

04 - STRUCTURAL SUBSET INDEX OF DRAWINGS

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THE DESIGN APPEARS TO CONFORM TO APPLICABLE CRITERIA. APPROVAL IS NOT TO BE CONSTRUED TO MEAN THAT ALL ASPECTS OF THE DESIGN HAVE BEEN PERSONALLY CHECKED BY THE UNDERSIGNED.

 TRANSPORTATION PRINCIPAL ENGINEER

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013	DESIGNER/DRAFTER: MDG CHECKED BY: RDD SCALE AS NOTED	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION <small>Filename: ...01720387_SB_Sheet_Index.dgn</small>	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING APPROVED BY: 	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS DRAWING TITLE: SHEET INDEX	PROJECT NO. 172-387 DRAWING NO. S-1 SHEET NO. 04.01

GENERAL NOTES

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 DATED 2004, SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 2013 AND SPECIAL PROVISIONS

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS - 2013, WITH THE LAST INTERIM SPECIFICATIONS, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL-2003.

EXISTING DIMENSIONS: ALL DIMENSIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE THE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENT ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.

SIGN SUPPORT NOTES

THE STEEL USED FOR ROLLED SHAPES, PLATES, AND BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 (ASTM A709), GRADE 50.

ALL STEEL MEMBERS AND COMPONENTS SHALL BE HOT-DIP GALVANIZED, AFTER FABRICATION, IN ACCORDANCE WITH ASTM A123. ANY GALVANIZING DAMAGED DURING HANDLING OR INSTALLATION SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISIONS

ALL WELDING DETAILS, PROCEDURES AND TESTING METHODS SHALL CONFORM TO THE SPECIFICATIONS. ALL WELDING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE.

ALL HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A325, TYPE 1. NUTS SHALL CONFORM TO ASTM A563, GRADE DH. CIRCULAR, FLAT HARDENED STEEL WASHERS SHALL CONFORM TO ASTM F436. THE BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR ASTM B695, GRADE 50.

DIRECT TENSION INDICATORS SHALL CONFORM TO SPECIFICATIONS AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.

U-BOLTS AND THREADED RODS SHALL CONFORM TO ASTM A449. THE NUTS SHALL CONFORM TO ASTM A563, GRADE DH. THE WASHERS SHALL CONFORM TO ASTM F436. THE BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR ASTM B695, GRADE 50.

ALL BOLT HOLES SHALL BE STANDARD HOLES ($\frac{1}{16}$ " LARGER THAN THE BOLT DIAMETER), UNLESS OTHERWISE NOTED.

ALL HIGH STRENGTH BOLTS SHALL HAVE HARDENED WASHERS PLACED UNDER ALL ELEMENTS (NUT OR BOLT HEAD) TURNED DURING TENSIONING.

ALL BOLTS SHALL BE LUBRICATED PRIOR TO INSTALLATION TO ENSURE FREE ROTATION OF THE NUT ON THE BOLT THREAD.

THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS UNTIL THE TOTAL STRUCTURE IS ERECTED.

ALL REMOVAL AND INSTALLATION OF VERTICAL ATTACHMENT MEMBERS SHALL BE PAID UNDER "STRUCTURAL STEEL".

BOLTING REQUIREMENTS FOR EXISTING SIGN SUPPORTS AS FOLLOWS:

NEW STEEL TO NEW STEEL:

BOTH GALVANIZED FAYING SURFACES SHALL BE LIGHTLY SCORED BY WIRE BRUSHING AFTER GALVANIZING AND PRIOR TO ASSEMBLY. AFTER TENSIONING THE BOLTS, THE FAYING SURFACES SHALL BE IN FIRM CONTACT.

NEW STEEL TO EXISTING UNPAINTED GALVANIZING STEEL:

THE NEW GALVANIZED FAYING SURFACE SHALL BE LIGHTLY SCORED BY WIRE BRUSHING AFTER GALVANIZING AND PRIOR TO ASSEMBLY. THE EXISTING GALVANIZED FAYING SURFACE SHALL BE LIGHTLY SCORED PRIOR TO ASSEMBLY. AFTER TENSIONING THE BOLTS, THE FAYING SURFACES SHALL BE IN FIRM CONTACT.

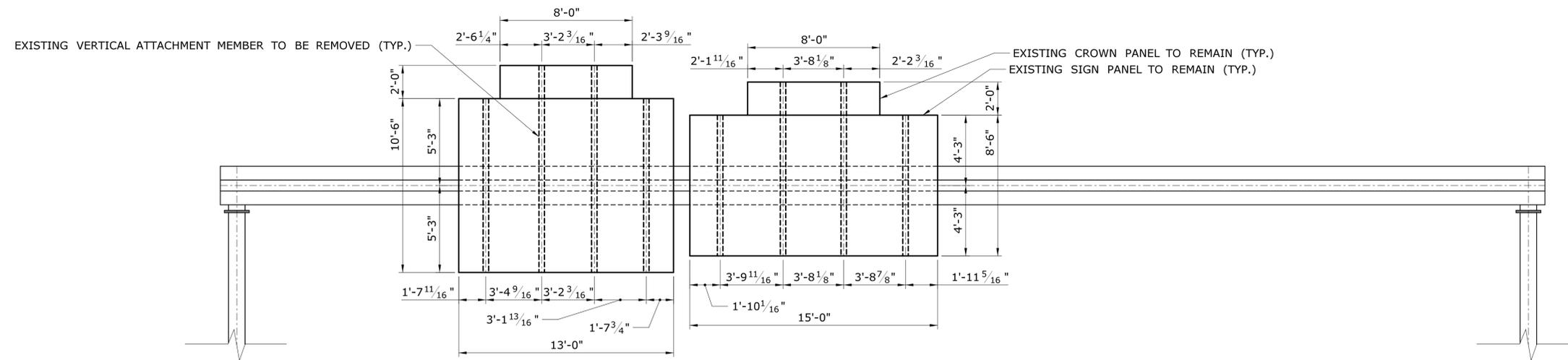
NEW STEEL TO EXISTING PAINTED STEEL:

THE NEW GALVANIZED FAYING SURFACE SHALL BE LIGHTLY SCORED BY WIRE BRUSHING AFTER GALVANIZING AND PRIOR TO ASSEMBLY. ALL PACK OR LAMINAR RUST SHALL BE REMOVED FROM EXISTING FAYING SURFACES THAT ARE TO REMAIN AND WILL BE ATTACHED TO THE NEW STRUCTURAL STEEL. BURRS OR OTHER IRREGULARITIES THAT PREVENT SOLID SEATING OF THE FAYING SURFACES SHALL BE REMOVED. THE FAYING SURFACE OF THE EXISTING STEEL SHALL BE FREE OF DIRT OR OTHER FOREIGN MATERIAL. LOOSE OR NON-ADHERENT PAINT SHALL BE REMOVED, BUT TIGHTLY ADHERENT PAINT NEED NOT BE REMOVED. AFTER TENSIONING THE BOLTS, THE FAYING SURFACES SHALL BE IN FIRM CONTACT.

ESTIMATED STRUCTURE QUANTITIES			
ITEM	UNIT	QUANTITY	
STRUCTURAL STEEL	LBS.	9,000	
MONOTUBE BRIDGE SIGN STRUCTURE	EA.	4	
DRILLED SHAFT TRAFFIC STRUCTURE FOUNDATION	EA.	8	
STRUCTURE MOUNTED SIGN SUPPORT	EA.	2	

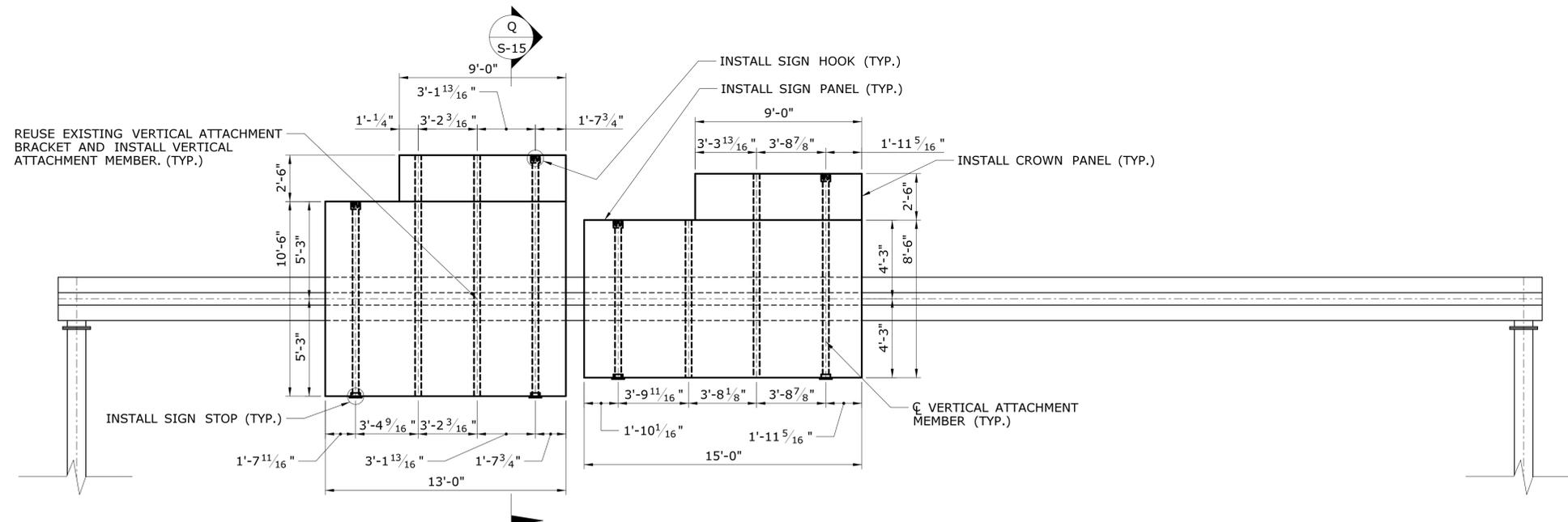
EXISTING COATING OF STEEL SIGN SUPPORTS				
SIGN SUPPORT NUMBER	PAINTED STEEL ONLY	GALVANIZED STEEL ONLY	PAINTED GALVANIZED STEEL	
21244			X	
21245A		X		
21245B		X		
21248			X	
21249			X	
21276			X	
21283			X	
21284			X	
21286			X	
21806		X		
21964			X	
21965			X	

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			



**EXISTING CONDITIONS
SIGN SUPPORT NO. 21244**

SCALE: 1/4" = 1'-0"



**FINAL CONDITIONS
SIGN SUPPORT NO. 21244**

SCALE: 1/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
MDG
CHECKED BY:
RDD
SCALE AS NOTED

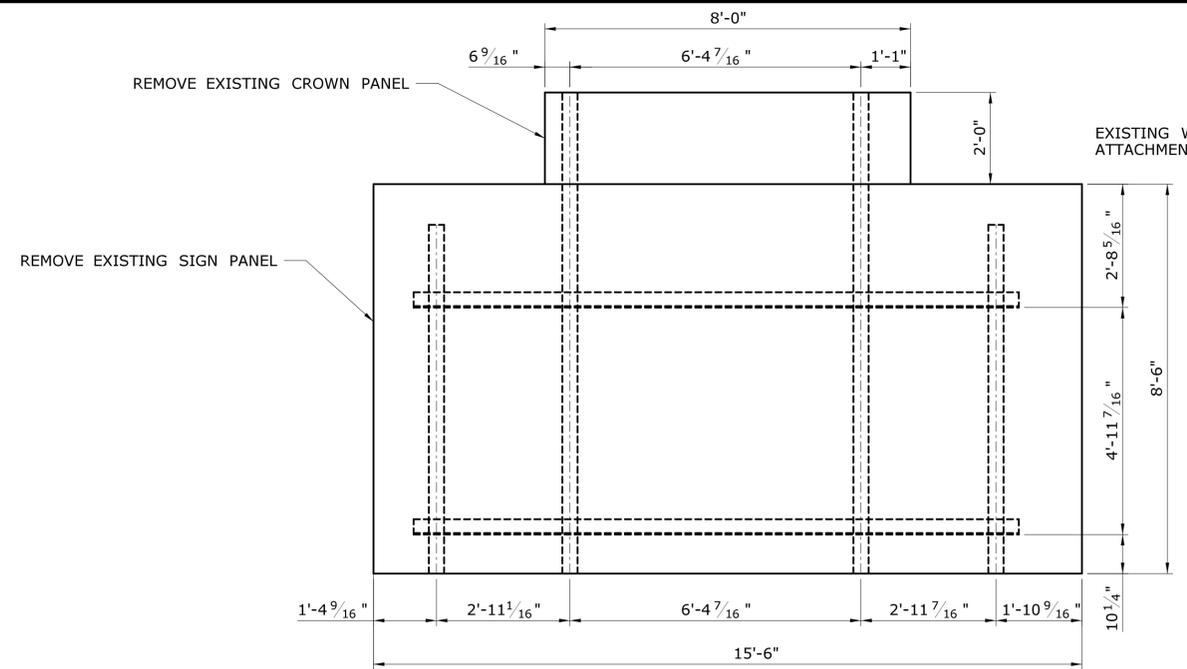


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OFFICE OF ENGINEERING
APPROVED BY:
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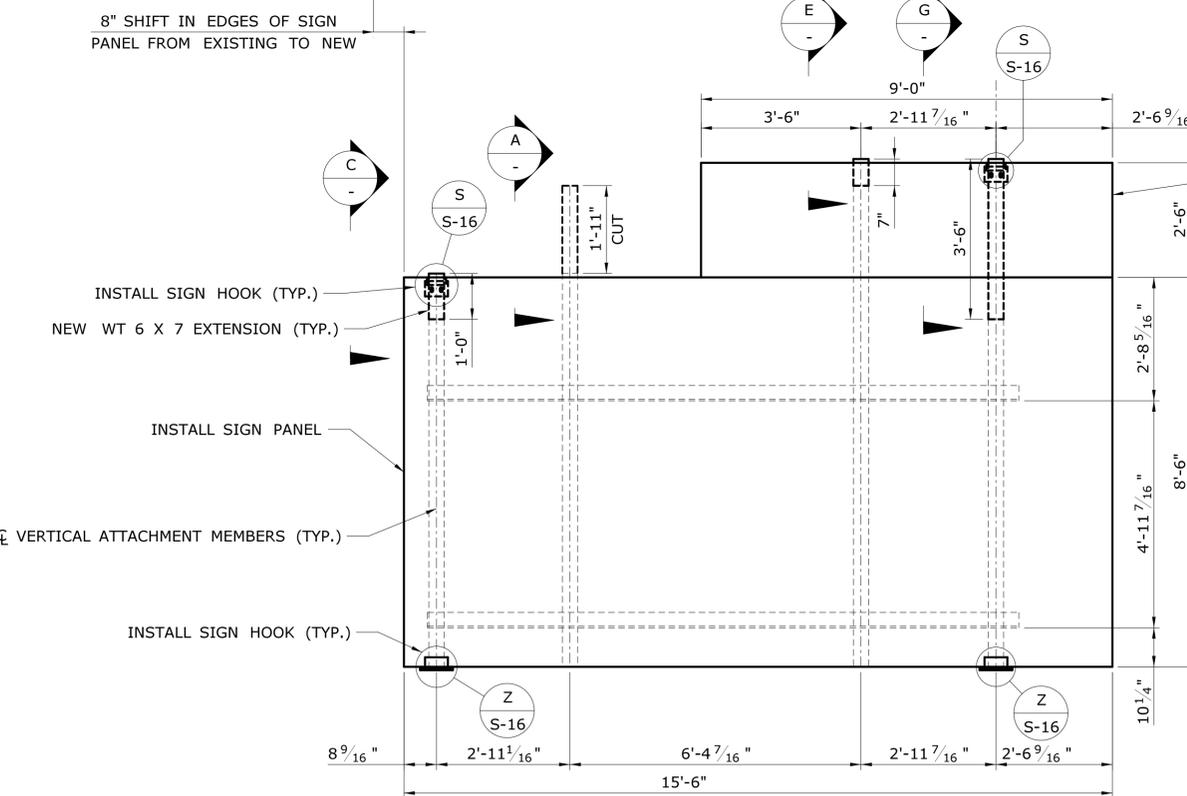
PROJECT TITLE:
**REPLACEMENT OF
HIGHWAY SIGNING
ON I-395**

TOWN:
VARIOUS
DRAWING TITLE:
**SIGN SUPPORT NO.
21244 DETAILS**

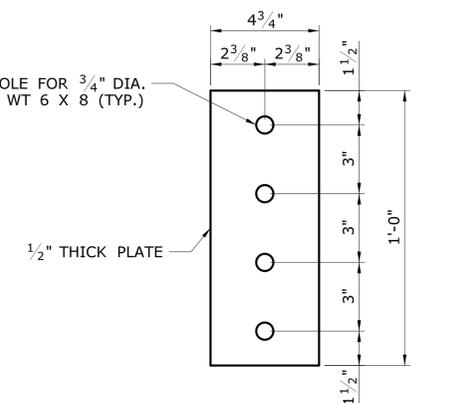
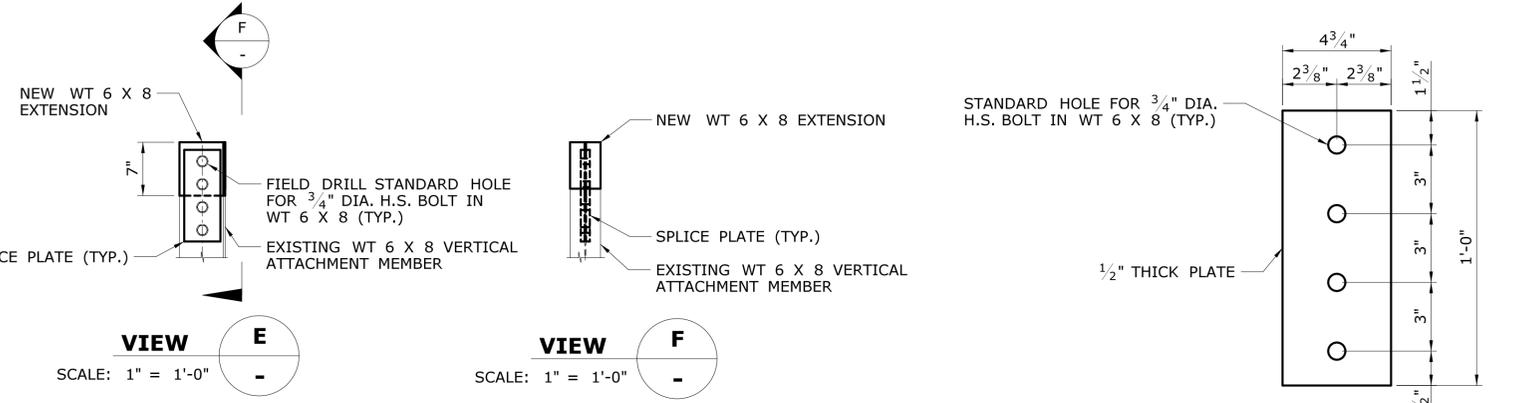
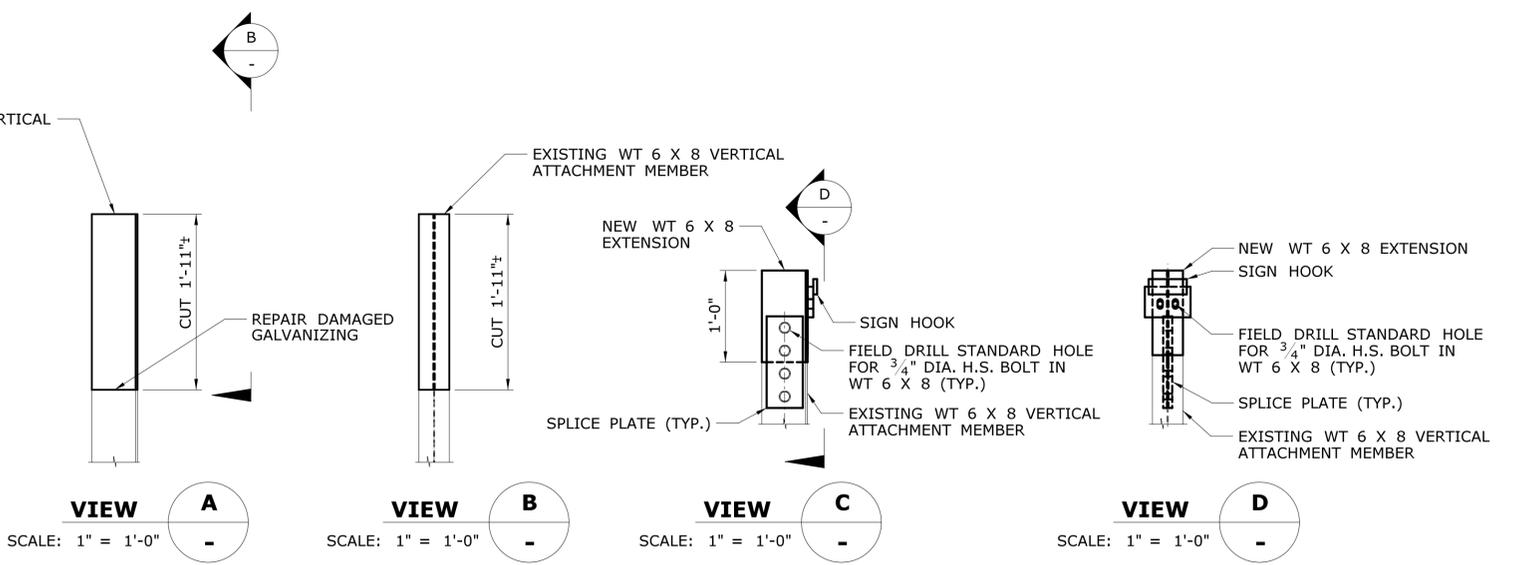
PROJECT NO.
172-387
DRAWING NO.
S-3
SHEET NO.
04.03



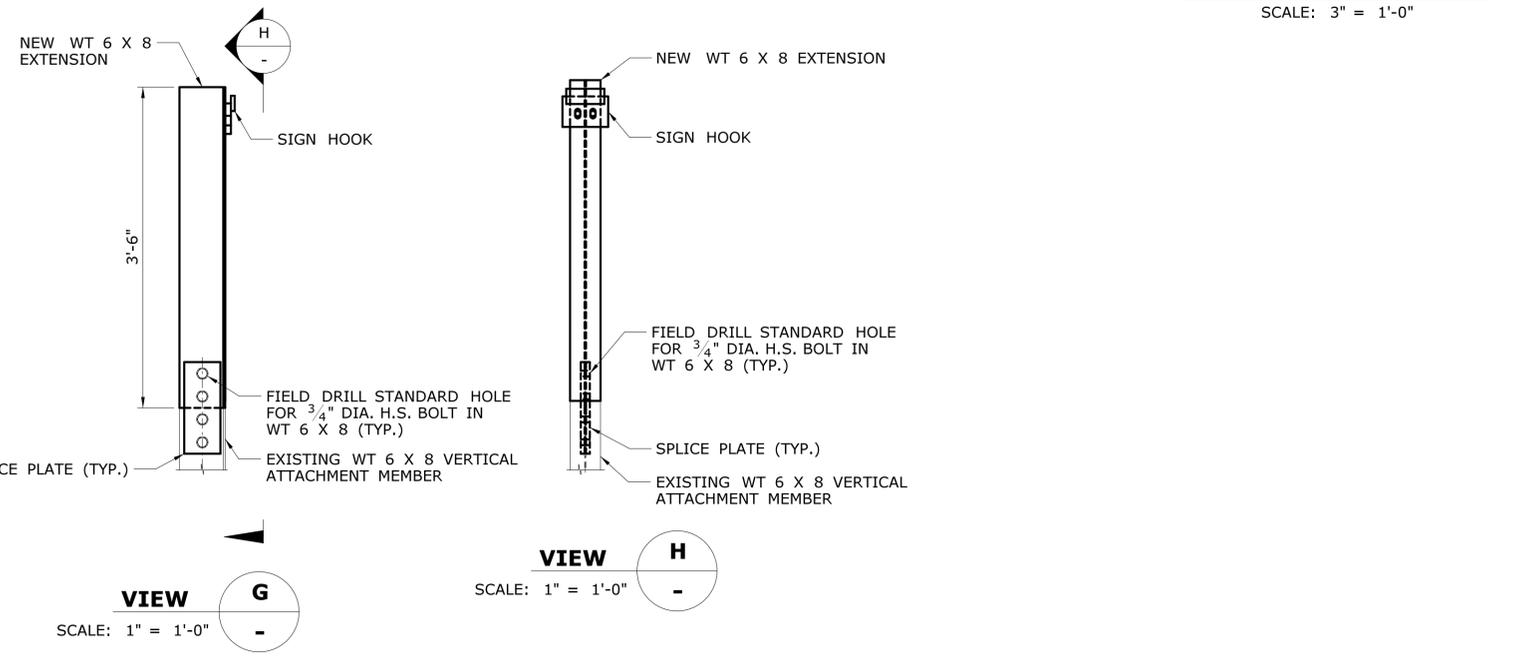
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EXISTING CONDITIONS**
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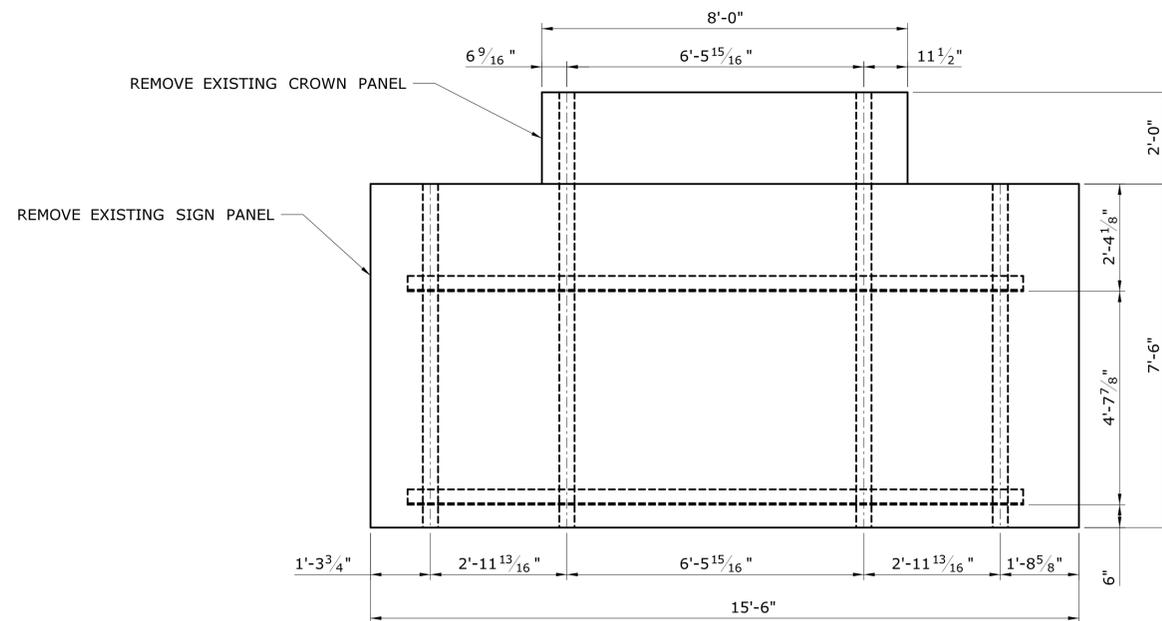
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FINAL CONDITIONS**
SCALE: 1/2" = 1'-0"



SPLICE PLATE DETAIL
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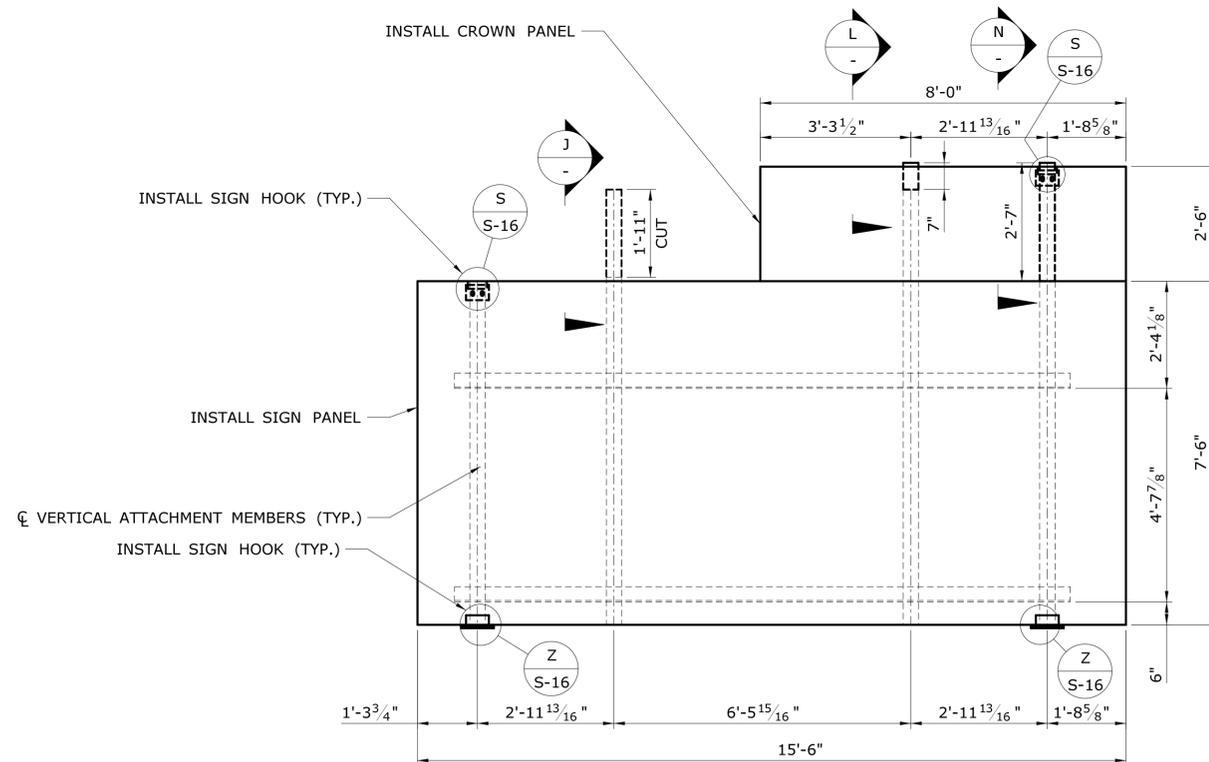


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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			



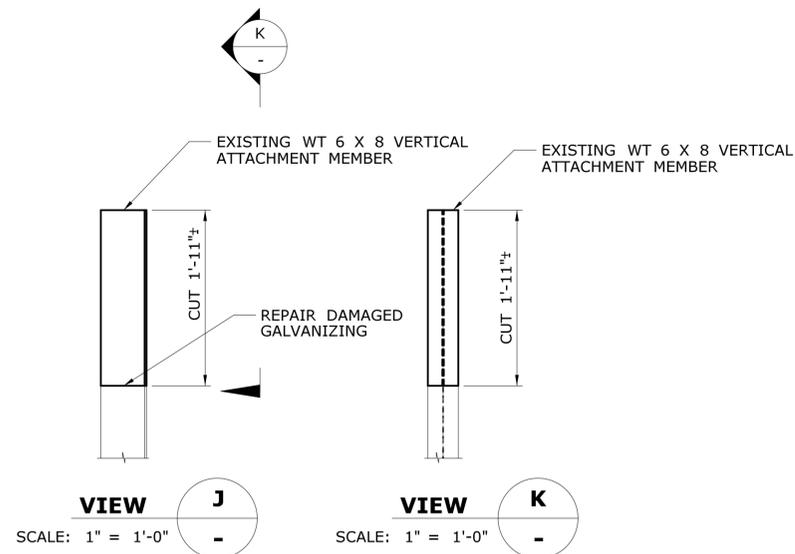
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SCALE: 1/2" = 1'-0"



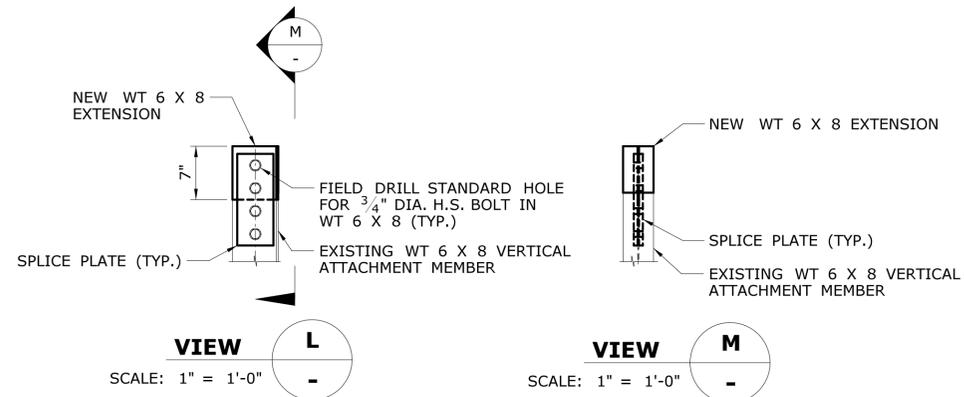
**FINAL CONDITIONS
SIGN SUPPORT NO. 21245B**

SCALE: 1/2" = 1'-0"



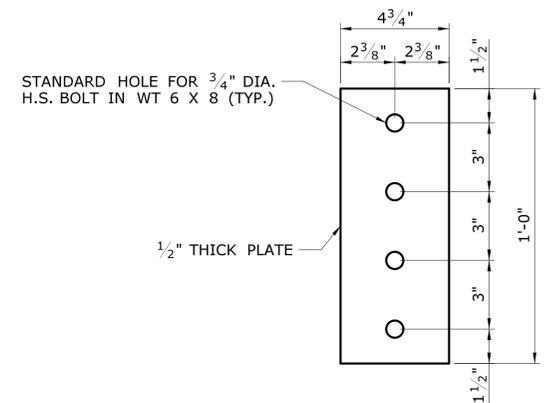
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VIEW K
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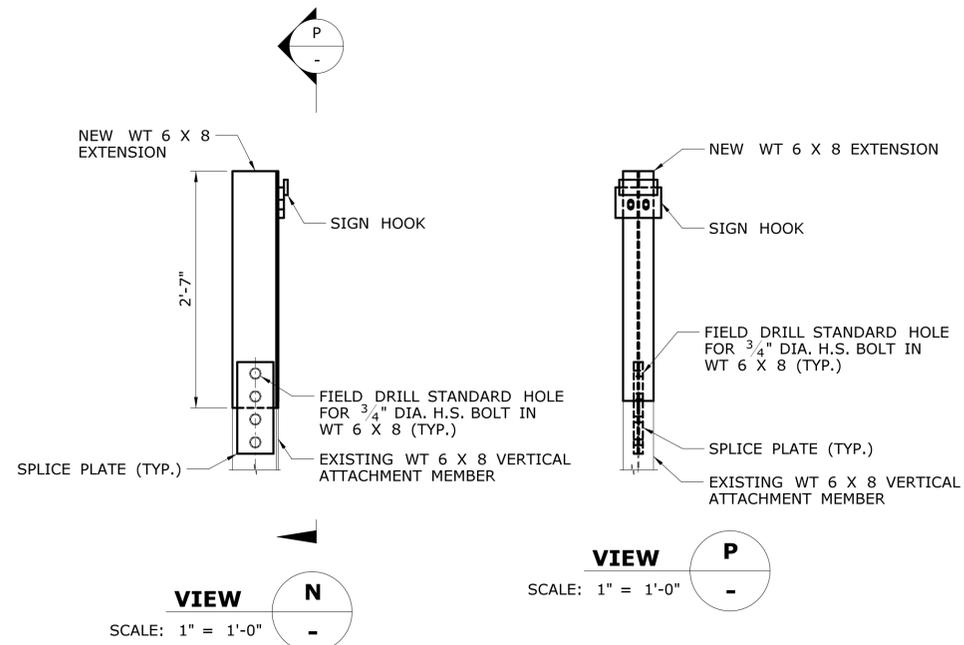
VIEW L
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VIEW M
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SPlice PLATE DETAIL

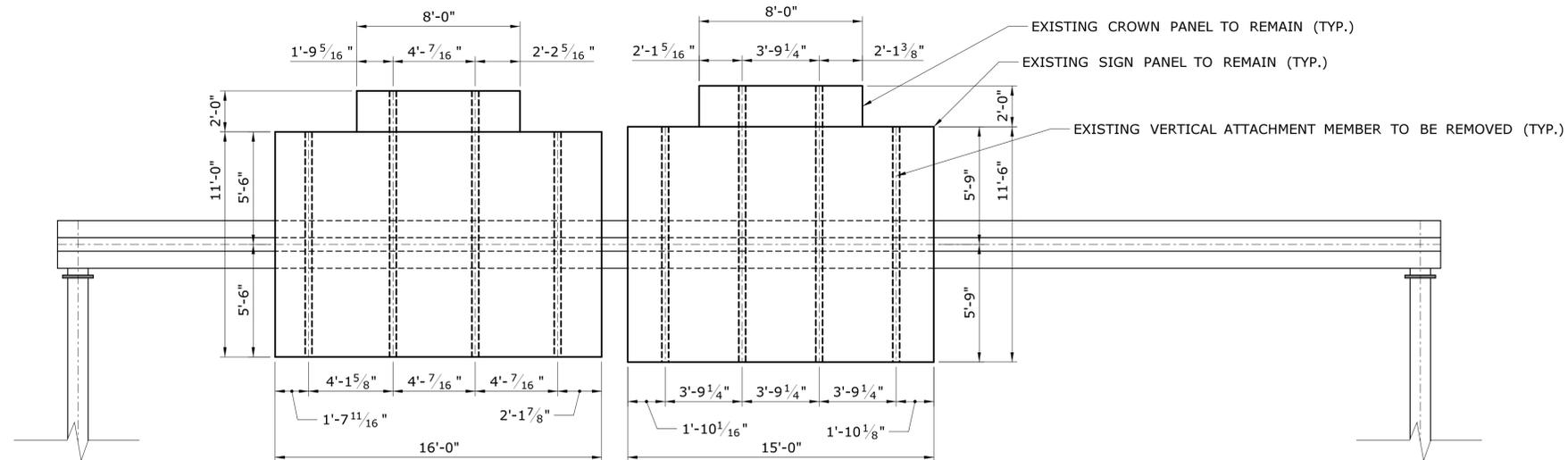
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VIEW N
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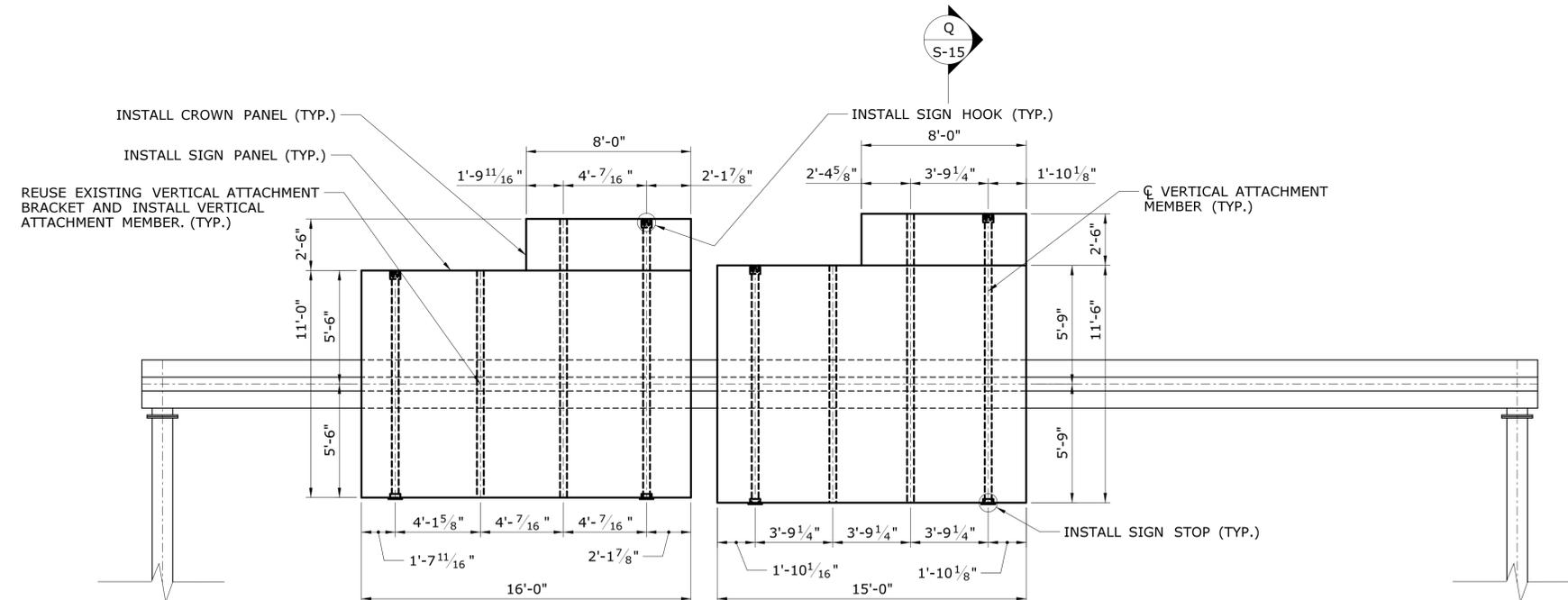
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REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013	DESIGNER/DRAFTER: MDG	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN:	PROJECT NO. 172-387
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EXISTING CONDITIONS
SIGN SUPPORT NO. 21248

SCALE: 1/4" = 1'-0"



FINAL CONDITIONS
SIGN SUPPORT NO. 21248

SCALE: 1/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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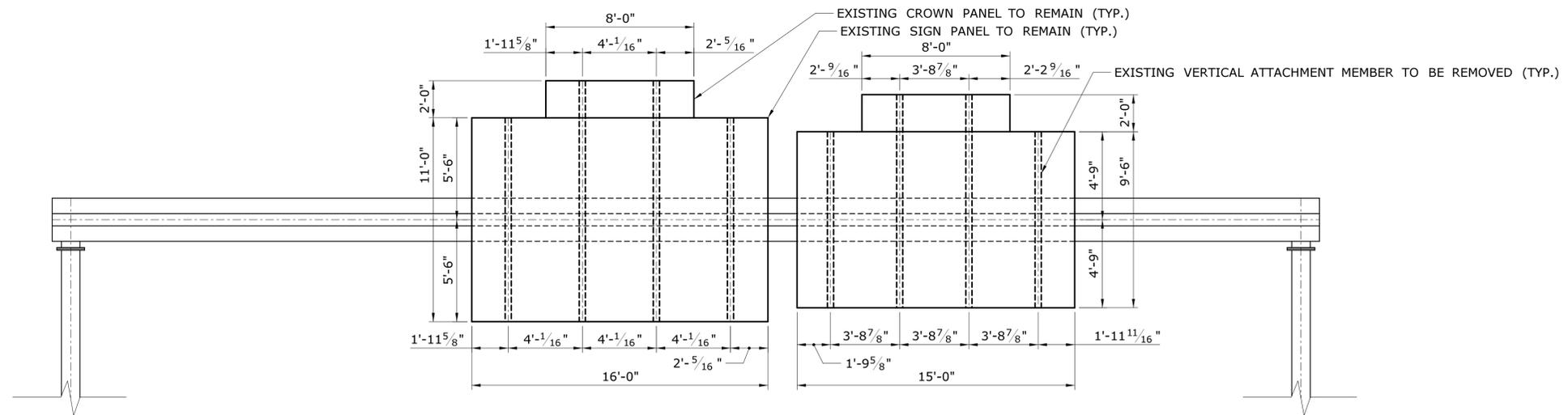


