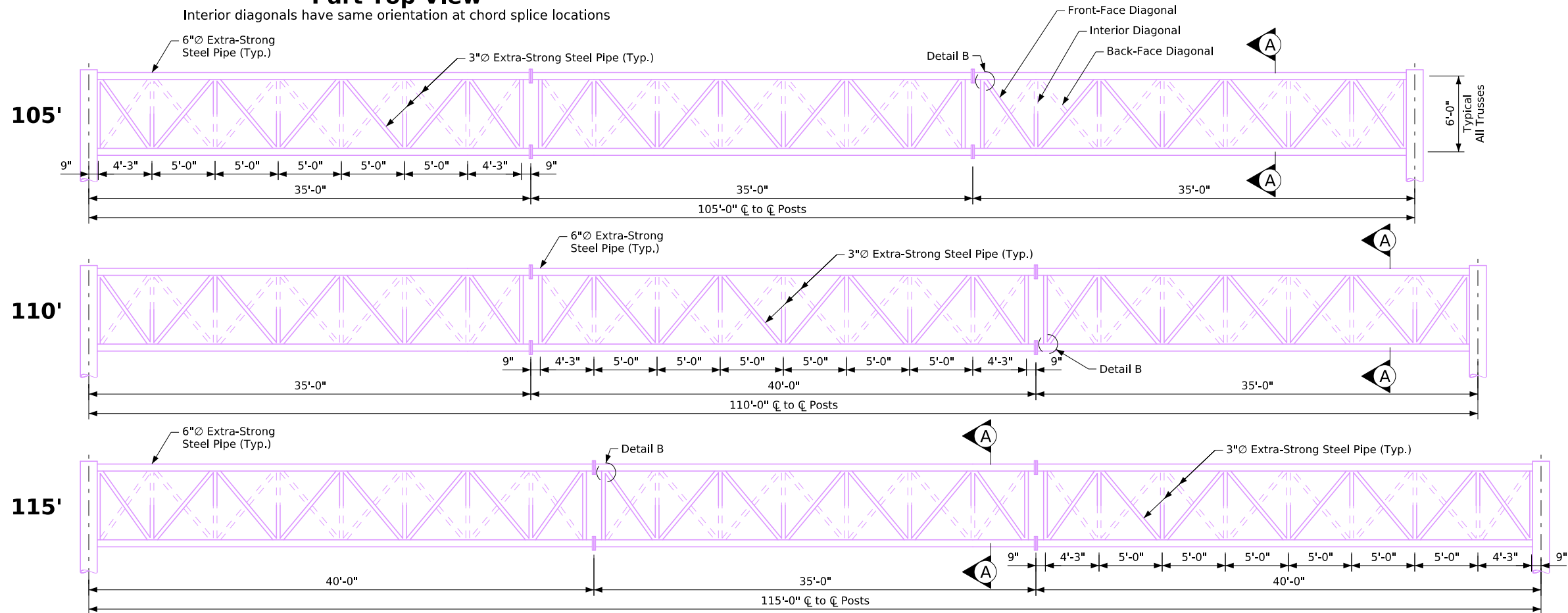
Sign offset may be mirrored (E₁ and E₂ values reversed).

06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		Steel Overhead Sign Truss	
		September, 2011	
		Elevation Views for Truss Spans 80'-100' Spans	SOST-03-11



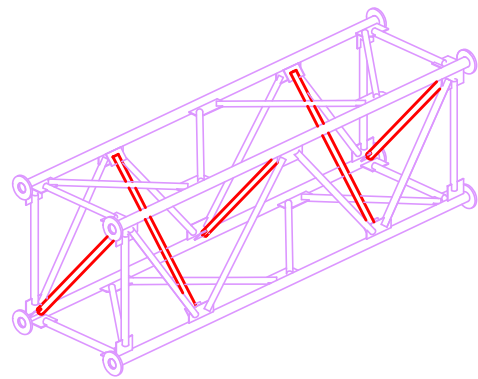
Part Top View

Interior diagonals have same orientation at chord splice locations



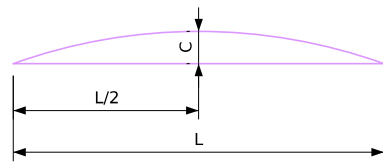
Part Elevation Views

Gusset plates not shown



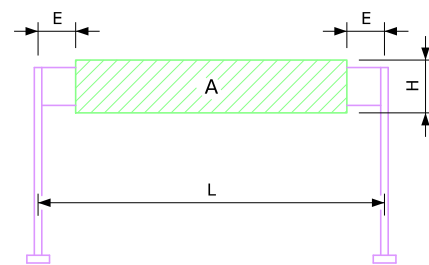
Isometric View Typical Truss Unit

Interior diagonals shown in red for clarity



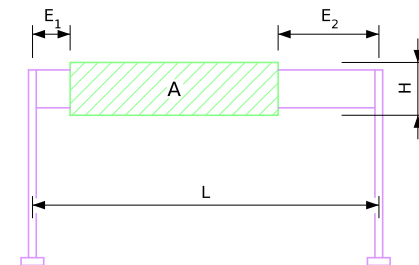
Camber Diagram

Span L	Camber C
105'	2 1/4"
110'	2 1/2"
115'	2 3/4"



Sign Area for Steel Overhead Sign Truss

Centered



Sign Area for Steel Overhead Sign Truss

Offset

Sign offset may be mirrored
(E₁ and E₂ values reversed).

Back-face diagonals and bottom-face diagonals are shown with dashed lines. Interior diagonals are shown solid near the front face and top face. Interior diagonals are shown dashed towards the back face and bottom face.

Allowable Sign Area


Centered

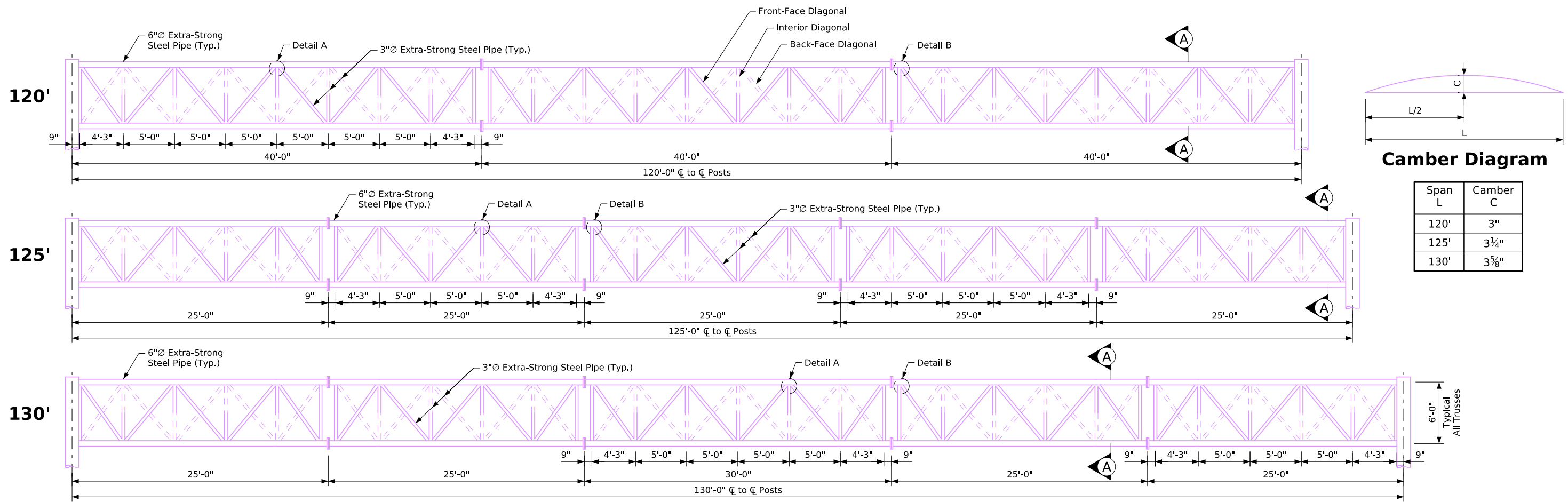
Span	Max. Sign Height	Min. End Dist.		Max. Sign Area
L	H	E		A
105'	19'-0"	27'-6"		950 S.F.
110'	19'-0"	30'-0"		950 S.F.
115'	19'-0"	32'-6"		950 S.F.
105'	14'-9"	20'-6"		944 S.F.
110'	14'-9"	23'-0"		944 S.F.
115'	14'-9"	25'-6"		944 S.F.
105'	12'-0"	13'-0"		948 S.F.
110'	12'-0"	15'-6"		948 S.F.
115'	12'-0"	18'-0"		948 S.F.

Offset

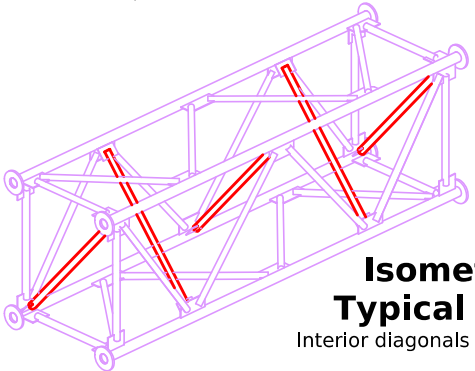
Span	Max. Sign Height	Min. Left End Dist.	Min. Right End Dist.	Max. Sign Area
L	H	E ₁	E ₂	A
105'	19'-0"	10'-0"	62'-0"	627 S.F.
105'	19'-0"	15'-0"	54'-0"	684 S.F.
110'	19'-0"	10'-0"	68'-0"	608 S.F.
110'	19'-0"	15'-0"	60'-0"	665 S.F.
115'	19'-0"	10'-0"	73'-0"	608 S.F.
115'	19'-0"	15'-0"	66'-0"	646 S.F.
105'	14'-9"	10'-0"	48'-0"	693 S.F.
105'	14'-9"	15'-0"	37'-0"	782 S.F.
110'	14'-9"	10'-0"	54'-0"	679 S.F.
110'	14'-9"	15'-0"	45'-0"	738 S.F.
115'	14'-9"	10'-0"	61'-0"	649 S.F.
115'	14'-9"	15'-0"	51'-0"	732 S.F.
105'	12'-0"	10'-0"	27'-0"	816 S.F.
110'	12'-0"	10'-0"	36'-0"	768 S.F.
115'	12'-0"	10'-0"	45'-0"	720 S.F.
115'	12'-0"	15'-0"	29'-0"	852 S.F.

See Standard Sheet SOST-08-11 for Section A-A and Details A, B and C.

06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		Steel Overhead Sign Truss	
		September, 2011	
		Elevation Views for Truss Spans 105'-115' Spans	SOST-04-11



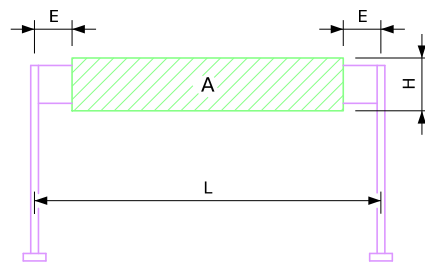
Span L	Camber C
120'	3"
125'	3 1/4"
130'	3 5/8"



Back-face diagonals and bottom-face diagonals are shown with dashed lines. Interior diagonals are shown solid near the front face and top face. Interior diagonals are shown dashed towards the back face and bottom face.

**Isometric View
Typical Truss Unit**
Interior diagonals shown in red for clarity

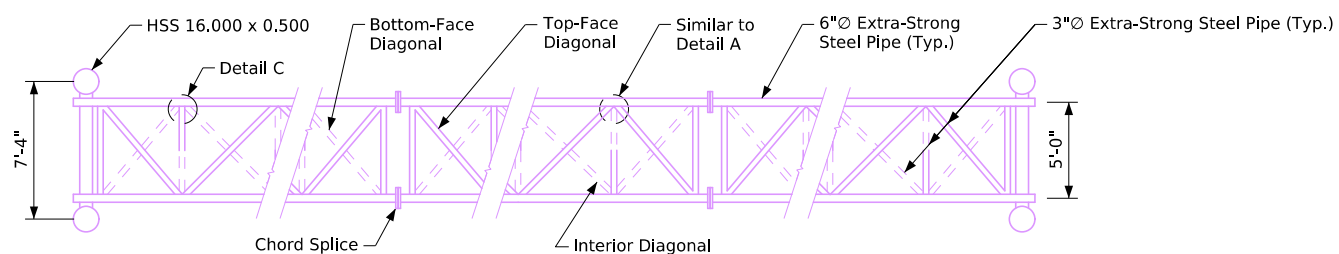
Allowable Sign Area				
Centered				
Span	Max. Sign Height	Min. End Dist.		Max. Sign Area
L	H	E		A
120'	19'-0"	35'-0"		950 S.F.
125'	19'-0"	37'-6"		950 S.F.
130'	19'-0"	40'-0"		950 S.F.
120'	14'-9"	28'-0"		944 S.F.
125'	14'-9"	30'-6"		944 S.F.
130'	14'-9"	33'-0"		944 S.F.
120'	12'-0"	20'-6"		948 S.F.
125'	12'-0"	23'-0"		948 S.F.
130'	12'-0"	25'-6"		948 S.F.



**Sign Area for
Steel Overhead
Sign Truss**
Centered

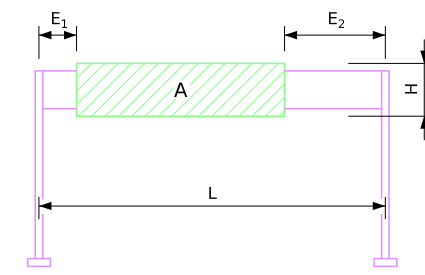
Part Elevation Views
Gusset plates not shown

Allowable Sign Area				
Offset				
Span	Max. Sign Height	Min. Left End Dist.	Min. Right End Dist.	Max. Sign Area
L	H	E ₁	E ₂	A
120'	19'-0"	10'-0"	79'-0"	589 S.F.
120'	19'-0"	20'-0"	64'-0"	684 S.F.
125'	19'-0"	10'-0"	84'-0"	589 S.F.
125'	19'-0"	20'-0"	70'-0"	665 S.F.
130'	19'-0"	10'-0"	90'-0"	570 S.F.
130'	19'-0"	20'-0"	75'-0"	665 S.F.
120'	14'-9"	10'-0"	67'-0"	634 S.F.
120'	14'-9"	20'-0"	48'-0"	767 S.F.
125'	14'-9"	10'-0"	72'-0"	634 S.F.
125'	14'-9"	20'-0"	55'-0"	738 S.F.
130'	14'-9"	10'-0"	78'-0"	620 S.F.
130'	14'-9"	20'-0"	62'-0"	708 S.F.
120'	12'-0"	10'-0"	51'-0"	708 S.F.
120'	12'-0"	20'-0"	23'-0"	924 S.F.
125'	12'-0"	10'-0"	58'-0"	684 S.F.
125'	12'-0"	20'-0"	34'-0"	852 S.F.
130'	12'-0"	10'-0"	65'-0"	660 S.F.
130'	12'-0"	20'-0"	43'-0"	804 S.F.




Part Top View

Interior diagonals have same orientation at chord splice locations



**Sign Area for
Steel Overhead
Sign Truss**
Offset
Sign offset may be mirrored
(E₁ and E₂ values reversed).

See Standard Sheet SOST-08-11 for Section A-A and Details A, B and C.

06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		Steel Overhead Sign Truss	
		September, 2011	
		Elevation Views for Truss Spans 120'-130' Spans	SOST-05-11

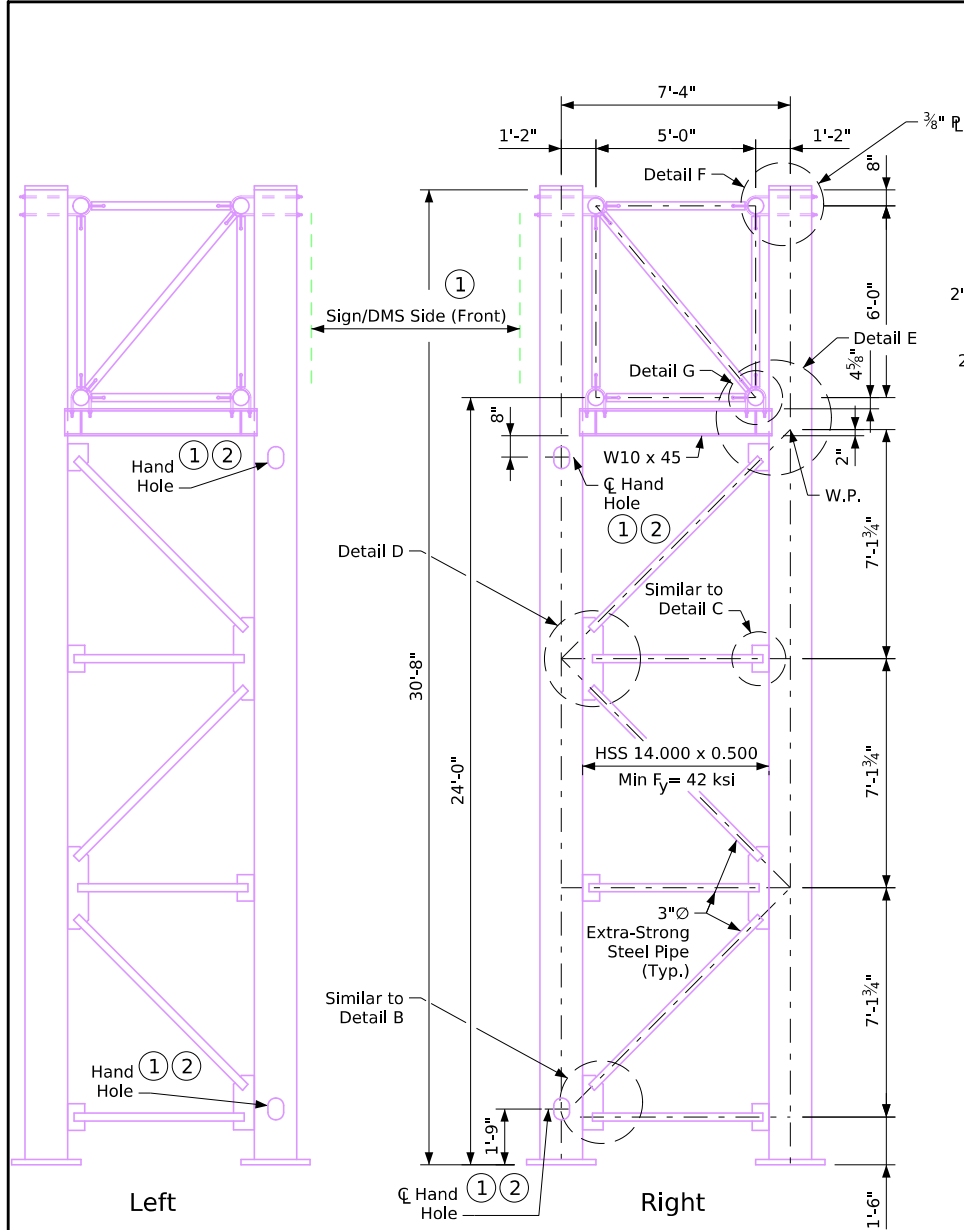
• Revised 03-2019: Updated Bridge Engineer signature.
• Revised 06-2025: This sheet reissued, sheet format update.
• steeloverheadsigntruss.dgn - SOST-05-11 - This sheet issued 09-2011.

