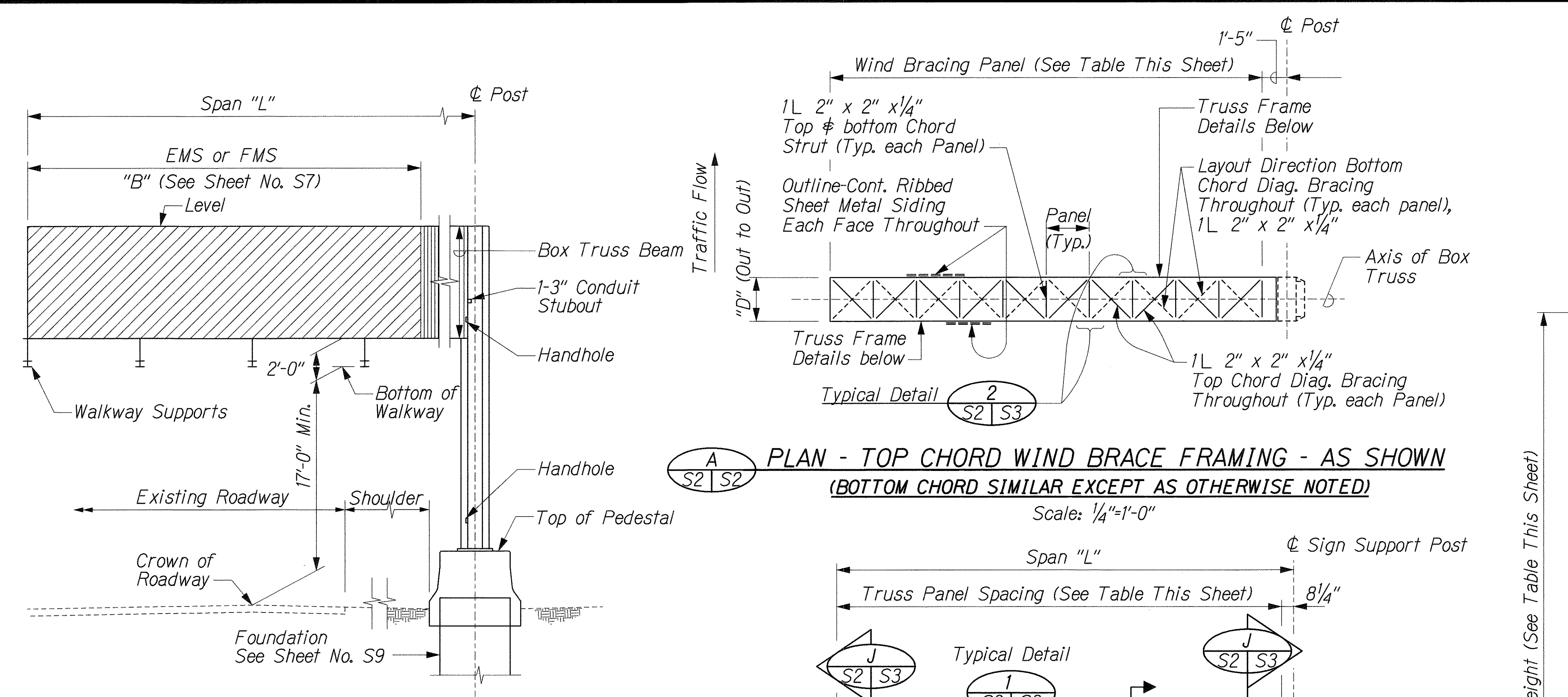
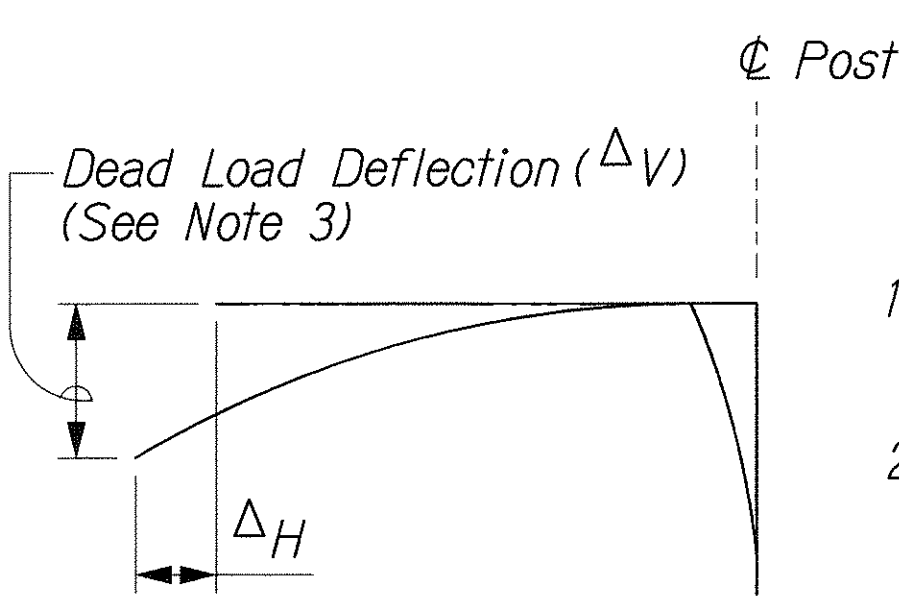


FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(246)	2004	74	105



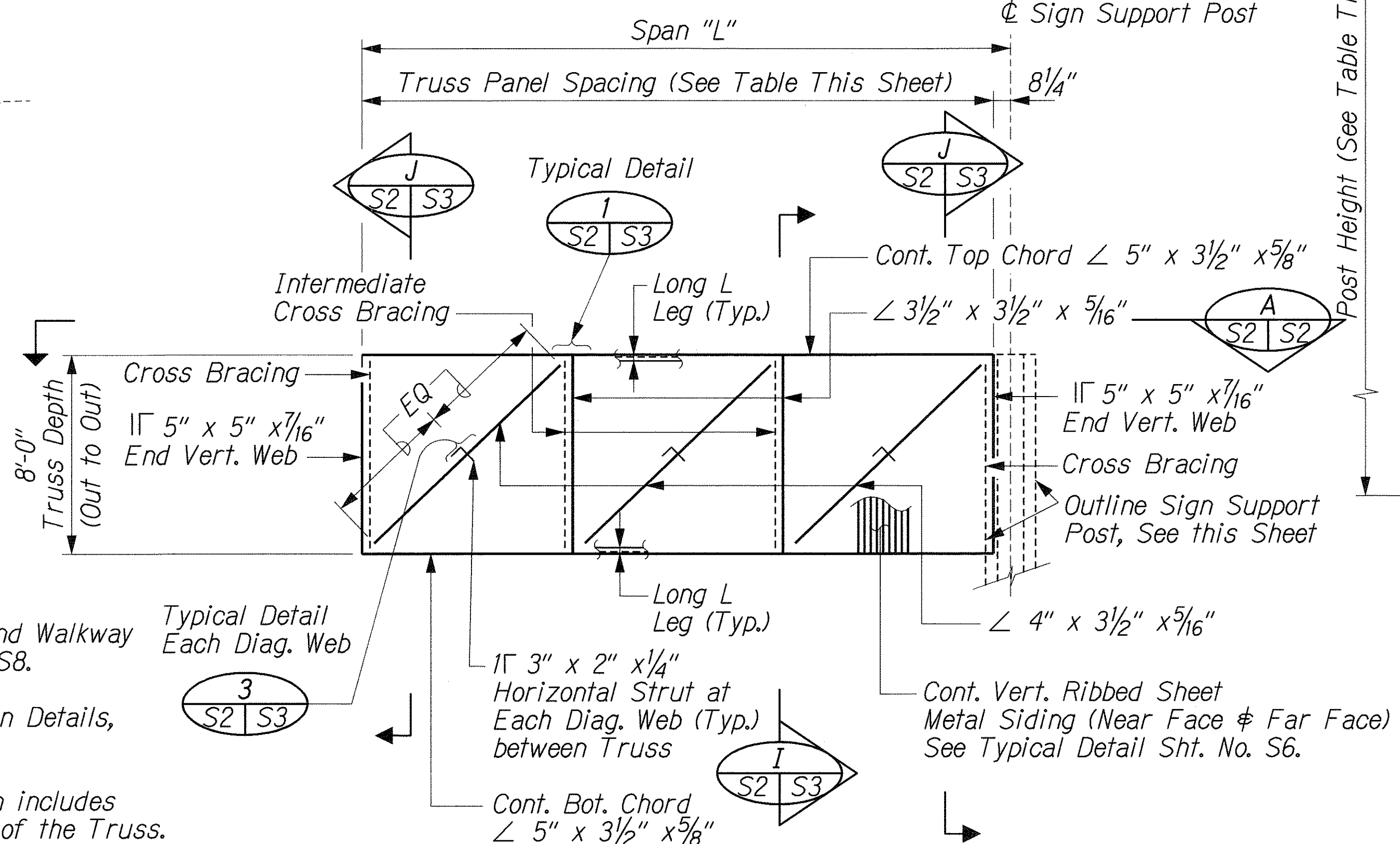
SIGN STRUCTURE
Scale: 1"=5'-0"



DEAD LOAD DEFLECTION
Not to Scale

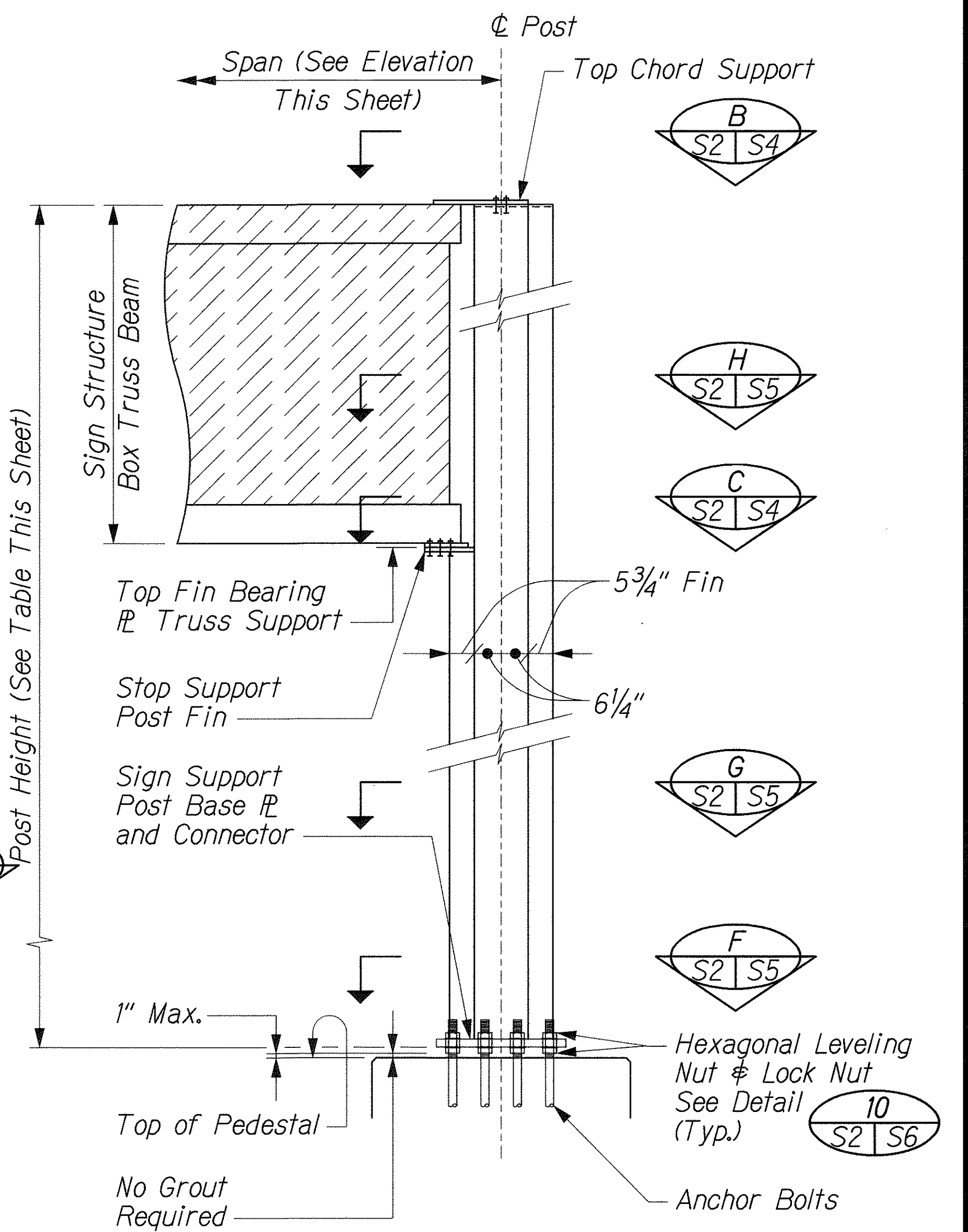
NOTES:

- For locations of Signs and Walkway Supports, See Sheet No. S8.
- For Box Truss Connection Details, See Sheet Nos. S3 & S4.
- The Dead Load Deflection includes the effect of the weight of the Truss. A Camber shall be provided to accomodate this Deflection.
- For Post & Base types, See Sheet No. S5.



ELEVATION - TRUSS FRAMING DETAIL FOR BOX TRUSS BEAM
Scale: 1/4"=1'-0"

Station & Offset	Truss Panel Spacing	Windbracing Panel Spacing	Truss Width "D"	Span "L"	Base & Post Type	Post Ht.	D.L. Deflection		Truss Depth	
							Δ _H	Δ _V		
H-1 @ Sta. 40+00	3 Equal Panels @ 7'-9¼" = 23'-3¾"	10 Equal Panels @ 2'-3⅞"± = 22'-7"	2'-6"	24'-0"	I	A	24'-6"	-0.39"	-0.77"	8'-0"
H-1 @ Sta. 50+00	3 Equal Panels @ 7'-11¼" = 23'-9¾"	10 Equal Panels @ 2'-3⅞"± = 23'-1"	2'-6"	24'-6"	I	A	24'-6"	-0.40"	-0.82"	8'-0"
H-1 @ Sta. 65+35	3 Equal Panels @ 7'-6⅛"± = 22'-8¾"	10 Equal Panels @ 2'-2⅜"± = 22'-0"	2'-6"	23'-5"	I	A	24'-6"	-0.38"	-0.73"	8'-0"
H-1 @ Sta. 73+58	3 Equal Panels @ 8'-1¼" = 24'-3¾"	10 Equal Panels @ 2'-4⅝"± = 23'-7"	2'-6"	25'-0"	I	A	24'-6"	-0.42"	-0.89"	8'-0"
H-1 @ Sta. 84+60	3 Equal Panels @ 8'-5¼" = 25'-3¾"	10 Equal Panels @ 2'-5½" = 24'-7"	2'-6"	26'-0"	I	A	24'-6"	-0.45"	-0.97"	8'-0"



ELEVATION FOR POST
Scale: 1/2"=1'-0"

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HIGHWAYS DIVISION

BOX TRUSS
DETAILS FOR EMS OR FMS

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-H1-1(246)

