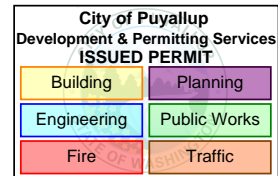
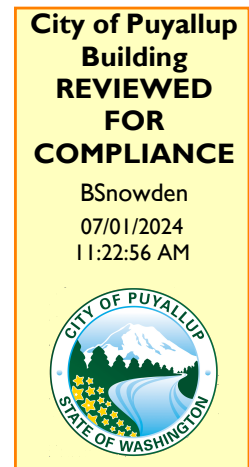


PRCA20240398



Project No - 221205
Coastal Pacific Food Distributors
Freezer Expansion
Puyallup, WA

Steel Connection Design



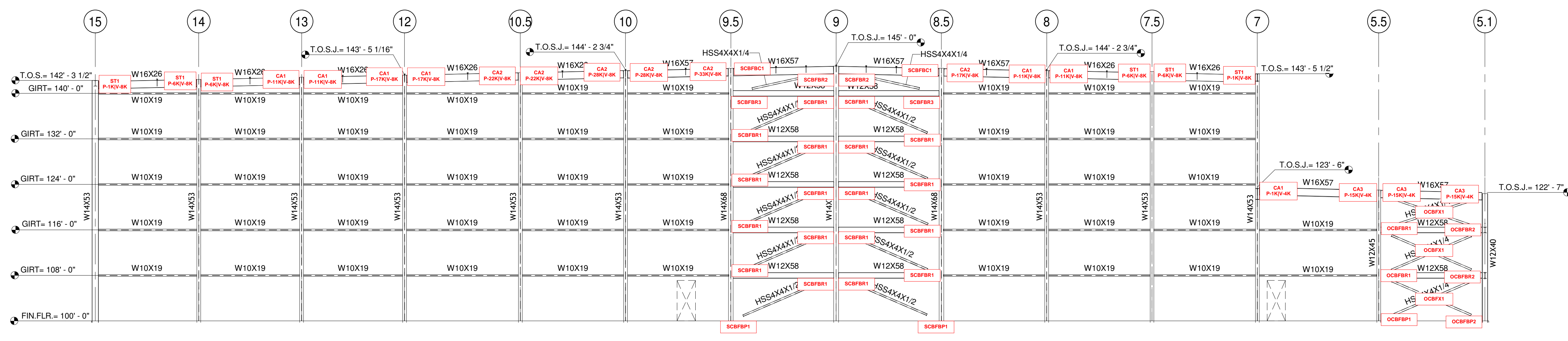
Prepared by
Vivek A Kannan

Reviewed by
Matt Smith



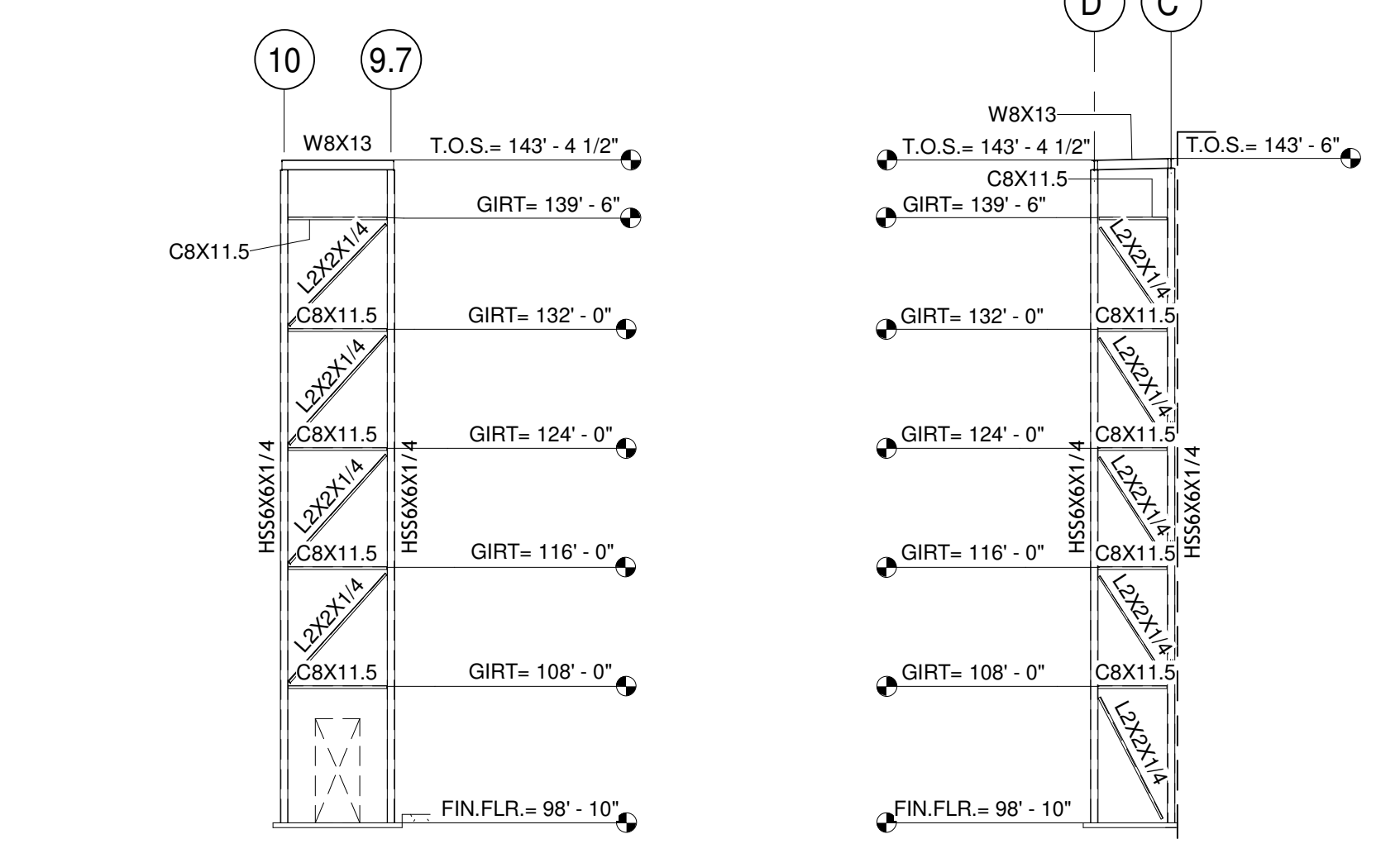
28 JUN 2024

Calculations required to be provided by
the Permittee on site for all Inspections



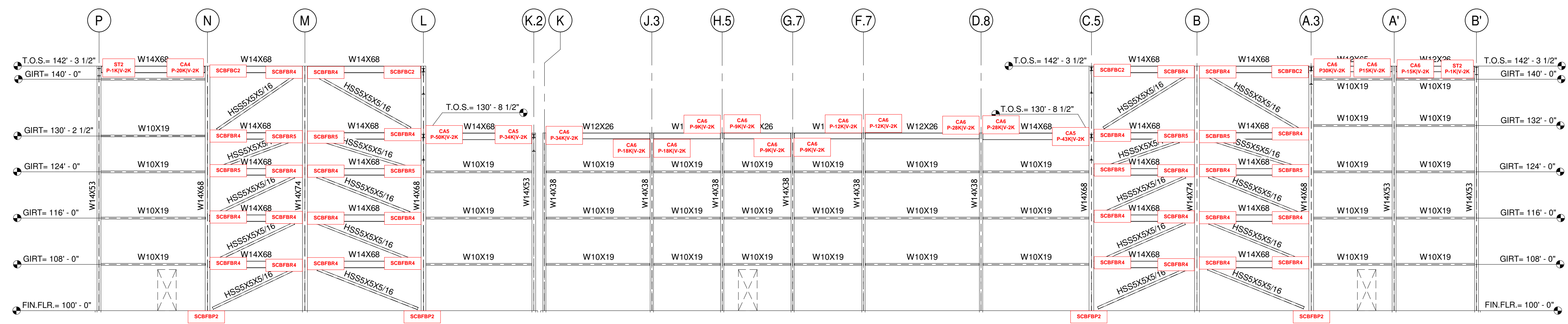
FRAMING ELEVATION @ GRID B'
SCALE: 3/32" = 1'-0"

Refer to "Generic Single-Plate Connections" Worksheet for Girt to Column Connections



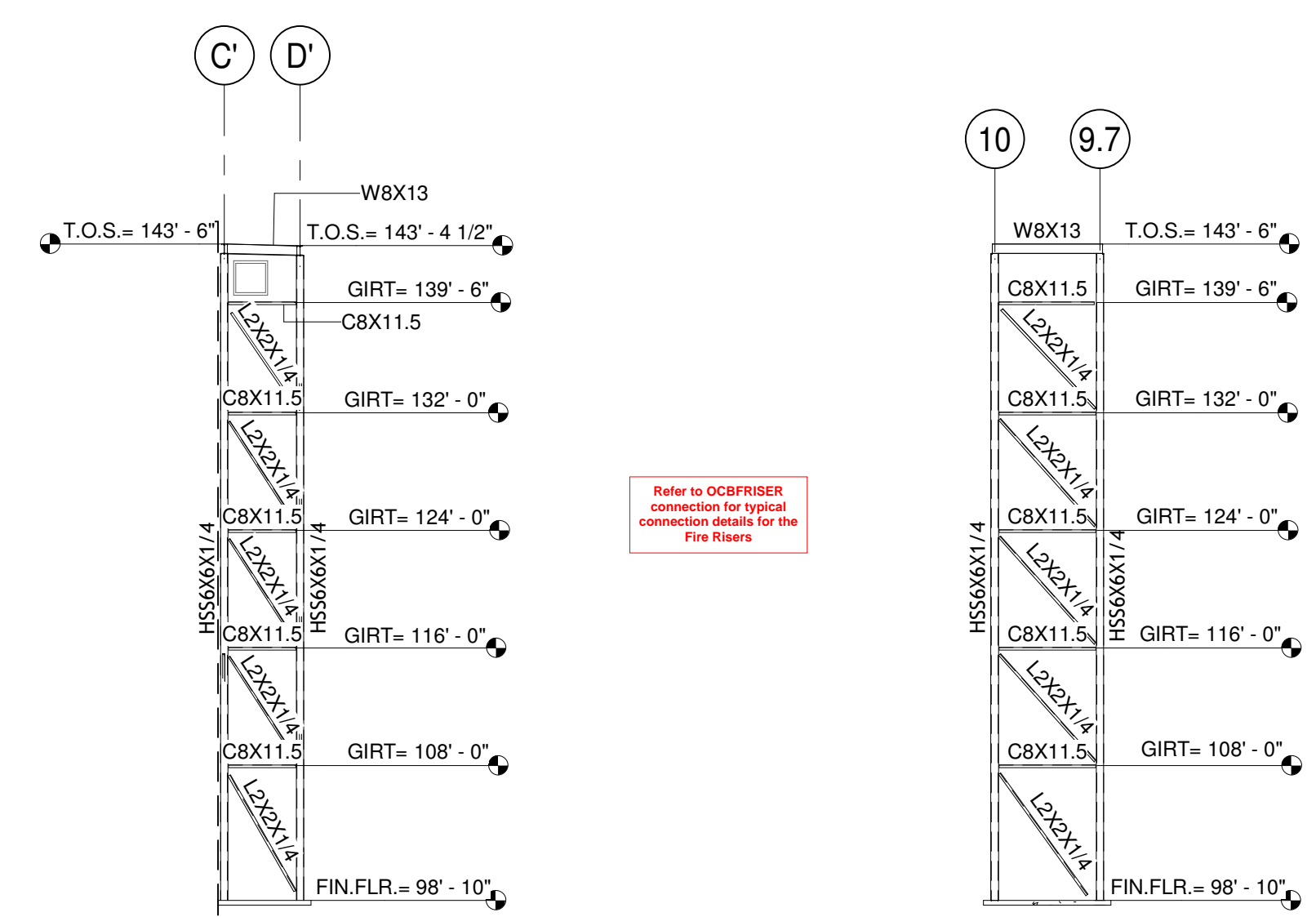
FRAMING ELEVATION @ GRID D'
SCALE: 3/32" = 1'-0"

FRAMING ELEVATION @ GRID 9.7
SCALE: 3/32" = 1'-0"



FRAMING ELEVATION @ GRID 15
SCALE: 3/32" = 1'-0"

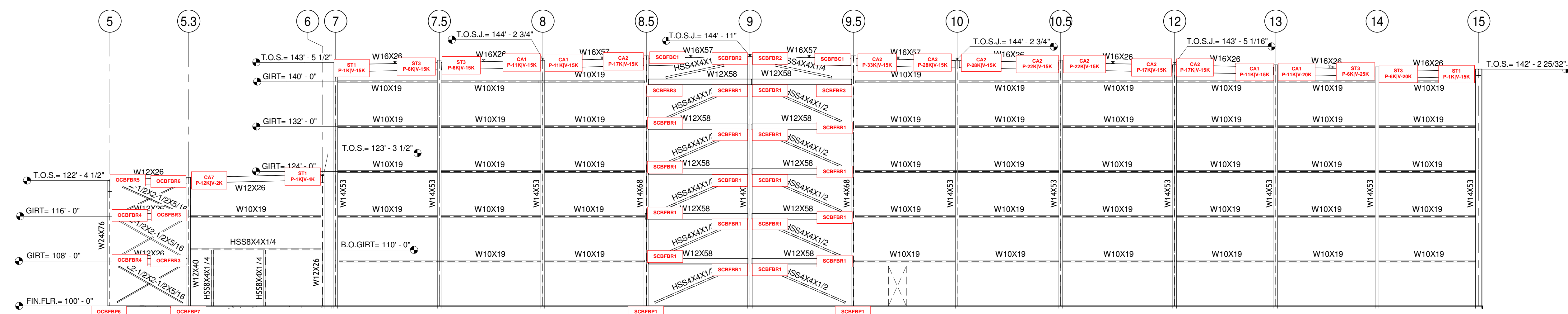
Refer to "Generic Single-Plate Connections" Worksheet for Girt to Column Connections



FRAMING ELEVATION @ GRID 10
SCALE: 3/32" = 1'-0"

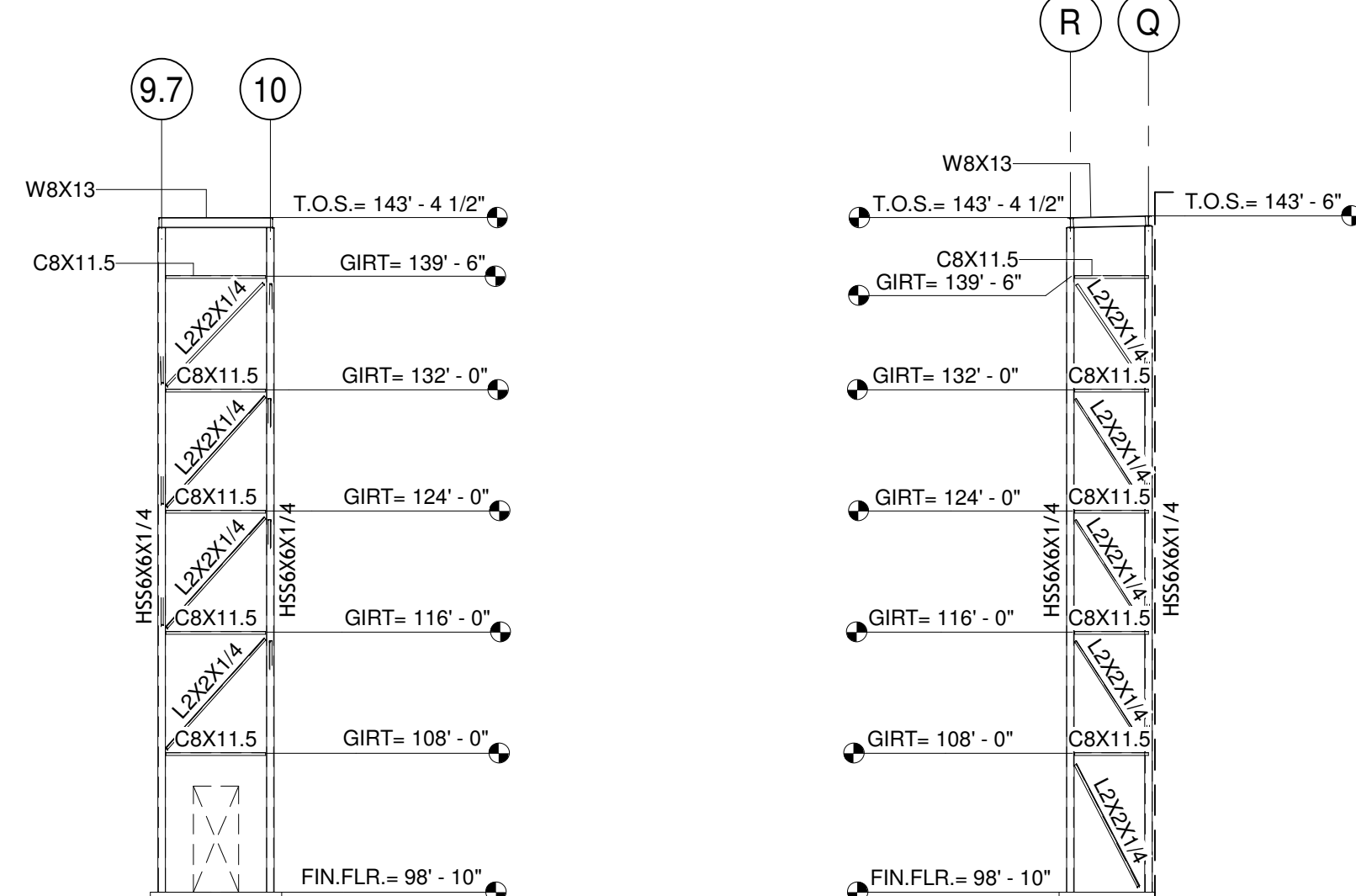
FRAMING ELEVATION @ GRID C'
SCALE: 3/32" = 1'-0"

Refer to SCFBR3 connection for typical connection detail for the Fire Beams



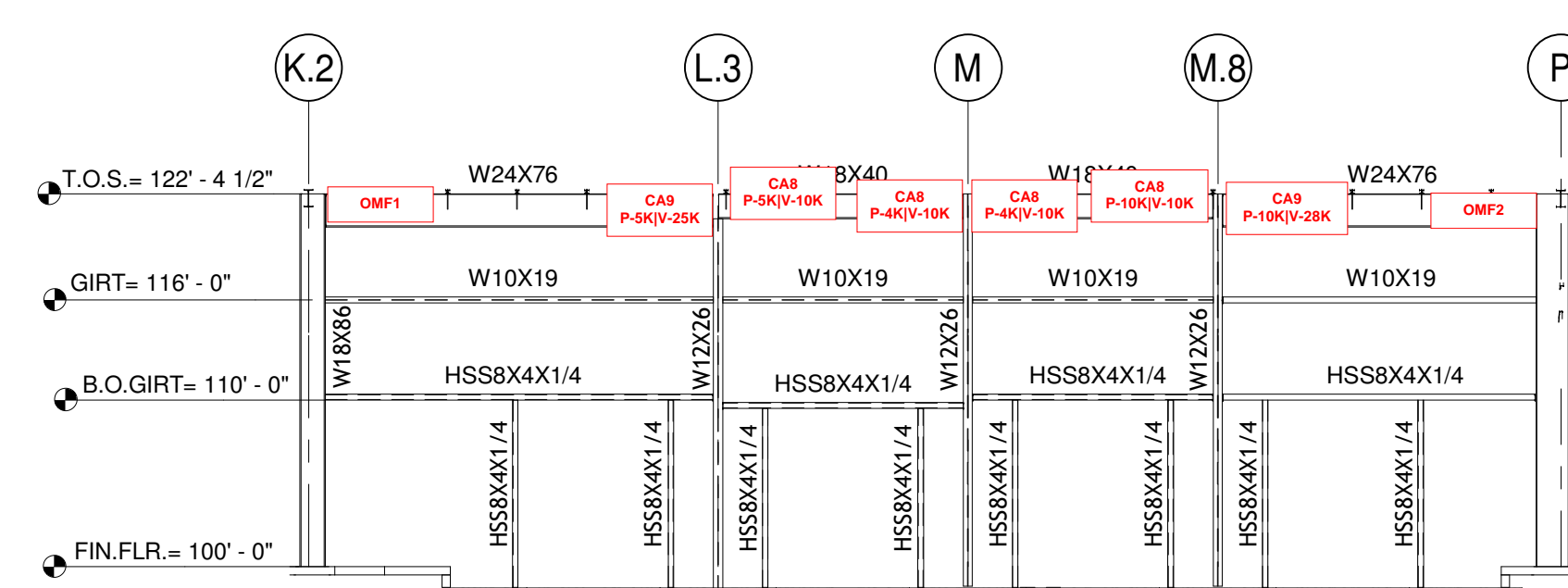
FRAMING ELEVATION @ GRID P
SCALE: 3/32" = 1'-0"

Refer to "Generic Single-Plate Connections" Worksheet for Girt to Column Connections

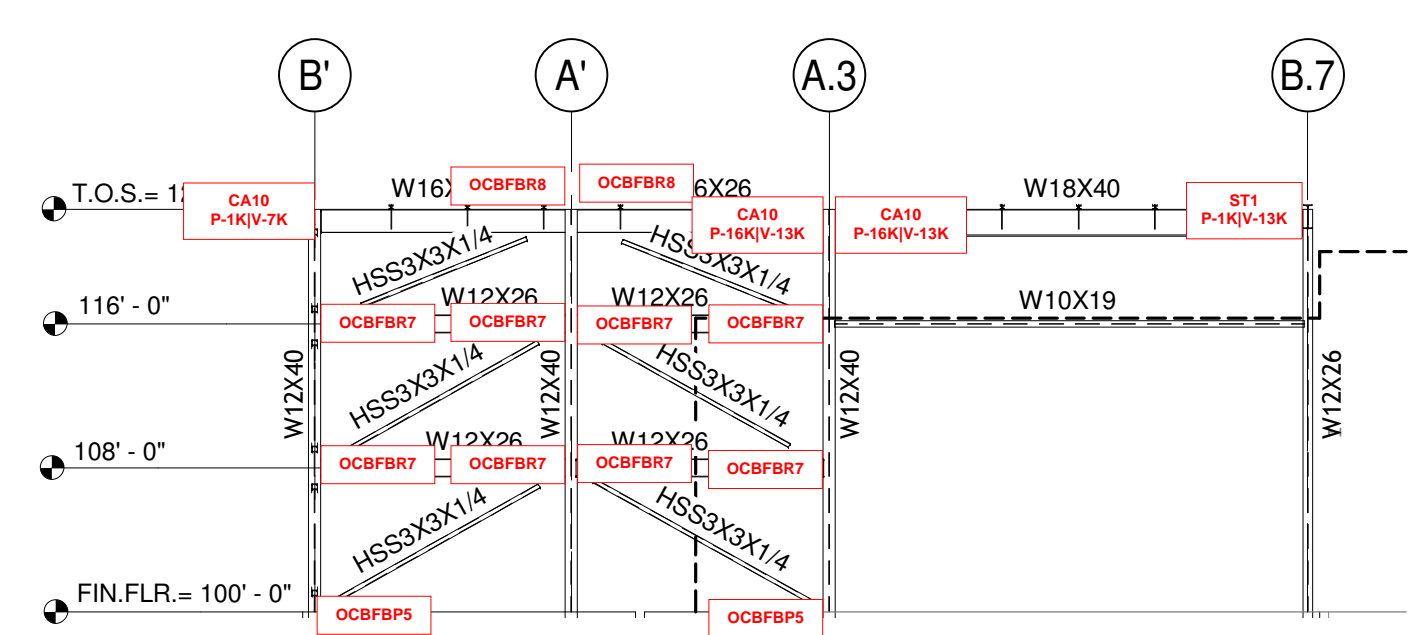


FRAMING ELEVATION @ GRID R
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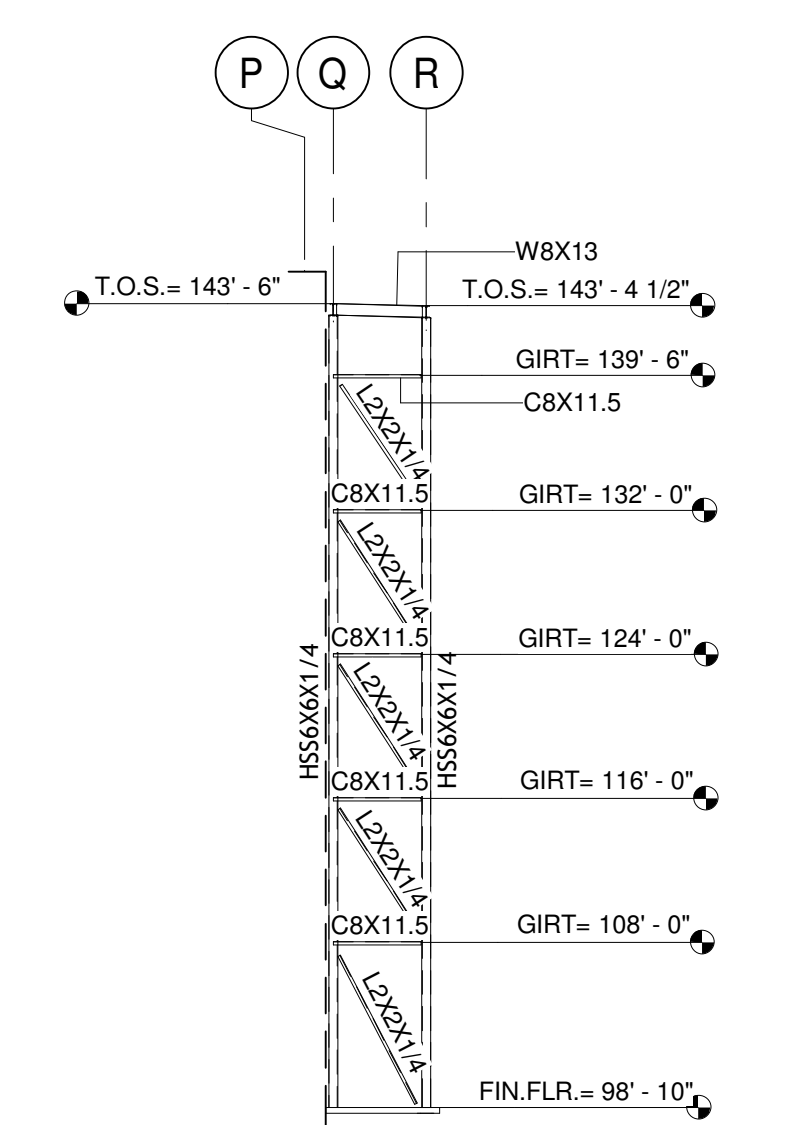
FRAMING ELEVATION @ GRID 10
SCALE: 3/32" = 1'-0"



FRAMING ELEVATION @ GRID 5.1
SCALE: 3/32" = 1'-0"



FRAMING ELEVATION @ GRID 5.1
SCALE: 3/32" = 1'-0"



FRAMING ELEVATION @ GRID 9.7
SCALE: 3/32" = 1'-0"

5/21/2024 10:21:55 AM Autodesk Docs://221205_CPFDFreezerExpansion/221205_CPFDF_Revit_2024.rvt

REV	DESCRIPTION
26 JUN 24	CAS PROGRESS RELEASE
05 MAR 24	CAS ISSUED FOR PERMIT
11 MAR 24	CAS STRUCTURAL REVISIONS
15 MAY 24	CAS ISSUED FOR PERMIT
	A

ENGINEERS / ARCHITECTS
1042 NORTHWOOD DRIVE, SUITE 200, WAVERLY, MARYLAND 21093-7054
PH: (410) 742-7599 FAX: (410) 792-9272
COPYRIGHT © 2023 ANDREW W. BODIN & ASSOCIATES, INC.

AWB ENGINEERS

WHITTING-TURNER

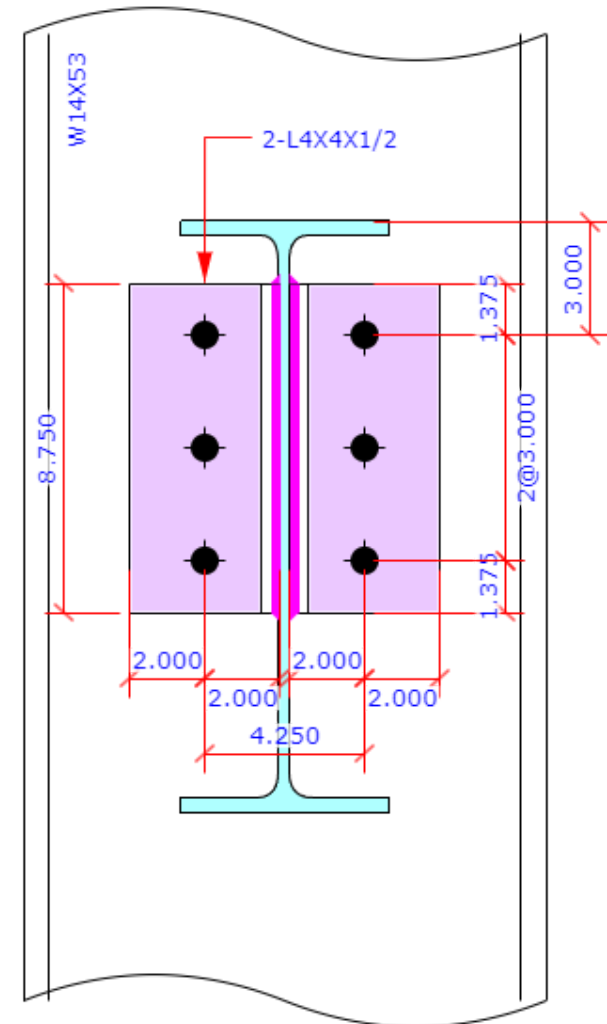
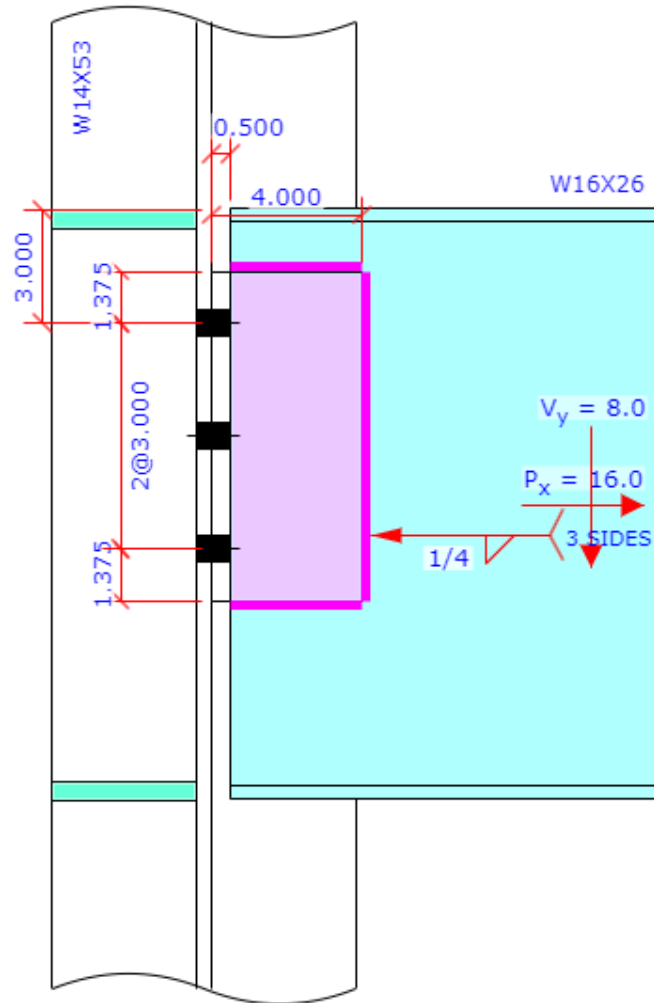
FRAMING ELEVATIONS
FREEZER EXPANSION
PUYALLUP, WASHINGTON

SCALE	3/32" = 1'-0"
DRAWN	CAS
PROJ.MGR.	MRS
JOB	221205
SHEET	S-201

Sketch

Shear Connection **CA1**

Code=AISC 360-16 ASD

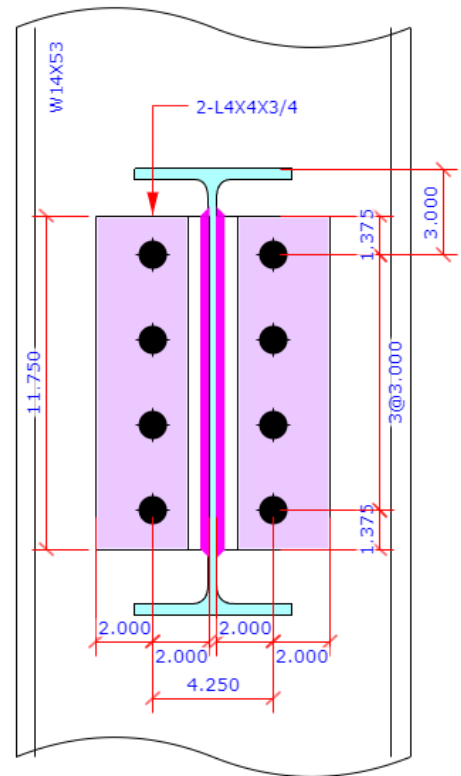
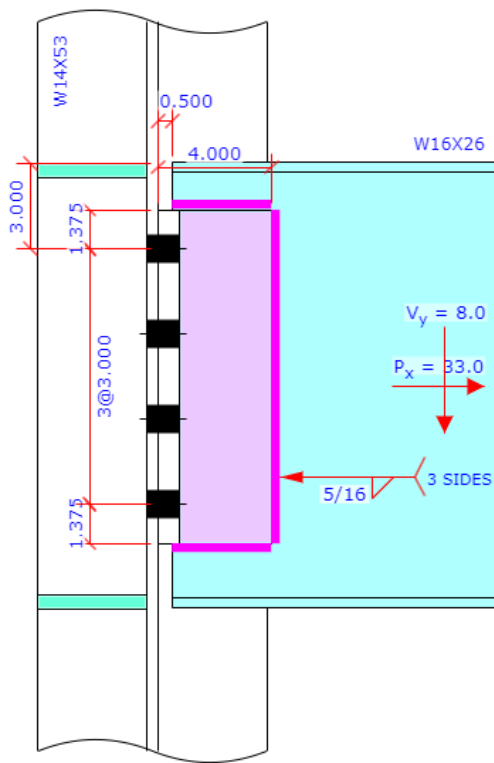