•Revised 03-2019; Increased diameter of galvanizing vent hole in base plate from 1" to 3/4" to improve constructability. Added note to clarify that hex nut welded to hand hole frame is for lower hand hole only. Replaced note identifier asterisks and triangles with circled numbers to improve readability. Updated Bridge Engineer signature.

•Revised 04-2020: Changed "Galvanizing Vent Hole" to "Galvanizing Hole" in Section B-B to reflect hole use as a galvanizing vent hole and/or a galvanizing drain hole. Decreased diameter of galvanizing hole in base plate from 1" to 3/4" to improve constructability. Revised Section B-B post-to-base-plate weld symbol to show a standard-sized backing element. Changed "Full-Penetration Groove Weld" to "Complete-Joint-Penetration Groove Weld" to conform to AWS nomenclature.

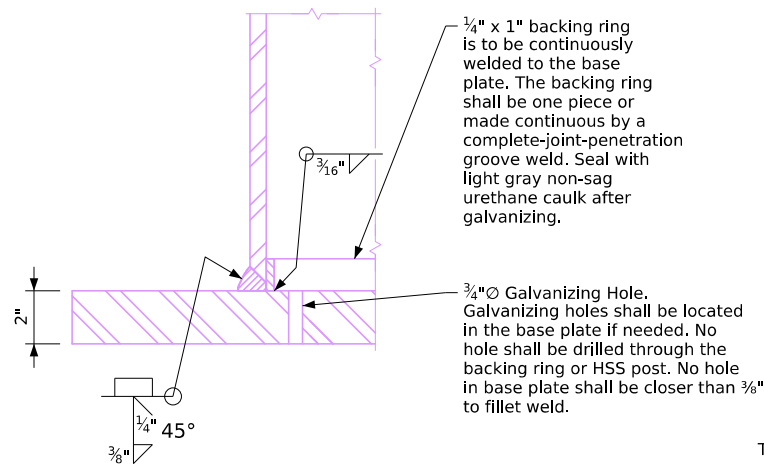
•Revised 06-2025; This sheet reissued, sheet format update.

•steeloverheadsigntruss.dgn - SOST-06-11 - This sheet issued 09-2011.

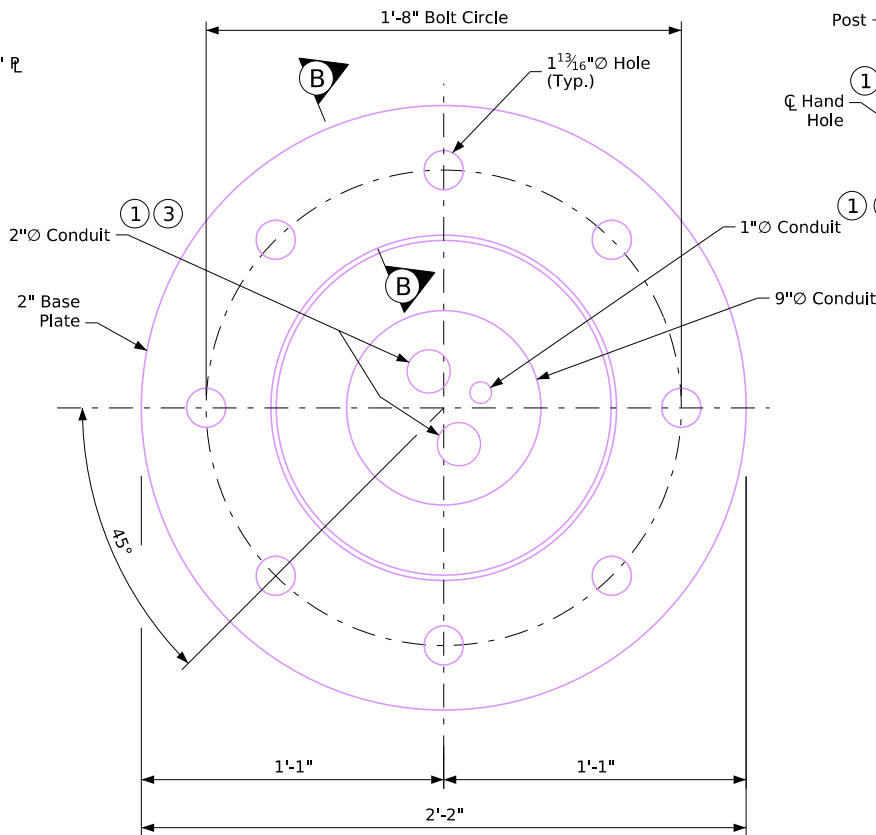


End View of Truss Supports

- ② Hand holes shall be located only in posts that are closest to dynamic message sign and be positioned on side opposite traffic.

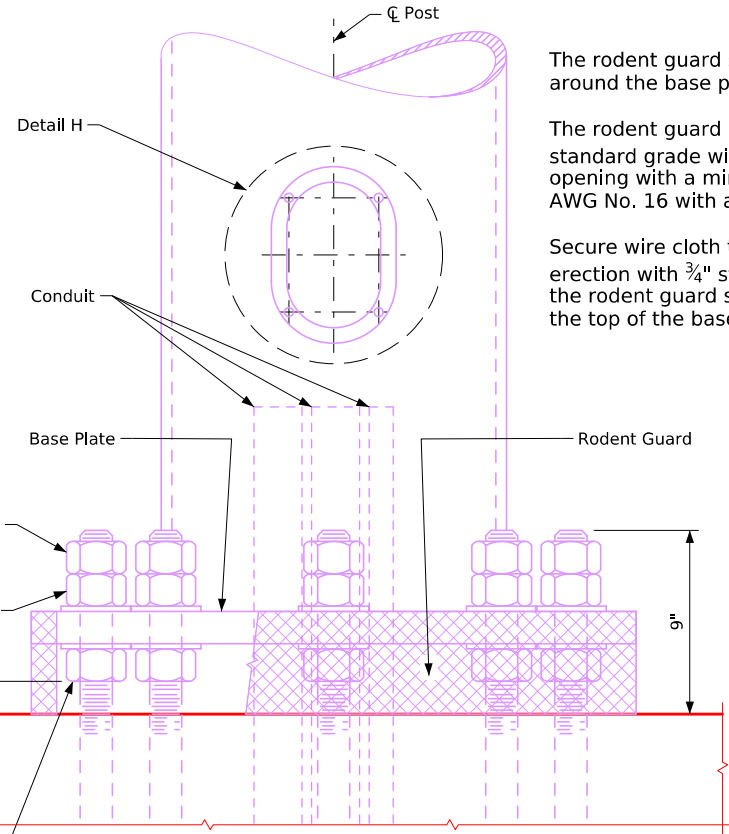


Section B-B



Base Plate Plan

- ③ Conduit is present only in posts with hand holes.



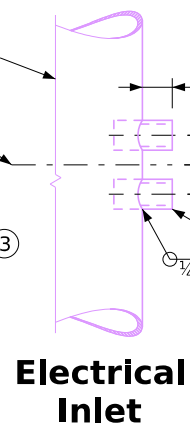
Base Side View

Opposite of traffic side

The rodent guard shall be placed around the base plate.

The rodent guard is stainless steel standard grade wire cloth, 1/4" maximum opening with a minimum wire diameter of AWG No. 16 with a minimum 2" lap.

Secure wire cloth to base plate after erection with 3/4" stainless steel banding. the rodent guard shall not extend above the top of the base plate.



Electrical Inlet

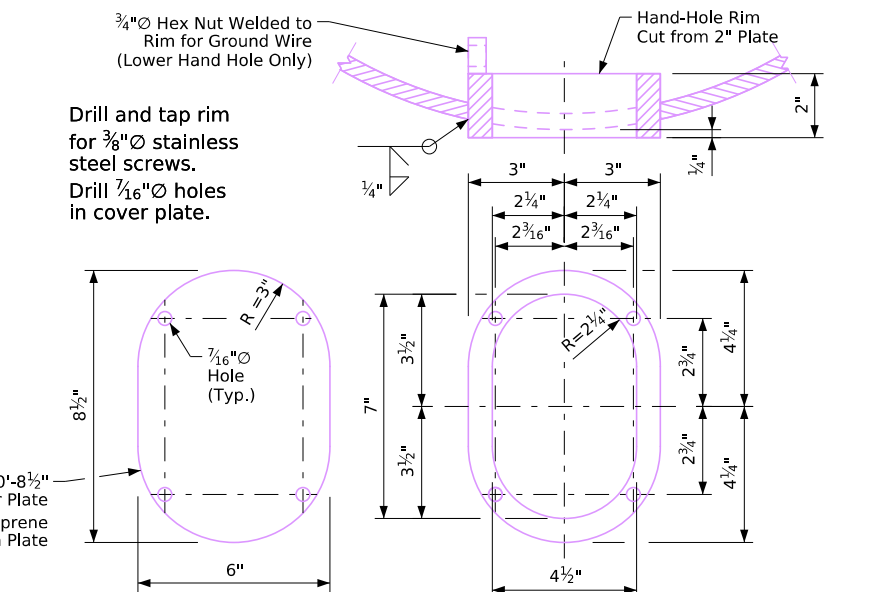
- ① For DMS Trusses Only

Hand holes, conduit, and pipe inlet couplings are to be included on DMS truss designs only. See Standard Sheet SOST-18-11 for foundation conduit location details.

Hand holes and electrical inlet holes shall be located in both truss supports unless otherwise indicated on detail project plans. Locate holes only in posts that are closest to dynamic message sign.

Threaded steel pipe inlet couplings are to be placed opposite to upper hand hole on post. Couplings shall be fitted with standard plugs until conduit is installed.

All conduit shall be Schedule 40 plastic.



Detail H



Standard Design

Steel Overhead Sign Truss

September, 2011

Support Post Base and
DMS Electrical Access Details
50'-100' Spans

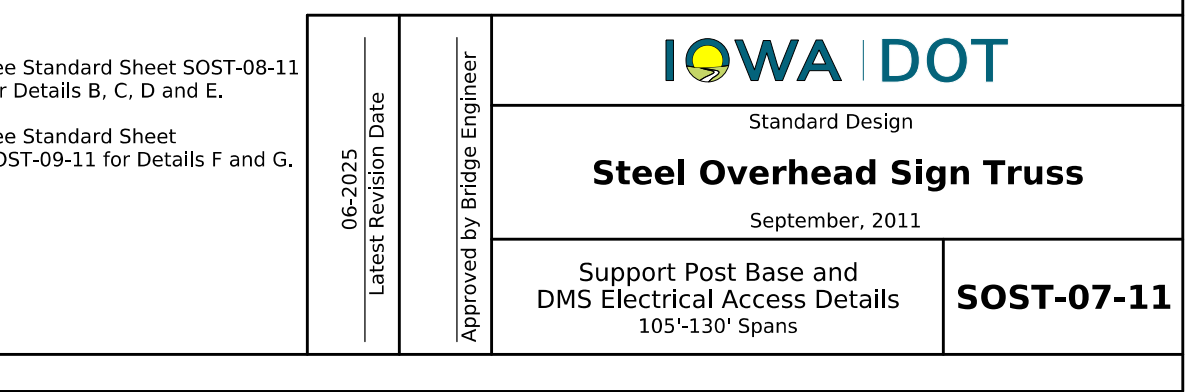
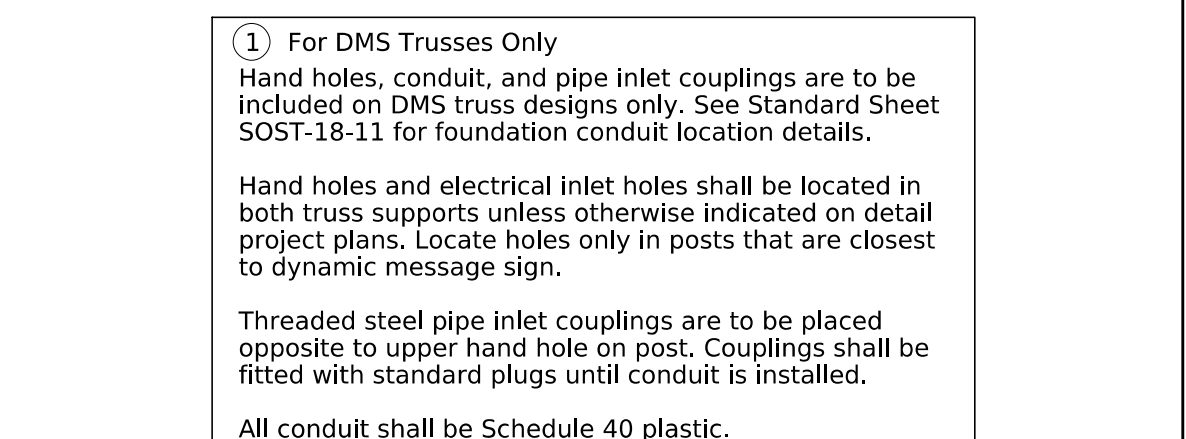
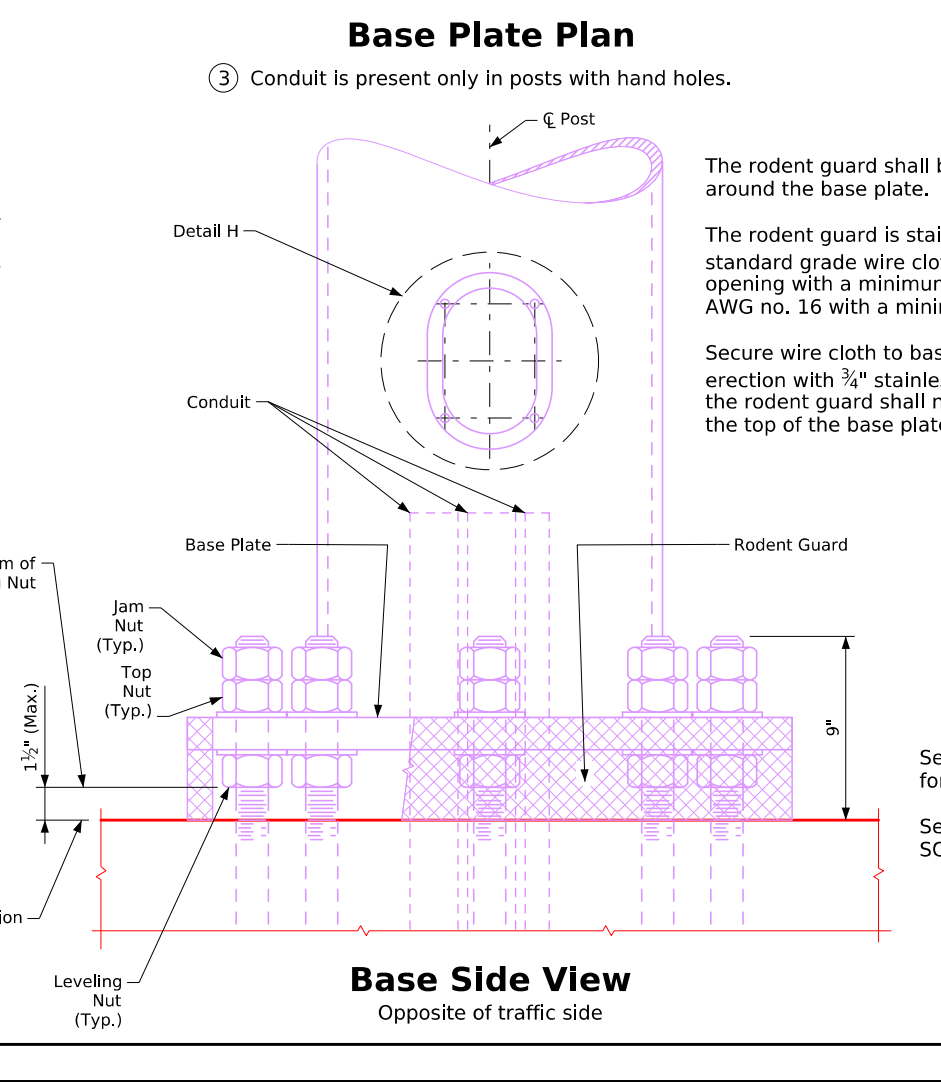
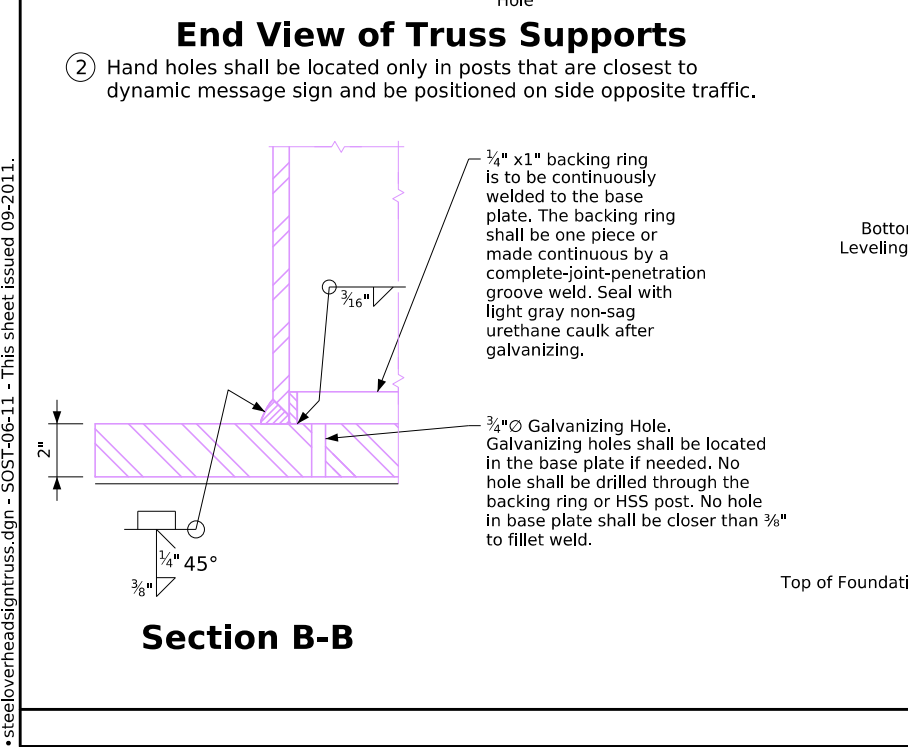
SOST-06-11