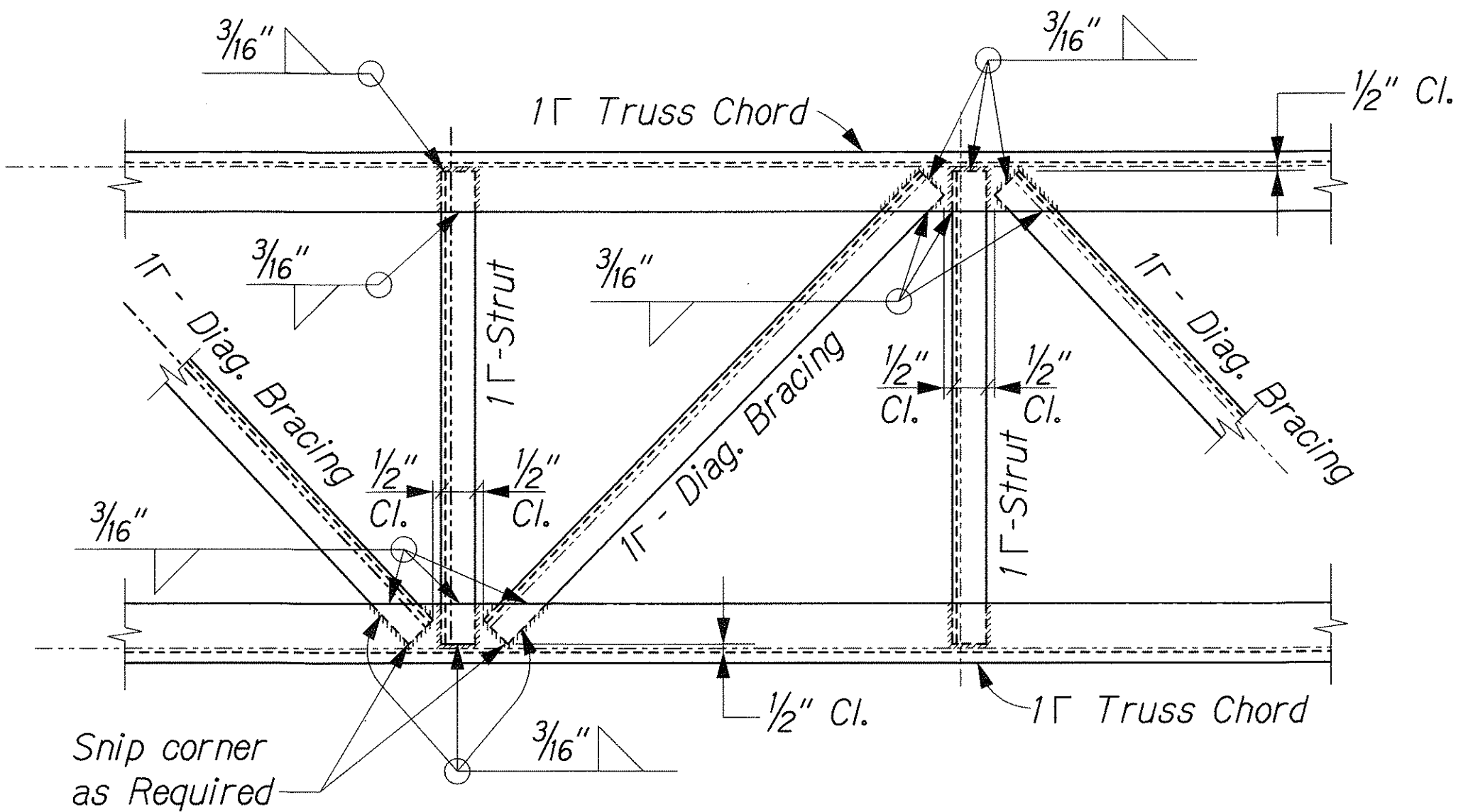
Scale: As Shown Date: Mar. 2, 2004

SHEET No. S2 OF 13 SHEETS

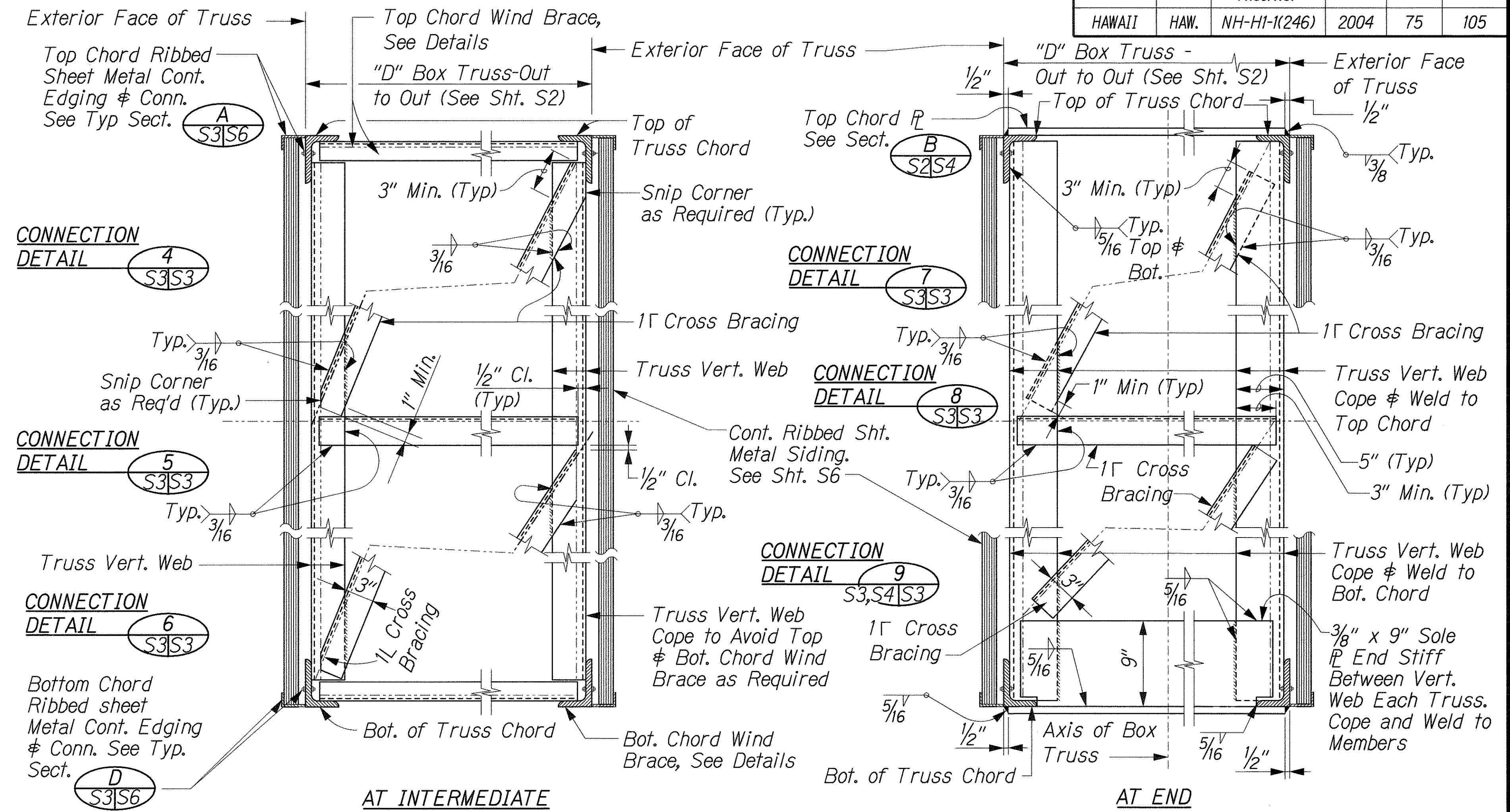
SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	

1/4 ZIPPER EXTENSION/STRUCT/S02.dgn

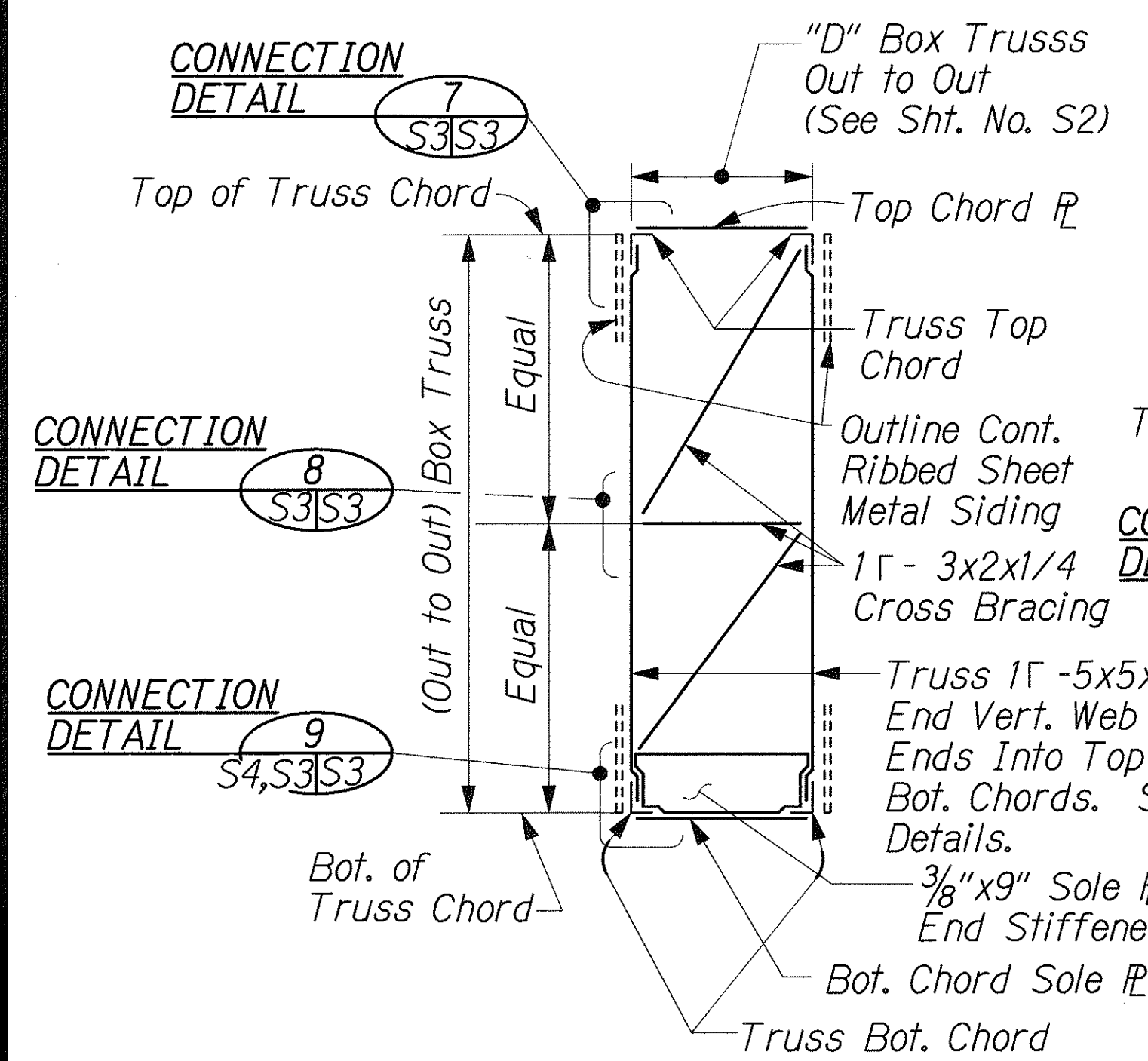
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(246)	2004	75	105



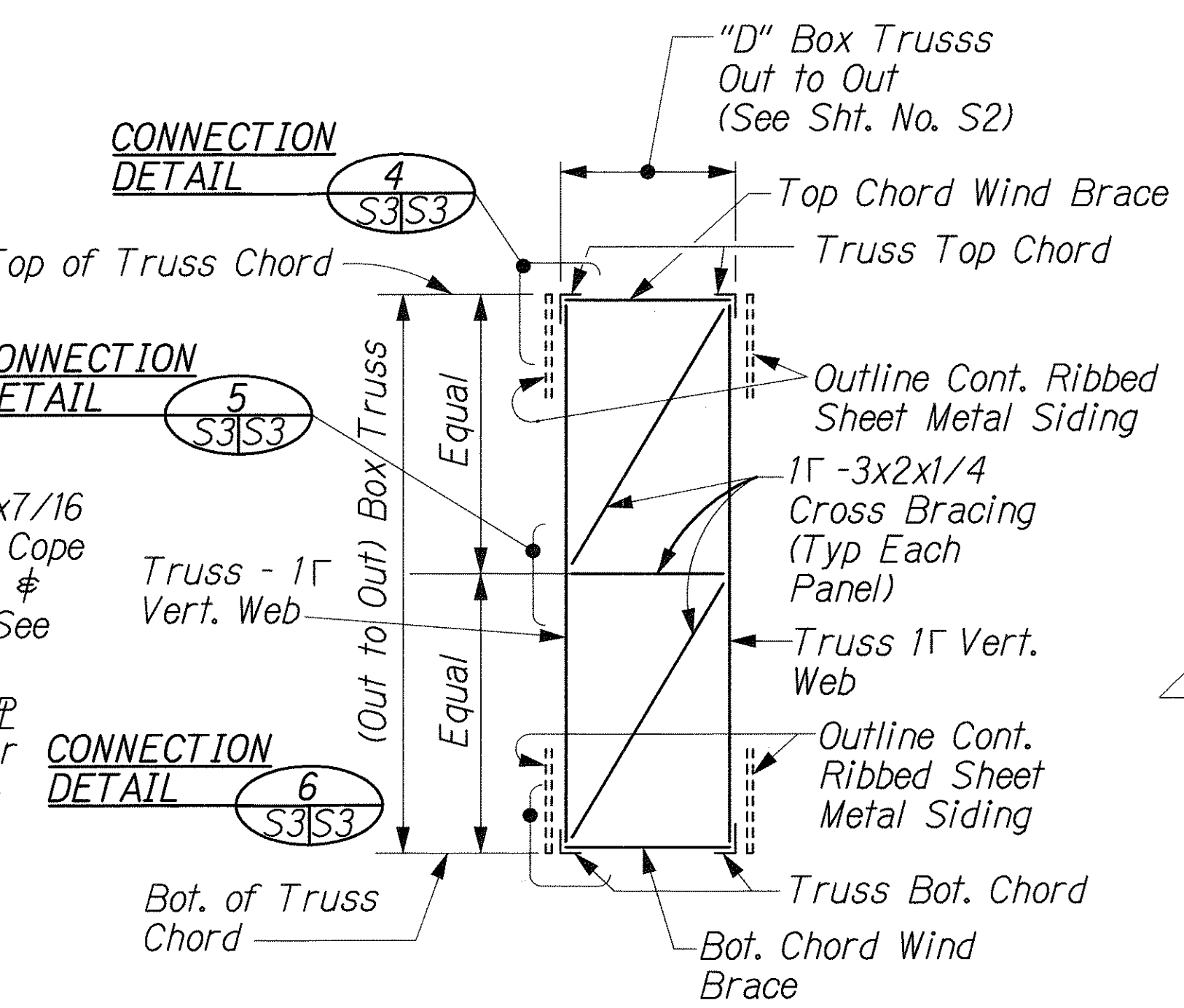
TYPICAL DETAIL 2
WIND BRACE CONNECTION
 (TOP CHORD SHOWN - BOT. CHORD SIMILAR)
 Scale: 1/2"=1'-0"