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APPROVED BY:
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PROJECT TITLE:
REPLACEMENT OF HIGHWAY SIGNING ON I-395

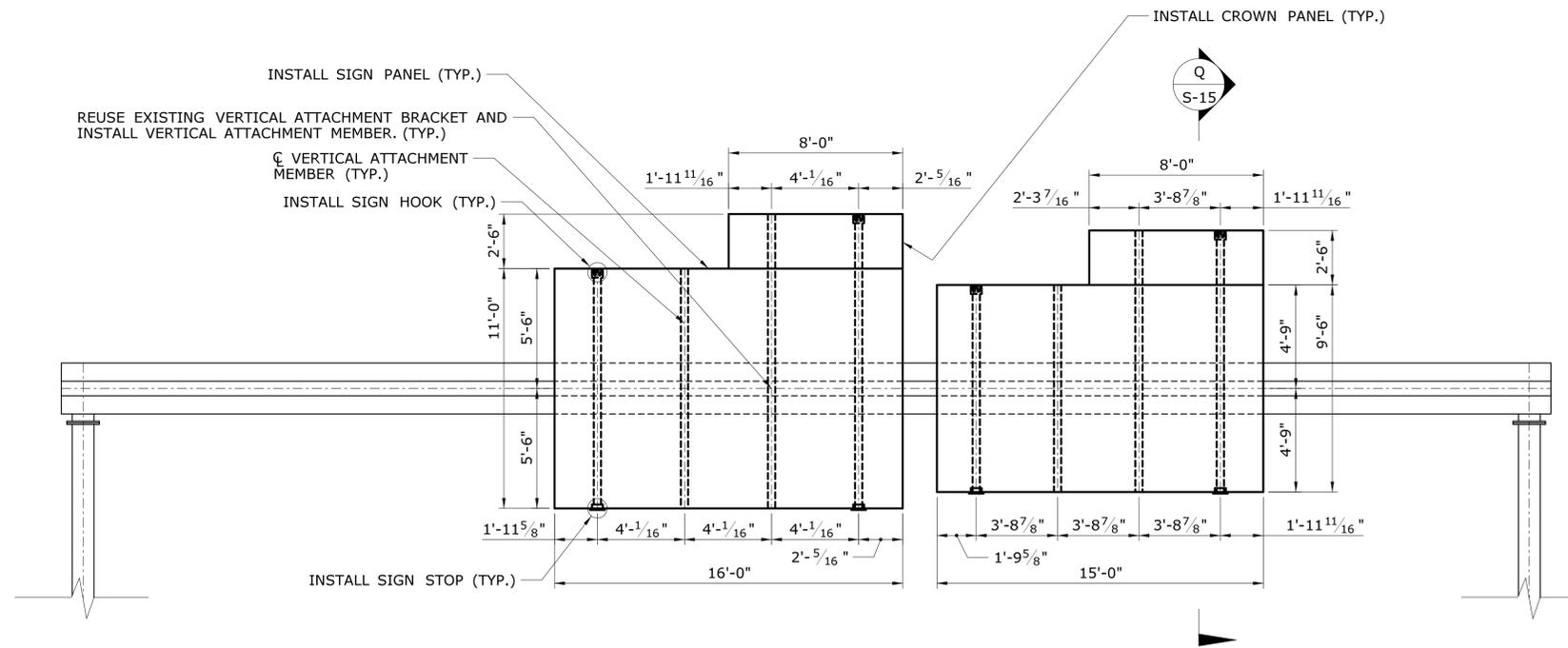
TOWN:
VARIOUS
DRAWING TITLE:
SIGN SUPPORT NO. 21248 DETAILS

PROJECT NO.
172-387
DRAWING NO.
S-6
SHEET NO.
04.06



EXISTING CONDITIONS
SIGN SUPPORT NO. 21249

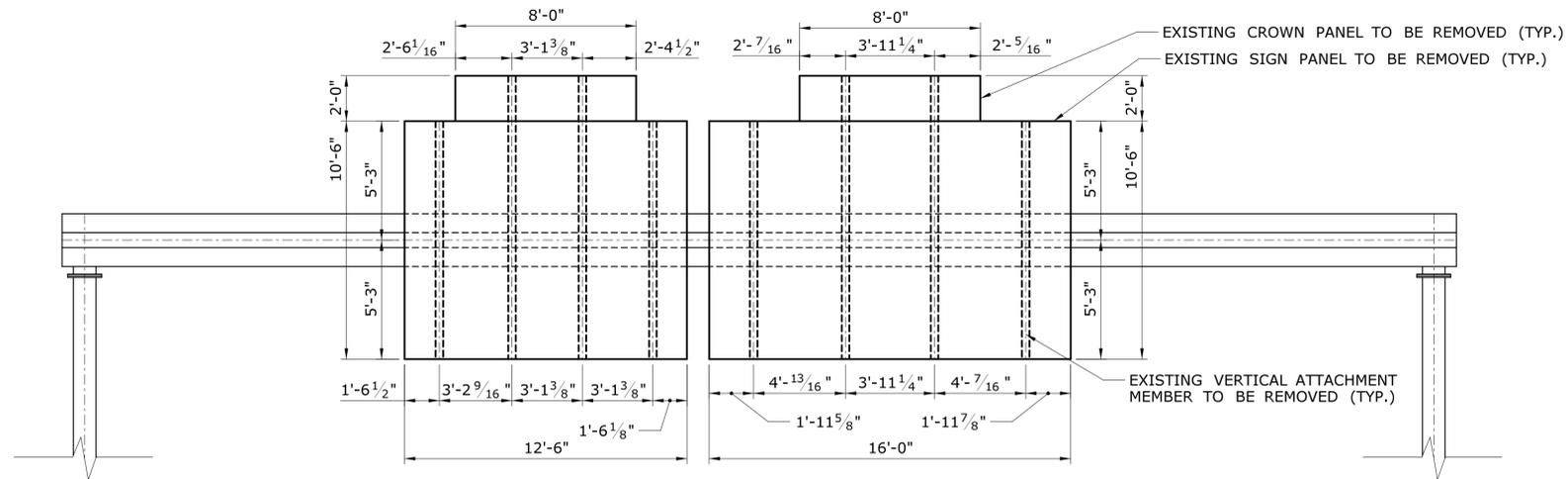
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FINAL CONDITIONS
SIGN SUPPORT NO. 21249

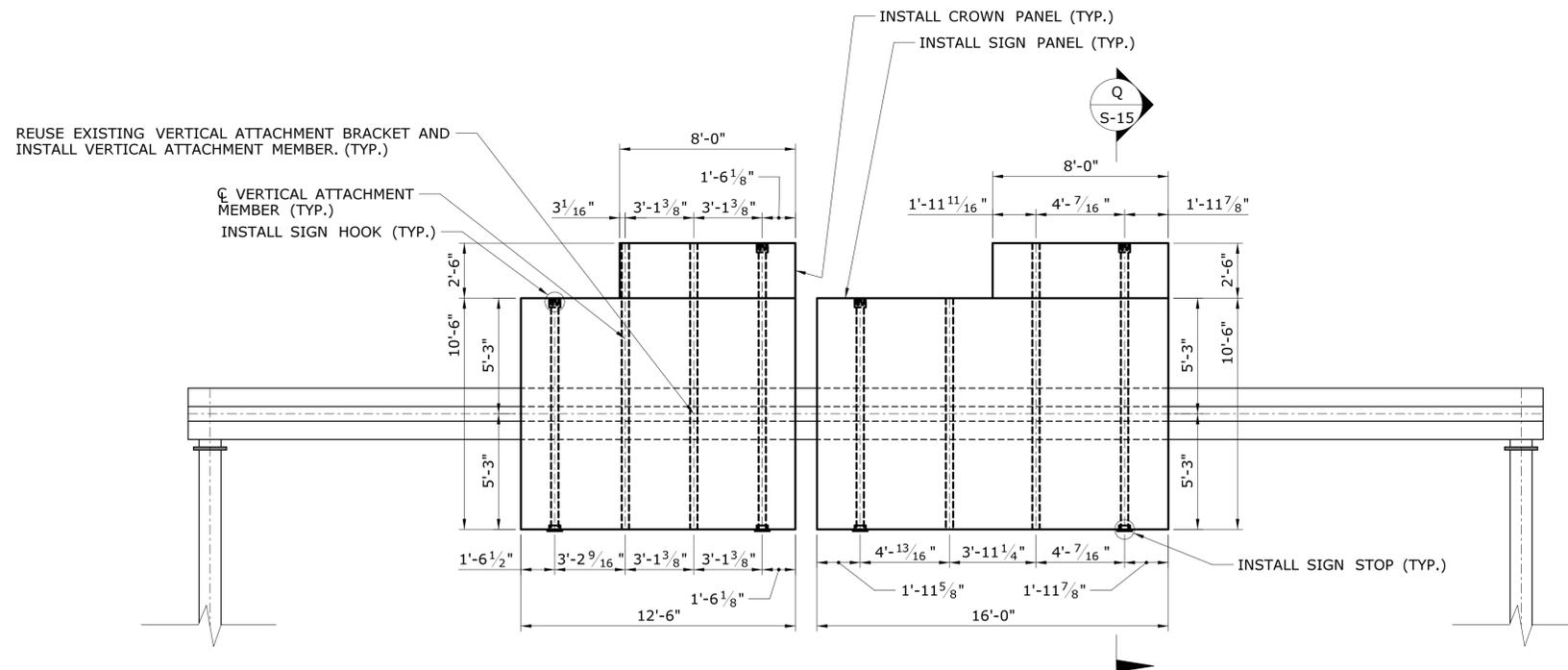
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REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013	DESIGNER/DRAFTER: MDG	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	PROJECT NO. 172-387
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**EXISTING CONDITIONS
SIGN SUPPORT NO. 21276**

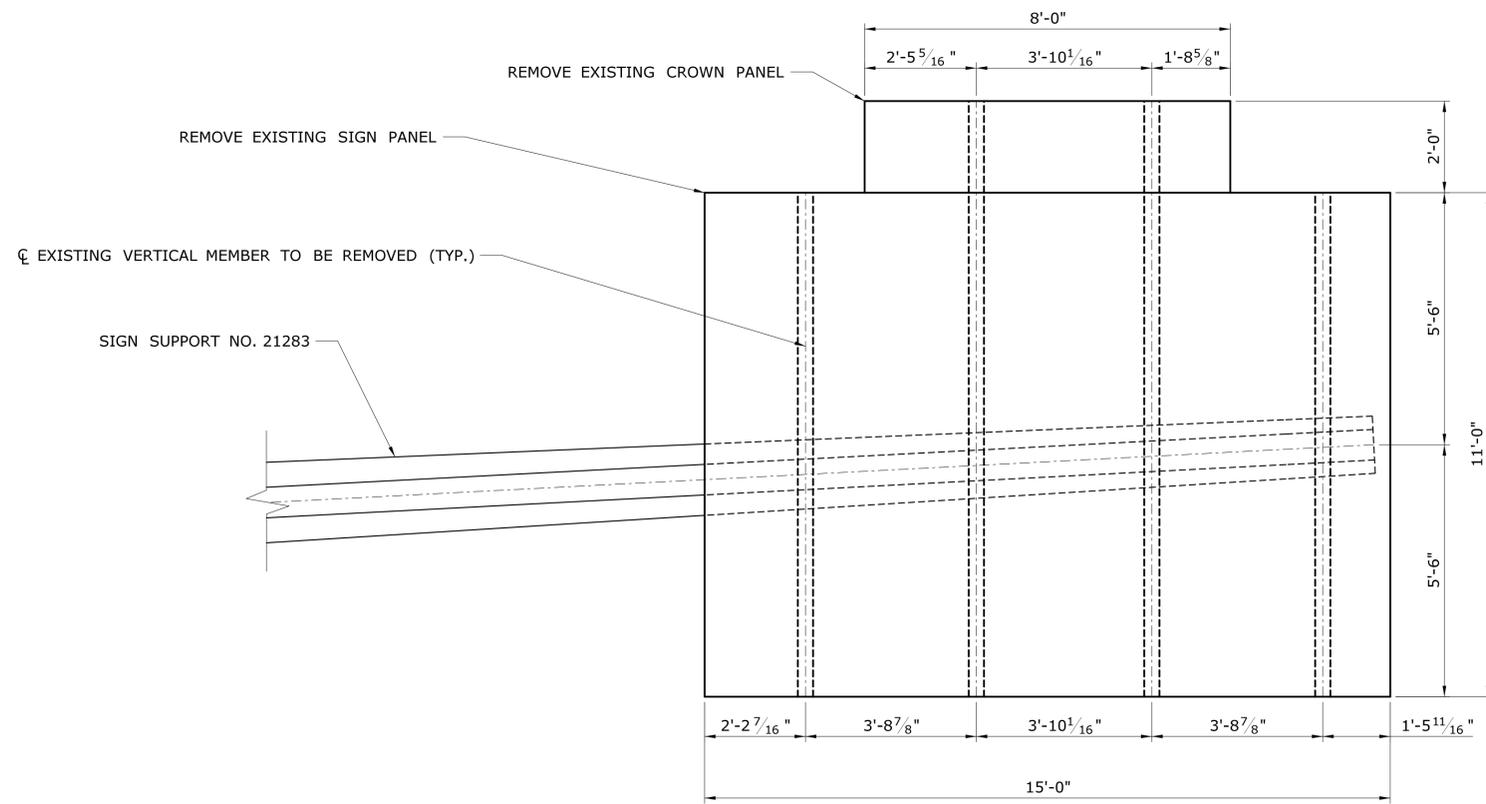
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**FINAL CONDITIONS
SIGN SUPPORT NO. 21276**

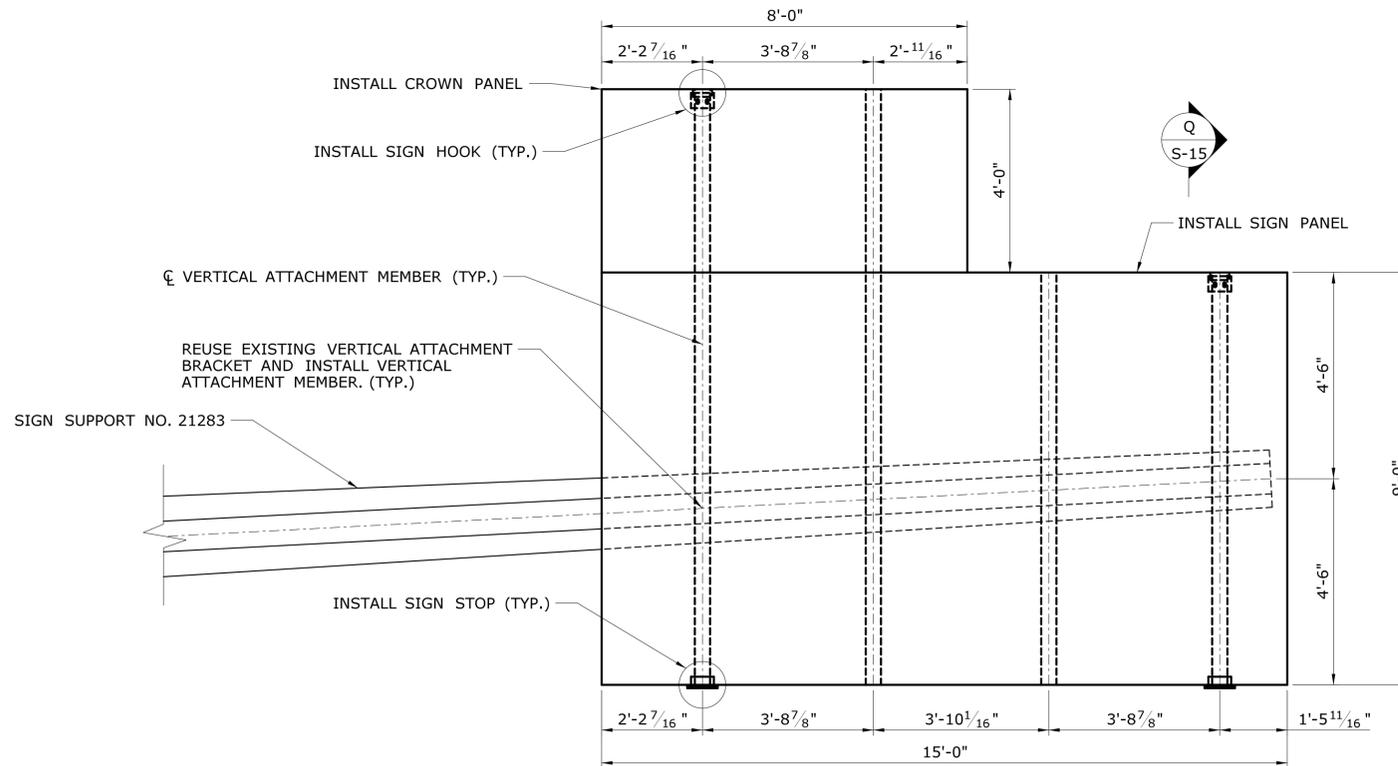
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			



**SIGN SUPPORT NO. 21283
EXISTING CONDITIONS**

SCALE: 1/2" = 1'-0"



**SIGN SUPPORT NO. 21283
FINAL CONDITIONS**

SCALE: 1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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SCALE AS NOTED



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APPROVED BY:
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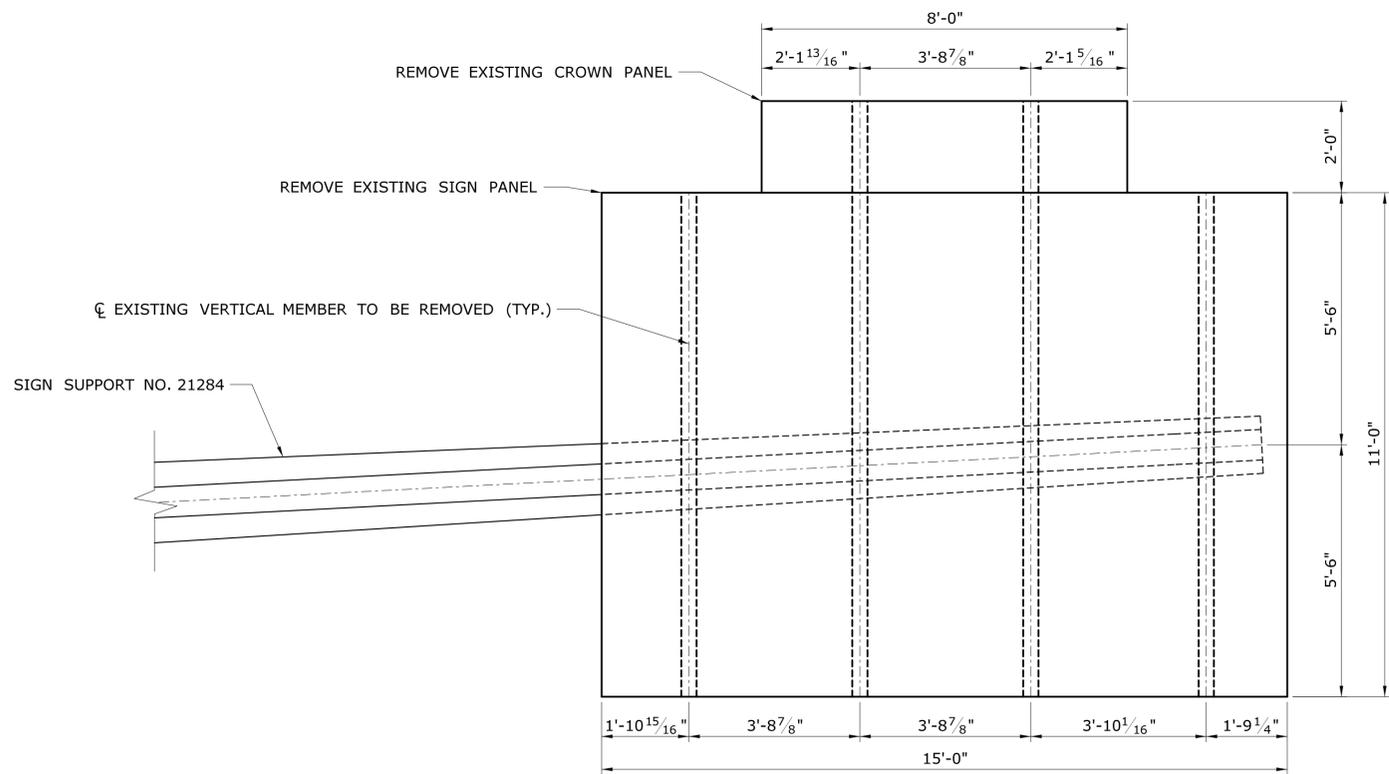
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**REPLACEMENT OF
HIGHWAY SIGNING
ON I-395**

TOWN:
VARIOUS
DRAWING TITLE:
**SIGN SUPPORT NO. 21283
DETAILS**

PROJECT NO.
172-387
DRAWING NO.
S-9
SHEET NO.
04.09

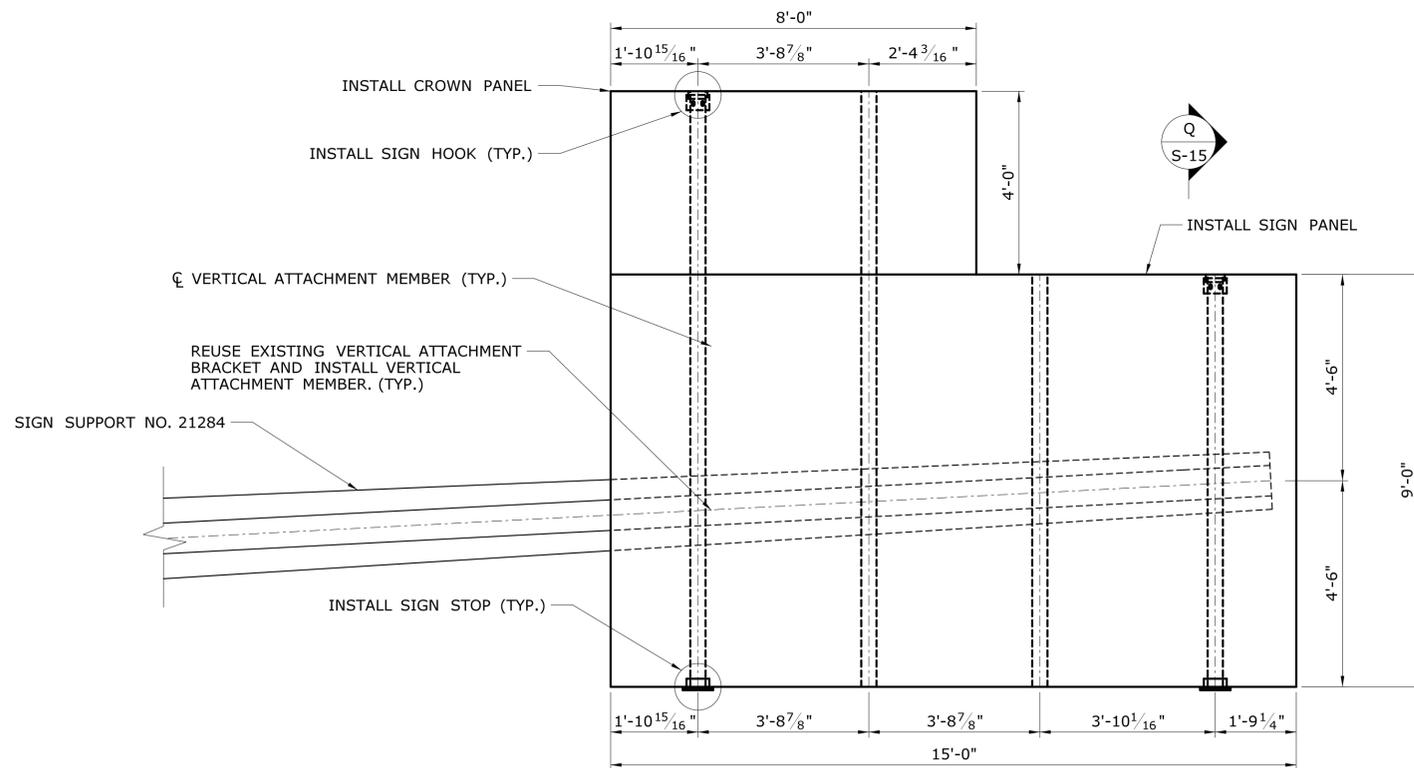
Plotted Date: 7/10/2013

Filename: ...01720387_SB_21T_Support21283.dgn



**SIGN SUPPORT NO. 21284
EXISTING CONDITIONS**

SCALE: 1/2" = 1'-0"



**SIGN SUPPORT NO. 21284
FINAL CONDITIONS**

SCALE: 1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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SCALE AS NOTED


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



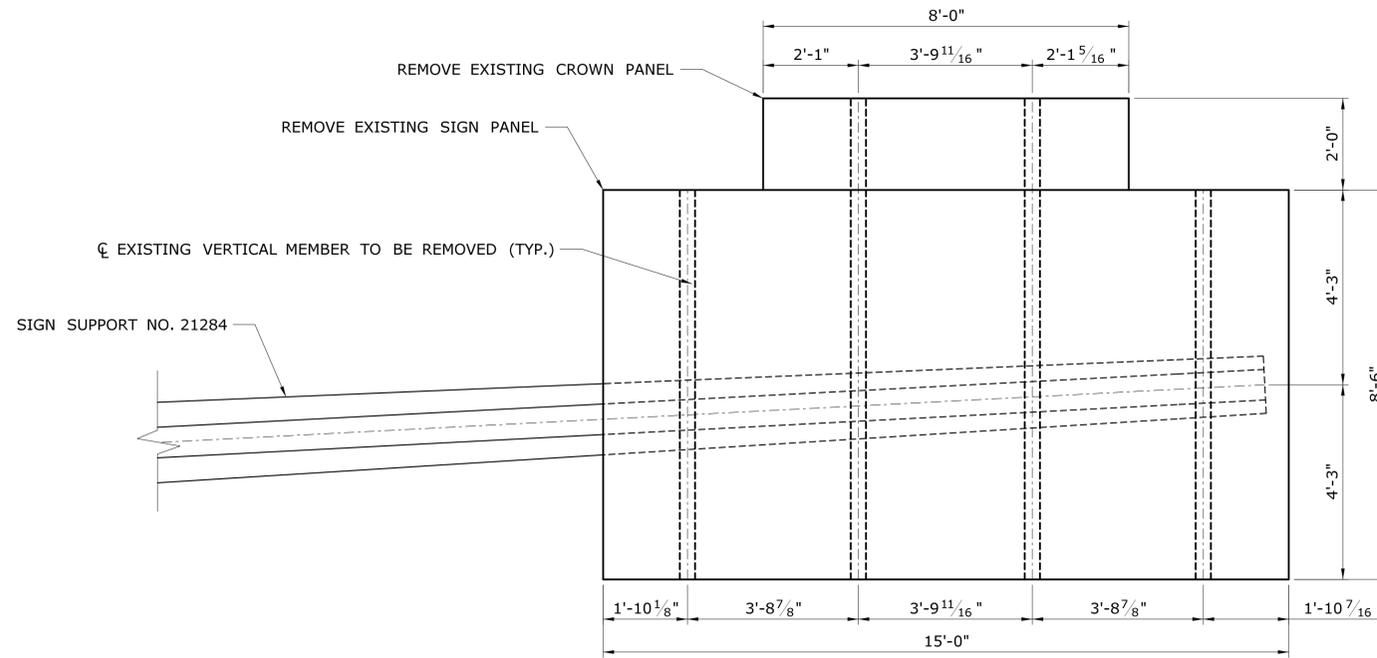
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PROJECT TITLE:
**REPLACEMENT OF
HIGHWAY SIGNING
ON I-395**

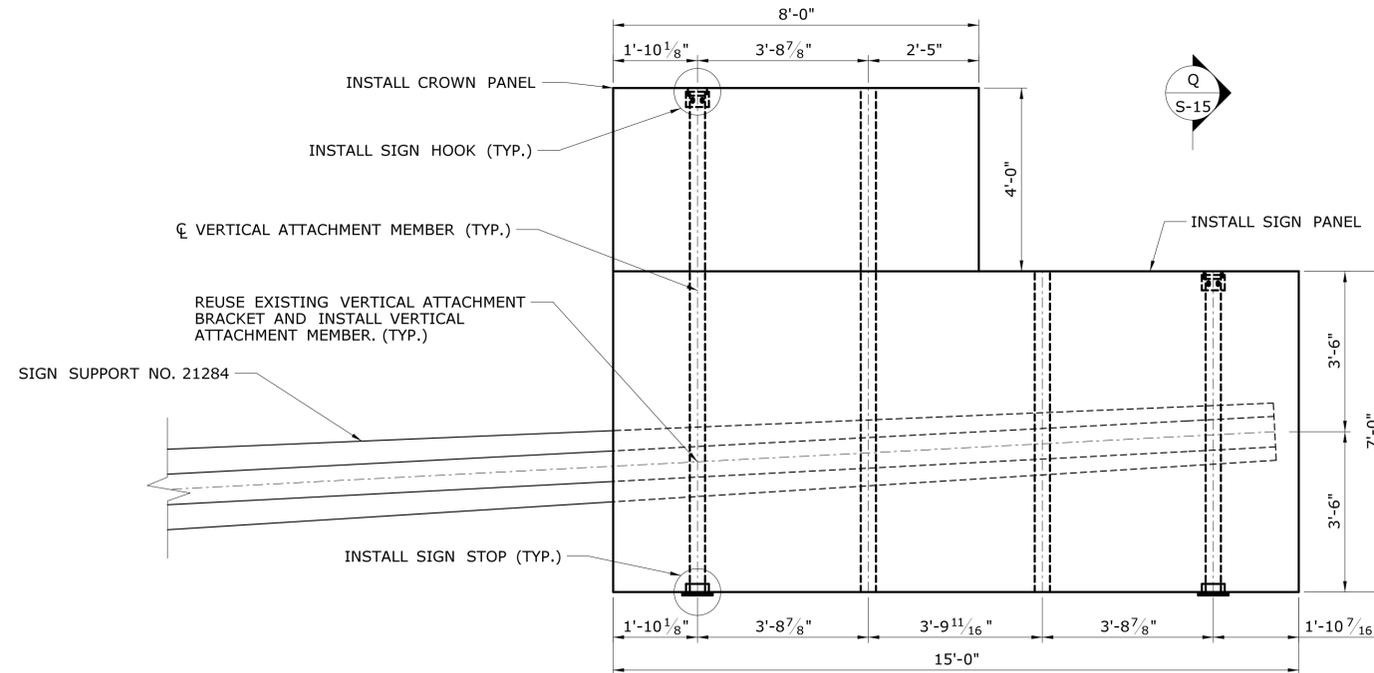
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VARIOUS
DRAWING TITLE:
**SIGN SUPPORT NO. 21284
DETAILS**

PROJECT NO.
172-387
DRAWING NO.
S-10
SHEET NO.
04.10



**SIGN SUPPORT NO. 21286
EXISTING CONDITIONS**

SCALE: 1/2" = 1'-0"



**SIGN SUPPORT NO. 21286
FINAL CONDITIONS**

SCALE: 1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

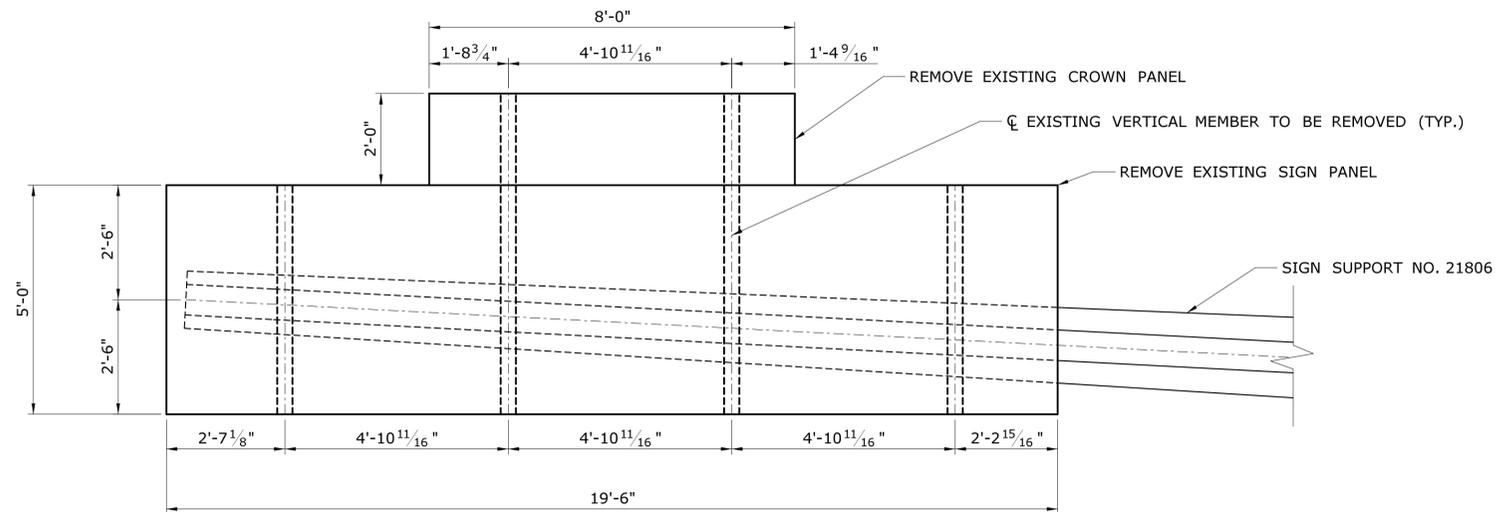
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PROJECT TITLE:
**REPLACEMENT OF
HIGHWAY SIGNING
ON I-395**

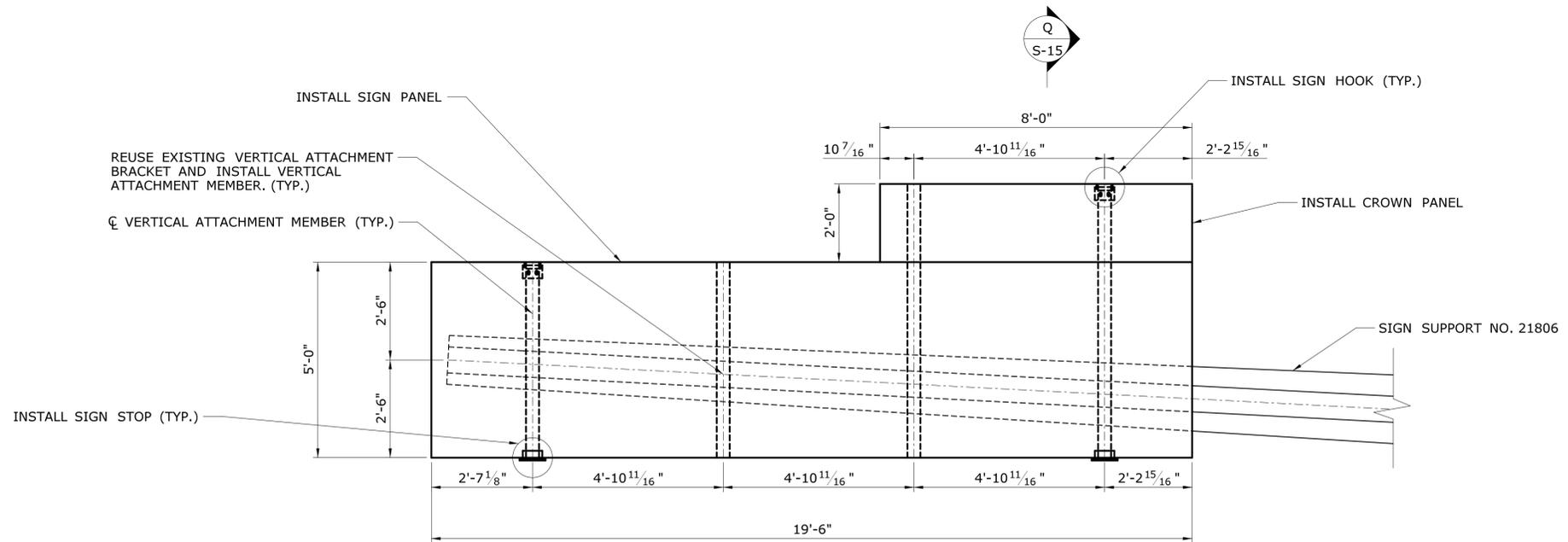
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VARIOUS
DRAWING TITLE:
**SIGN SUPPORT NO. 21286
DETAILS**

PROJECT NO.
172-387
DRAWING NO.
S-11
SHEET NO.
04.11



**SIGN SUPPORT NO. 21806
EXISTING CONDITIONS**

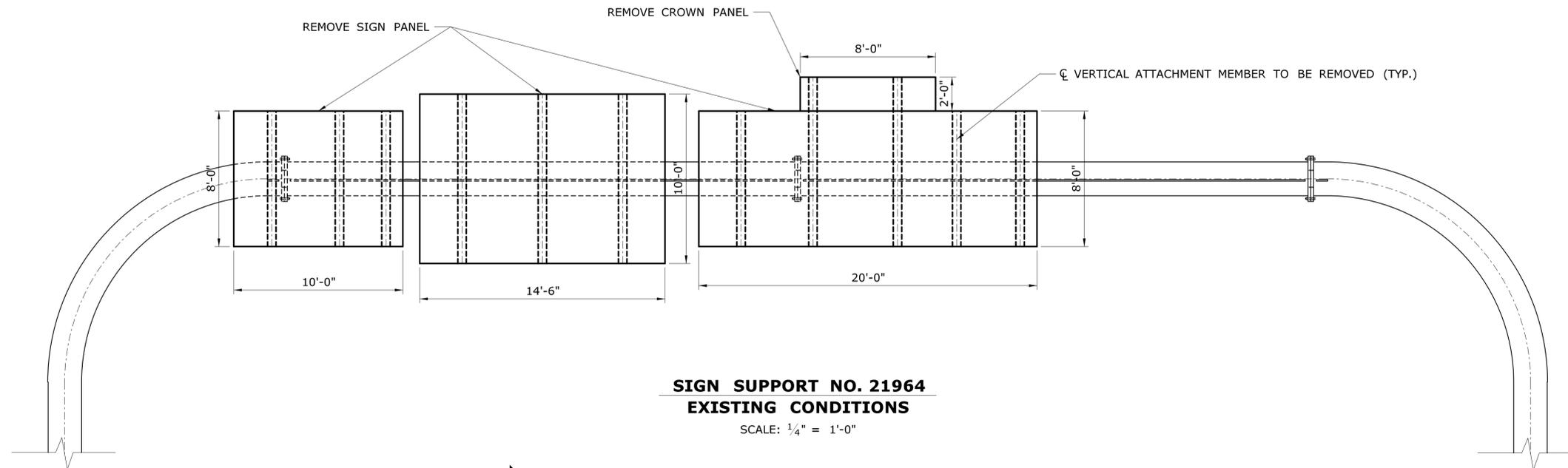
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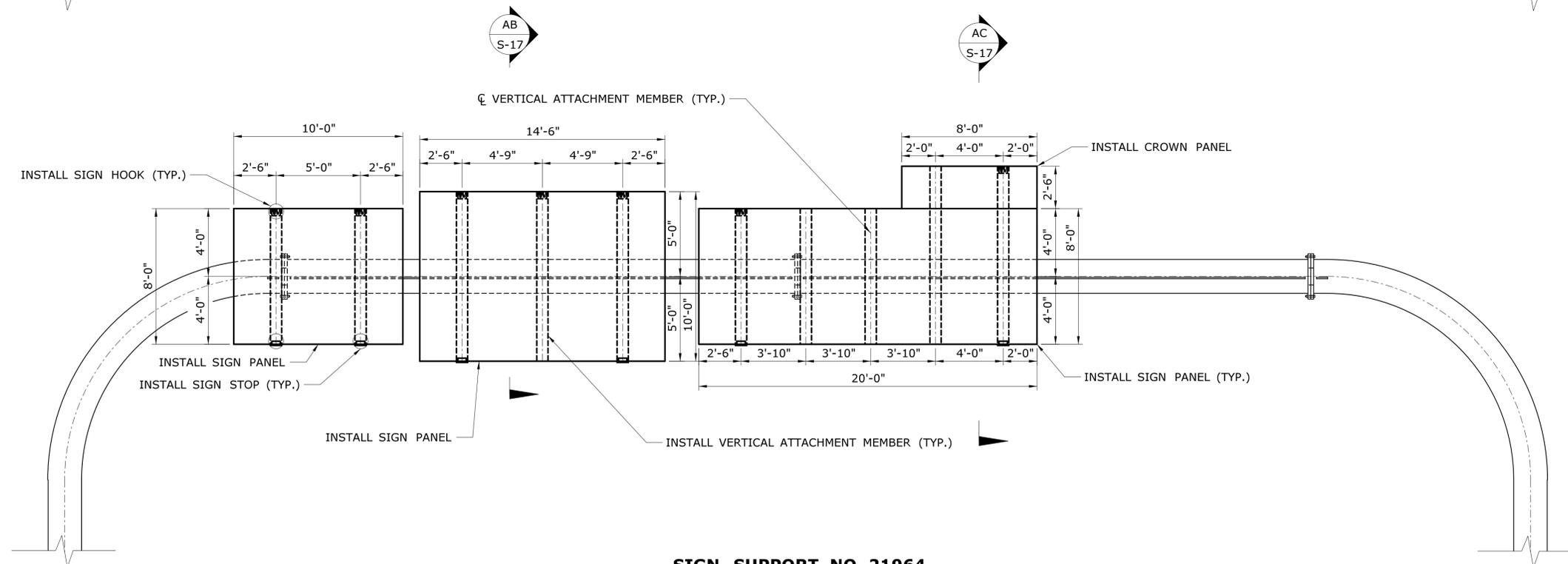
**SIGN SUPPORT NO. 21806
FINAL CONDITIONS**