06-2025

Latest Revision Date

Approved by Bridge Engineer

• Revised 04-2020: Changed "Galvanizing Vent Hole" to "Galvanizing Hole" in Section B-B to reflect hole as a galvanizing vent hole and/or a galvanizing drain hole. Decreased diameter of galvanizing hole in base plate from 1" to ¾" to improve constructability. Revised Section B-B post-to-base-plate weld symbol to show a standard-sized backing element. Changed "Full-Penetration Groove Weld" to "Complete-Joint-Penetration Groove Weld" to conform to AWS nomenclature.



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Details A, B and C show connections at top chords. Connections at bottom chords are similar.




- ② Gusset plate thickness differs from that shown for other details.
- ③ Use $1\frac{1}{16}$ " slot with $1\frac{1}{4}$ " \varnothing hole at $\frac{5}{8}$ " gusset plate (Detail E locations only).

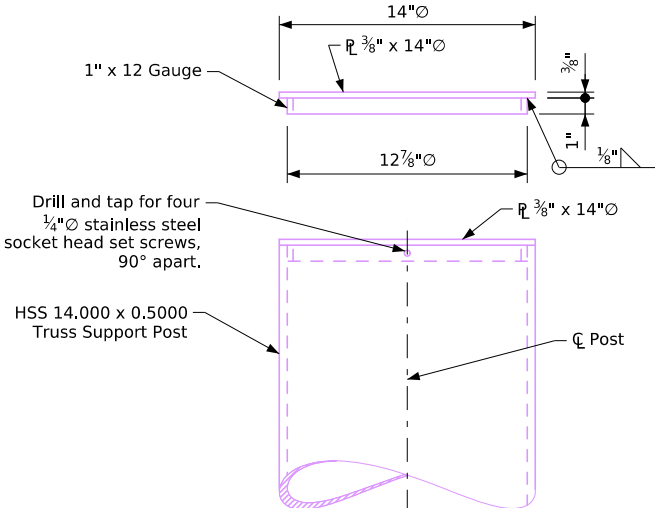


See Standard Sheets SOST-06-11 and SOST-07-11 for locations of details that are similar to Details B and C and locations of Details D and E.

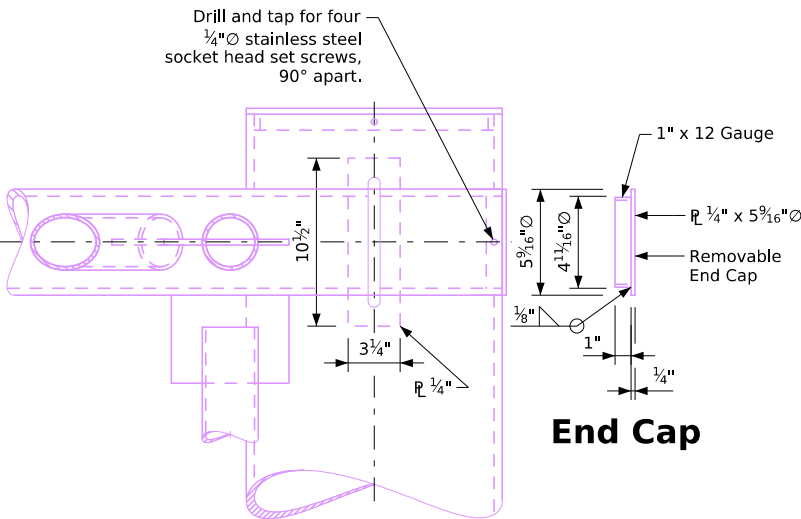
Truss Pipe Details		
Span	④ Truss Diagonals	⑤ Truss Chords
50'-100'	3"Ø Standard Steel Pipe	5"Ø Extra-Strong Steel Pipe
105'-130'	3"Ø Extra-Strong Steel Pipe	6"Ø Extra-Strong Steel Pipe

06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		<h1>Steel Overhead Sign Truss</h1>	
		September, 2011	
		Gusset Plate Connections 105'-130' Spans	SOST-08-11

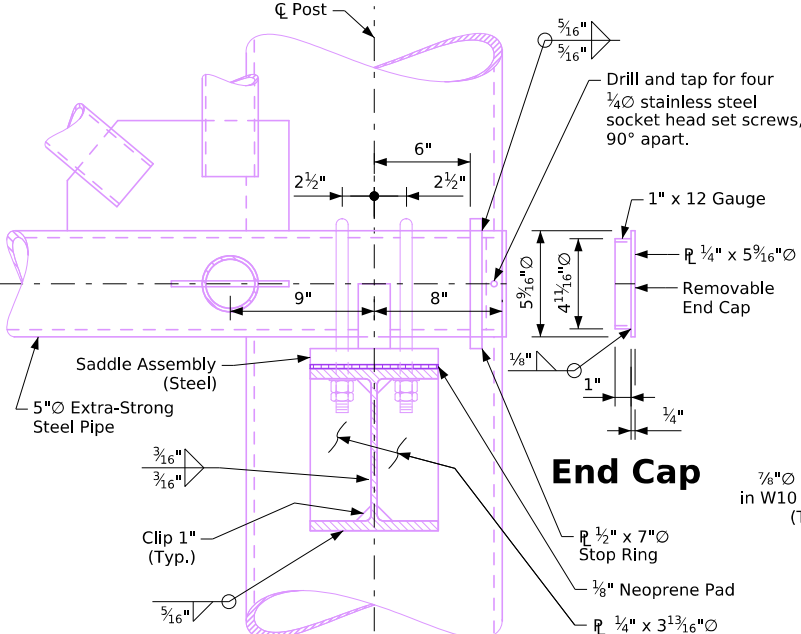
•Revised 03-2019: Modified chord splice fastener note to address change in ASTM Specifications. Clarified acceptable hardness of neoprene pad. Updated Bridge Engineer Signature.
•Revised 06-2025: This sheet reissued, sheet format update.
•steeloverheadsigntruss.dgn - SOST-09-11 - This Sheet Issued 09-2011.



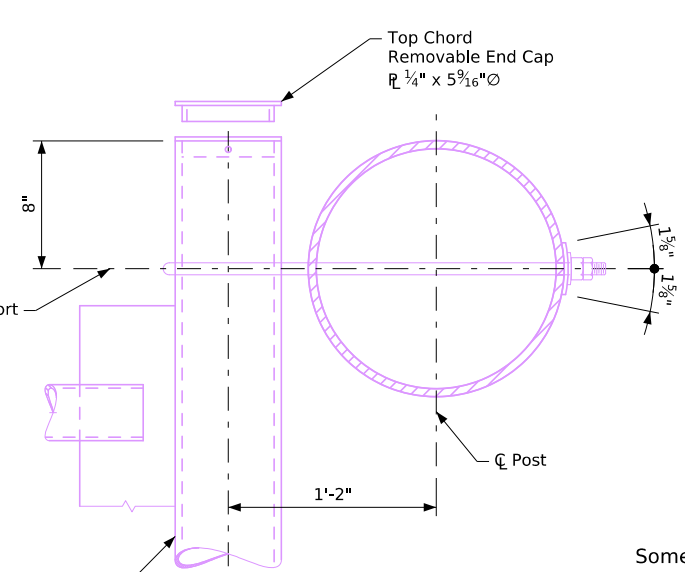
Post Top Detail



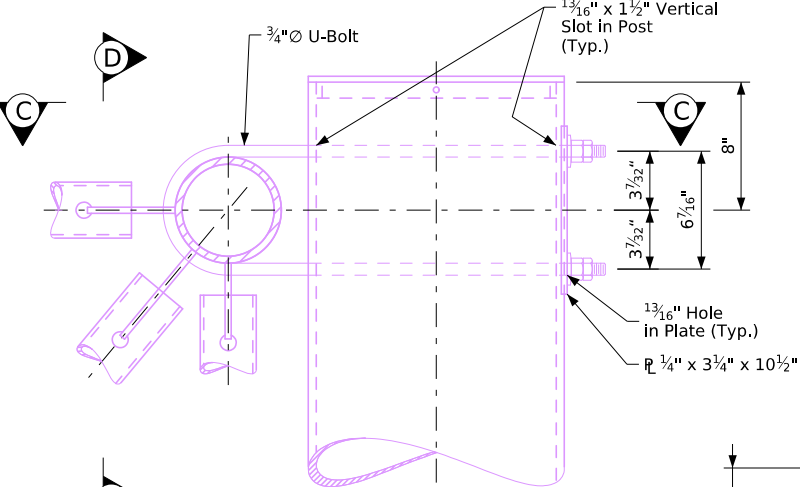
End Cap



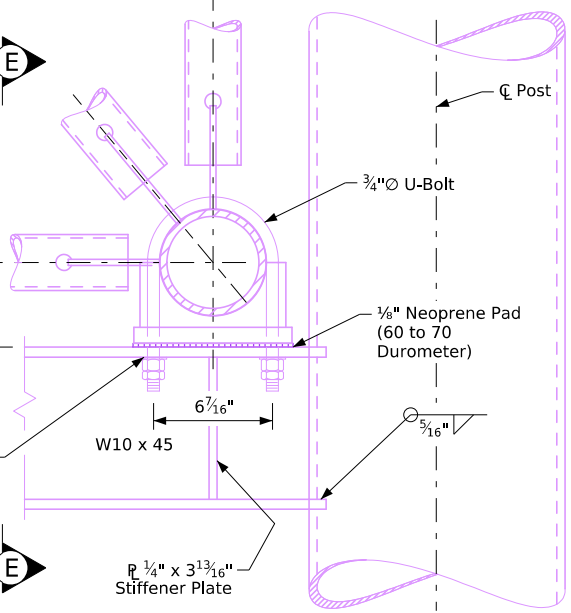
View E-E



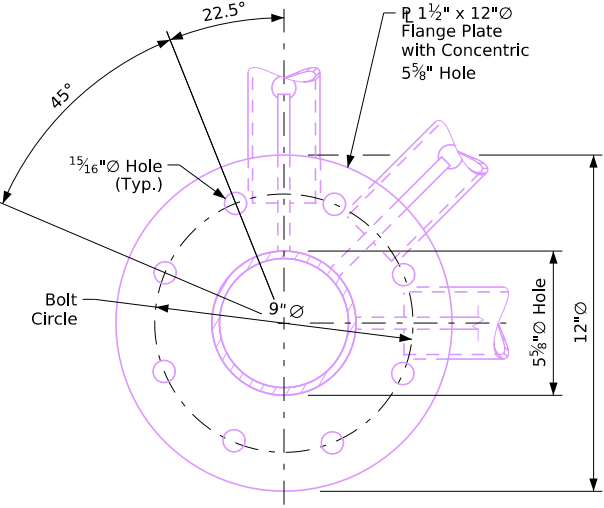
View C-C



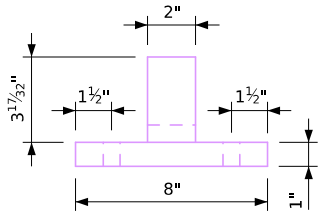
Detail F
Top Chord



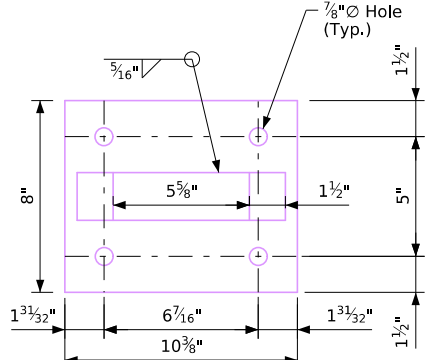
Detail G
Bottom Chord



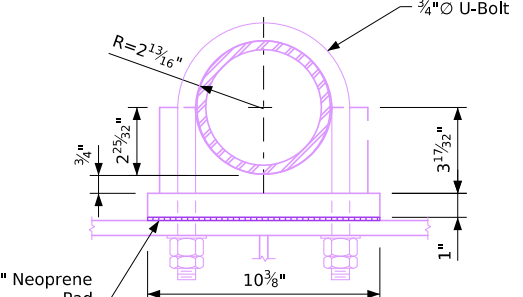
Chord Splice



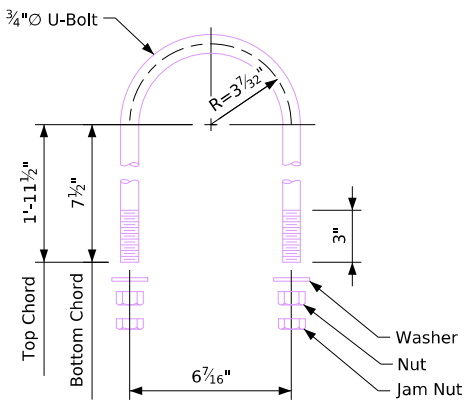
Saddle End View



Saddle Plan View



Saddle Side View




U-Bolt Detail

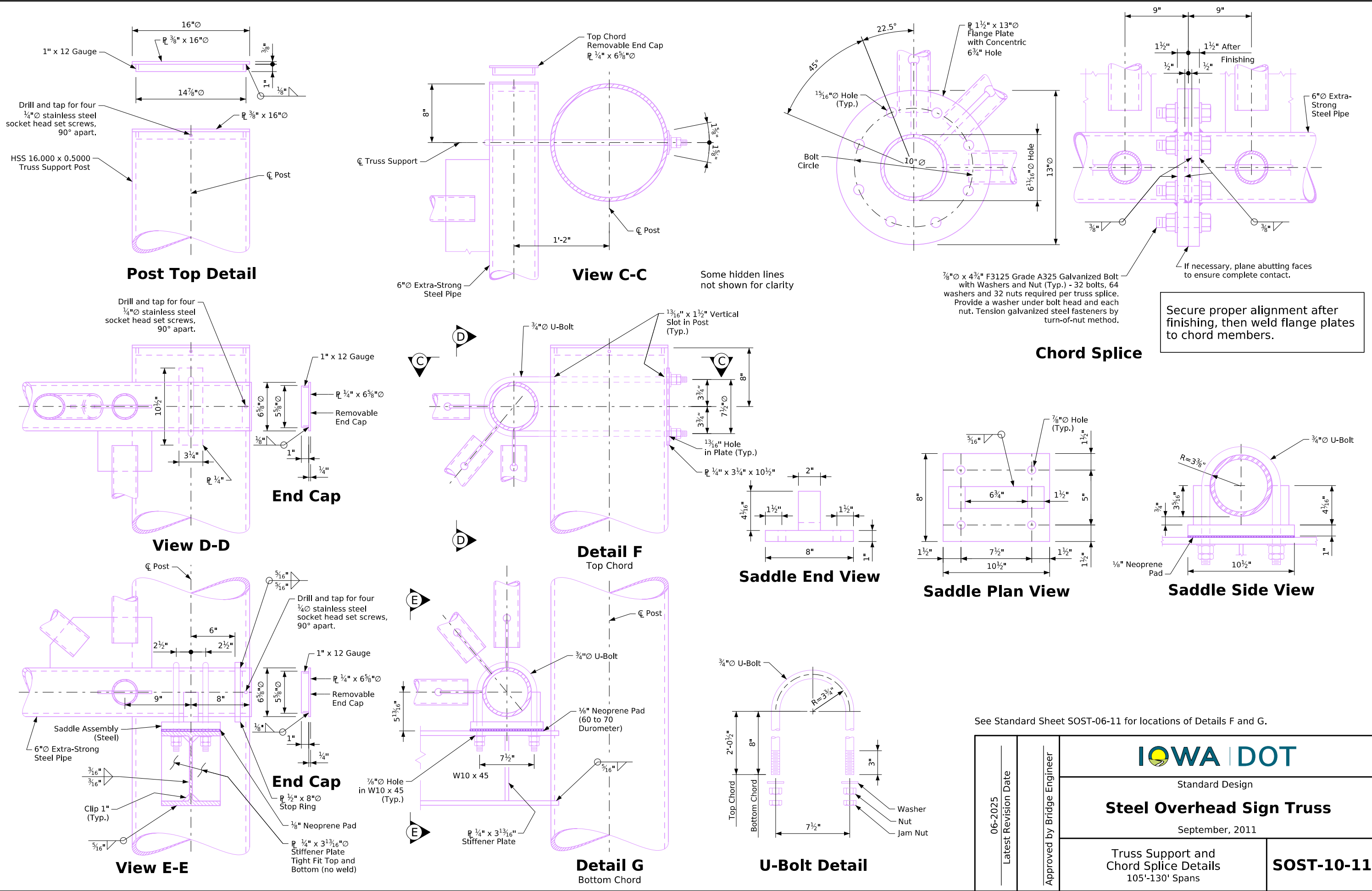
7/8" x 4 3/4" F3125 Grade A325 Galvanized Bolt with Washers and Nut (Typ.) - 32 bolts, 64 washers and 32 nuts are required per truss splice. Provide a washer under bolt head and each nut. Tension galvanized steel fasteners by turn-of-nut method.