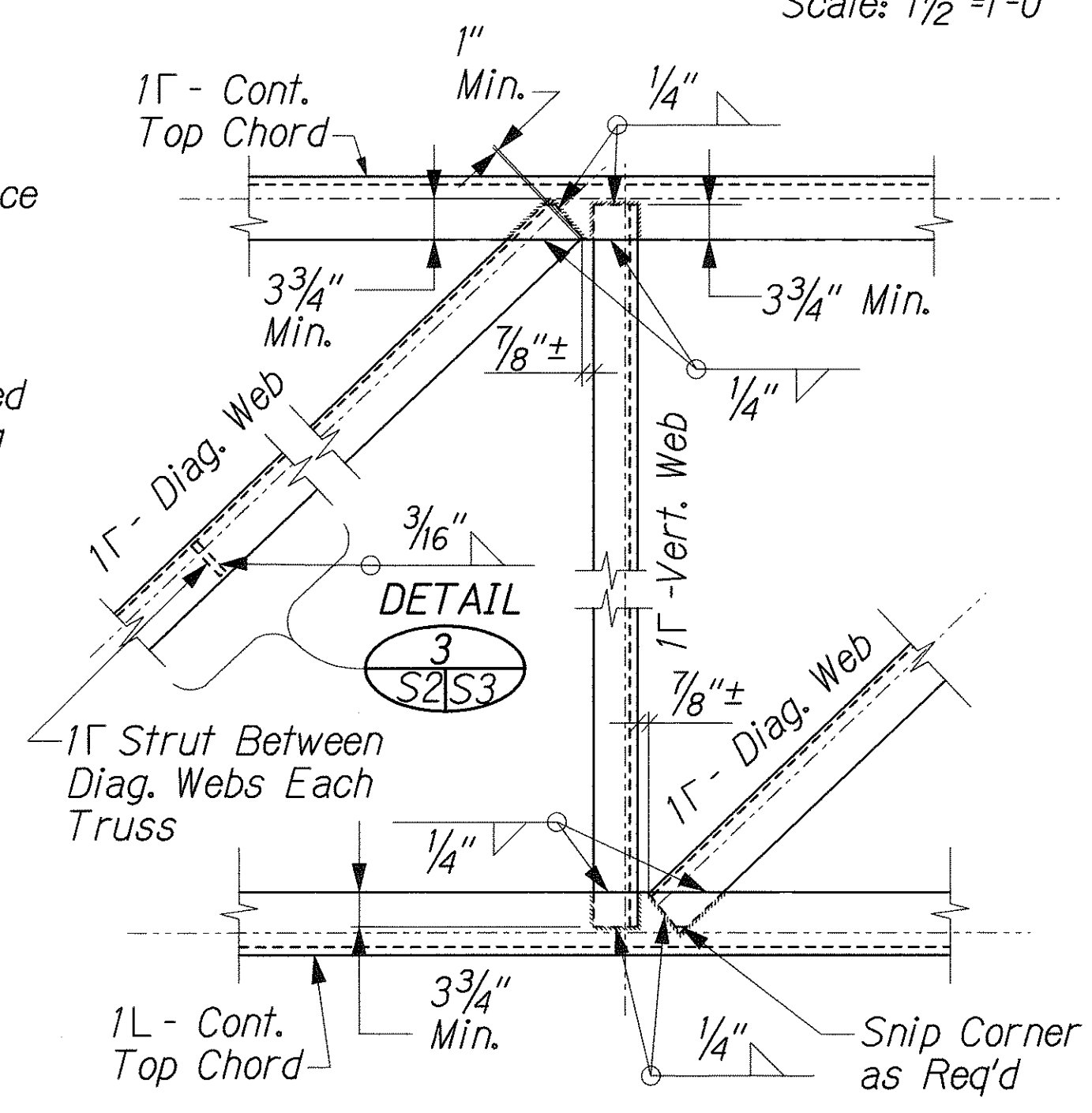
TYPICAL BOX TRUSS DETAILS
 Scale: 1/2"=1'-0"



TYP. BOX TRUSS END SECTION
 AS SHOWN
 Scale: 1/2"=1'-0"



TYP. BOX TRUSS SECTION
 (Intermediate Cross Bracing Details)
 Scale: 1/2"=1'-0"



TYPICAL DETAIL 1
 Scale: 1"=1'-0"

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
ORIGINAL FILED	_____

1/2 ZIPPER EXTENSION/STRUCT/SS03.dgn

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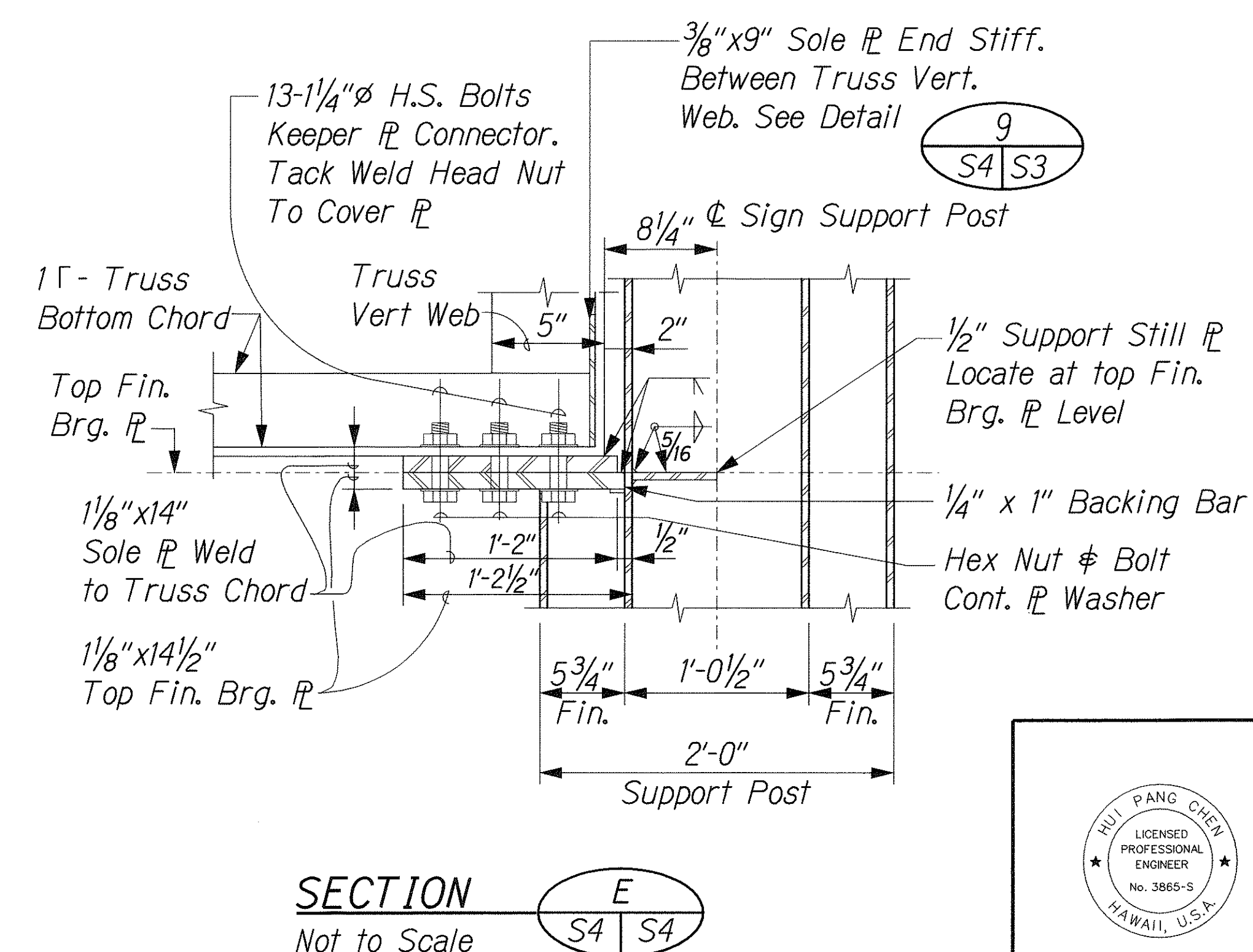
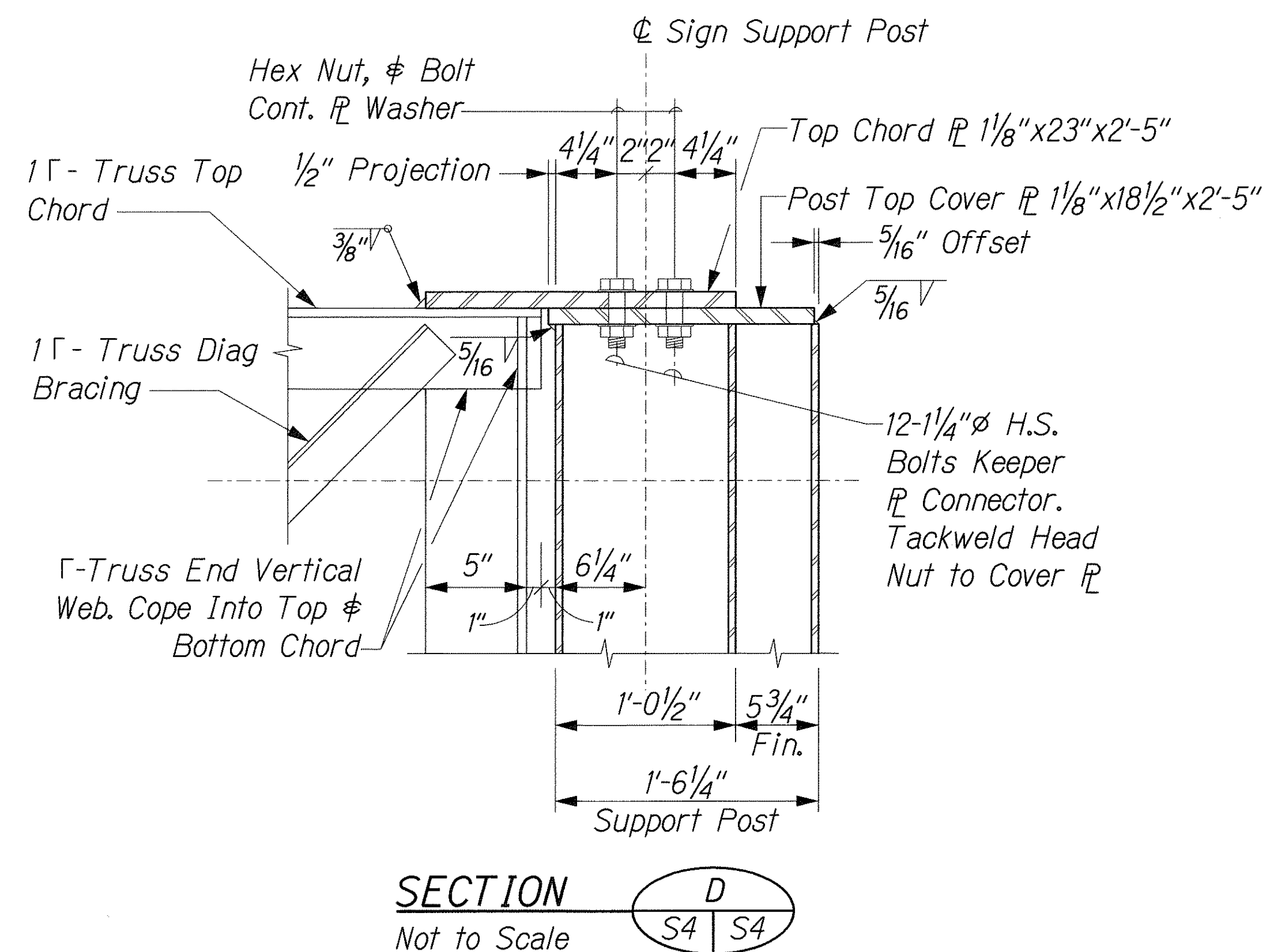
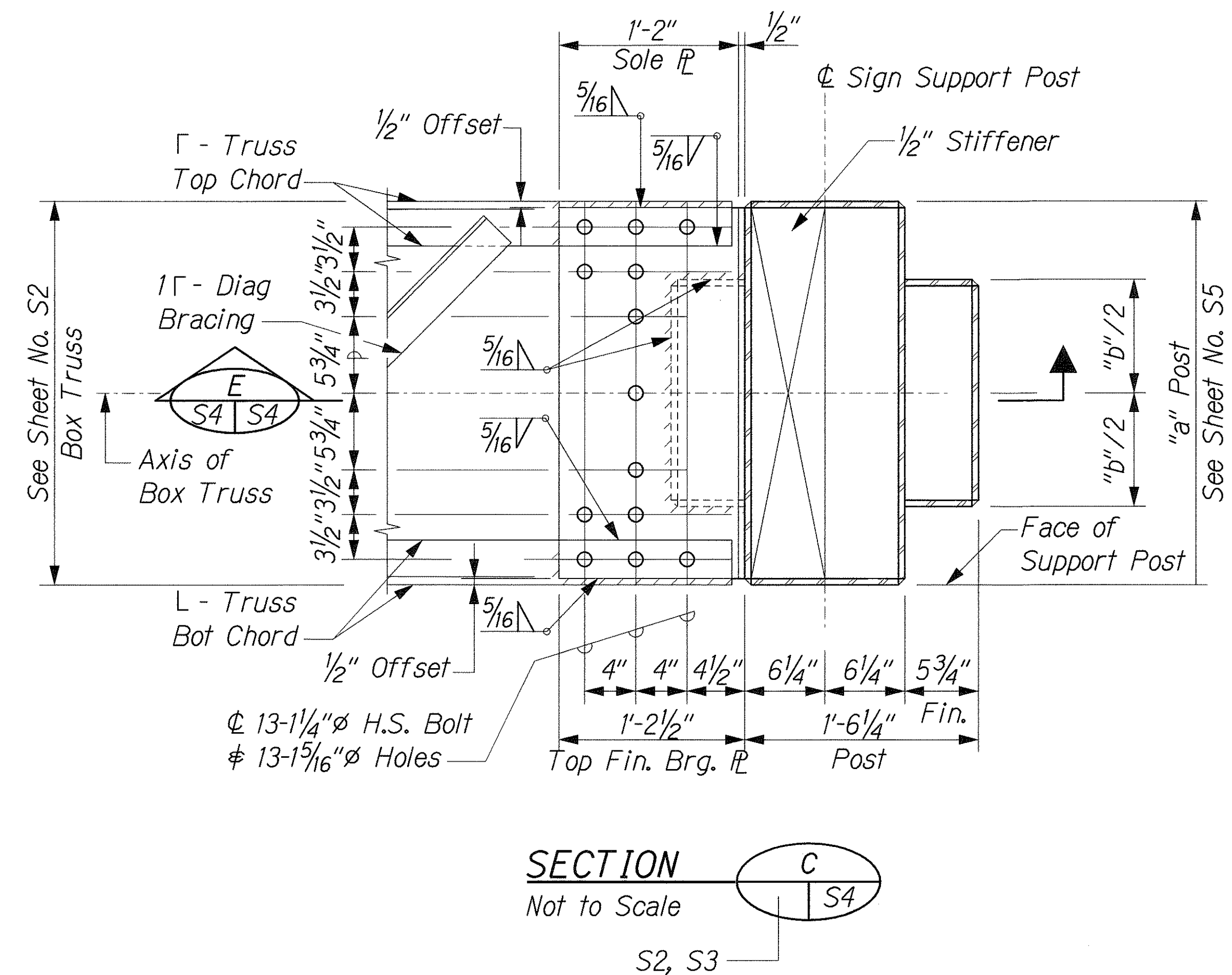
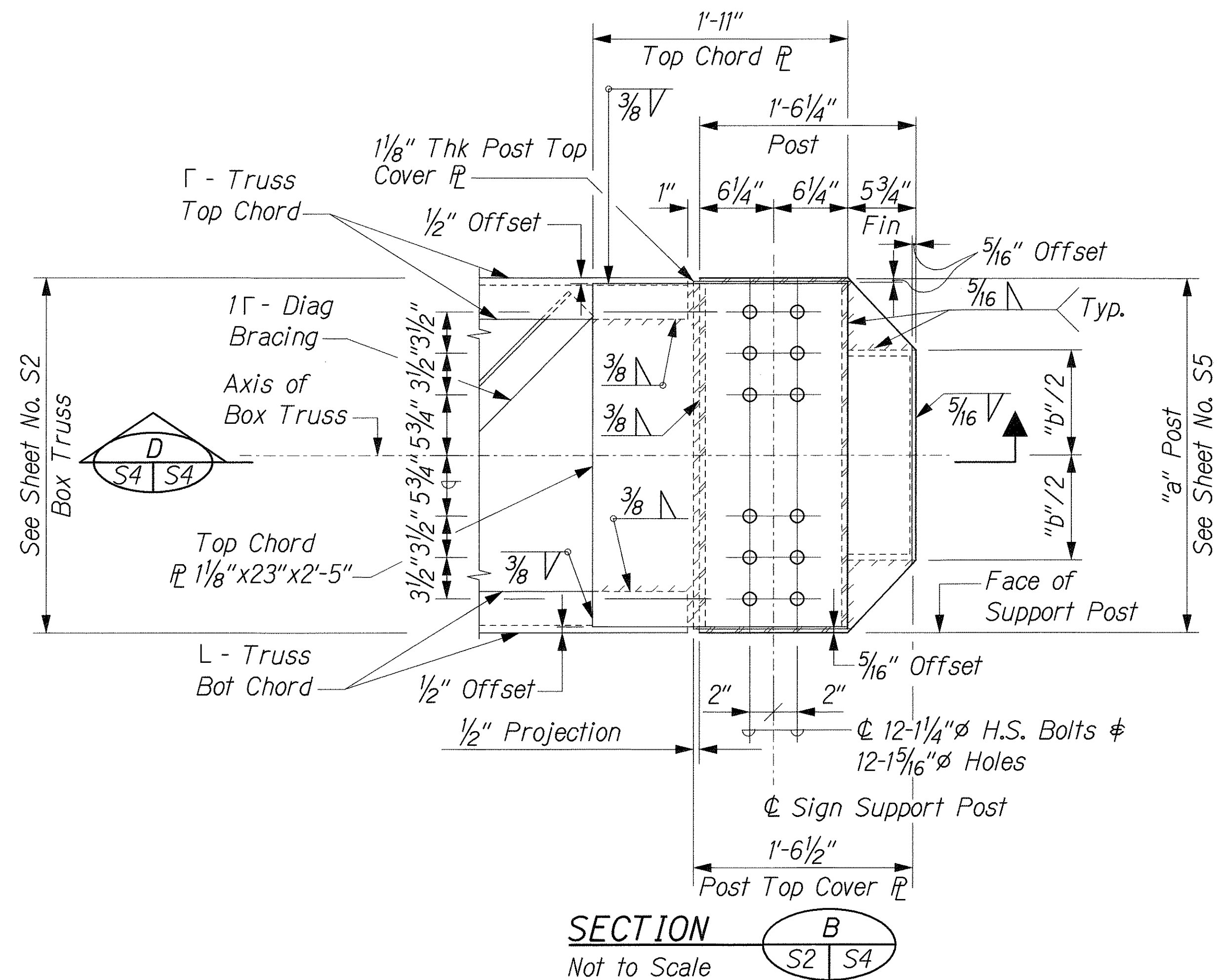
BOX TRUSS
CONNECTION DETAILS - 1