SCALE: 1/2" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MDG CHECKED BY: RDD SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...01720387_SB_21T_Support21806.dgn	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: 	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS DRAWING TITLE: SIGN SUPPORT NO. 21806 DETAILS	PROJECT NO. 172-387 DRAWING NO. S-12 SHEET NO. 04.12
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			



SIGN SUPPORT NO. 21964
EXISTING CONDITIONS
 SCALE: 1/4" = 1'-0"



SIGN SUPPORT NO. 21964
FINAL CONDITIONS
 SCALE: 1/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
MDG
 CHECKED BY:
RDD
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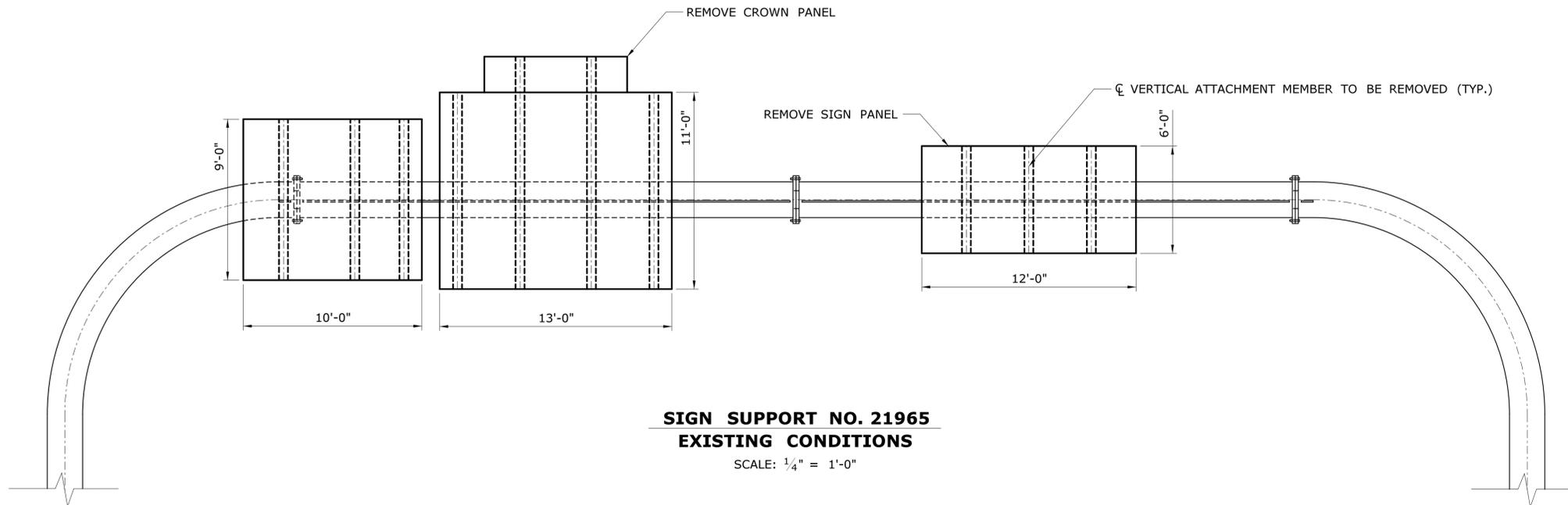


SIGNATURE/
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OFFICE OF ENGINEERING
 APPROVED BY:
[Signature]

PROJECT TITLE:
**REPLACEMENT OF
 HIGHWAY SIGNING
 ON I-395**

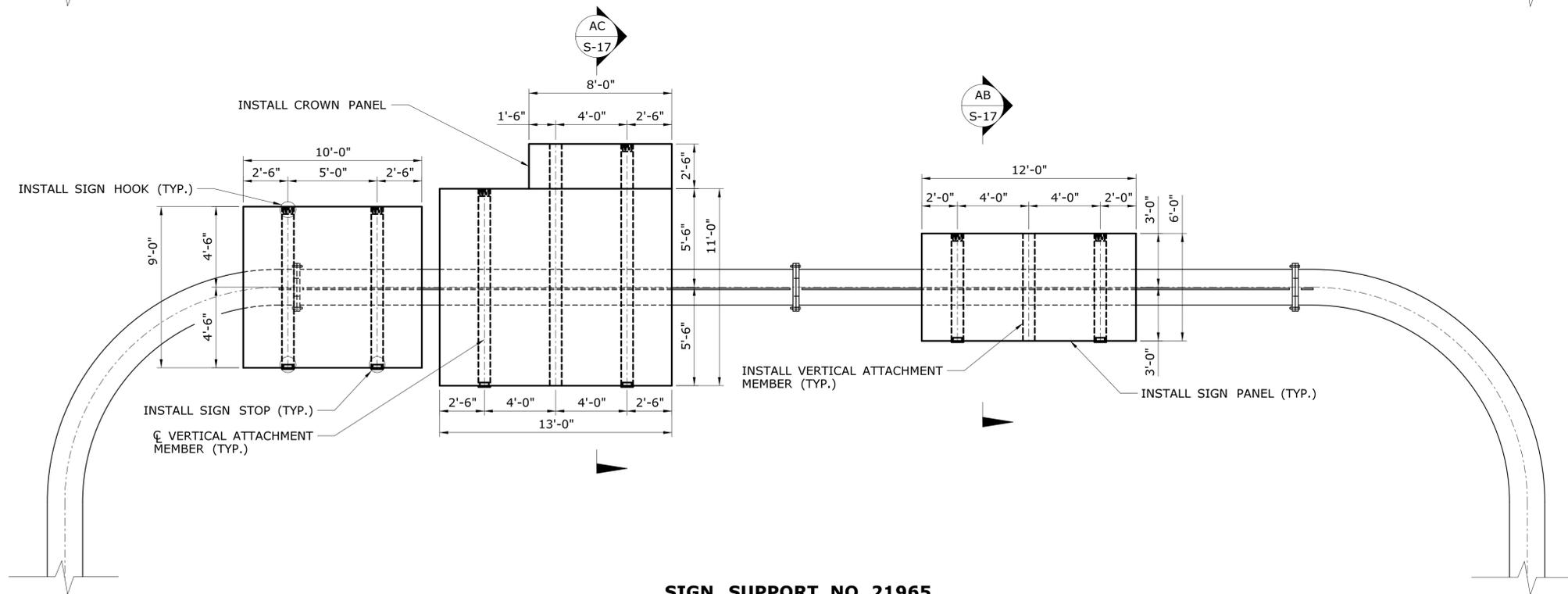
TOWN:
VARIOUS
 DRAWING TITLE:
**SIGN SUPPORT NO. 21964
 DETAILS**

PROJECT NO.
172-387
 DRAWING NO.
S-13
 SHEET NO.
04.13



**SIGN SUPPORT NO. 21965
EXISTING CONDITIONS**

SCALE: 1/4" = 1'-0"



**SIGN SUPPORT NO. 21965
FINAL CONDITIONS**

SCALE: 1/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
MDG
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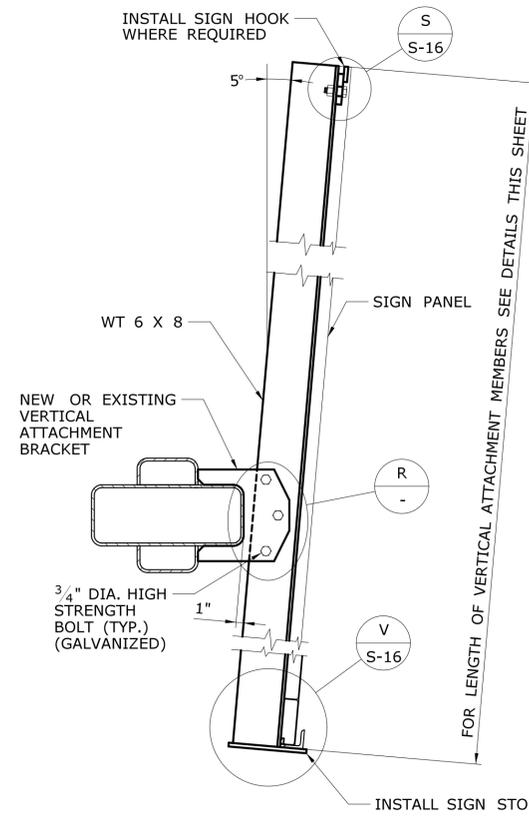


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APPROVED BY:
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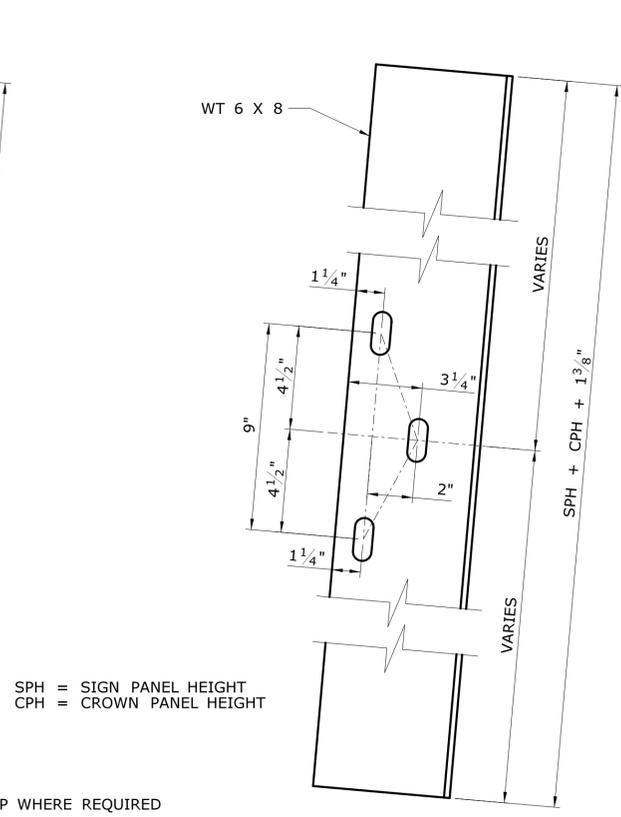
PROJECT TITLE:
**REPLACEMENT OF
HIGHWAY SIGNING
ON I-395**

TOWN:
VARIOUS
DRAWING TITLE:
**SIGN SUPPORT NO. 21965
DETAILS**

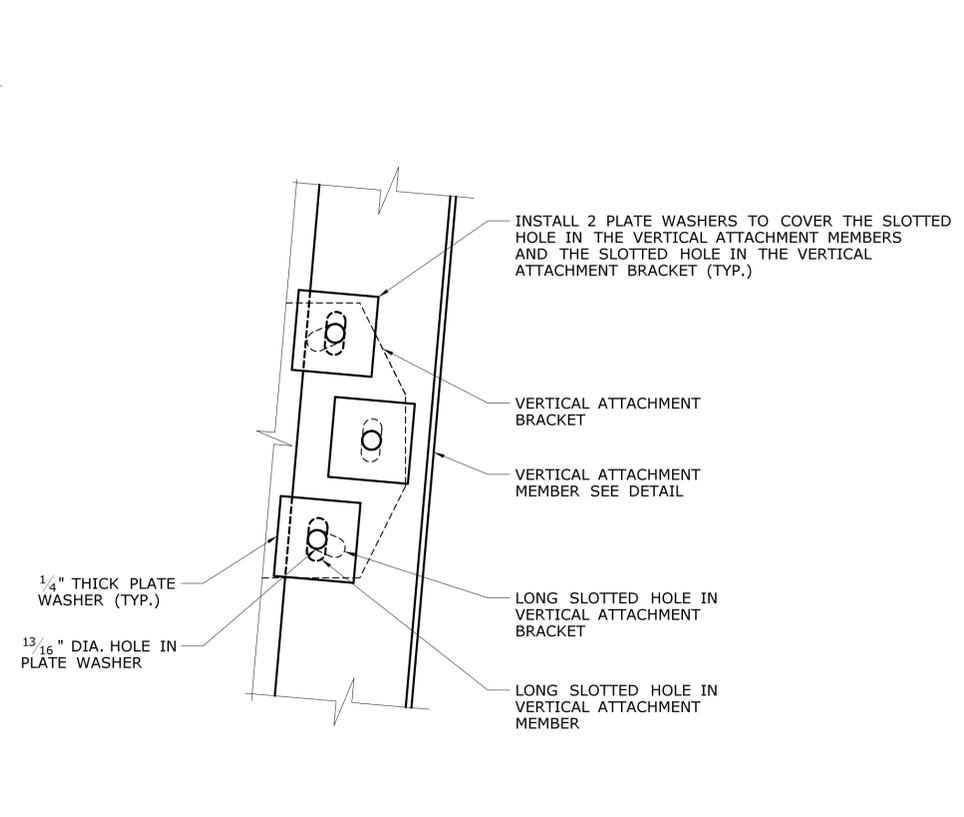
PROJECT NO.
172-387
DRAWING NO.
S-14
SHEET NO.
04.14



SECTION Q
SCALE: 3" = 1'-0"



SLOTTED HOLE DETAIL
SCALE: 3" = 1'-0"



CONNECTION DETAIL R
SCALE: 3" = 1'-0"

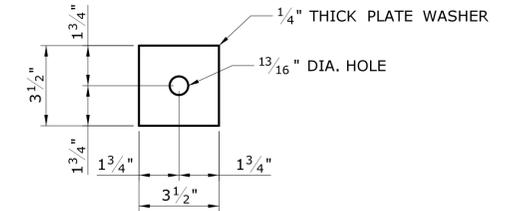
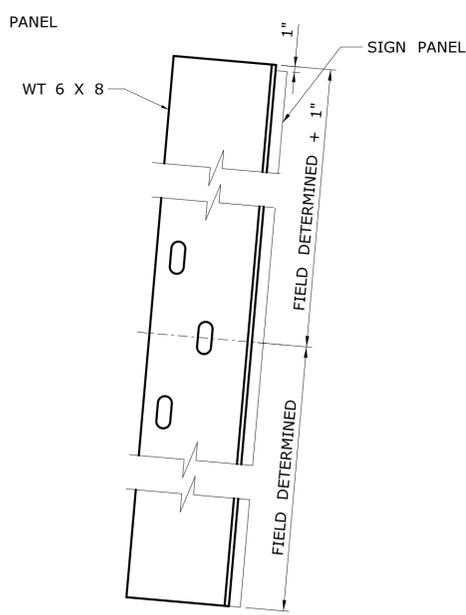
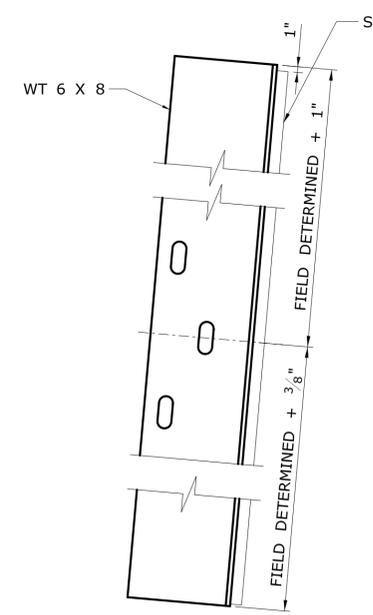
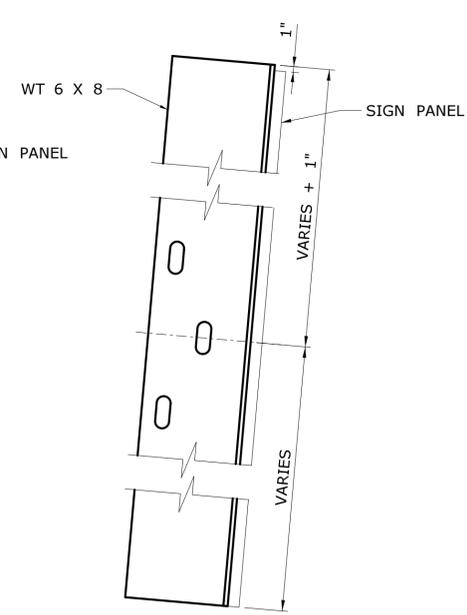
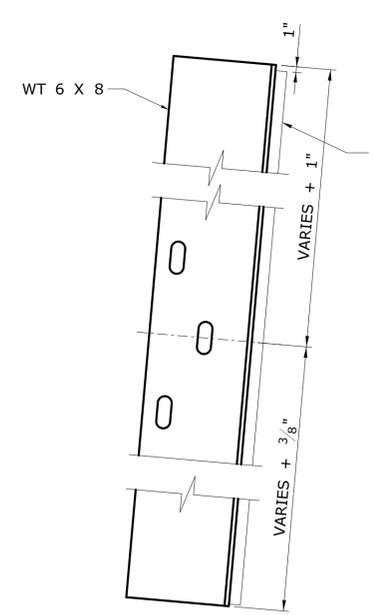


PLATE WASHER DETAIL
SCALE: 1" = 1'-0"



SIGN PANEL AND CROWN PANEL WITH SIGN STOP SIGN PANEL AND CROWN PANEL NO SIGN STOP

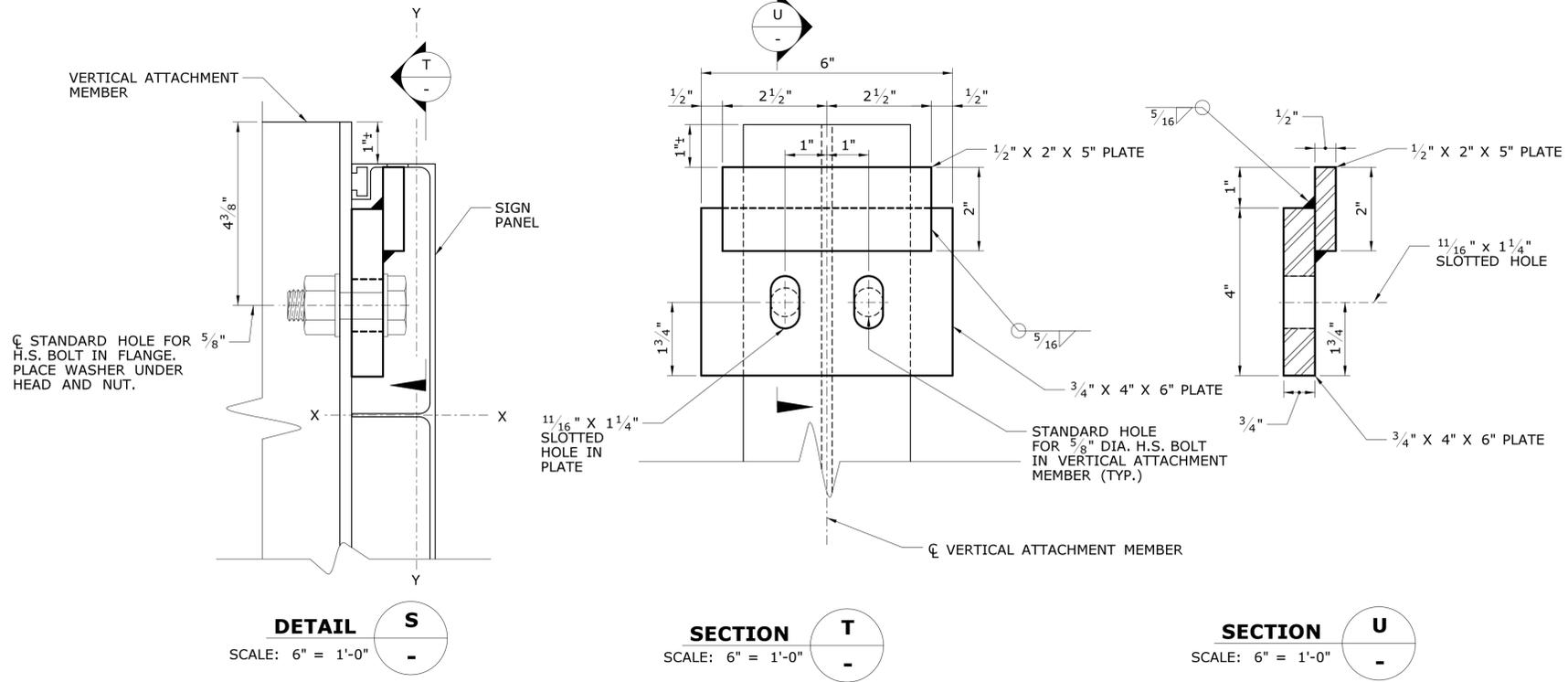
LENGTH OF VERTICAL ATTACHMENT MEMBERS (CANTILEVER TYPE)
SCALE: 3/4" = 1'-0"



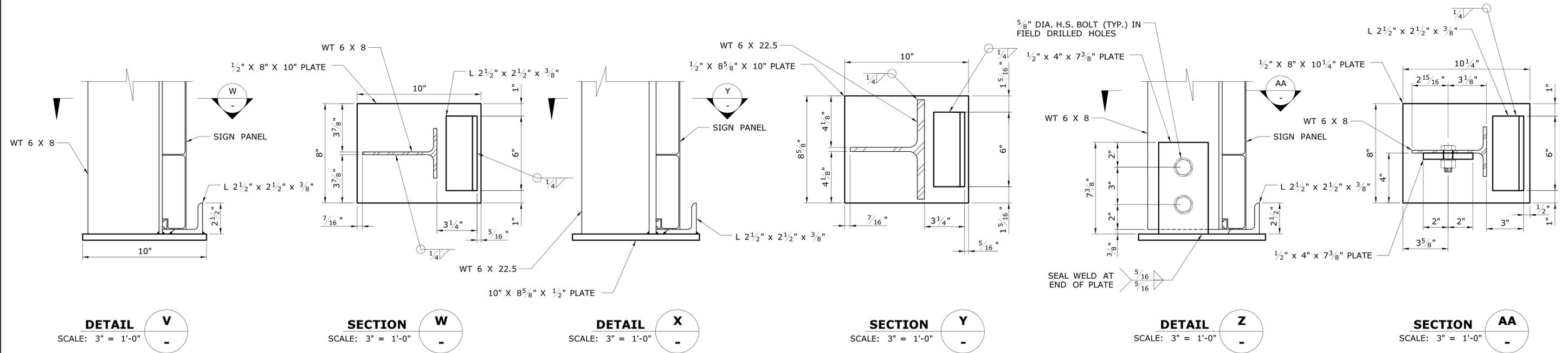
SIGN PANEL AND CROWN PANEL WITH SIGN STOP SIGN PANEL AND CROWN PANEL NO SIGN STOP

LENGTH OF VERTICAL ATTACHMENT MEMBERS (BRIDGE TYPE)
SCALE: 3/4" = 1'-0"

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013	DESIGNER/DRAFTER: MDG	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	PROJECT NO. 172-387
				CHECKED BY: RDD		APPROVED BY: 			DRAWING NO. S-15
				SCALE AS NOTED	Filename: ...01720387_SB_21T_41T_Attachment_Details_2.dgn			DRAWING TITLE: VERTICAL ATTACHMENT MEMBER DETAILS - 1	SHEET NO. 04.15

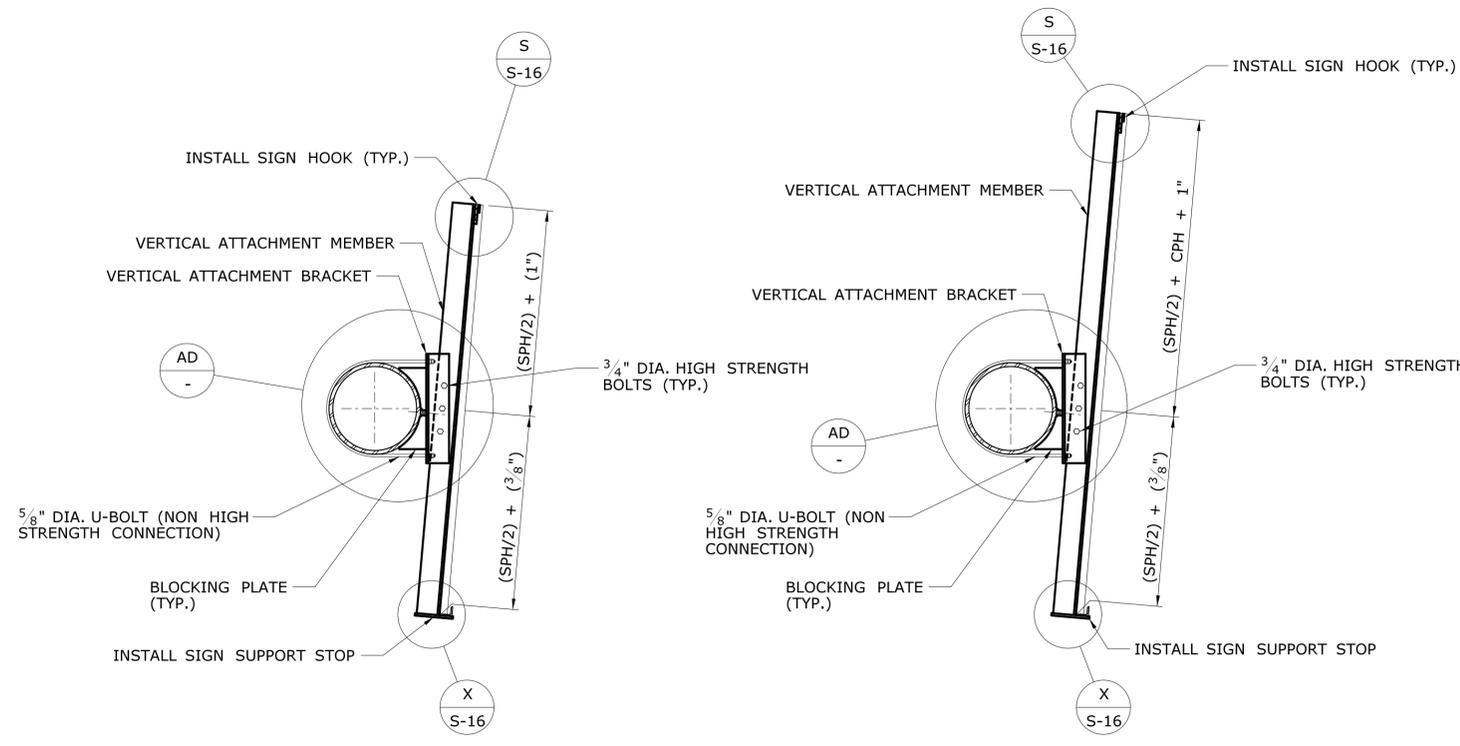


TYPICAL SIGN PANEL HOOK DETAILS



TYPICAL SIGN STOP DETAILS

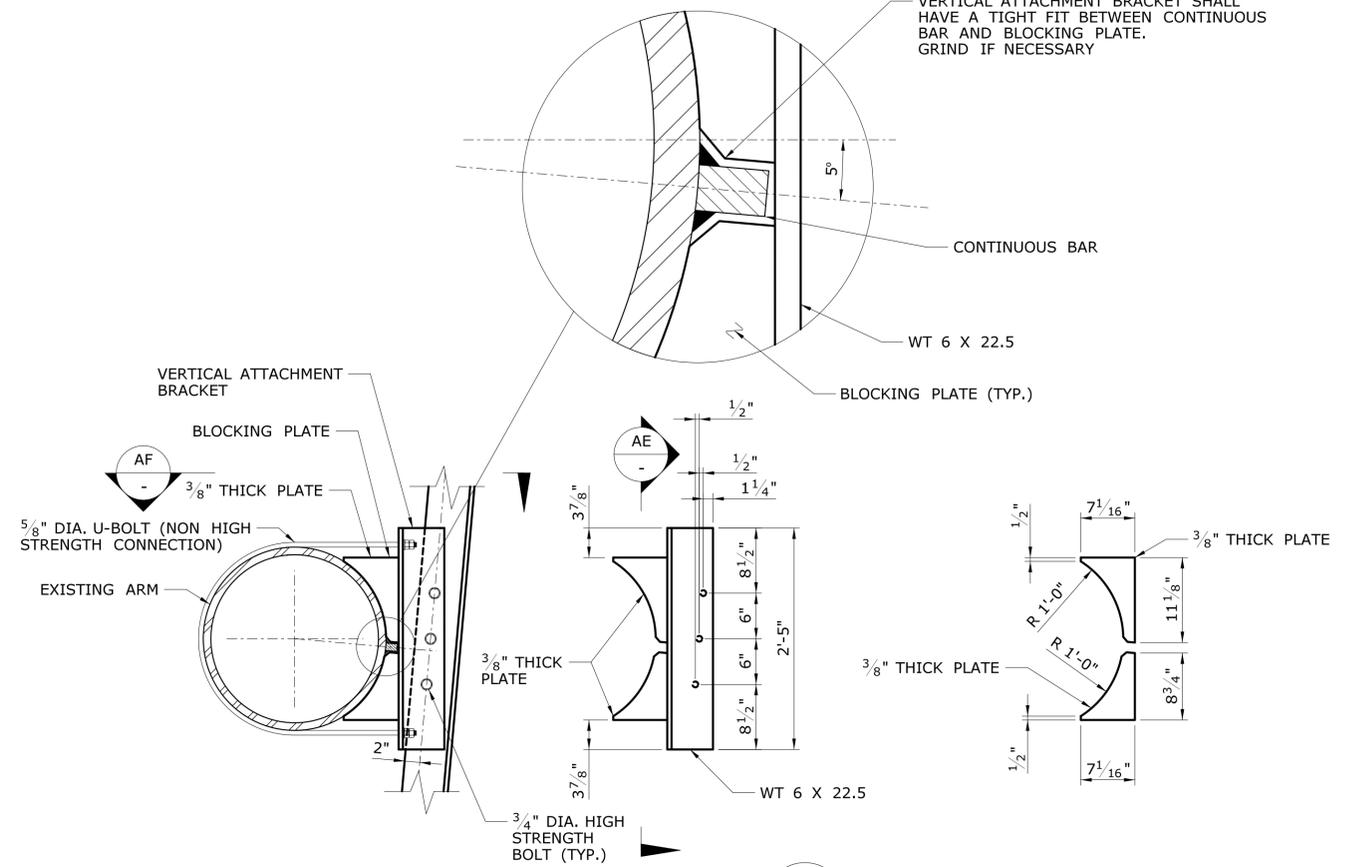
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.			DESIGNER/DRAFTER: MDG CHECKED BY: RDD SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...01720387_SB_SignHookandStopDetails.dgn	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: 	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	DRAWING TITLE: VERTICAL ATTACHMENT MEMBER DETAILS - 2	PROJECT NO. 172-387 DRAWING NO. S-16 SHEET NO. 04.16
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013					



SECTION AB
SCALE: 1/2" = 1'-0"

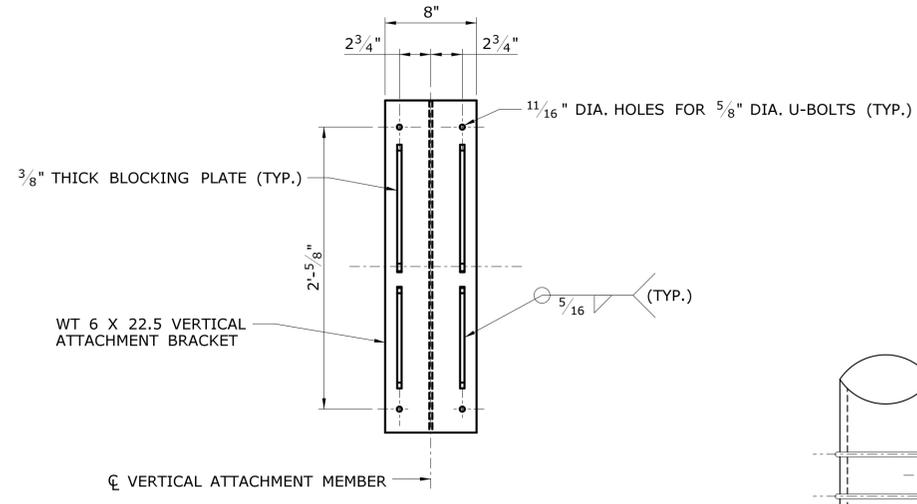
SECTION AC
SCALE: 1/2" = 1'-0"

SPH = SIGN PANEL HEIGHT
CPH = CROWN PANEL HEIGHT

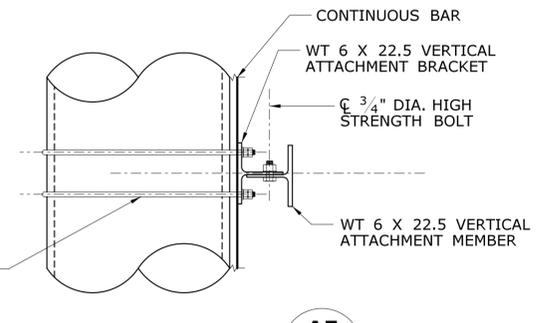


VERTICAL ATTACHMENT BRACKET DETAIL AD
SCALE: 1" = 1'-0"

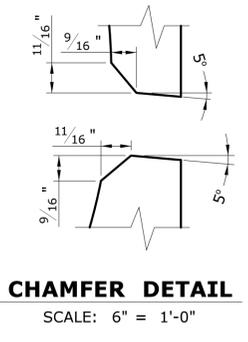
BLOCKING PLATE DETAIL
SCALE: 1" = 1'-0"



SECTION AE
SCALE: 1 1/2" = 1'-0"

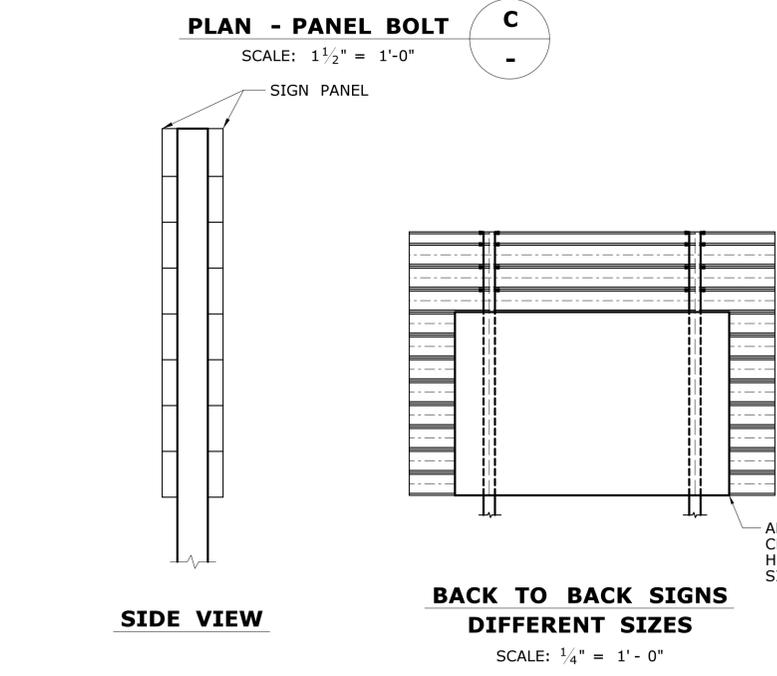
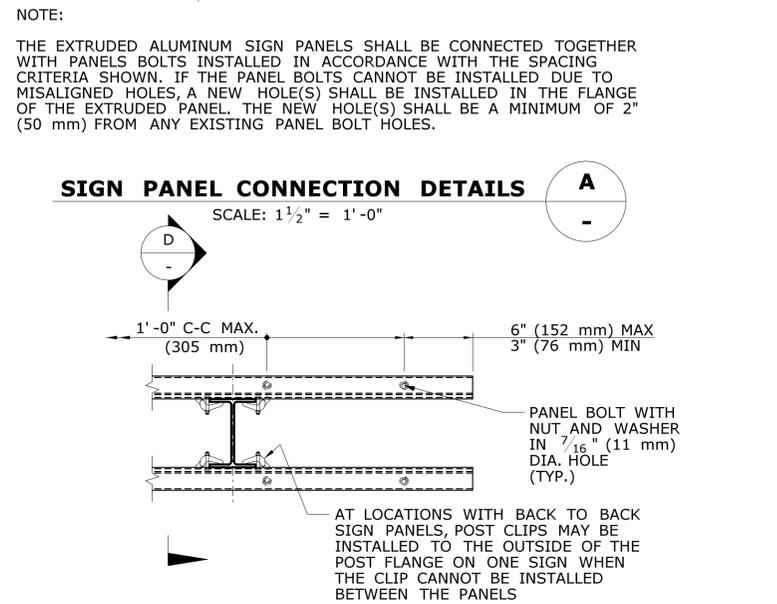
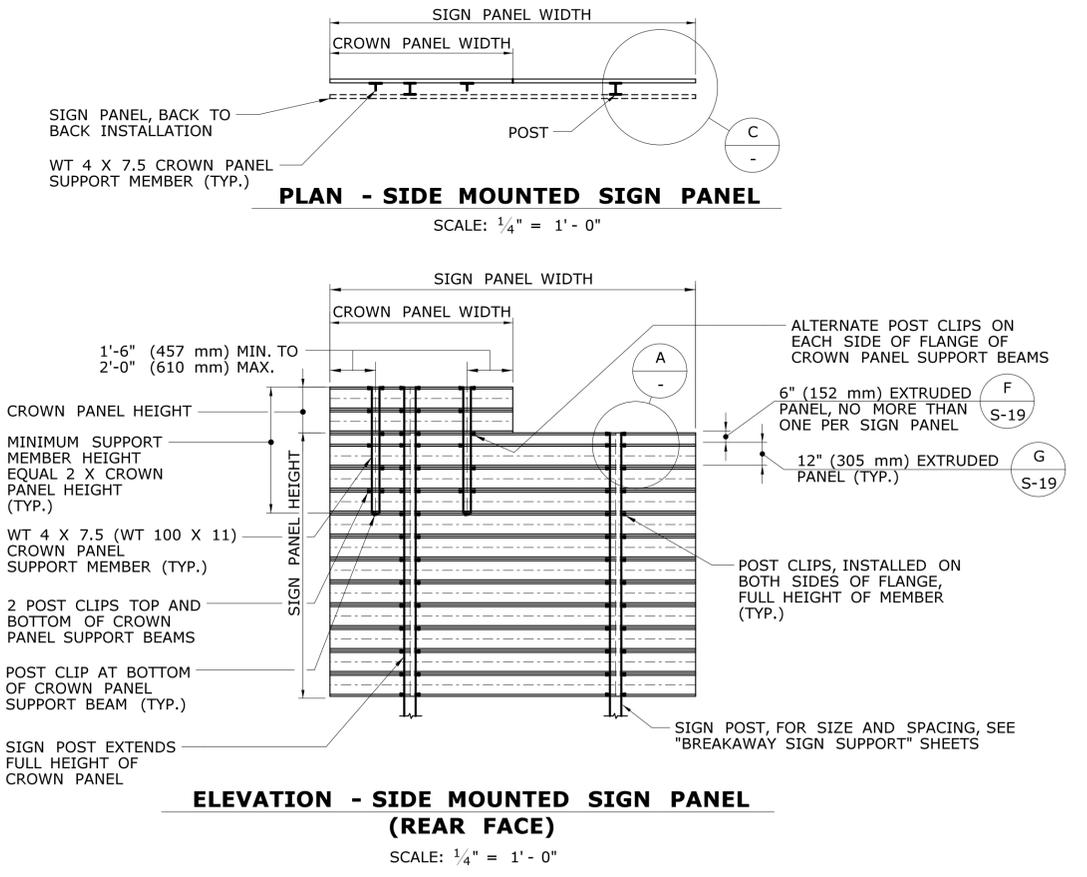
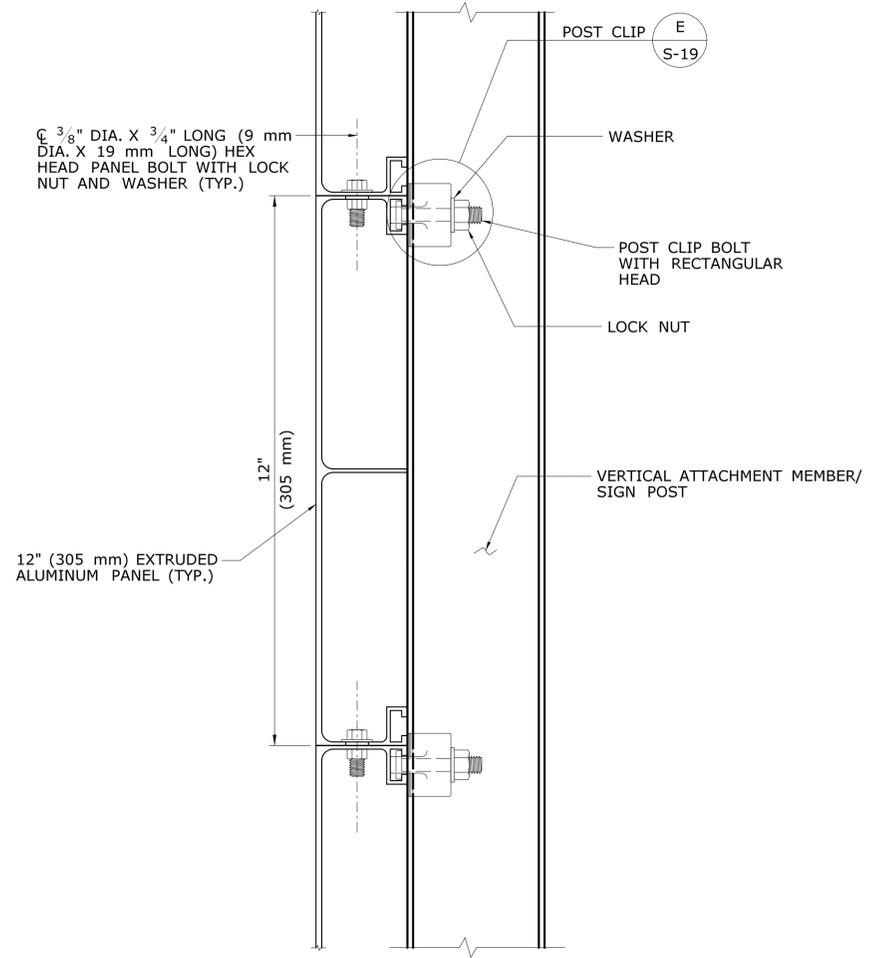
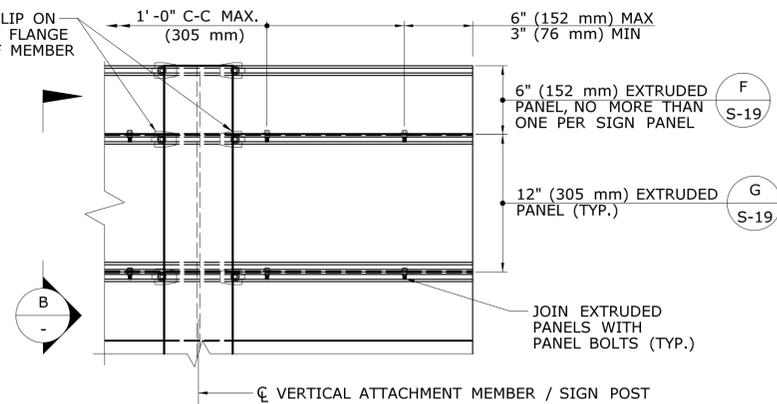
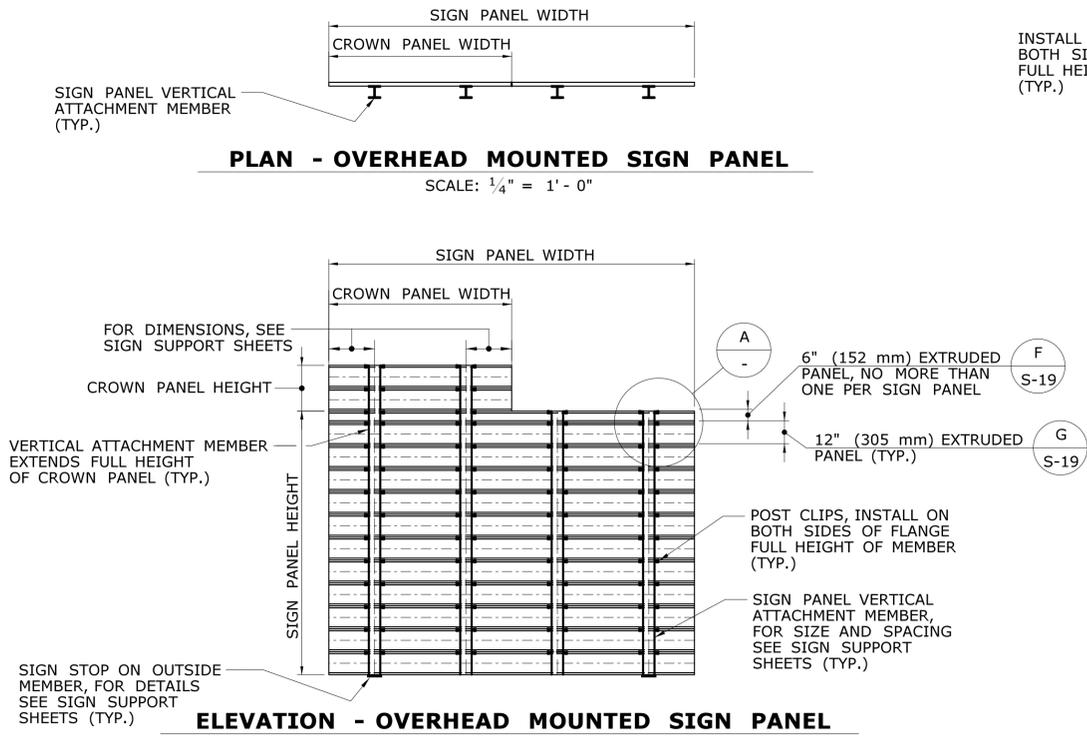