* All Bolts are 3/4" Dia. A325-N

Sketch

Shear Connection CA2

Code=AISC 360-16 ASD

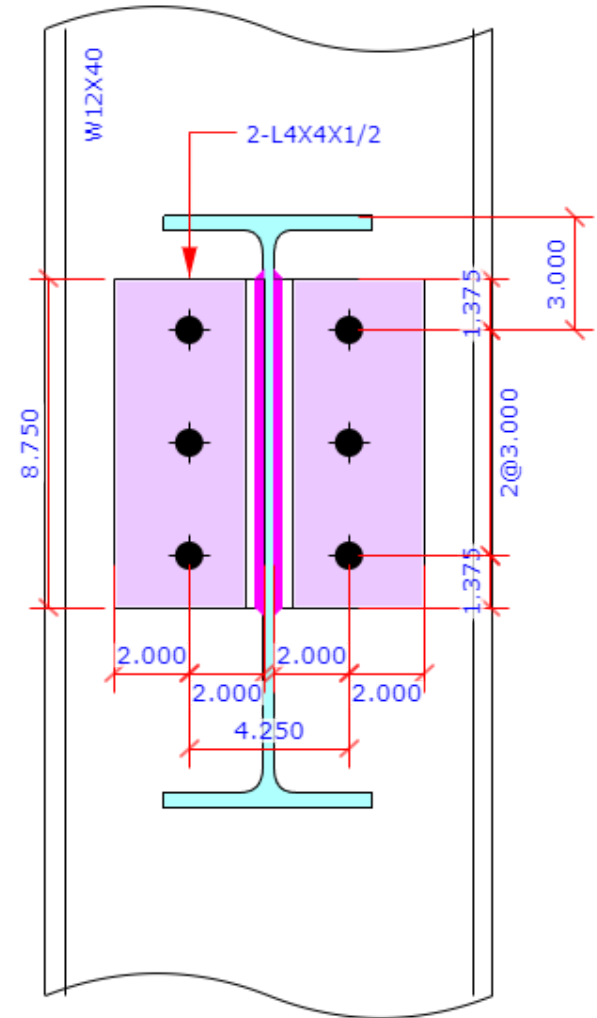
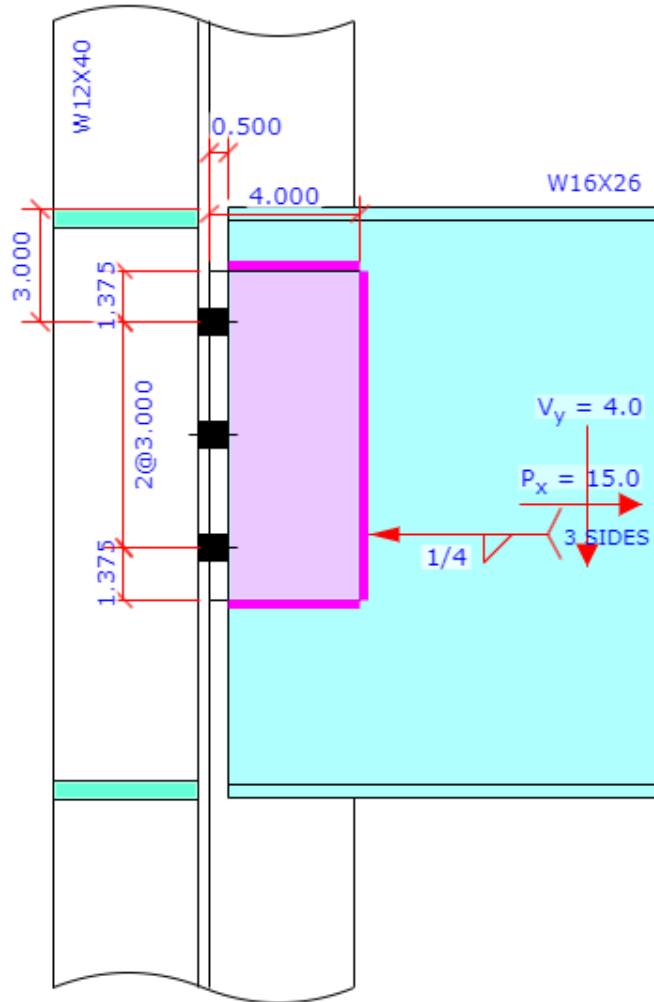


* All Bolts are 1" Dia. A325-N

Sketch

Shear Connection **CA3**

Code=AISC 360-16 ASD

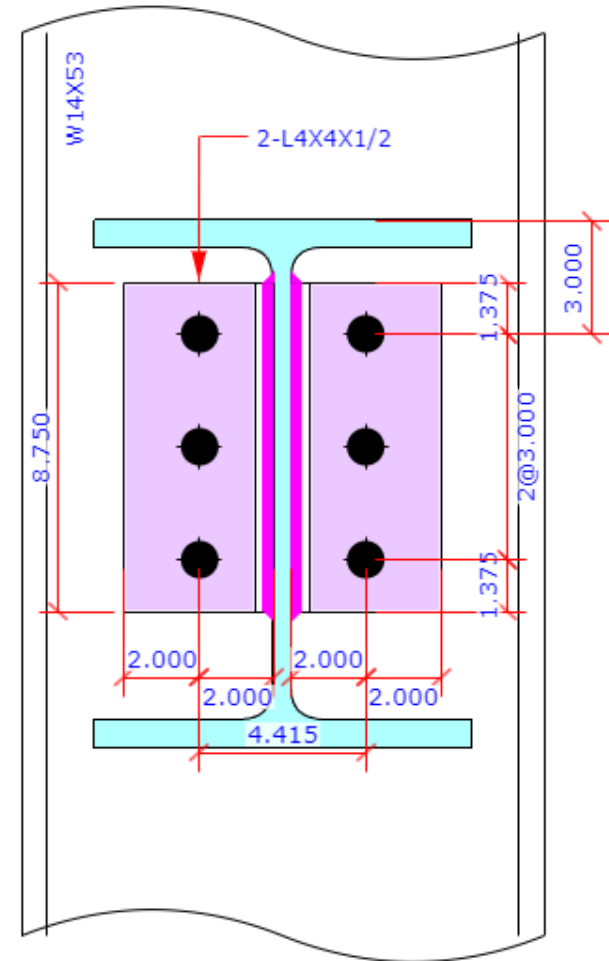
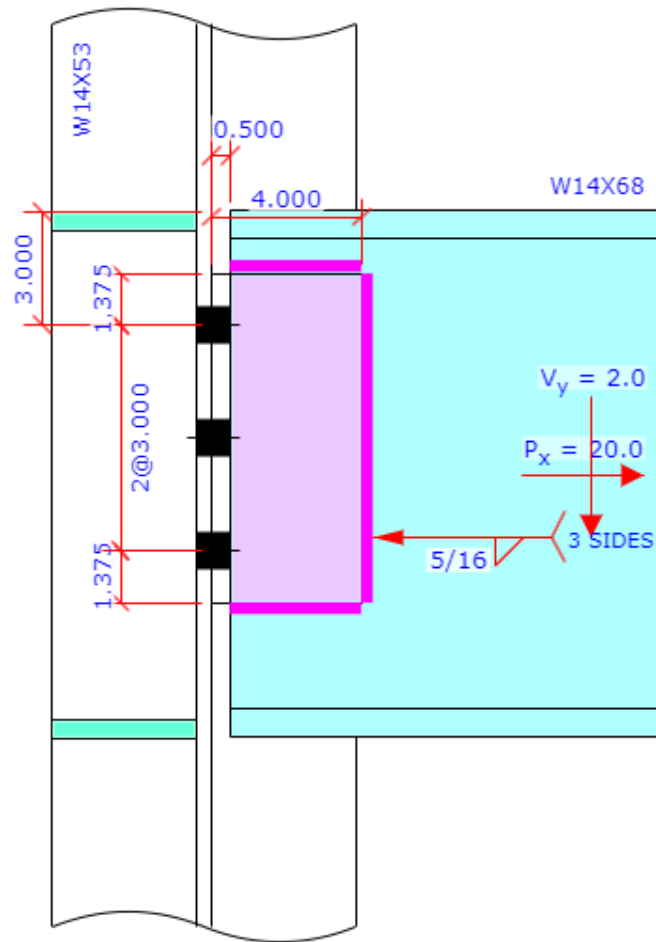


* All Bolts are 3/4" Dia. A325-N

Sketch

Shear Connection CA4

Code=AISC 360-16 ASD



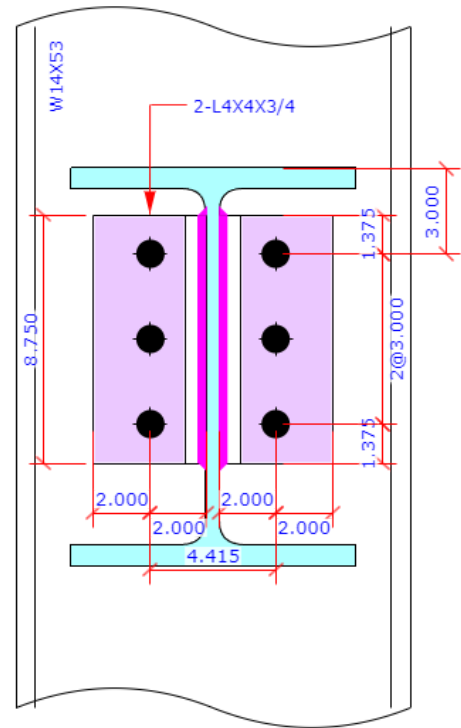
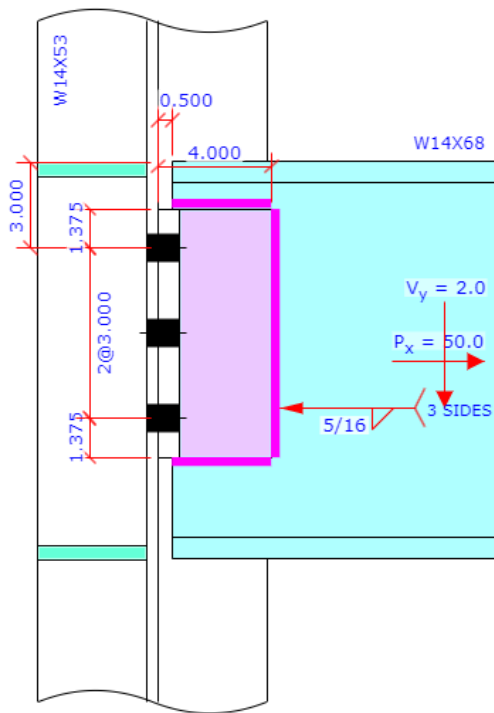
* All Bolts are 1" Dia. A325-N

Sketch

Shear Connection

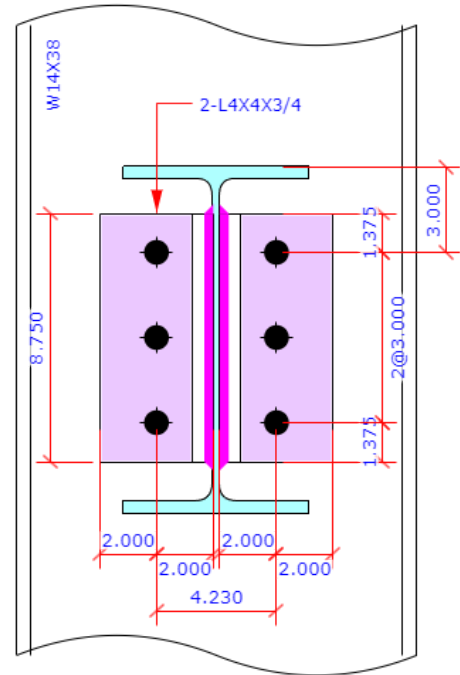
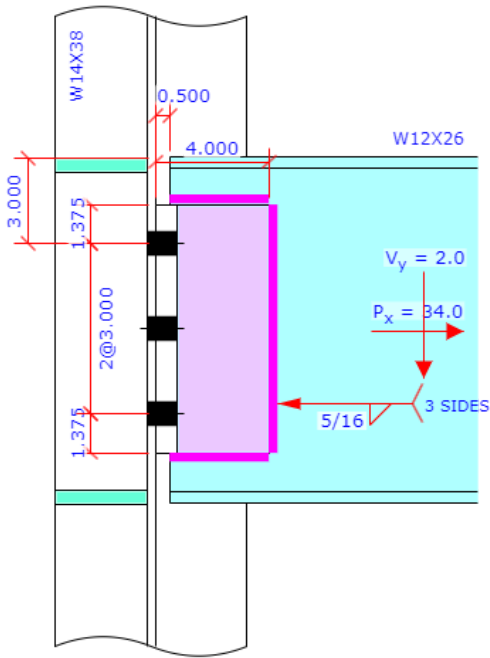
CA5

Code=AISC 360-16 ASD



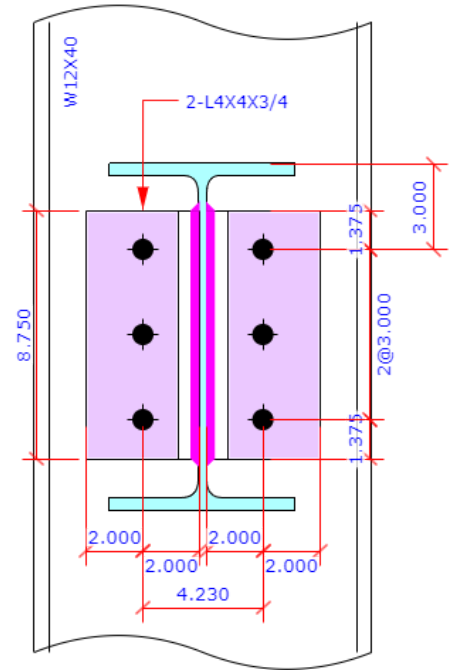
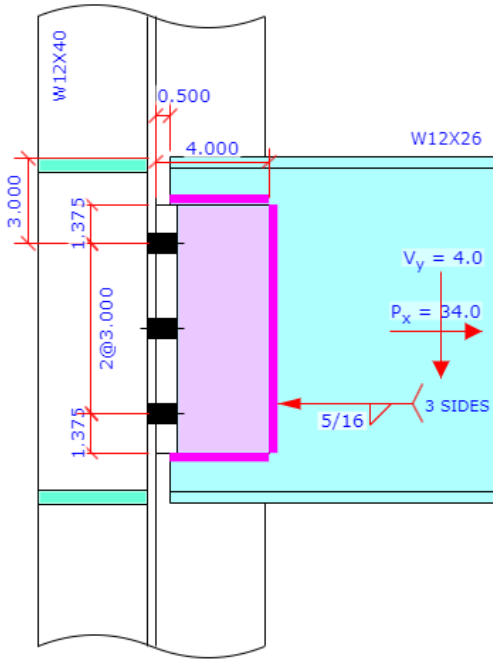
* All Bolts are 3/4" Dia. A325-N

Sketch	Shear Connection	CA6	Code=AISC 360-16 ASD
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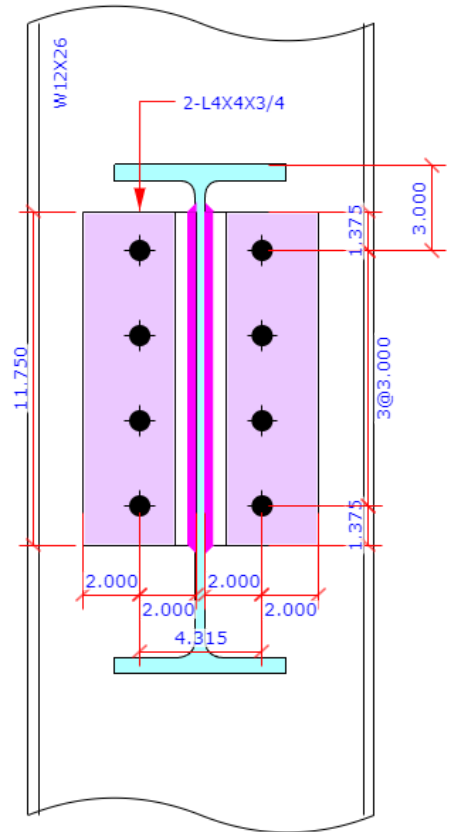
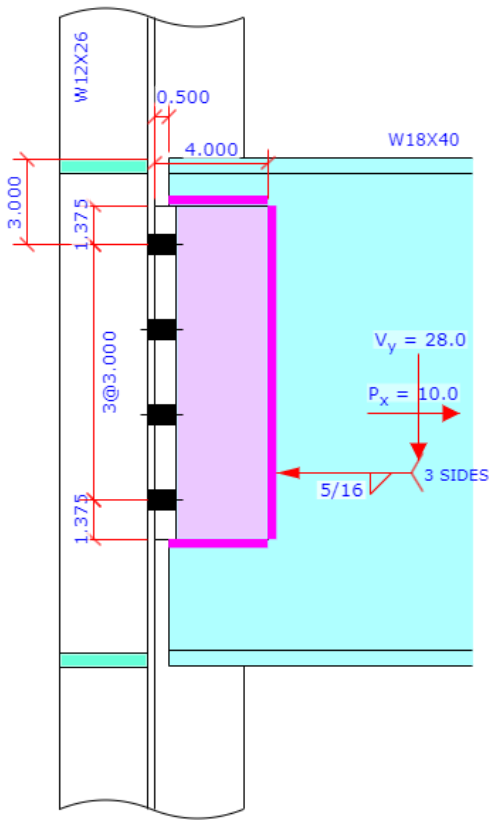
* All Bolts are 1" Dia. A325-N

Sketch	Shear Connection	CA7	Code=AISC 360-16 ASD
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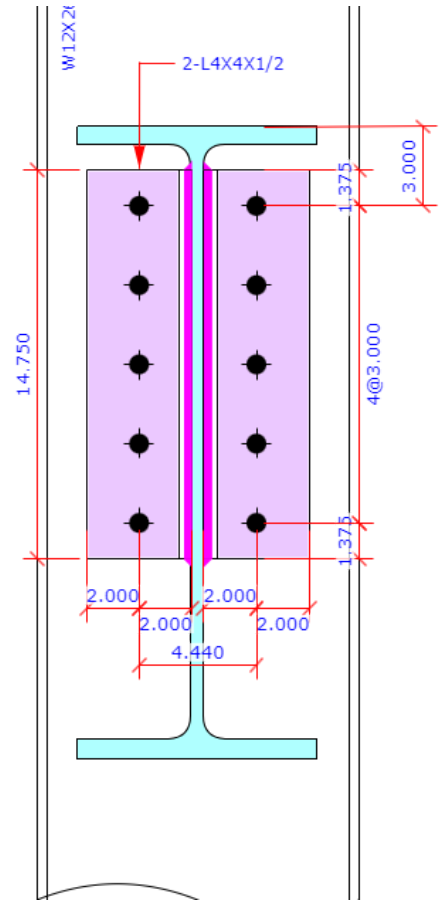
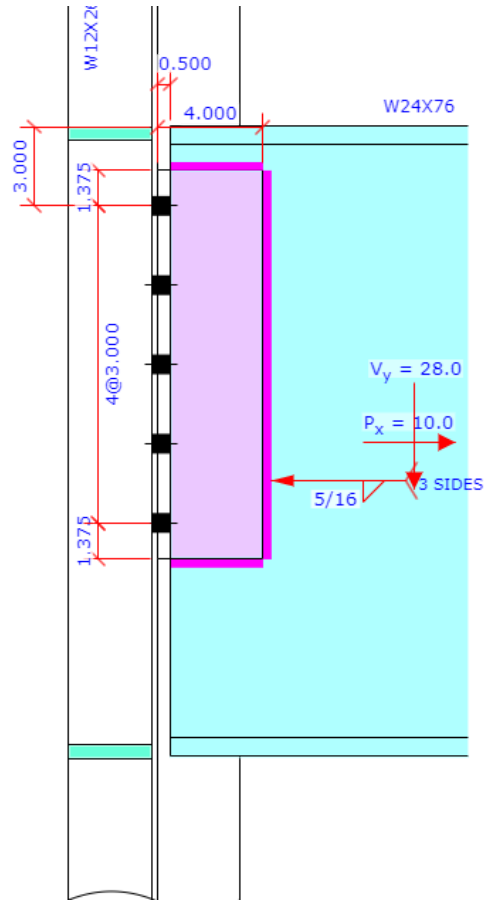
* All Bolts are 3/4" Dia. A325-N

Sketch	Shear Connection	CA8	Code=AISC 360-16 ASD
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* All Bolts are 3/4" Dia. A325-N

Sketch Shear Connection **CA9** Code=AISC 360-16 ASD



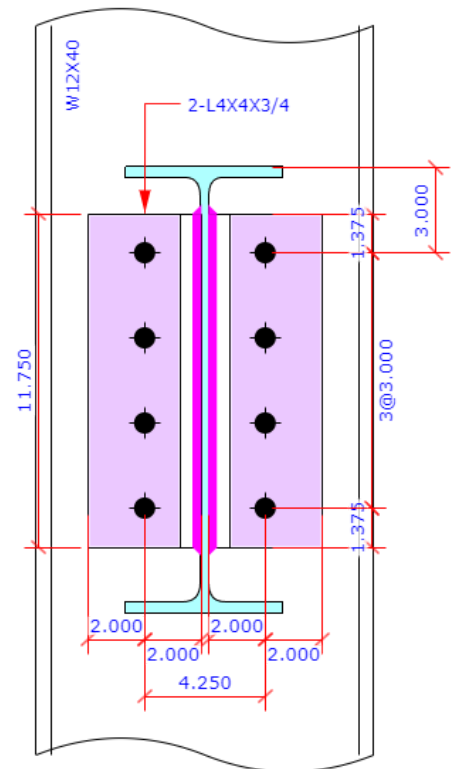
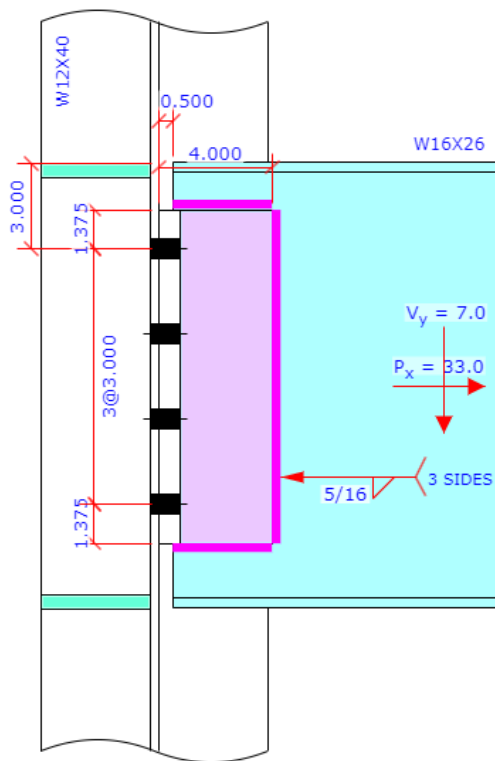
* All Bolts are 3/4" Dia. A325-N

Sketch

Shear Connection

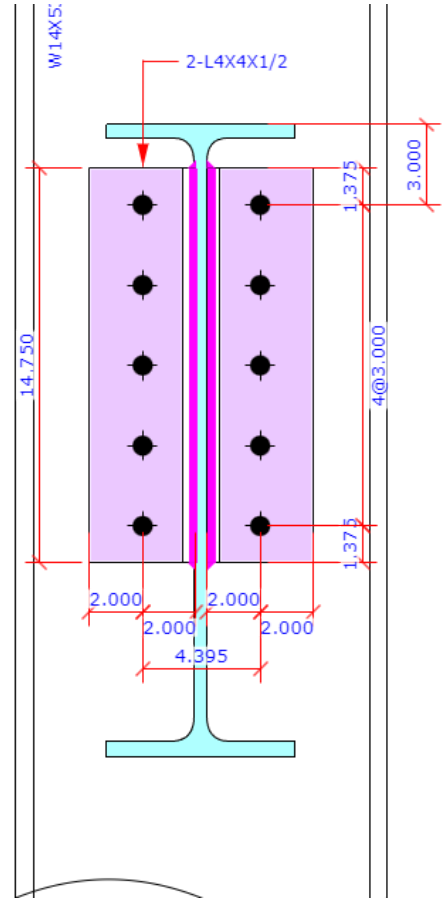
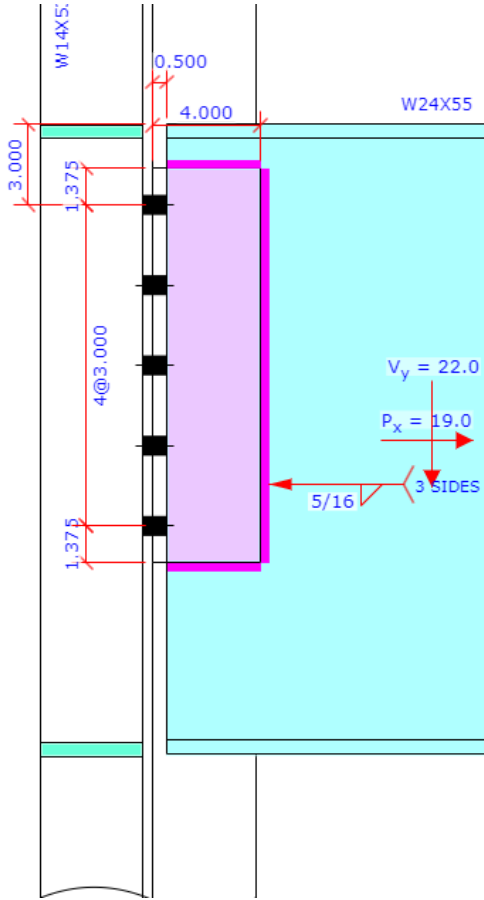
CA10

Code=AISC 360-16 ASD



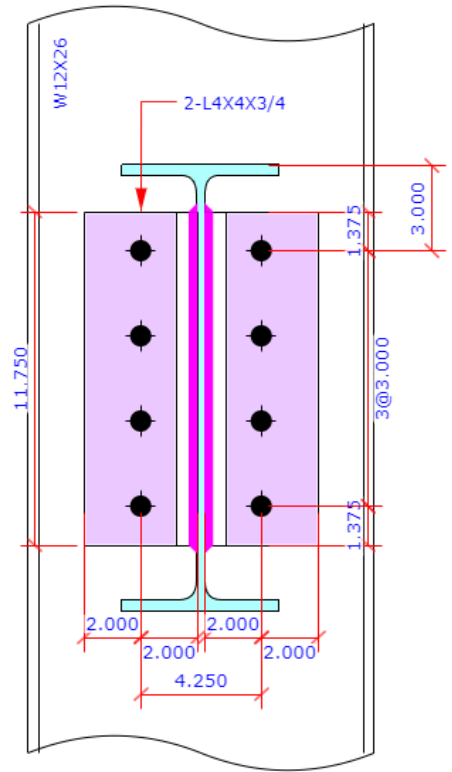
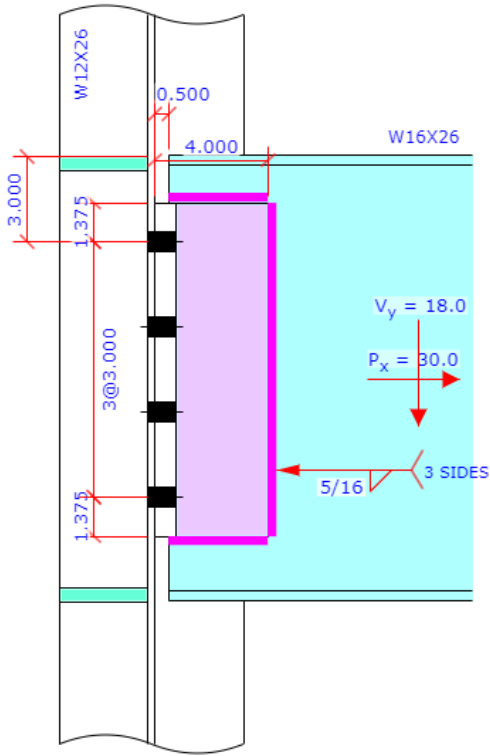
* All Bolts are 3/4" Dia. A325-N

Sketch Shear Connection **CA11** Code=AISC 360-16 ASD



* All Bolts are 3/4" Dia. A325-N

Sketch Shear Connection Code=AISC 360-16 ASD



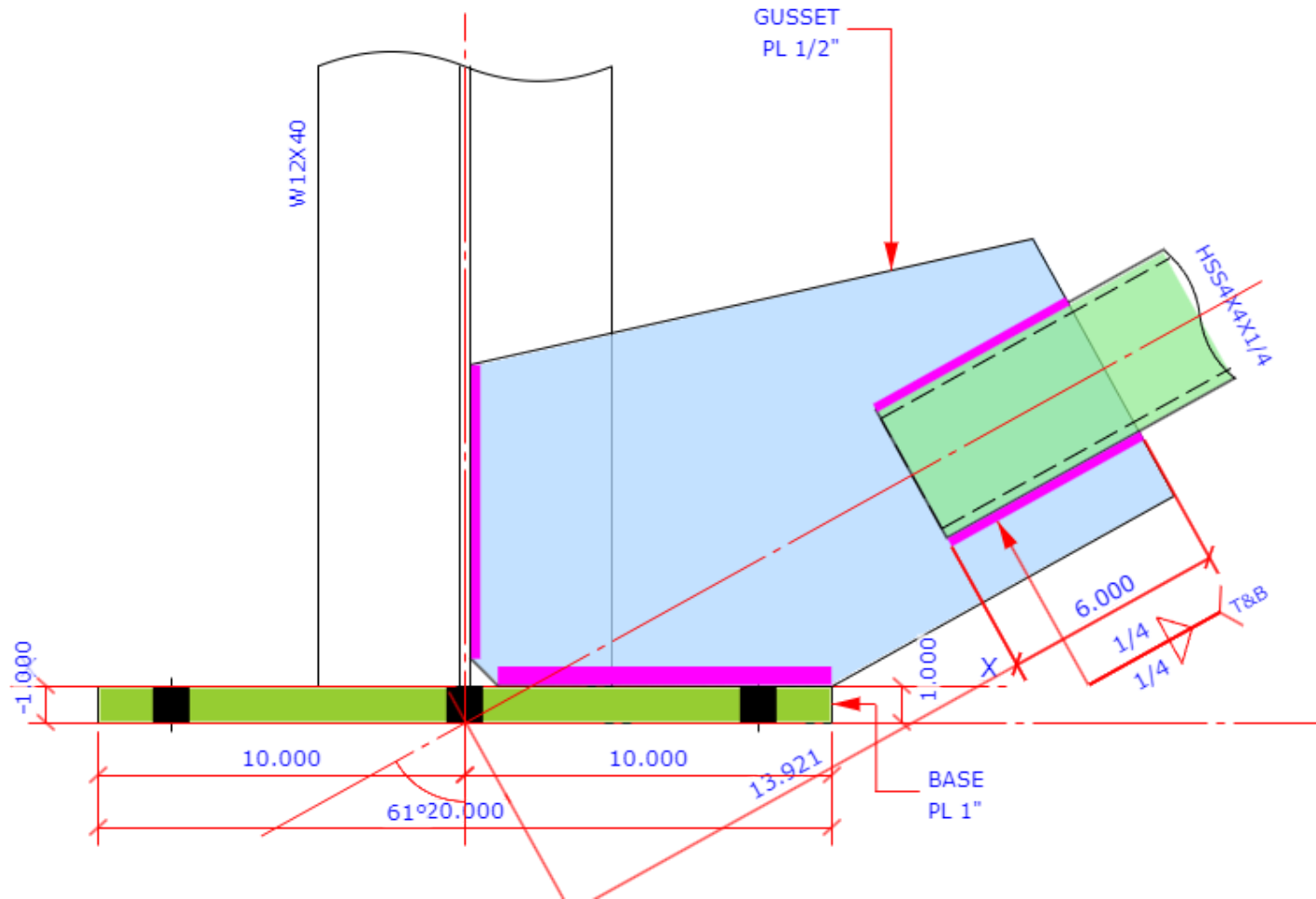
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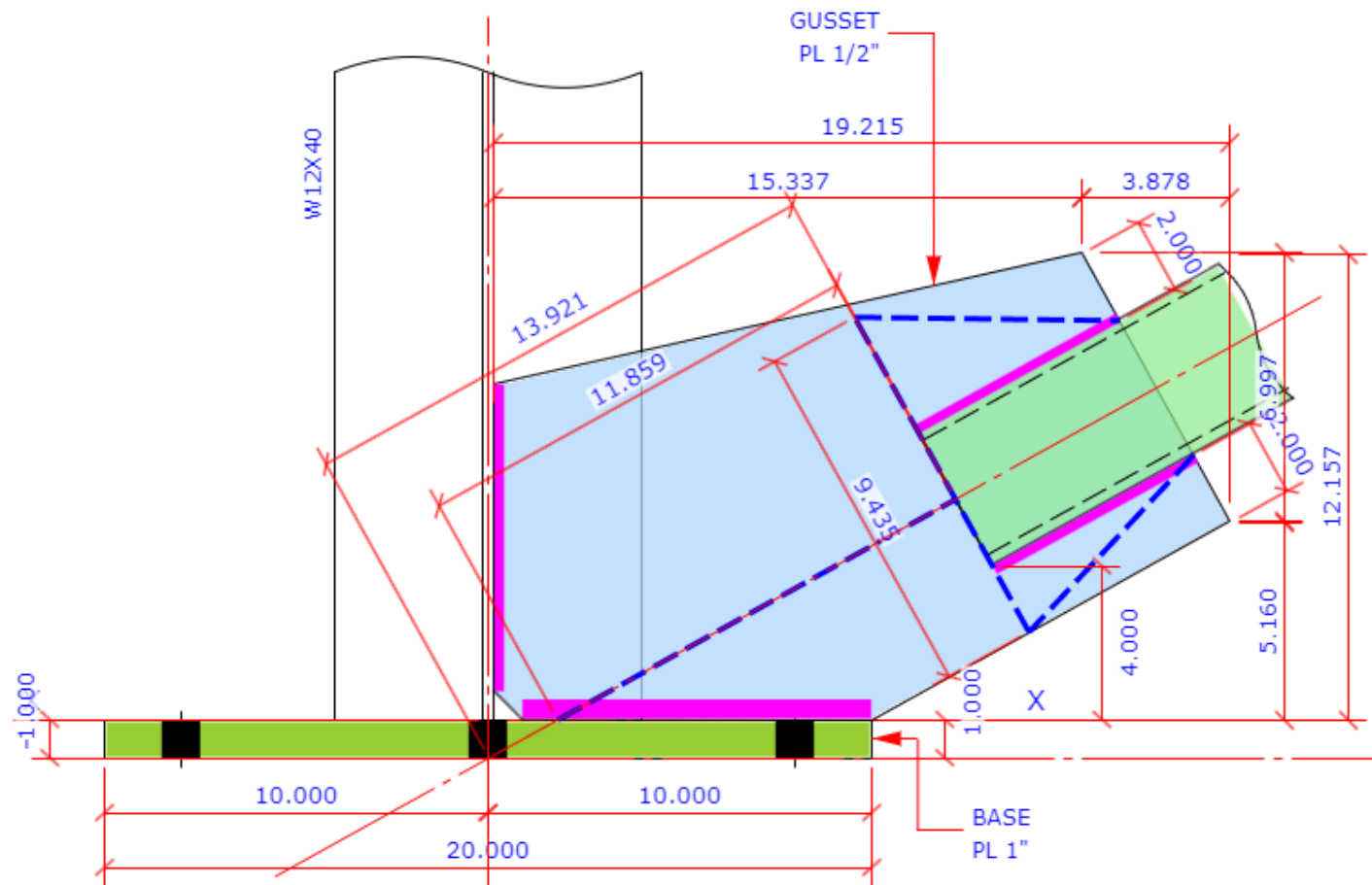
Base Plate Brace Connection