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
 RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
 FEDERAL AID PROJECT NO. NH-H1-1(246)

Scale: As Noted Date: Mar. 2, 2004

SHEET No. S3 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(246)	2004	76	105



ORIGINAL PLAN	DATE
NOTED BY	DESIGNED BY
CHECKED BY	QUANTITIES BY

1/4 ZIPPER EXTENSION/STRUCT/SS04.dgn

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BOX TRUSS
CONNECTION DETAILS - 2

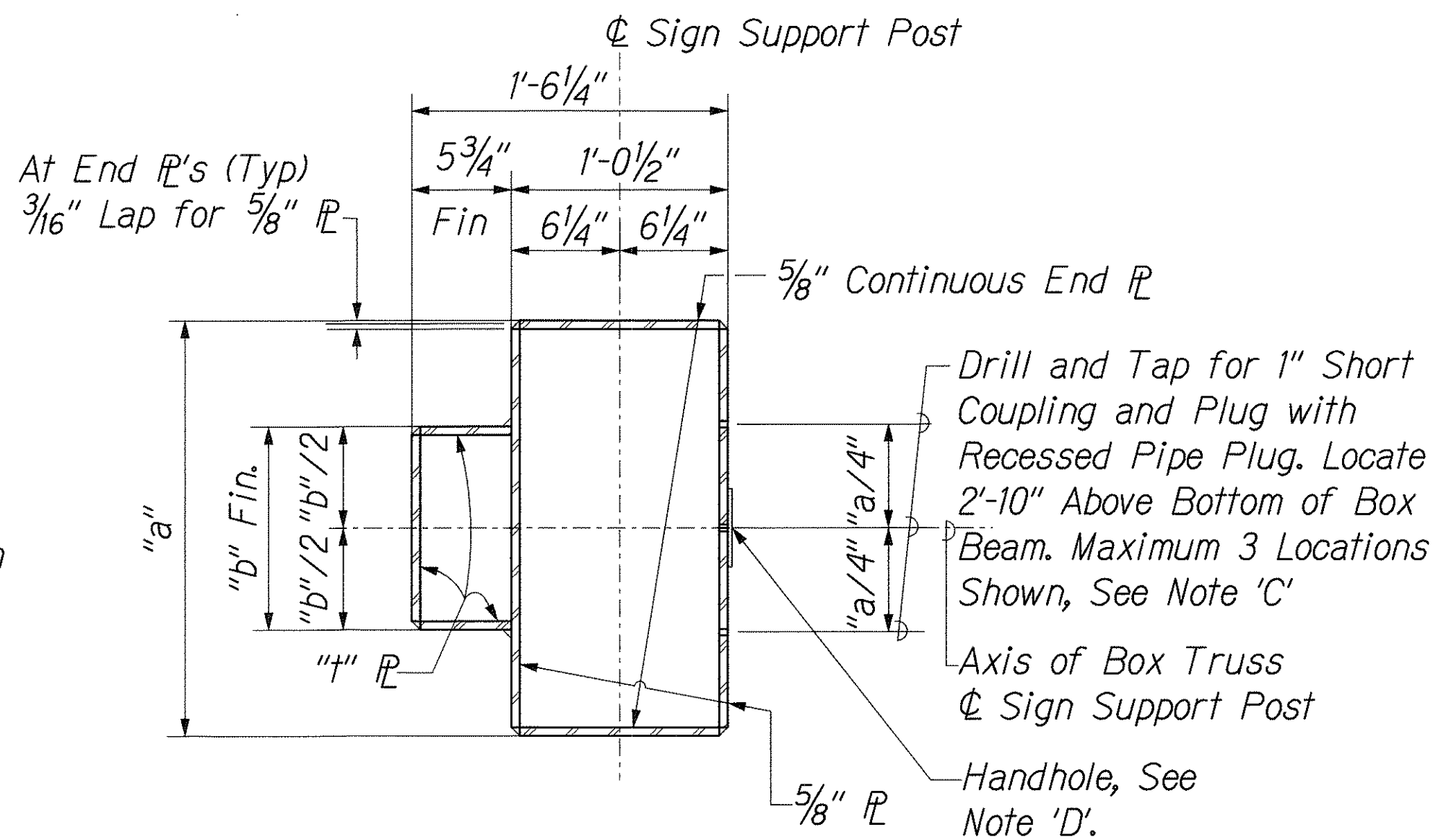
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-H1-1(246)

Scale: As Noted Date: Mar. 2, 2004

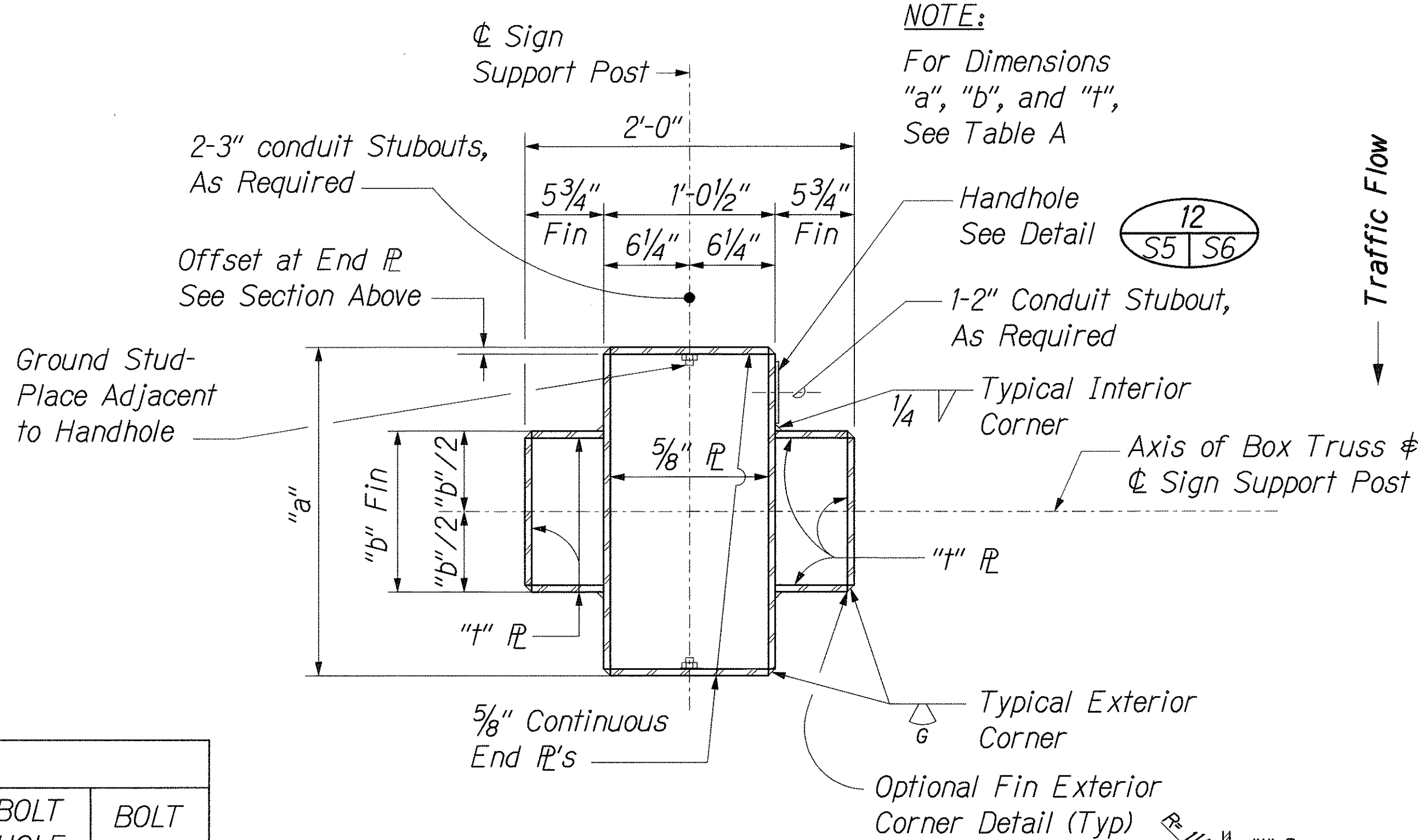
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(246)	2004	77	105

NOTE 'C':
For Number & Sizes of Conduit Stubouts, See Sht. S2.

NOTE 'D':
Place Handhole in Support Posts Where conduit Stubouts are Provided. Locate Handhole so That Bottom of Handhole Cover $\varnothing$ is 1'-2" Above Bottom of Box Beam & Centered About $\varnothing$ Support Post.

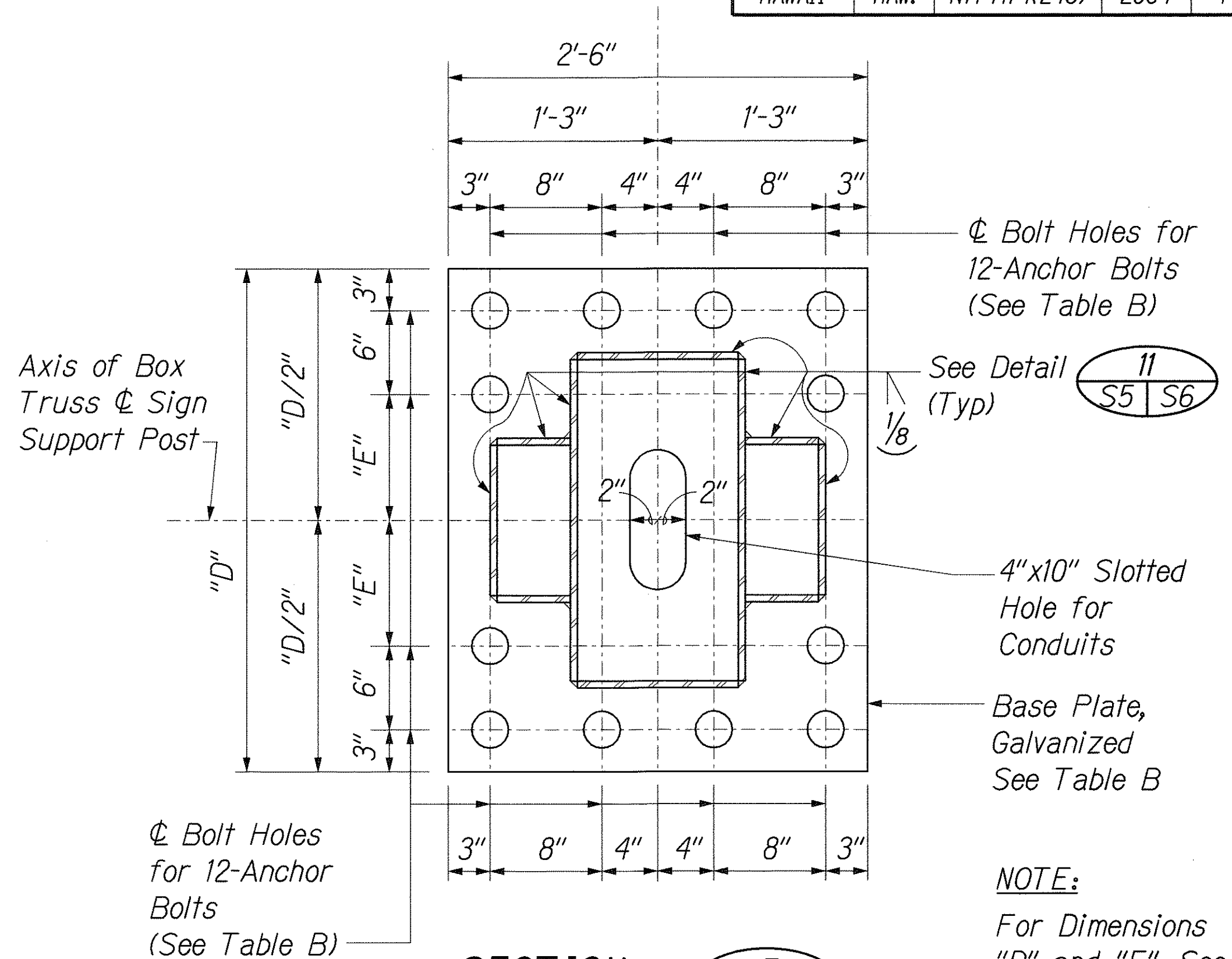


SECTION H
Scale: 1 1/2"=1'-0"



SECTION G
Scale: 1 1/2"=1'-0"

SUPPORT POST



SECTION F
Scale: 1 1/2"=1'-0"

BASE PLATE

TABLE A			
Post Type	"a"	"b"	"t"
A	2'-6"	1'-5 3/4"	5/8"

TABLE B				
BASE PLATE				
TYPE	"D"	THICKNESS	"E"	BOLT HOLE SIZE
I	3'-6"	3"	1'-0"	2 13/16"

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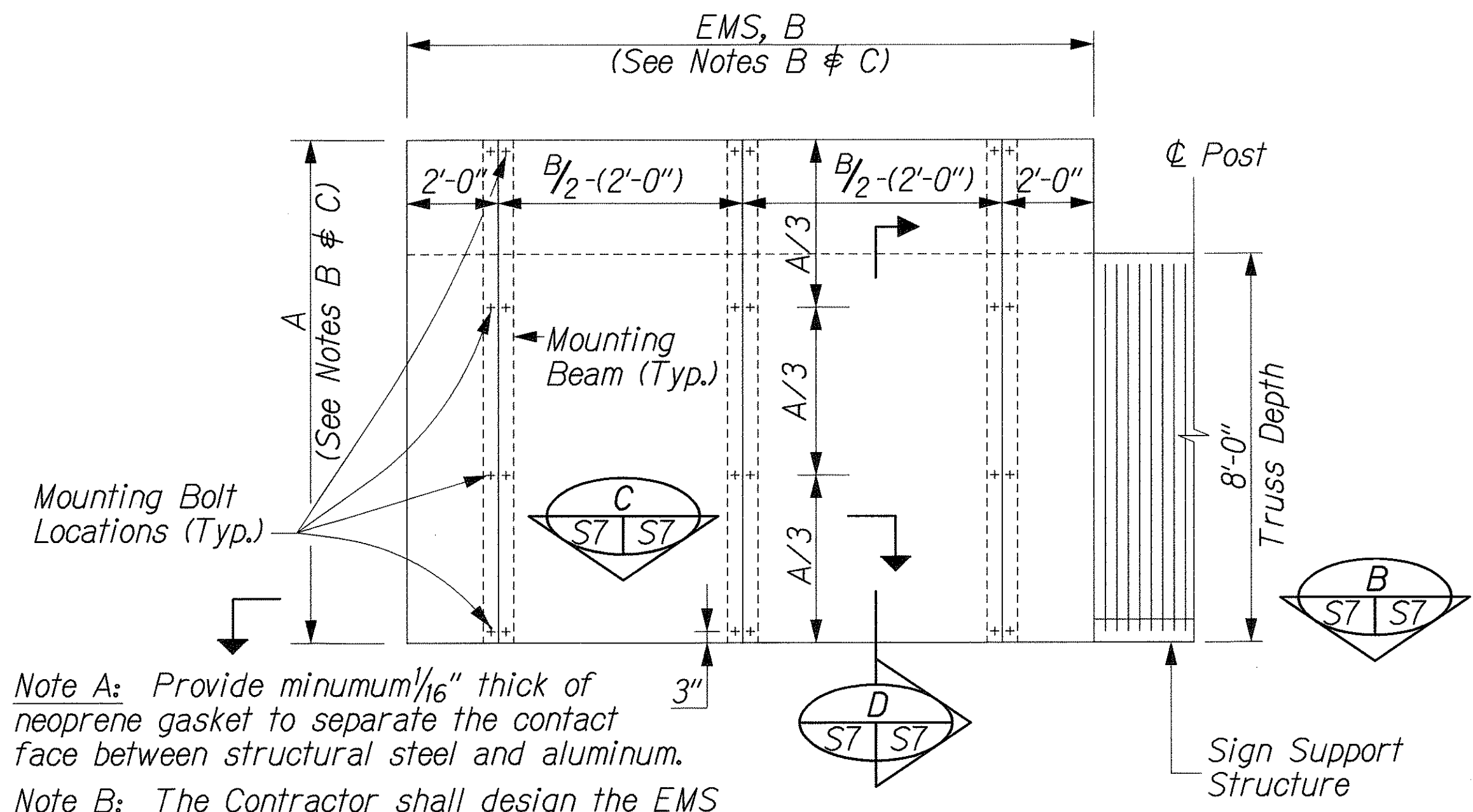
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**BOX TRUSS
SUPPORT POST DETAILS**