SECTION AF
SCALE: 1" = 1'-0"

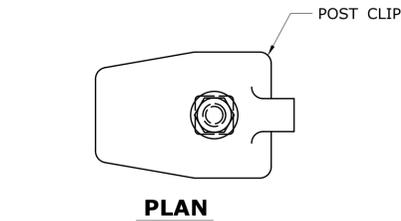


CHAMFER DETAIL
SCALE: 6" = 1'-0"

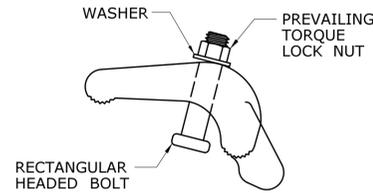
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MDG CHECKED BY: RDD SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...01720387_SB_21P_41P_Attachment_Details.dgn	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: 	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS DRAWING TITLE: 41P VERTICAL ATTACHMENT DETAILS	PROJECT NO. 172-387 DRAWING NO. S-17 SHEET NO. 04.17
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			



THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MDG CHECKED BY: RDD SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...01720387_SB_ExtrudedAlSignPanel_ConnectionDetails.dgn	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: 	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	PROJECT NO.: 172-387 DRAWING NO.: S-18 SHEET NO.: 04.18
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			



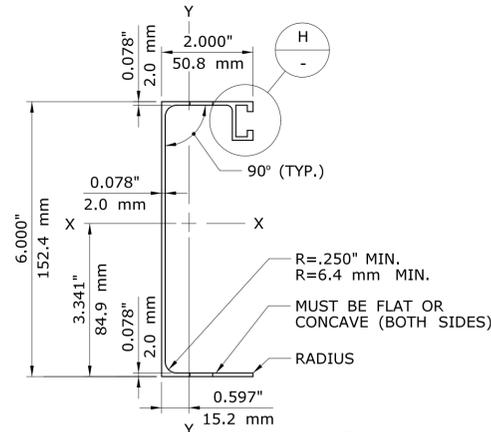
PLAN



ELEVATION

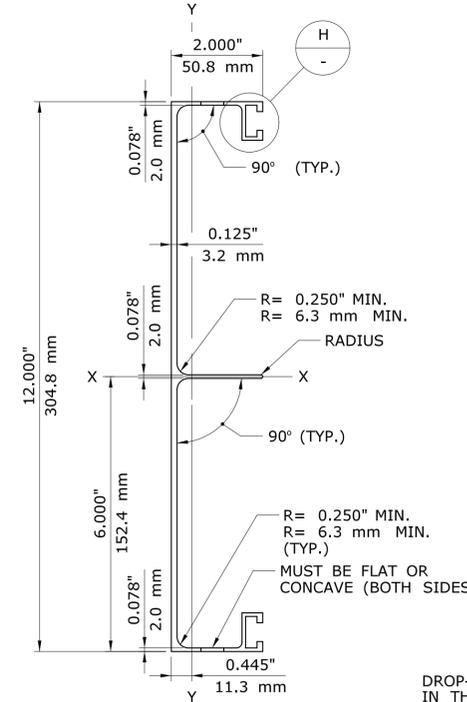


POST CLIP DETAIL
FULL SCALE

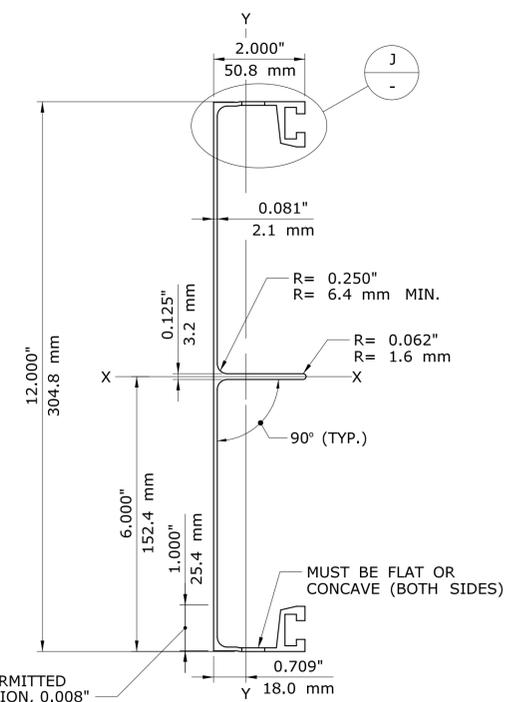


6" (150 mm) EXTRUDED PANEL

SCALE: 6" = 1'-0"



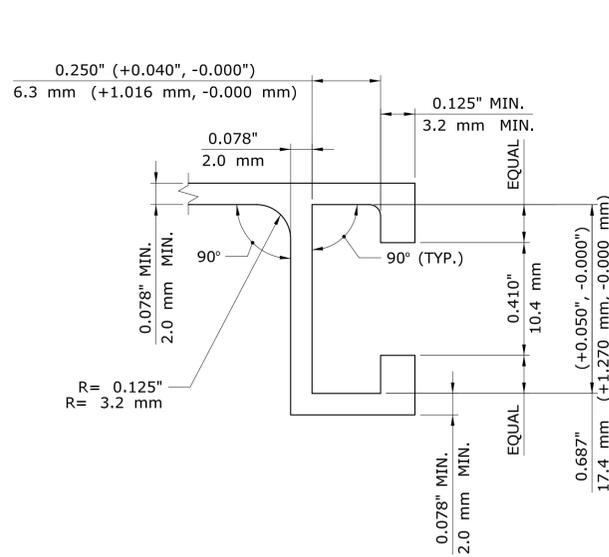
ALTERNATE A



ALTERNATE B

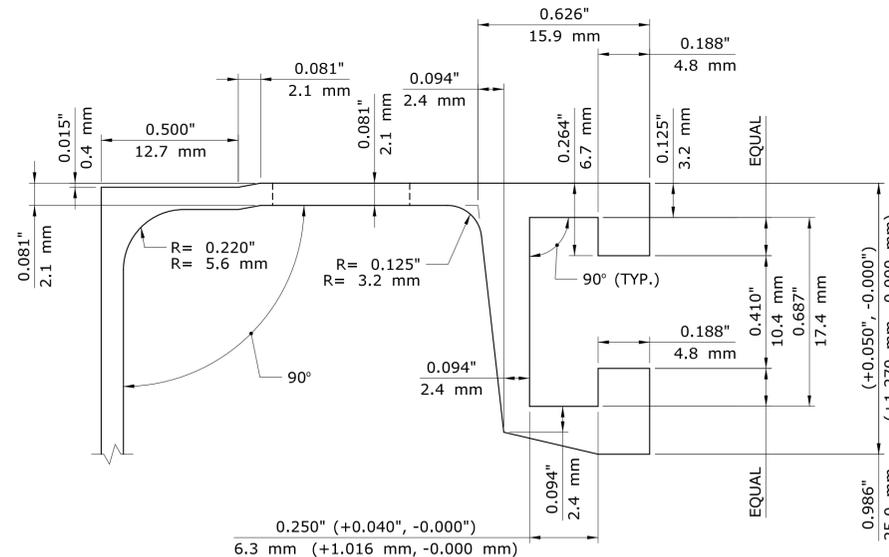
12" (305 mm) EXTRUDED PANEL

SCALE: 6" = 1'-0"



DETAIL

SCALE: 3 X FULL SCALE



DETAIL

SCALE: 3 X FULL SCALE



NOTES:

THE EXTRUDED PANELS SHALL CONFORM TO THE REQUIREMENTS ASTM B221, ALLOY 6063-T6 AND THE FOLLOWING SECTION PROPERTIES:

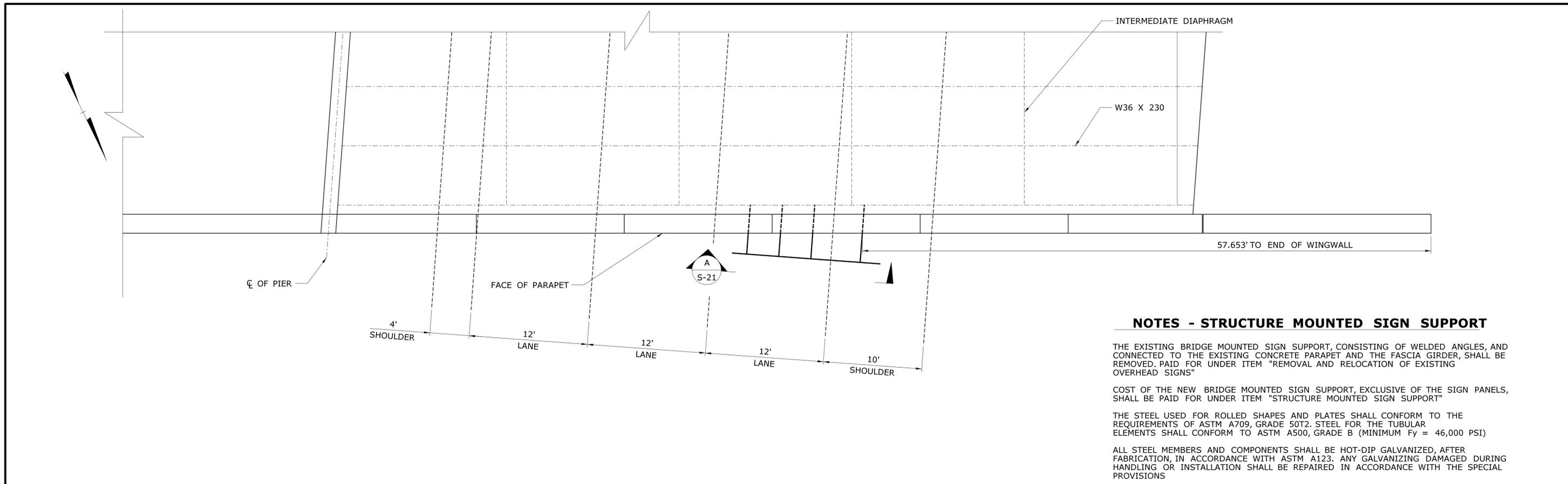
SECTION	AREA OF SECTION in ² (mm ²)	WT. / FT. LBS. / FT. (KG / M)	I _{X-X} in ⁴ (mm ⁴)	I _{Y-Y} in ⁴ (mm ⁴)
6" (150 mm) EXTRUDED PANEL	0.933 (601.93)	1.13 (0.16)	5.023 (2 090 730)	0.473 (196 877)
12" (305 mm) EXTRUDED PANEL ALTERNATE A	2.237 (1443.22)	2.72 (0.38)	36.284 (15 102 541)	0.941 (391 674)
12" (305 mm) EXTRUDED PANEL ALTERNATE B	2.091 (1349.03)	2.54 (0.35)	38.947 (16 210 965)	1.183 (492 402)

THE PANEL BOLTS SHALL CONFORM TO ASTM A193, CLASS 1, GRADE B8 (TYPE 304). THE NUTS SHALL BE A COMPATIBLE HEX, PREVAILING TORQUE (NYLON INSERT) LOCK NUTS CONFORMING TO ASTM A194, CLASS 1, GRADE B8 (TYPE 304). THE WASHERS SHALL BE A COMPATIBLE, FLAT, CIRCULAR WASHERS CONFORMING TO ASTM A276, TYPE 304, ANNEALED.

THE POST CLIP ASSEMBLY SHALL COMPOSED OF A POST CLIP AND A BOLT WITH A NUT AND WASHER. THE POST CLIP SHALL CONFORM TO THE REQUIREMENTS OF ASTM B26, ALLOY 356.0-T6. THE POST BOLT SHALL BE A 3/8" DIA. X 1 3/4" LONG (9 mm DIA. X 44 mm LONG) RECTANGULAR HEAD BOLT CONFORMING TO ASTM A193, CLASS 1, GRADE B8 (TYPE 304). THE NUT SHALL BE A COMPATIBLE HEX, PREVAILING TORQUE (NYLON INSERT) LOCK NUT CONFORMING TO ASTM A194, CLASS 1, GRADE B8 (TYPE 304). THE WASHER SHALL BE A COMPATIBLE, FLAT, CIRCULAR WASHER CONFORMING TO ASTM A276, TYPE 304, ANNEALED. THE DIMENSIONS OF THE RECTANGULAR BOLT HEAD SHALL BE SUCH THAT IT WILL FIT INTO THE EXTRUDED PANEL SLOT AND WILL NOT ROTATE WHILE THE NUT IS BEING TURNED.

THE COST OF FURNISHING AND INSTALLING THE EXTRUDED ALUMINUM SIGN AND CROWN PANELS, INCLUDING THE PANELS BOLTS AND POST CLIP ASSEMBLIES, SHALL BE PAID FOR UNDER THE ITEM "SIGN FACE - EXTRUDED ALUMINUM (TYPE IV RETROREFLECTIVE SHEETING)".

DESIGNER/DRAFTER: MDG	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	PROJECT NO. 172-387
CHECKED BY: RDD		APPROVED BY: 	DRAWING TITLE: EXTRUDED ALUMINUM SIGN PANEL MANUFACTURING DETAILS	DRAWING NO. S-19	
SCALE AS NOTED	Filename: ...01720387_SB_ExtrudedAlSignPanel_ManufacturingDetails.dgn				SHEET NO. 04.19
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013		



PLAN

**BRIDGE NO. 00274
SS NO. 21245C**

GENERAL NOTES

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 DATED 2004, SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 2013 AND SPECIAL PROVISIONS

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS - 2009, WITH THE LAST INTERIM SPECIFICATIONS, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL-2003.

EXISTING DIMENSIONS: ALL DIMENSIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE THE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.

NOTES - STRUCTURE MOUNTED SIGN SUPPORT

THE EXISTING BRIDGE MOUNTED SIGN SUPPORT, CONSISTING OF WELDED ANGLES, AND CONNECTED TO THE EXISTING CONCRETE PARAPET AND THE FASCIA GIRDER, SHALL BE REMOVED. PAID FOR UNDER ITEM "REMOVAL AND RELOCATION OF EXISTING OVERHEAD SIGNS"

COST OF THE NEW BRIDGE MOUNTED SIGN SUPPORT, EXCLUSIVE OF THE SIGN PANELS, SHALL BE PAID FOR UNDER ITEM "STRUCTURE MOUNTED SIGN SUPPORT"

THE STEEL USED FOR ROLLED SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709, GRADE 50T2. STEEL FOR THE TUBULAR ELEMENTS SHALL CONFORM TO ASTM A500, GRADE B (MINIMUM Fy = 46,000 PSI)

ALL STEEL MEMBERS AND COMPONENTS SHALL BE HOT-DIP GALVANIZED, AFTER FABRICATION, IN ACCORDANCE WITH ASTM A123. ANY GALVANIZING DAMAGED DURING HANDLING OR INSTALLATION SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISIONS

ALL WELDING DETAILS, PROCEDURES AND TESTING METHODS SHALL CONFORM TO THE REQUIREMENTS OF THE AWS D1.1 STRUCTURAL WELDING CODE - STEEL. ALL WELDING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE.

CARRIAGE BOLTS SHALL CONFORM TO ASTM A307 OR STRONGER AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.

ALL HIGH STRENGTH BOLTS SHALL BE 3/4" IN DIAMETER AND CONFORM TO ASTM A325, TYPE 1. NUTS SHALL CONFORM TO ASTM A563, GRADE DH. CIRCULAR, FLAT, HARDENED STEEL WASHERS SHALL CONFORM TO ASTM F436. THE BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR ASTM B695, GRADE 50.

ALL BOLT HOLES SHALL BE STANDARD HOLES (1/16" LARGER THAN THE BOLT DIAMETER), UNLESS OTHERWISE NOTED. HOLES MAY BE FIELD DRILLED, PROVIDED SHOP DRILLED HOLES ARE USED AS TEMPLATES FOR THE FIELD DRILLED HOLES.

ALL HIGH STRENGTH BOLTS SHALL HAVE HARDENED WASHERS PLACED UNDER ALL ELEMENTS (NUT OR BOLT HEAD) TURNED DURING TENSIONING.

CARRIAGE BOLTS SHALL HAVE A SINGLE HARDENED WASHER PLACED BETWEEN THE BEVELED PLATE AND THE TURNED ELEMENT (NUT)

ALL BOLTS SHALL BE LUBRICATED PRIOR TO INSTALLATION TO ENSURE FREE ROTATION OF THE NUT ON THE BOLT THREAD.

THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS UNTIL THE TOTAL STRUCTURE IS ERECTED.

BOLTING REQUIREMENTS FOR THE STRUCTURE MOUNTED SIGN SUPPORT ARE AS FOLLOWS:

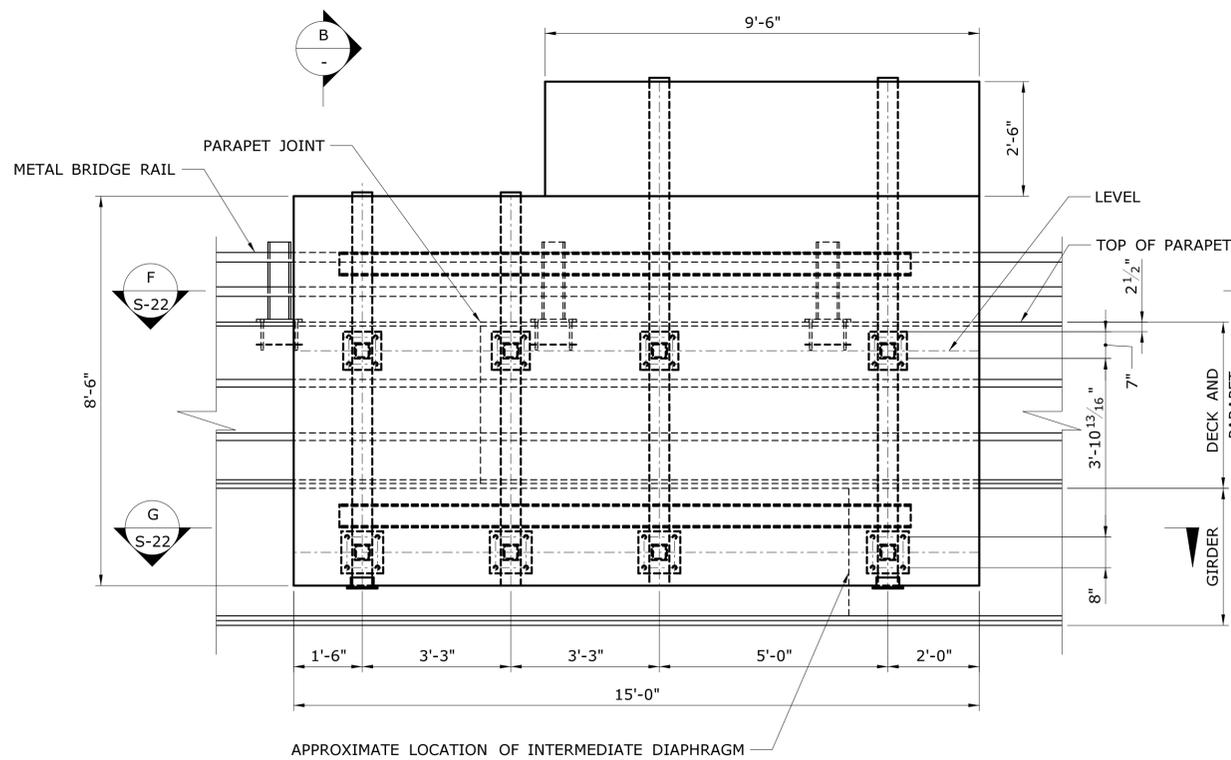
NEW STEEL TO NEW STEEL:

BOTH GALVANIZED FAYING SURFACES SHALL BE LIGHTLY SCORED BY WIRE BRUSHING AFTER GALVANIZING AND PRIOR TO ASSEMBLY. AFTER THE BOLTS HAVE BEEN FULLY TENSIONED, THE FAYING SURFACES SHALL BE IN FIRM CONTACT.

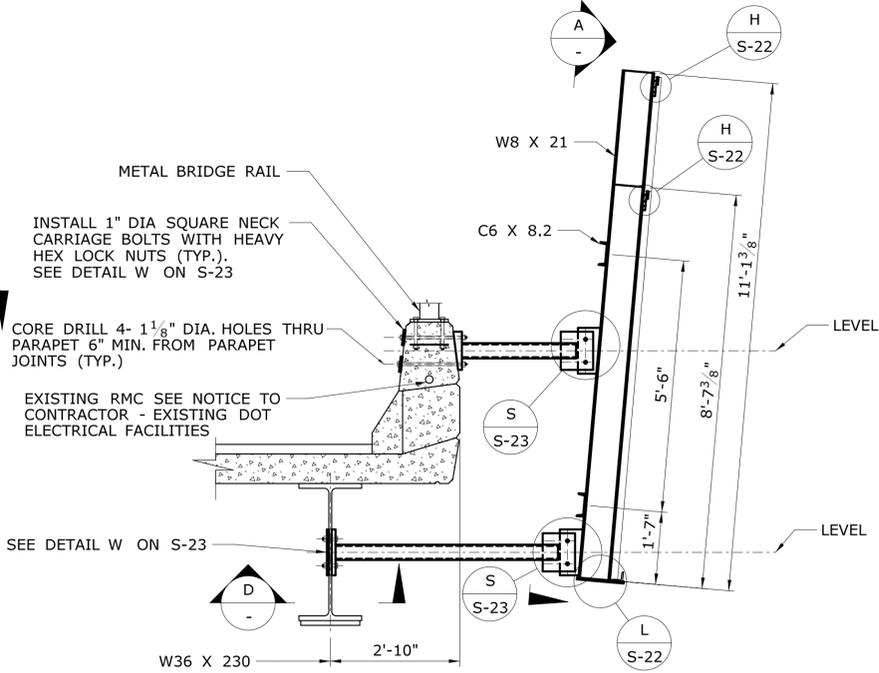
NEW STEEL TO EXISTING PAINTED STEEL:

THE NEW GALVANIZED FAYING SURFACE SHALL BE LIGHTLY SCORED BY WIRE BRUSHING AFTER GALVANIZING AND PRIOR TO ASSEMBLY. ALL PACK OR LAMINAR RUST SHALL BE REMOVED FROM EXISTING FAYING SURFACES THAT ARE TO REMAIN AND WILL BE ATTACHED TO THE NEW STRUCTURAL STEEL. BURRS OR OTHER IRREGULARITIES THAT PREVENT SOLID SEATING OF THE FAYING SURFACES SHALL BE REMOVED. THE FAYING SURFACE OF THE EXISTING STEEL SHALL BE FREE OF DIRT OR OTHER FOREIGN MATERIAL. LOOSE OR NON-ADHERENT PAINT SHALL BE REMOVED, BUT TIGHTLY ADHERENT PAINT NEED NOT BE REMOVED. AFTER THE BOLTS HAVE BEEN FULLY TENSIONED, THE FAYING SURFACES SHALL BE IN FIRM CONTACT.

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			

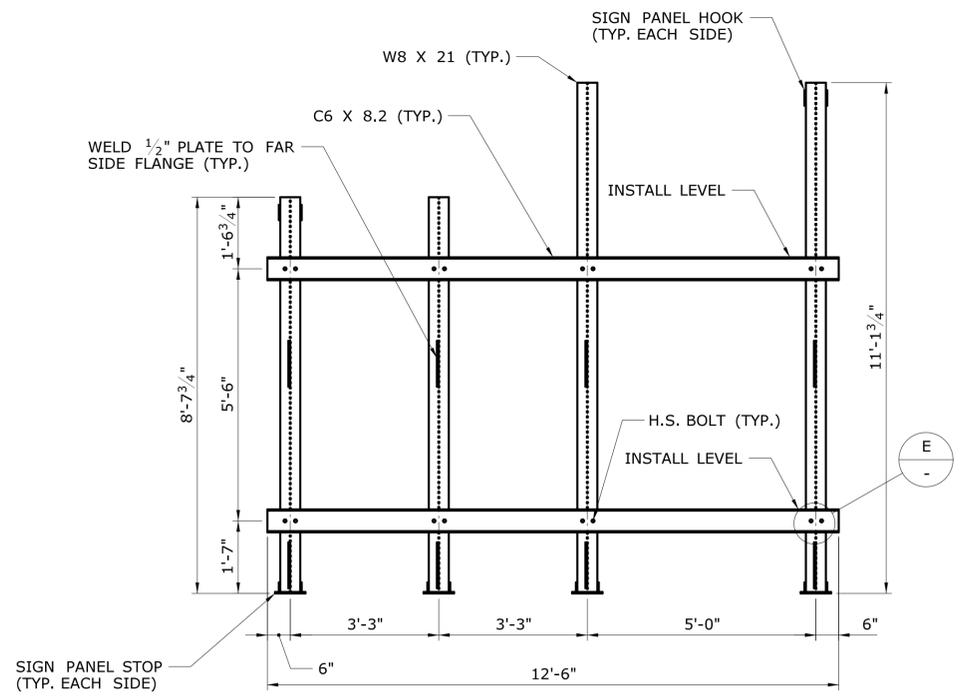


VIEW A
SCALE: 1/2" = 1'-0"

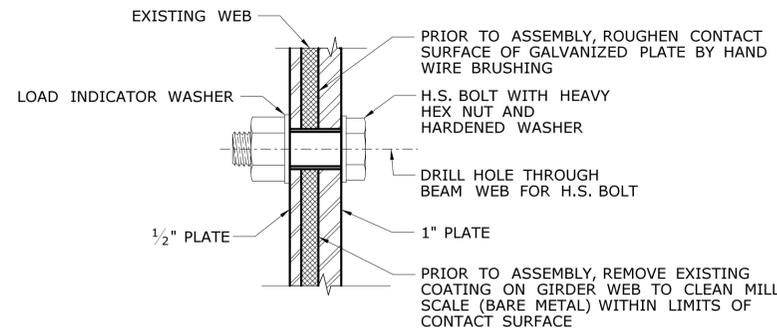


NOTE: LEG 1 IS SHOWN AS THE TYPICAL DETAIL FOR ALL LEGS

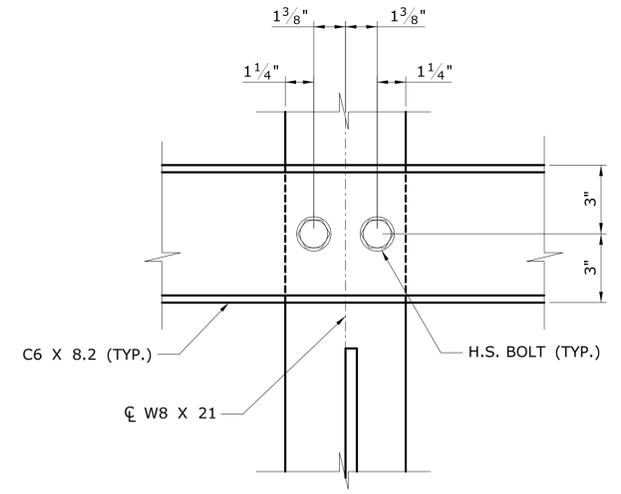
SECTION B
SCALE: 1/2" = 1'-0"



VIEW C
SCALE: 1/2" = 1'-0"

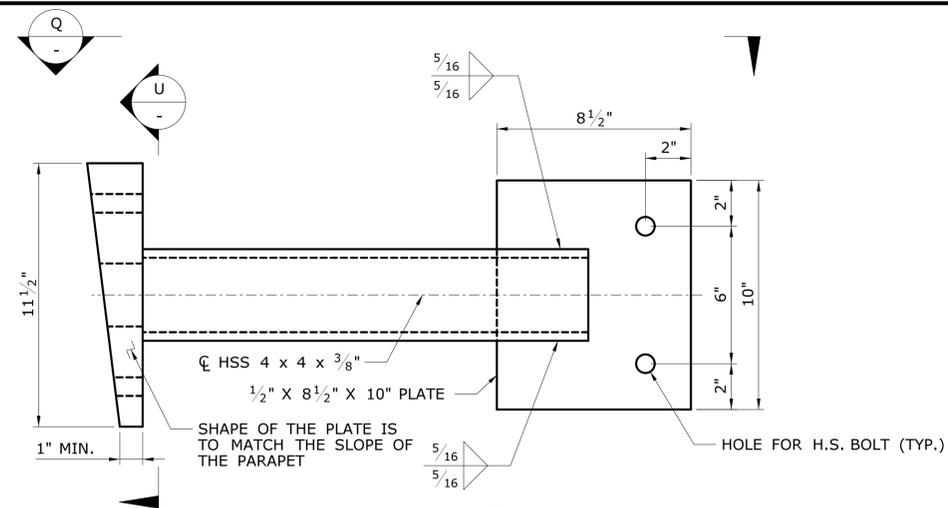


SECTION D
SCALE: 3" = 1'-0"



DETAIL E
SCALE: 3" = 1'-0"

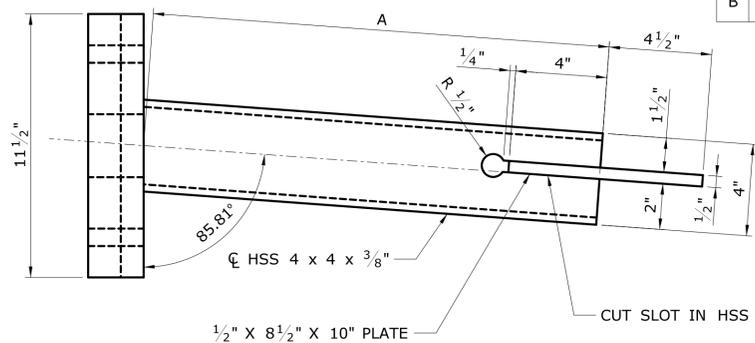
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MDG CHECKED BY: RDD SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...01720387_SB_BM_Support21245C_Details_1.dgn	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: 	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS DRAWING TITLE: SIGN SUPPORT NO. 21245C DETAILS - 1	PROJECT NO. 172-387 DRAWING NO. S-21 SHEET NO. 04.21
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			



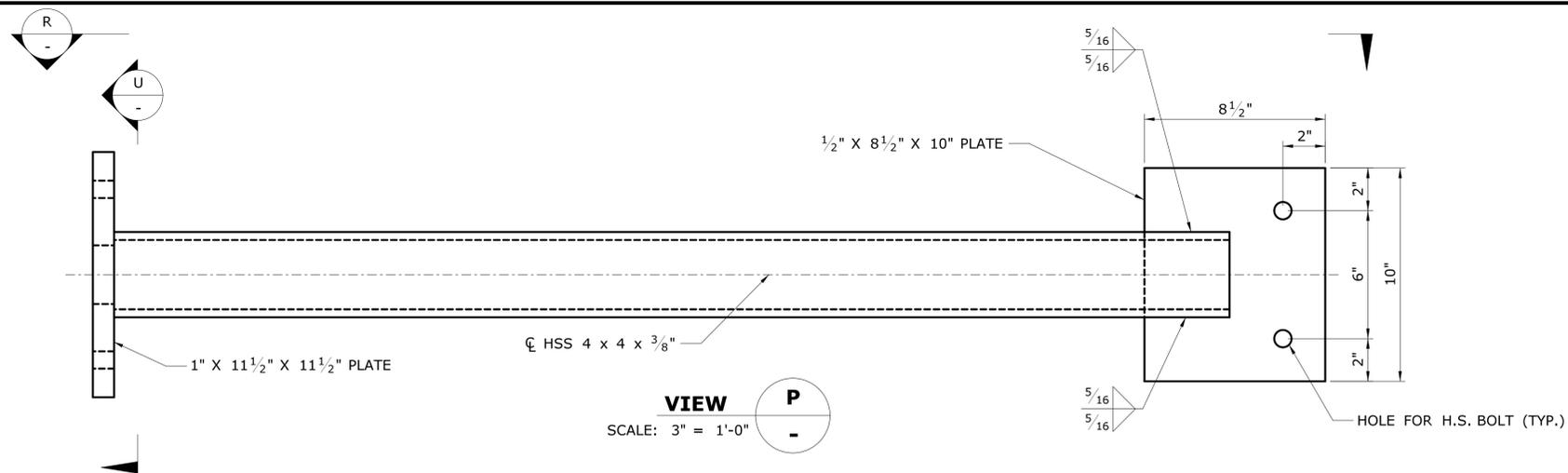
VIEW N
SCALE: 3" = 1'-0"

LENGTH OF LEG

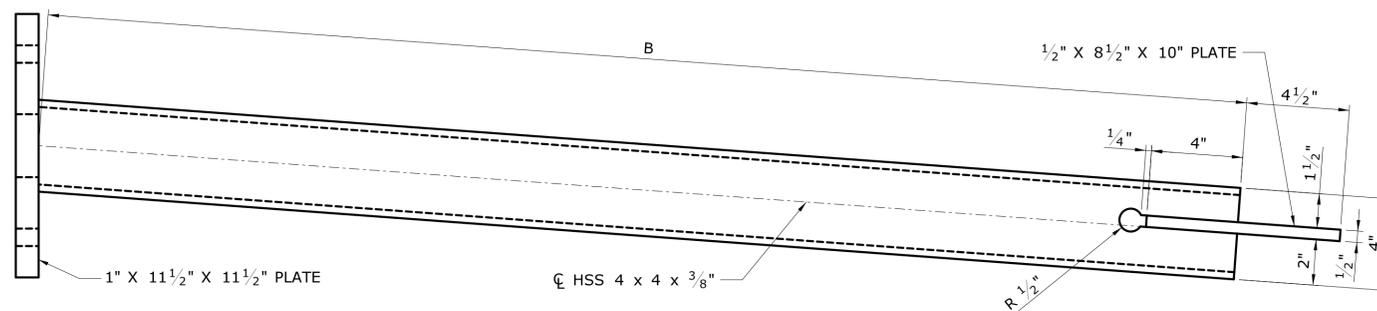
	LEG 1	LEG 2	LEG 3	LEG 4
A	1'-7 ⁵ / ₁₆ "	1'-10 ³ / ₁₆ "	2'-1"	2'-5 ⁷ / ₁₆ "
B	4'-4 ⁹ / ₁₆ "	4'-7 ⁷ / ₁₆ "	4'-10 ⁵ / ₁₆ "	5'-2 ¹¹ / ₁₆ "



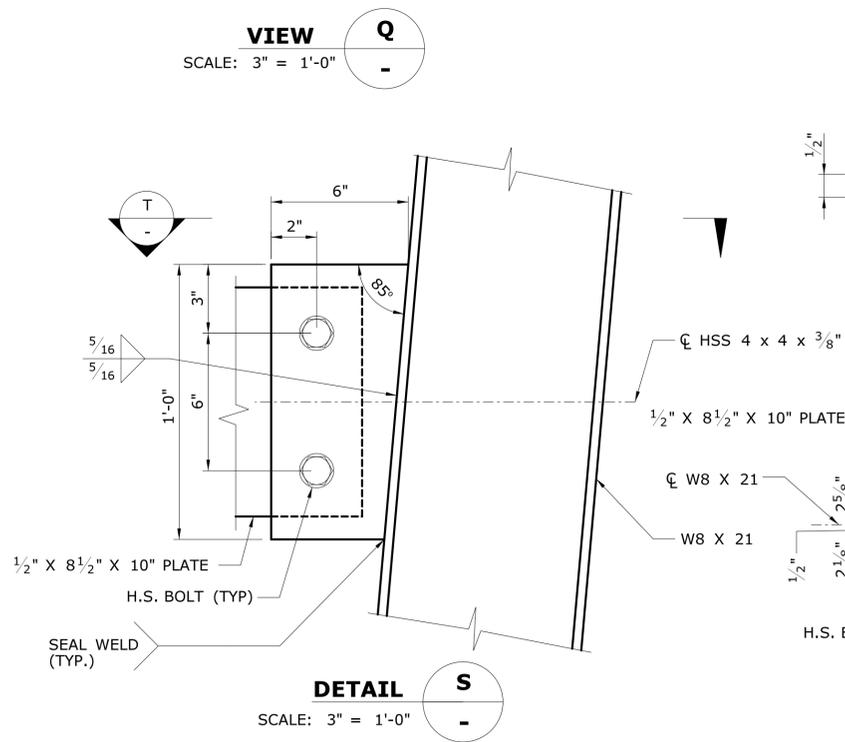
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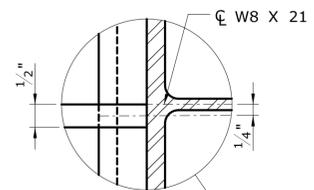
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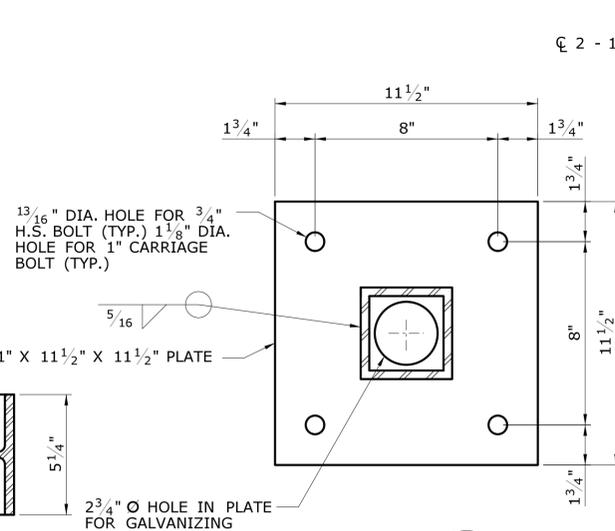
VIEW R
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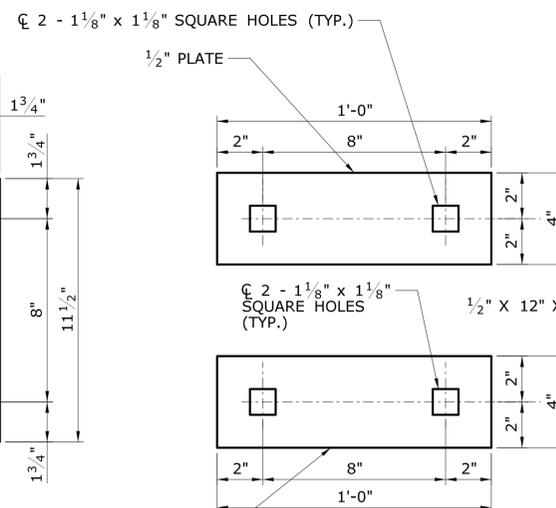
DETAIL S
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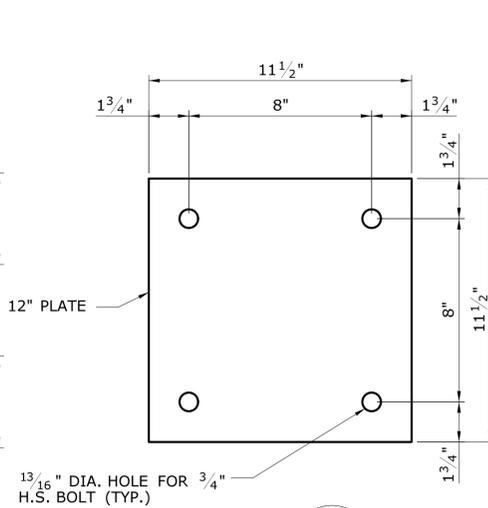
SECTION T
SCALE: 3" = 1'-0"



SECTION U
SCALE: 3" = 1'-0"



DETAIL V
SCALE: 3" = 1'-0"



DETAIL W
SCALE: 3" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER: **MDG**
CHECKED BY: **RDD**
SCALE AS NOTED

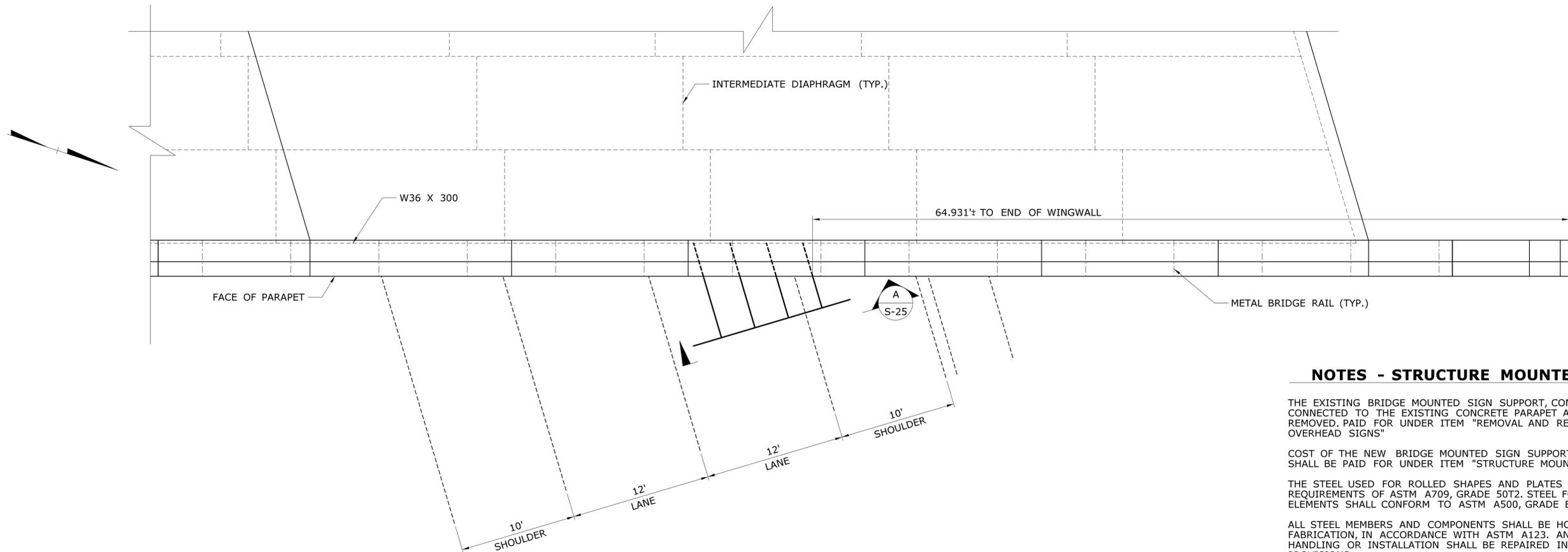
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

SIGNATURE/BLOCK: **OFFICE OF ENGINEERING**
APPROVED BY: *[Signature]*

PROJECT TITLE: **REPLACEMENT OF HIGHWAY SIGNING ON I-395**

TOWN: **VARIOUS**
DRAWING TITLE: **SIGN SUPPORT NO. 21245C DETAILS - 3**

PROJECT NO. **172-387**
DRAWING NO. **S-23**
SHEET NO. **04.23**



PLAN

**BRIDGE NO. 00274
SS NO. 21245C**

GENERAL NOTES

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 DATED 2004, SUPPLEMENTAL SPECIFICATIONS DATED JULY 2012 AND SPECIAL PROVISIONS

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS - 2009, WITH THE LAST INTERIM SPECIFICATIONS, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL-2003.