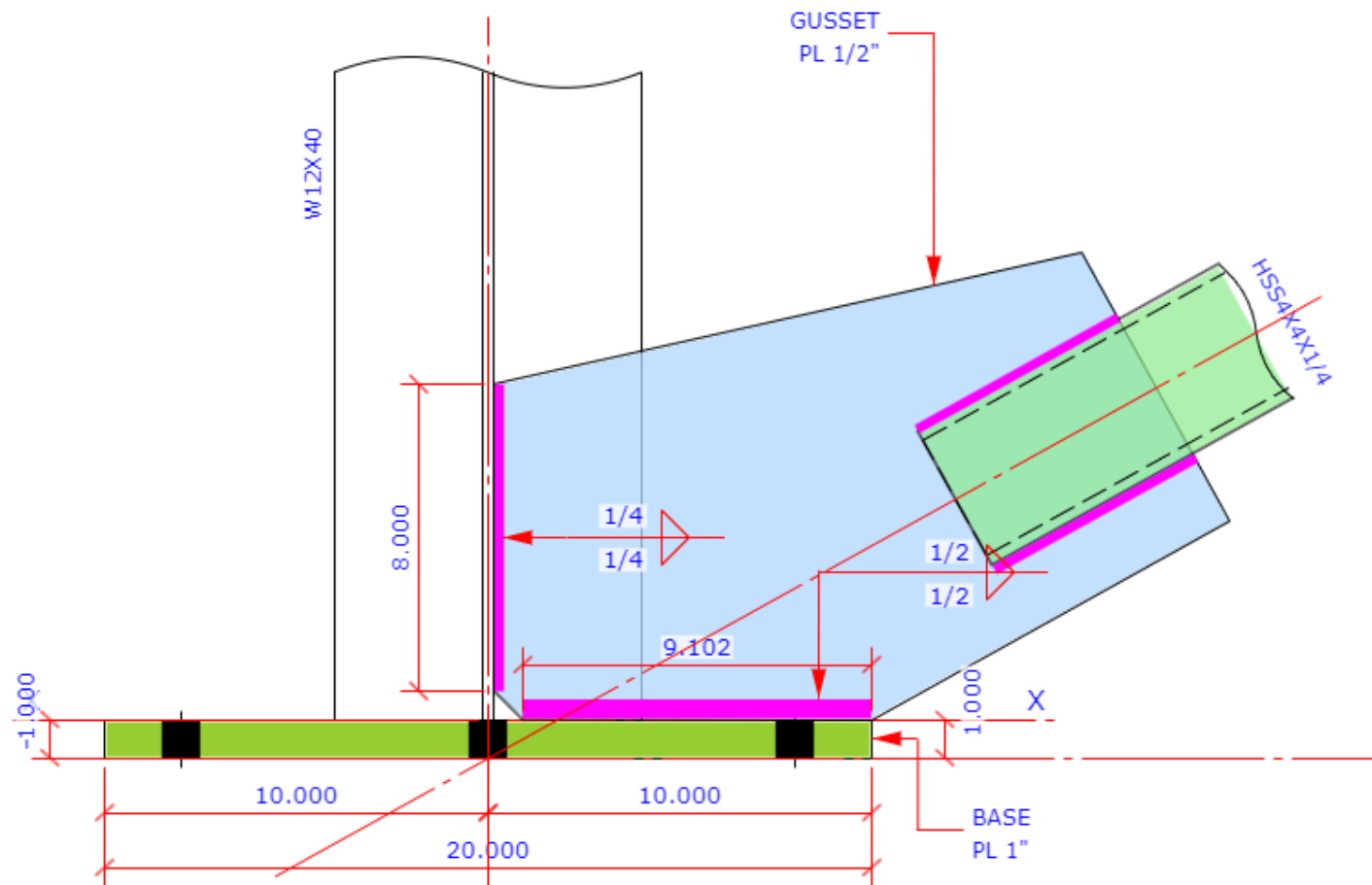
OCBFBP1

Code=AISC 360-16 ASD

Refer to DWG S-601 for Baseplate & Anchor Bolt Details







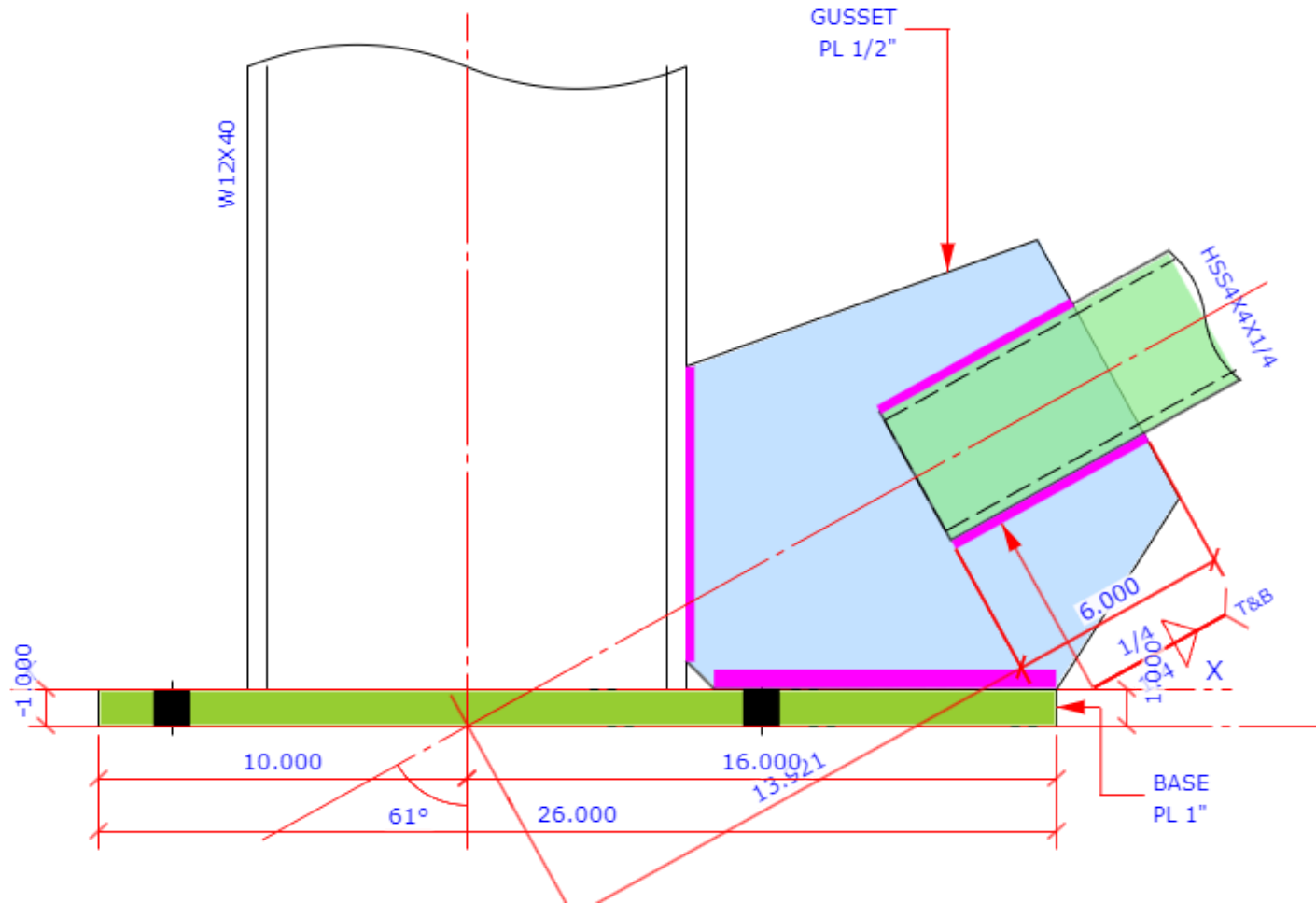
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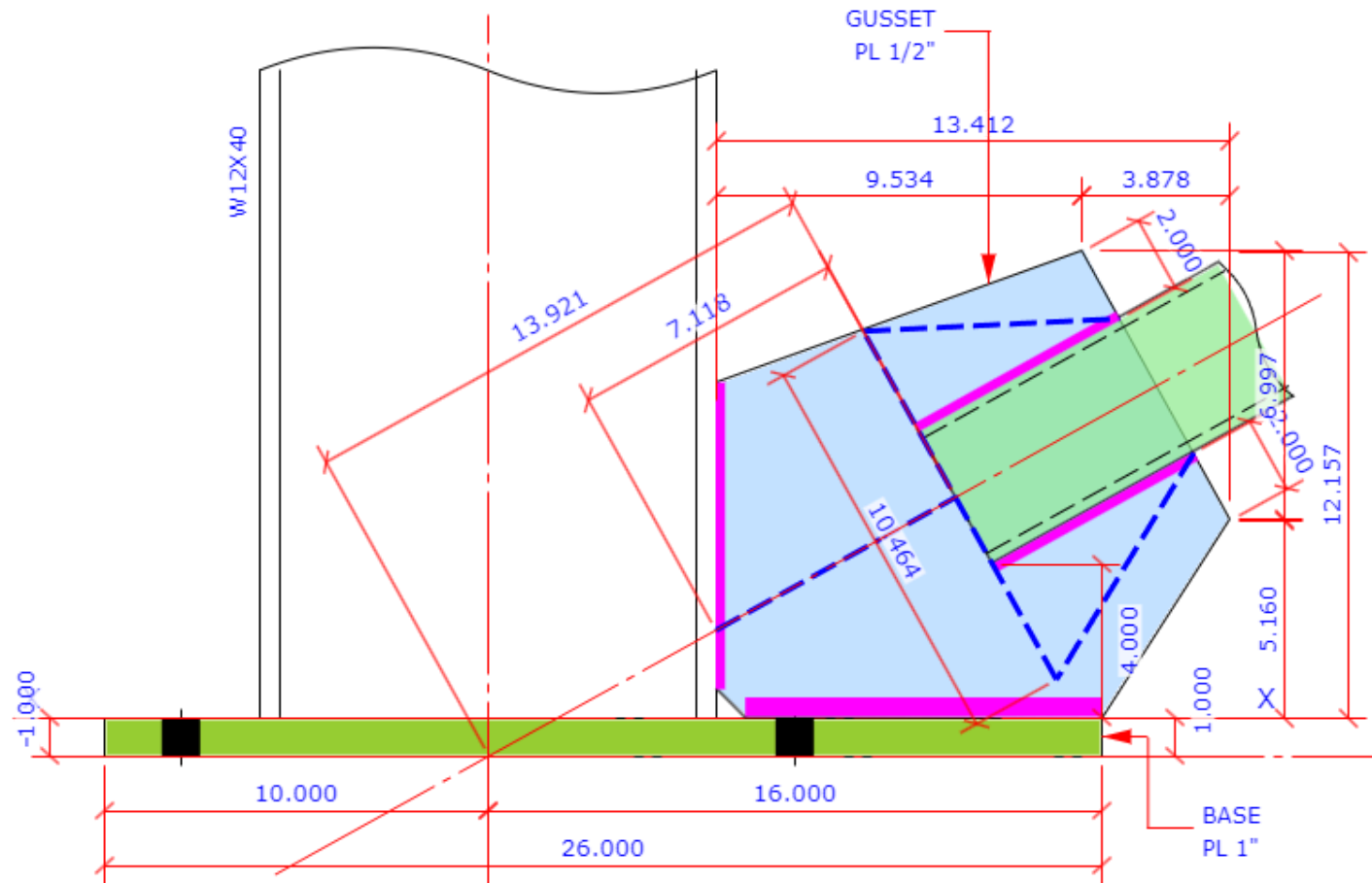
Base Plate Brace Connection

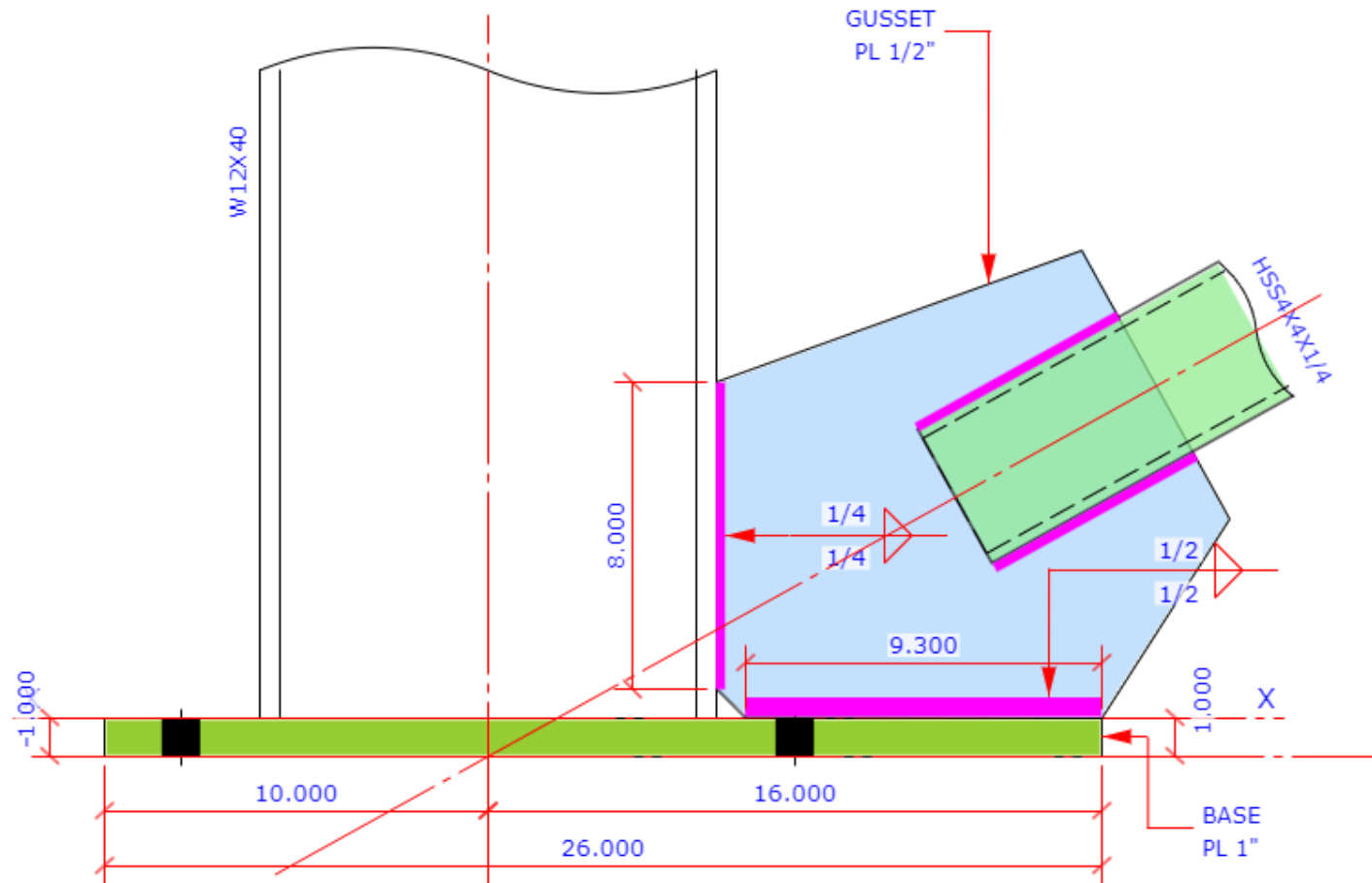
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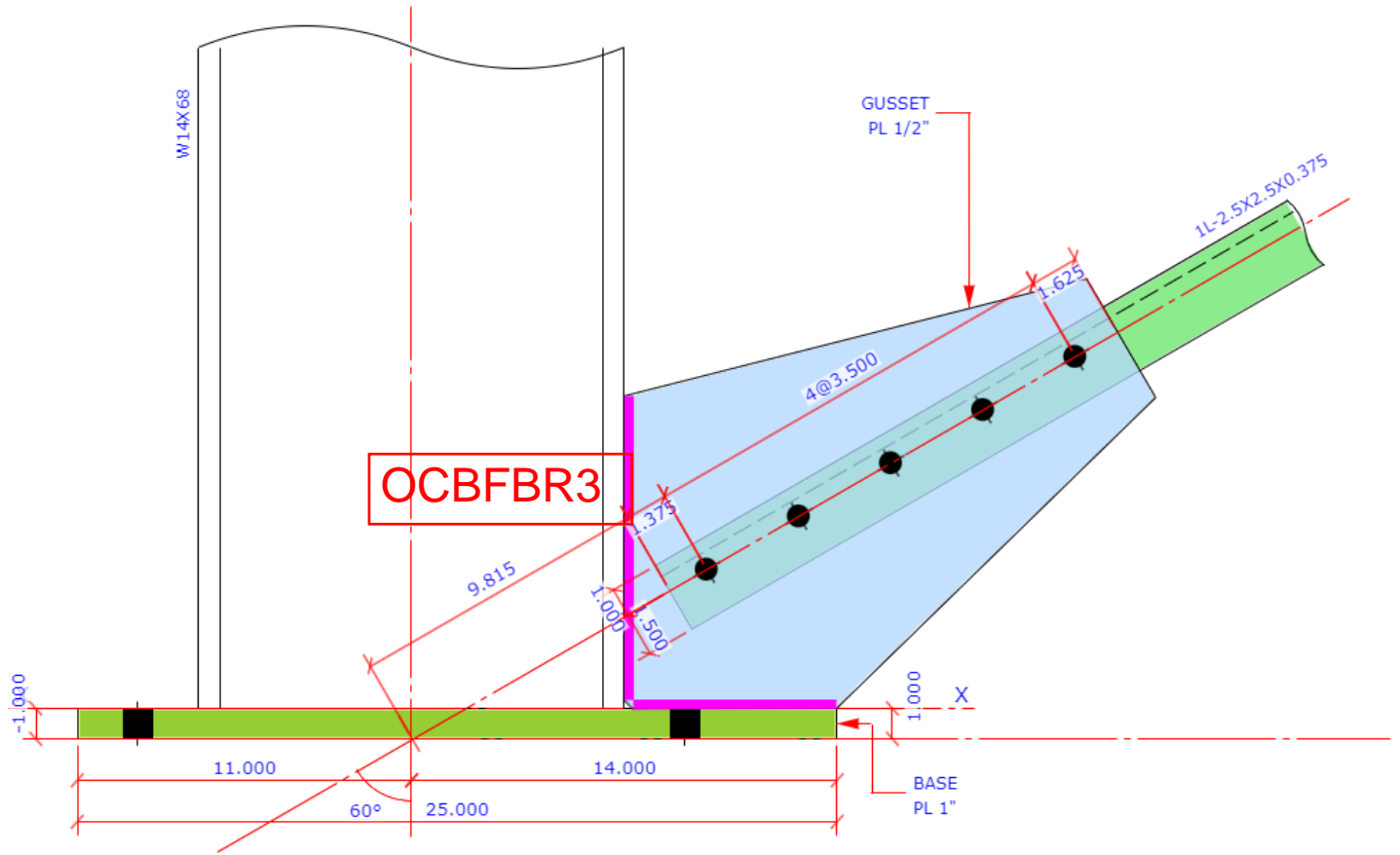
Refer to DWG S-601 for Baseplate & Anchor Bolt Details





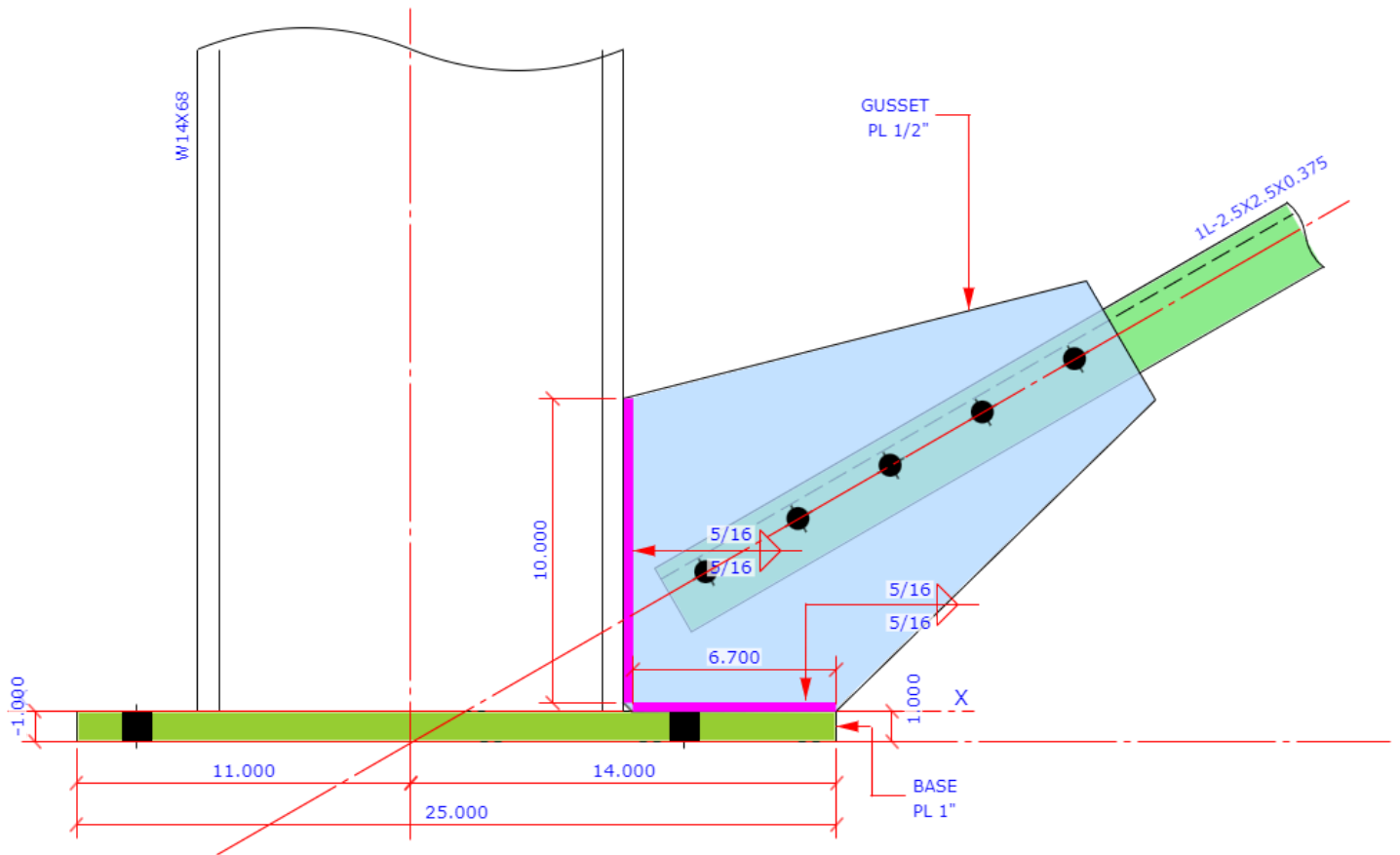
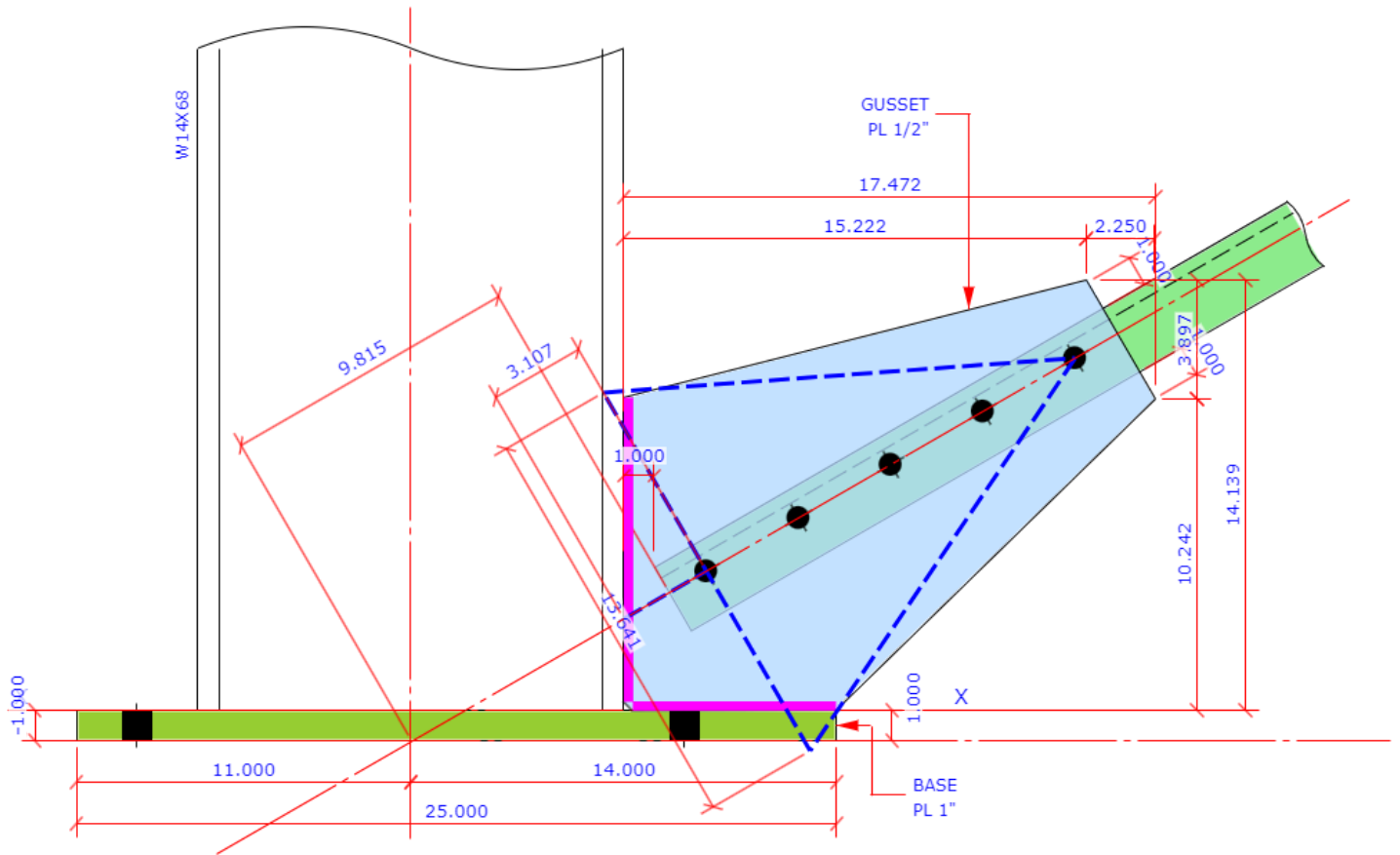


Sketch	Base Plate Brace Connection	OCBFBP3	Code=AISC 360-16 ASD
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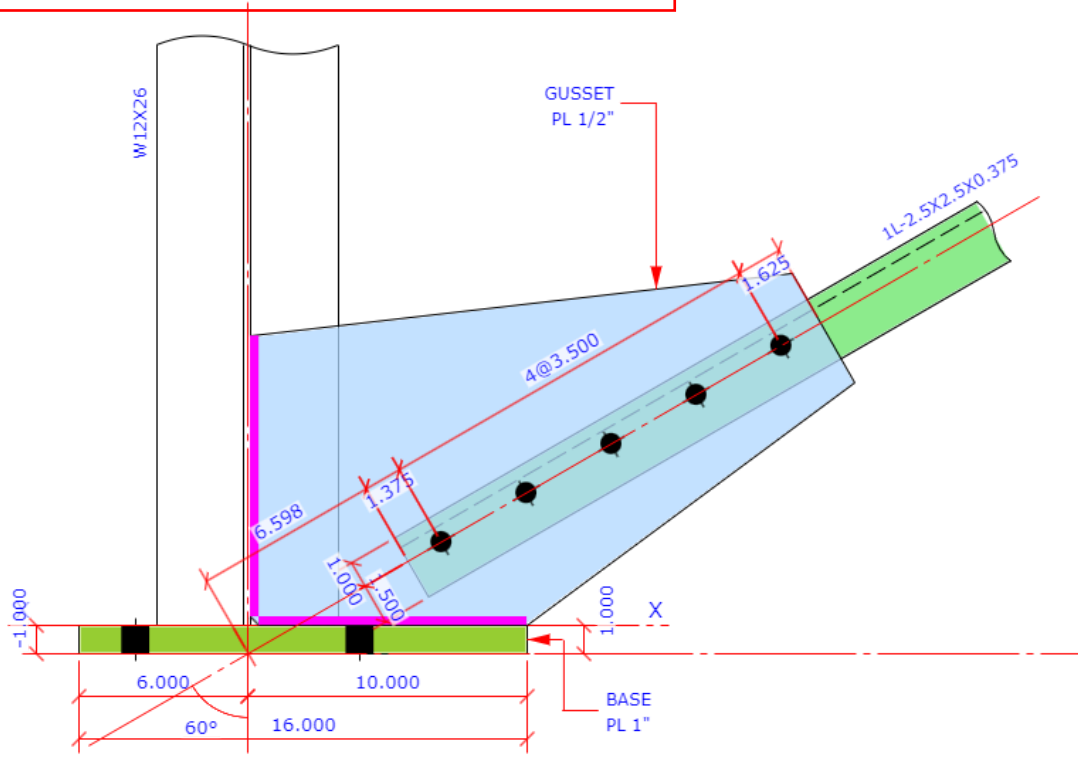
Refer to DWG S-601 for Baseplate & Anchor Bolt Details