Secure proper alignment after finishing, then weld flange plates to chord members.

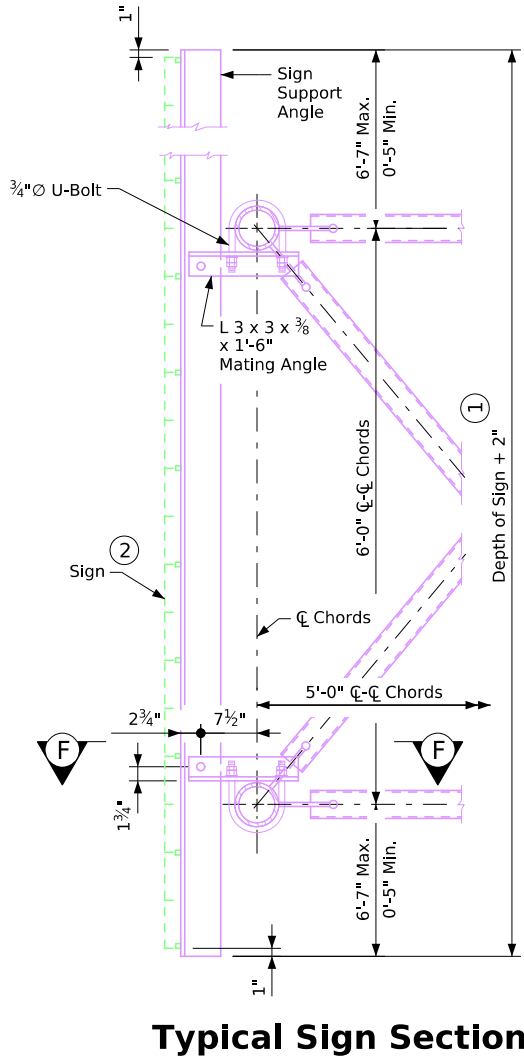
See Standard Sheet SOST-06-11 for locations of Details F and G.

06-2025 Latest Revision Date	Approved by Bridge Engineer	 Standard Design	
		Steel Overhead Sign Truss September, 2011	
		Truss Support and Chord Splice Details 50'-100' Spans	SOST-09-11

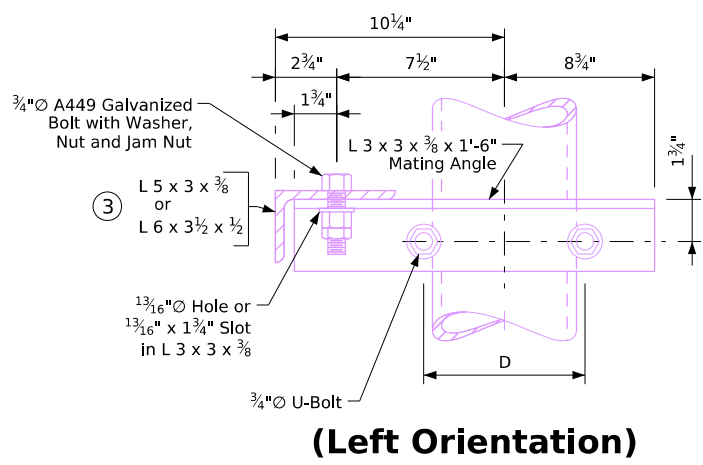
•Revised 03-2019: Modified chord splice fastener note to address change in ASTM Specifications. Clarified acceptable hardness of neoprene pad. Updated Bridge Engineer signature.
•Revised 06-2025: This sheet reissued, sheet format update.
•steeloverheadsigntruss.dgn - SOST-09-11 - This Sheet Issued 09-2011.



•Revised 11-2024: Modified Note 2 to improve clarity. At various locations, changed "Typical Sign" to "Main Sign" and changed "Sign panel" to "Sign".
•Revised 06-2025: This sheet reissued, sheet format update.
•steeloverheadsigntruss.dgn - SOST-11-11 - this sheet issued 09-2011.



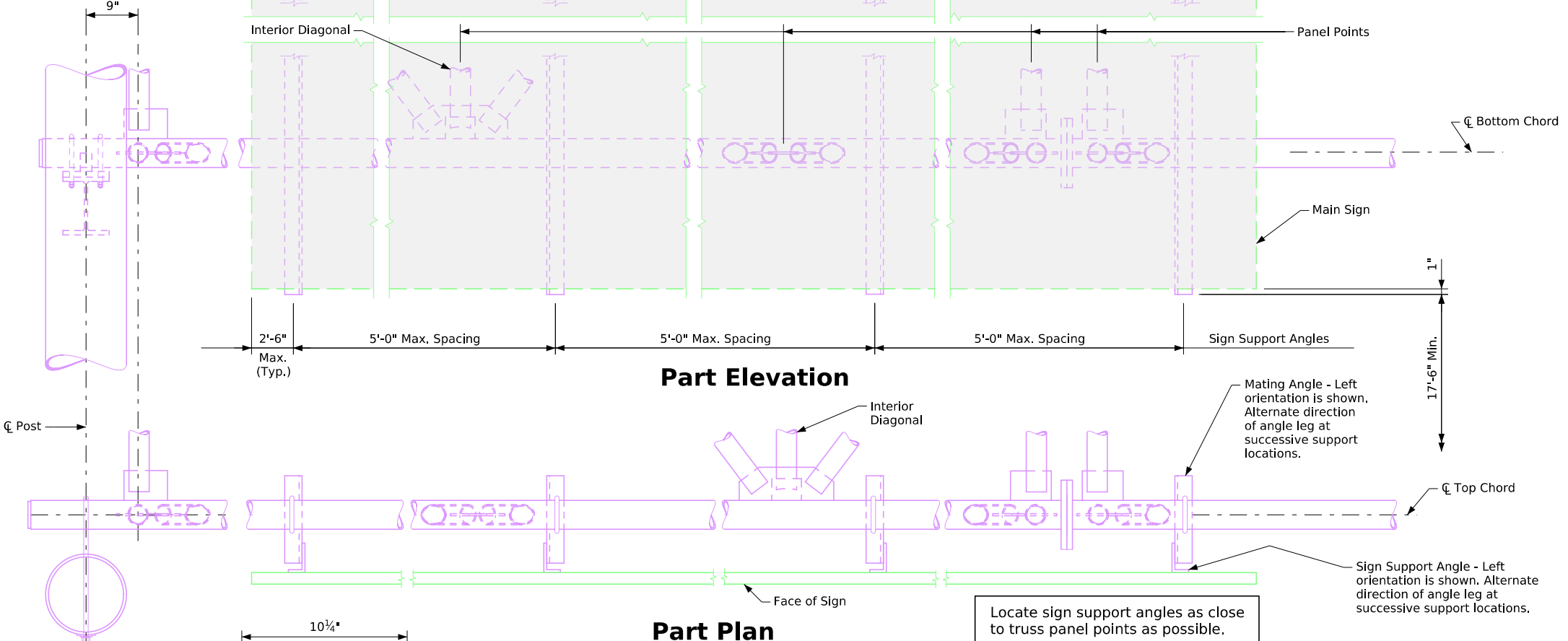
Typical Sign Section



(Left Orientation)

Section F-F

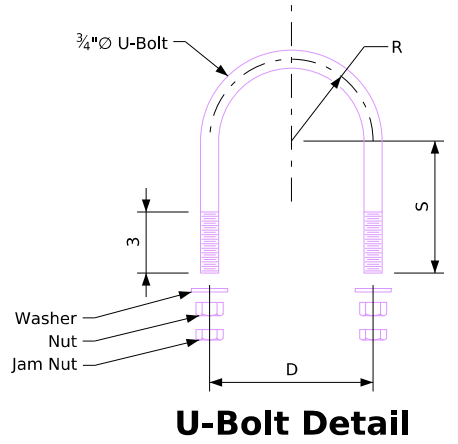
Alternate direction of sign support angle leg and mating angle leg at successive supports as shown in part plan.



Part Elevation

Part Plan

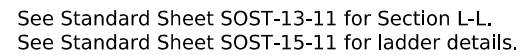
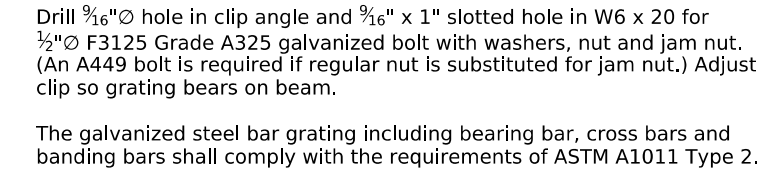
- ① Angle length will be greater if sign does not extend up to top chord.
- ② The sign with the greatest vertical dimension shall be centered vertically on the horizontal space truss. Other signs need not be centered vertically, but due consideration must be taken to limit torsional wind loading on the space truss. For the purposes of this note, "Sign" is defined as the main sign if the length of any auxiliary sign (such as an exit number sign) is less than half the length of the main sign, otherwise "Sign" is defined as the aggregate sign consisting of the main sign and auxiliary sign.
- ③ Use L 6 x 3 1/2 x 1/2 for sign height over 10'-0" to 19'-0" and L 5 x 3 x 3/8 for sign height of 10'-0" or less. Total sign height greater than 19'-0", sign support angle cantilever length greater than 6'-7" and/or sign support angle spacing greater than 5'-0" requires approval by the Bridges and Structures Bureau.



U-Bolt Detail

U-Bolt Dimension Table					
Span	Truss Chord	U-Bolt Dimensions			
		D	R	S	
50'-100'	5" Extra-Strong Steel Pipe	6 7/16"	3 7/32"	5 1/2"	<div><div>06-2025</div><div>Latest Revision Date</div></div> <div><div>Approved by Bridge Engineer</div></div> <div><div>IOWA DOT</div><div>Standard Design</div><div>Steel Overhead Sign Truss</div><div>September, 2011</div><div>Sign Attachment Details</div><div>50'-130' Spans</div></div> <div><div>SOST-11-11</div></div>
105'-130'	6" Extra-Strong Steel Pipe	7 1/2"	3 3/4"	6"	

•steeloverheadsigntruss.dgn - S051-12-11 - This sheet issued 03-2013.



06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		<h1>Steel Overhead Sign Truss</h1>	
		September, 2011	
		DMS Runway Details 50'-130' Spans	SOST-12-11

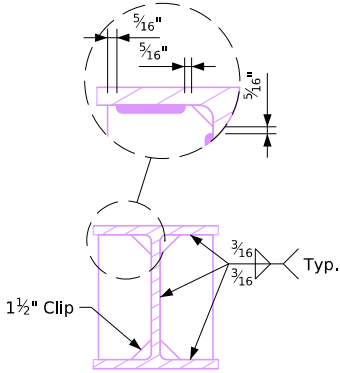
• Revised 11-2024; Modified Section L-L (Typical Runway Section) dimensions to facilitate proper alignment of runway with DMS cabinet. Expanded dimension table associated with DMS cabinet access runway to accommodate multiple DMS cabinet models.
• Revised 06-2025; Changed Detail K dimension from 1'-5 3/4" to "X" to match variable dimension "X" in Section L-L. This sheet reissued, sheet format update.
• steeloverheadsigntruss.dgn - SOST-13-11 - This sheet issued 03-2013.

Dimension Table								
For Runway Compatible with Skyline VMSLED-WV-20F-112x432-30C-I+-ISC DMS Cabinet								
Span	Truss Chord	A	B	L*	X*	U-Bolt Dimensions		
						D	R	S
50'-100'	5"Ø Extra-Strong Steel Pipe	2'2 5/32"	5 1/4"	5'-0 3/4"	1'-2 3/4"	6 7/16"	3 7/32"	5 1/2"
105'-130'	6"Ø Extra-Strong Steel Pipe	3 5/16"	5 3/4"	5'-1 3/4"	1'-3 3/4"	7 1/2"	3 3/4"	6"

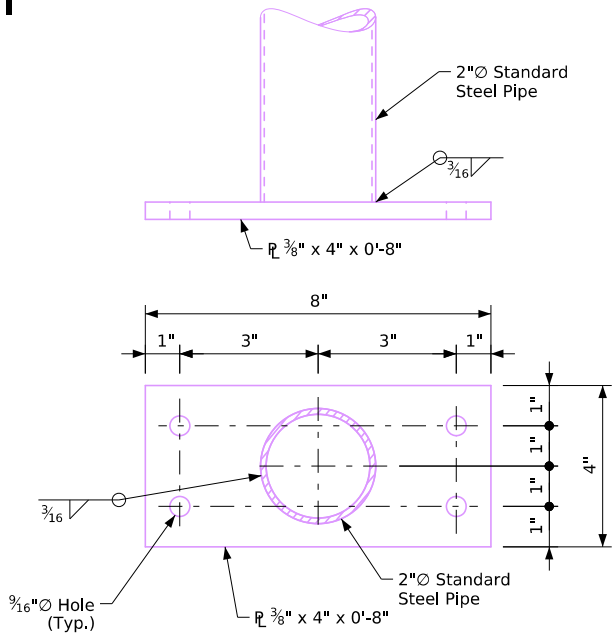
Dimension Table								
For Runway Compatible with Daktronics VF-2020-112x432-20 DMS Cabinet								
Span	Truss Chord	A	B	L*	X*	U-Bolt Dimensions		
						D	R	S
50'-100'	5"Ø Extra-Strong Steel Pipe	2'2 5/32"	5 1/4"	5'-1 3/4"	1'-5 1/4"	6 7/16"	3 7/32"	5 1/2"
105'-130'	6"Ø Extra-Strong Steel Pipe	3 5/16"	5 3/4"	5'-4 1/4"	1'-6 1/4"	7 1/2"	3 3/4"	6"

*These dimensions are for estimating purposes only. The Contractor shall verify specific DMS cabinet dimensions, positioning and orientation relative to the support truss before detailing shop drawings to ensure proper alignment of DMS access runway and associated handrails with DMS access door.