EXISTING DIMENSIONS: ALL DIMENSIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE THE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.

NOTES - STRUCTURE MOUNTED SIGN SUPPORT

THE EXISTING BRIDGE MOUNTED SIGN SUPPORT, CONSISTING OF WELDED ANGLES, AND CONNECTED TO THE EXISTING CONCRETE PARAPET AND THE FASCIA GIRDER, SHALL BE REMOVED. PAID FOR UNDER ITEM "REMOVAL AND RELOCATION OF EXISTING OVERHEAD SIGNS"

COST OF THE NEW BRIDGE MOUNTED SIGN SUPPORT, EXCLUSIVE OF THE SIGN PANELS, SHALL BE PAID FOR UNDER ITEM "STRUCTURE MOUNTED SIGN SUPPORT"

THE STEEL USED FOR ROLLED SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709, GRADE 50T2. STEEL FOR THE TUBULAR ELEMENTS SHALL CONFORM TO ASTM A500, GRADE B (MINIMUM Fy = 46,000 PSI)

ALL STEEL MEMBERS AND COMPONENTS SHALL BE HOT-DIP GALVANIZED, AFTER FABRICATION, IN ACCORDANCE WITH ASTM A123. ANY GALVANIZING DAMAGED DURING HANDLING OR INSTALLATION SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISIONS

ALL WELDING DETAILS, PROCEDURES AND TESTING METHODS SHALL CONFORM TO THE REQUIREMENTS OF THE AWS D1.1 STRUCTURAL WELDING CODE - STEEL. ALL WELDING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE.

CARRIAGE BOLTS SHALL CONFORM TO ASTM A307 OR STRONGER AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.

ALL HIGH STRENGTH BOLTS SHALL BE 3/4" IN DIAMETER AND CONFORM TO ASTM A325, TYPE 1. NUTS SHALL CONFORM TO ASTM A563, GRADE DH. CIRCULAR, FLAT, HARDENED STEEL WASHERS SHALL CONFORM TO ASTM F436. THE BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR ASTM B695, GRADE 50.

ALL BOLT HOLES SHALL BE STANDARD HOLES (1/16" LARGER THAN THE BOLT DIAMETER), UNLESS OTHERWISE NOTED. HOLES MAY BE FIELD DRILLED, PROVIDED SHOP DRILLED HOLES ARE USED AS TEMPLATES FOR THE FIELD DRILLED HOLES.

ALL HIGH STRENGTH BOLTS SHALL HAVE HARDENED WASHERS PLACED UNDER ALL ELEMENTS (NUT OR BOLT HEAD) TURNED DURING TENSIONING.

CARRIAGE BOLTS SHALL HAVE A SINGLE HARDENED WASHER PLACED BETWEEN THE BEVELED PLATE AND THE TURNED ELEMENT (NUT)

ALL BOLTS SHALL BE LUBRICATED PRIOR TO INSTALLATION TO ENSURE FREE ROTATION OF THE NUT ON THE BOLT THREAD.

THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS UNTIL THE TOTAL STRUCTURE IS ERECTED.

BOLTING REQUIREMENTS FOR THE STRUCTURE MOUNTED SIGN SUPPORT ARE AS FOLLOWS:

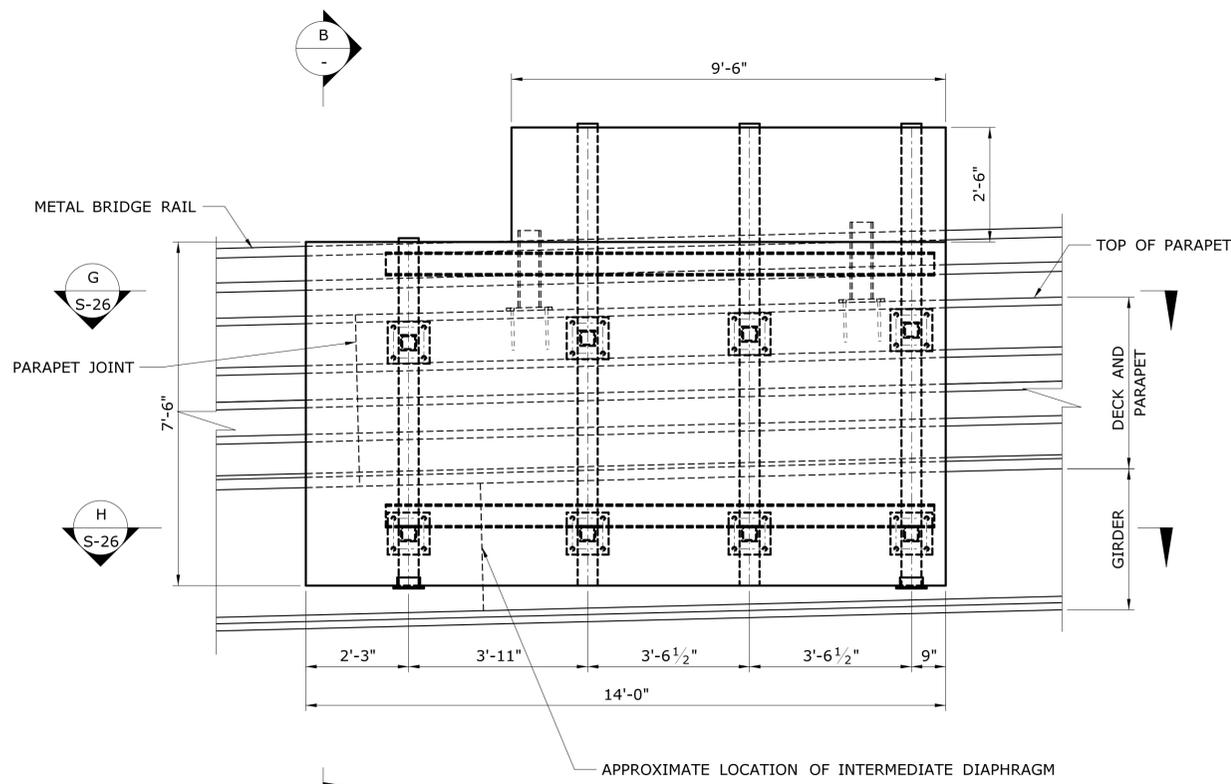
NEW STEEL TO NEW STEEL:

BOTH GALVANIZED FAYING SURFACES SHALL BE LIGHTLY SCORED BY WIRE BRUSHING AFTER GALVANIZING AND PRIOR TO ASSEMBLY. AFTER THE BOLTS HAVE BEEN FULLY TENSIONED, THE FAYING SURFACES SHALL BE IN FIRM CONTACT.

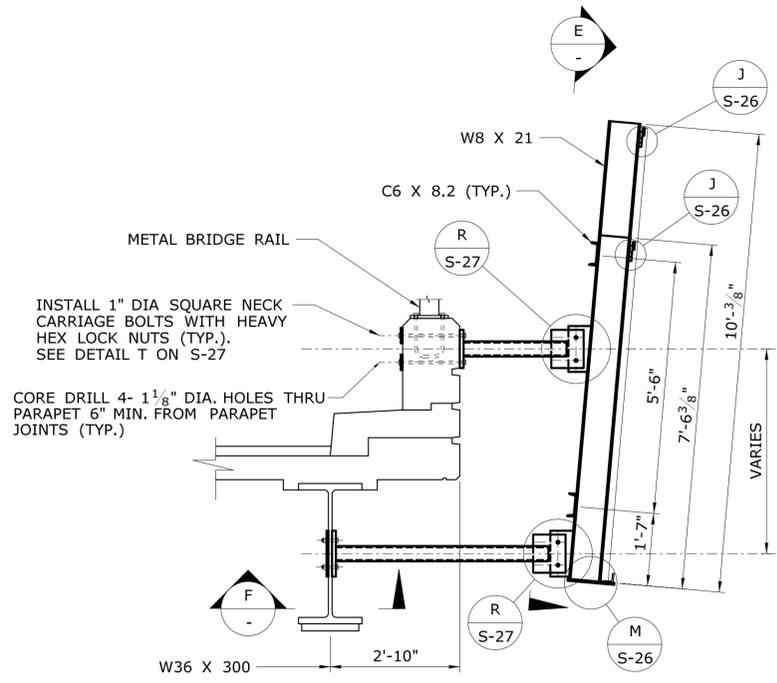
NEW STEEL TO EXISTING PAINTED STEEL:

THE NEW GALVANIZED FAYING SURFACE SHALL BE LIGHTLY SCORED BY WIRE BRUSHING AFTER GALVANIZING AND PRIOR TO ASSEMBLY. ALL PACK OR LAMINAR RUST SHALL BE REMOVED FROM EXISTING FAYING SURFACES THAT ARE TO REMAIN AND WILL BE ATTACHED TO THE NEW STRUCTURAL STEEL. BURRS OR OTHER IRREGULARITIES THAT PREVENT SOLID SEATING OF THE FAYING SURFACES SHALL BE REMOVED. THE FAYING SURFACE OF THE EXISTING STEEL SHALL BE FREE OF DIRT OR OTHER FOREIGN MATERIAL. LOOSE OR NON-ADHERENT PAINT SHALL BE REMOVED, BUT TIGHTLY ADHERENT PAINT NEED NOT BE REMOVED. AFTER THE BOLTS HAVE BEEN FULLY TENSIONED, THE FAYING SURFACES SHALL BE IN FIRM CONTACT.

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			

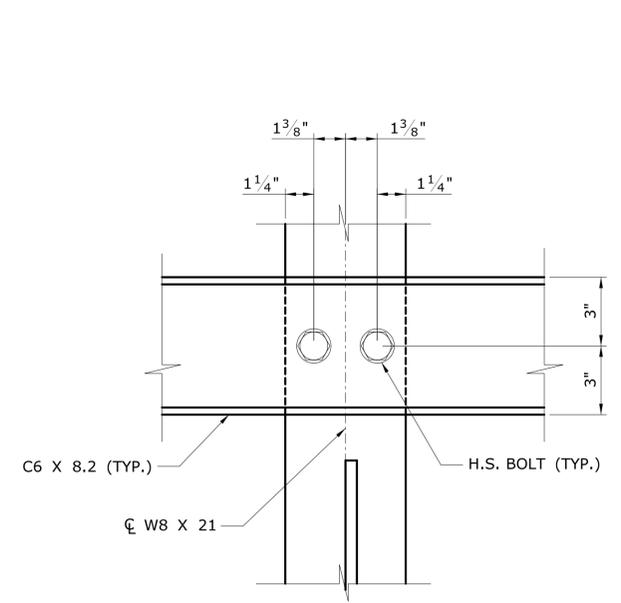


VIEW A
SCALE: 1/2" = 1'-0"

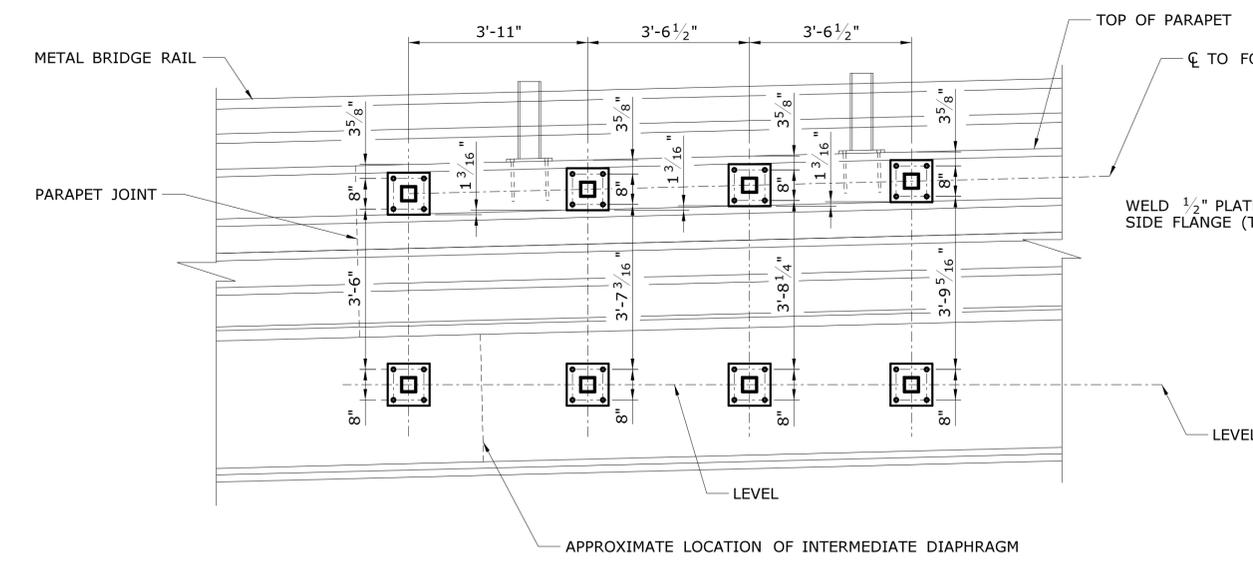


NOTE: LEG 1 IS SHOWN AS THE TYPICAL DETAIL FOR ALL LEGS

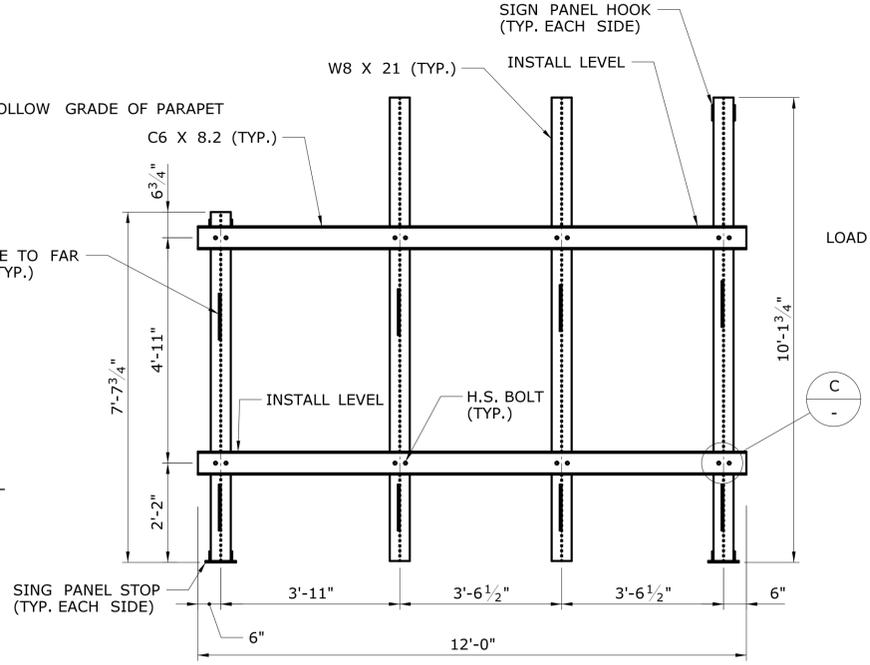
SECTION B
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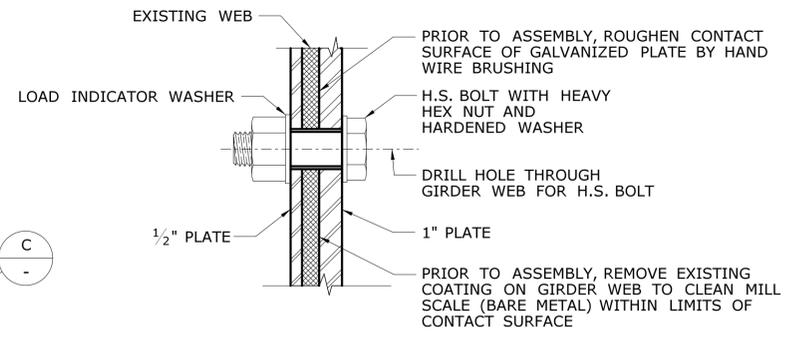
DETAIL C
SCALE: 3" = 1'-0"



VIEW - LAYOUT PLAN A
SCALE: 1/2" = 1'-0"

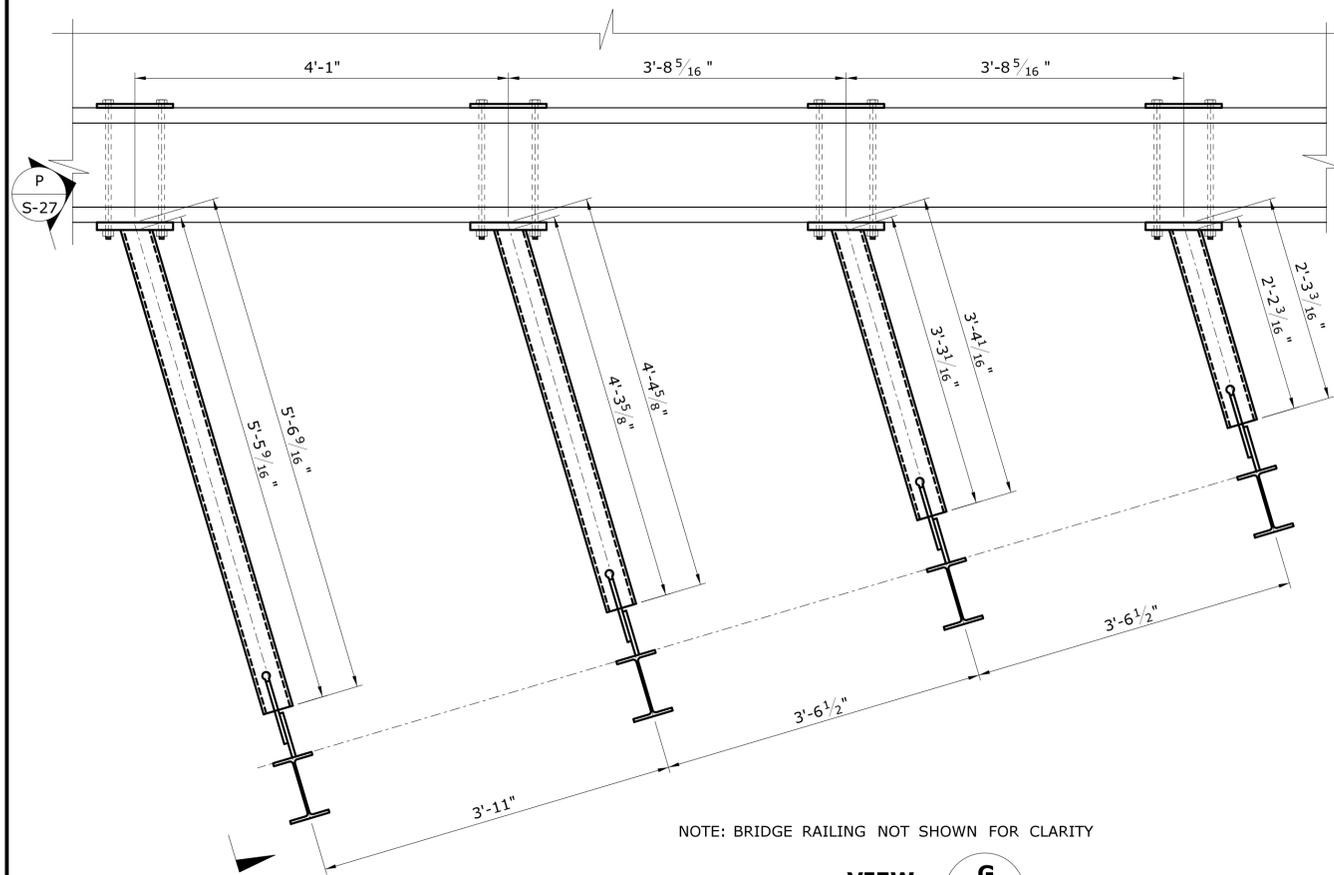


VIEW E
SCALE: 1/2" = 1'-0"

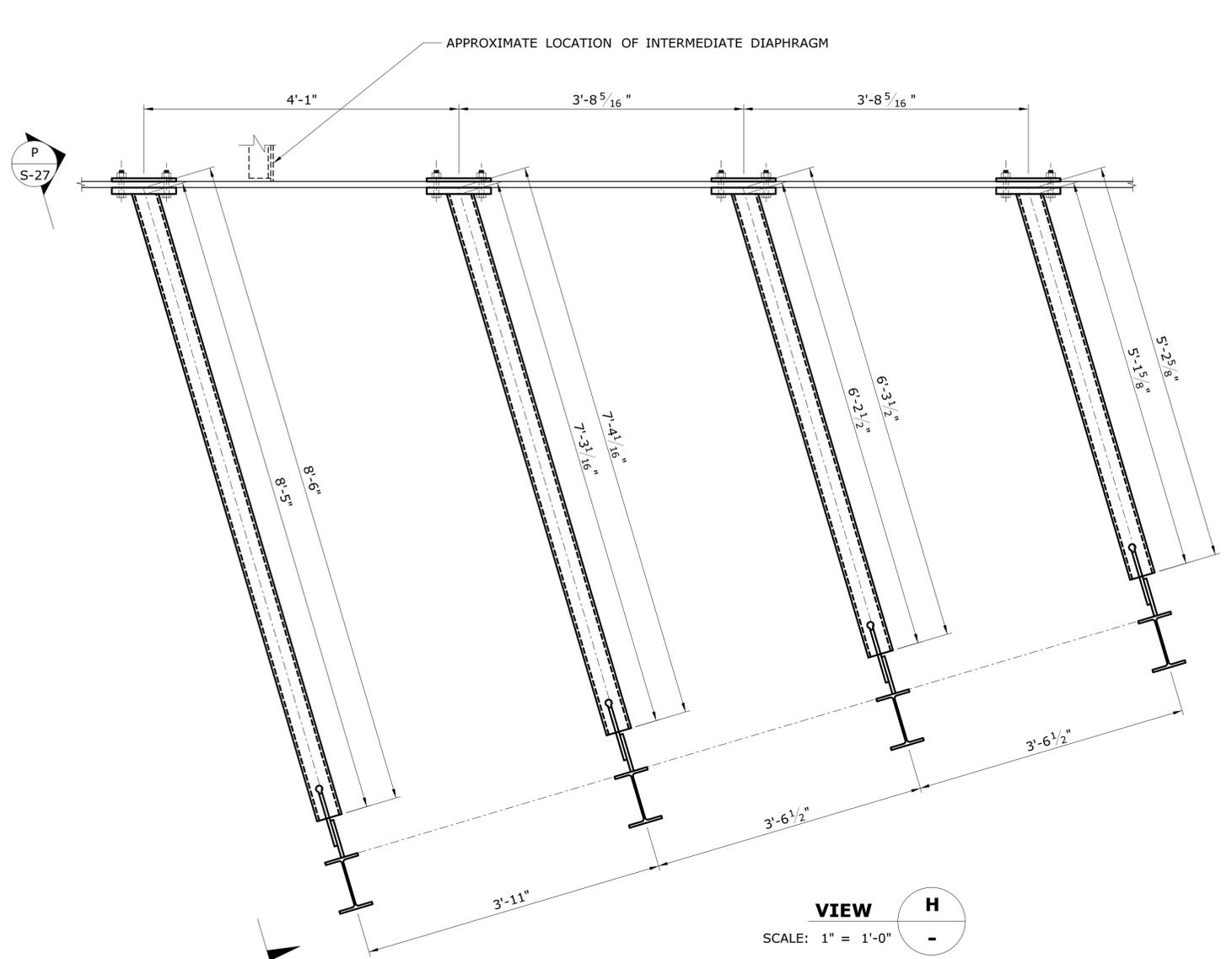


SECTION F
SCALE: 3" = 1'-0"

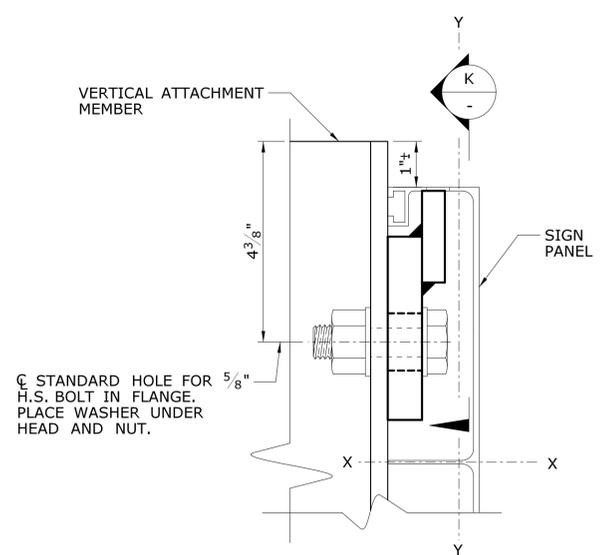
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				CHECKED BY: RDD		APPROVED BY: <i>[Signature]</i>		VARIOUS	DRAWING NO. S-25
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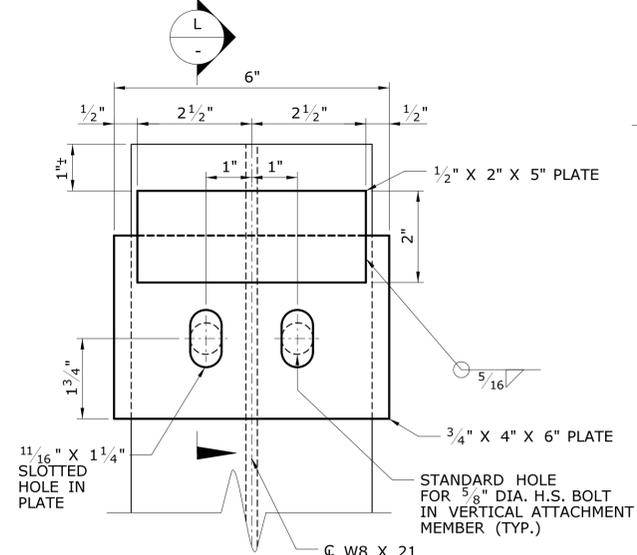
VIEW G
SCALE: 1" = 1'-0"



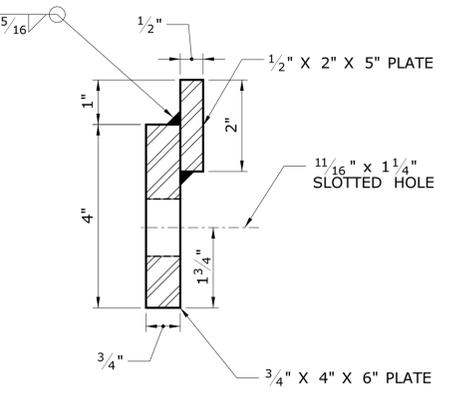
VIEW H
SCALE: 1" = 1'-0"



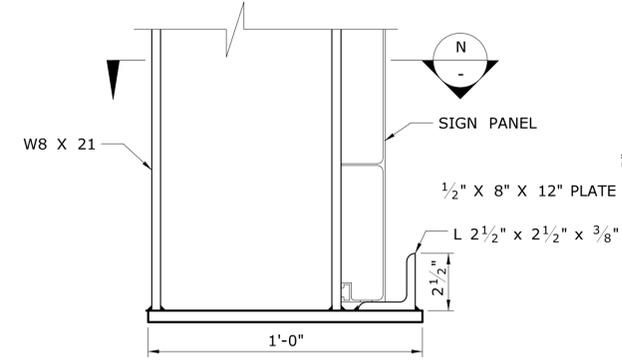
DETAIL J
SCALE: 6" = 1'-0"



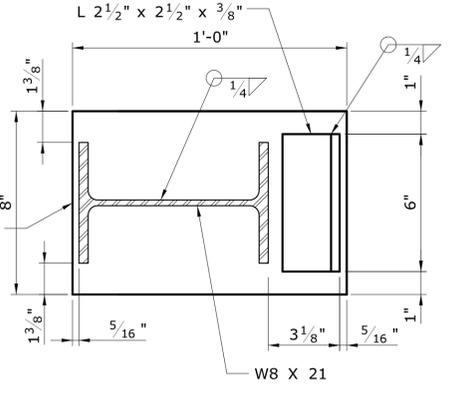
SECTION K
SCALE: 6" = 1'-0"



SECTION L
SCALE: 6" = 1'-0"



DETAIL M
SCALE: 3" = 1'-0"



SECTION N
SCALE: 3" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
MDG
CHECKED BY:
RDD
SCALE AS NOTED

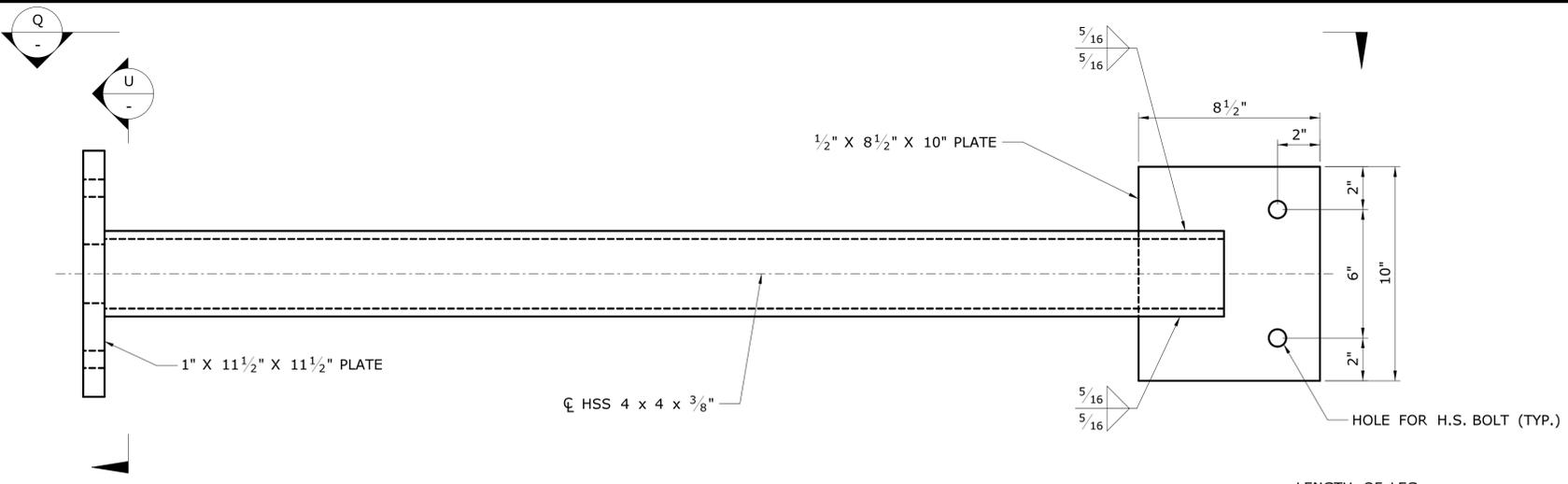


SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:
[Signature]

PROJECT TITLE:
REPLACEMENT OF HIGHWAY SIGNING ON I-395

TOWN:
VARIOUS
DRAWING TITLE:
SIGN SUPPORT NO. 21287 DETAILS - 2

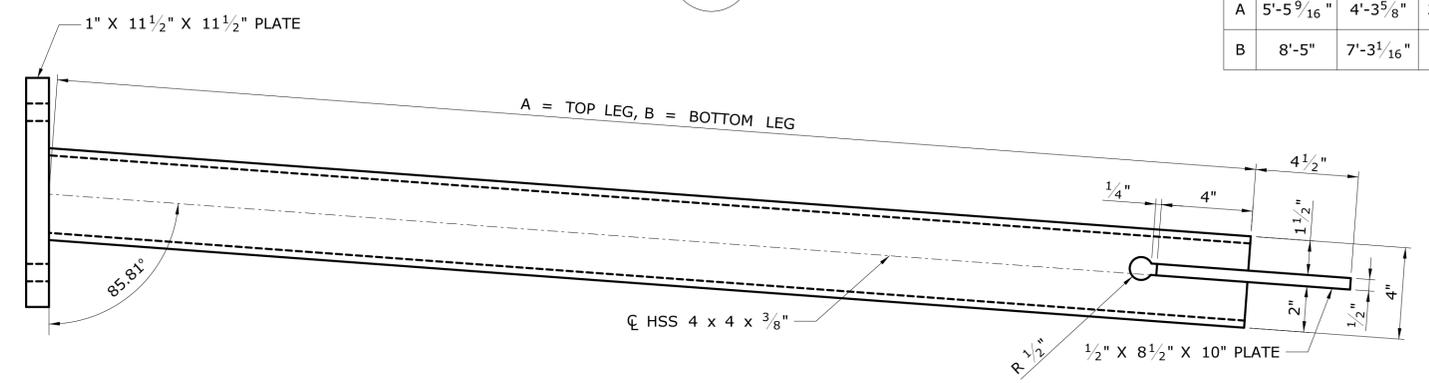
PROJECT NO.
172-387
DRAWING NO.
S-26
SHEET NO.
04.26



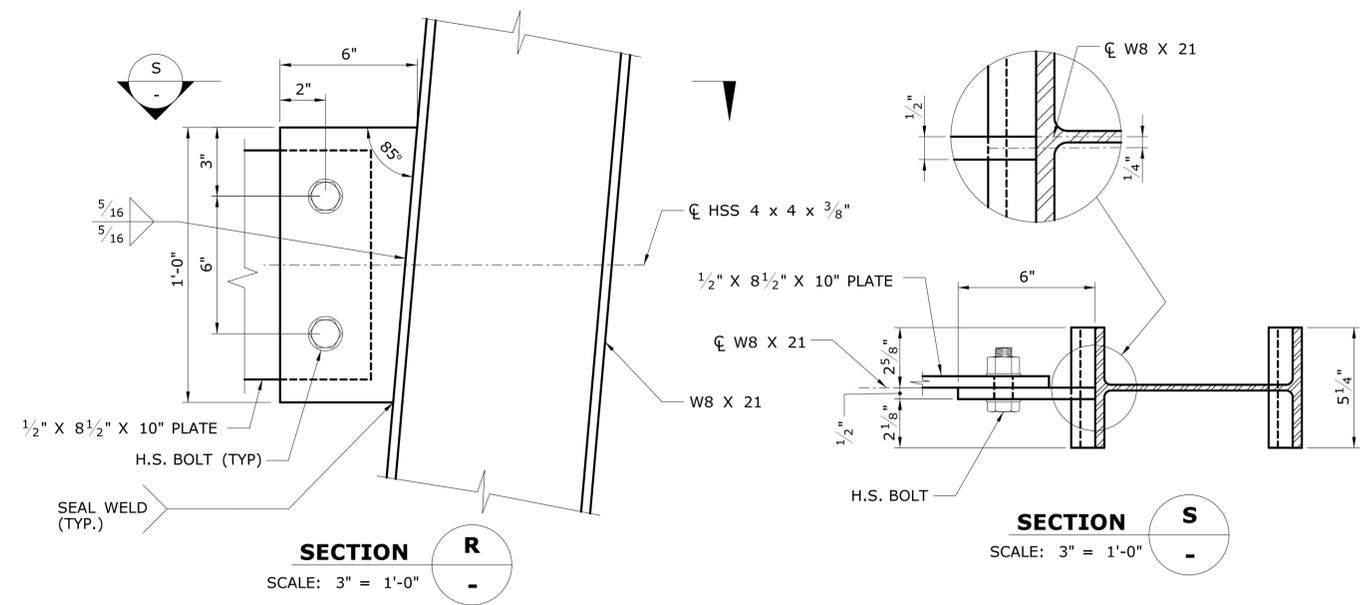
VIEW P
SCALE: 3" = 1'-0"

LENGTH OF LEG

	LEG 1	LEG 2	LEG 3	LEG 4
A	5'-5 ⁹ / ₁₆ "	4'-3 ⁵ / ₈ "	3'-3 ¹ / ₁₆ "	2'-2 ⁷ / ₁₆ "
B	8'-5"	7'-3 ¹ / ₁₆ "	6'-2 ¹ / ₂ "	5'-1 ⁷ / ₈ "

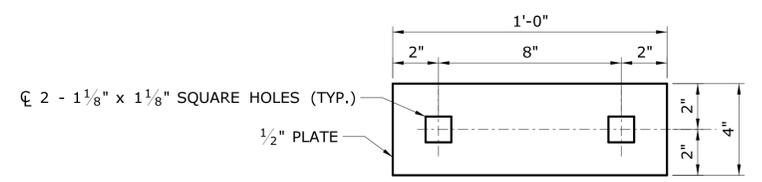


VIEW Q
SCALE: 3" = 1'-0"

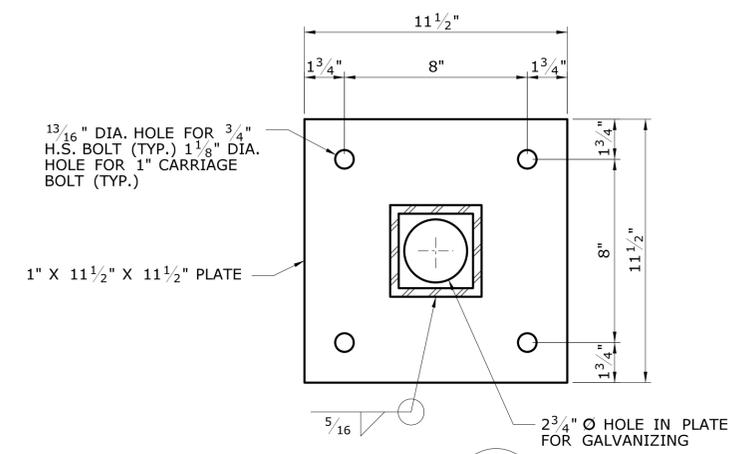
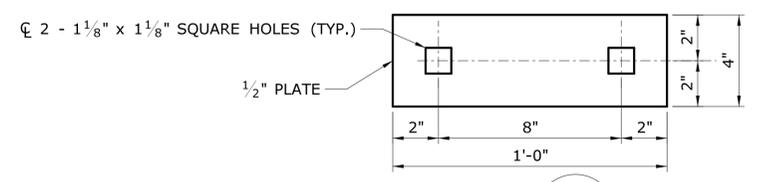


SECTION R
SCALE: 3" = 1'-0"

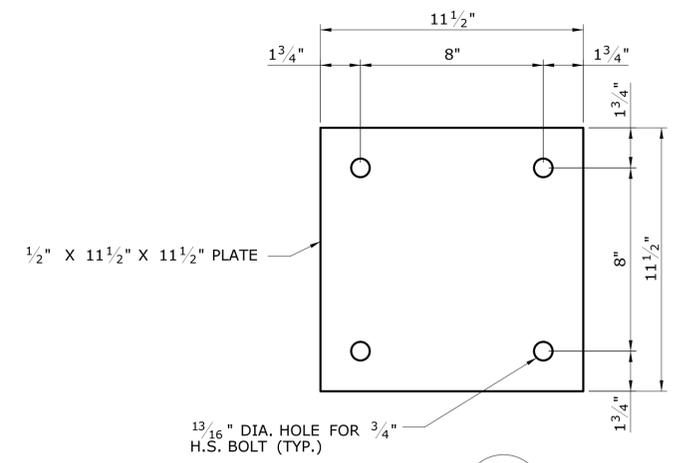
SECTION S
SCALE: 3" = 1'-0"



DETAIL T
SCALE: 3" = 1'-0"



SECTION U
SCALE: 3" = 1'-0"



DETAIL V
SCALE: 3" = 1'-0"

NOTES

THE MONOTUBE BRIDGE SIGN STRUCTURE, INCLUDING THE ANCHORAGE TO THE FOUNDATION AND THE HARDWARE AND STRUCTURAL MEMBERS REQUIRED TO SUPPORT THE TRAFFIC APPURTENANCES, SHALL BE DESIGNED, FABRICATED, ERECTED, ASSEMBLED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISION "MONOTUBE BRIDGE SIGN STRUCTURE".

THE MONOTUBE BRIDGE SIGN SUPPORT SHALL BE COMPOSED OF A SINGLE LINEAR TUBULAR HORIZONTAL OVERHEAD SPAN MEMBER SUPPORTED ON EACH END BY A SINGLE LINEAR TUBULAR POLE MEMBER.