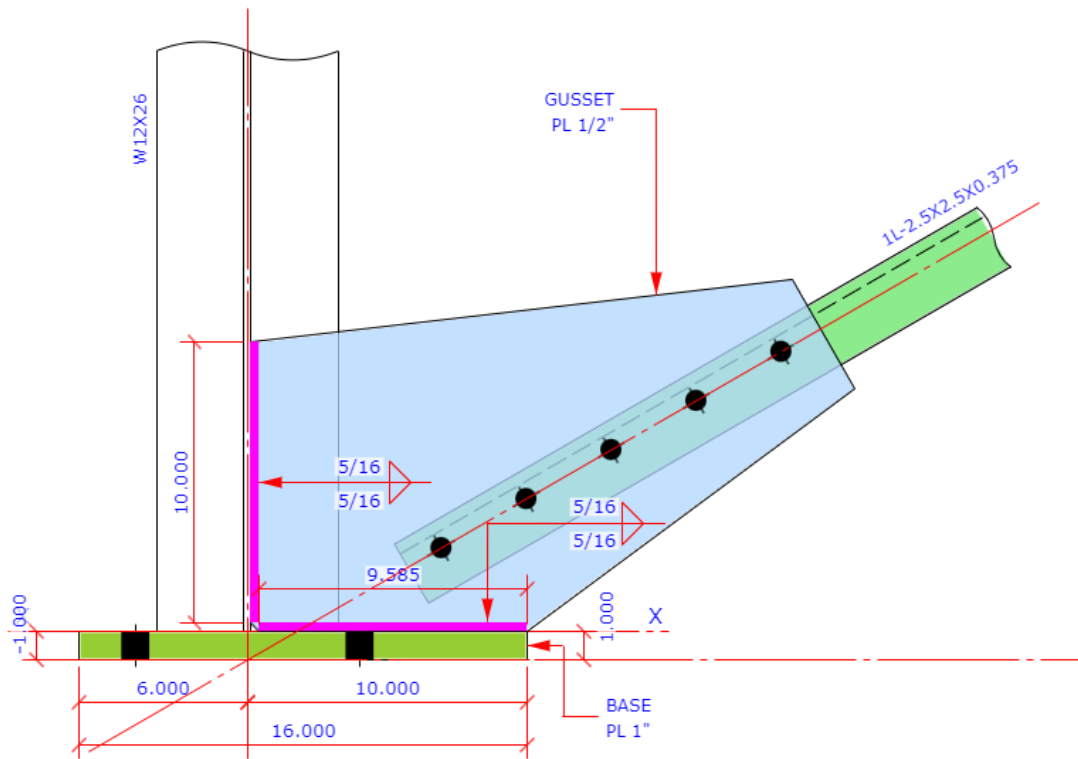
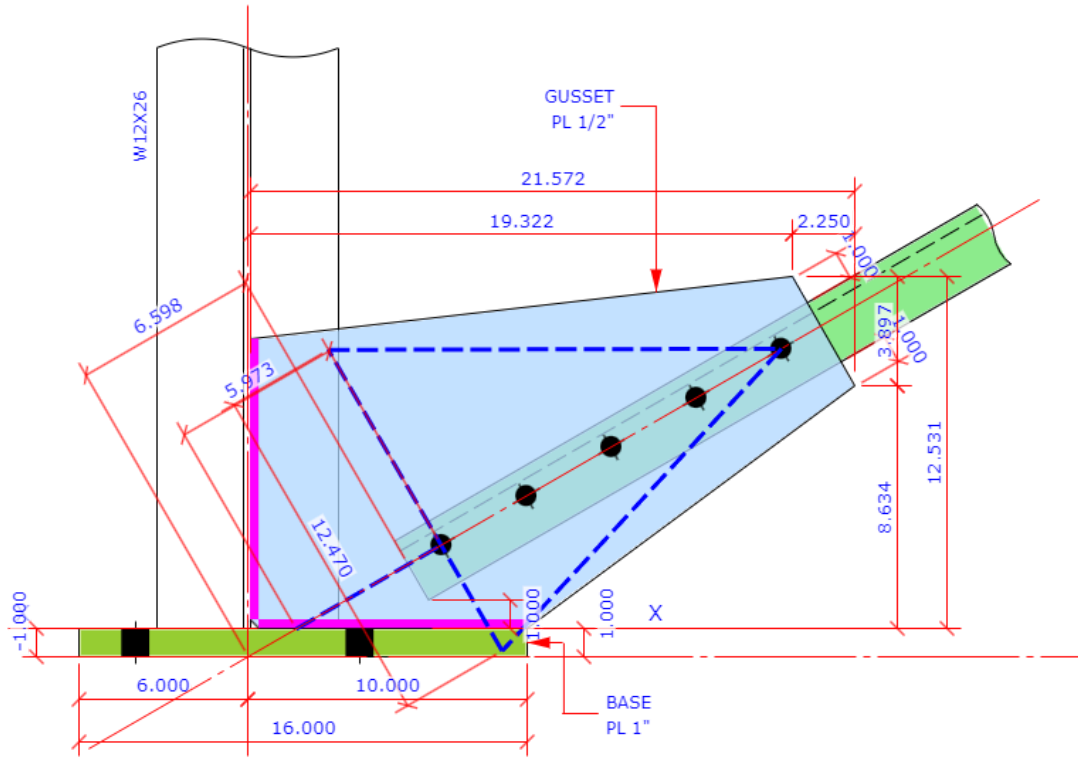
* All Bolts are 3/4" Dia. A325-N



Sketch	Base Plate Brace Connection	OCBFBP4	Code=AISC 360-16 ASD
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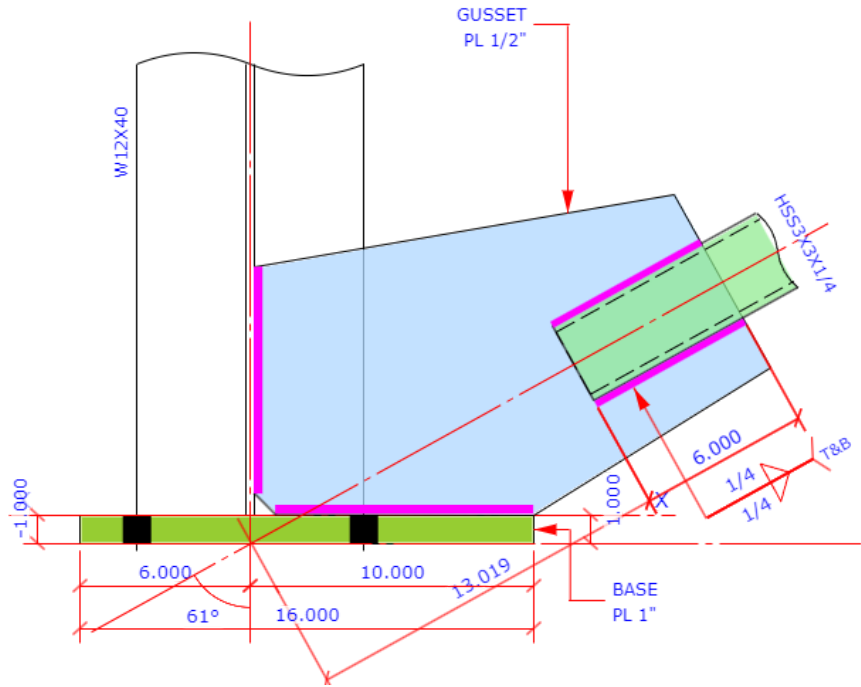
Refer to DWG S-601 for Baseplate & Anchor Bolt Details

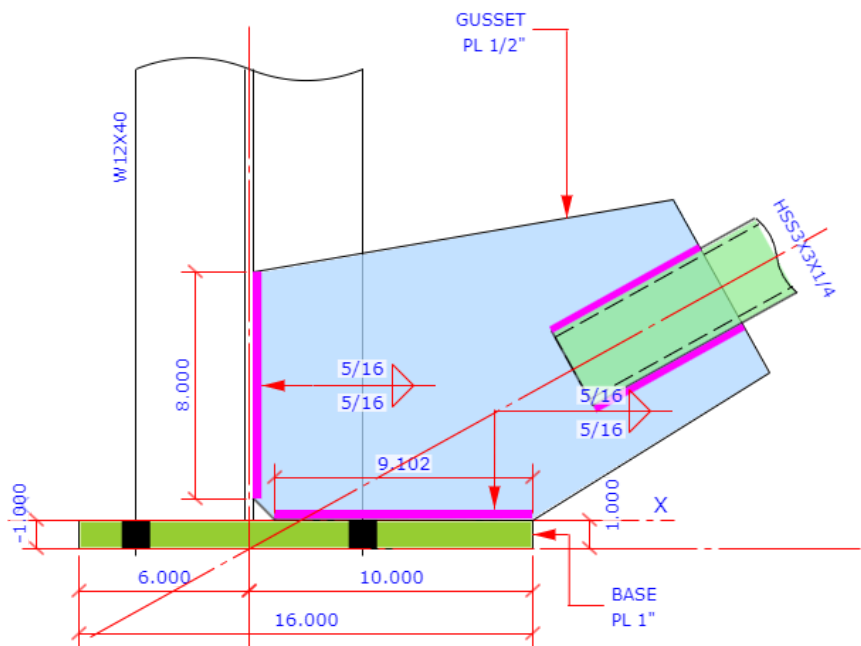
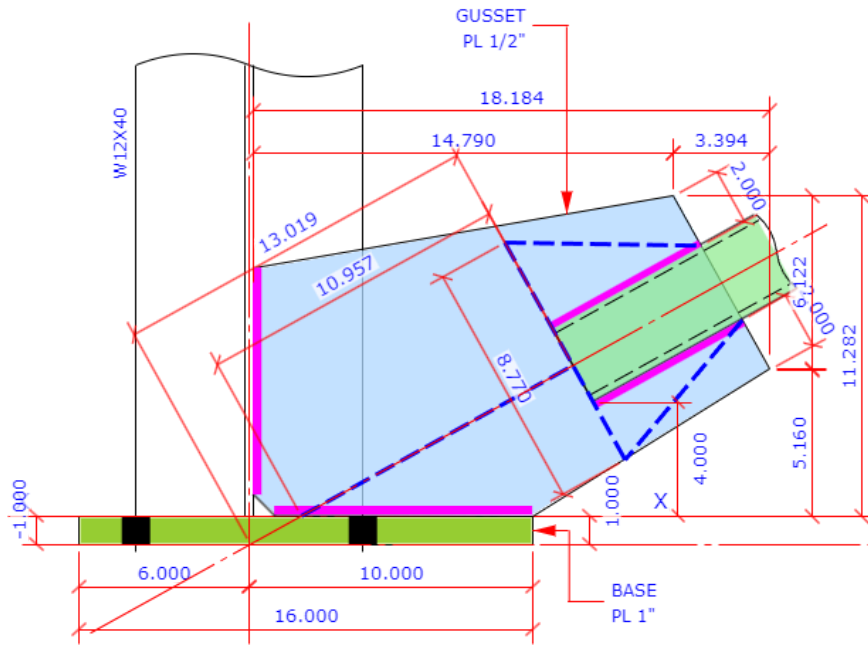




Sketch	Base Plate Brace Connection	OCBFBP5	Code=AISC 360-16 ASD
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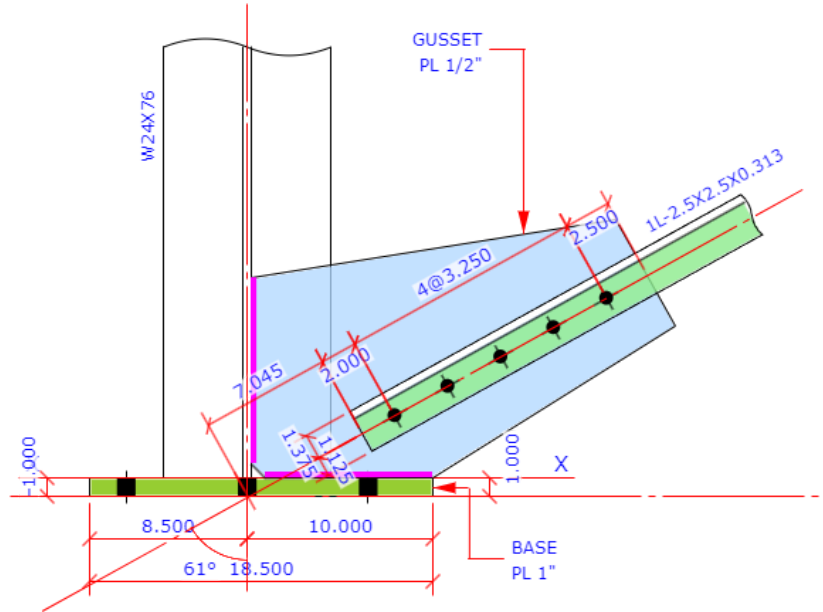
Refer to DWG S-601 for Baseplate & Anchor Bolt Details

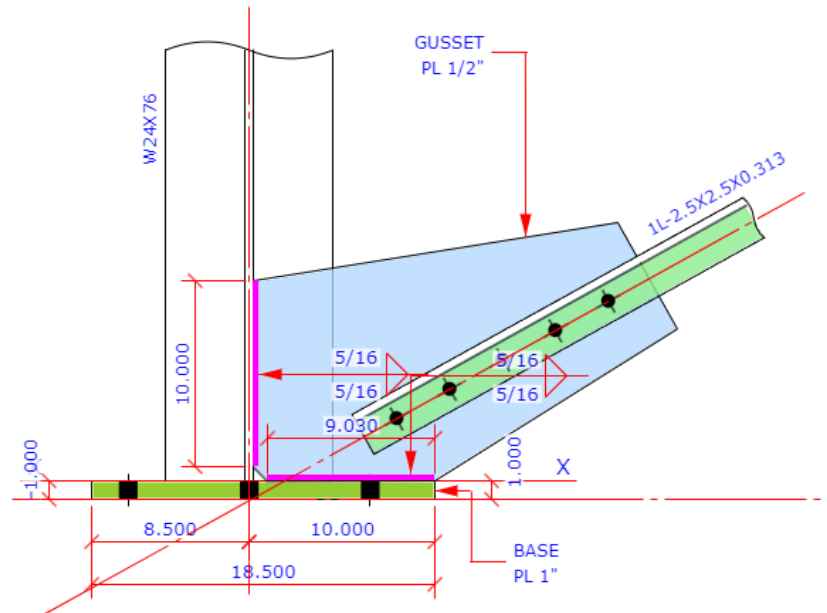
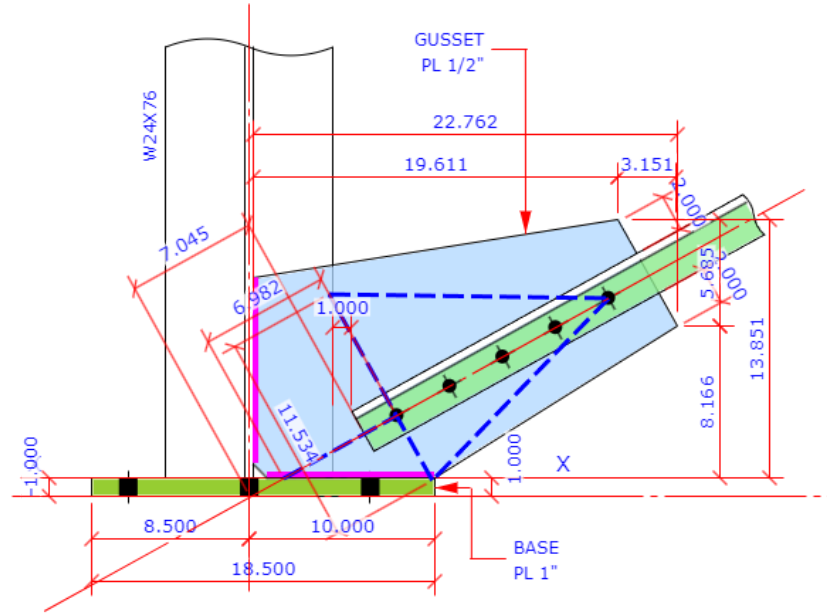




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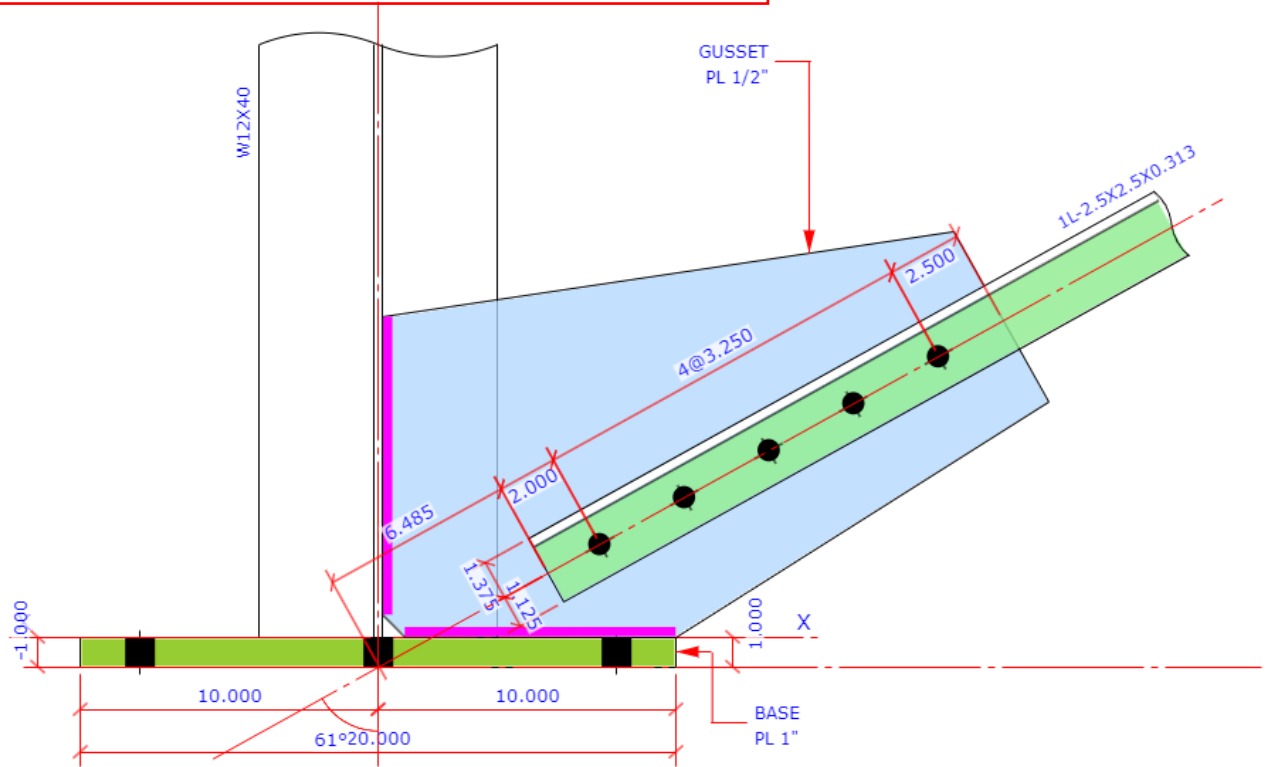
Refer to DWG S-601 for Baseplate & Anchor Bolt Details

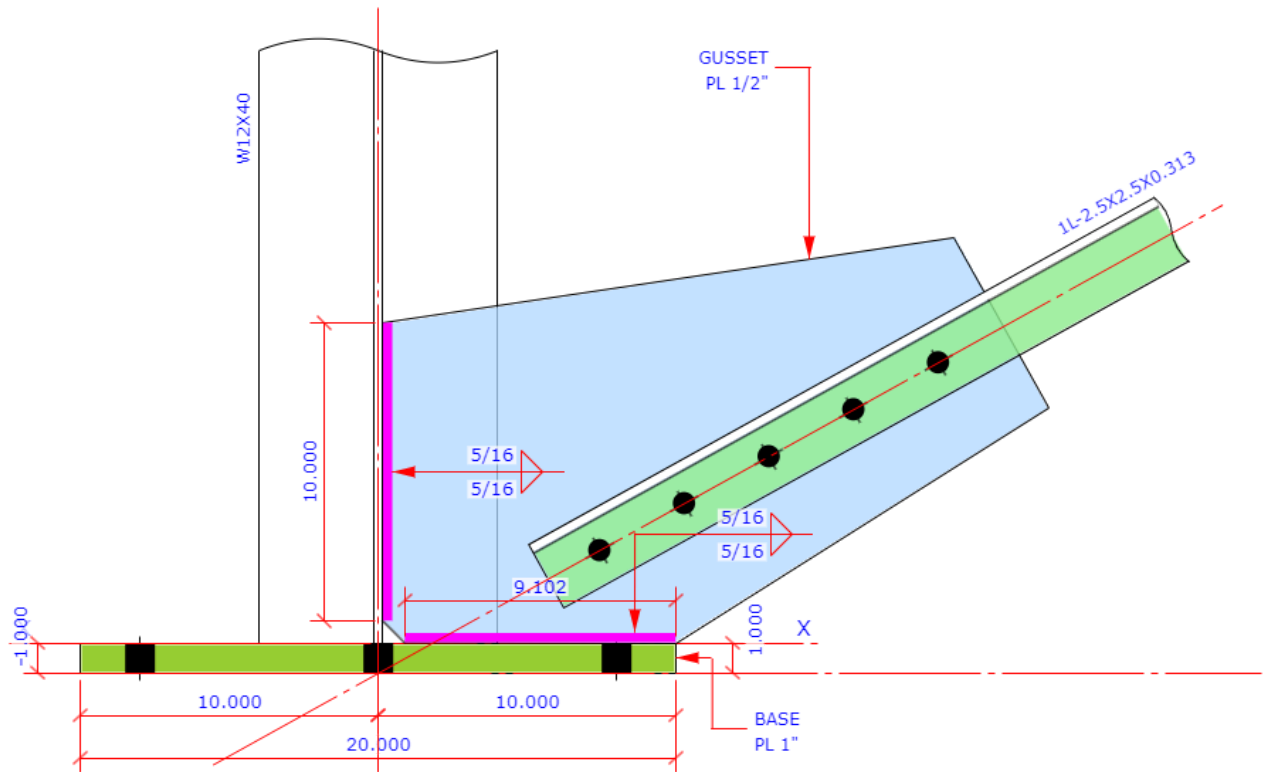
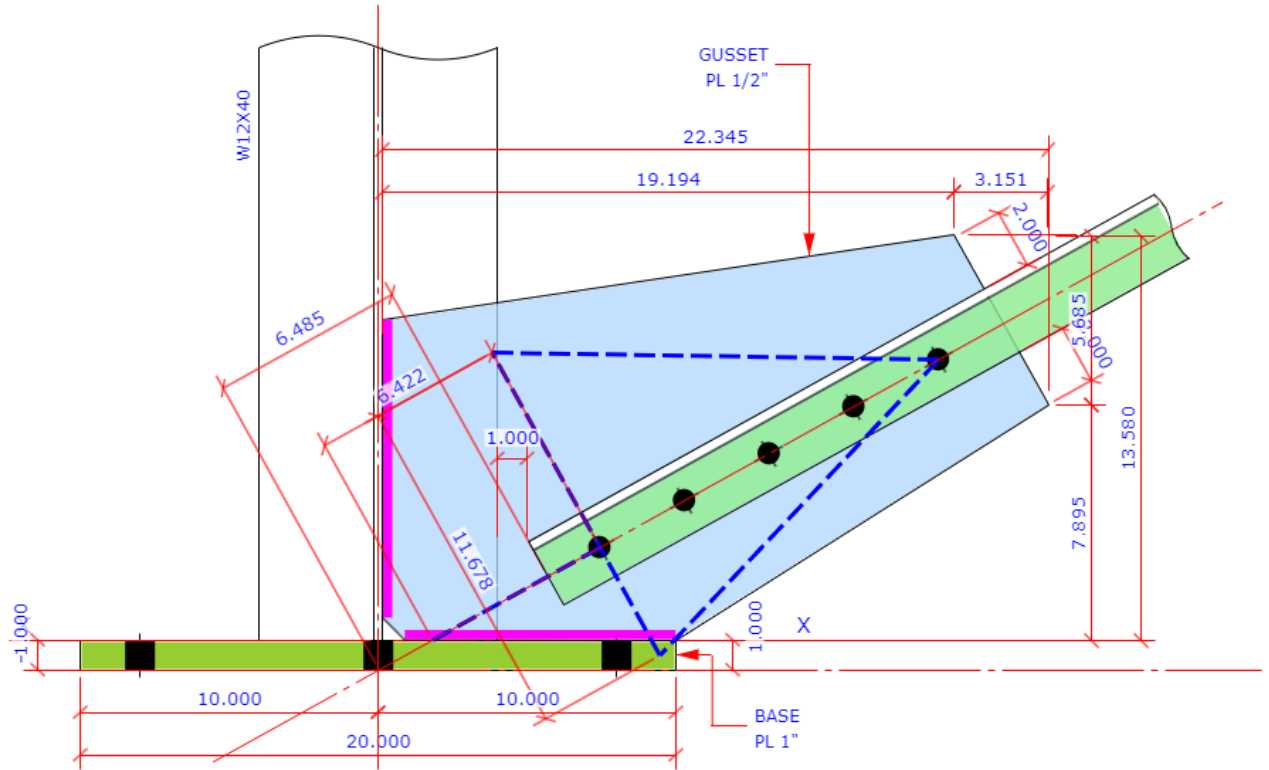




Sketch	Base Plate Brace Connection	OCBFBP7	Code=AISC 360-16 ASD
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Refer to DWG S-601 for Baseplate & Anchor Bolt Details



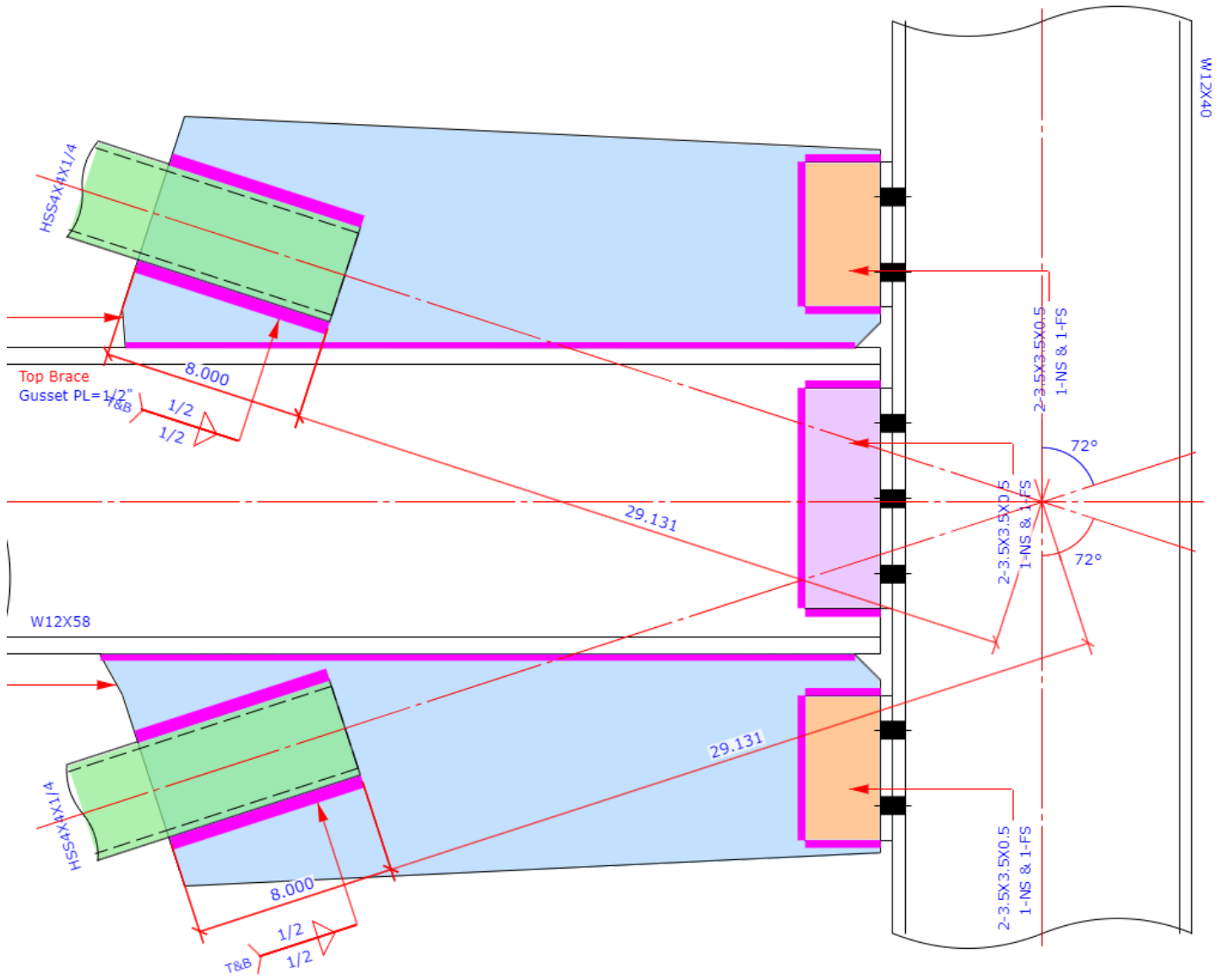


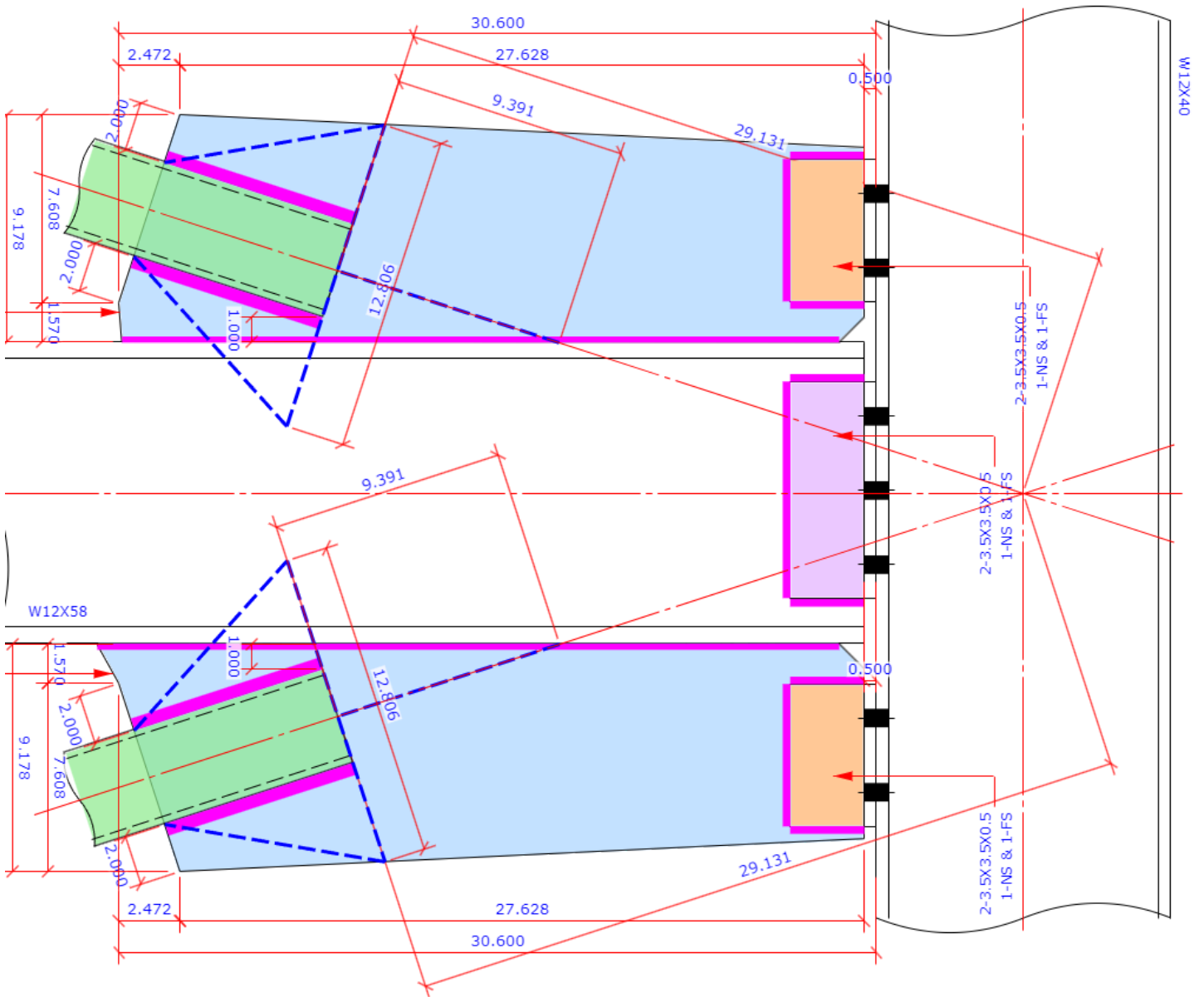
Sketch

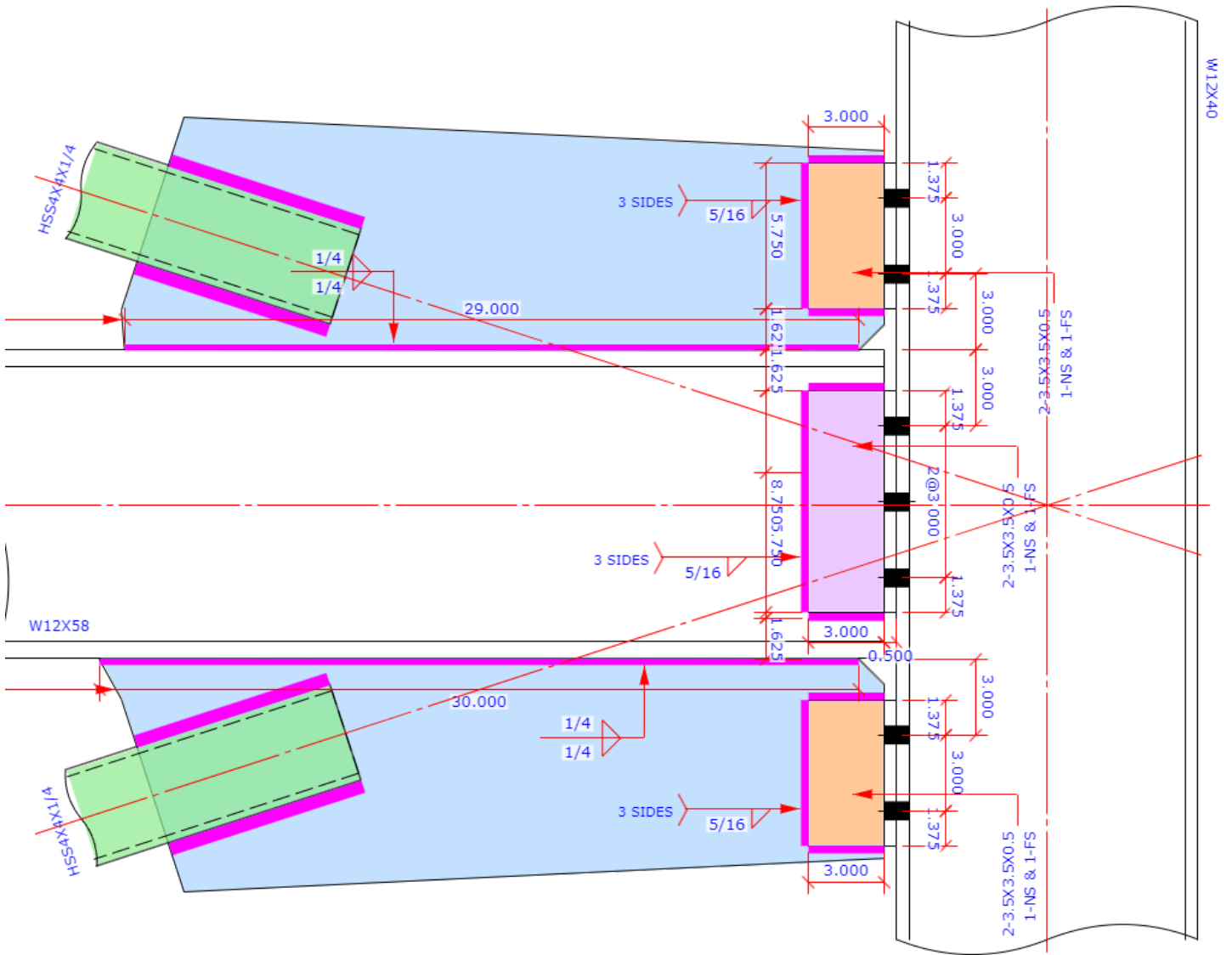
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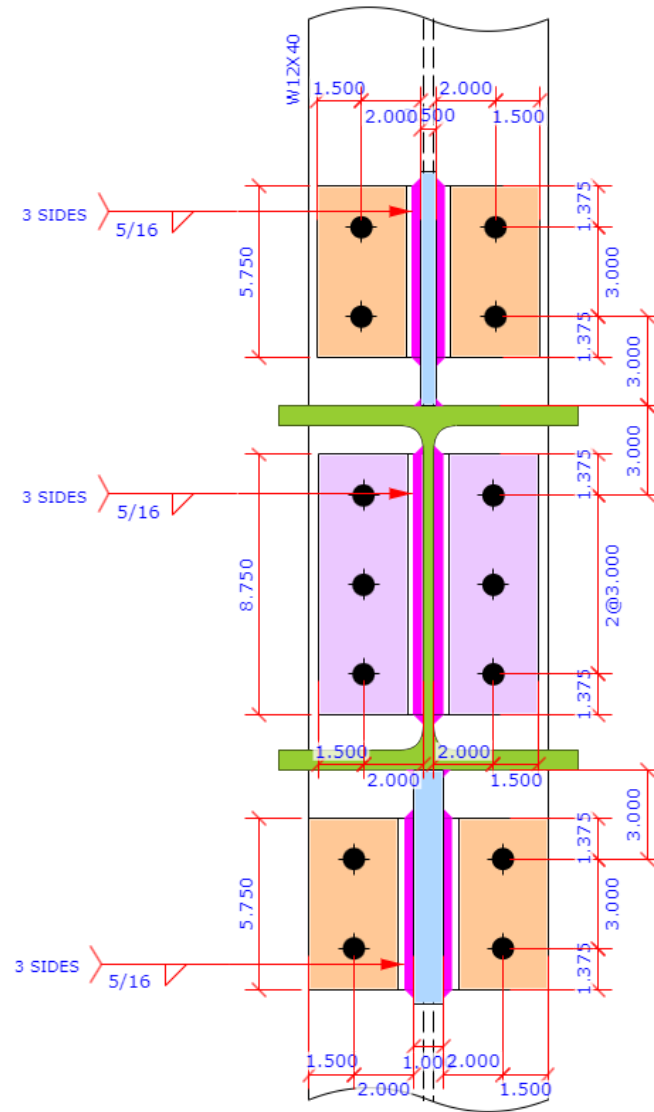
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OCBFBR1