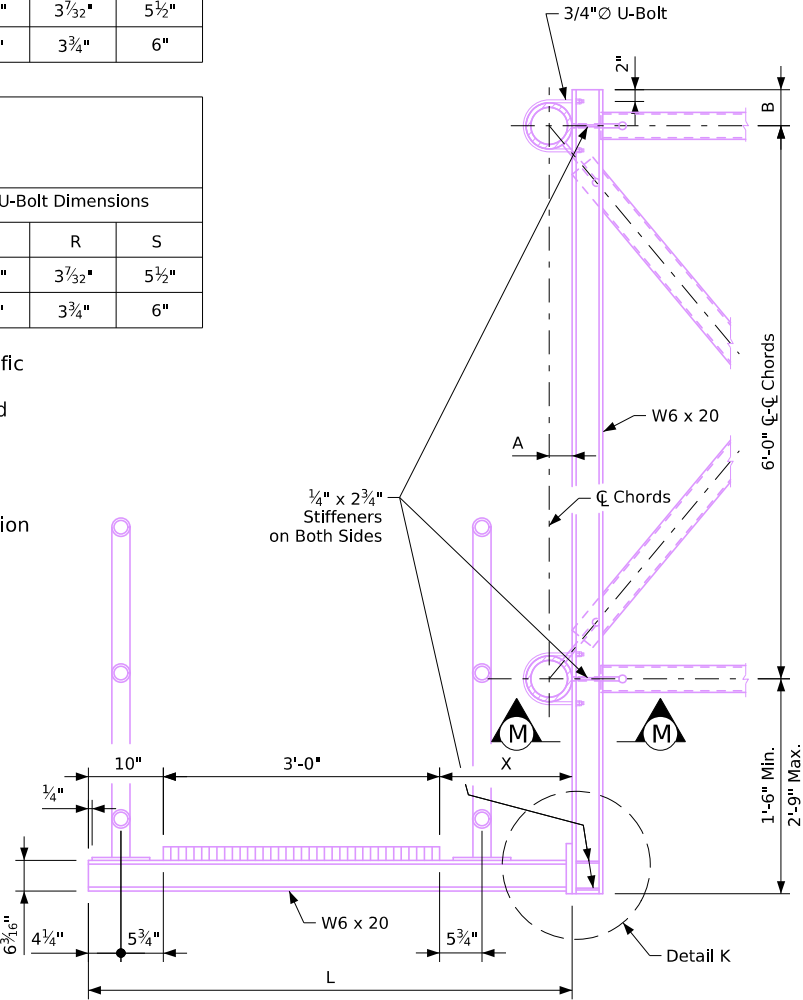
Note that identical DMS cabinets may be positioned and oriented differently due to differences in DMS-to-truss attachment hardware. Do not assume dimensions of attachment hardware. Contact the Iowa D.O.T. Traffic Operations Bureau for information about specific DMS cabinet dimensions, positioning and orientation relative to a particular support truss.



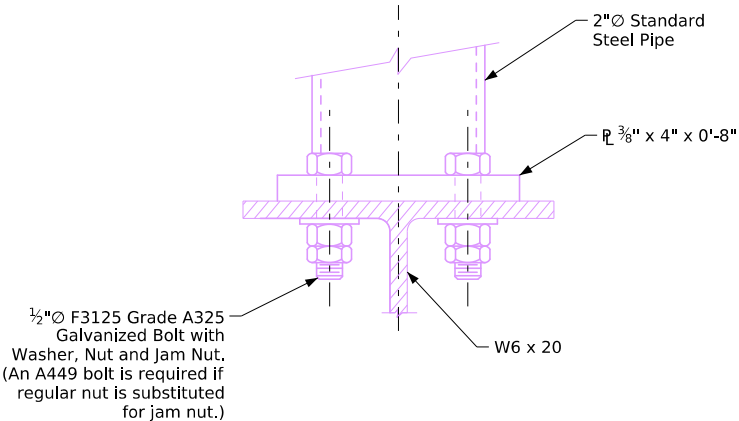
Typical Stiffener Detail



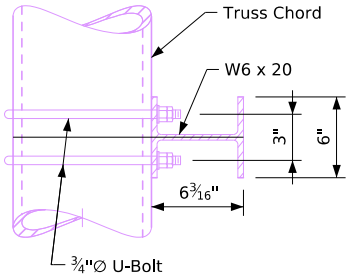
Handrail Post Base Plate



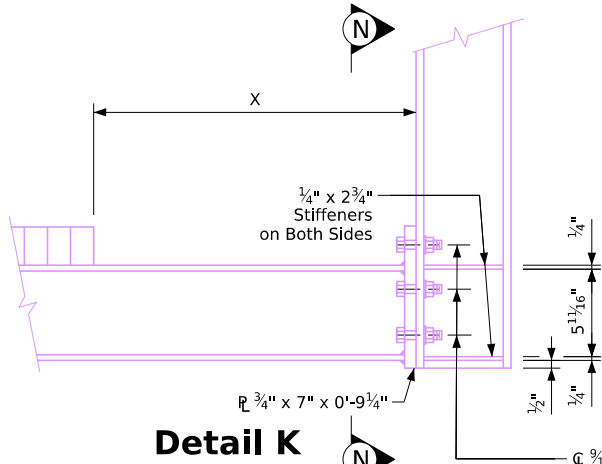
Section L-L
Typical Runway Section



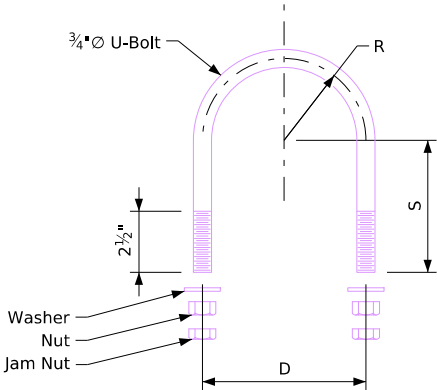
End Elevation of
Handrail Post Base



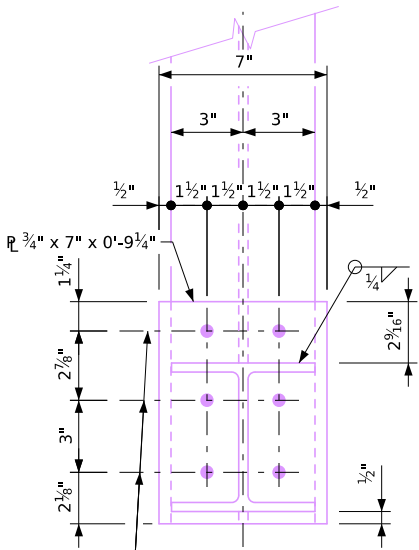
Section M-M



Detail K



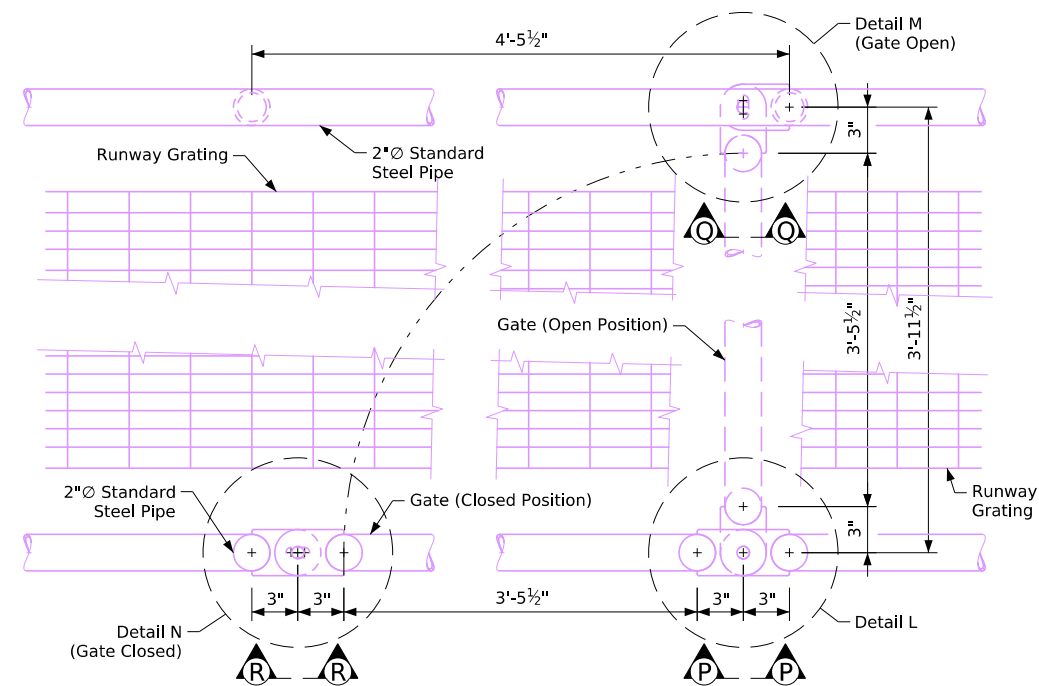
U-Bolt Detail



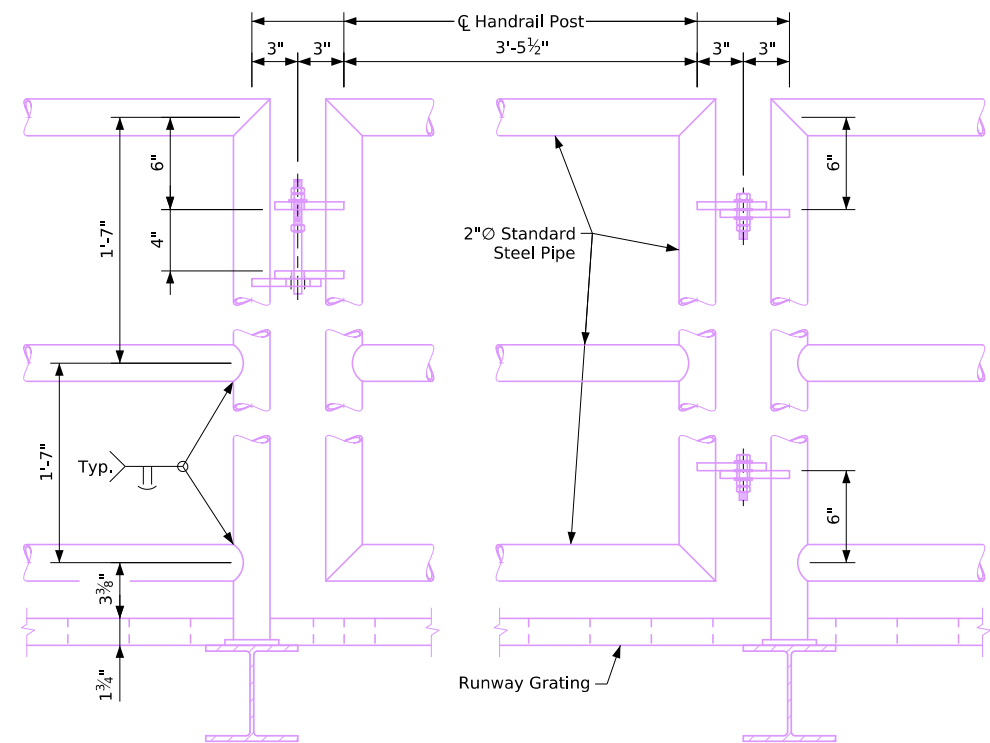
Section N-N
Fasteners Not Shown

06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		Steel Overhead Sign Truss	
		September, 2011	
		DMS Runway Details 50'-130' Spans	SOST-13-11

•Revised 06-2025: Corrected horizontal distance between DWS access runways to 3'-11½" (was 3'-11") for consistency with dimensions shown on SOST-13-11 Section L-L. Changed width of handrail gate from 3'-5" to 3'-5½" and width of handrail gate opening from 4'-5" to 4'-5½" to facilitate proper functioning of latch when gate is in open position. This sheet reissued, sheet format update, steeloverheadsigntruss.dgn - SOST-14-11 - this sheet issued 03-2013.

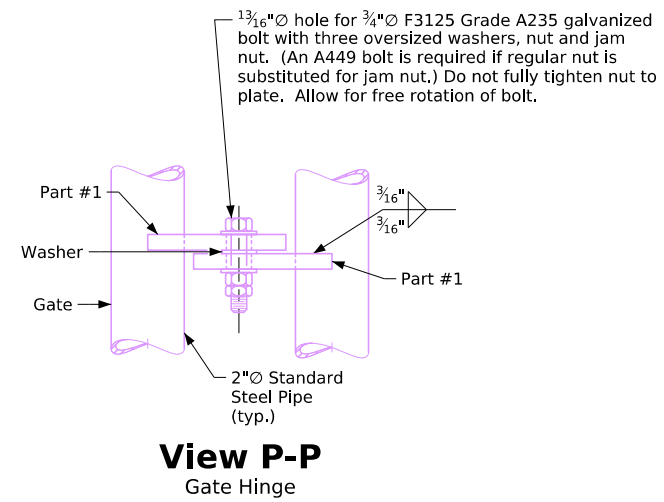


Gate Detail Plan



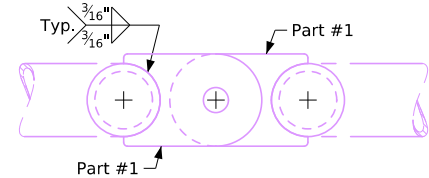
GATE DETAIL ELEVATION

Gate located over
shoulder of Roadway

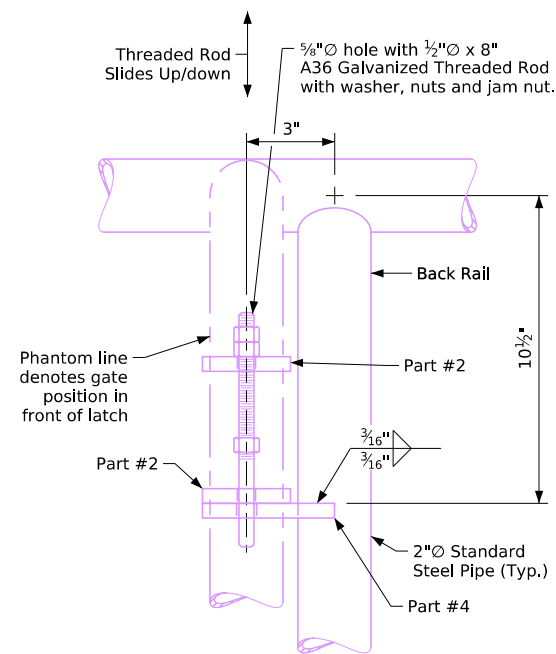


View P-P

Gate Hinge

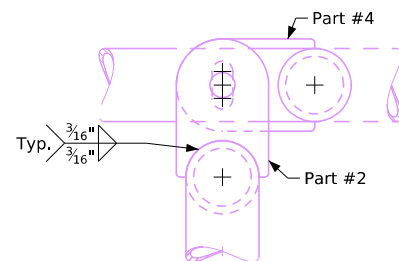


Detail L

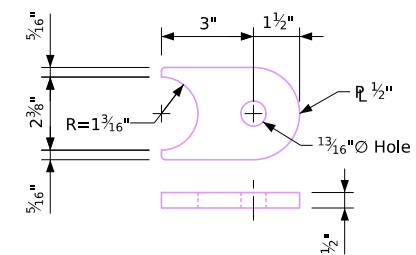


View Q-Q

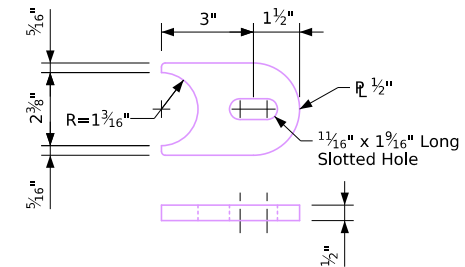
Gate Latch with Gate Open



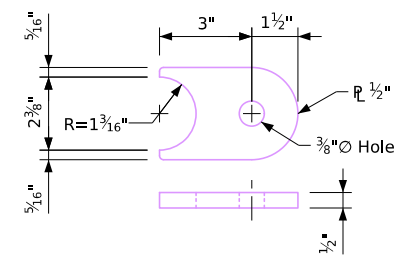
Detail M



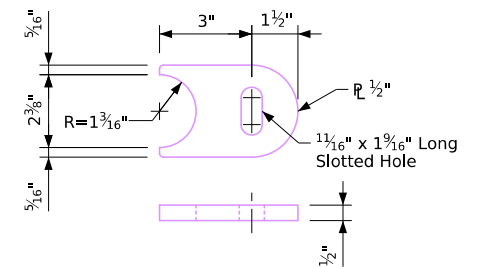
Part #1



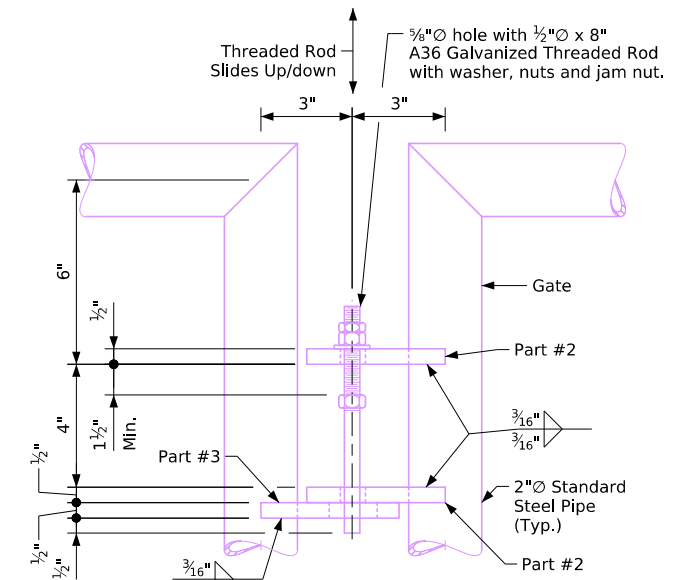
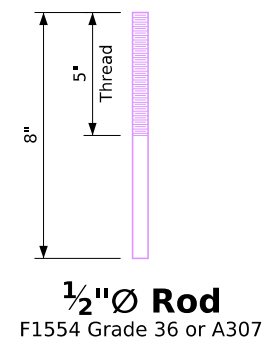
Part #3