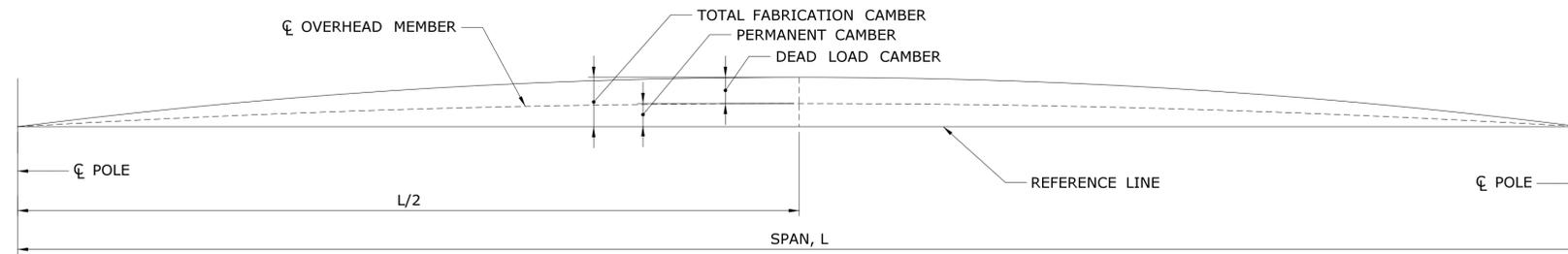
THE DETAILS PRESENTED AND REFERRED TO ON THIS SHEET REPRESENT CONCEPTUAL DETAILS OF A SIGN SUPPORT CONSISTANT WITH THE REQUIREMENTS IN THE SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALL DETAILS AND DIMENSIONS.

THE APPROXIMATE DIMENSIONS OF THE HORIZONTAL OVERHEAD SPAN MEMBER AND THE POLE HEIGHTS ARE SHOWN IN PLAN AND ELEVATION ON THE TRAFFIC SHEETS. THE ACTUAL SIGN SUPPORT DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR BASED ON A THE HORIZONTAL AND VERTICAL CLEARANCES SHOWN ON THE TRAFFIC SHEETS, A FIELD SURVEY OF THE FINISHED GRADE AT THE SITE, THE ELEVATION OF THE TOP OF THE FINISHED FOUNDATION, THE LOCATIONS OF OVERHEAD AND SUBSURFACE UTILITIES, THE LOCATION OF THE DRAINAGE FACILITIES AND NOISE BARRIER WALL LOCATIONS.

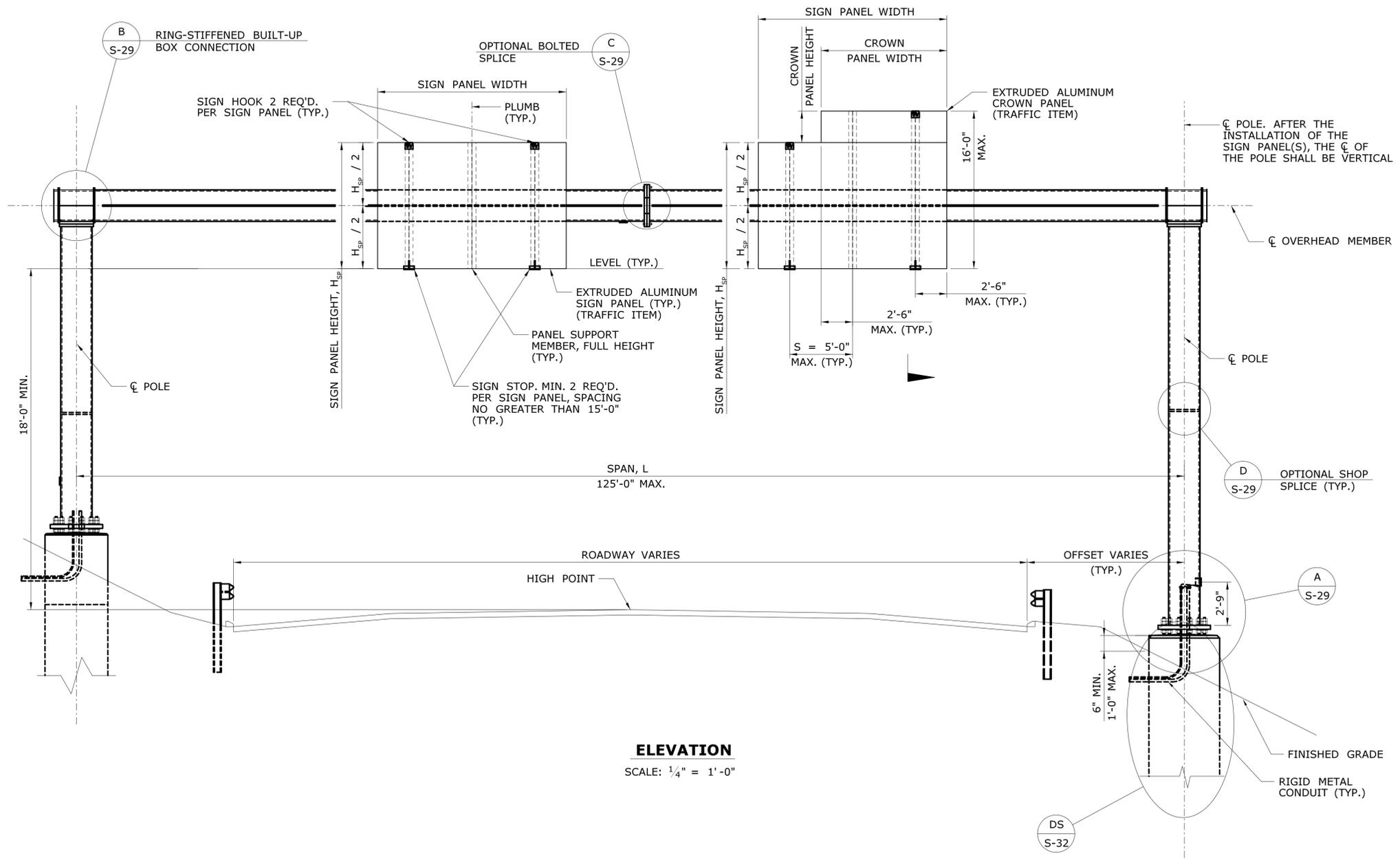
THE SIGN PANELS, INCLUDING CROWN PANELS AS APPLICABLE, SHALL BE LOCATED ON THE HORIZONTAL OVERHEAD SPAN MEMBER BASED ON THE DIMENSIONS SHOWN ON THE TRAFFIC SHEETS AND THE ACTUAL SIGN SUPPORT DIMENSIONS. THE SIGN PANELS SHALL BE INSTALLED SYMMETRICALLY ABOUT THE CENTERLINE OF THE OVERHEAD MEMBER. THE NUMBER AND SPACING OF PANEL SUPPORT MEMBERS SHALL BE DETERMINED BY THE CONTRACTOR BASED ON THE WIDTH OF THE SIGN AND CROWN PANELS AND THE SUPPORT MEMBER SPACING PARAMETERS. SIGN PANELS SHALL BE SUPPORTED BY NO LESS THAN 3 SUPPORT MEMBERS. CROWN PANELS SHALL BE SUPPORTED BY NO LESS THAN 2 SUPPORT MEMBERS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FIT OF THE SIGN SUPPORT STRUCTURES ON THE CONSTRUCTED FOUNDATIONS. PRIOR TO FABRICATION, THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS TO VERIFY ALL SIGN SUPPORT DIMENSIONS DEPENDANT UPON THE CONSTRUCTED FOUNDATIONS. THE OVERHEAD MEMBER SHALL BE TEMPORARILY SUPPORTED, IN ORDER TO BRING ALL PLATES OF THE CONNECTIONS INTO FIRM CONTACT, WHILE THE HIGH STRENGTH BOLTS ARE INSTALLED AND TENSIONED. THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS UNTIL THE TOTAL STRUCTURE IS ERECTED.

THE COST OF THE TUBULAR STEEL MEMBERS, STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS, HIGH-STRENGTH BOLTS AND ANCHORAGE MATERIALS, INCLUDING THE DESIGN, FABRICATION, COATING AND ERECTION, SHALL BE PAID FOR UNDER THE ITEM "MONOTUBE BRIDGE SIGN STRUCTURE". THE COST OF FOUNDATION EXCAVATION, REINFORCEMENT AND CONCRETE, INCLUDING THE DESIGN AND FABRICATION, SHALL BE PAID FOR UNDER THE ITEM "DRILLED SHAFT TRAFFIC STRUCTURE FOUNDATION".



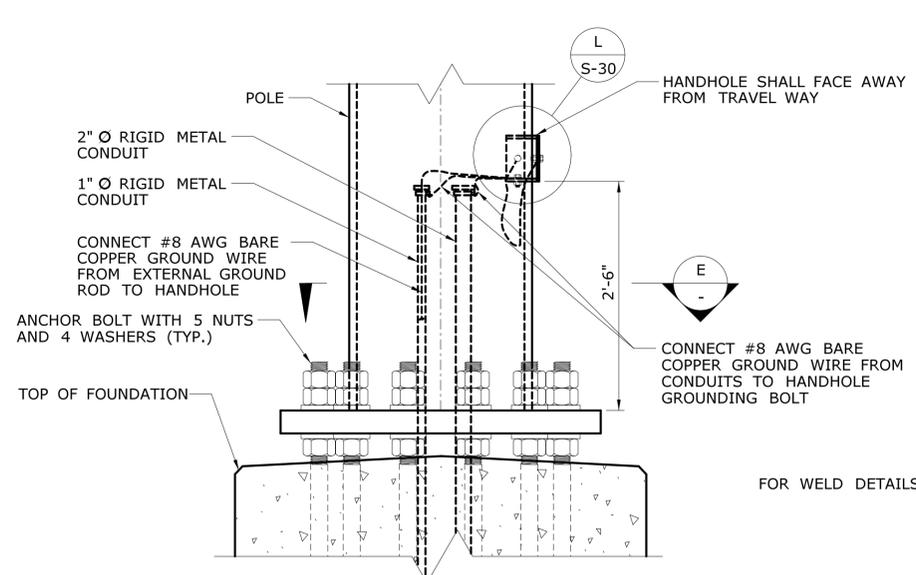
CAMBER DIAGRAM



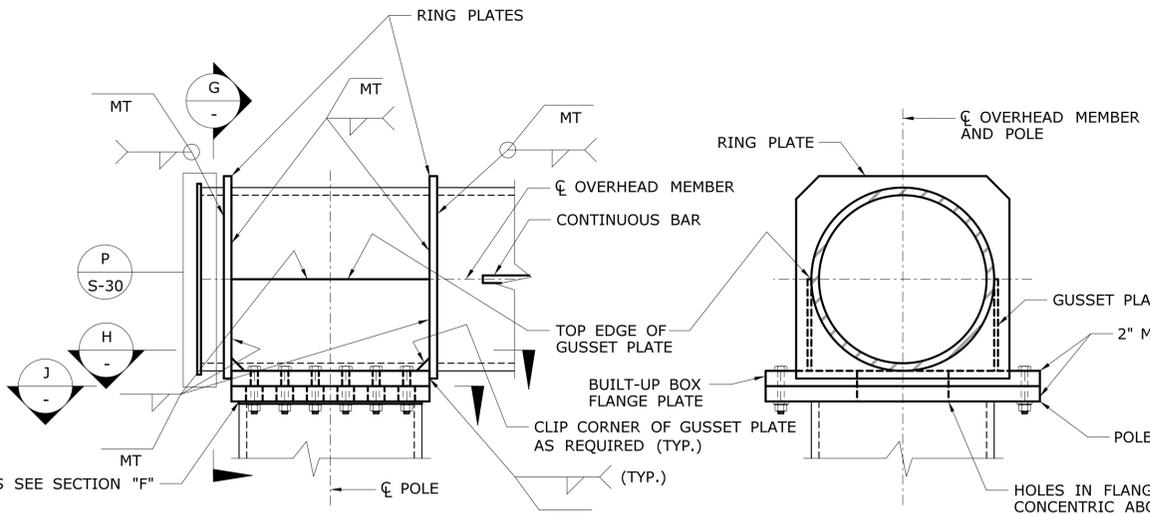
ELEVATION

SCALE: 1/4" = 1'-0"

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013	DESIGNER/DRAFTER: MDG	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN:	PROJECT NO. 172-387
				CHECKED BY: RDD		APPROVED BY: <i>[Signature]</i>		VARIOUS	DRAWING NO. S-28
				SCALE AS NOTED	Filename: ...\\SB_MBS-1_Elevation.dgn			DRAWING TITLE: MONOTUBE BRIDGE TYPE SIGN STRUCTURE	SHEET NO. 04.28

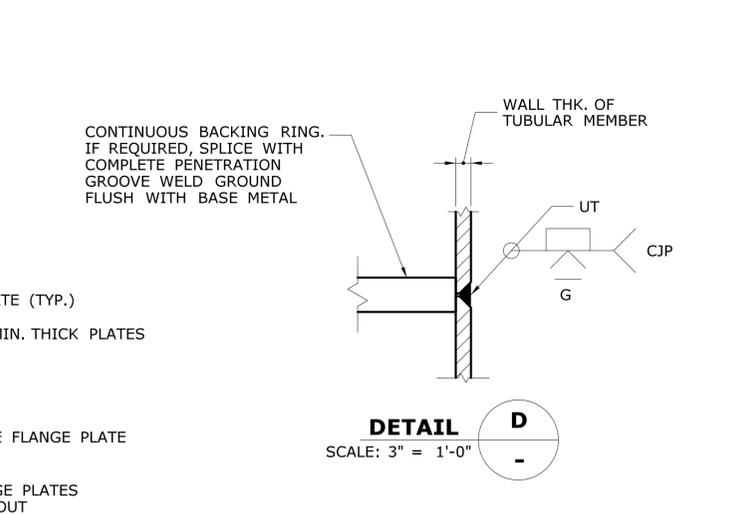


DETAIL A
SCALE: 1" = 1'-0"

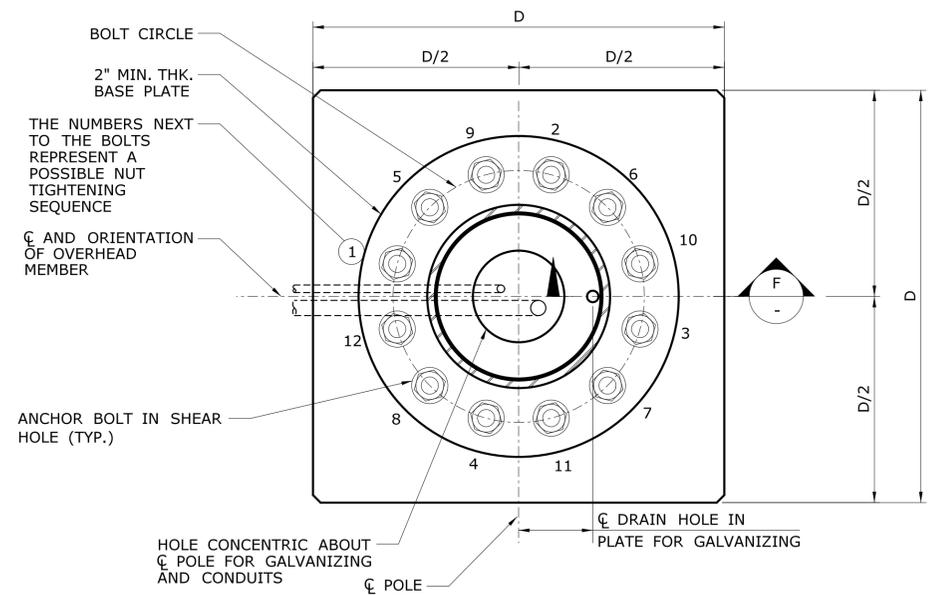


DETAIL B
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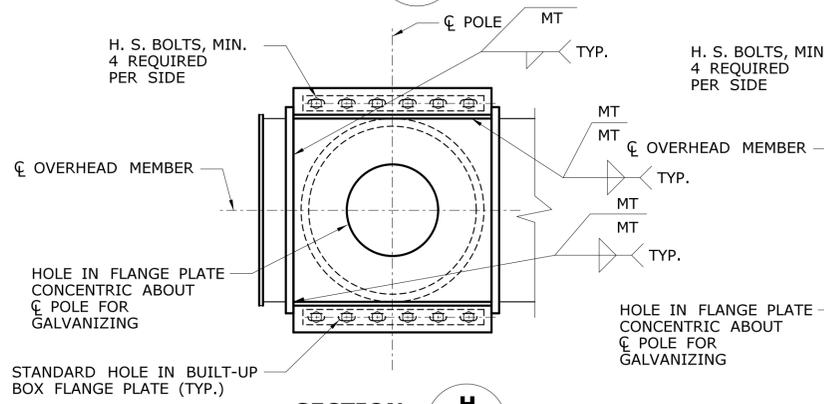
SECTION G
SCALE: 1" = 1'-0"



DETAIL D
SCALE: 3" = 1'-0"

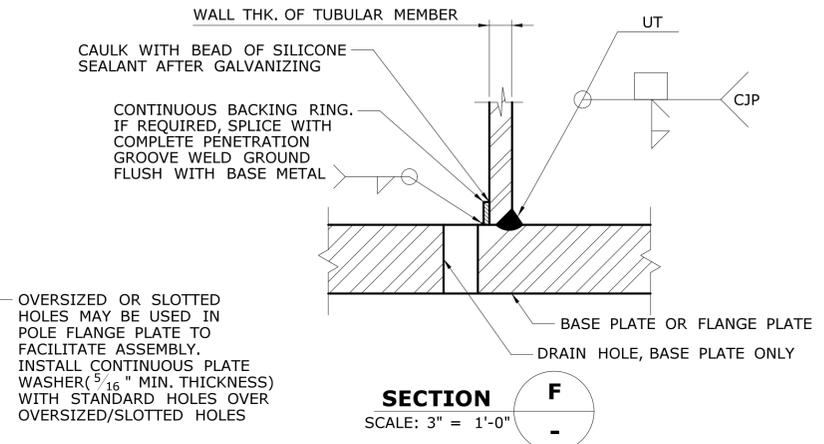


SECTION E
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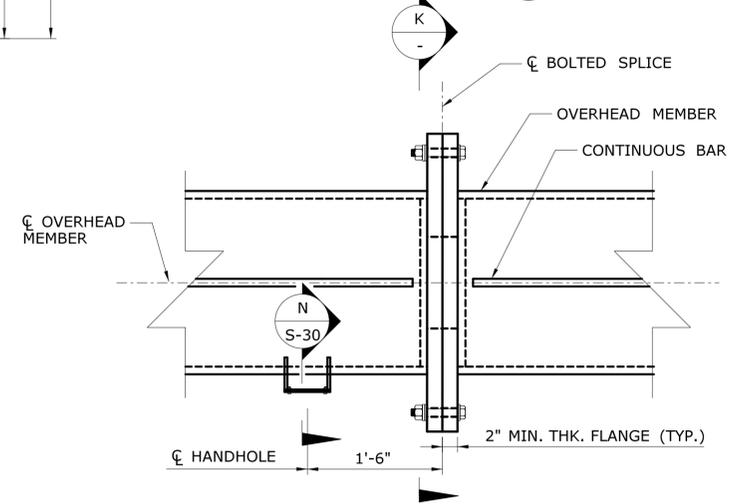


SECTION H
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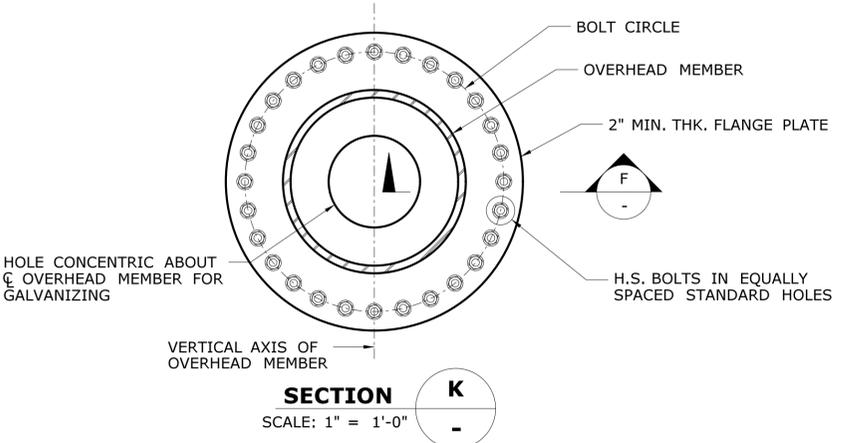
SECTION J
SCALE: 1" = 1'-0"



SECTION F
SCALE: 3" = 1'-0"



DETAIL C
SCALE: 1" = 1'-0"

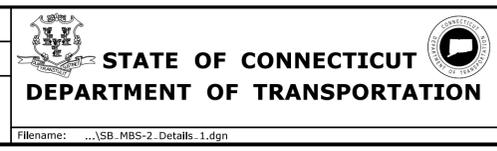


SECTION K
SCALE: 1" = 1'-0"

NOTE: TO ASSEMBLE BOX CONNECTION, FIRST FIT-UP & WELD FLANGE PLATE, GUSSET PLATES AND RING PLATES; THEN WELD BOX CONNECTION TO OVERHEAD MEMBER

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:
MDG
CHECKED BY:
RDD
SCALE AS NOTED



SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:
[Signature]

PROJECT TITLE:
**REPLACEMENT OF
HIGHWAY SIGNING
ON I-395**

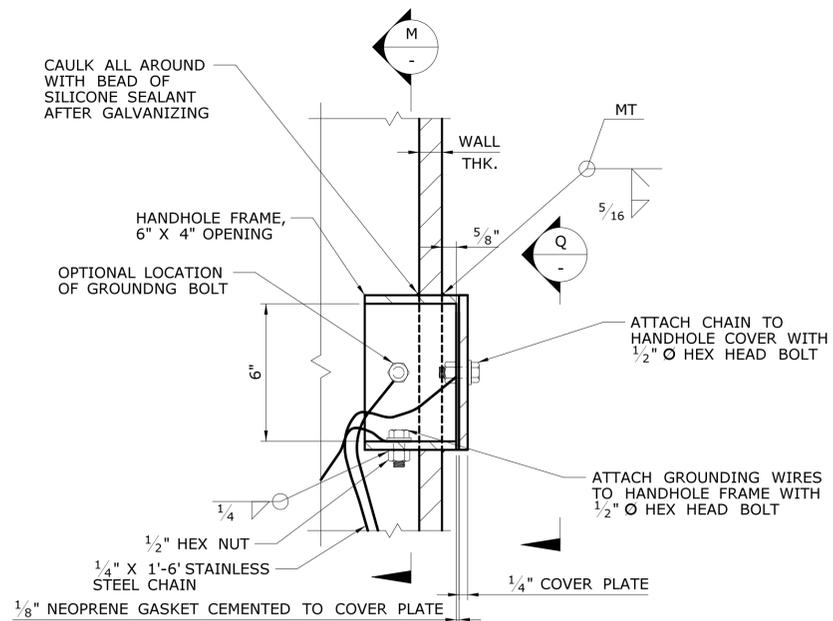
TOWN:
VARIOUS
DRAWING TITLE:
**MONOTUBE BRIDGE TYPE
DETAILS - 1**

PROJECT NO.
172-387
DRAWING NO.
S-29
SHEET NO.
04.29

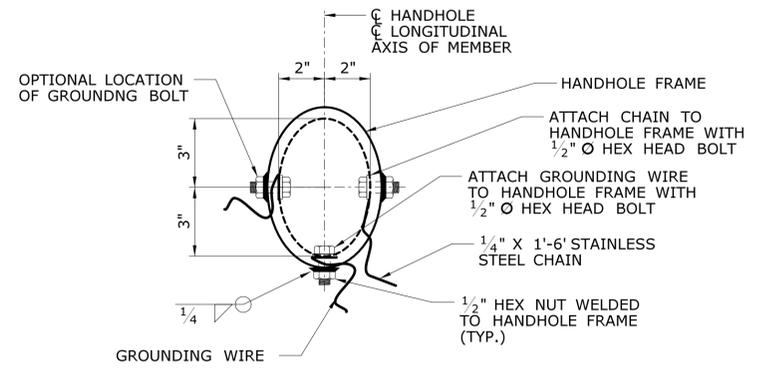
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/10/2013

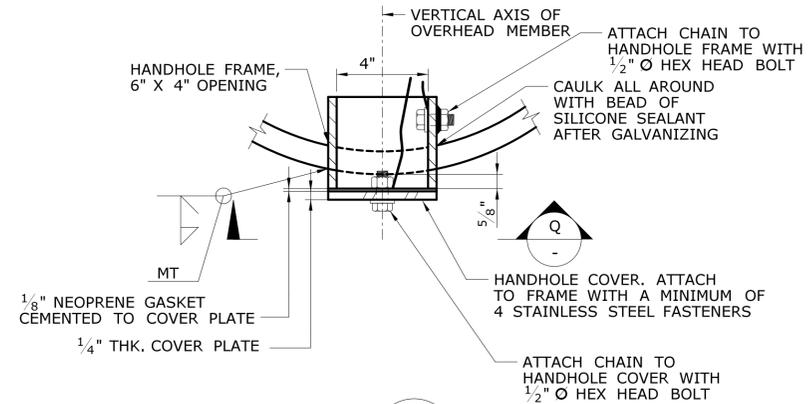
Filename: ...\\SB_MBS-2_Details_1.dgn



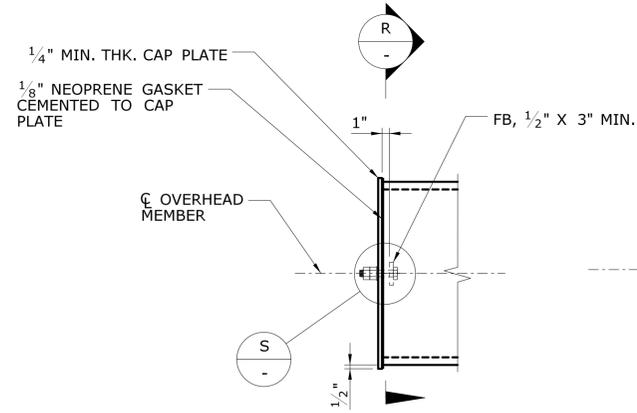
DETAIL L
SCALE: 3" = 1'-0"



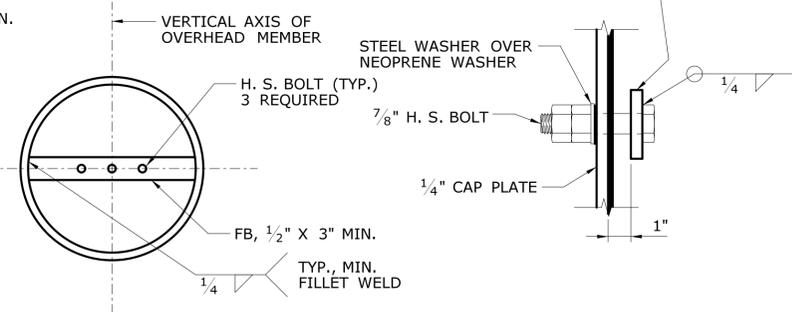
SECTION M
SCALE: 3" = 1'-0"



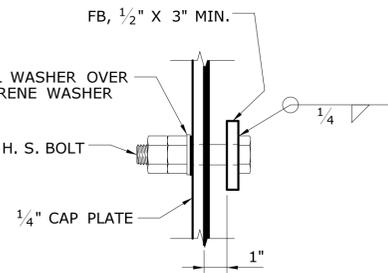
SECTION N
SCALE: 3" = 1'-0"



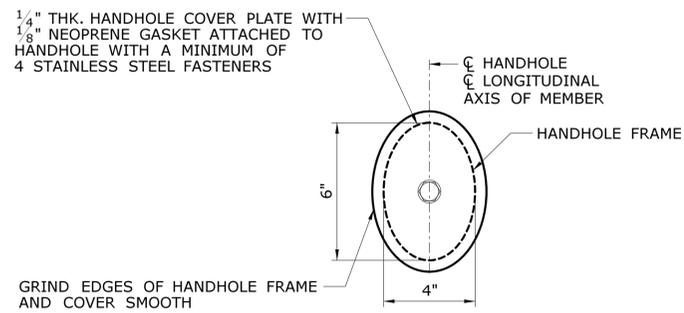
DETAIL P
SCALE: 1" = 1'-0"



DETAIL R
SCALE: 1" = 1'-0"



DETAIL S
SCALE: 3" = 1'-0"



VIEW Q
SCALE: 3" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER: **MDG**
CHECKED BY: **RDD**
SCALE AS NOTED


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

SIGNATURE/BLOCK: **OFFICE OF ENGINEERING**
APPROVED BY: *[Signature]*

PROJECT TITLE: **REPLACEMENT OF HIGHWAY SIGNING ON I-395**

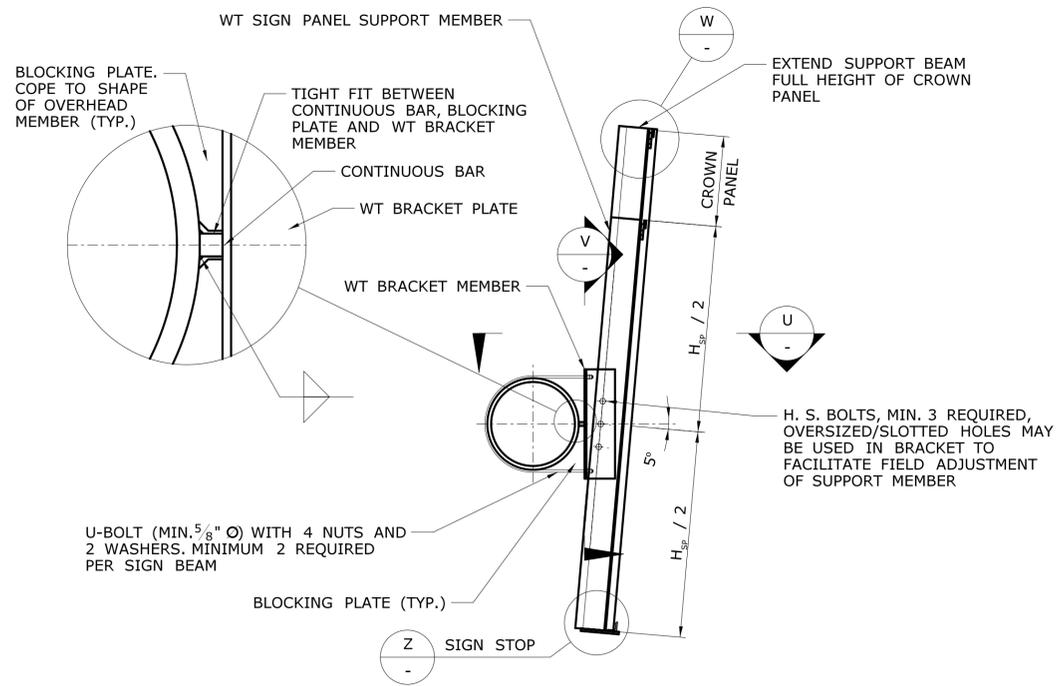
TOWN: **VARIOUS**
DRAWING TITLE: **MONOTUBE BRIDGE TYPE DETAILS - 2**

PROJECT NO. **172-387**
DRAWING NO. **S-30**
SHEET NO. **04.30**

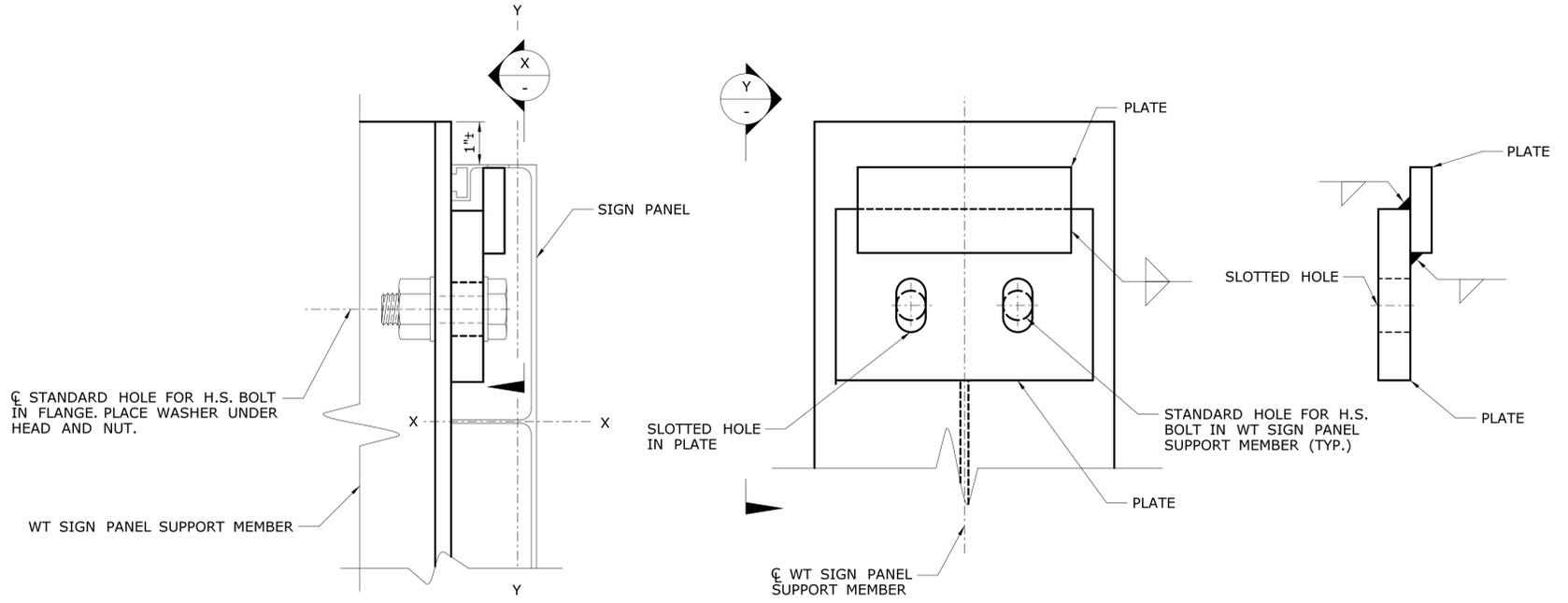
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/10/2013

Filename: ...\\SB_MBS-3_Details_2.dgn



SECTION T
SCALE: $\frac{1}{2}$ " = 1'-0"

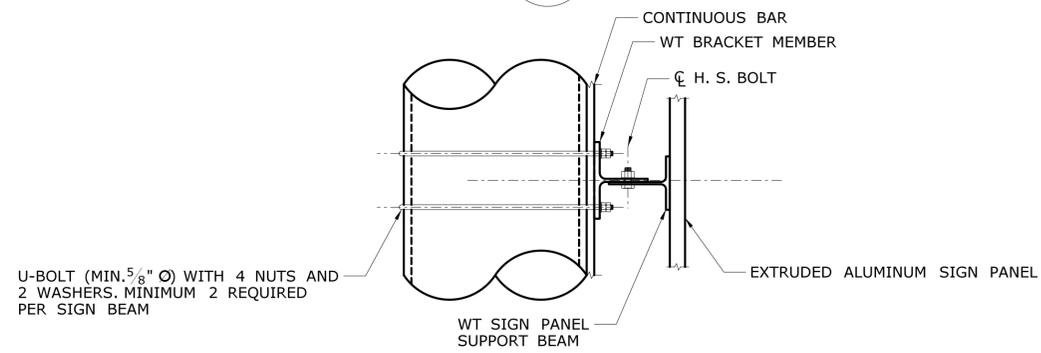


SECTION W
SCALE: 6" = 1'-0"

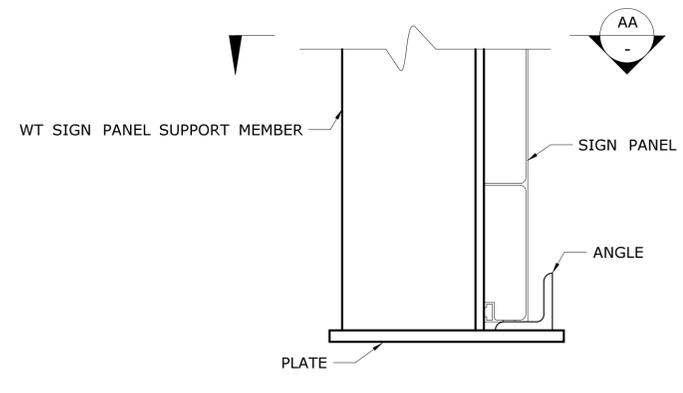
SECTION X
SCALE: 6" = 1'-0"

SECTION Y
SCALE: 6" = 1'-0"

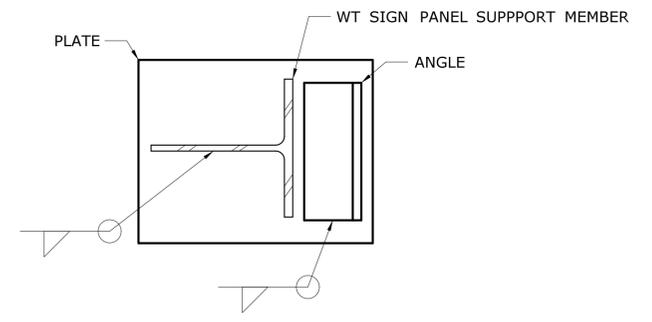
TYPICAL SIGN HOOK DETAILS



SECTION U
SCALE: 1" = 1'-0"

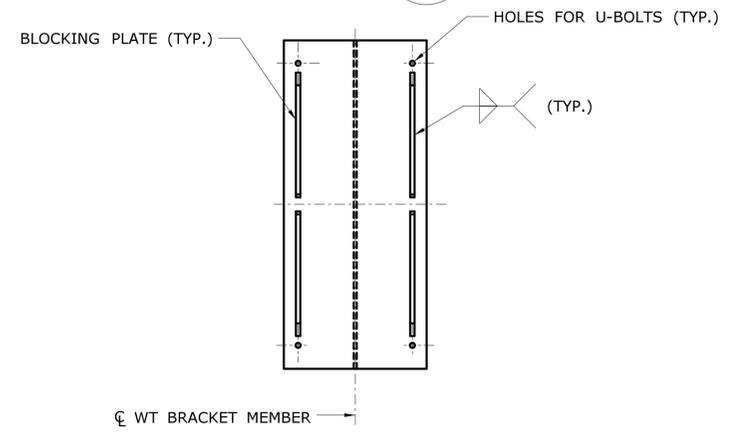


SECTION Z
SCALE: 3" = 1'-0"



SECTION AA
SCALE: 3" = 1'-0"

TYPICAL SIGN STOP DETAILS



SECTION V
SCALE: $1\frac{1}{2}$ " = 1'-0"

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013	DESIGNER/DRAFTER: MDG	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN:	PROJECT NO. 172-387
				CHECKED BY: RDD		APPROVED BY: 		VARIOUS	DRAWING NO. S-31
				SCALE AS NOTED	Filename: ...SB_MBS-4_Details_3.dgn			DRAWING TITLE: MONOTUBE BRIDGE TYPE DETAILS - 3	SHEET NO. 04.31

FOUNDATION NOTES

THE DRILLED SHAFT FOUNDATION SHALL BE DESIGNED, FABRICATED, AND CONSTRUCTED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISION "DRILLED SHAFT TRAFFIC STRUCTURE FOUNDATION".

FOR THE DESIGN OF THE DRILLED SHAFT FOUNDATION, THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE SUBSURFACE CONDITIONS (CHARACTER OF THE SOIL AND ROCK, PRESENCE OF GROUND WATER, ETC.) IN THE LOCATION OF, ADJACENT TO AND BELOW THE SHAFT EXCAVATION. SOIL BORINGS, IF AVAILABLE, ARE INCLUDED WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR MAY OBTAIN SUBSURFACE INFORMATION AT HIS OWN EXPENSE.

THE DESIGN OF THE FOUNDATION SHALL BE COORDINATED WITH THE SIGN SUPPORT AND THE SUPPORT ANCHORAGE TO ENSURE THAT THE FOUNDATION IS ADEQUATE FOR THE SUPPORT REACTIONS AND TO AVOID CONFLICTS BETWEEN THE EMBEDDED SUPPORT ANCHORAGE AND THE FOUNDATION REINFORCEMENT.

THE SIGN SUPPORT SHALL NOT BE INSTALLED UNTIL BOTH THE PEDESTAL CONCRETE AND SHAFT CONCRETE HAVE REACHED THE DESIGN COMPRESSIVE STRENGTH, f'_c , OF 4,000 PSI AT 28 DAYS.

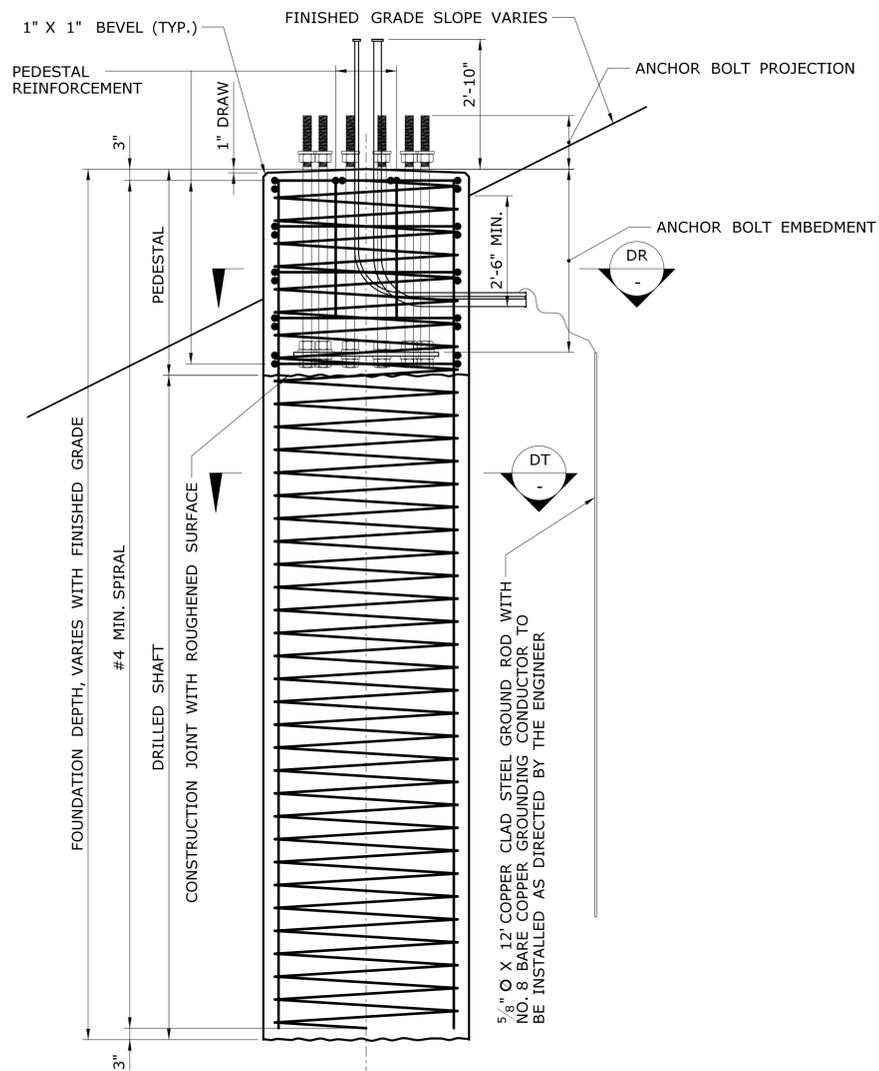
ADDITIONAL RIGID METAL CONDUITS SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.