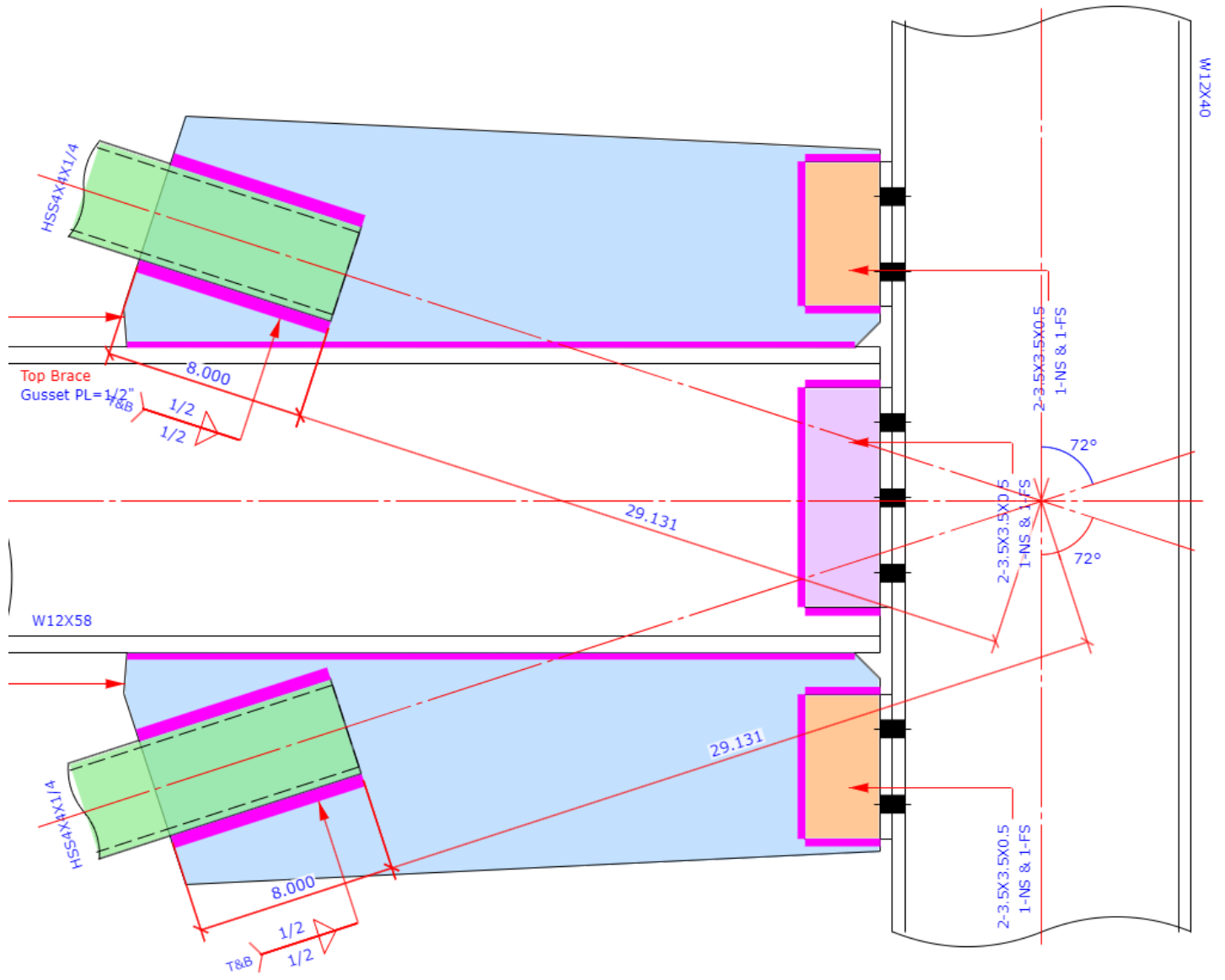


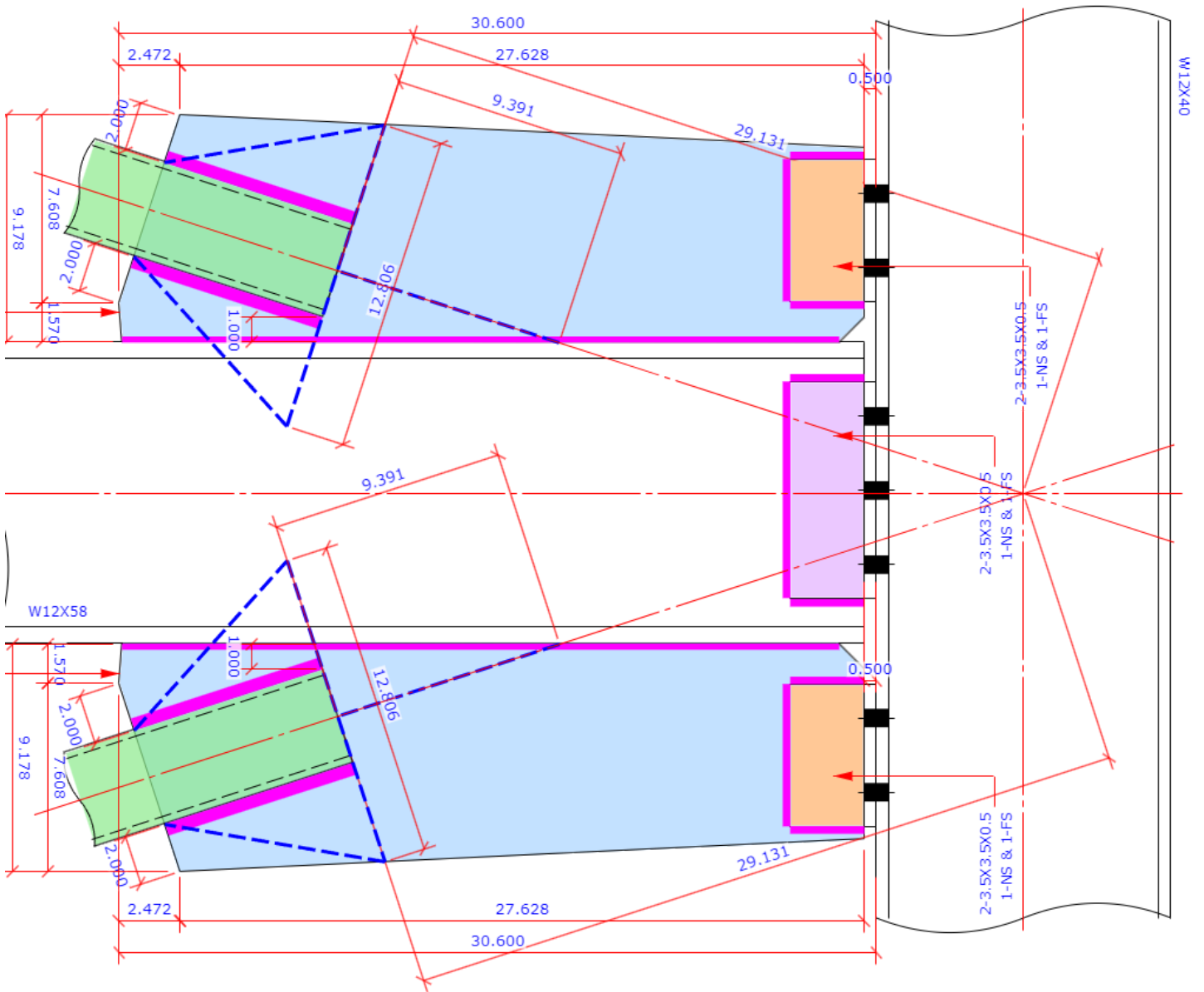
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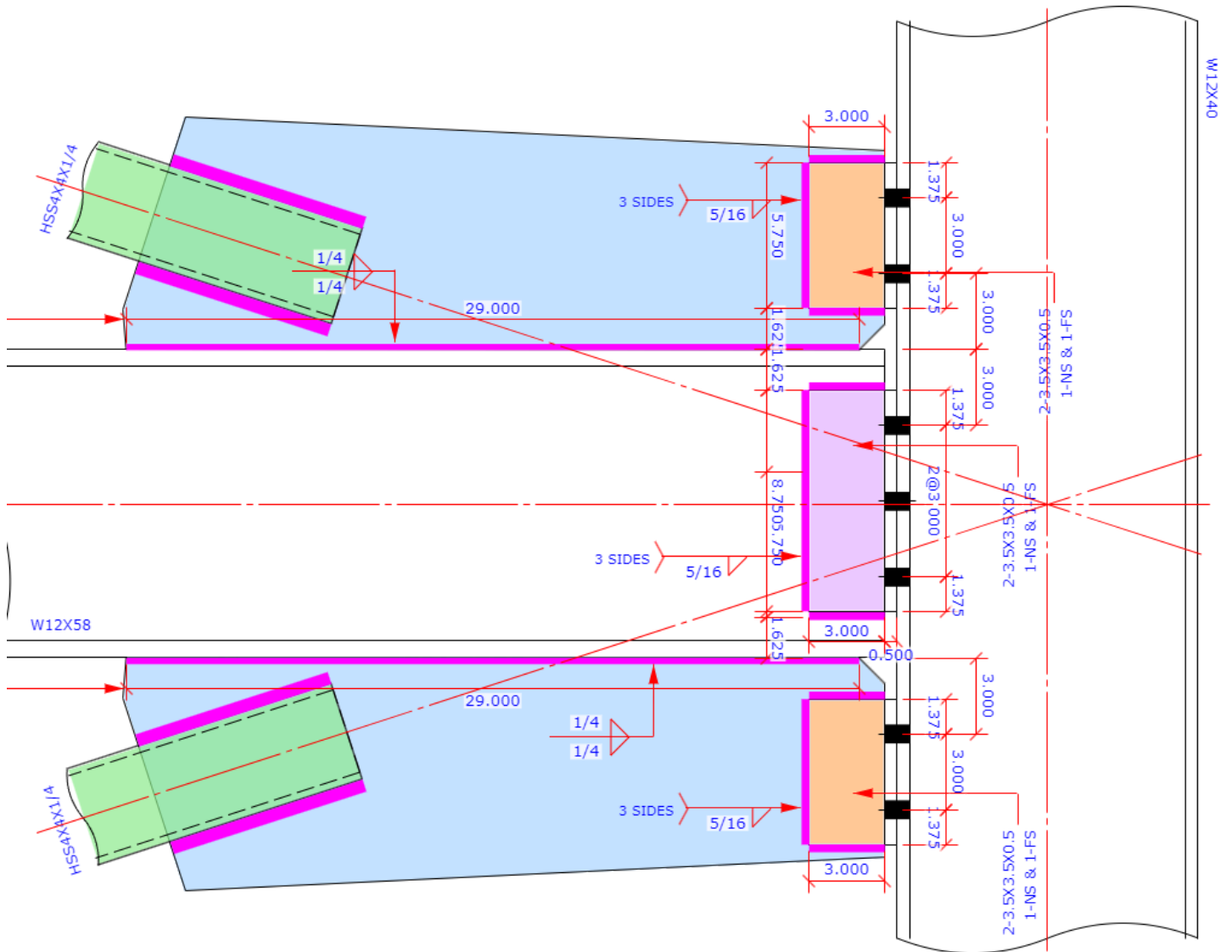
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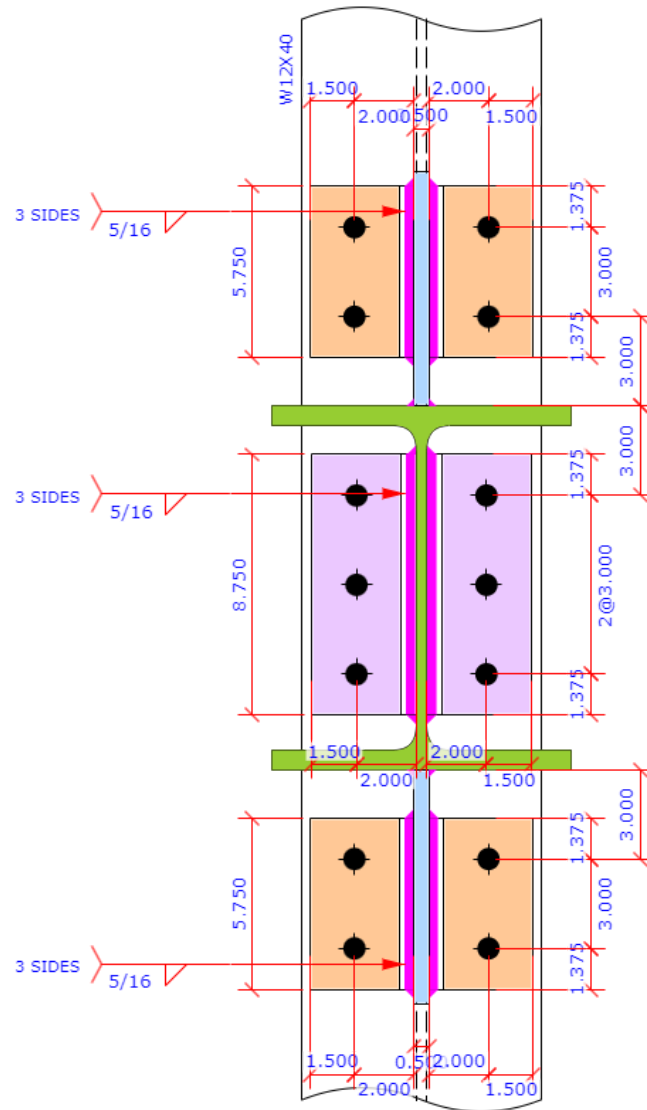
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OCBFBR2









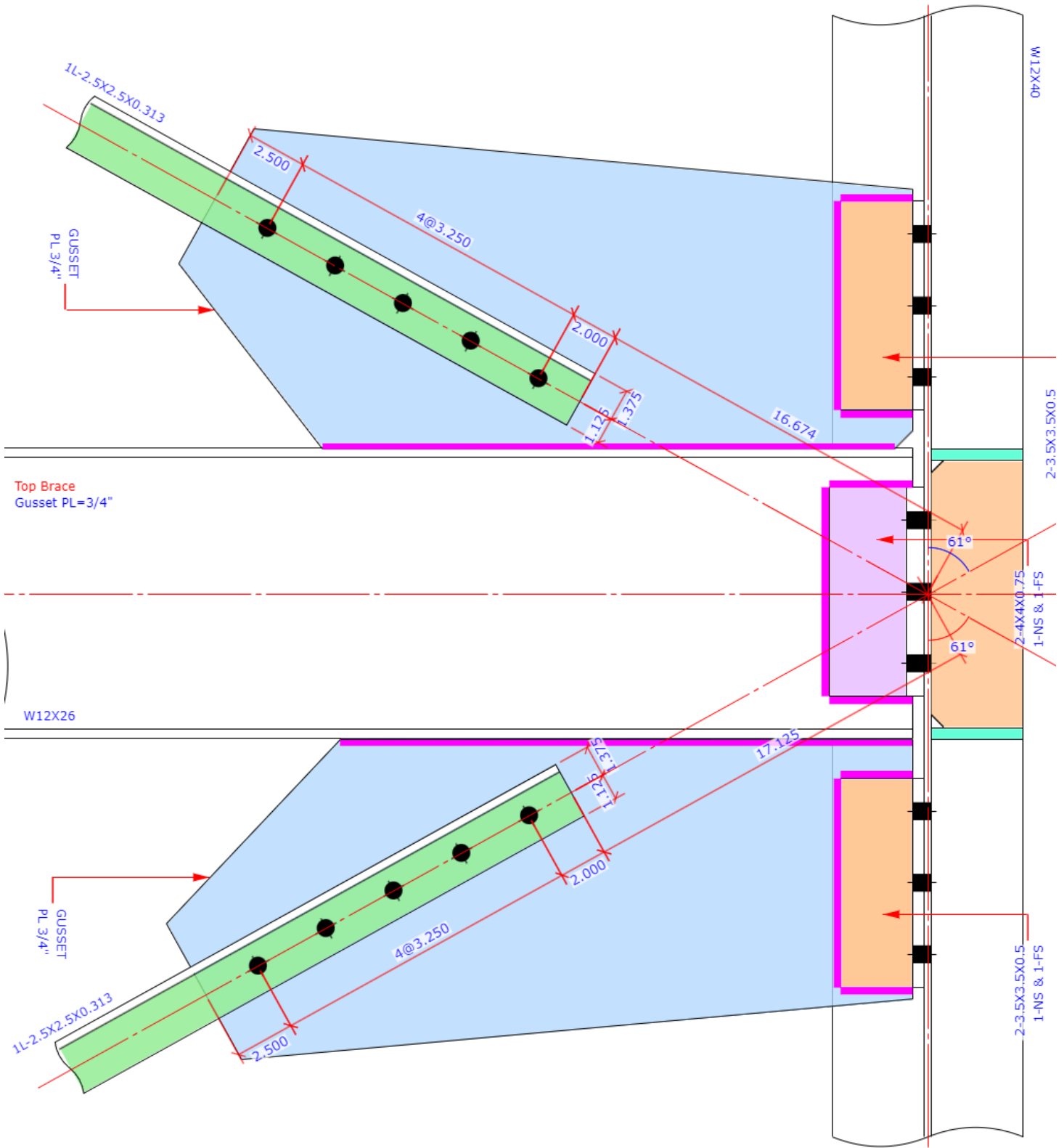
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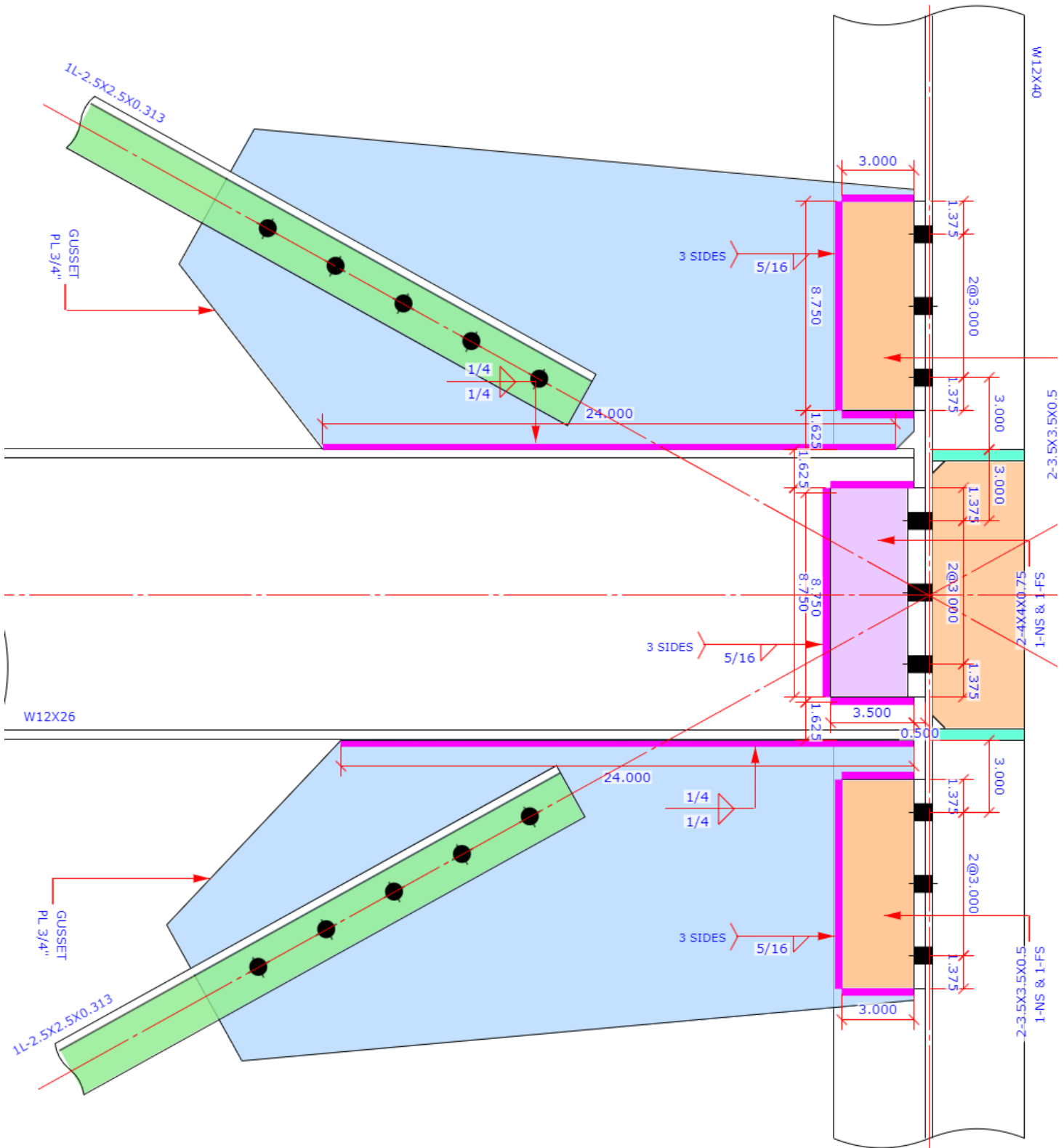
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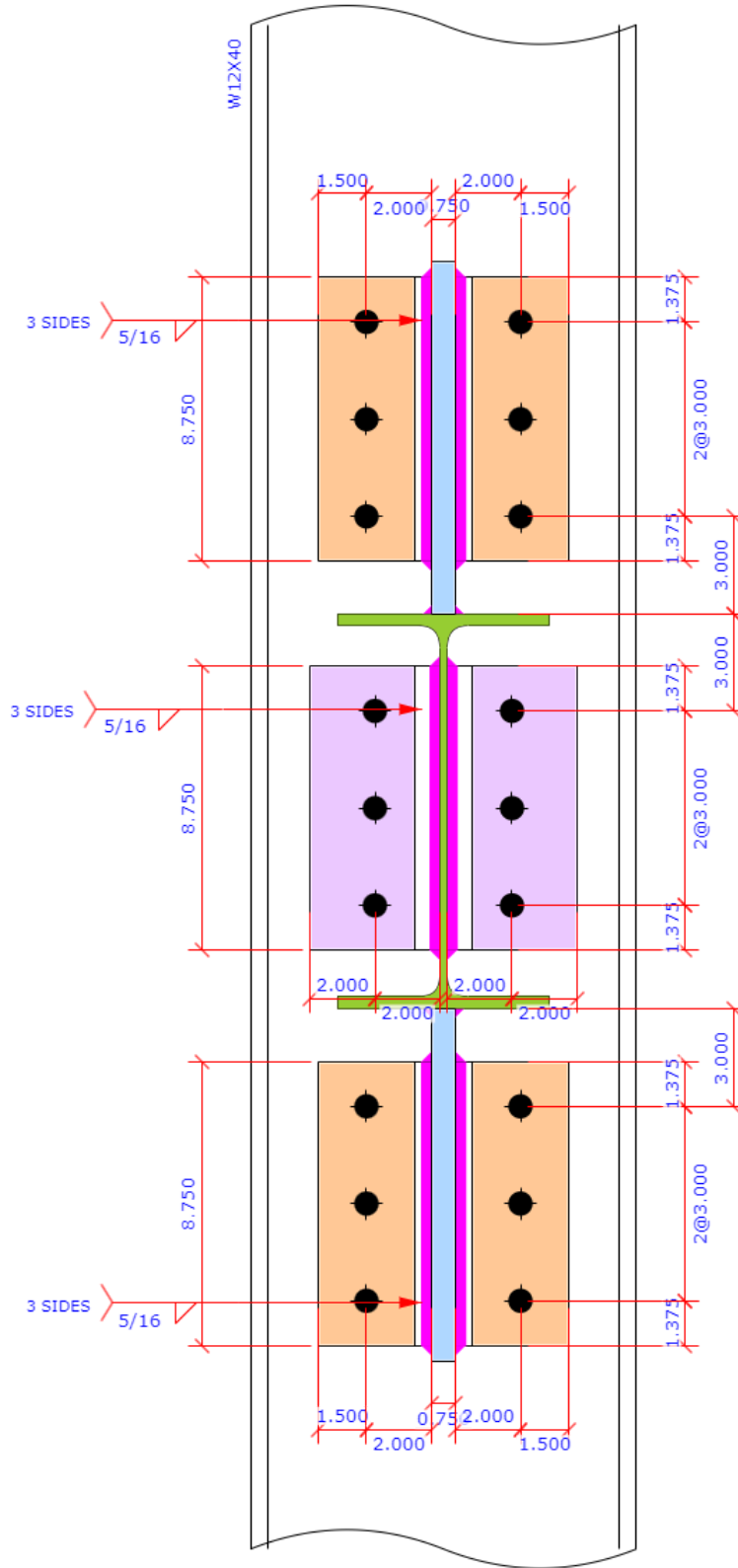
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OCBFBR3

* All Bolts are 3/4" Dia. A325-N







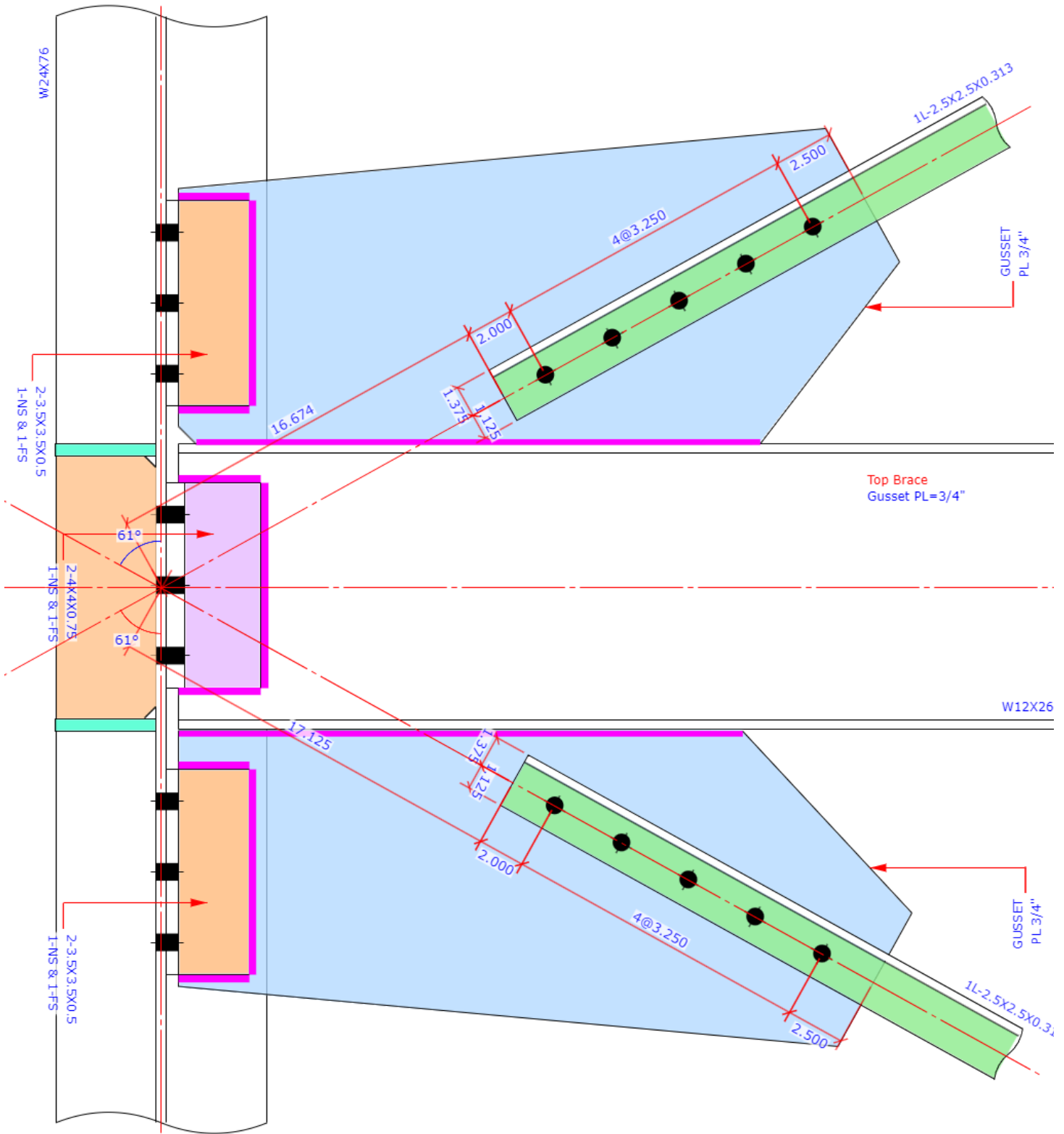
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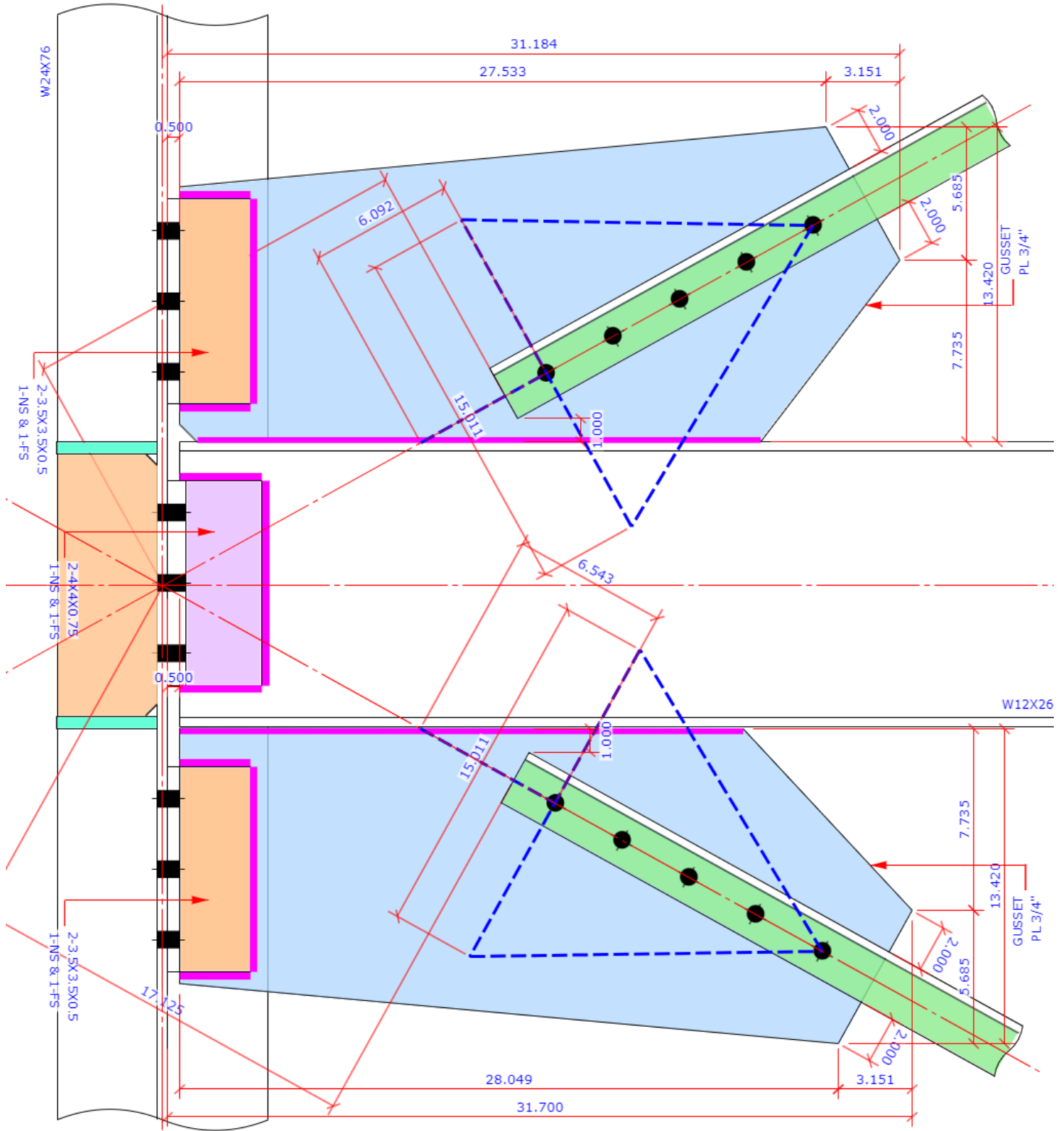
Vertical Brace Connection