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-H1-1(246)

Scale: As Noted Date: Mar. 2, 2004

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	79	105

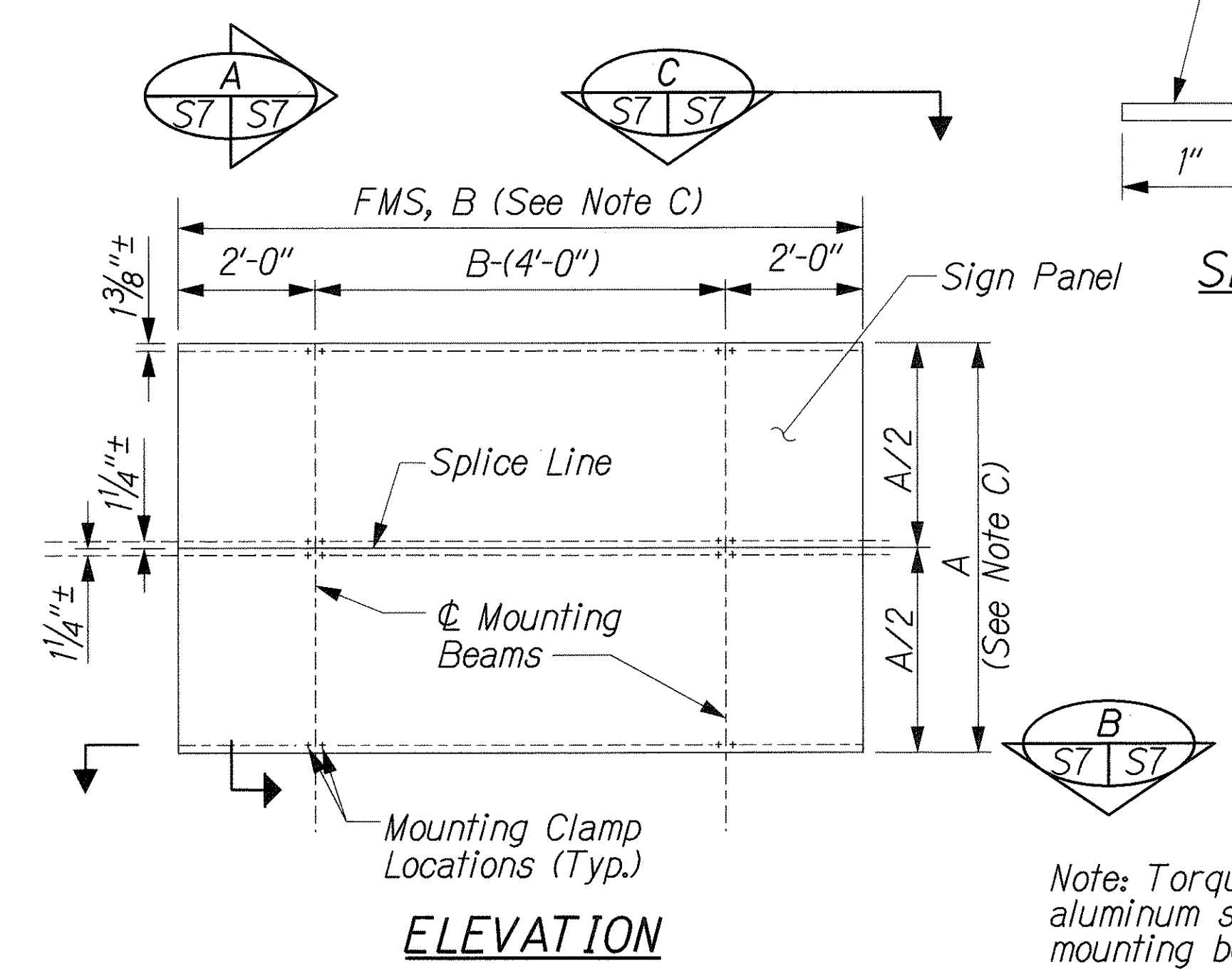


Note A: Provide minimum $\frac{1}{16}$ " thick of neoprene gasket to separate the contact face between structural steel and aluminum.

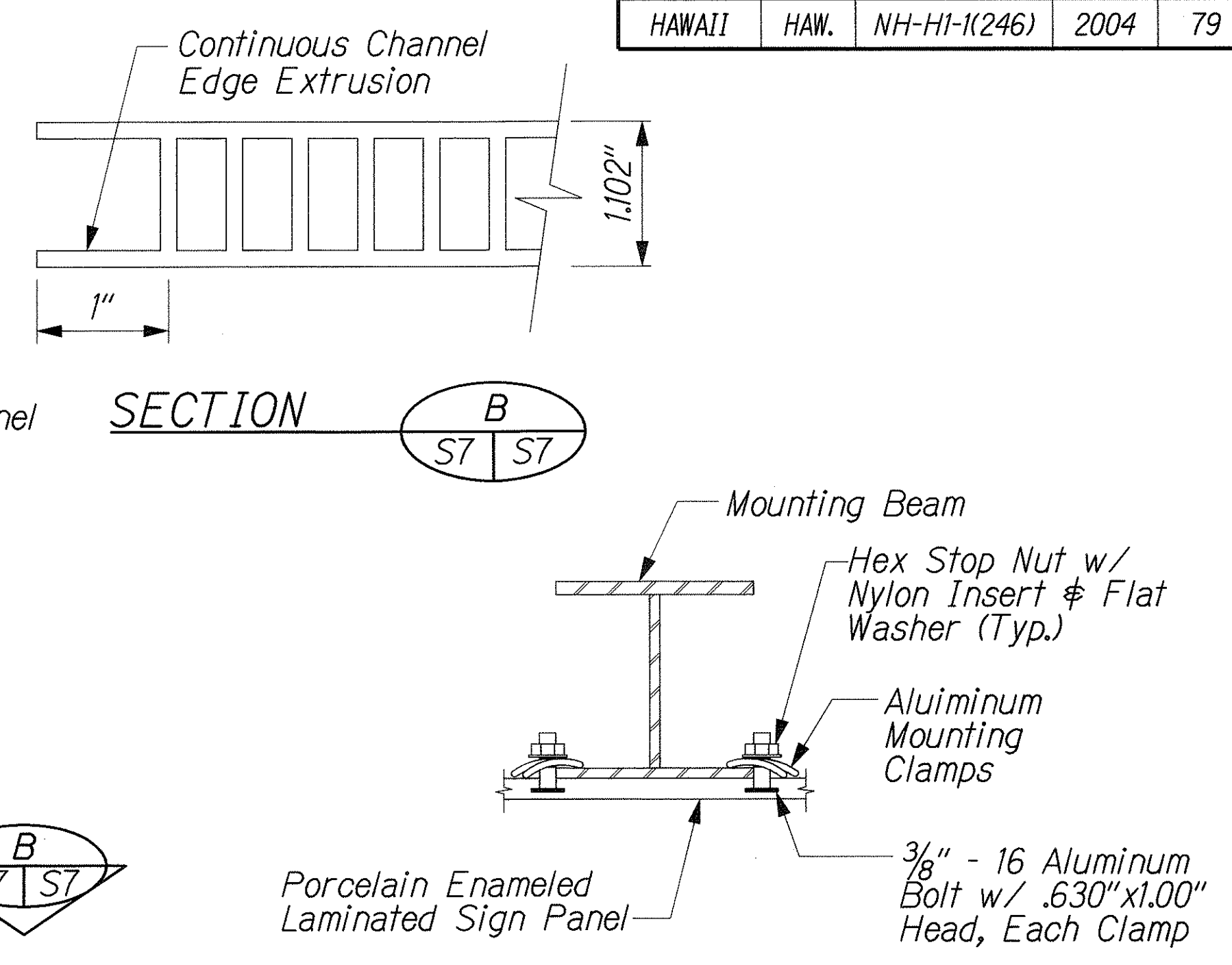
Note B: The Contractor shall design the EMS panel thickness to accommodate the dimensions & mounting spacings as shown and the requirements of the manufacturer.

Note C: For sign panel dimensions A & B, see sign panel layout details on Sht. P16.

**ELEVATION FOR
ELECTRONIC MESSAGE SIGN (EMS) OR FIXED MESSAGE SIGN (FMS)**
Scale: $\frac{3}{8}$ "=1'-0" (A $\geq$ TRUSS DEPTH)

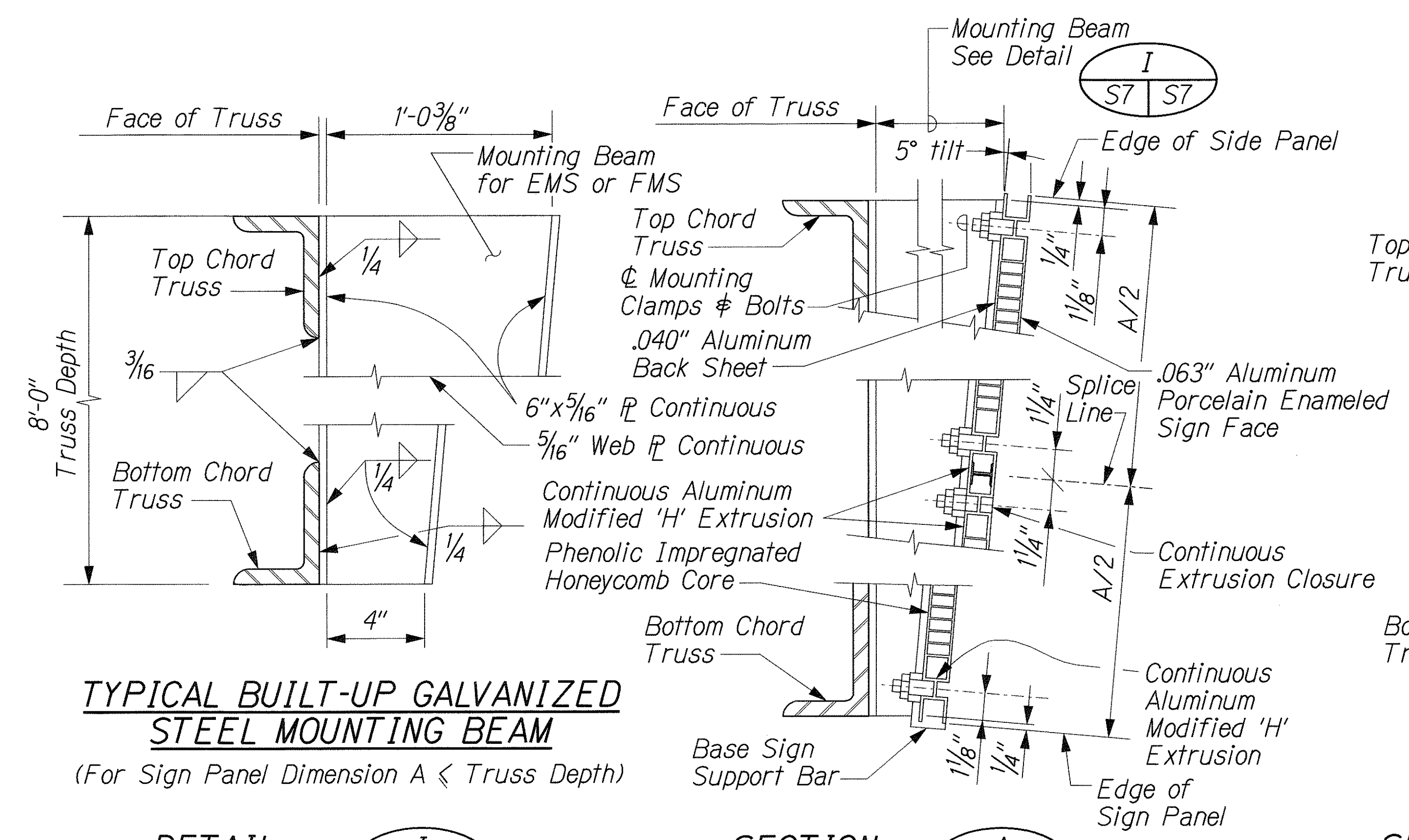


ELEVATION



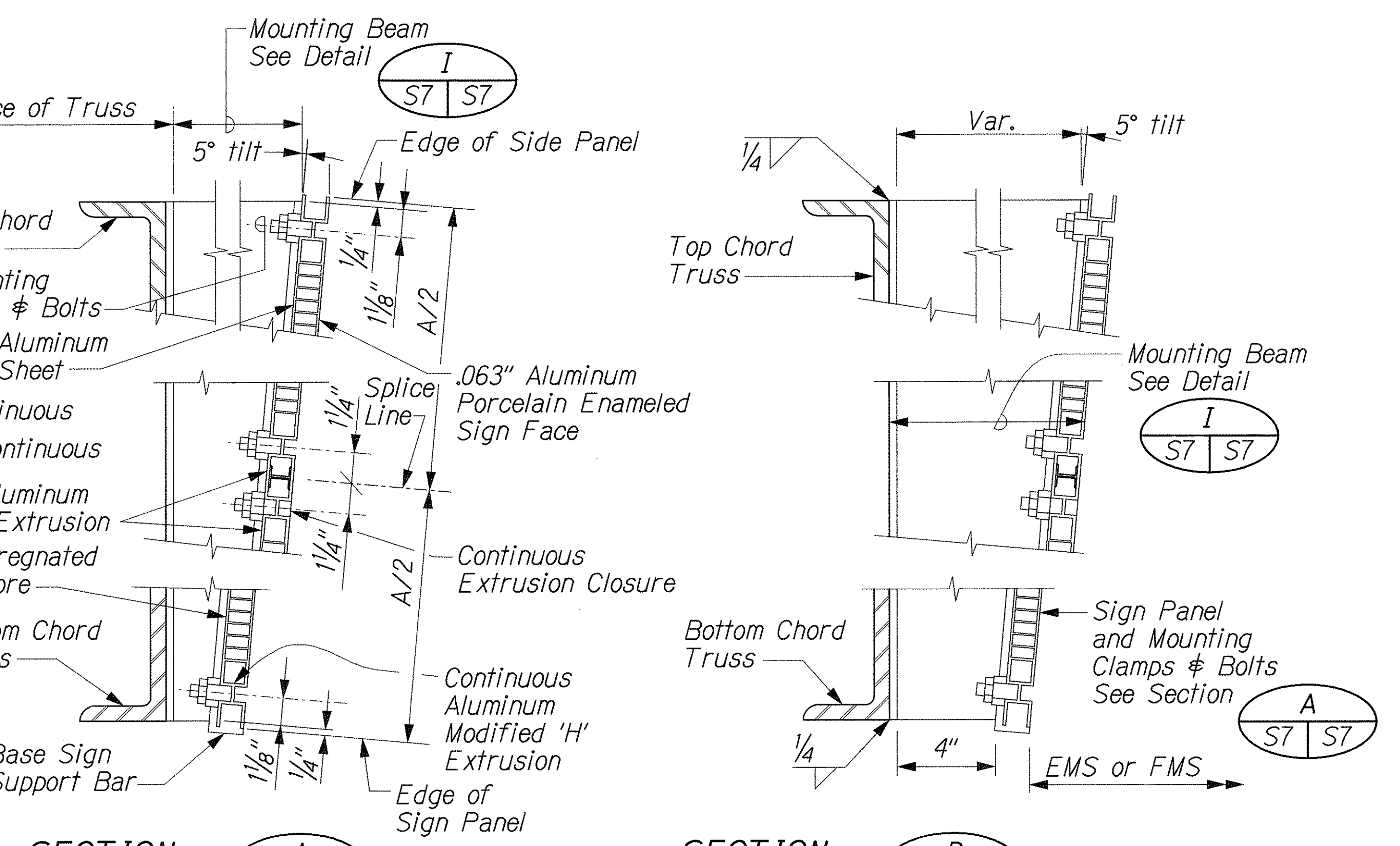
TYPICAL CONNECTION
Note: Torque FMS aluminum sign panel mounting bolt to 100 in-lbs.
SECTION C