Part #2

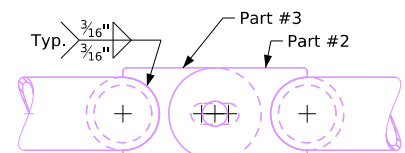


Part #4




View R-R

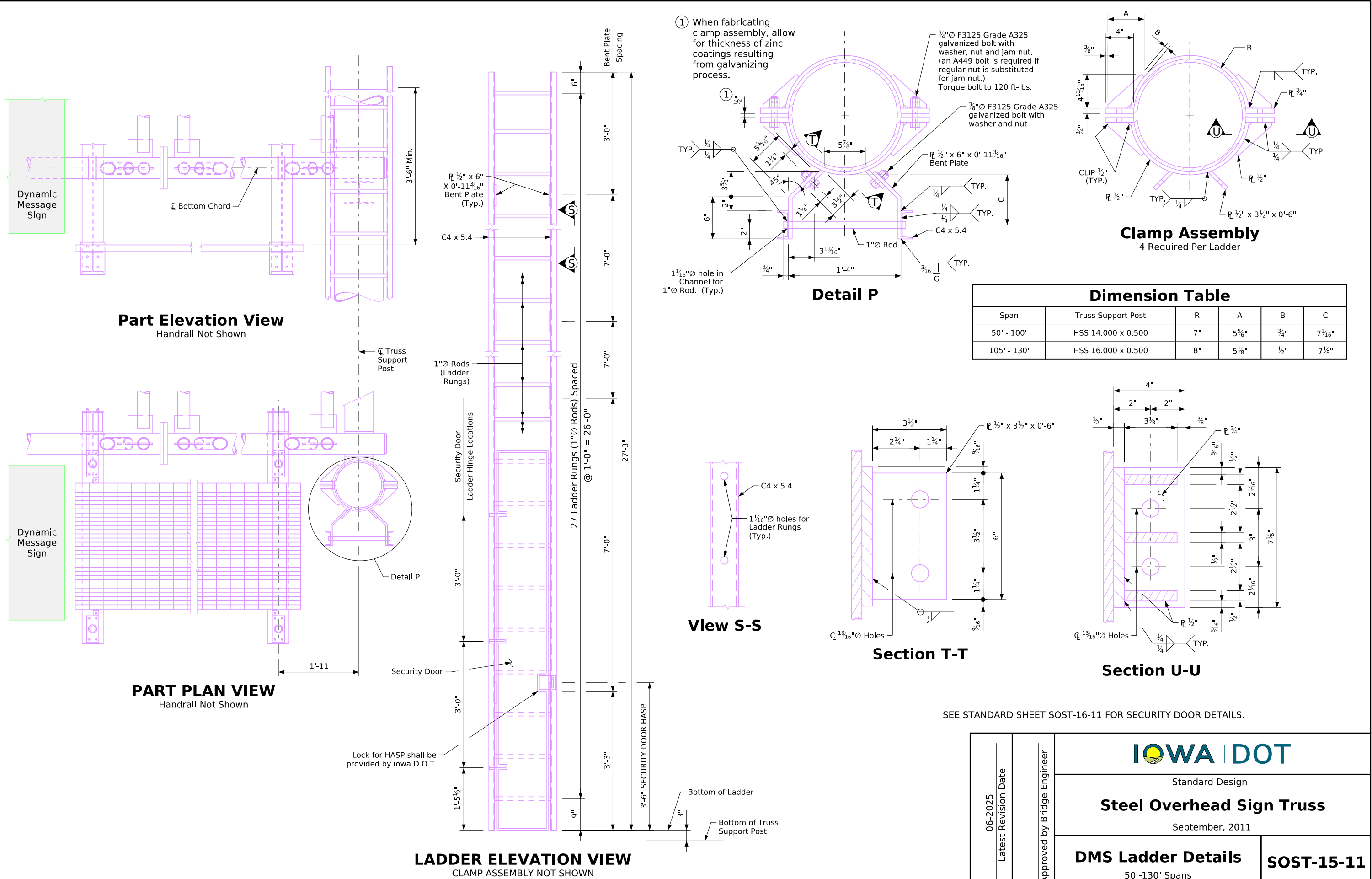
Gate Latch with Gate Closed



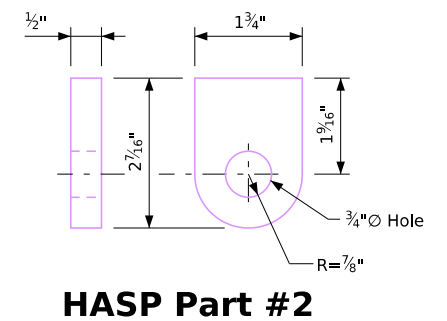
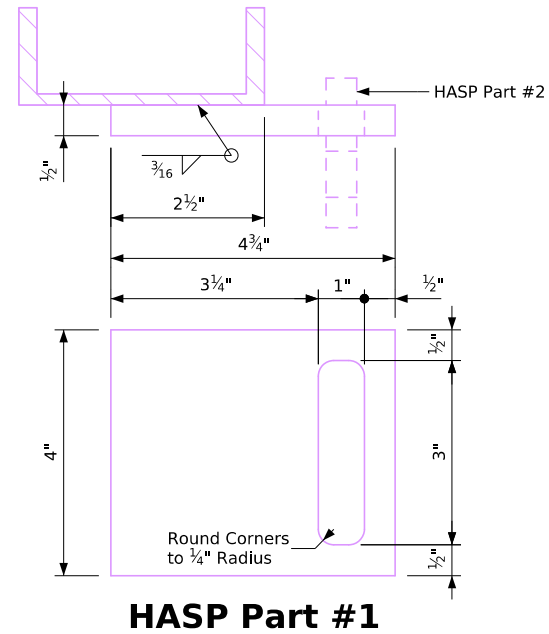
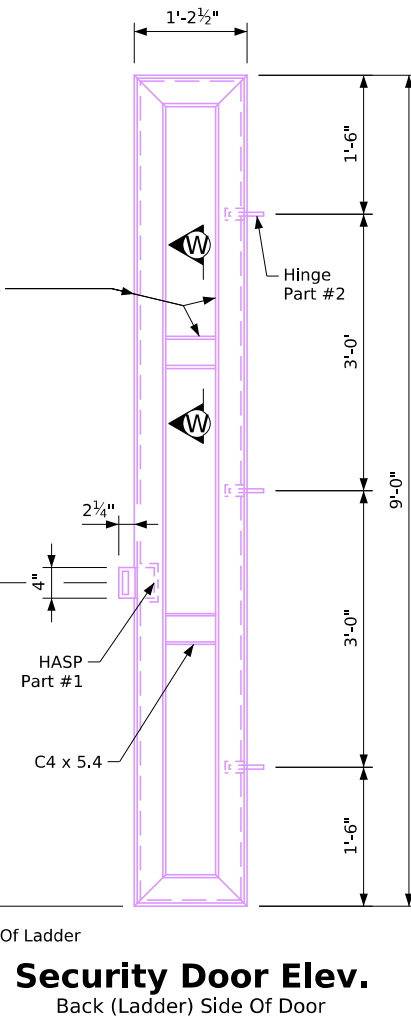
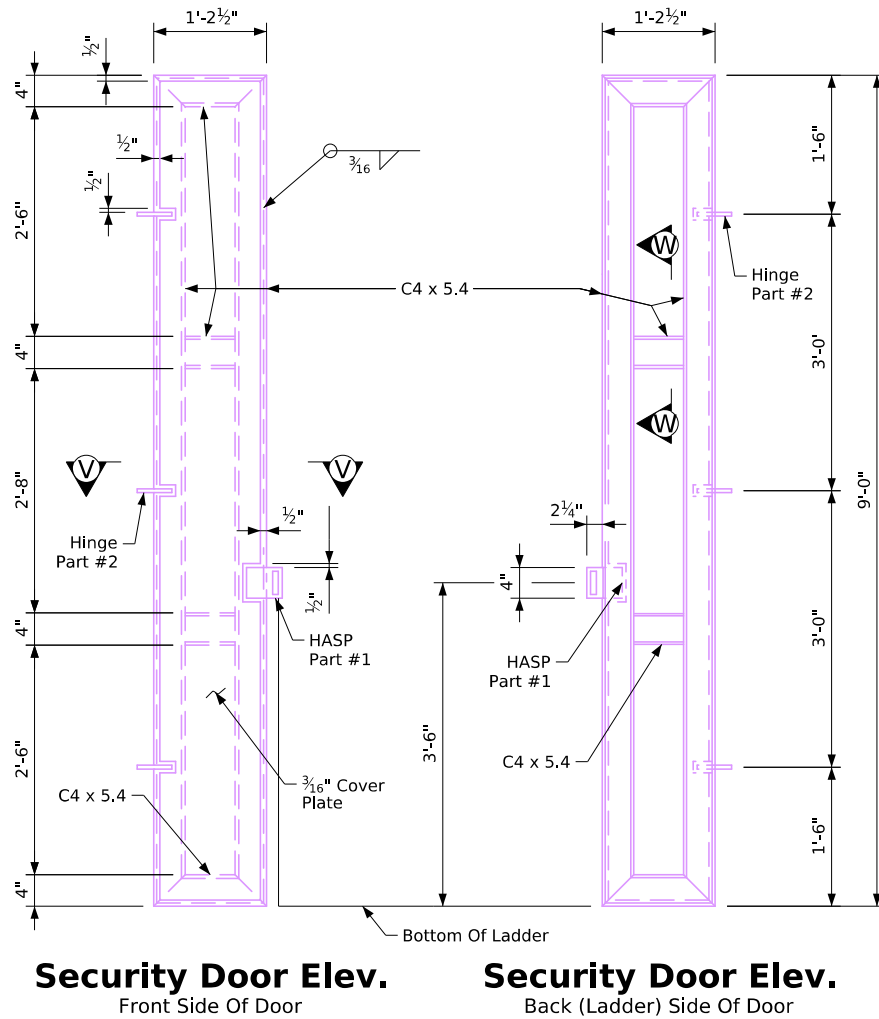
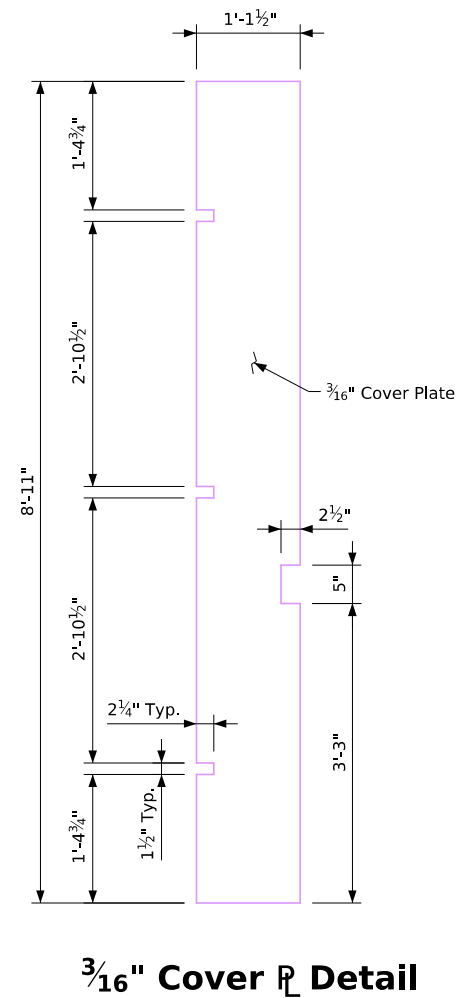
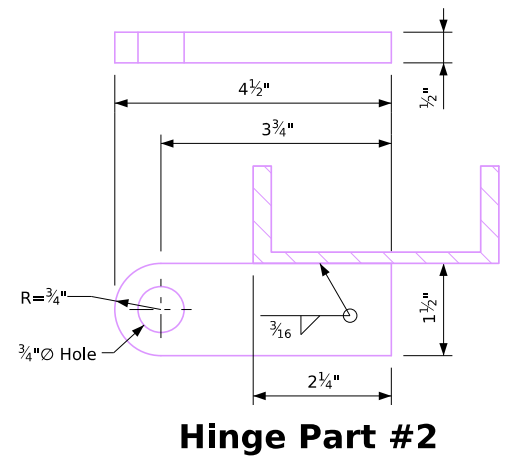
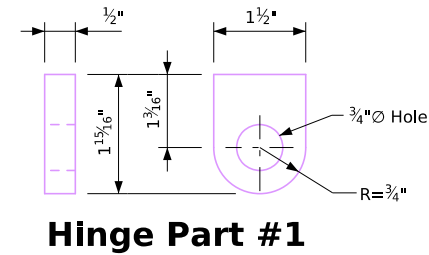
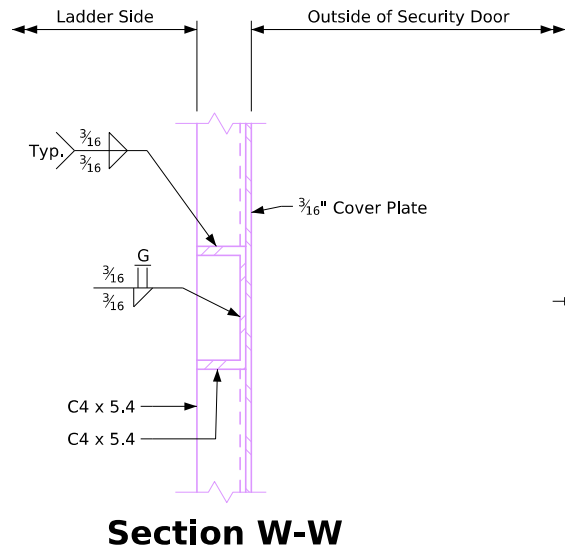
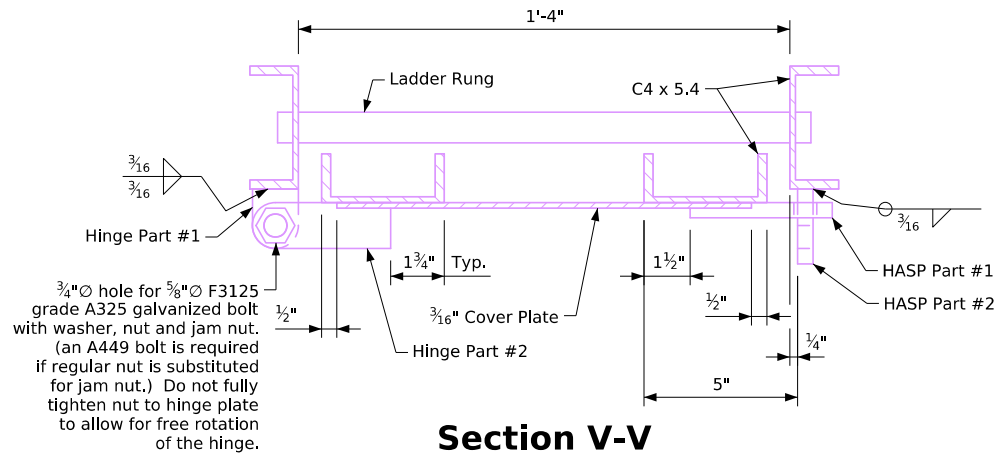
Detail N

06-2025 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design Steel Overhead Sign Truss September, 2011	
		DMS Runway Gate Details 50'-130' Spans	SOST-14-11

•Revised 07-2017: Modified note.
•Revised 03-2019: Modified Detail P fastener notes to address change in ASTM Specifications. Replaced note Identifier astrisk with encircled number to improve readability. Updated Bridge Engineer signature.
•Revised 06-2025: This sheet reissued, sheet format update.
•steeloverheadsigntruss.dgn - SOST-15-11 - This sheet issued 03-2013.

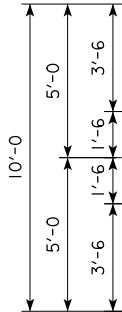


•Revised 07-2017: Modified formatting of callouts.
•Revised 03-2019: Modified Section V-V fastener note to address change in ASTM Specifications. Updated Bridge Engineer signature.
•Revised 06-2025: This sheet reissued, sheet format update.
•steeloverheadsigntruss.dgn - SOST-16-11 - This sheet issued 03-2013.

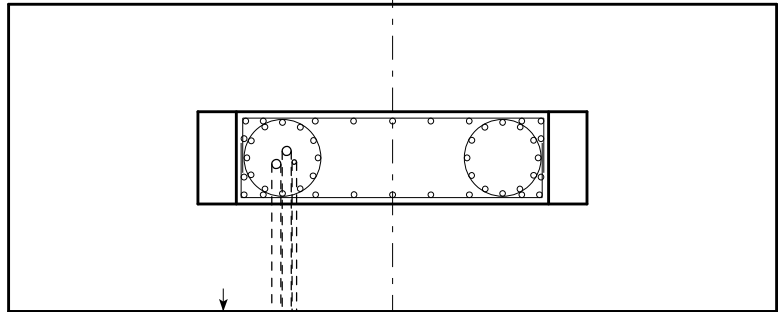


06-2025 Latest Revision Date	Approved by Bridge Engineer	IOWA DOT	
		Standard Design	
		Steel Overhead Sign Truss	
		September, 2011	
		DMS Ladder Security Door Details 50'-130' Spans	SOST-16-11

•REVISED 07-2017: MODIFIED NOTES.
•REVISED 03-2019: ADDED H. TOTAL



LOCATED AT MEDIAN FOR TYPICAL DESIGNS
ANCHOR BOLT ASSEMBLIES AND SELECTED REINFORCING BARS NOT SHOWN



LOCATED AT OUTSIDE SHOULDER FOR TYPICAL DESIGNS
ANCHOR BOLT ASSEMBLIES AND SELECTED REINFORCING BARS NOT SHOWN

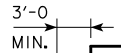


ANCHOR BOLT ASSEMBLIES NOT SHOWN

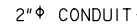


STEM WALL PERIMETER REINFORCING BARS NOT SHOWN

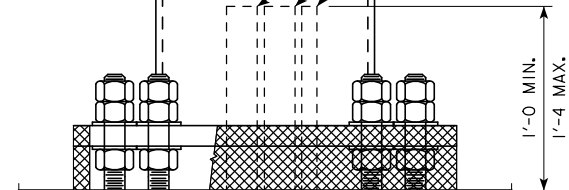
ELECTRICAL CONDUIT IS REQUIRED IN FOUNDATIONS SUPPORTING TRUSSES WITH DYNAMIC MESSAGE SIGNS.