ALL EMPTY RIGID METAL CONDUITS SHALL BE CAPPED.

THE RIGID METAL CONDUIT SWEEPS SHALL EXTEND A MINIMUM 2'-0" FROM THE SIDE OF THE FOUNDATION.

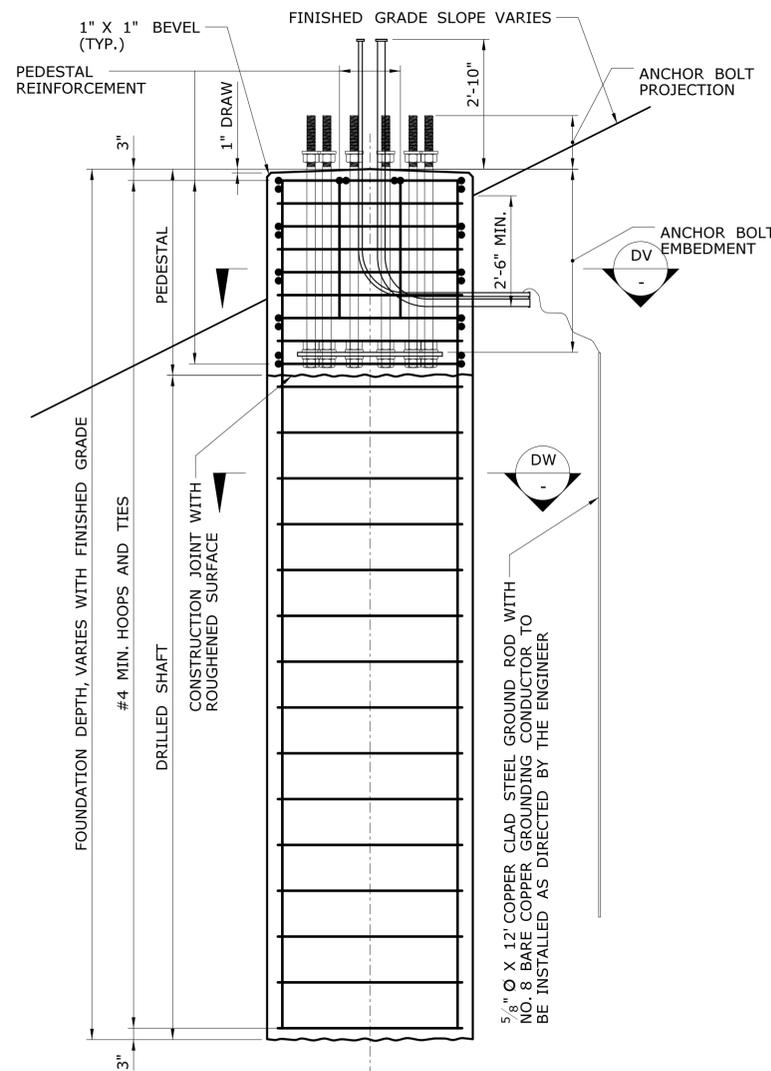
THE NO. 8 AWG BARE COPPER CONDUCTOR SHALL BE CONNECTED TO THE EXTERNAL GROUND ROD USING A GROUNDING CLAMP APPROVED FOR DIRECT BURIAL.

THE COST OF FOUNDATION EXCAVATION, REINFORCEMENT AND CONCRETE, INCLUDING THE DESIGN AND FABRICATION, SHALL BE PAID FOR UNDER THE ITEM "DRILLED SHAFT TRAFFIC STRUCTURE FOUNDATION".



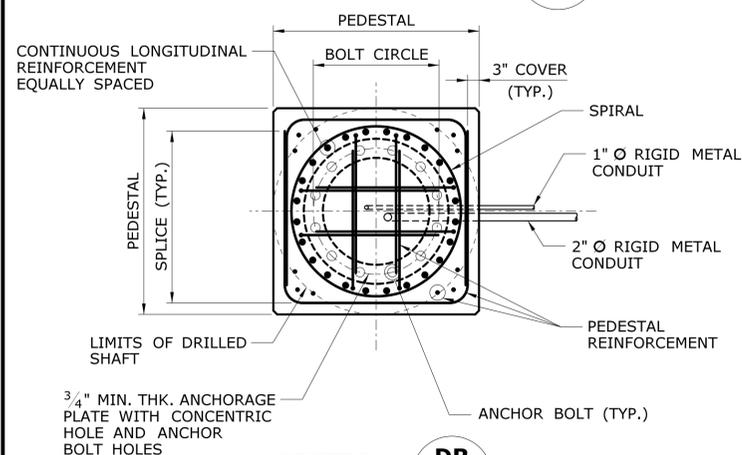
ELEVATION VIEW DS

SCALE: 1/2" = 1'-0"



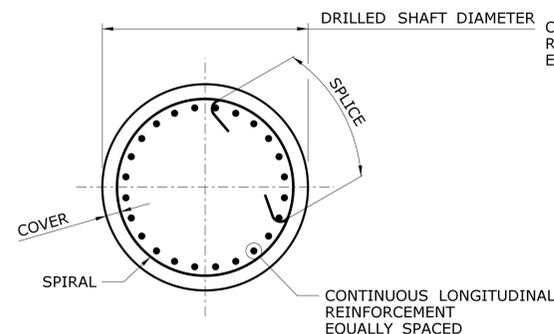
ELEVATION VIEW DS

SCALE: 1/2" = 1'-0"



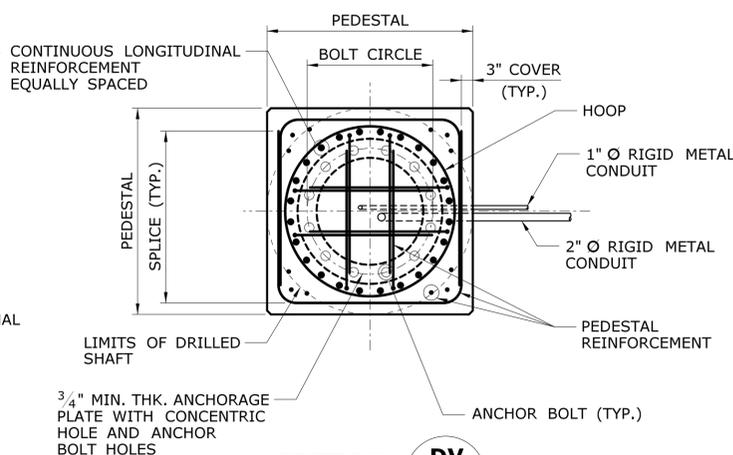
SECTION DR

SCALE: 1/2" = 1'-0"



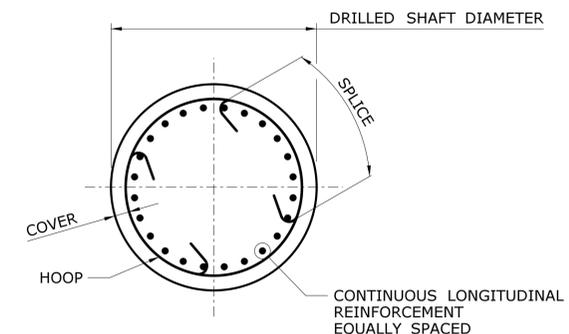
SECTION DT

SCALE: 1/2" = 1'-0"



SECTION DV

SCALE: 1/2" = 1'-0"



SECTION DW

SCALE: 1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER: MDG
CHECKED BY: RDD
SCALE AS NOTED


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
 APPROVED BY: *[Signature]*

PROJECT TITLE:
REPLACEMENT OF HIGHWAY SIGNING ON I-395

TOWN:
VARIOUS
 DRAWING TITLE:
DRILLED SHAFT DETAILS

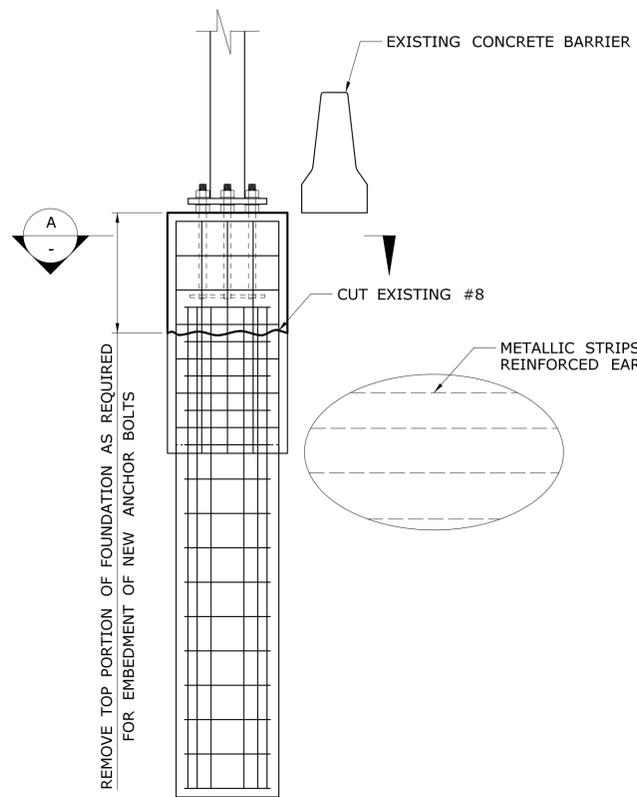
PROJECT NO.
172-387
 DRAWING NO.
S-32
 SHEET NO.
04.32

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

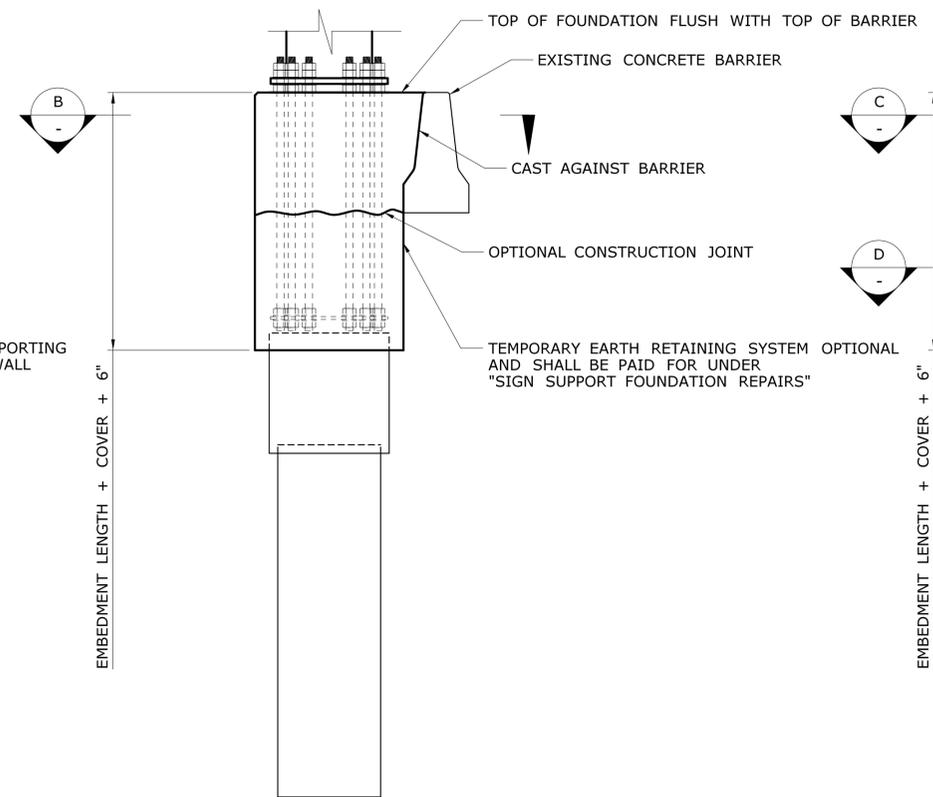
Plotted Date: 7/10/2013

Filename: ...\\SB-DSF-1_Fnd.dgn

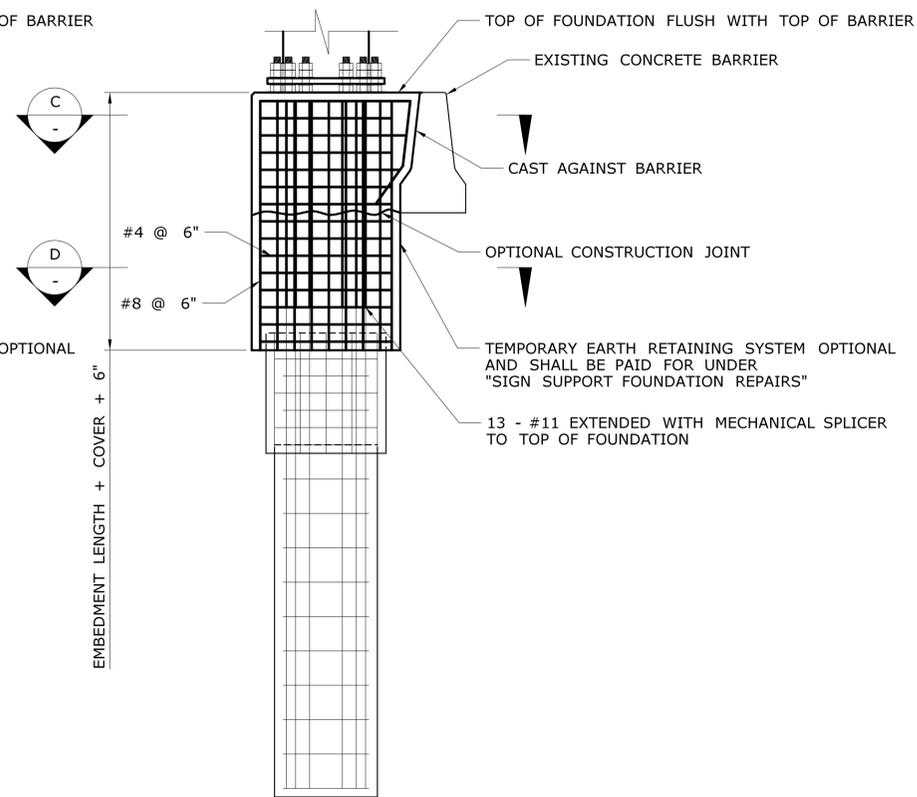
NOTE:
 THE ITEM "SIGN SUPPORT FOUNDATION REPAIRS" IS ONLY FOR SIGN SUPPORT NO. 21802. ALSO THE CONTRACTOR NEEDS TO MAKE SURE THAT ANCHORAGE PLATE AND ANCHORS BOLT SHALL FIT WITH OUT CONFLICTS OF THE EXISTING/EXTENDED VERTICAL REINFORCEMENT.



EXISTING DRILLED SHAFT FOUNDATION
 SCALE: 3/8" = 1'-0"



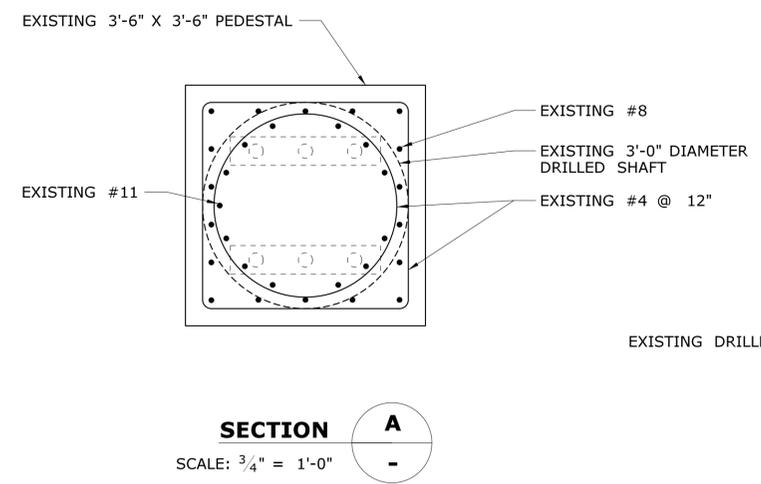
MODIFIED DRILLED SHAFT FOUNDATION
 SCALE: 3/8" = 1'-0"



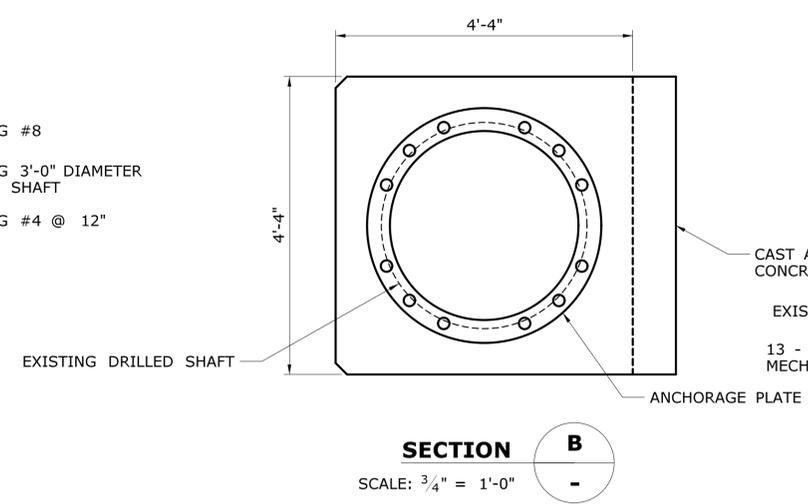
MODIFIED DRILLED SHAFT FOUNDATION
 SCALE: 3/8" = 1'-0"

NOTE: REINFORCEMENT NOT SHOWN FOR CLARITY

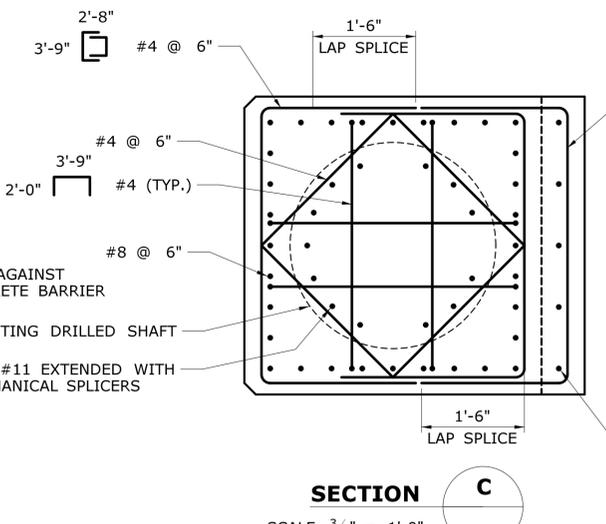
NOTE: ANCHOR BOLTS NOT SHOWN FOR CLARITY



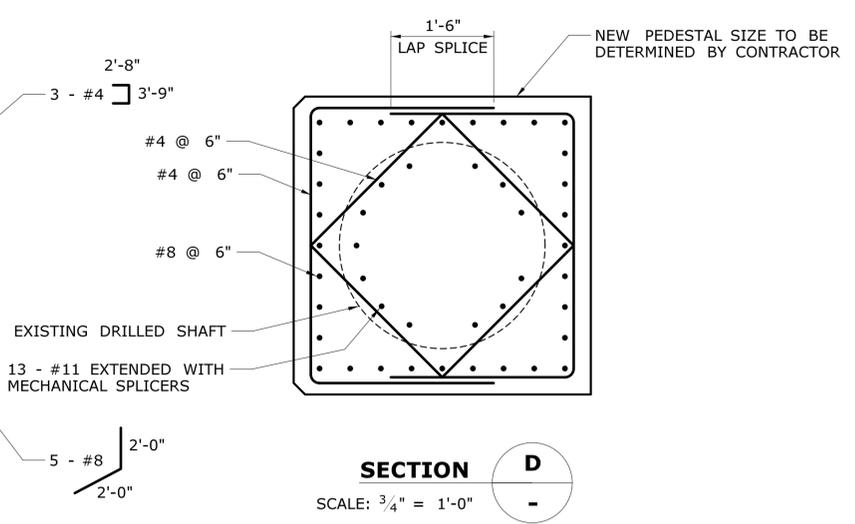
SECTION A
 SCALE: 3/4" = 1'-0"



SECTION B
 SCALE: 3/4" = 1'-0"

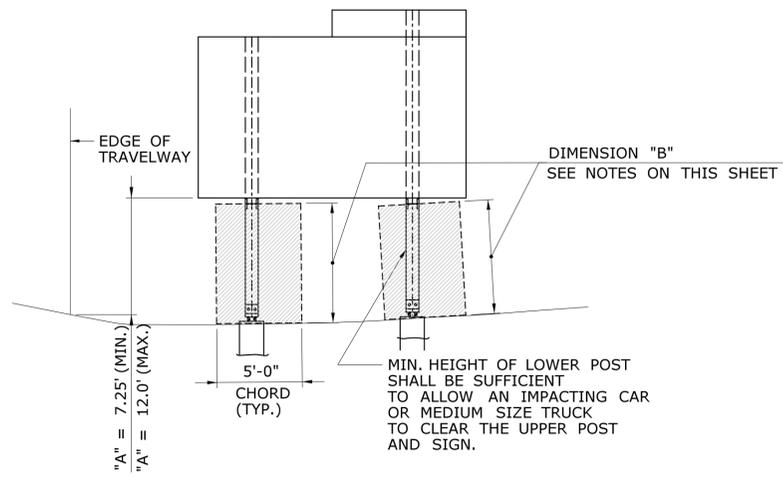


SECTION C
 SCALE: 3/4" = 1'-0"

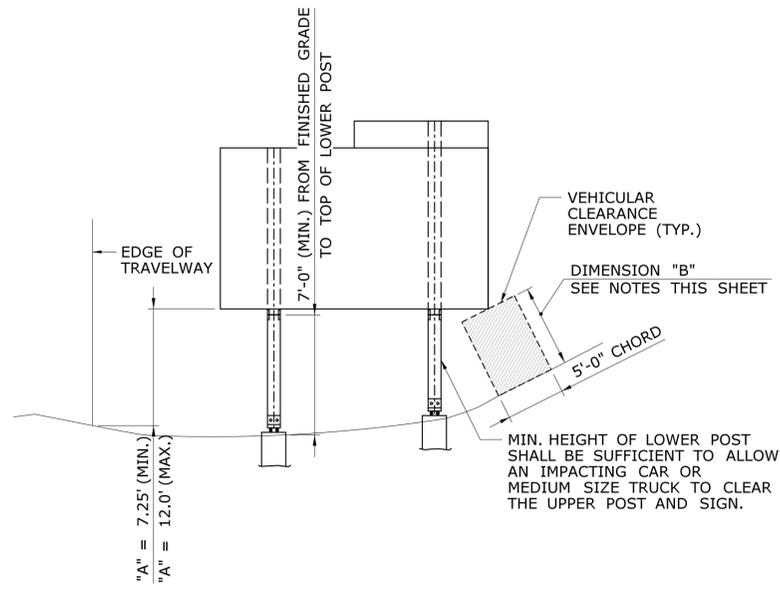


SECTION D
 SCALE: 3/4" = 1'-0"

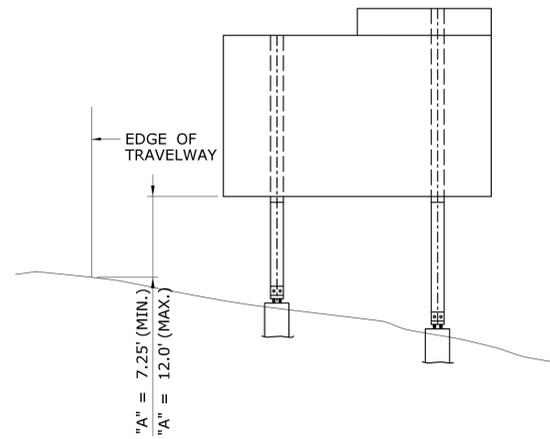
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013	DESIGNER/DRAFTER: MDG	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	PROJECT NO. 172-387
				CHECKED BY: RDD		APPROVED BY: 		DRAWING TITLE: SIGN SUPPORT NO. 21802 FOUNDATION MODIFICATIONS	DRAWING NO. S-33
				SCALE AS NOTED	Filename: ...41T Foundation.dgn				SHEET NO. 04.33



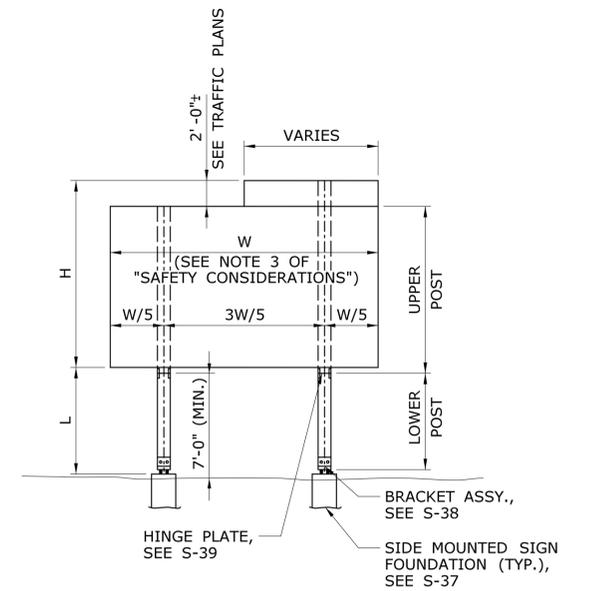
LEVEL TO SHALLOW SLOPES



STEEPER SLOPES



SIGN LOCATION - FILL



TYPICAL POST MOUNTED SIGN

SIGN LOCATION - CUT

SAFETY CONSIDERATIONS

NOTES FOR DETERMINING DIMENSION "B"

- DIMENSION "B" IS THE SMALLER OF:
 - THE CLEAR DISTANCE BETWEEN THE BOTTOM OF SIGN AND THE FINISHED GRADE.
 - THE CLEAR DISTANCE BETWEEN THE BOTTOM OF UPPER POST AND THE FINISHED GRADE.
- DIMENSION "B" SHALL TYPICALLY BE A MINIMUM OF 7'-0" TO CLEAR AN IMPACTING CAR OR MEDIUM SIZE TRUCK.
- WHEN DIMENSION "A" WOULD EXCEED 12'-0", CONSIDERATION MAY BE GIVEN TO REDUCING DIMENSION "B" IN ACCORDANCE WITH PROVISIONS OF NOTE 3.
- DIMENSION "B" MAY BE LESS THAN 7'-0":
 - IF THE POST IS OUT OF THE CLEAR ZONE.
 - IF THE POST IS WITHIN THE CLEAR ZONE BUT SHIELDED BY AN APPROPRIATE BARRIER SYSTEM.
 - IN NO CASE SHALL DIMENSION "B" BE LESS THAN 2'-6".
- IF FIELD CONDITIONS EXCEED THESE REQUIREMENTS, CONTACT THE ENGINEER FOR DIRECTION.

- THE HINGE BETWEEN THE UPPER AND LOWER POSTS SHALL BE AT LEAST 7 FT. ABOVE THE GROUND.
- NO SUPPLEMENTARY SIGNS SHALL BE ATTACHED BELOW THE HINGES.
- THE POST SPACING SHALL BE 3/5 W EXCEPT AS NOTED BELOW:

UNIT WEIGHT OF POST	POST SPACING REQUIREMENTS
LESS THAN 17 PLF	NO RESTRICTIONS ON POST SPACING **
FROM 17 PLF TO 44 PLF	PROVIDE AT LEAST 7 FT. CLEAR DISTANCE BETWEEN POSTS ***
EXCEEDS 44 PLF	RELOCATE SIGN OUTSIDE OF CLEAR ZONE OR SHIELD SIGN FROM VEHICULAR IMPACT AS DIRECTED BY THE ENGINEER

**IF THE TOTAL COMBINED WEIGHT OF ONE LOWER POST AND TWO BRACKETS EXCEEDS 600 LBS OR THE COMBINED WEIGHT OF TWO POSTS AND FOUR BRACKETS LOCATED WITHIN A CLEAR DISTANCE OF 7 FT OF EACH OTHER EXCEEDS 600 LBS, THE SIGN SHALL BE RELOCATED OUTSIDE OF THE CLEAR ZONE OR SHALL BE PROPERLY SHIELDED FROM VEHICULAR IMPACT AS DIRECTED BY THE ENGINEER. SEE "TABLE 1 - BRACKET DATA" ON S-38 FOR BRACKET WEIGHT.

*** IF THE REQUIRED CLEAR DISTANCE CANNOT BE ATTAINED, THE ENGINEER MAY DIRECT THAT THE SIGN BE RELOCATED OUTSIDE THE CLEAR ZONE OR THAT IT BE PROPERLY SHIELDED FROM VEHICULAR IMPACT.

SELECTION A POST SIZE, BRACKET NUMBER, AND HINGE TYPE

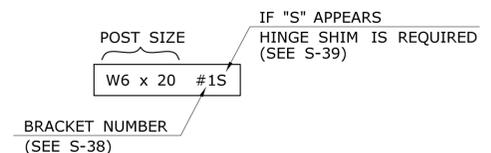
- DETERMINE THE REQUIRED SIGN DIMENSIONS AND POST HEIGHTS (SEE "TYPICAL POST MOUNTED SIGN" DETAIL, THIS SHEET).

- W = SIGN WIDTH (HORIZONTAL DIMENSION)
- H = SIGN HEIGHT (VERTICAL DIMENSION) (ADD CROWN HEIGHT WHEN APPLICABLE)
- L = POST HEIGHT (THE DISTANCE BETWEEN THE TOP OF THE FOUNDATION AND THE BOTTOM OF THE SIGN MEASURED AT THE TALLER POST)

- ENTER "POST SELECTION TABLE 1 AND 2" ON S-35 AND S-36 WITH THE DESIRED VALUES OF W, H, AND L. ROUND UP TO THE NEAREST VALUES IN THE TABLE. READ THE CORRESPONDING POST SIZE AND BRACKET NUMBER. REFER TO S-38 FOR BRACKET TYPE AND S-39 TYPICAL HINGE REQUIREMENTS.

EXAMPLE: W = 8', L = 10', H = 14'

ENTER "POST SELECTION TABLE 1" ON S-35 SINCE TABLE 1 IS APPLICABLE FOR SIGN WIDTH ≤ 15'. LOCATE THE FOLLOWING CELL:



- IF NO POST SIZE IS SHOWN FOR THE COMBINATION OF DIMENSIONS W, L, AND H, THE ENGINEER WILL EITHER PROVIDE A DESIGN FOR THE POST AND FOUNDATION OR RELOCATE THE SIGN.

NOTES ON TOTAL HEIGHT OF SIGN POSTS

- UPPER SIGN POSTS SHALL EXTEND TO THE TOP OF FULL WIDTH SIGN PANEL OF THE TOP OF CROWN, WHICHEVER IS HIGHER.
- FOR TEMPORARY ADDITIONAL CROWN PANEL REFER TO DescriptionSheet Number

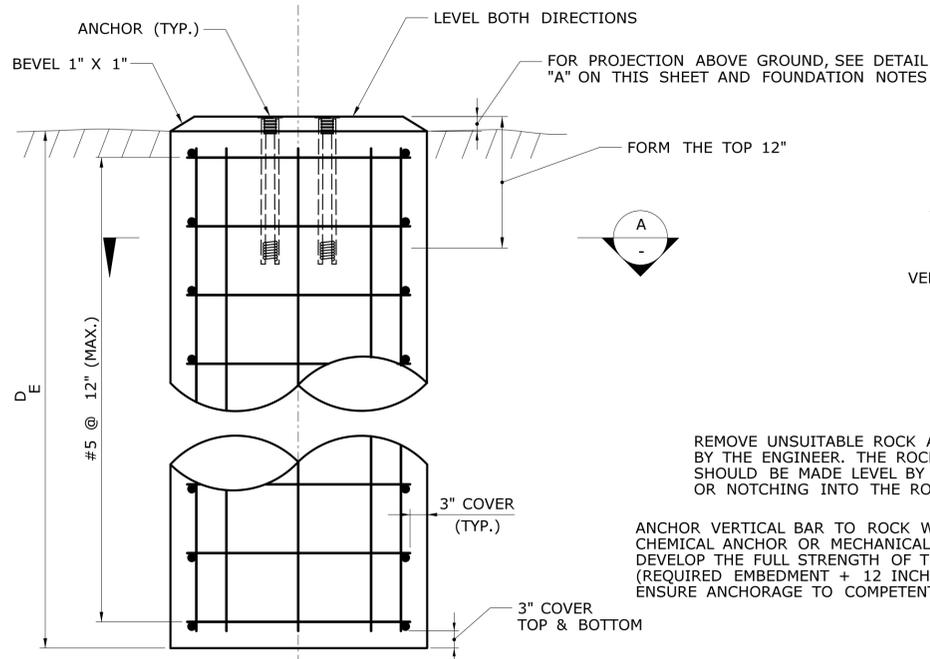
BREAKAWAY SIGN SUPPORT TYPICAL SHEETS ARE IN US CUSTOMARY UNITS

- FOR METRIC PROJECTS:
- DETERMINE US CUSTOMARY POST SIZE FROM THE POST SELECTION TABLE.
 - CALCULATE THE WEIGHT OF POSTS IN US CUSTOMARY UNITS (CWT) THEN USE THE FOLLOWING CONVERSION FACTOR TO CONVERT CWT TO KILOGRAMS.

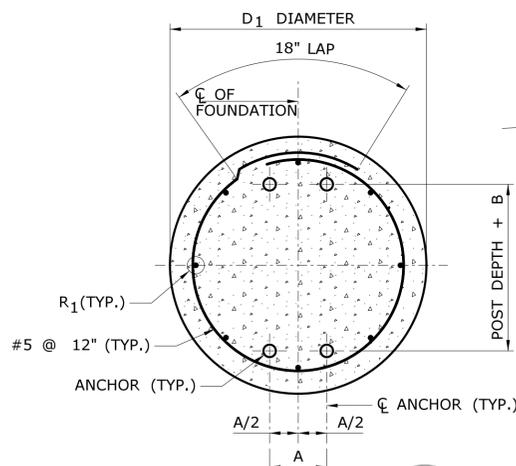
1 CWT = 45.36 KG

EXAMPLE: 120 CWT x 45.36 KG/CWT = 5443 KG

		DESIGNER/DRAFTER: BKC CHECKED BY: JRH	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY:	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	PROJECT NO. 172-387 DRAWING NO. S-34 SHEET NO. 04.34
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	Plotted Date: 7/10/2013	SCALE AS NOTED	Filename: ...SB_Breakaway_Signpost_BSM1_General Note.dgn			DRAWING TITLE: BREAKAWAY SIGN SUPPORTS GENERAL NOTES	
REV. DATE REVISION DESCRIPTION SHEET NO.							



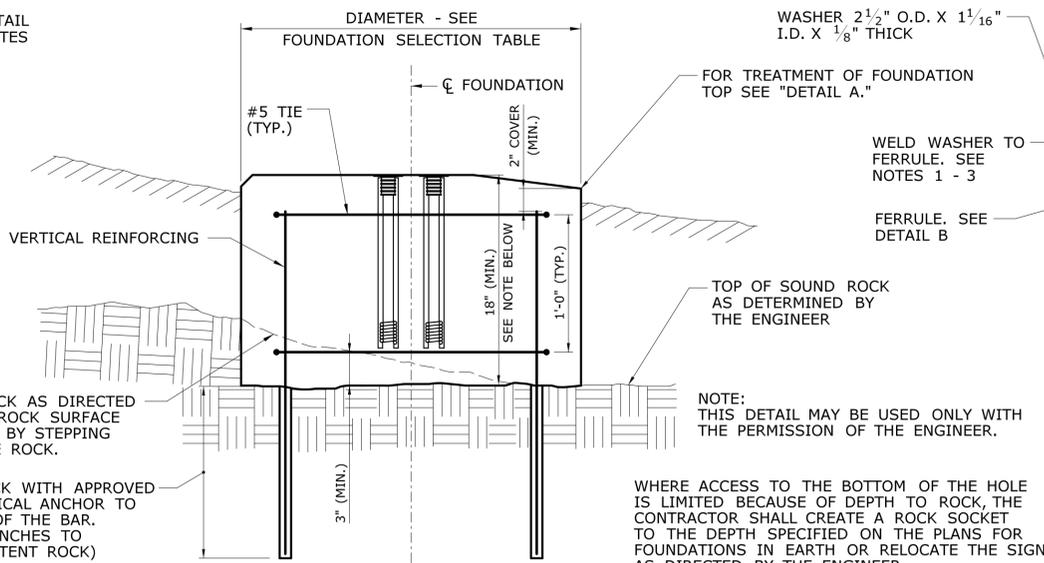
TYPICAL SECTION SIGN SUPPORT FOUNDATION IN EARTH
SCALE: 3/4" = 1'-0"



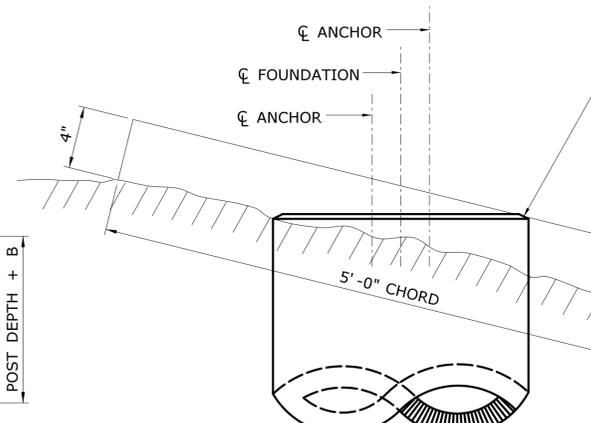
SECTION DRILLED FOUNDATION
SCALE: 3/4" = 1'-0"

FOUNDATION NOTES

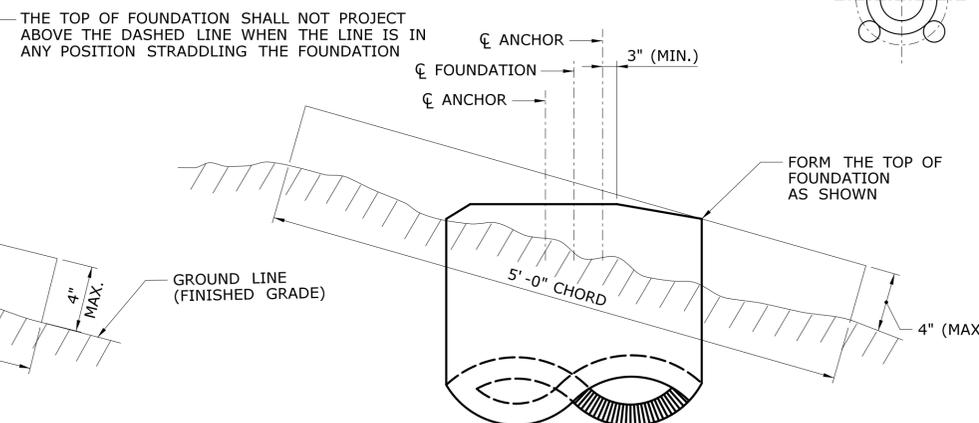
1. DETAIL A ILLUSTRATES THE METHOD USED TO MEASURE THE PROJECTION OF THE FOUNDATION ABOVE FINISHED GRADE. IT IS IMPORTANT THAT THE TOP OF THE FOUNDATION BE PLACED IN ACCORDANCE WITH THIS DETAIL.
2. THE TOP OF FOUNDATION SHALL BE CONSTRUCTED AS CLOSE TO THE FINISHED GRADE AS POSSIBLE, BUT SHOULD NOT BE COVERED BY SOIL.
3. USE A MODIFIED TOP WHERE PROJECTION LIMITS CANNOT BE MET WITH THE STANDARD TOP.
4. FOUNDATIONS SHALL BE PLACED AGAINST UNDISTURBED SOIL. WHERE ROCK IS ENCOUNTERED, THE CONTRACTOR MAY USE THE "SIGN SUPPORT FOUNDATION IN ROCK" DETAIL SHOWN ON THIS SHEET WITH THE PERMISSION OF THE ENGINEER.
5. IF UNSUITABLE SOIL IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER SHALL BE NOTIFIED. AN ALTERNATE FOUNDATION DESIGN MAY BE SUPPLIED BY THE ENGINEER, OR THE SIGN MAY BE RELOCATED.
6. PLACEMENT OF FOUNDATIONS SHALL BE IN ACCORDANCE WITH "SIGN SUPPORT PLACEMENT DETAILS" ON THIS SHEET.
7. WHERE FOUNDATIONS ARE PLACED ON SLOPES STEEPER THAN 1V : 6H, GRADE AROUND THE FOUNDATIONS IN CONFORMANCE WITH DETAIL A.