FIXED MESSAGE SIGN (FMS) PANEL DETAIL
Not to Scale

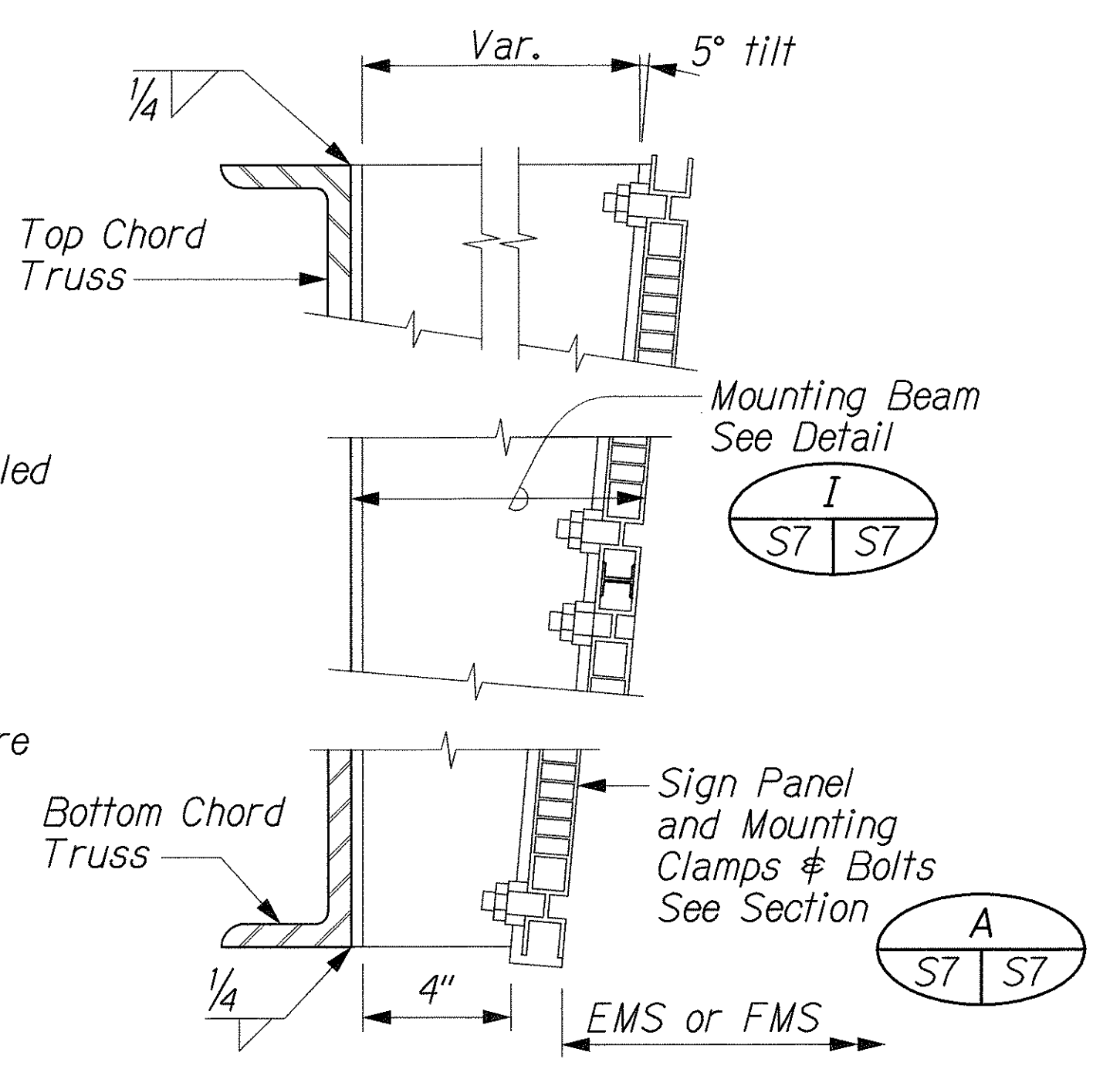


**TYPICAL BUILT-UP GALVANIZED
STEEL MOUNTING BEAM**
(For Sign Panel Dimension A $\leq$ Truss Depth)

DETAIL I
Scale: 3"=1'-0"



SECTION A
Scale: 3"=1'-0"



SECTION D
Scale: 3"=1'-0"

(For Sign Panel Dimension A $>$ Truss Depth)

SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

1/4 ZIPPER EXTENSION/STRUCT/SS01a9n

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

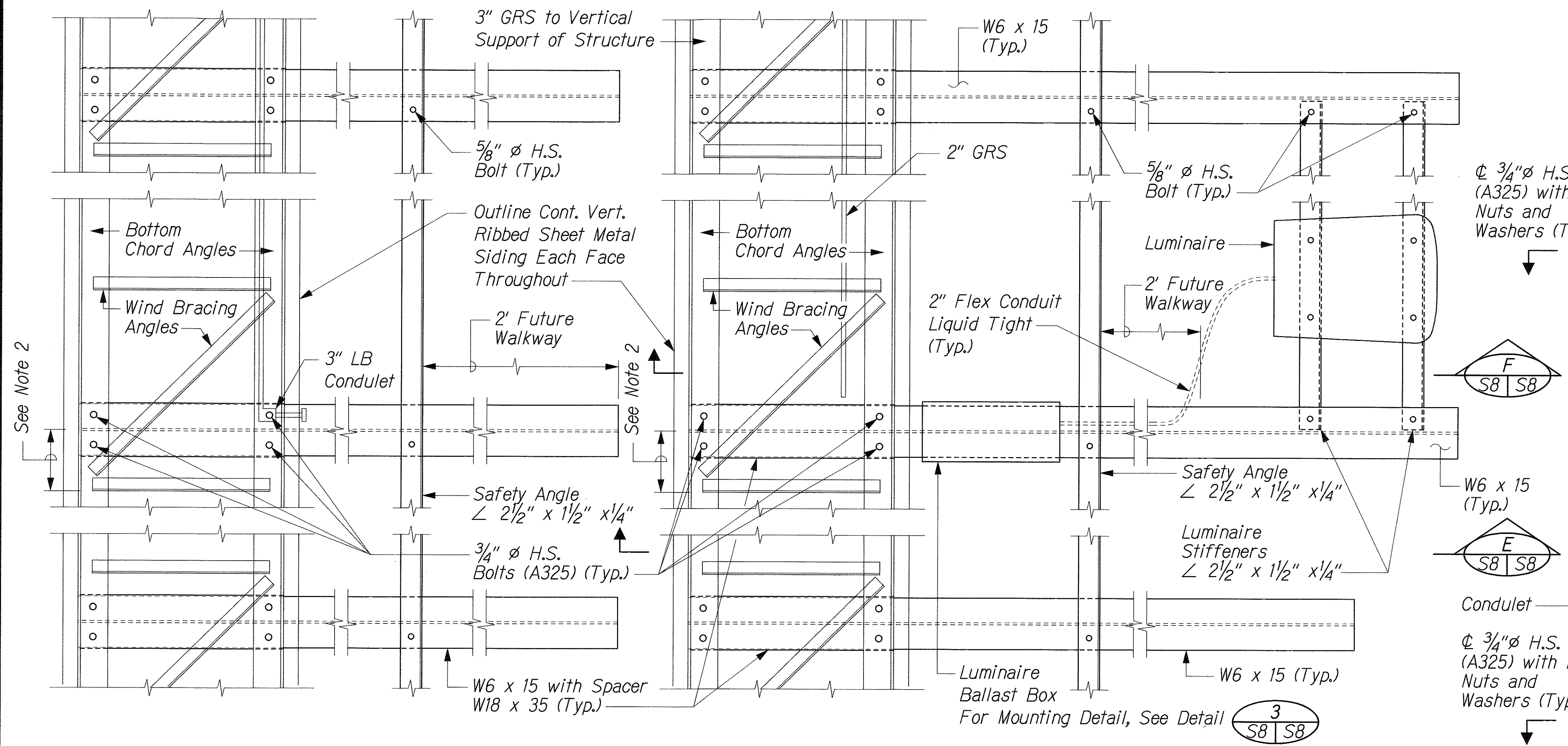
BOX TRUSS

MISCELLANEOUS DETAILS - 2

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: Mar. 2, 2004

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-K246	2004	80	105

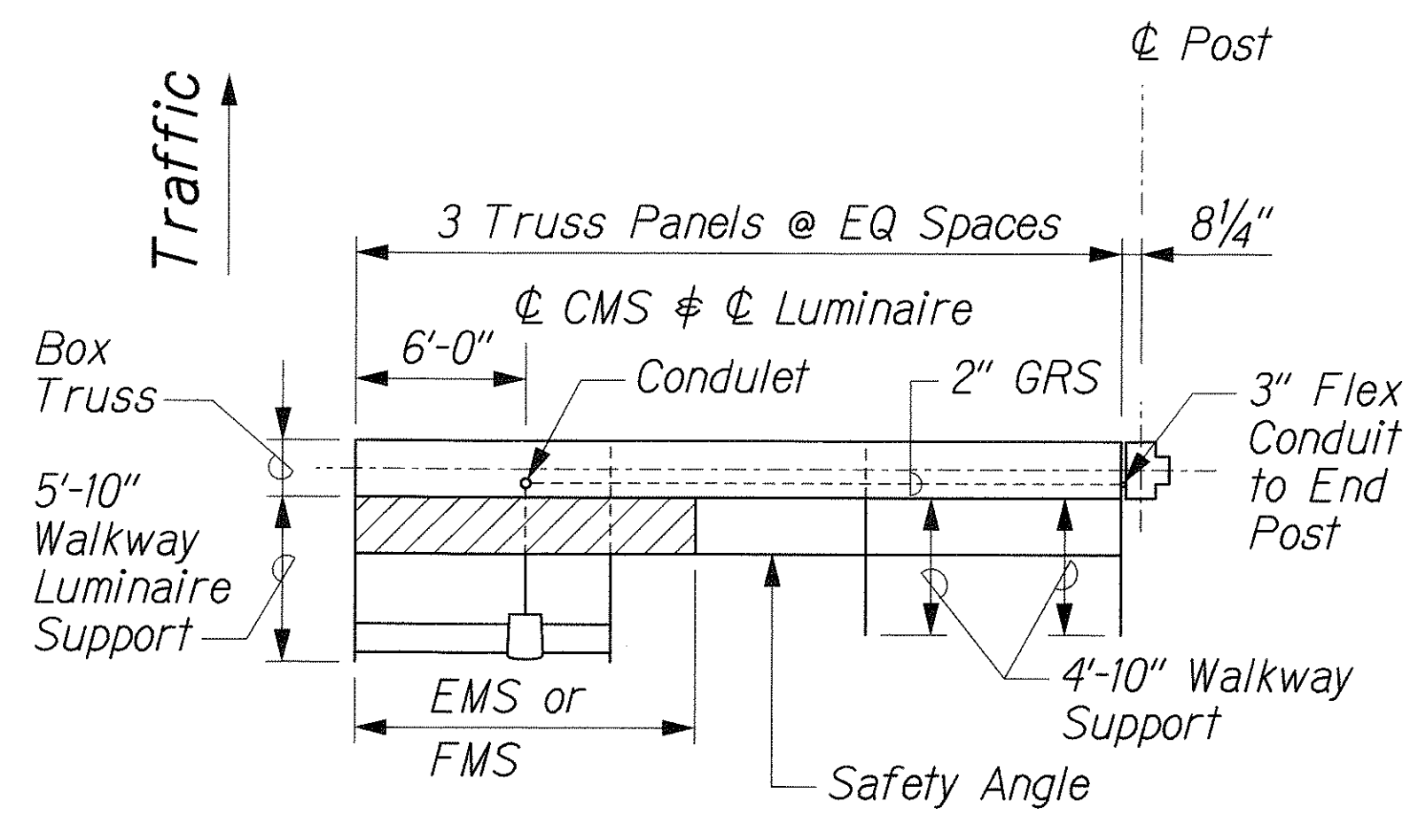
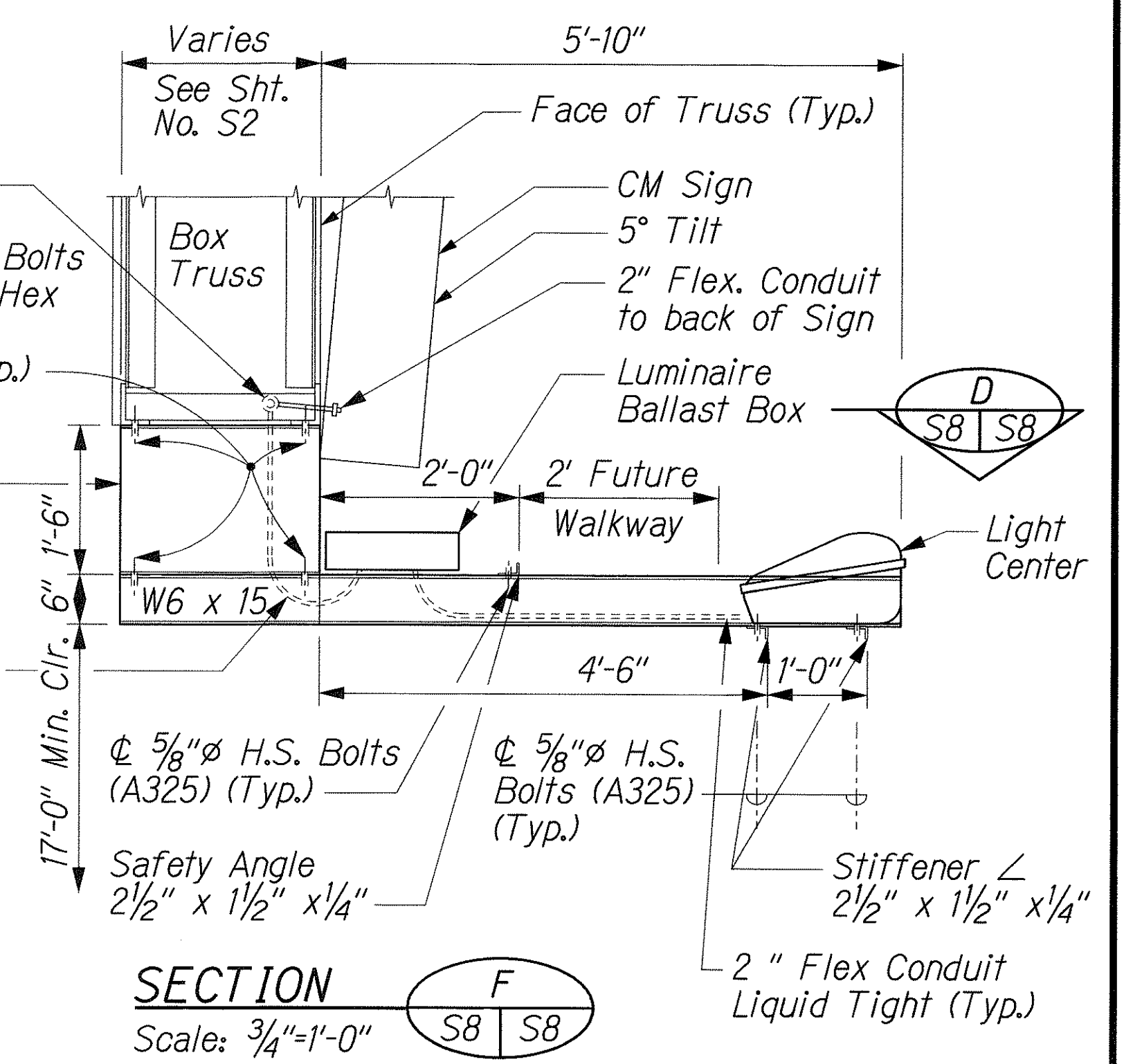
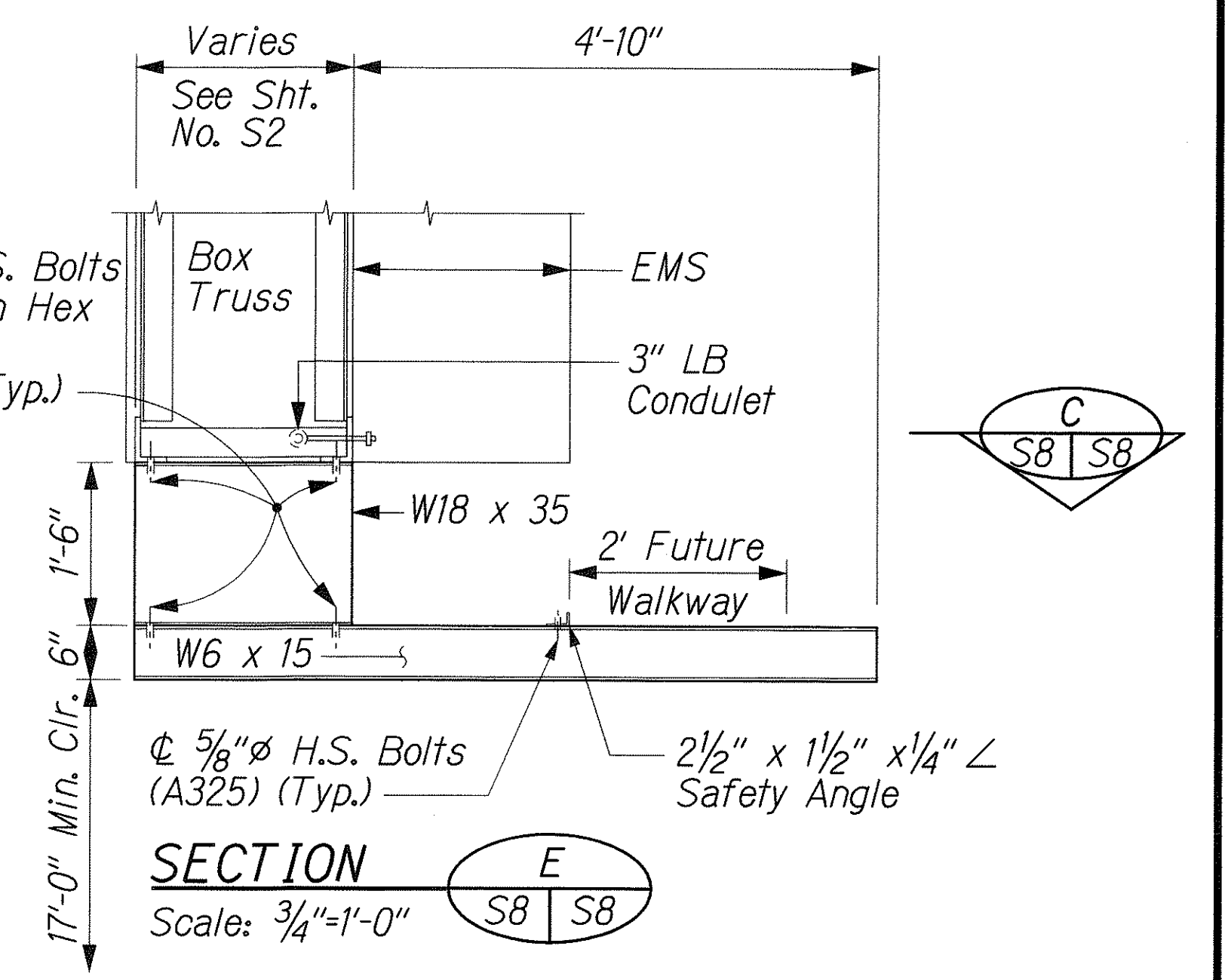