REINFORCING BARS NOT SHOWN



CONDUIT IS PRESENT ONLY
IN POSTS WITH HAND HOLES



OPPOSITE OF TRAFFIC SIDE
NOT ALL ANCHOR BOLTS SHOWN

STANDARD SHEET SOST-06-11 FOR 14" ϕ POSTS (50'-100' TRUSS SPANS)
STANDARD SHEET SOST-07-11 FOR 16" ϕ POSTS (105'-130' TRUSS SPANS)

06-2025

•STEELOVERHEADSIGNTRUSS.DGN - SOST-19-11 - THIS SHEET ISSUED 02-2019. ORIGINAL SHEET SOST-19-11 RENAMED SOST-20-11.)

STAGED FOUNDATION CONSTRUCTION NOTES:

STRUCTURAL CONCRETE, CLASS C, SHALL BE USED FOR THE FOUNDATION.

EXCAVATION FOR THE FOUNDATION SHALL BE TO NEAT LINES AND CONCRETE SHALL BE PLACED AGAINST THE UNDISTURBED MATERIAL. ALL EXCAVATION FOR THE FOUNDATION SHALL BE DISPOSED AS DIRECTED BY THE ENGINEER. THE FOUNDATION DETAILS SHOWN ARE BASED ON A NET ALLOWABLE SOIL BEARING PRESSURE (FOR SETTLEMENT) OF 1.0 TON / FT². (FOUNDATION IS BASED ON A MAXIMUM SOIL SURCHARGE DEPTH OF 6'-0.)

ACCURATE PLACEMENT OF 8a3 BARS SHALL BE CONSIDERED ESSENTIAL. 8a4 BARS WILL BE MECHANICALLY SPLICED TO 8a3 BARS DURING STAGE 2 AND MUST NOT INTERFERE WITH ANCHOR BOLT ASSEMBLIES.

ALL MECHANICAL SPLICE ASSEMBLIES TO BE USED IN SPLICING 8a1, 8a2, 8a3, AND 8a4 BARS SHALL BE EPOXY COATED.

CLARIFICATION OF STAGE 1 FOUNDATION CONSTRUCTION ACTIVITIES:

ALL SPLICE ASSEMBLIES SHALL BE FURNISHED AND INSTALLED IN STAGE 1.

ALL REINFORCING BARS TO BE PLACED IN STAGE 1 AND STAGE 2 SHALL BE FURNISHED IN STAGE 1.

ALL REINFORCING BARS TO BE PLACED IN STAGE 2 (i.e., 8a2, 8a4, APPLICABLE 4b1 AND APPLICABLE 4d1 BARS) SHALL BE TRANSPORTED AND STOCKPILED IN AN APPROPRIATE STORAGE LOCATION AS DIRECTED BY THE ENGINEER IN STAGE 1.

CONCRETE FOR STAGE 1 FOUNDATION (i.e., STAGE 1 FOOTING AND STAGE 1 STEM WALL) SHALL BE PLACED IN STAGE 1.

SPECIAL BACKFILL (SEE SECTION 4132 OF THE STANDARD SPECIFICATIONS FOR DESCRIPTION AND GRADATION) SHALL BE PLACED IN STAGE 1.

CLARIFICATION OF STAGE 2 FOUNDATION CONSTRUCTION ACTIVITIES:

ALL REINFORCING BARS TO BE PLACED IN STAGE 2 (i.e., 8a2, 8a4, APPLICABLE 4b1 AND APPLICABLE 4d1 BARS) SHALL BE OBTAINED FROM STORAGE, TRANSPORTED AND PLACED AS DIRECTED BY THE ENGINEER IN STAGE 2.

ALL ANCHOR BOLT ASSEMBLIES AND RODENT GUARDS SHALL BE FURNISHED AND INSTALLED IN STAGE 2.

THE PORTION OF SPECIAL BACKFILL PLACED IN STAGE 1 ABOVE THE PLYWOOD SHEET COVERING THE TOP OF THE STAGE 1 STEM WALL SHALL BE SUFFICIENTLY REMOVED IN STAGE 2 TO EXPOSE AND MAINTAIN A CLEAN COLD JOINT BEFORE CONSTRUCTION OF THE STAGE 2 STEM WALL.

CONCRETE FOR STAGE 2 FOUNDATION (i.e., STAGE 2 STEM WALL) SHALL BE PLACED IN STAGE 2.

AFTER COMPLETION OF THE STAGE 2 STEM WALL, THE EXCAVATED SPECIAL BACKFILL AROUND THE STEM WALL SHALL BE REPLACED UP TO THE BOTTOM OF PAVEMENT ELEVATION. THE BACKFILL SHALL BE REPLACED IN LOOSE 6-INCH LIFTS AND COMPACTED WITH A MECHANICAL TAMPER. MOISTURE ADJUSTMENT SHALL BE EMPLOYED AS NEEDED.

PRICE BID FOR CONTRACT ITEMS:

IF STAGE 1 AND STAGE 2 OF THE FOUNDATION ARE TO BE CONSTRUCTED IN THE SAME PROJECT, THE PRICE BID FOR CONTRACT ITEMS SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY TO CONSTRUCT BOTH STAGE 1 AND STAGE 2 OF THE FOUNDATION AS DETAILED ON STANDARD SHEETS SOST-20-11 AND SOST-21-11 INCLUDING BOTH THE STAGE 1 AND STAGE 2 CONSTRUCTION ACTIVITIES LISTED ON THIS SHEET.

IF STAGE 2 OF THE FOUNDATION WILL BE CONSTRUCTED IN A SEPARATE PROJECT, THE PRICE BID FOR CONTRACT ITEMS SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY TO CONSTRUCT THE STAGE 1 FOUNDATION AS DETAILED ON SHEET SOST-20-11 (WORKED WITH STANDARD SHEET SOST-21-11) INCLUDING THE STAGE 1 CONSTRUCTION ACTIVITIES LISTED ON THIS SHEET.

IF STAGE 1 OF THE FOUNDATION HAS BEEN CONSTRUCTED IN A SEPARATE PROJECT, THE PRICE BID FOR CONTRACT ITEMS SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY TO CONSTRUCT THE STAGE 2 FOUNDATION AS DETAILED ON STANDARD SHEET SOST-21-11 (WORKED WITH STANDARD SHEET SOST-20-11) INCLUDING THE STAGE 2 CONSTRUCTION ACTIVITIES LISTED ON THIS SHEET.

THE COST OF ALL SPLICE ASSEMBLIES IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL, EPOXY COATED" AND NO SEPARATE PAYMENT WILL BE MADE. THE WEIGHT OF MECHANICAL SPLICE ASSEMBLIES IS NOT INCLUDED IN THE QUANTITY SHOWN FOR "REINFORCING STEEL, EPOXY COATED". A TOTAL OF 46 SPLICES WILL BE REQUIRED.

THE CONTRACTOR IS STRONGLY ENCOURAGED TO CONSTRUCT A TEMPLATE FOR THE 8a3 BARS IN STAGE 1 TO ENSURE THAT THEY ARE IN THE CORRECT LOCATIONS WHEN THE 8a4 BARS ARE PLACED IN STAGE 2. THE 8a4 BARS SHALL NOT INTERFERE WITH THE ANCHOR BOLT ASSEMBLY.

THE COST OF FURNISHING AND INSTALLING RODENT GUARDS, THE COST OF REMOVING SPECIAL BACKFILL, AND THE COST OF TRANSPORTATION AND PLACEMENT OF REINFORCING BARS TO BE PLACED IN THE STAGE 2 FOUNDATION (i.e., 8a2, 8a4, APPLICABLE 4b1 AND APPLICABLE 4d1 BARS) SHALL BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (MISCELLANEOUS)" AND NO SEPARATE PAYMENT WILL BE MADE. THE COST OF FURNISHING ANCHOR BOLT ASSEMBLIES SHALL BE INCLUDED IN THE PRICE BID FOR "ANCHOR BOLT ASSEMBLY--FURNISH". (NOTE THAT THIS IS A SPECIAL BID ITEM.) THE COST OF ACCURATELY INSTALLING AND SURVEYING ANCHOR BOLT ASSEMBLIES SHALL BE INCLUDED IN THE PRICE BID FOR "ANCHOR BOLT ASSEMBLY--INSTALL AND SURVEY". (NOTE THAT THIS IS A SPECIAL BID ITEM.) SEE STRUCTURAL ALIGNMENT/TOLERANCE NOTES ON SHEET SOST-01-11 FOR ANCHOR BOLT ASSEMBLY ALIGNMENT DOCUMENTATION REQUIREMENTS.

CONTRACT ITEMS FOR OVERHEAD SIGN TRUSS FOUNDATION CONSTRUCTION ARE:
REINFORCING STEEL, EPOXY COATED - POUNDS
(STAGE 1 ACTIVITY)

STRUCTURAL CONCRETE (MISCELLANEOUS) - CUBIC YARDS
(STAGE 1 AND STAGE 2 ACTIVITIES)


EXCAVATION - CUBIC YARDS OF CLASS SPECIFIED
(STAGE 1 ACTIVITY)

SPECIAL BACKFILL - CUBIC YARDS
(STAGE 1 ACTIVITY)

ANCHOR BOLT ASSEMBLY--FURNISH (SPECIAL BID ITEM) - POUNDS
(STAGE 2 ACTIVITY)

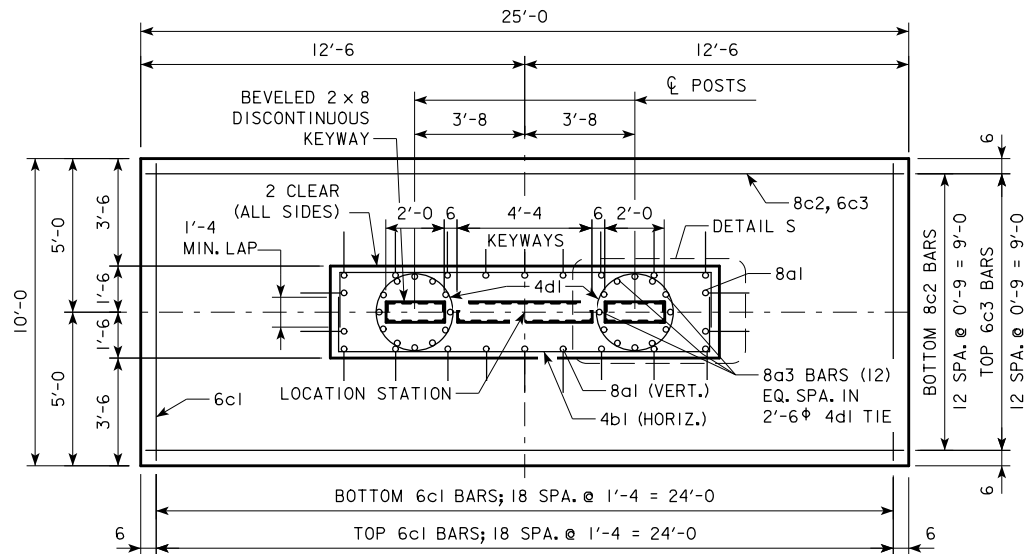
ANCHOR BOLT ASSEMBLY--INSTALL AND SURVEY (SPECIAL BID ITEM) - EACH
(STAGE 2 ACTIVITY)

WORK THIS SHEET WITH STANDARD SHEETS SOST-20-11 "STAGE 1 FOUNDATION DETAILS" AND SOST-21-11 "STAGE 2 FOUNDATION DETAILS".

03-2019 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		Steel Overhead Sign Truss	
		September, 2011	
		STAGED FOUNDATION CONSTRUCTION NOTES 50'-130' SPANS	SOST-19-11

•REVISED 03-2019; SHEET RENAMED FROM SOST-19-11 TO SOST-20-11, MODIFIED GENERAL NOTES TO CLARIFY PRICE BID FOR STAGE 1 FOUNDATION AND STAGE 2 FOUNDATION CONSTRUCTION ACTIVITIES AND TO CLARIFY THAT FOUNDATION DESIGN IS BASED ON A MAXIMUM SOIL SURCHARGE DEPTH OF 6'-0". MOVED MODIFIED GENERAL NOTES TO NEW STANDARD SHEET SOST-19-11, ADDED H (TOTAL FOUNDATION HEIGHT) AND H₂ (STAGE 2 STEM WALL HEIGHT) DIMENSIONS TO SIDE ELEVATION AND REINFORCING BAR LIST TO IMPROVE CLARITY. INCREASED SPECIAL BACKFILL EXTENTS SHOWN IN END ELEVATION TO IMPROVE CONSTRUCTABILITY. REVISED X DIMENSION LOWER LIMIT TO SIMPLIFY DESIGN. CHANGED TABULATED VALUES IN REINFORCING BAR LIST TO CORRESPOND WITH H = 6'-0". REPLACED NOTE IDENTIFIER ASTRISKS AND ENCIRCLED LETTERS WITH ENCIRCLED NUMBERS TO IMPROVE READABILITY. UPDATED BRIDGE ENGINEER SIGNATURE.

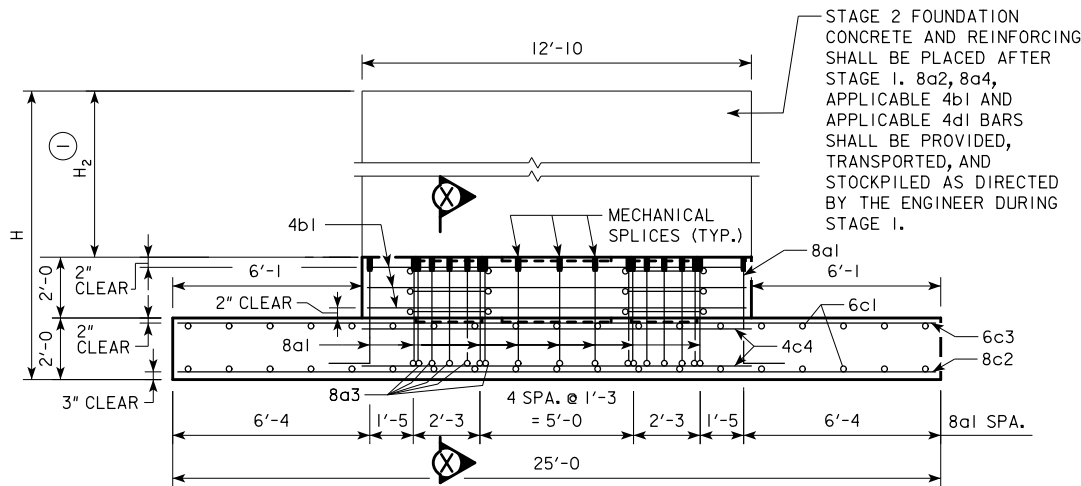
•STEEL OVERHEAD SIGN TRUSS.DGN - SQST-20-11 - THIS SHEET ISSUED 03-2013. THIS SHEET RENAMED FROM SOST-19-11 TO SOST-20-11 ON 02-2019.



PLAN

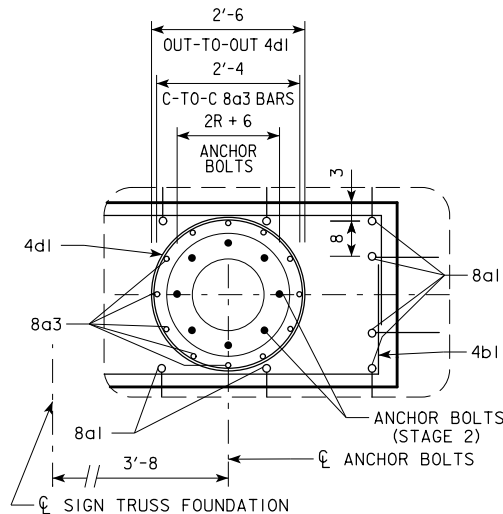
CONCRETE PLACEMENT QUANTITIES	
ONE FOUNDATION - STAGE 1	
ITEM	C.Y.
WALL (STAGE 1)	2.9
FOOTING	18.5
TOTAL	21.4

	R	BOLT CIRCLE DIAMETER
FOR 14" Φ POSTS (50'-100' SPANS)	7	1'-8
FOR 16" Φ POSTS (105'-130' SPANS)	8	1'-10



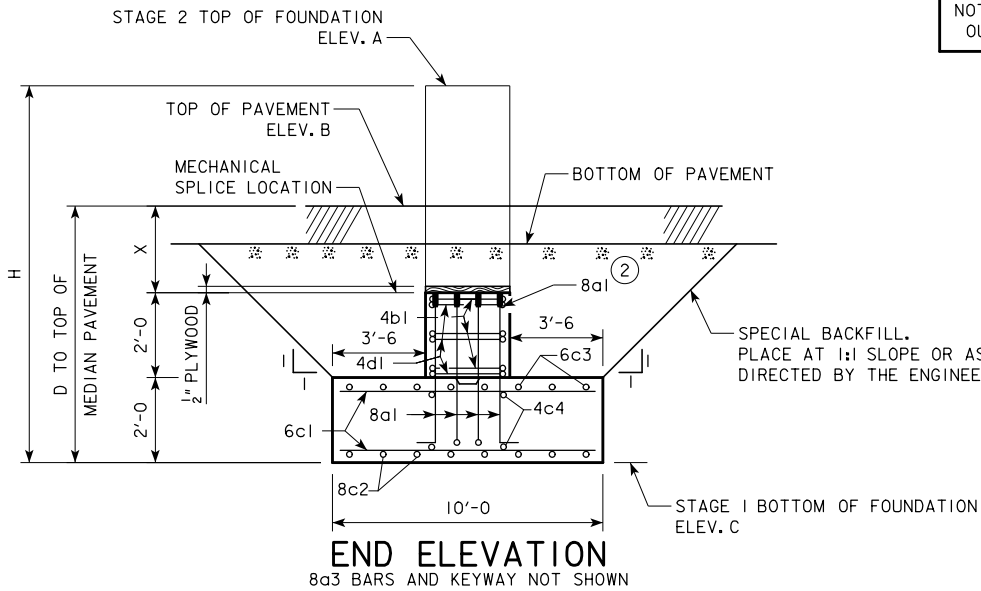
SIDE ELEVATION

① H₂ = HEIGHT OF STAGE 2 STEM WALL. H₂ SHALL NOT EXCEED 8'-6" NOR BE LESS THAN 5'-0".