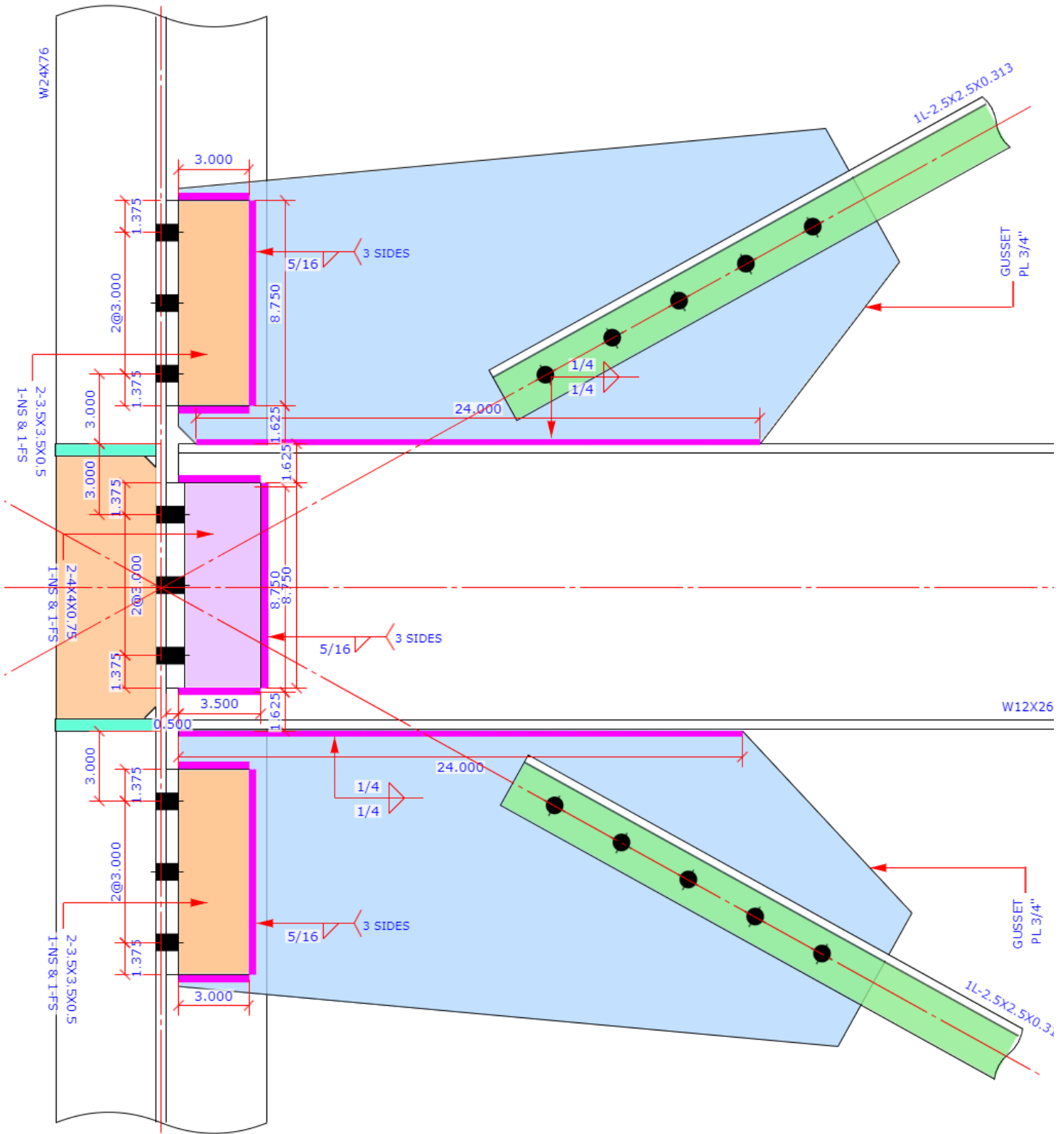
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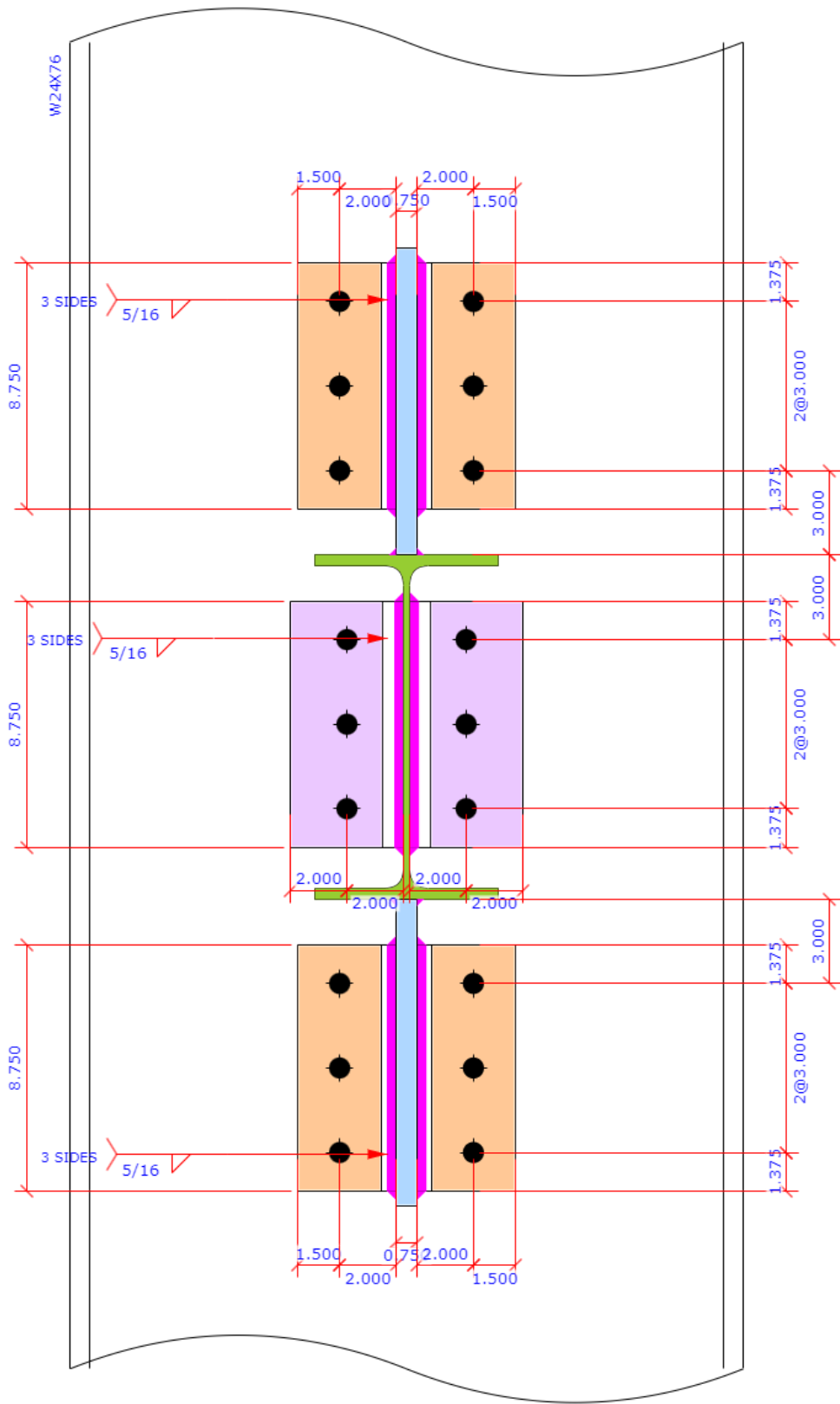
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* All Bolts are 3/4" Dia. A325-N

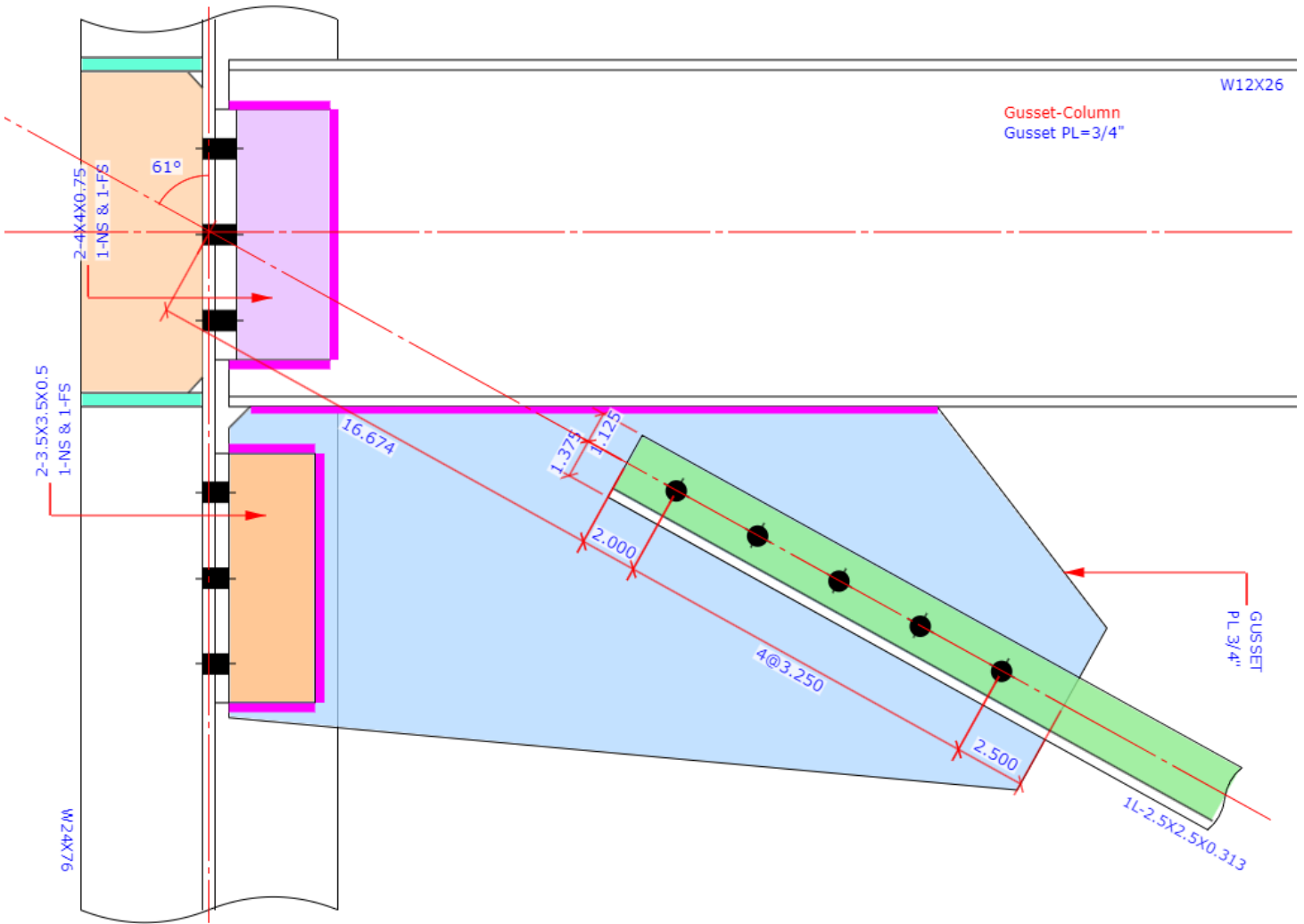




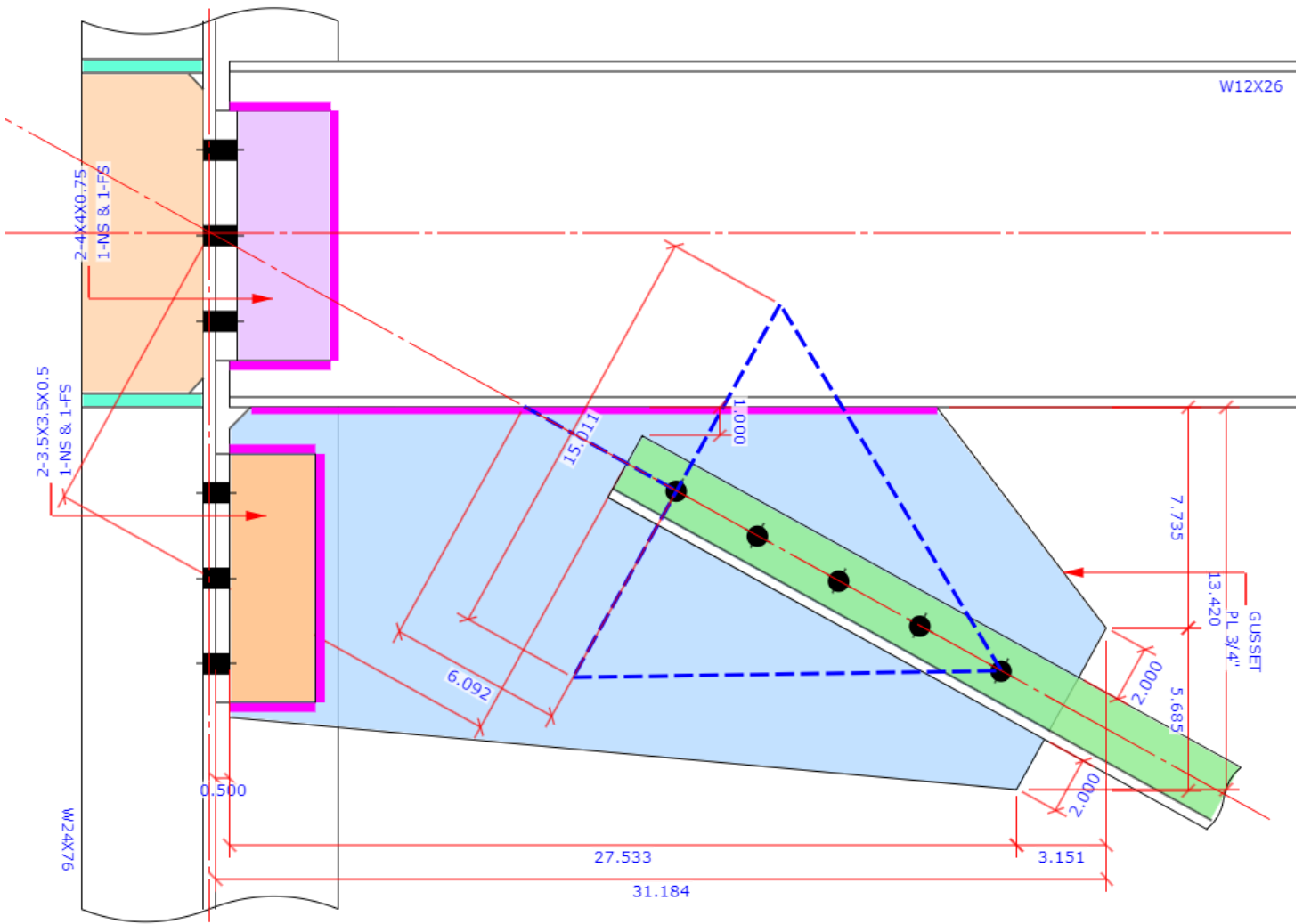


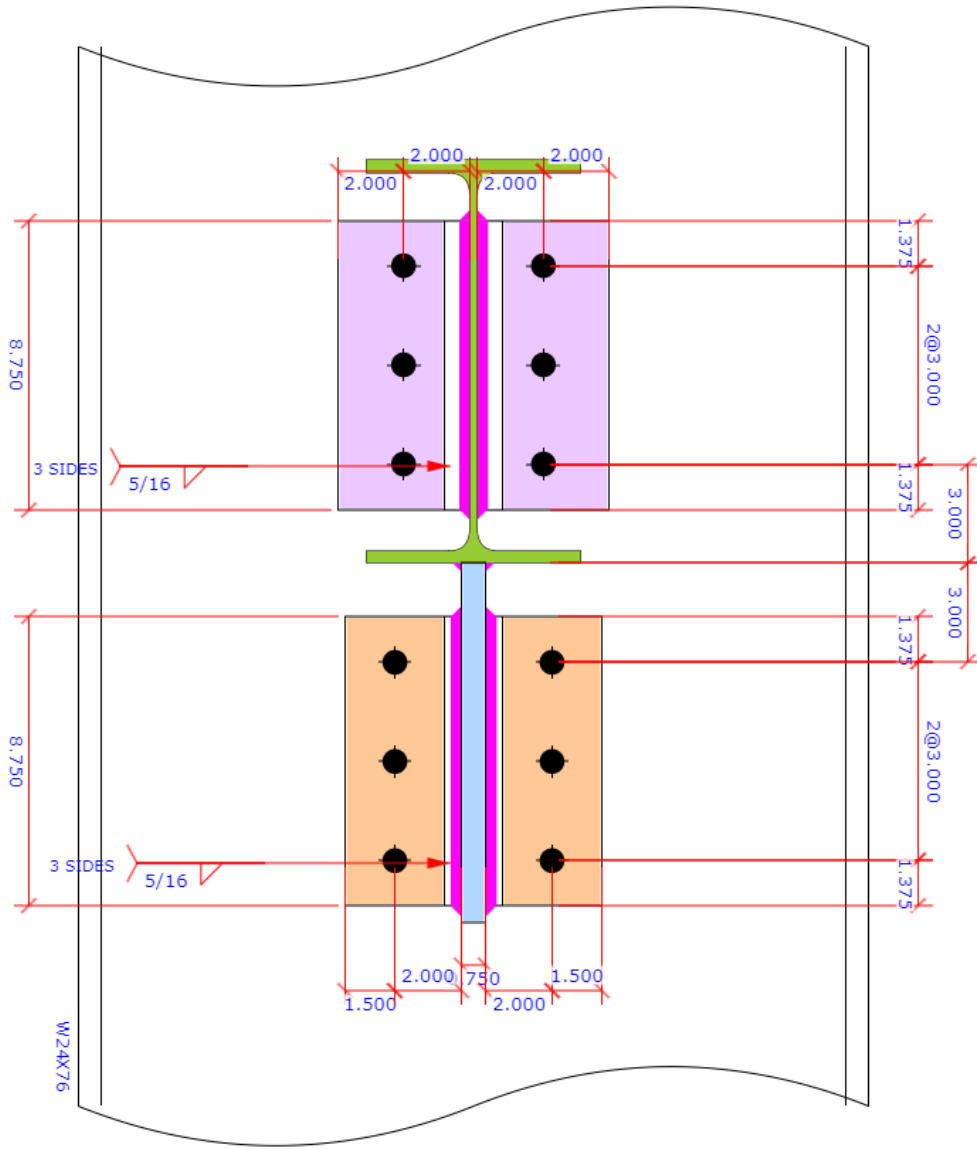


Sketch	Vertical Brace Connection	OCBFBR5	Code=AISC 360-16 ASD
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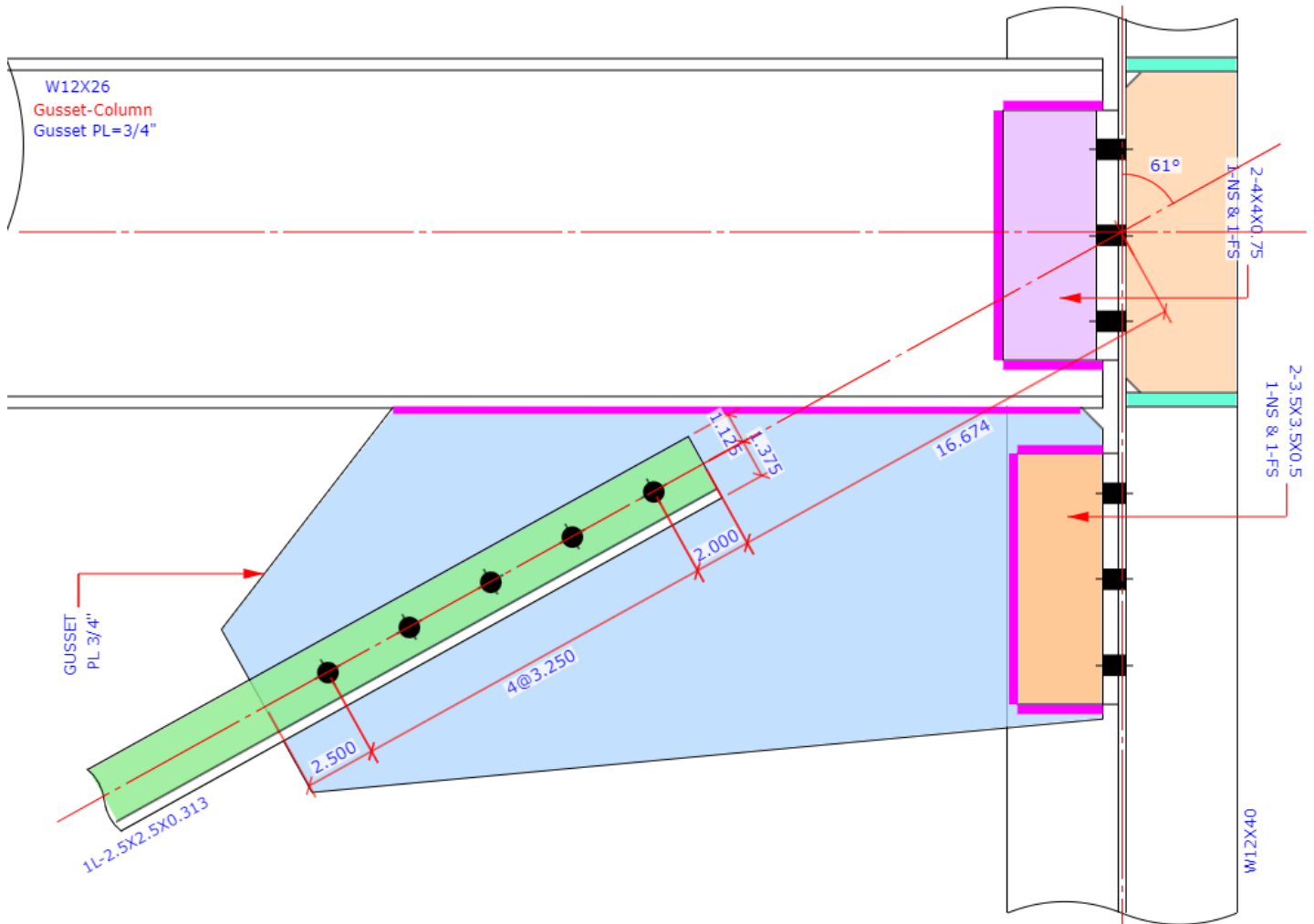


* All Bolts are 3/4" Dia. A325-N

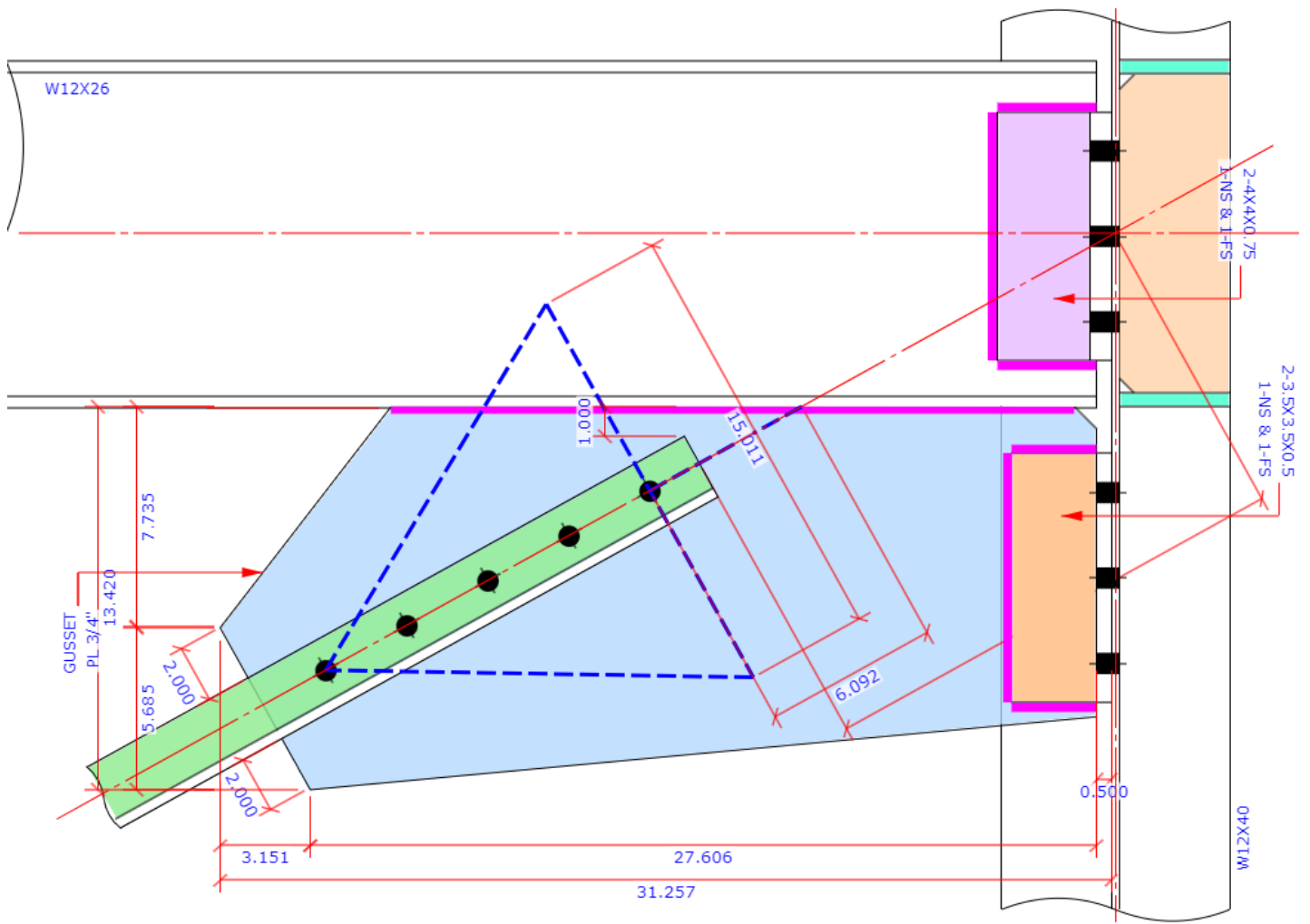


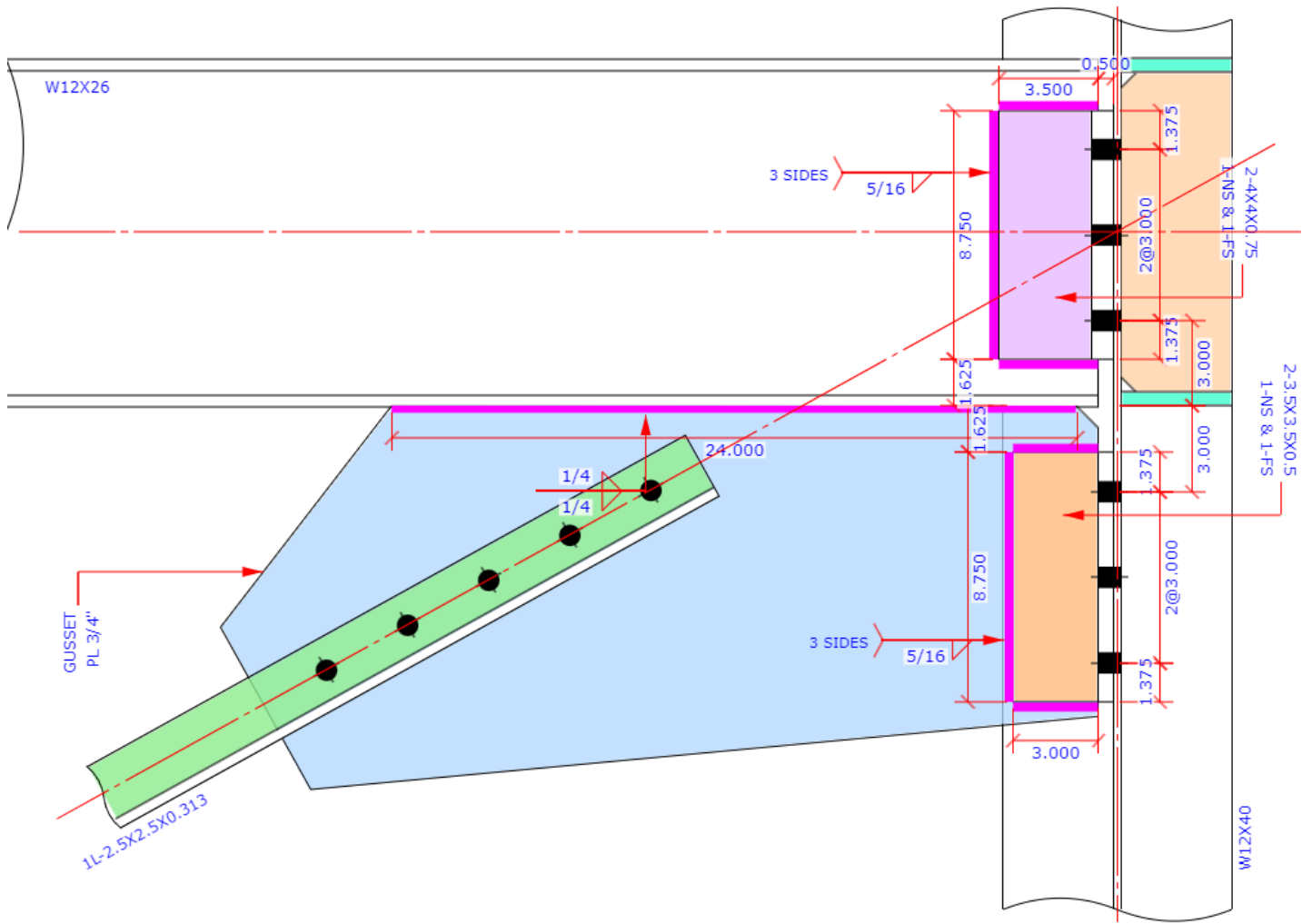


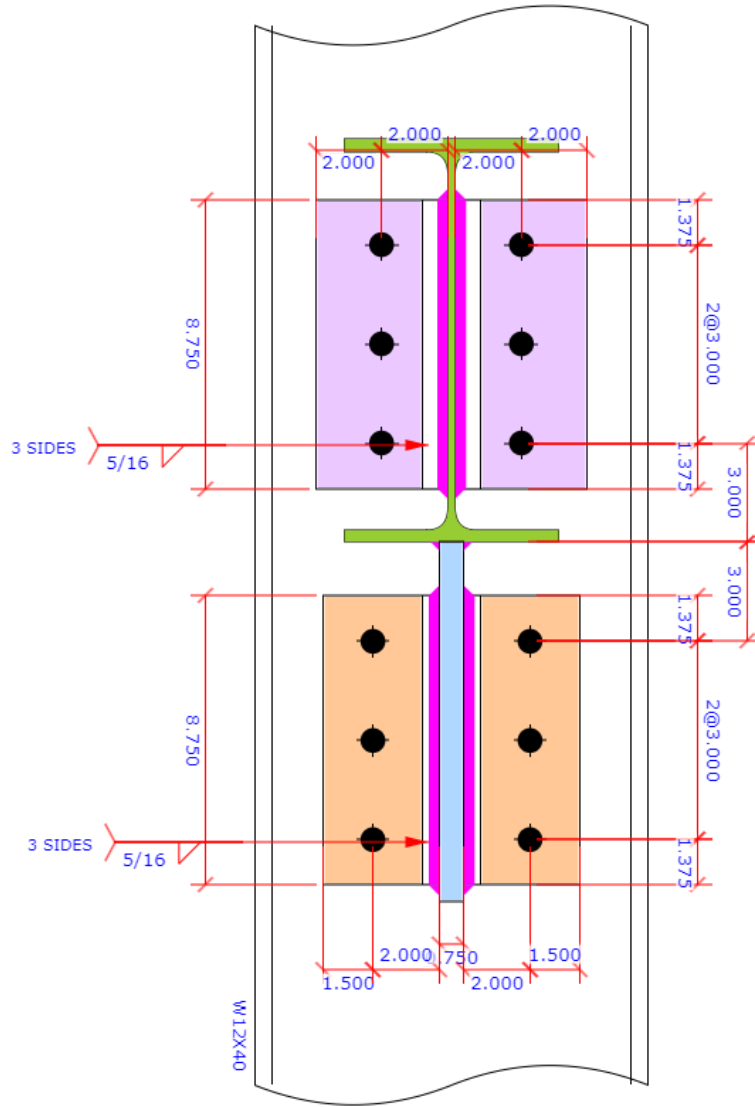
Sketch	Vertical Brace Connection	OCBFBR6	Code=AISC 360-16 ASD
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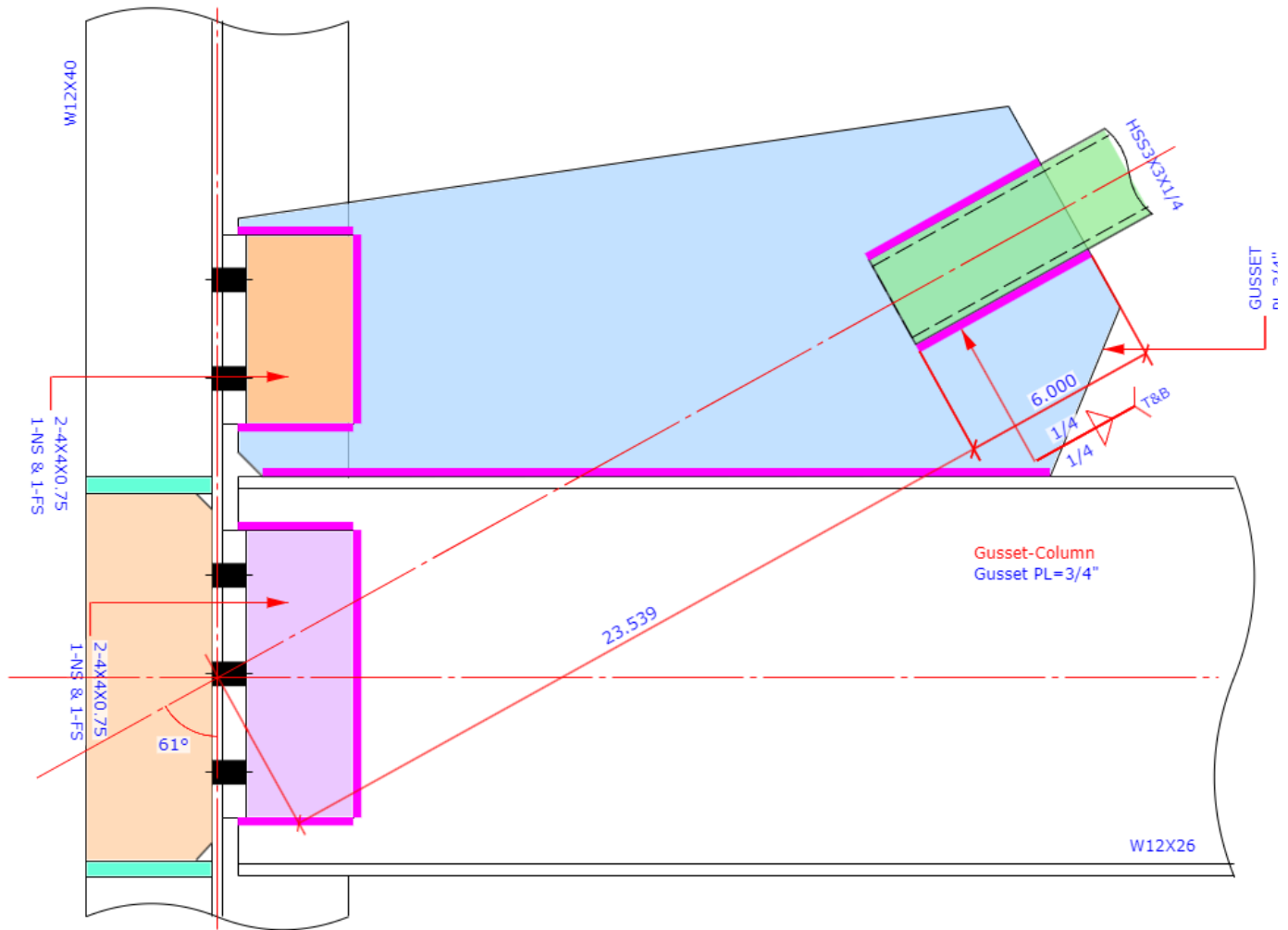
* All Bolts are 3/4" Dia. A325-N