SECTION C
Scale: 1 1/2"=1'-0"

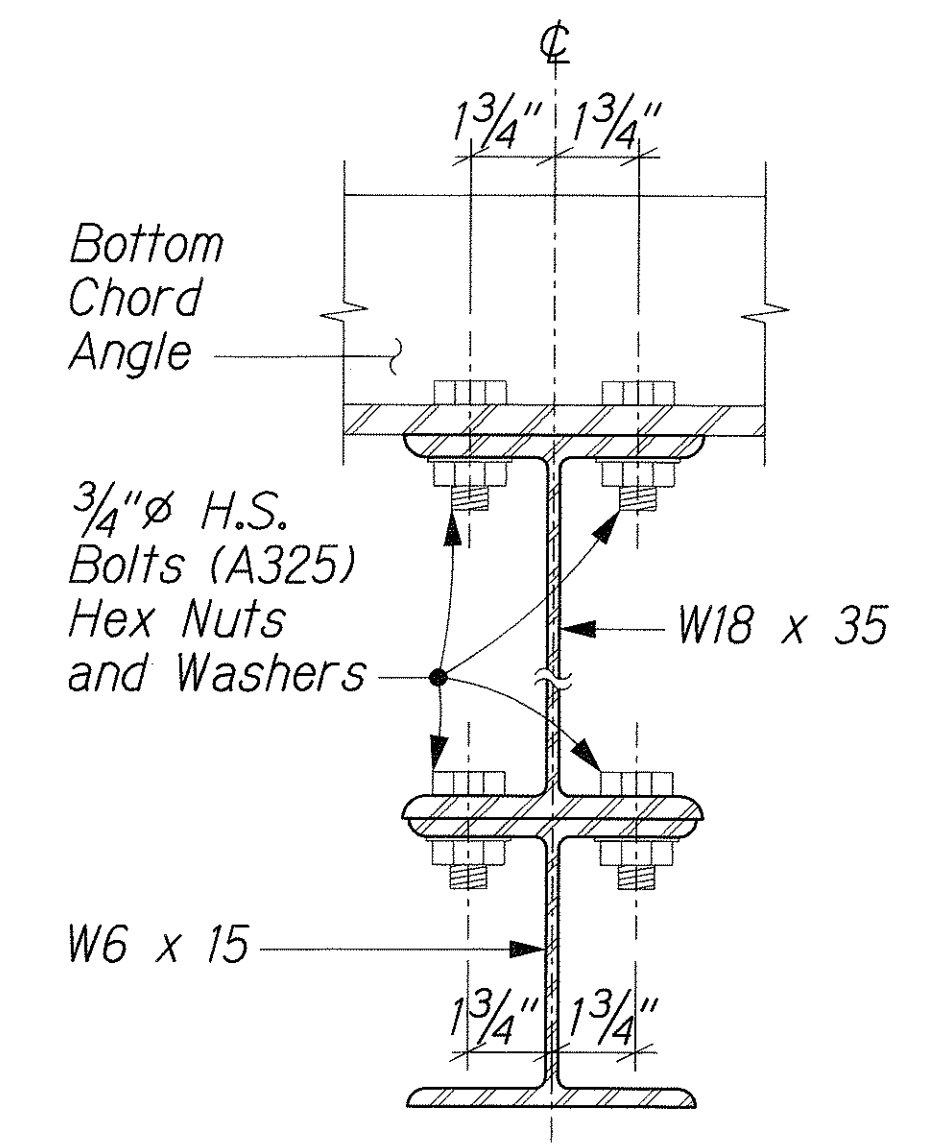
SECTION D
Scale: 1 1/2"=1'-0"

TYPICAL WALKWAY CONNECTION DETAIL
Scale: 1 1/2"=1'-0"

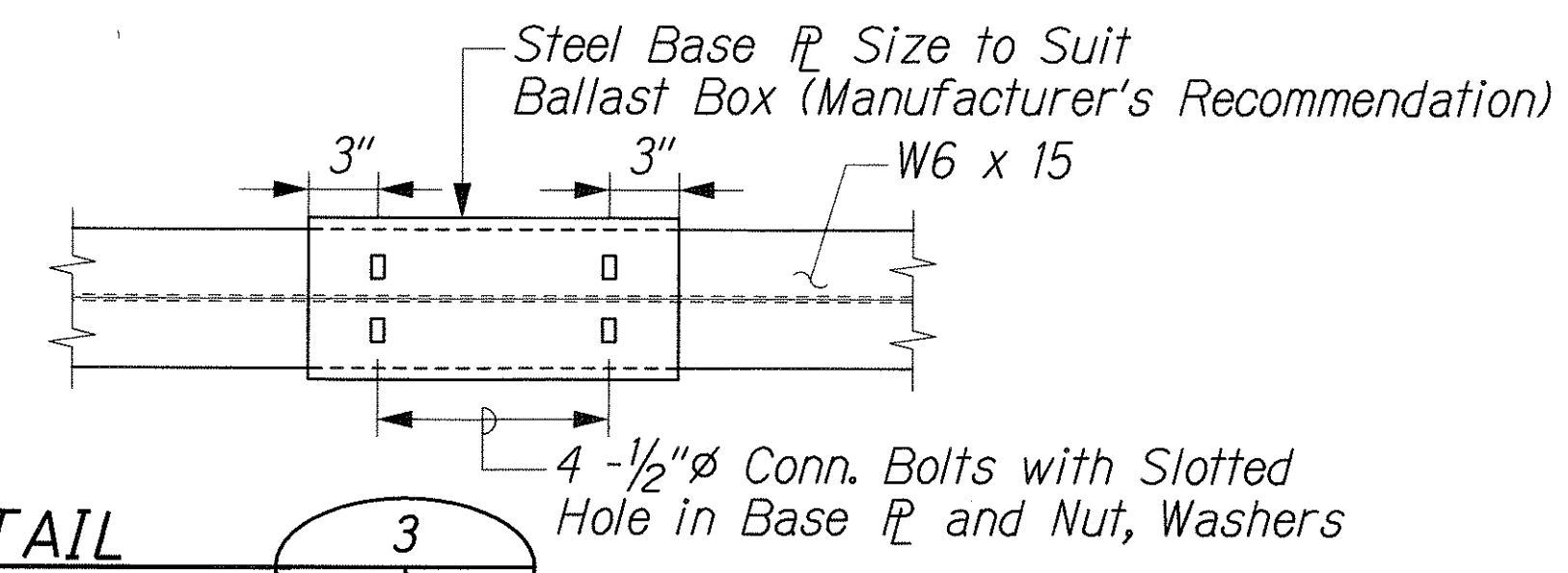
- NOTES:**
- For General Notes, See Sheet No. S1.
 - Locations of Bottom Wind Bracing may be adjusted to avoid any interference with Sign Luminaires & Walkway Brackets subject to the approval of the Engineer.
 - Load of Walkway and Railing on each Bracket shall not exceed 375 lbs.
 - Live load on each Bracket = 500 lbs.
 - For locations of Sign Luminaires and Walkway Brackets, See this Sheet.
 - All Structural Steel, Steel Pipe, Steel Strap, Connection Bolts, Washers & Nuts in Walkway/Luminaire supports shall be Hot Dip Galvanized after fabrication.



TRUSS PLAN AT EMS OR FMS
Scale: 1"=6'-0"



SECTION A
Scale: 3"=1'-0"



DETAIL 3
Scale: 1 1/2"=1'-0"

SURVEY PLOTTED BY: _____
 DATE: _____
 ORIGINAL PLAN: _____
 DRAWN BY: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 NO. _____

J:\ZIPPER EXTENSION\STRUCT\SS08.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**BOX TRUSS
WALKWAY DETAILS**

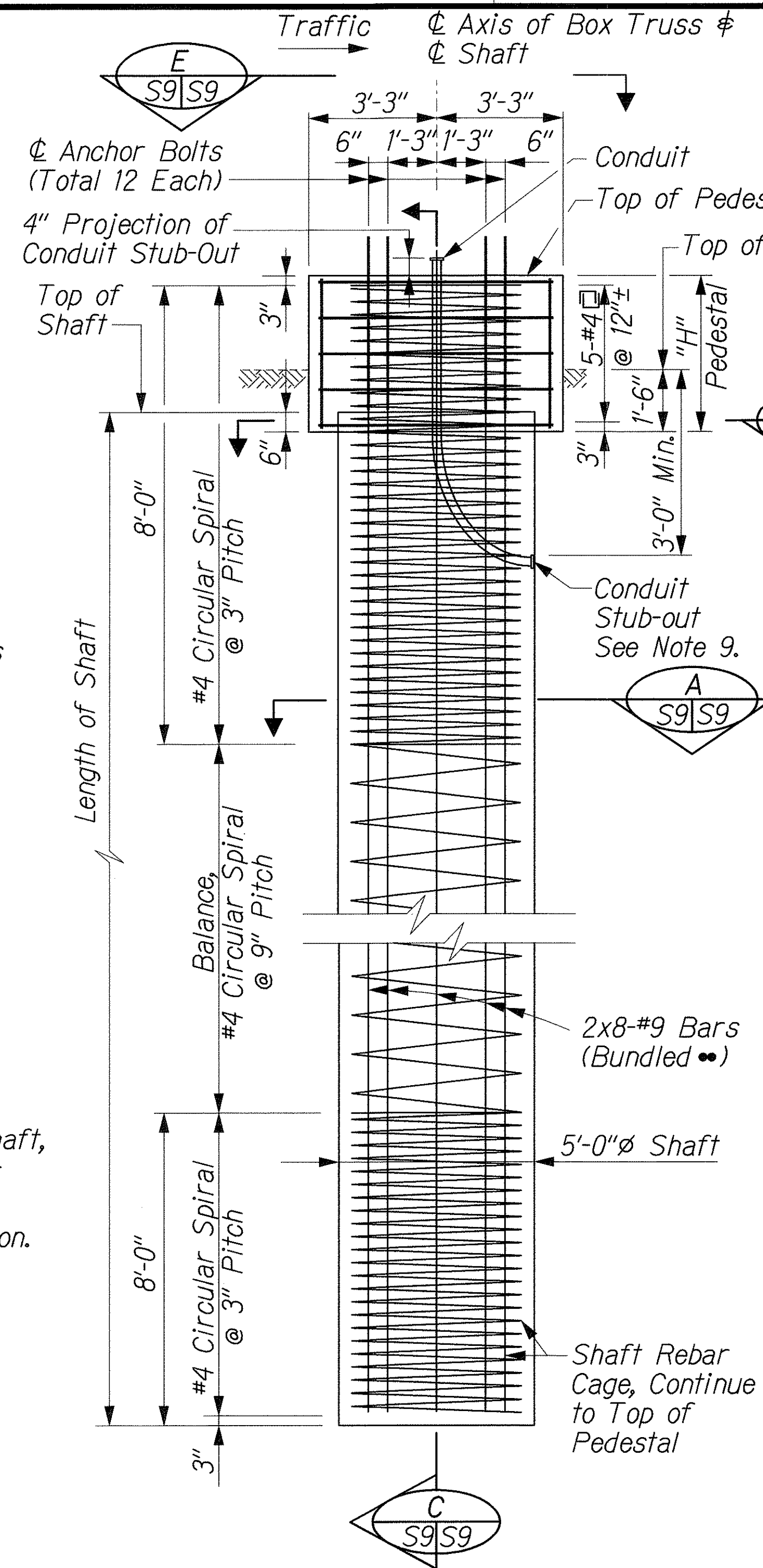
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-H1-K246