DETAIL S
ANCHOR BOLT AND ANCHOR
REINFORCING LOCATION

KEYWAY NOT SHOWN
ANCHOR BOLTS SHOWN FOR INFORMATION ONLY. ANCHOR BOLT ASSEMBLIES WILL BE PLACED DURING STAGE 2.
SEE STANDARD SHEET SOST-21-11 FOR ANCHOR BOLT ASSEMBLY DETAILS.



END ELEVATION

8a3 BARS AND KEYWAY NOT SHOWN

② THE 8a1 BARS SHALL BE SPLICED TO THE 8a2 BARS AT THE LOCATIONS SHOWN USING MECHANICAL SPLICES. THE 8a3 BARS AND SHALL ALSO BE SPLICED TO THE 8a4 BARS USING MECHANICAL SPLICES. MECHANICAL SPLICES SHALL BE SELECTED FROM MATERIALS I.M. 451 APPENDIX E AND BE FLUSH WITH THE TOP OF CONCRETE AT THE END OF STAGE 1 CONSTRUCTION. THE TOP OF THE STAGE 1 STEM WALL SHALL BE COVERED WITH A 1/2" THICK PLYWOOD SHEET TO KEEP CONCRETE SURFACE AND MECHANICAL SPLICES CLEAN.

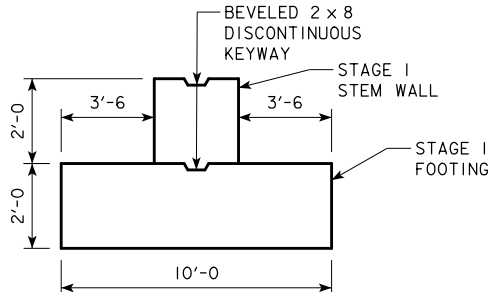
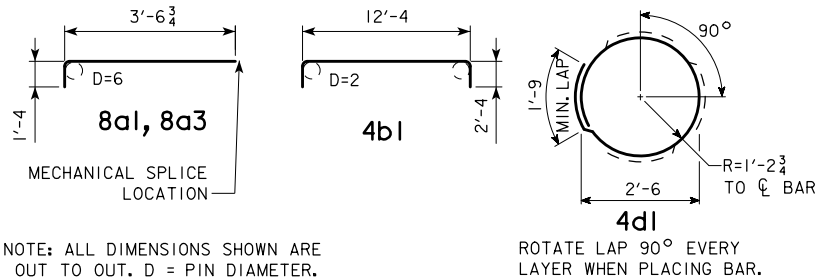
ELEV. A = STAGE 2 TOP OF FOUNDATION ELEVATION
ELEV. B = TOP OF PAVEMENT ELEVATION
ELEV. C = STAGE 1 BOTTOM OF FOUNDATION ELEVATION
ELEV. C SHOULD BE SET SO THAT (ELEV. A - ELEV. C) IS A MULTIPLE OF 1'-0".

D = [ELEV. B. - ELEV. C]
X SHALL NOT BE LESS THAN 2'-0".

ELEV. A, ELEV. B AND ELEV. C SHALL BE AS SHOWN ELSEWHERE IN THESE PLANS.

REINFORCING BAR LIST - EPOXY COATED								
ONE FOUNDATION								
BAR	SHAPE	TABULATED VALUE FOR H ₂ = 6'-0" AND H = 10'-0"				EACH 1'-0" OF H ₂ AND H		
		NO.	LENGTH	WEIGHT	SPACING	NO.	LENGTH	WEIGHT
8a1		22	4'-11	289	SEE DETAIL	---	---	---
8a2		22	5'-11	348	SEE DETAIL	22	1'-0 ③	59
8a3		24	4'-11	315	SEE DETAIL	---	---	---
8a4		24	5'-11	379	SEE DETAIL	24	1'-0 ③	64
4b1		20	17'-0	227	1'-0 ⑤	2 ④	17'-0	23
6c1		38	9'-6	542	1'-4	---	---	---
8c2		13	24'-6	850	0'-9	---	---	---
6c3		13	24'-6	478	0'-9	---	---	---
4c4		4	12'-8	34	SEE DETAIL	---	---	---
4d1		22 ⑥	9'-6	140	1'-0 ⑤	2 ④	9'-6	13
TOTAL 3602 LBS.						TOTAL 159 LBS.		


BENT BAR DETAILS (SHOP BEND ALL BARS)



SECTION X-X

SHOWING KEYWAYS
REINFORCING NOT SHOWN

WORK THIS SHEET WITH STANDARD SHEETS SOST-19-11 "STAGED FOUNDATION CONSTRUCTION NOTES" AND SOST-21-11 "STAGE 2 FOUNDATION DETAILS".

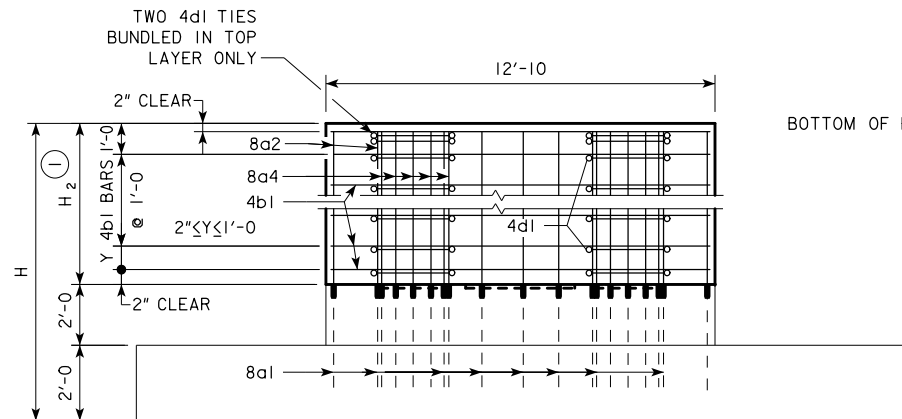
03-2019 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design	
		Steel Overhead Sign Truss	
September, 2011			
STAGE I FOUNDATION DETAILS		SOST-20-11	
50'-130' SPANS			

Plan view of a bridge deck showing the layout of reinforcement bars and keyways. The deck is 25'-0" wide and 10'-0" deep. It features two existing discontinuous keyways, each 12'-6" wide and 3'-6" deep. The reinforcement consists of 8a4 bars (12) with 2'-6" 4d1 ties. The layout includes dimensions for the keyways, the reinforcement bars, and the clearances between them. A detail T is shown at the right end of the deck.

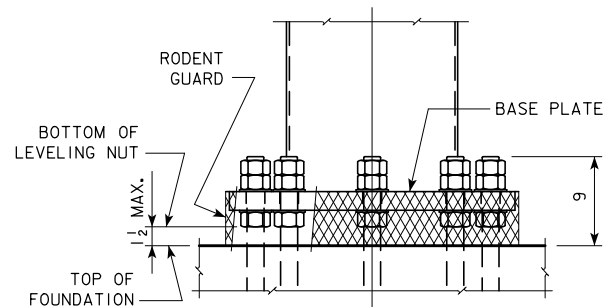
Dimensions and labels:

- Overall width: 25'-0"
- Overall depth: 10'-0"
- Keyway width: 12'-6"
- Keyway depth: 3'-6"
- Clearance between keyways: 3'-8"
- Clearance from edge to keyway: 3'-8"
- Reinforcement bars: 8a4 BARS (12) EQ. SPA. IN 2'-6" 4d1 TIE
- Reinforcement bars: 8a2 (VERT.)
- Reinforcement bars: 4b1 (HORIZ.)
- Reinforcement bars: 4d1
- Reinforcement bars: 2 CLEAR (ALL SIDES)
- Reinforcement bars: 1'-4 MIN. LAP
- Reinforcement bars: 4d1
- Reinforcement bars: 4b1 (HORIZ.)
- Reinforcement bars: 8a2 (VERT.)
- Reinforcement bars: 8a4 BARS (12) EQ. SPA. IN 2'-6" 4d1 TIE
- Detail T
- EXISTING DISCONTINUOUS KEYWAY
- LOCATION STATION
- CL POSTS

8a2, 8a4, APPLICABLE 4b1 AND APPLICABLE 4d1 BARS ARE TO BE PROVIDED, TRANSPORTED, AND STOCKPILED AS DIRECTED BY THE ENGINEER DURING STAGE 1. OBTAIN, TRANSPORT AND PLACE 8a2, 8a4, APPLICABLE 4b1 AND APPLICABLE 4d1 BARS AS DIRECTED BY THE ENGINEER DURING STAGE 2.

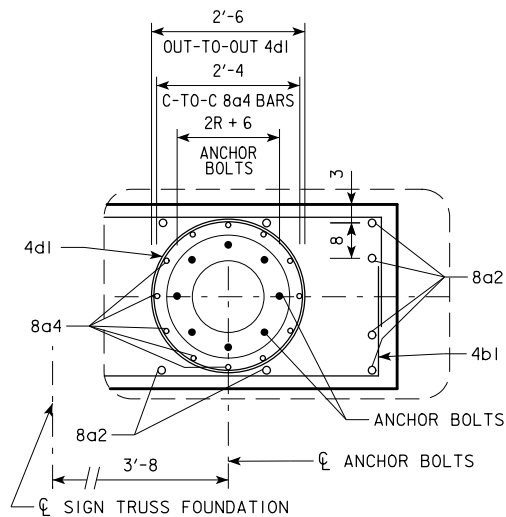


① H₂ SHALL NOT EXCEED 8'-6
NOR BE LESS THAN 5'-0.

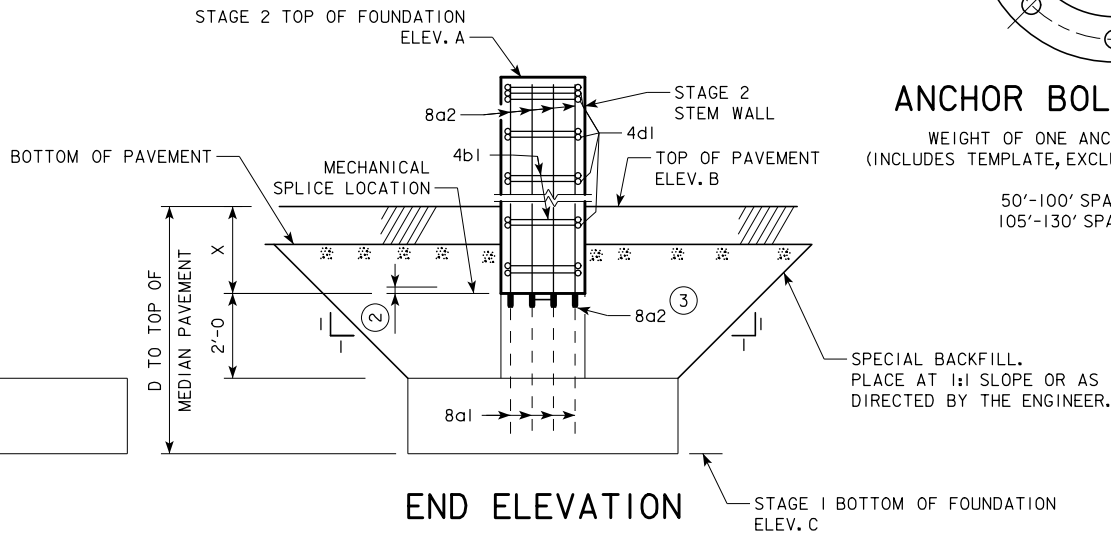


POST BASE DETAIL

SHOWING THE RODENT GUARD



DETAIL T
ANCHOR BOLT AND
ANCHOR REINFORCING
LOCATION
KEYWAY NOT SHOWN



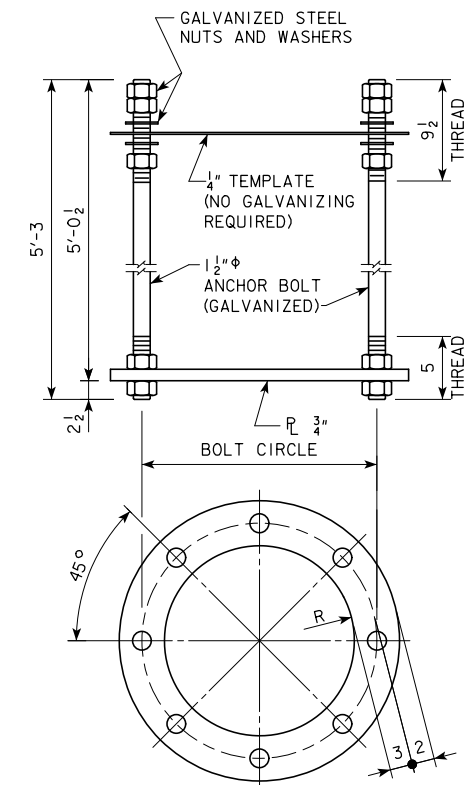
8a3 AND 8a4 BARS AND
KEYWAY NOT SHOWN
② 1/2" THICK PLYWOOD REMOVED
FOR CONSTRUCTION OF
STAGE 2.

③ THE 8a2 AND 8a4 BARS SHALL BE SPLICED AT THE LOCATIONS SHOWN USING MECHANICAL SPLICE ASSEMBLIES. MECHANICAL SPLICES SHALL BE SELECTED DURING STAGE 1 FROM MATERIALS I.M. 451 APPENDIX E TO ENABLE THE SPLICE TO BE FLUSH WITH THE TOP OF THE STAGE 1 STEM WALL. THE TOP OF THE STAGE 1 FOUNDATION STEM WALL WILL BE TEMPORARILY COVERED WITH A 1/2" THICK PLYWOOD SHEET TO KEEP THE CONCRETE SURFACE AND MECHANICAL SPLICES CLEAN.

ELEV. A = STAGE 2 TOP OF FOUNDATION ELEVATION
ELEV. B = TOP OF PAVEMENT ELEVATION
ELEV. C = STAGE 1 BOTTOM OF FOUNDATION ELEVATION
ELEV. C SHOULD BE SET SO THAT [ELEV. A - ELEV. C] IS A MULTIPLE OF 1'-0".

D = [ELEV. B - ELEV. C]
X SHALL NOT BE LESS THAN 2'-0.
Y SHALL NOT BE LESS THAN 2" NOR GREATER THAN 1'-0.

ELEV. A, ELEV. B AND ELEV. C SHALL BE AS SHOWN ELSEWHERE IN THESE PLANS.



WEIGHT OF ONE ANCHOR BOLT ASSEMBLY
(INCLUDES TEMPLATE, EXCLUDES GALVANIZING WEIGHT)

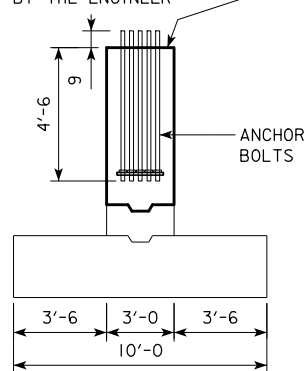
50'-100' SPANS: 388 LBS.
105'-130' SPANS: 397 LBS.

	R	BOLT CIRCLE DIAMETER
FOR 14" ϕ POSTS (50'-100' SPANS)	7	1'-8
FOR 16" ϕ POSTS (105'-130' SPANS)	8	1'-10

ONE FOUNDATION - STAGE 2


ITEM	C.Y.
WALL (STAGE 2)	(38.5 x H ₂)/27, H ₂ IN FT.
FOOTING	---
TOTAL	(38.5 x H ₂)/27, H ₂ IN FT.

TOP-OF-WALL ELEVATION IS TO BE SET AT SAME
ELEVATION AS HIGH POINT ON ROADWAY OR AS
DIRECTED BY THE ENGINEER \rightarrow



END ELEVATION
ANCHOR BOLTS

WORK THIS SHEET WITH STANDARD SHEETS SOST-19-11 "STAGED FOUNDATION CONSTRUCTION NOTES" AND SOST-20-11 "STAGE I FOUNDATION DETAILS".

03-2019 Latest Revision Date	Approved by Bridge Engineer		
		Standard Design Steel Overhead Sign Truss September, 2011	
		STAGE 2 FOUNDATION DETAILS 50'-130' SPANS	SOST-21-11