TYPICAL SECTION SIGN SUPPORT FOUNDATION IN ROCK
SCALE: 1 1/2" = 1'-0"



STANDARD FOUNDATION TOP



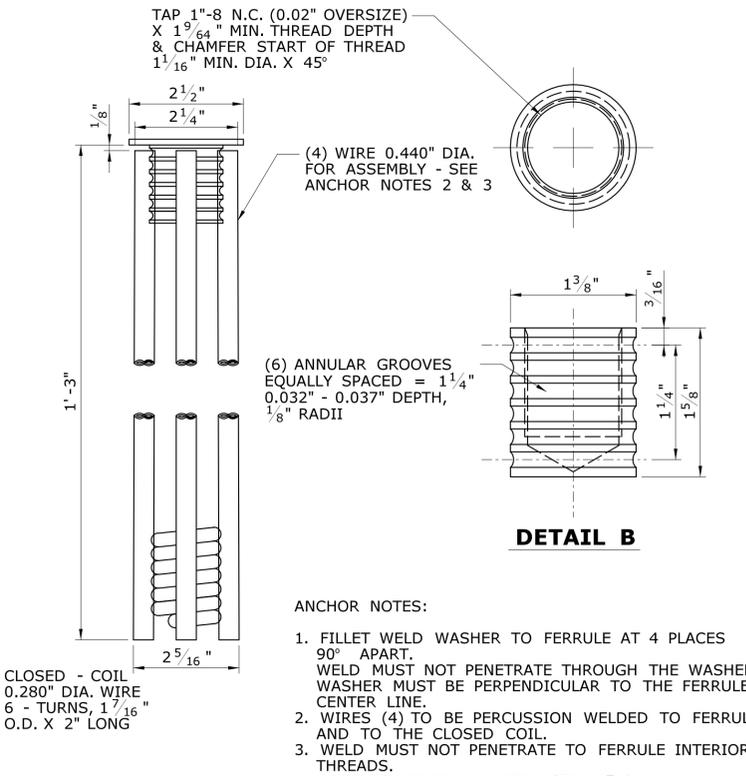
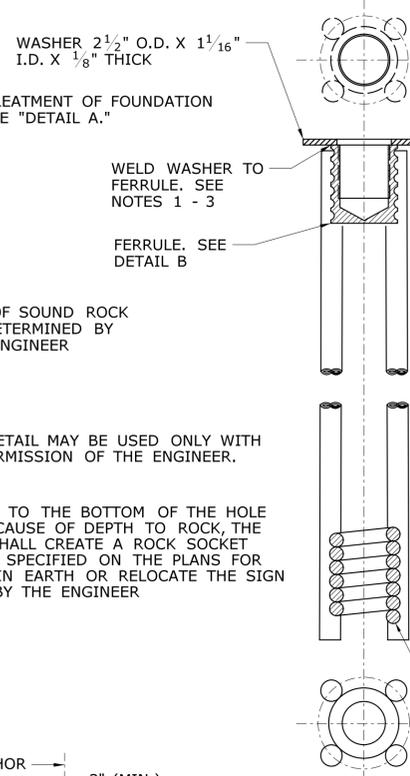
MODIFIED FOUNDATION TOP
(SEE FOUNDATION NOTE 3)

DETAIL A - PROJECTION OF FOUNDATION ABOVE GROUND

SELECTING A FOUNDATION:

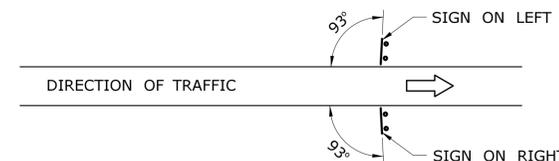
ENTER THE "FOUNDATION SELECTION TABLE" WITH THE POST SIZE AND BRACKET NO. SELECTED FROM THE "POST SELECTION TABLE 1 OR 2" ON S-35 OR S-36 READ HORIZONTALLY ACROSS THE TABLE THE CORRESPONDING VALUES OF FOUNDATION DIAMETER, EMBEDMENT DEPTH, REINFORCING BAR SIZE, ANCHOR SPACING AND DIMENSION "B".

POST SIZE	DIAMETER D ₁ (FT.)	DEPTH D _E (FT.)	REINF. STEEL R ₁	ANCHOR SPACING A (IN.)	B (IN.)		
					BRACKET NO.		
					1	2	3
W6 W8	2.5	8	8 - #5	3	7 ¹⁵ / ₁₆	8 ¹ / ₁₆	8 ¹ / ₈
W10 W12	2.5	8	8 - #5	4	7 ¹⁵ / ₁₆	8 ¹ / ₁₆	8 ¹ / ₈
W14 W16 W18 W21	3.25	8	8 - #6	4	7 ¹⁵ / ₁₆	8 ¹ / ₁₆	8 ¹ / ₈

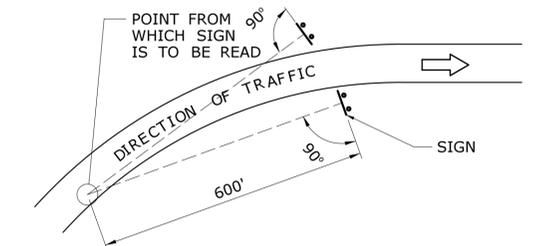


- ANCHOR NOTES:**
1. FILLET WELD WASHER TO FERRULE AT 4 PLACES 90° APART. WELD MUST NOT PENETRATE THROUGH THE WASHER. WASHER MUST BE PERPENDICULAR TO THE FERRULE CENTER LINE.
 2. WIRES (4) TO BE PERCUSSION WELDED TO FERRULE AND TO THE CLOSED COIL.
 3. WELD MUST NOT PENETRATE TO FERRULE INTERIOR THREADS.
 4. WIRE TO BE DRAWN PER ASTM A510.
 5. CHEMICAL & PHYSICAL CERTIFICATION SHOULD ACCOMPANY THE MATERIAL.
 6. CERTIFICATION SHOULD EXPLICITLY INDICATE THE MATERIAL TO BE DOMESTIC.
 7. TOLERANCES ON DECIMAL DIMENSIONS SHALL BE ± 0.004". ALL OTHER TOLERANCES SHALL BE ± 0.04", EXCEPT AS NOTED.

- ERECTION NOTE:**
- FOR MAXIMUM EFFECTIVENESS AND TO ELIMINATE OR MINIMIZE SPECULAR GLARE, POSITION SIDE MOUNTED SIGNS AS FOLLOWS:
- A. ON TANGENT SECTION, POSITION THE SIGN SUCH THAT THE VERTICAL AXIS IS PLUMB AND THE HORIZONTAL AXIS IS AT AN ANGLE OF 93° WITH THE TRAFFIC LANE WHICH THE SIGN SERVES (SEE DIAGRAM).



- B. WHERE THE SIGN IS POSITIONED ON THE OUTSIDE OR INSIDE OF THE HORIZONTAL CURVE, THE SIGN FACE SHOULD BE ORIENTED 90° TO THE STRAIGHT LINE BETWEEN THE SIGN AND THE POINT FROM WHICH THE SIGN IS TO BE READ AT THE DISTANCE SHOWN.

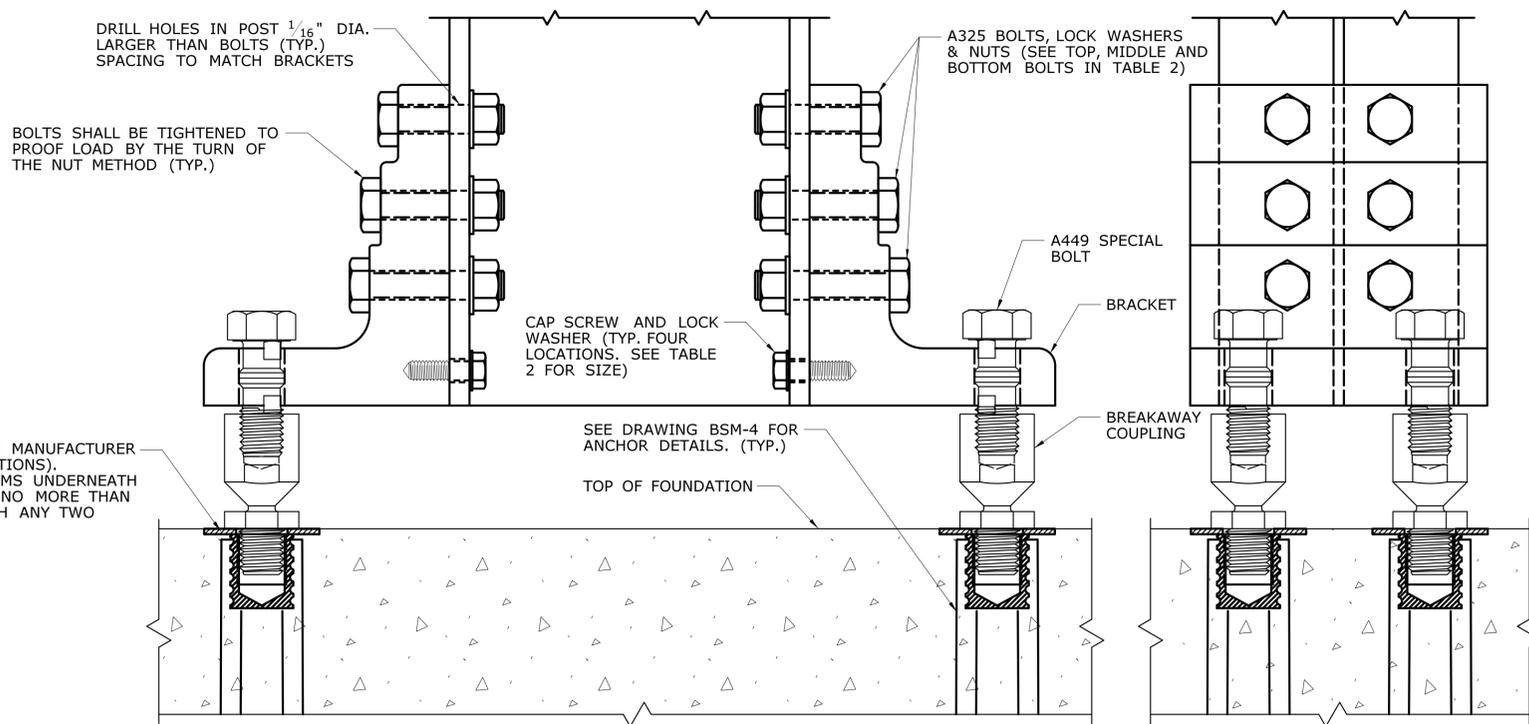


SIGN SUPPORT PLACEMENT DETAILS

DESIGNER/DRAFTER: BKC	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	PROJECT NO. 172-387
CHECKED BY: JRH		APPROVED BY: 	DRAWING TITLE: BREAKAWAY SIGN SUPPORTS FOUNDATION DETAILS	DRAWING NO. S-37	SHEET NO. 04.37
SCALE AS NOTED	Plotted Date: 7/10/2013	Filename: ...\\SB_Breakaway_Signpost_BSM4_FoundationDet.dgn			
REV. DATE	REVISION DESCRIPTION	SHEET NO.			

TABLE 1 - BRACKET DATA													
POST SIZE	BRACKET TYPE	BRACKET WEIGHT (LBS)	DIMENSIONS (IN.)			HOLE DIAMETERS (IN.)			DIMENSIONS (IN.)			F	G
			A	B	C	D1	D2	D3	BRACKET NO.				
									1	2	3		
W6, W8	B525	7 ⁵ / ₈	5 ¹ / ₄	1 ¹ / ₈	1 ¹ / ₂	1 ⁷ / ₃₂	7 ¹ / ₁₆	1 ¹ / ₂ " -13 UNC 1A	0.100	0.150	0.200	1 ⁷ / ₈	1 ¹ / ₂
ALL OTHERS	B650	9 ¹ / ₂	6 ¹ / ₂	1 ¹ / ₈	2	2 ¹ / ₃₂	1 ⁷ / ₃₂	1 ⁵ / ₈ " -11 UNC 1A	0.100	0.150	0.200	2 ⁷ / ₈	1 ¹ / ₂

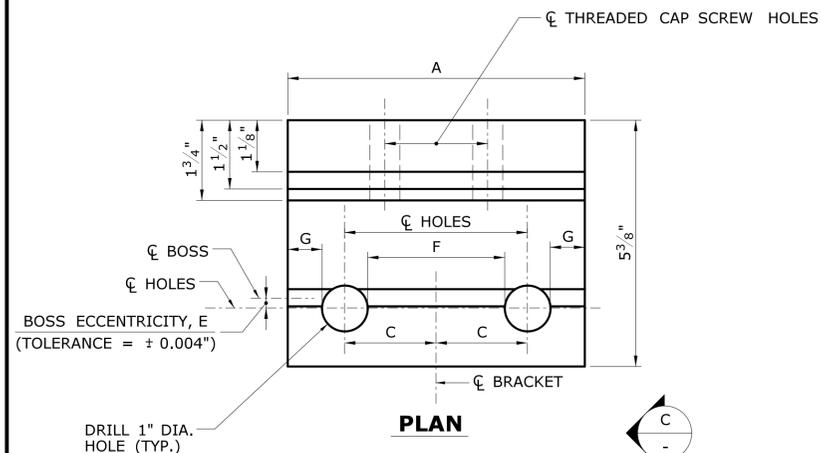
TABLE 2 - BRACKET BOLTS								
POST SIZE	BRACKET TYPE	BOLT AND CAP SCREW DIAMETER	BOLT LENGTH			CAP SCREW LENGTH	THREAD DESIGNATION (U.S. CUSTOMARY UNITS)	
			TOP	MIDDLE	BOTTOM		BOLT	CAP SCREW
W6, W8	B525	1/2	2 1/2	2 3/4	3	1 1/4	13 UNC	13 UNC
ALL OTHERS	B650	5/8	2 3/4	3	3 1/4	1 1/4	11 UNC	11 UNC



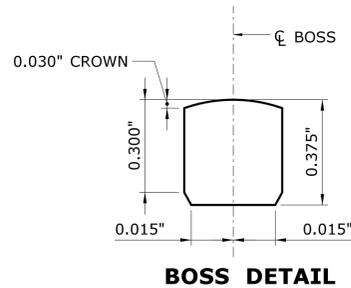
SIDE ELEVATION

FRONT ELEVATION

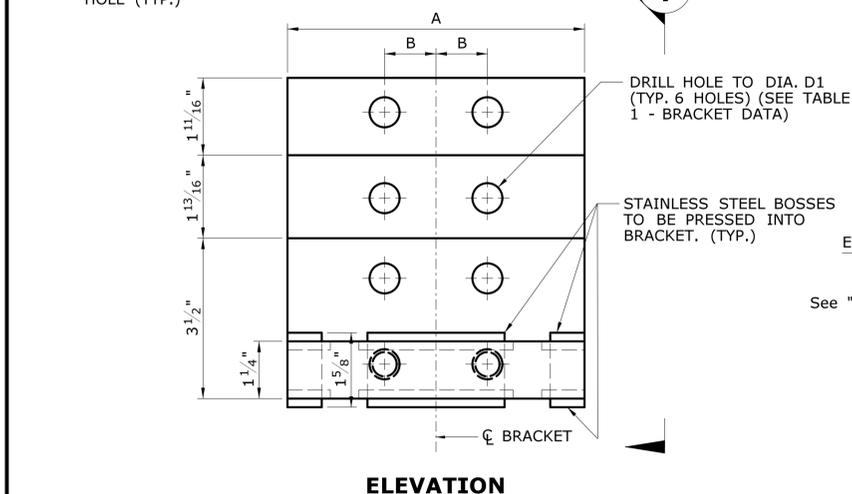
BRACKET ASSEMBLY DETAILS



PLAN

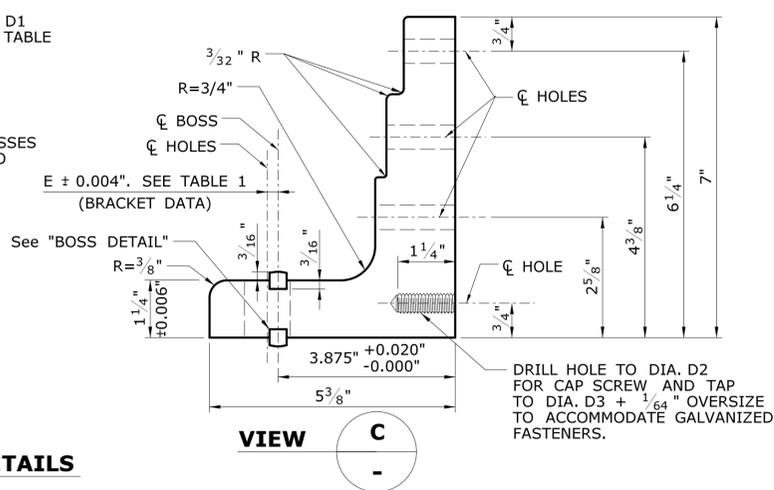


BOSS DETAIL

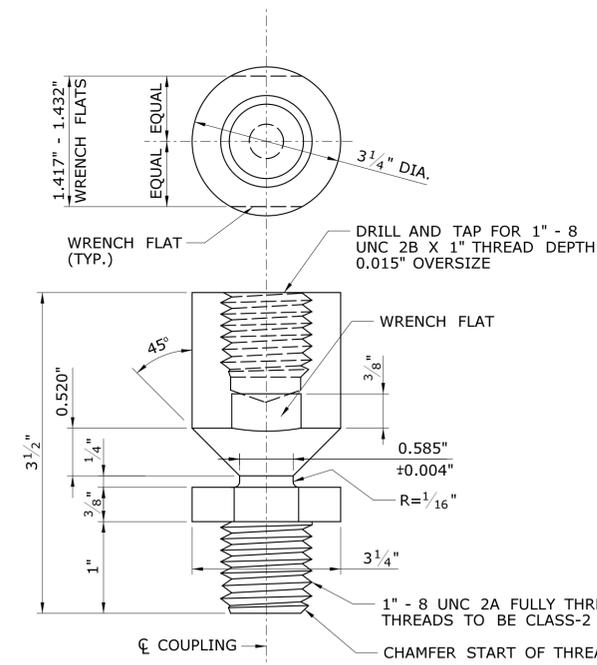


ELEVATION

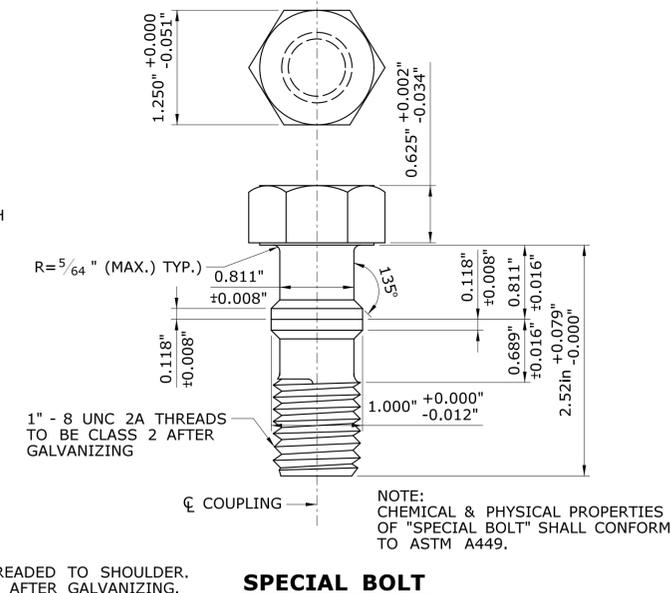
BRACKET DETAILS
HALF SCALE



VIEW



NOTE: TOLERANCES TO 1/32" EXCEPT AS NOTED



SPECIAL BOLT

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER: **BKC**
 CHECKED BY: **JRH**
 SCALE AS NOTED

STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION

OFFICE OF ENGINEERING

REPLACEMENT OF
 HIGHWAY SIGNING
 ON I-395

VARIOUS
 BREAKAWAY SIGN SUPPORTS
 BRACKET DETAILS

PROJECT NO. **172-387**
 DRAWING NO. **S-38**
 SHEET NO. **04.38**

GENERAL NOTES

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 (2004), SUPPLEMENTAL SPECIFICATION DATED JANUARY 2013, AND SPECIAL PROVISIONS. DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 17TH EDITION DATED 2002, AND AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (20013) WITH THE LATEST INTERIM SPECIFICATIONS. DESIGN LOADS: THE DESIGN WIND SPEED IS 100 MPH, BASED ON A 10-YEAR MEAN RECURRENCE INTERVAL. MATERIALS:

FOUNDATIONS: CONCRETE FOR FOUNDATIONS SHALL BE CLASS "A" CONCRETE.

REINFORCEMENT: REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60. SIGN POSTS: STEEL FOR SIGN POSTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709, GRADE 36, AND SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. THE POST SHALL BE PERMANENTLY LABELED WITH THE POST SIZE ON THE WEB AT THE BOTTOM OF THE LOWER POST. ANCHORS: THREADED FERRULES SHALL BE FABRICATED FROM TYPE 304 STAINLESS STEEL. RODS SHALL BE FABRICATED FROM STEEL CONFORMING TO AISI 1038. STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AISI 1008. MINIMUM TENSILE STRENGTH OF 60,000 LBS. SHIMS: 1" HORSESHOE SHIMS SHALL BE FABRICATED FROM 14 OR 18 GAUGE SHEET STEEL.

BREAKAWAY COUPLINGS: BREAKAWAY COUPLINGS SHALL BE MADE FROM ALLOY STEEL CONFORMING TO AMS 6378D WITH EXCEPTIONS TO DECARBURIZATION AND MACROSTRUCTURE CLAUSES OR AN EQUIVALENT MATERIAL, AND SHALL HAVE A MINIMUM TENSILE YIELD STRENGTH OF 130,000 PSI. THE COUPLING SHALL HAVE A MINIMUM TENSILE ULTIMATE STRENGTH OF 40,400 LBS. THE ROCKWELL HARDNESS SHALL BE C32 MINIMUM. COUPLINGS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153, CLEANED AND PHOSPHATED PER FEDERAL SPECIFICATION TT-C-490C, COATED, 0.002" - 0.004" THICK, USING MORTON POWDER COATINGS' 20-7037 BLACK POLYESTER POWDER OR EQUIVALENT. CHIPPED AREAS OF THE COATED SURFACE SHALL BE REPAIRED. ALL THREADED SURFACES, AFTER COATING, SHALL BE CLEANED TO ALLOW THEM TO FUNCTION PROPERLY.

BRACKETS: BRACKETS SHALL BE MADE FROM ALUMINUM ALLOY 6061-T6 OR AN EQUIVALENT MATERIAL. THE LOAD CONCENTRATING MEMBER (BOSS) SHALL BE MADE FROM STAINLESS STEEL CONFORMING TO ASTM A582, TYPE 416 WITH ROCKWELL HARDNESS OF C33 - C45. LOCATION HOLES FOR THE BREAKAWAY COUPLING SHALL BE ACCURATELY POSITIONED RELATIVE TO THE LOAD CONCENTRATING MEMBER AND BRACKETS SHALL BE PERMANENTLY LABELED WITH THE BRACKET NUMBER TO REFLECT THE HOLE POSITIONING. SEE DWG. NO. S-38 FOR IDENTIFICATION OF BRACKETS BY NUMBER.

HINGE PLATES: HINGE PLATES SHALL BE MADE FROM ALLOY STEEL CONFORMING TO AISI 4130 OR AN EQUIVALENT MATERIAL AND SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. THE HINGE PLATE SHALL HAVE A MINIMUM TENSILE YIELD STRENGTH OF 90,000 PSI AND MINIMUM TENSILE ULTIMATE

STRENGTH AS FOLLOWS:
 HI-1 7,100 LBS
 HI-2 11,300 LBS
 HI-3 17,000 LBS

BOLTS, NUTS AND WASHERS: UNLESS NOTED OTHERWISE, ALL BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325. SPECIAL BOLTS SHALL CONFORM TO ASTM A449. NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A563, GRADE DH. LOCKWASHERS SHALL CONFORM TO THE REQUIREMENTS OF ANSI B18-21-1. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A153. SPECIAL BOLTS MAY BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM B695, CLASS 50.

CAP SCREWS: CAP SCREWS ATTACHING BRACKETS TO POSTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.

BREAKAWAY HARDWARE: BREAKAWAY HARDWARE SHALL BE SUPPLIED AS COMPONENTS OF A CRASH-TESTED SYSTEM COMPLYING WITH THE GUIDELINES OF NCHRP REPORT 350 (RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES). THE MANUFACTURER SHALL SUBMIT TEST REPORTS TO FHWA FOR APPROVAL.

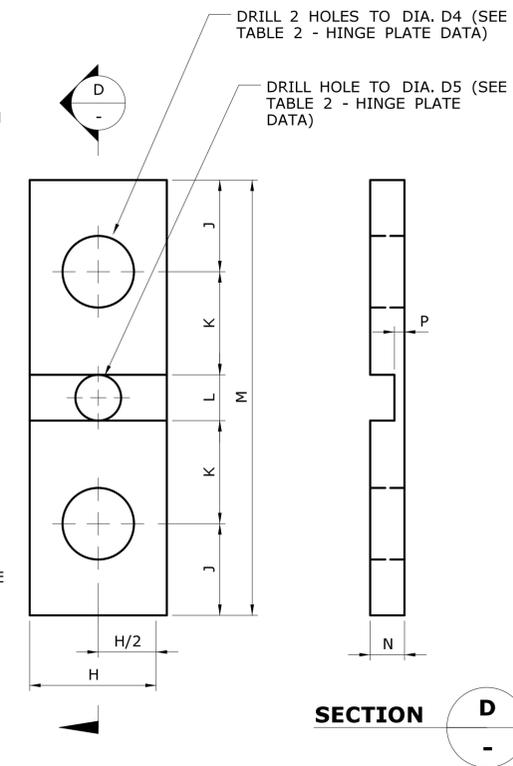
CERTIFICATION: THE CONTRACTOR SHALL PROVIDE A MATERIALS CERTIFICATE TO CERTIFY THAT THE MATERIAL AND COMPONENTS CONFORM TO THOSE SHOWN ON THE PLANS AND SPECIFICATIONS.

CHANGES: NO CHANGE IN DESIGN MATERIALS OR DETAIL ALTERATIONS WILL BE PERMITTED WITHOUT PRIOR APPROVAL BY THE ENGINEER.

INSTALLATION: INSTALLATION OF THE BREAKAWAY ASSEMBLY SHALL BE IN ACCORDANCE WITH THE RECOMMENDED PRACTICES OF THE SUPPLIER.

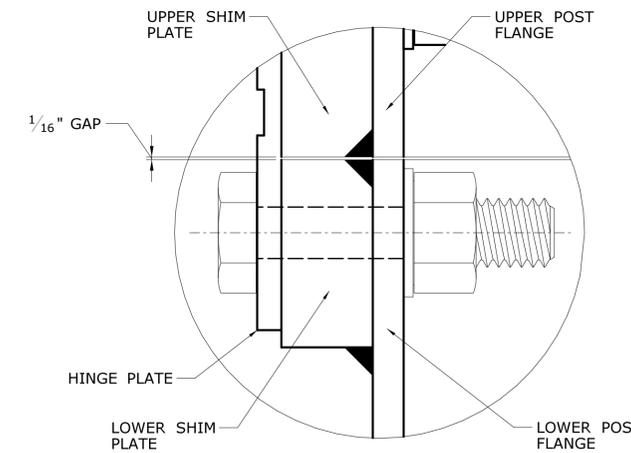
BASIS OF PAYMENT: THE COST OF FURNISHING AND INSTALLING THE BREAKAWAY HINGE PLATE ASSEMBLY WILL BE INCLUDED IN THE PAY ITEM "STRUCTURAL STEEL SIGN SUPPORTS." THE COST OF FURNISHING AND INSTALLING THE BREAKAWAY COUPLING SYSTEM, CONSISTING OF BRACKET, BREAKAWAY COUPLINGS, SPECIAL BOLTS, AND SHIMS WILL BE INCLUDED IN THE PAY ITEM "SIDE MOUNTED SIGN FOUNDATION." THE COST OF FURNISHING AND INSTALLING FOUNDATIONS, INCLUDING EXCAVATING, CLASS "A" CONCRETE, REINFORCING STEEL AND ANCHOR FERRULES, WILL BE INCLUDED IN THE PAY ITEM "SIDE MOUNTED SIGN FOUNDATION."

POST SIZE	HINGE ASSEMBLY		THREAD DESIGNATION (U.S. CUSTOMARY UNITS)
	BOLT DIAMETER	BOLT LENGTH	
W6 x 9	1/2	1 1/2	13 UNC
ALL OTHERS	3/4	2 1/4	10 UNC



HINGE PLATE DETAILS

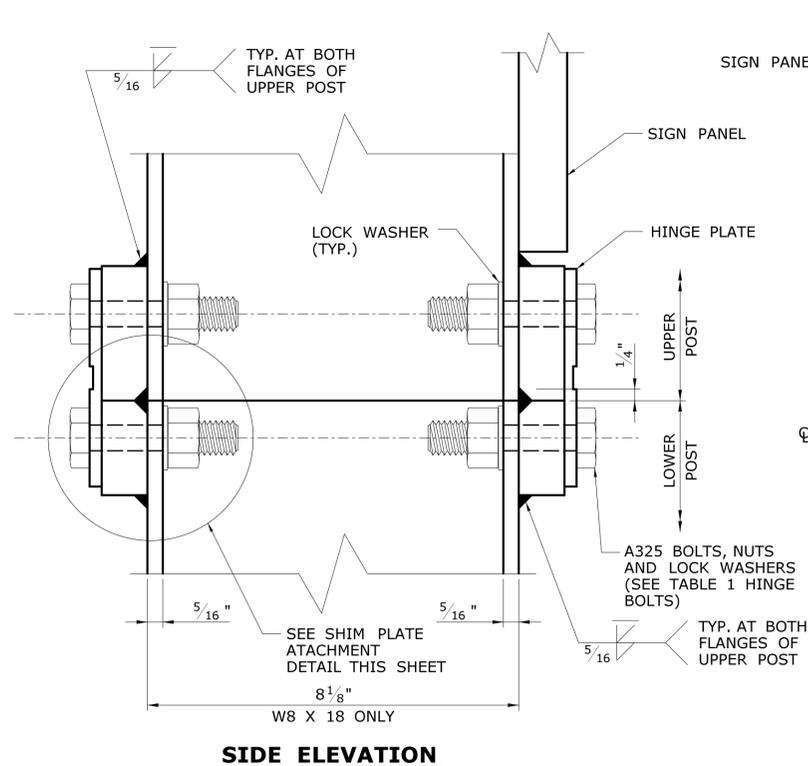
SCALE: FULL



SHIM PLATE ATTACHMENT DETAILS

POST SIZE	PLATE NO.	DIMENSIONS (IN.)							HOLE DIA. (IN.)	
		H	J	K	L	M	N	P	D4	D5
W6 X 9	1	1	3/4	7/8	1/2	3/4	15/64	0.071 ± 0.004	17/32	NONE
W6* AND W8	2	1 1/2	1	1 1/8	1/2	4/3	3/8	0.113 ± 0.004	25/32	1/2
ALL OTHERS	3	1 1/2	1	1 1/8	1/2	4/3	3/8	0.113 ± 0.004	25/32	NONE

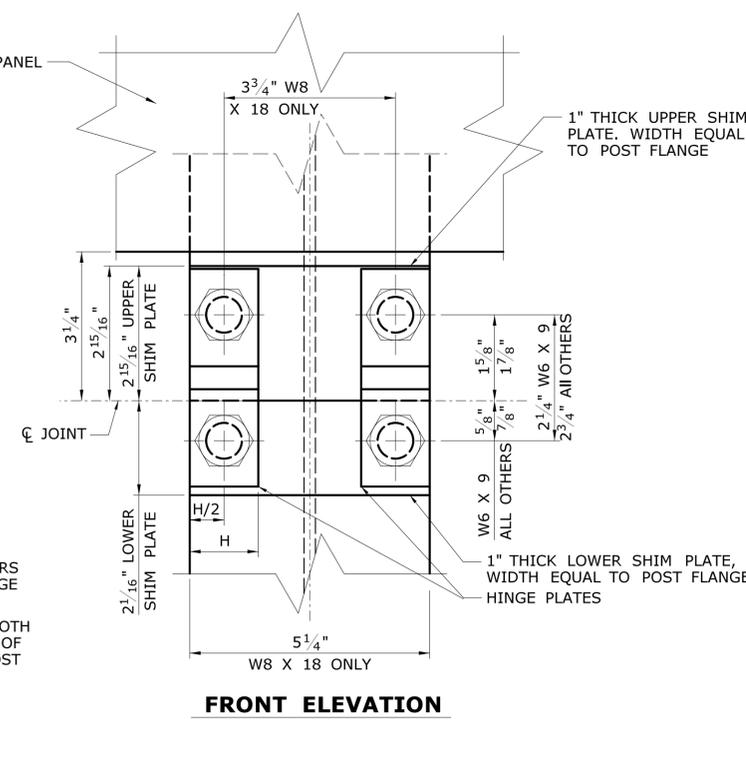
* EXCLUDING W6 X 9



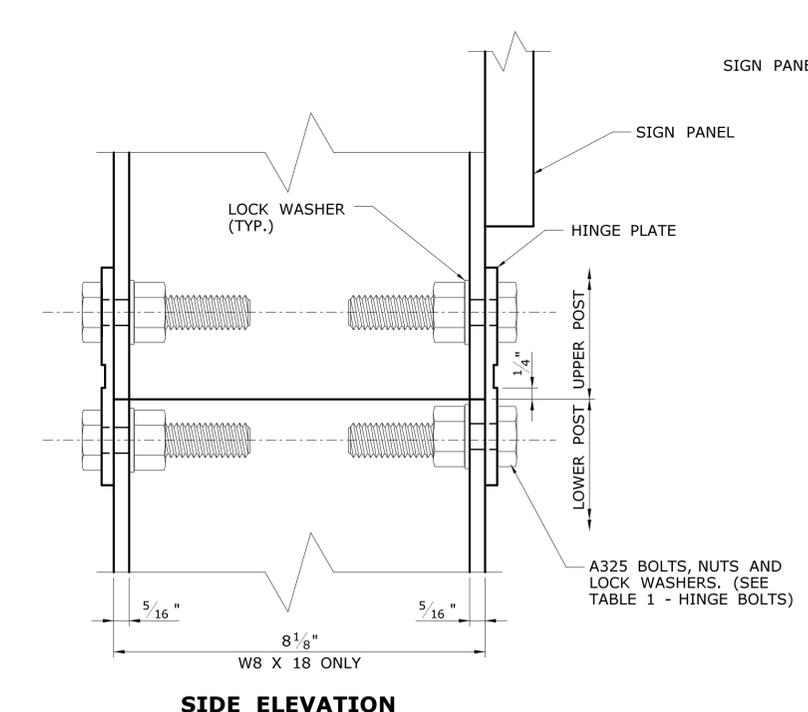
SIDE ELEVATION

WITH SHIM PLATE

SCALE: 1/2 (W8 X 18)



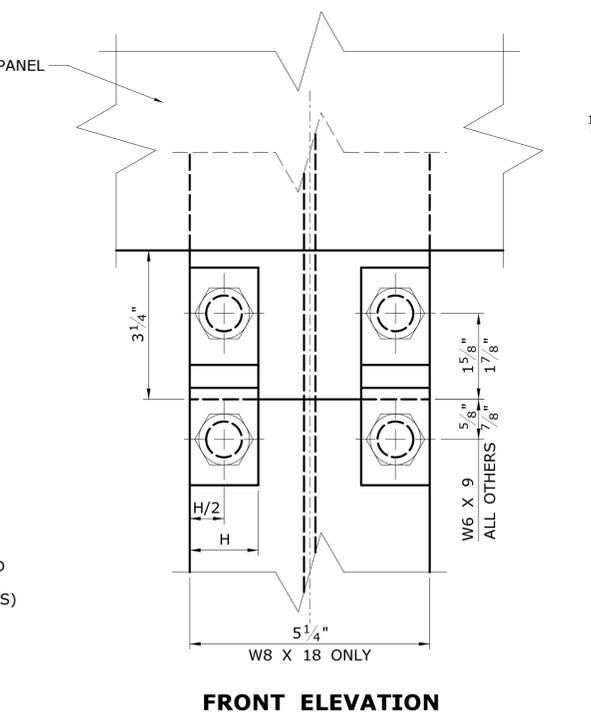
FRONT ELEVATION



SIDE ELEVATION

WITHOUT SHIM PLATE

SCALE: 1/2 (W8 X 18)



FRONT ELEVATION

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER: **BKC**
 CHECKED BY: **JRH**
 SCALE AS NOTED

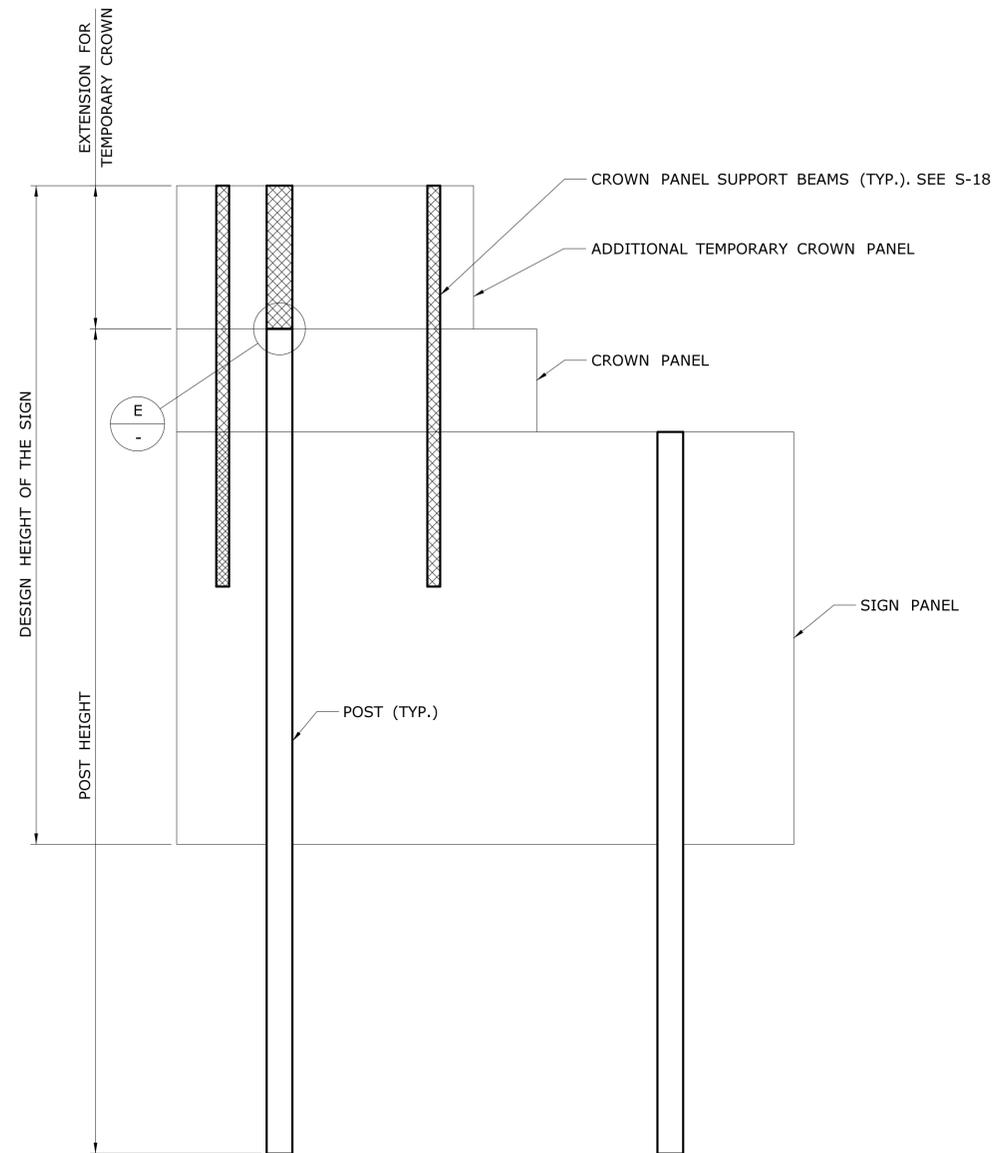
STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION

SIGNATURE/BLOCK: **OFFICE OF ENGINEERING**
 APPROVED BY: *[Signature]*

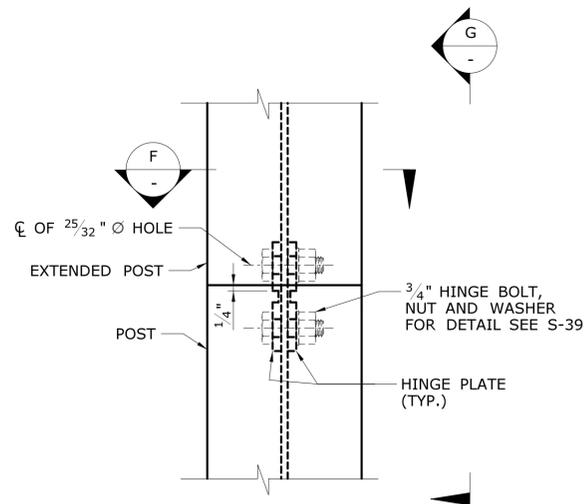
PROJECT TITLE: **REPLACEMENT OF HIGHWAY SIGNING ON I-395**

TOWN: **VARIOUS**
 DRAWING TITLE: **BREAKAWAY SIGN SUPPORTS HINGE DETAILS**

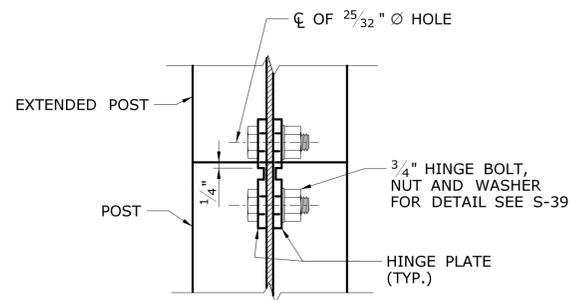
PROJECT NO. **172-387**
 DRAWING NO. **S-39**
 SHEET NO. **04.39**



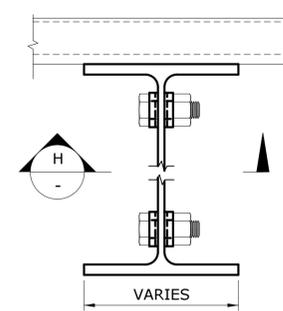
TEMPORARY ADDITIONAL CROWN



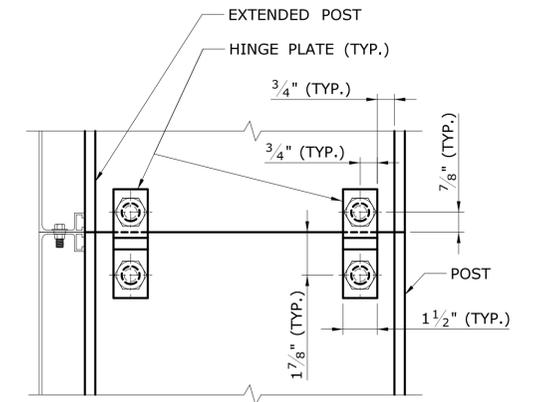
DETAIL E
SCALE: 3" = 1'-0"



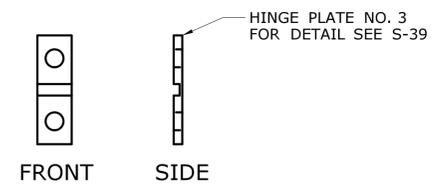
VIEW H
SCALE: 3" = 1'-0"



PLAN F
SCALE: 3" = 1'-0"



ELEVATION - HINGE ASSEMBLY G
SCALE: 3" = 1'-0"



HINGE PLATE
SCALE: 3" = 1'-0"

NOTE: POST EXTENSION AND HINGE ASSEMBLIES OF CONNECTION SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL SIGN SUPPORT"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: - CHECKED BY: - SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: 	PROJECT TITLE: REPLACEMENT OF HIGHWAY SIGNING ON I-395	TOWN: VARIOUS	PROJECT NO. 172-387 DRAWING NO. S-40 SHEET NO. 04.40
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/10/2013			