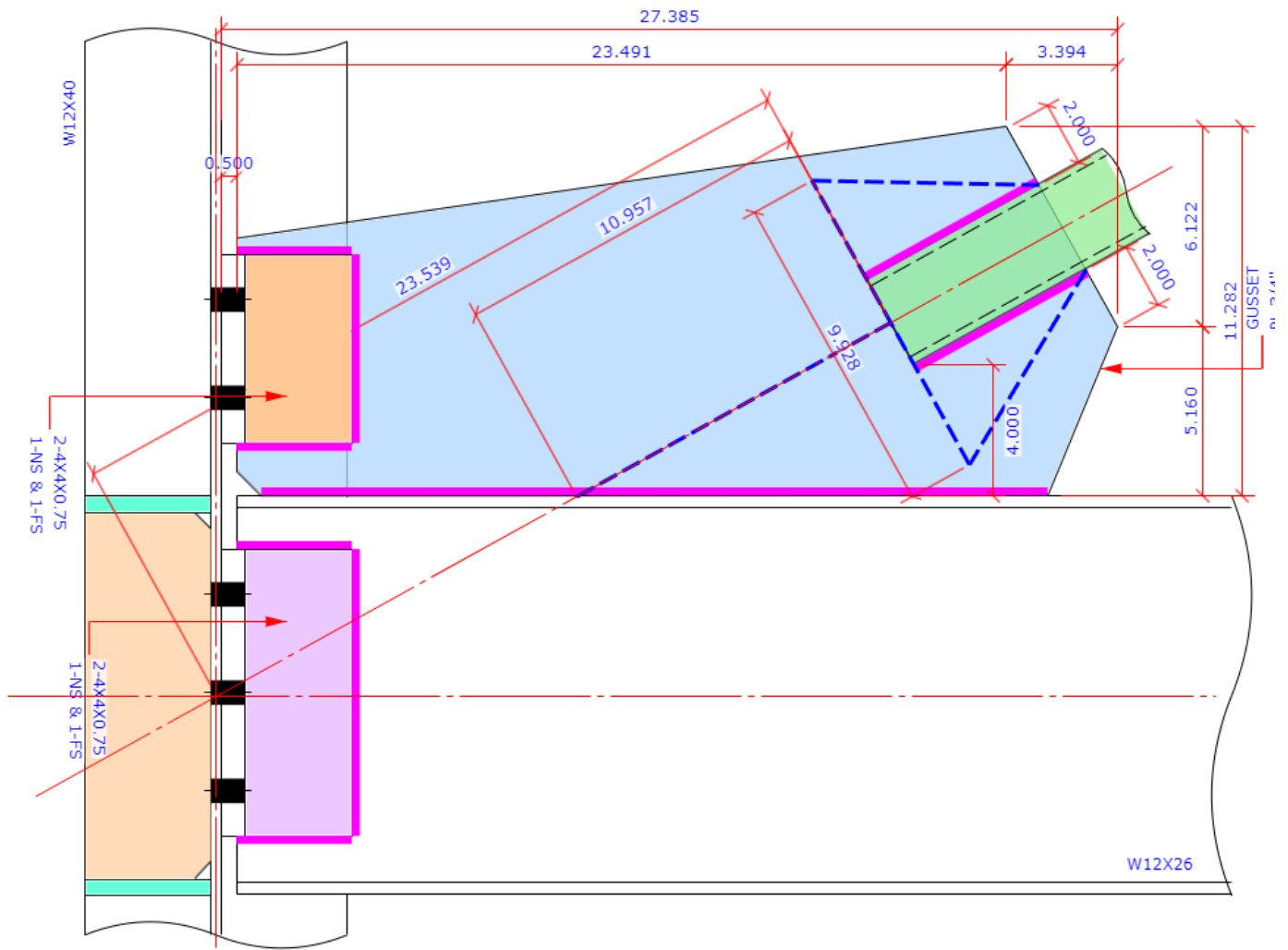


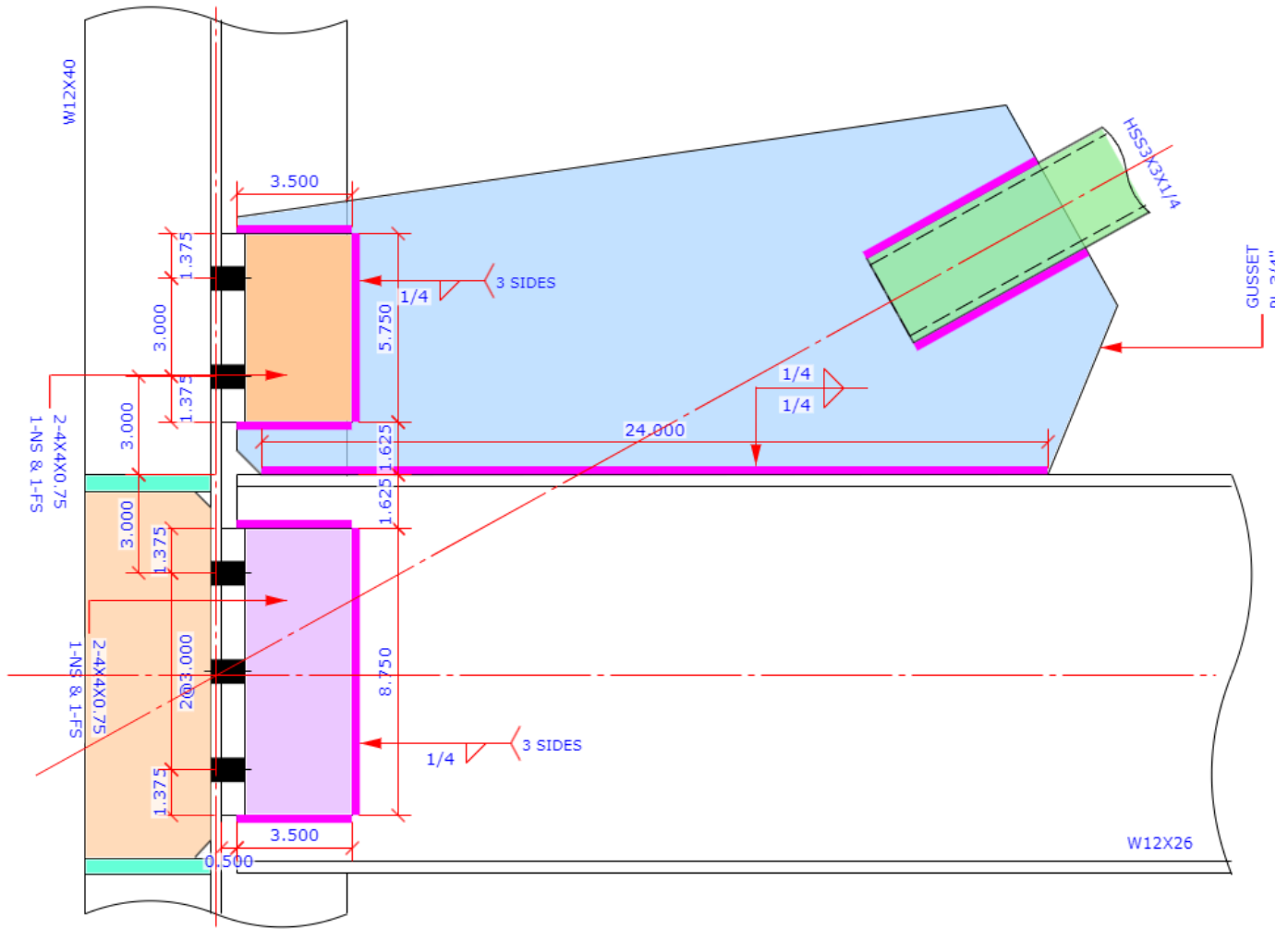


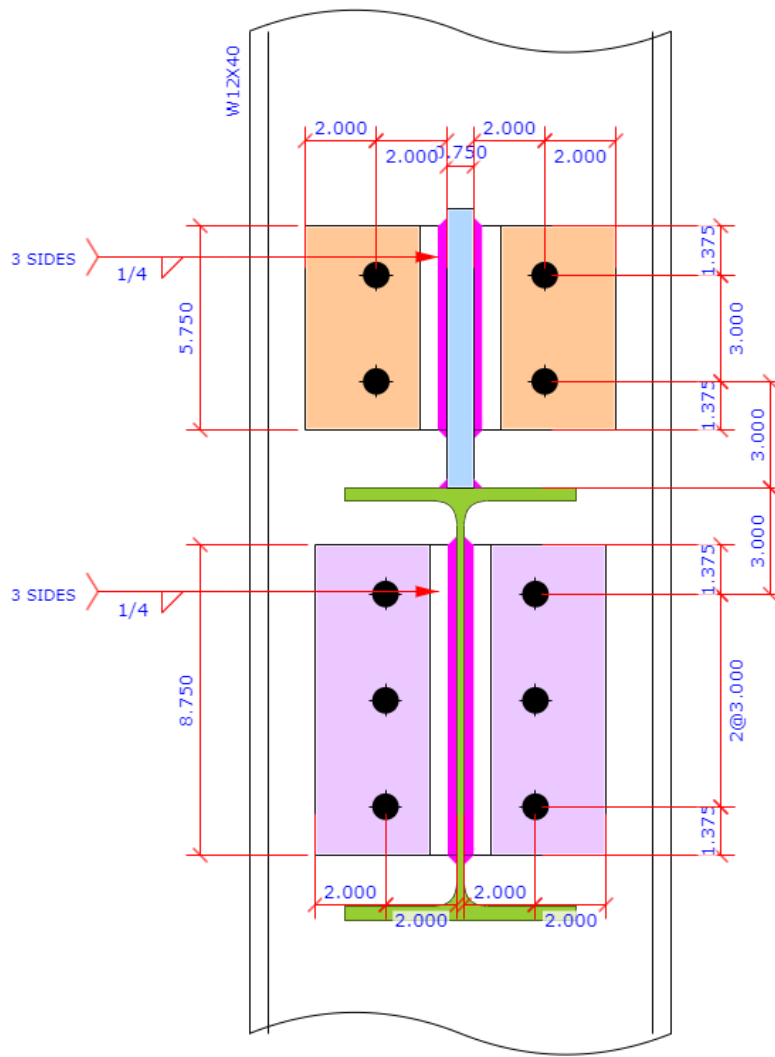
Sketch	Vertical Brace Connection	OCBFBR7	Code=AISC 360-16 ASD
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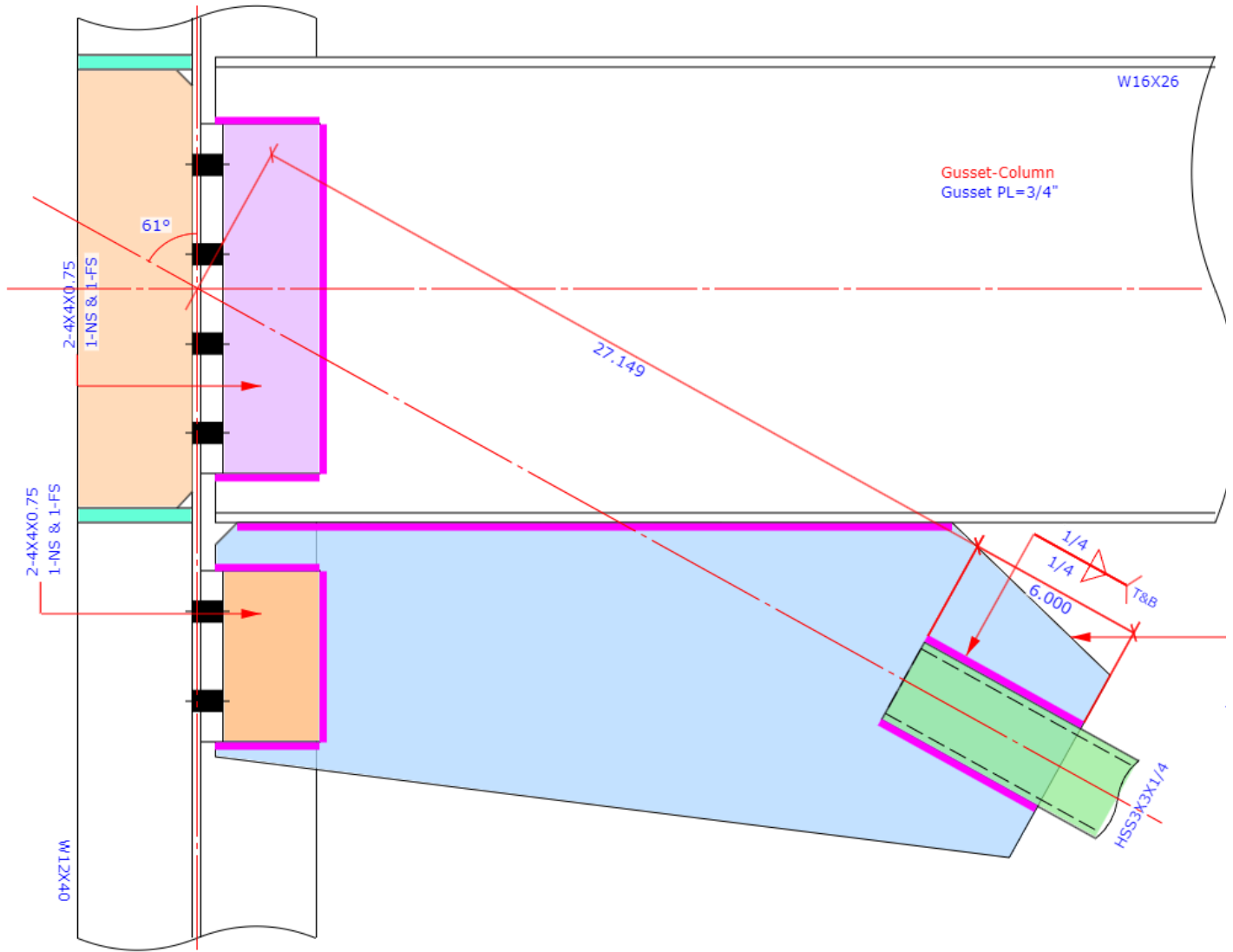
* All Bolts are 3/4" Dia. A325-N



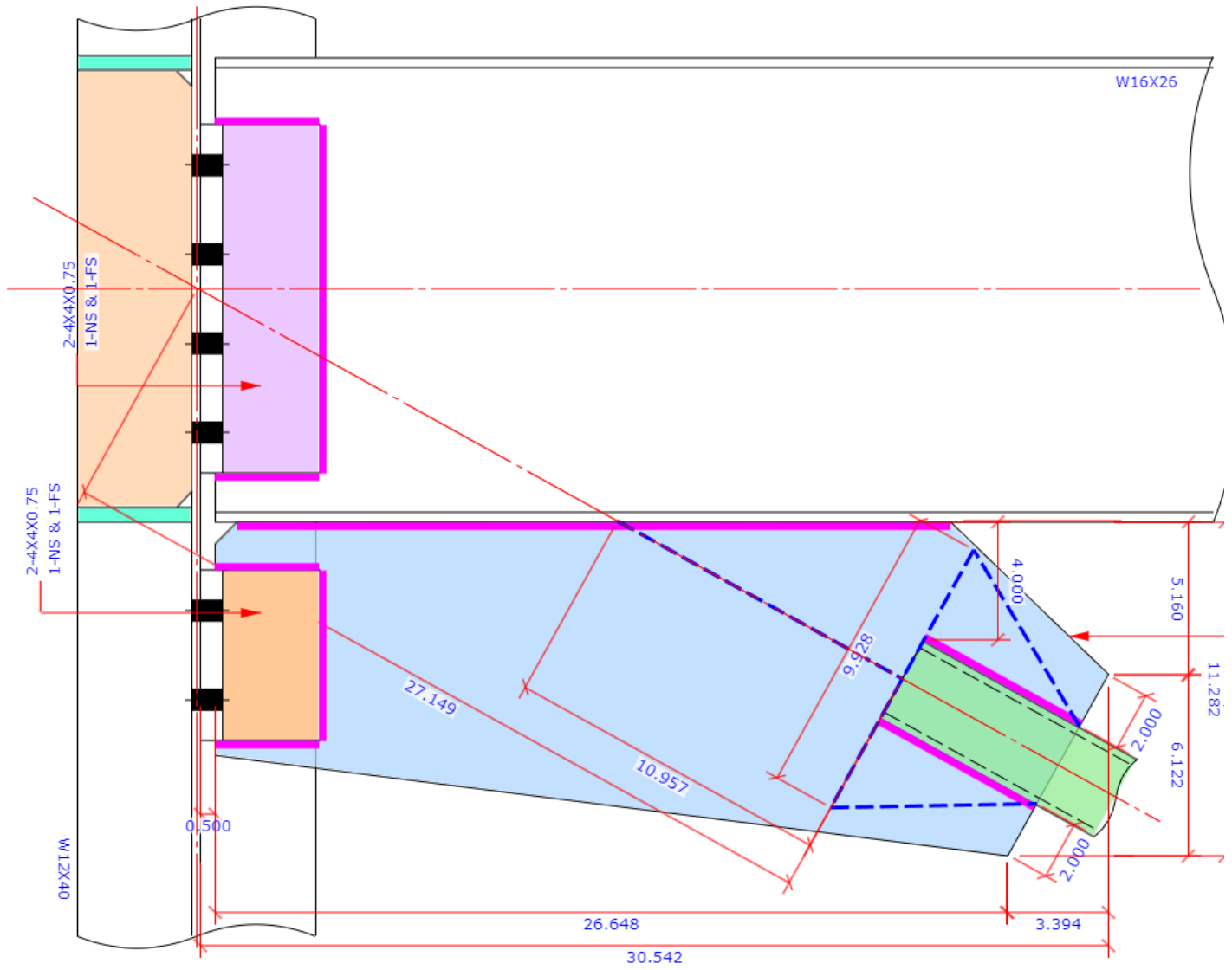


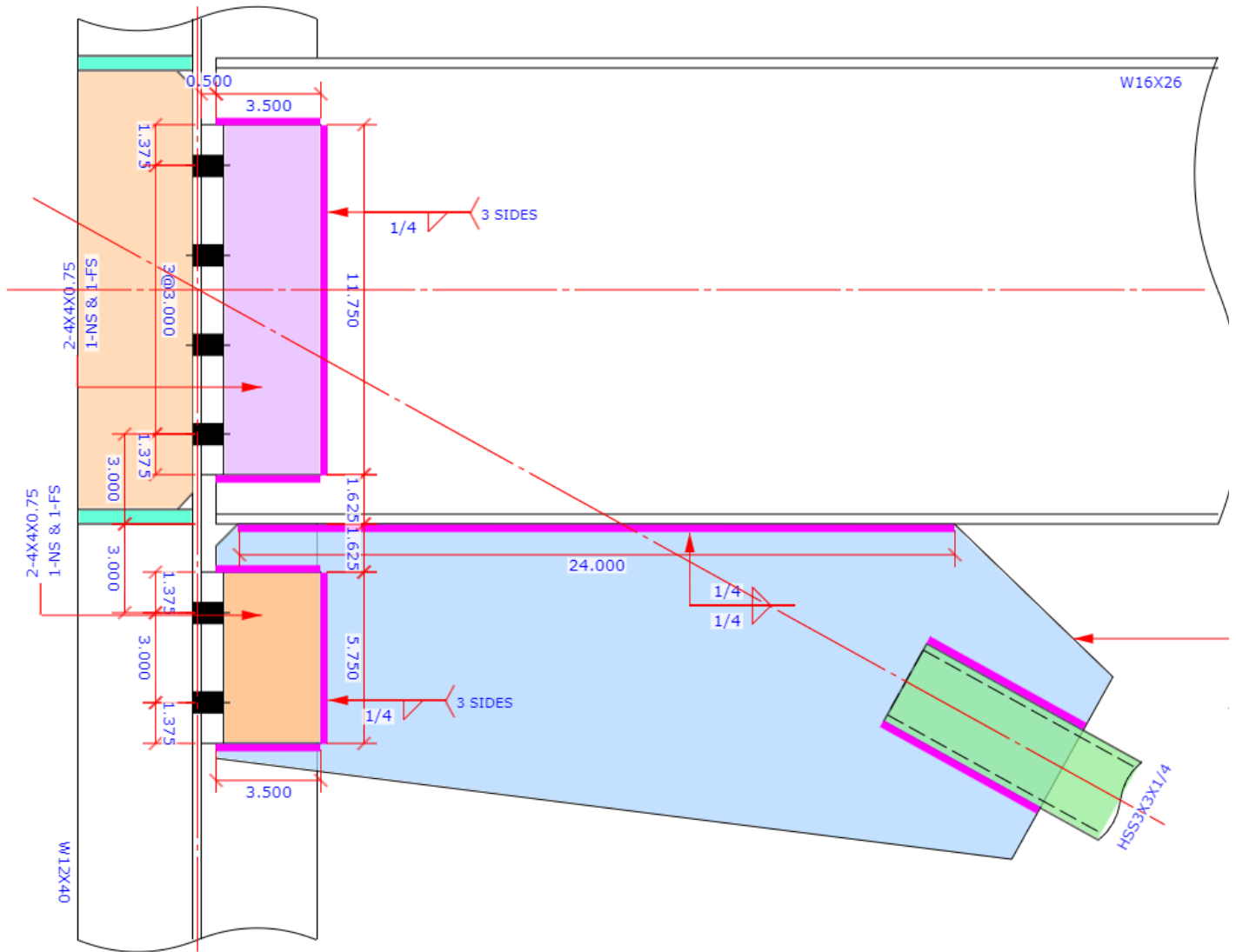


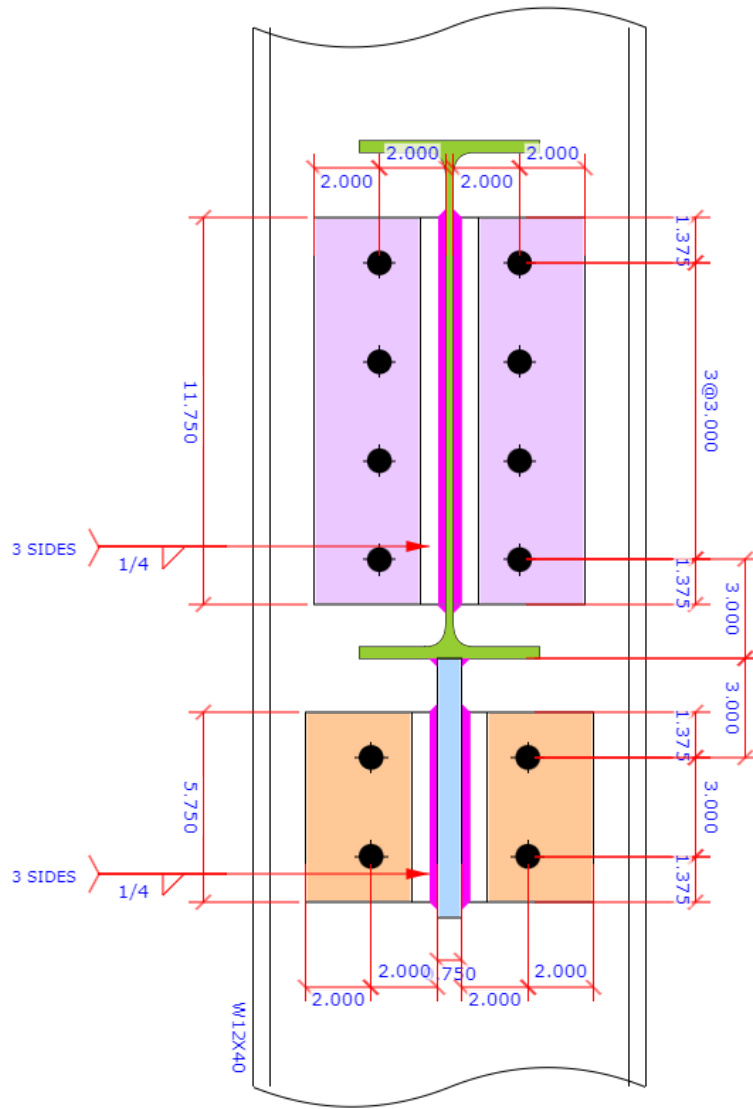
Sketch	Vertical Brace Connection	OCBFBR8	Code=AISC 360-16 ASD
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* All Bolts are 3/4" Dia. A325-N