Scale: As Noted Date: Mar. 2, 2004

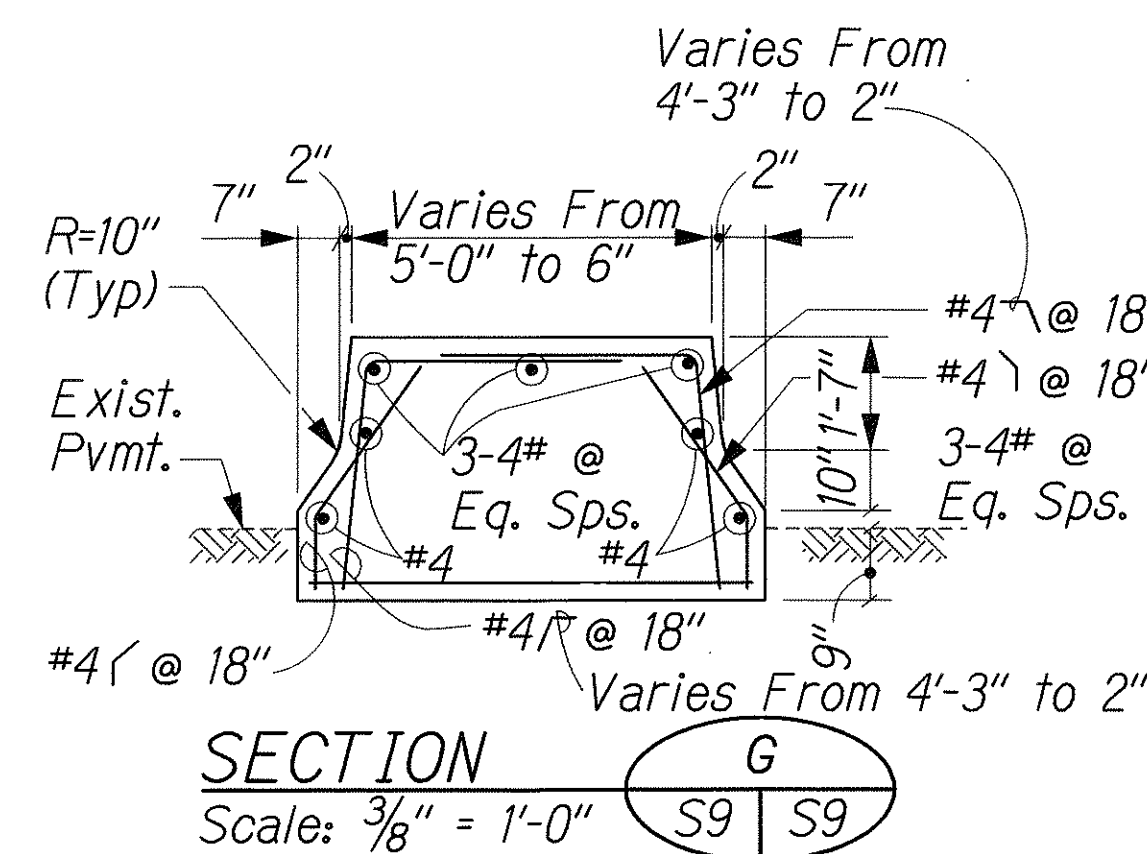
SHEET No. S8 OF 13 SHEETS

DRILLED SHAFT NOTES:

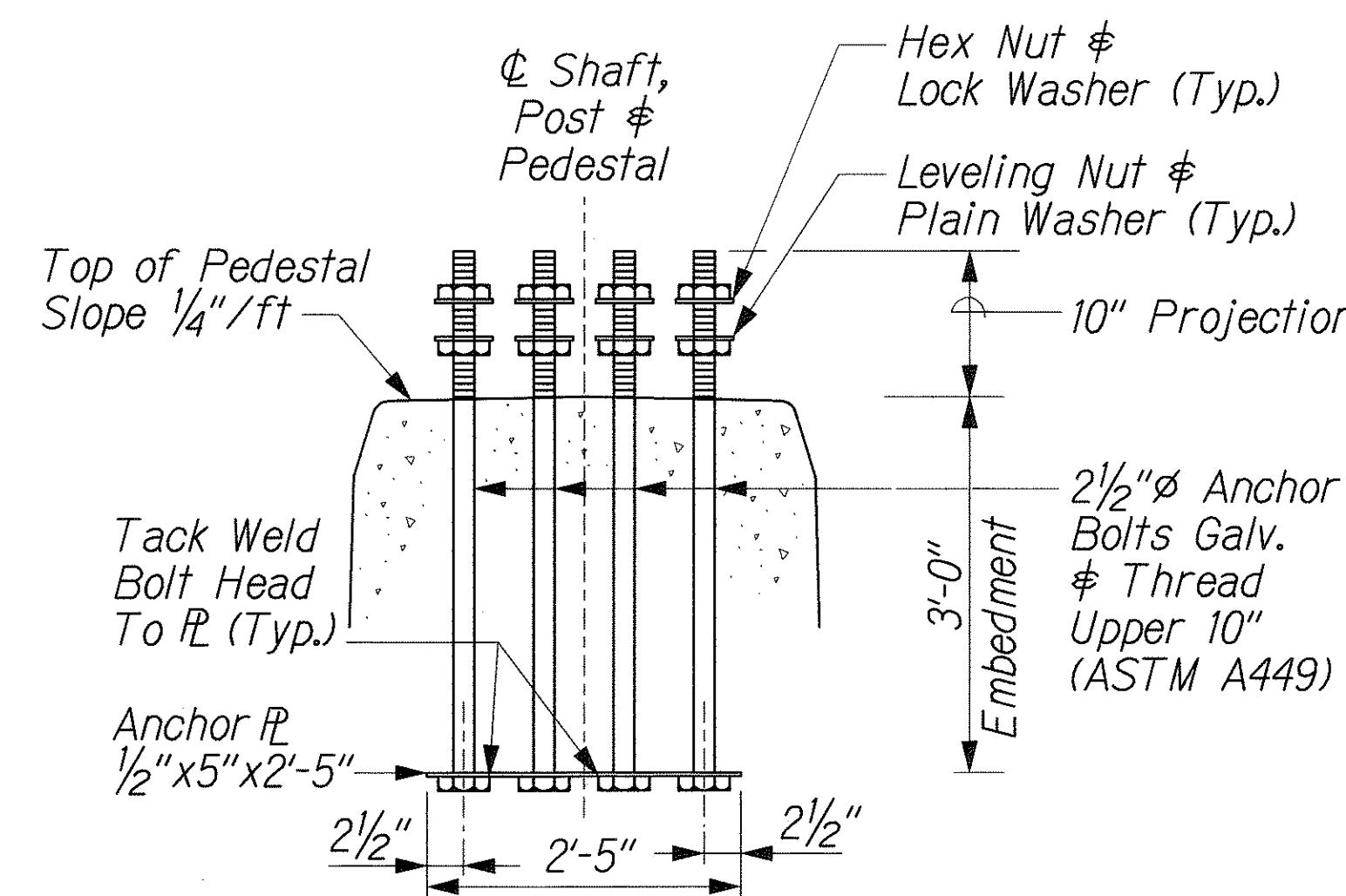
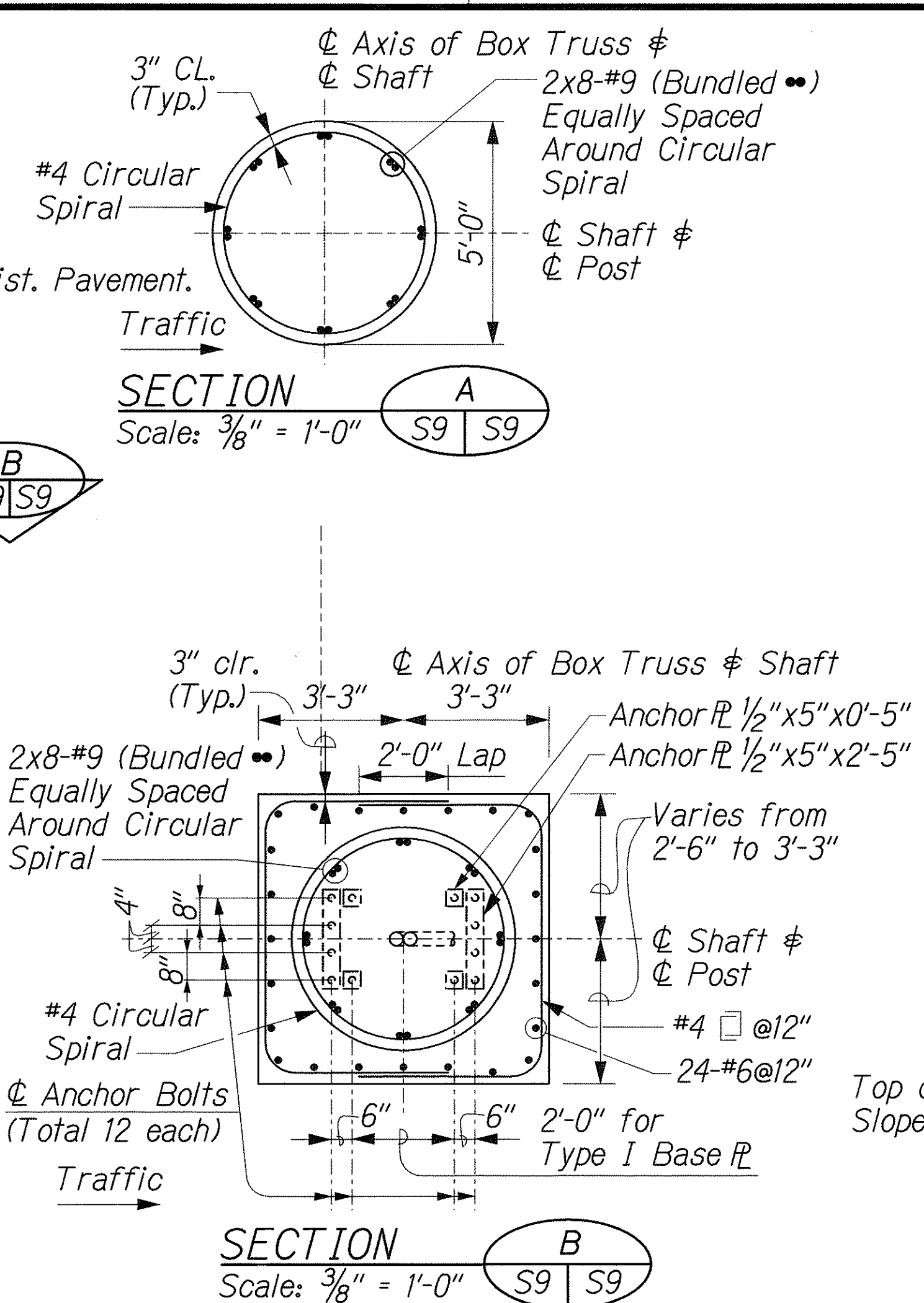
1. Provide sizing hoops as a guide for the fabrication of the rebar cage.
2. Provide centering devices as a guide for the placement of the rebar cage in the drilled hole.
3. Provide temporary stiffeners to strengthen the rebar cage during lifting. Stiffeners are to be removed prior to pouring of concrete.
4. Splices in the longitudinal steel, if required, should be staggered so as not to occur at the same horizontal plane along the rebar cage. The staggered shall be 1'-0" min.
5. Use No. 4 circular spiral for rebar cage. Circular ties shall not be used in drilled shafts except otherwise as noted.
6. The rebar cage shall be fabricated and stored so as to avoid distortion during transportation to the job site and to avoid contamination with mud or other deleterious material.
7. For slump of concrete, See Special Provisions.
8. Placement of the concrete shall be made by use of a tremie or pump line.
9. The spiral pitch may be opened wider at the location where the conduit stub-out is required in the shaft. During the construction of the shaft, the Contractor shall seal the end of the conduit stub-out and provide a device to identify its location in the shaft for later conduit connection.
10. For installation of anchor bolts, the contractor shall provide rigid templates to maintain the anchor bolts in proper locations.
11. The anchor bolts and conduit shall be installed prior to pouring shaft concrete and shall be protected at all times during construction.
12. Concrete for drilled shafts and pedestals shall have a minimum 28 days compressive strength of 4500 psi.
13. All reinforcing steel shall be ASTM A615 Grade 60.
14. For all drilled shafts, the Contractor shall provide a minimum 5'-0" long temporary casing to control the upper drilled hole size.



TYPE Y SHAFT ELEVATION
Not to Scale



SECTION G
Scale: 3/8" = 1'-0"



ANCHOR BOLT DETAIL
Not to Scale

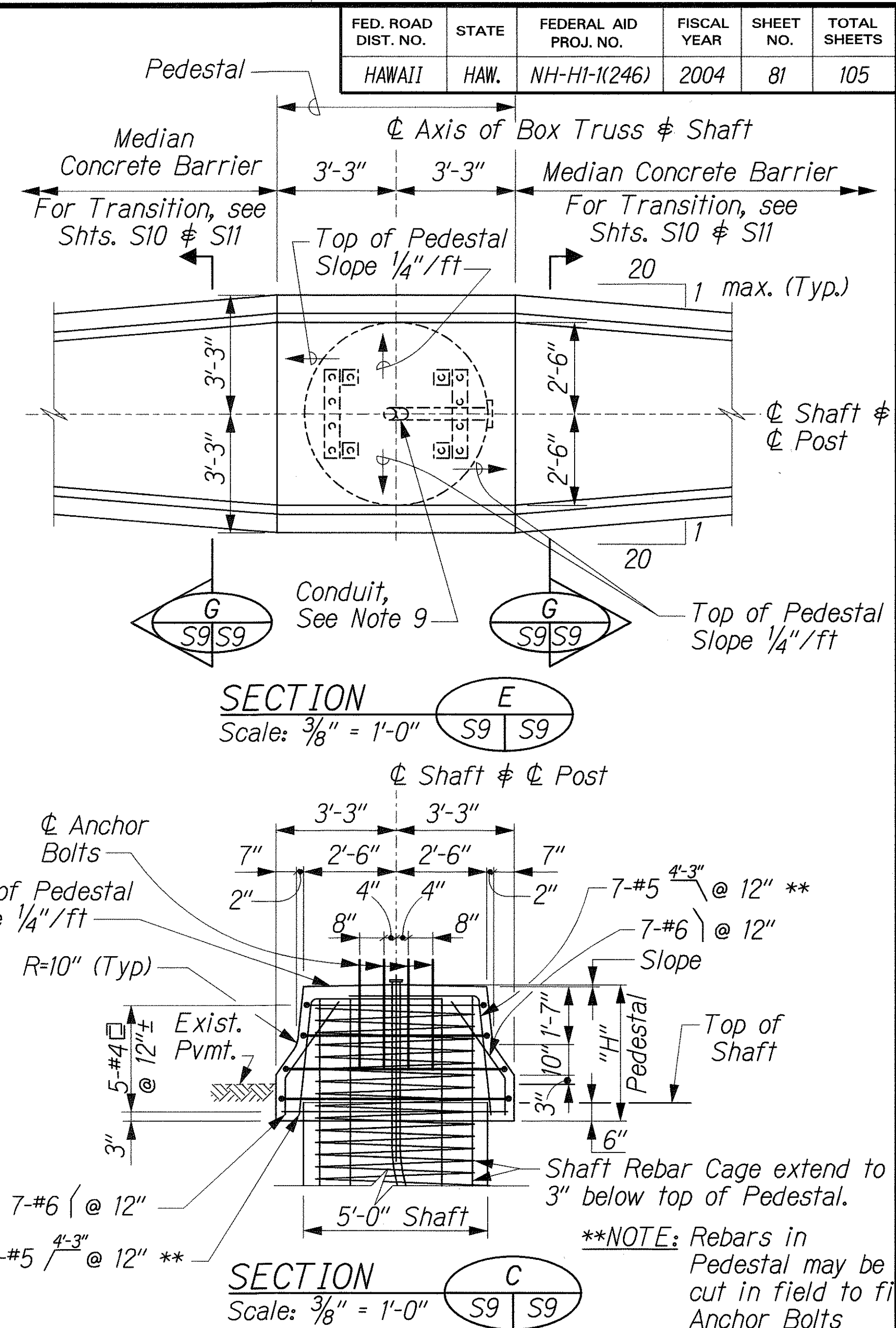


TABLE C				
Shaft Type	Base P Type *	Shaft Length	Top of Shaft Elevation	Ht. of Pedestal "H"
Y	Type I	25'-0"	--	4'-2 7/8"

*See Base P Details on Sht. S5

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**BOX TRUSS
FOUNDATION DETAILS**

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)
Scale: As Shown Date: Mar. 2, 2004

SHEET No. S9 OF 13 SHEETS

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