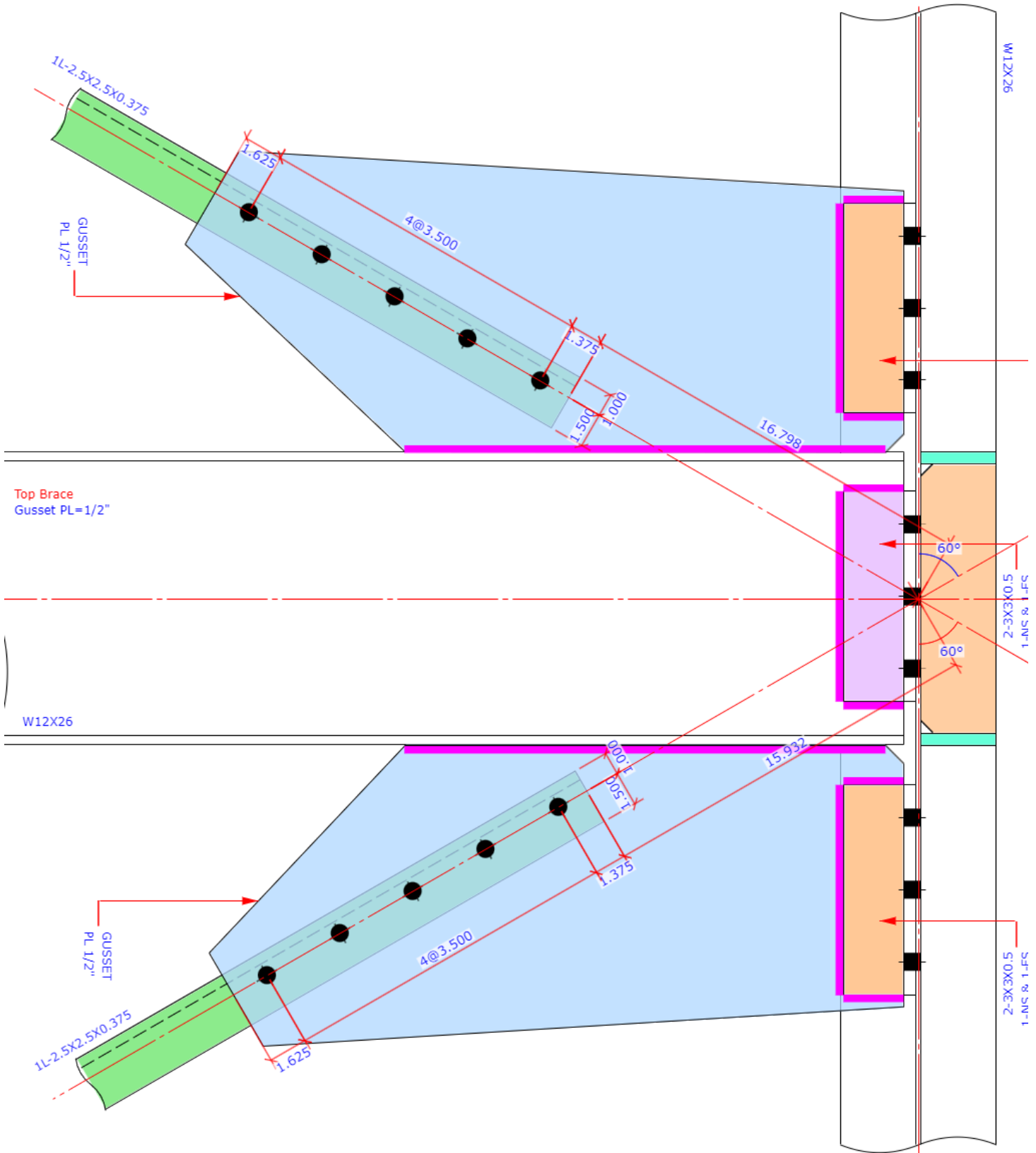
Sketch

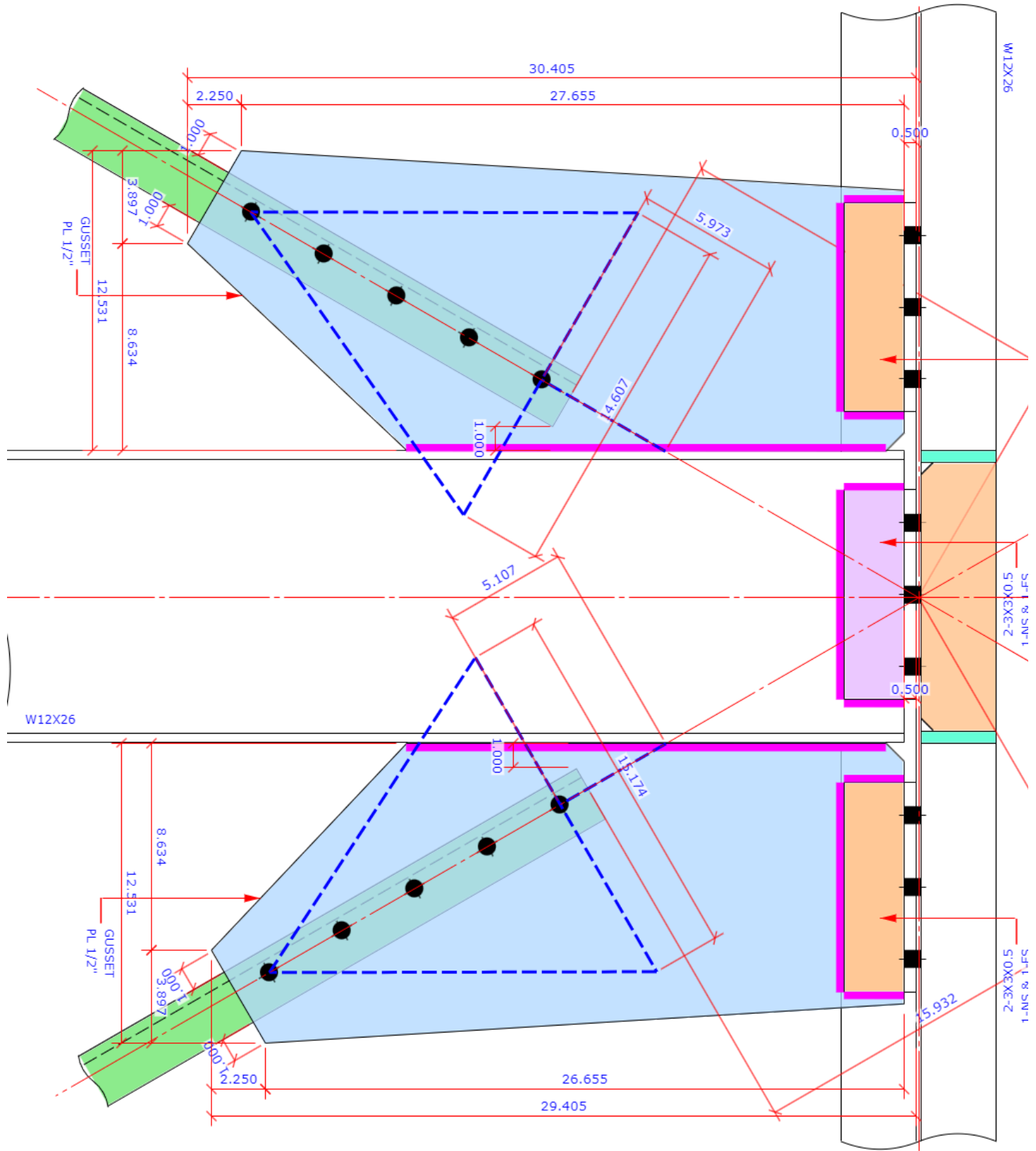
Vertical Brace Connection

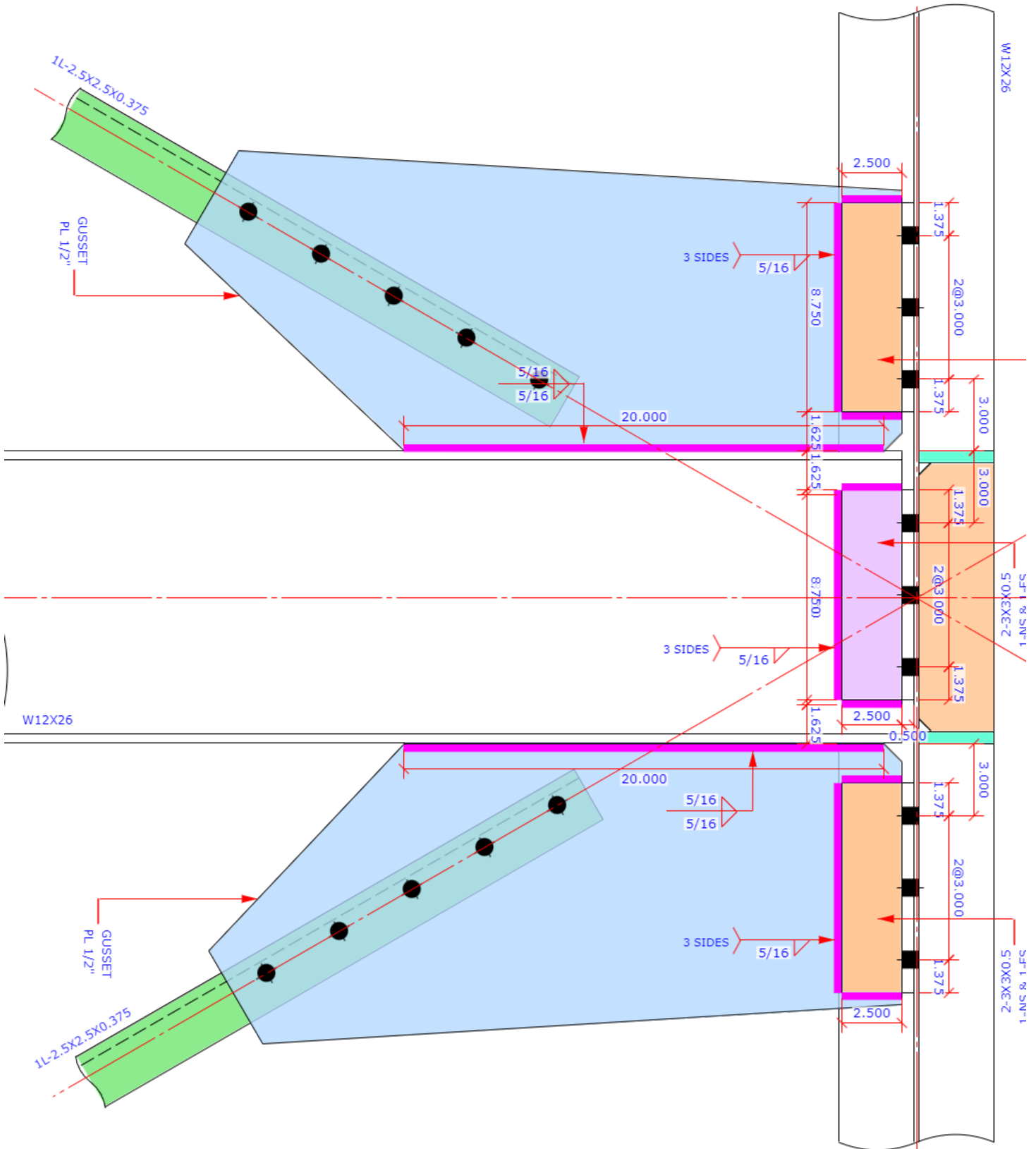
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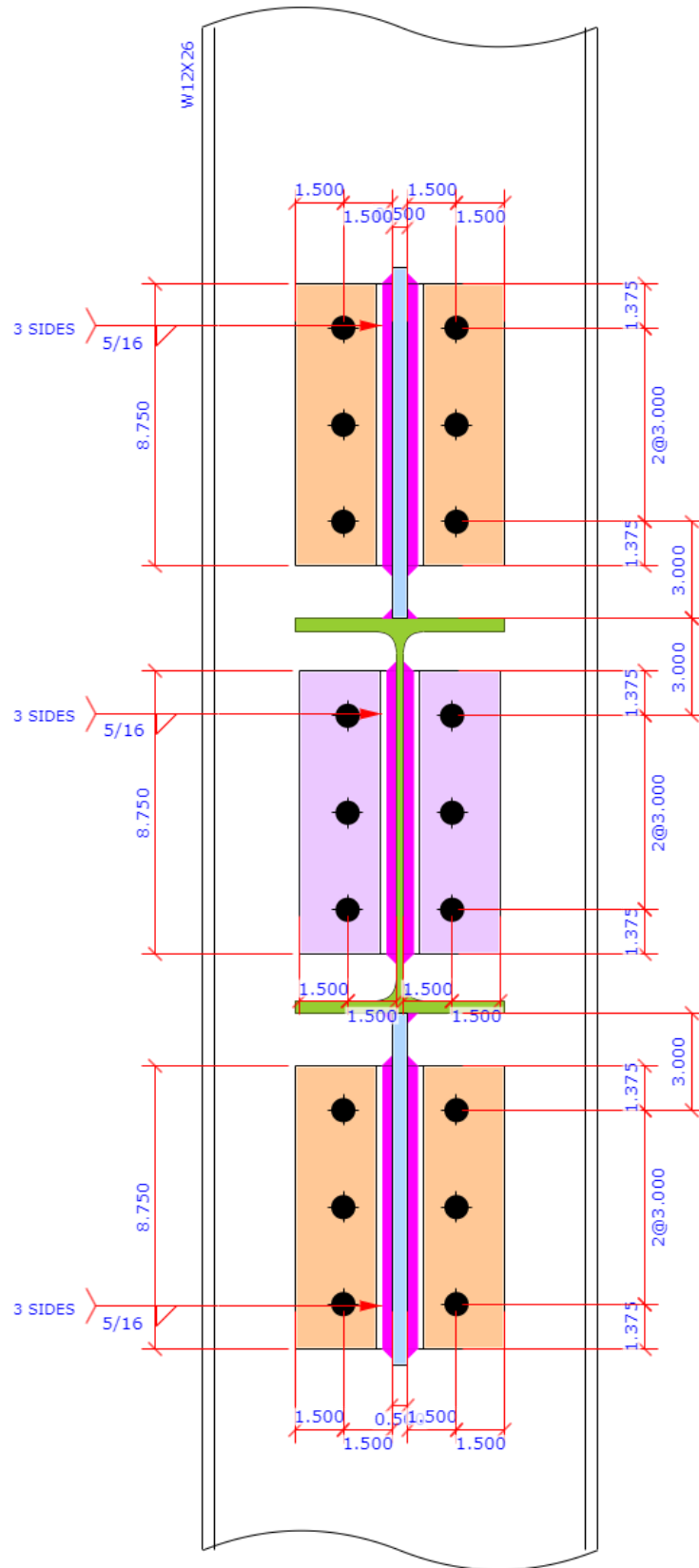
OCBFBR9

* All Bolts are 3/4" Dia. A325-N



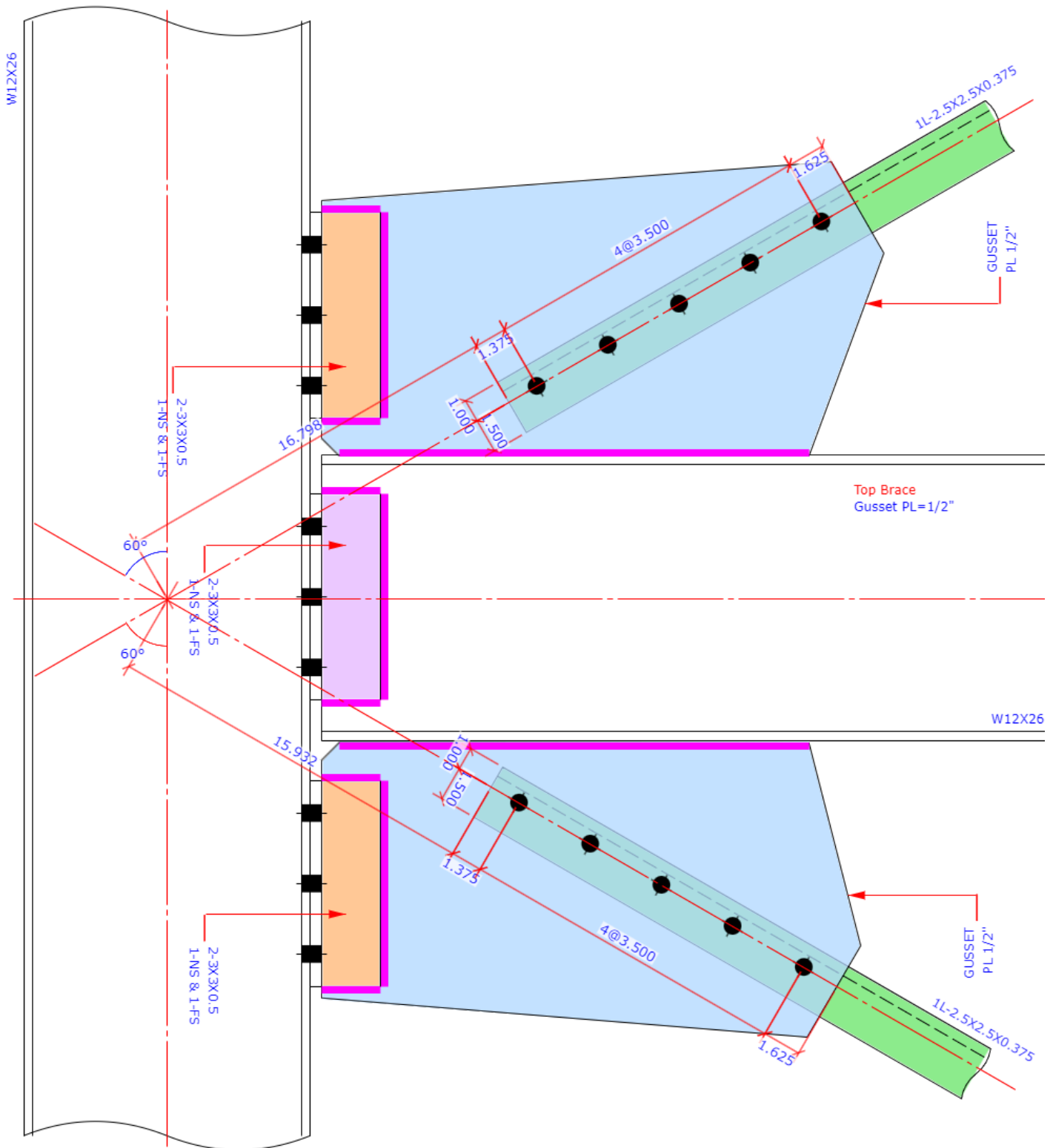


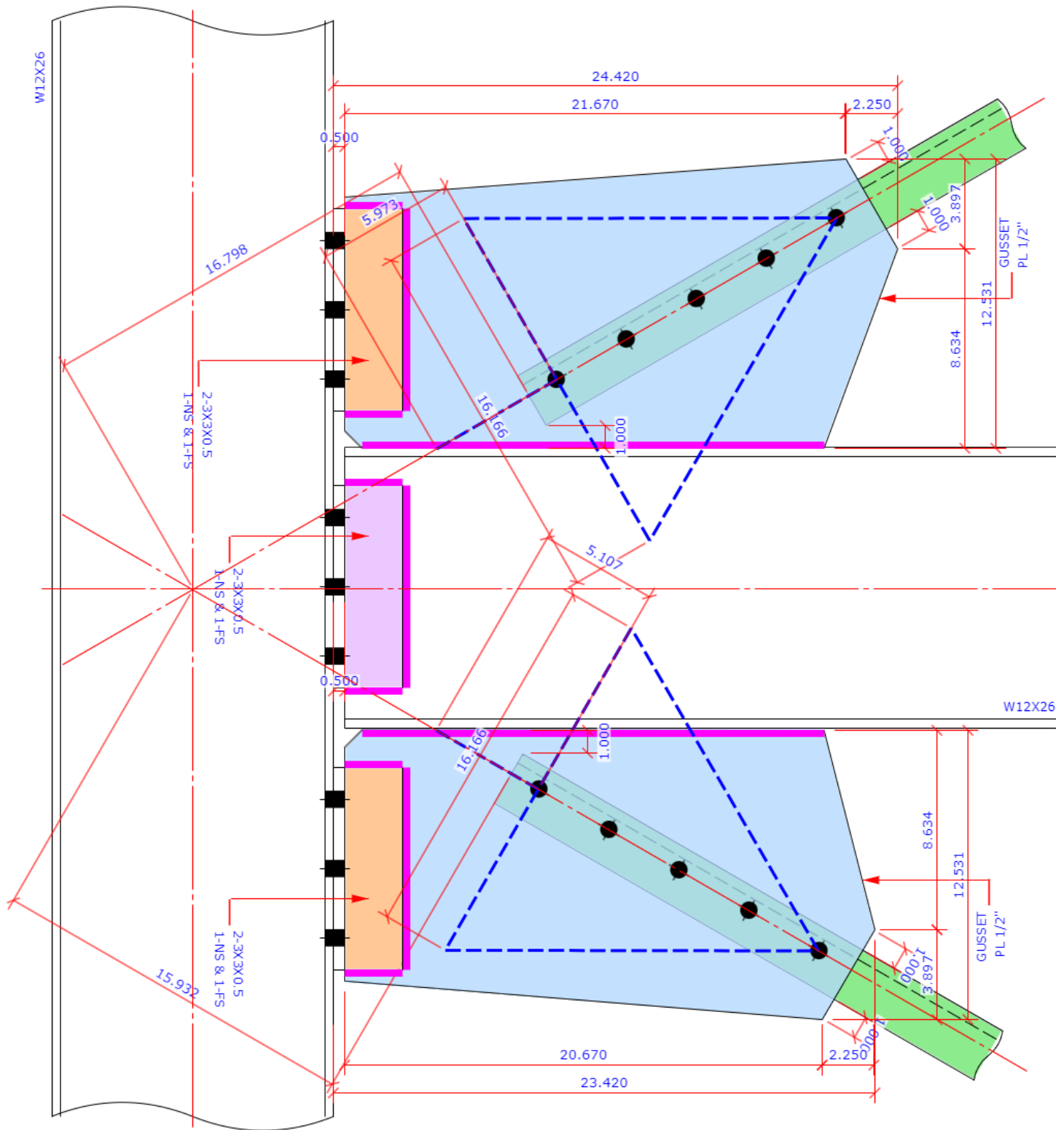


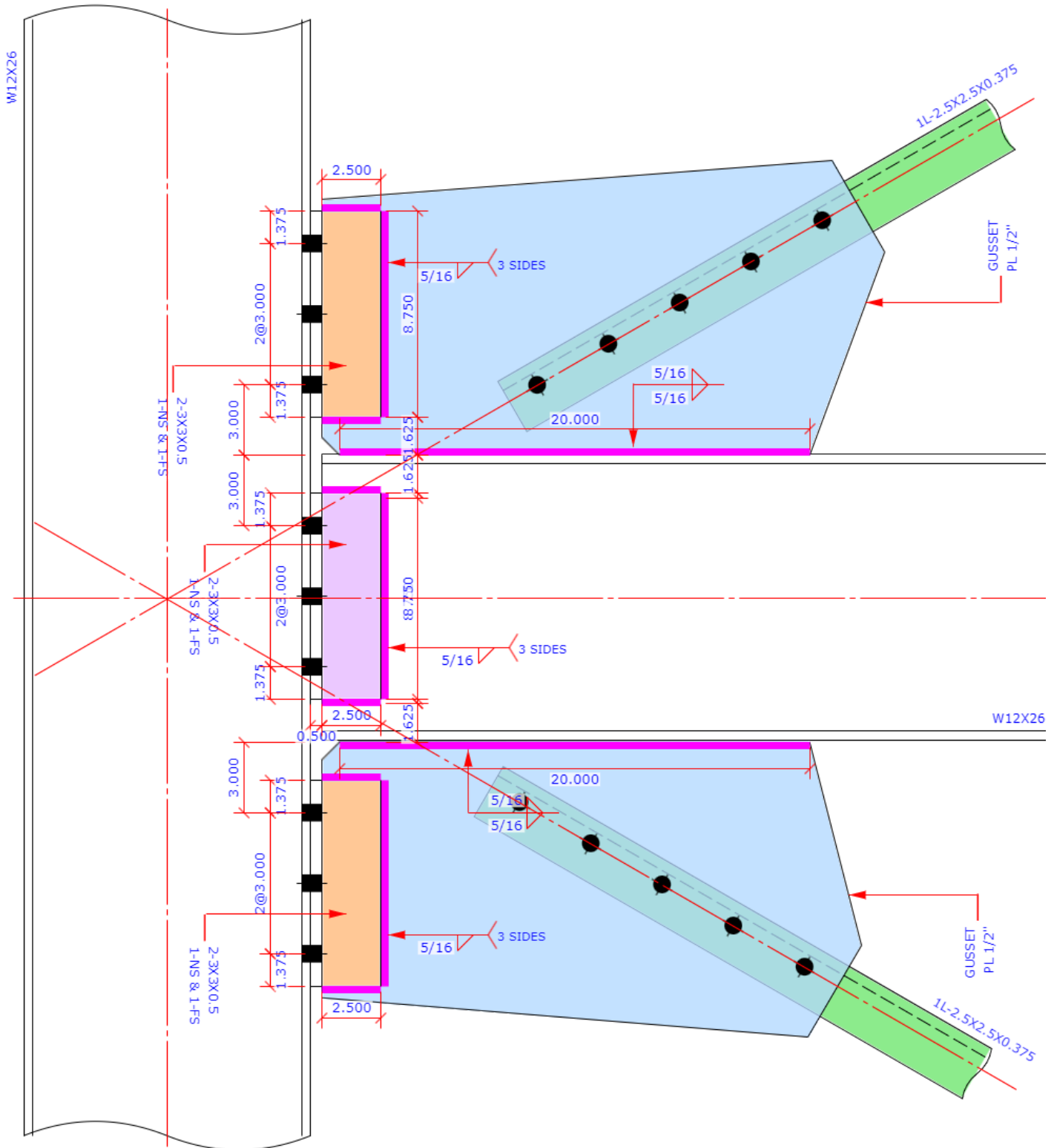


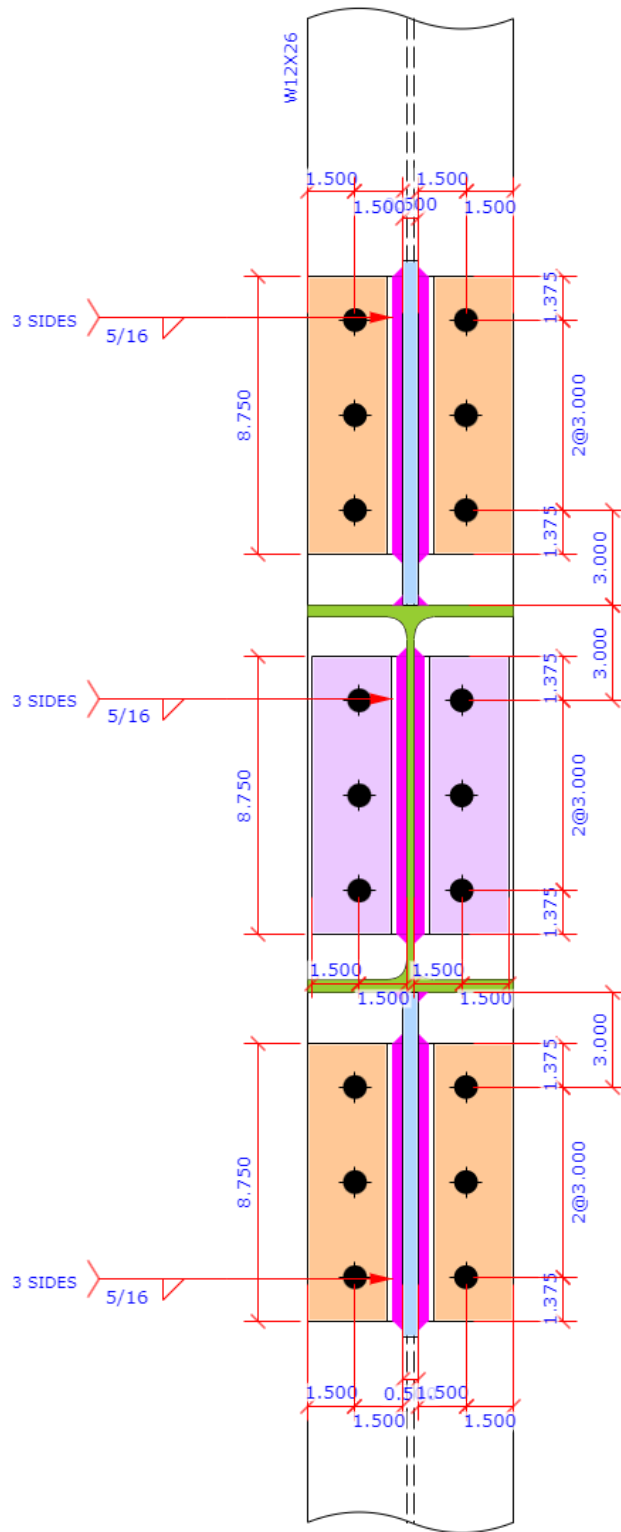
Sketch	Vertical Brace Connection	OCBFBR10	Code=AISC 360-16 ASD
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* All Bolts are 3/4" Dia. A325-N

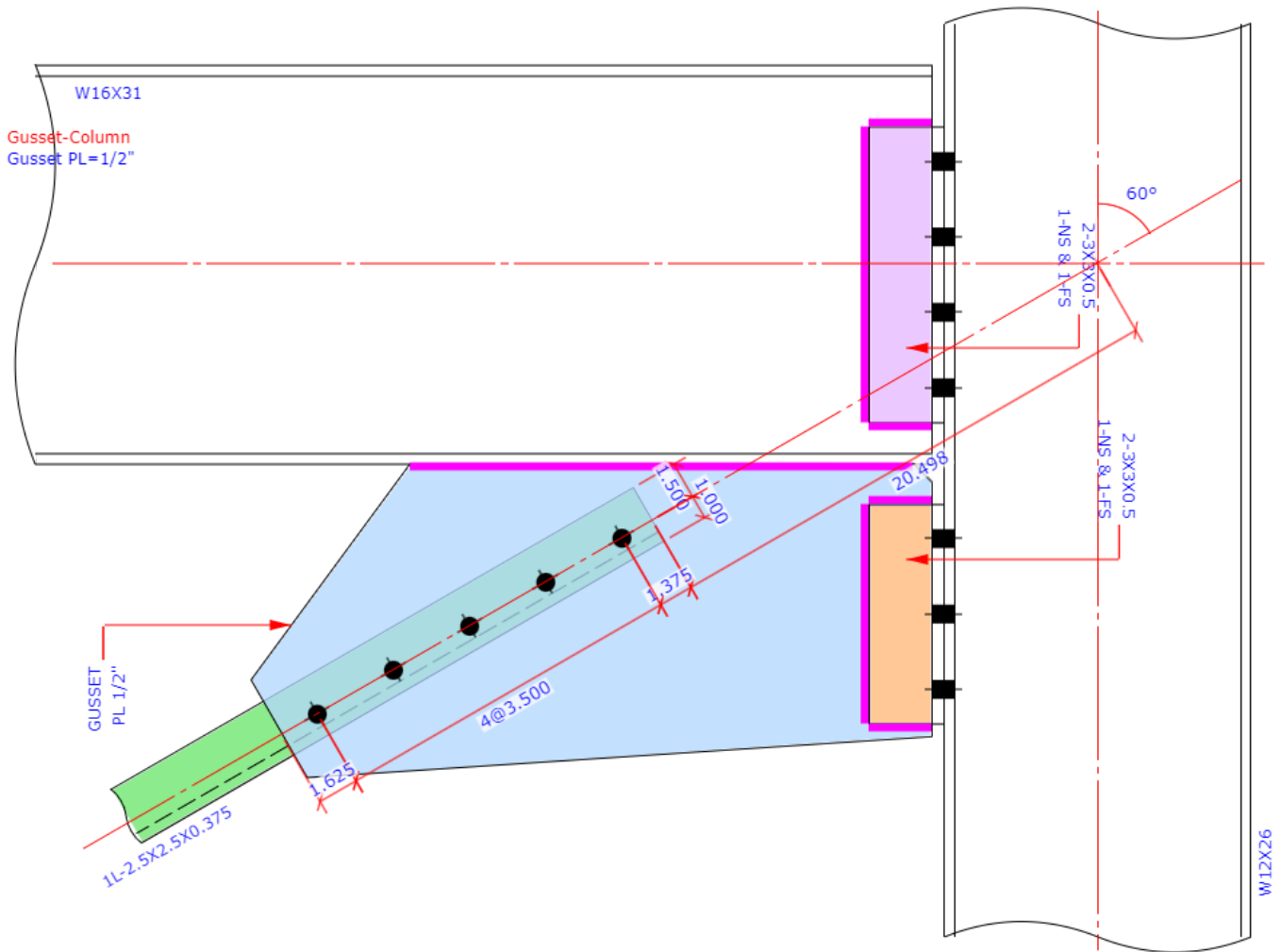




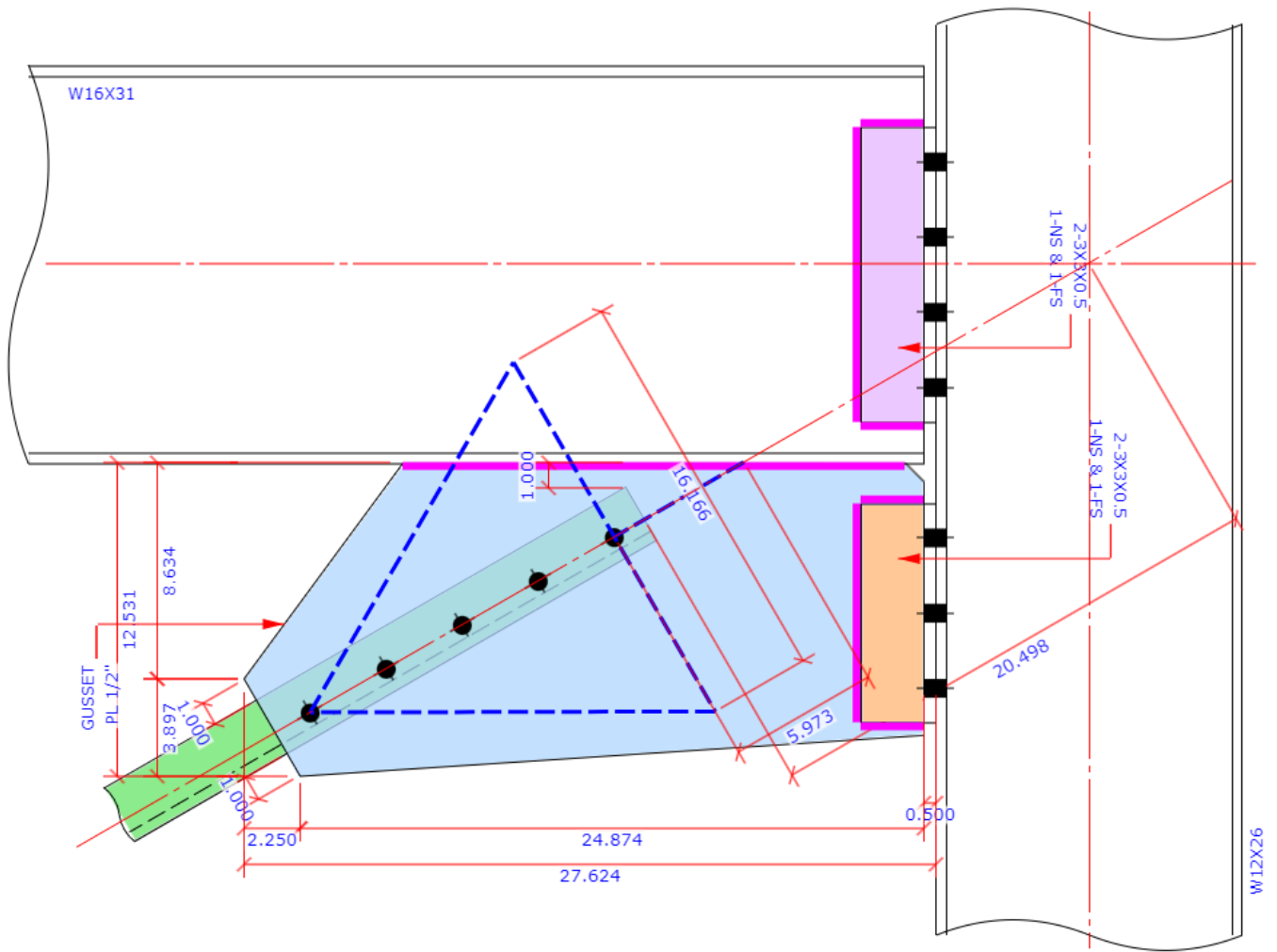


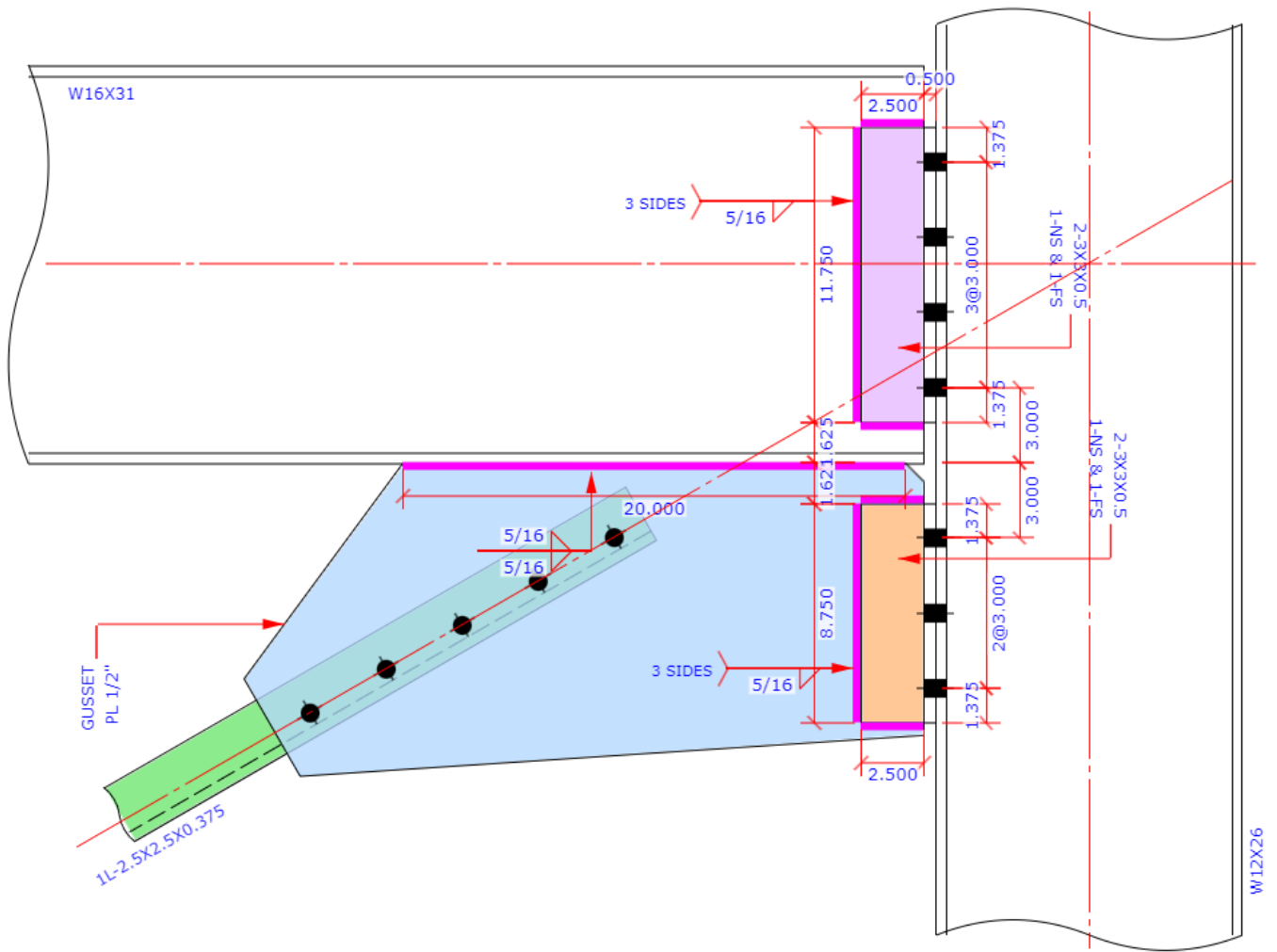


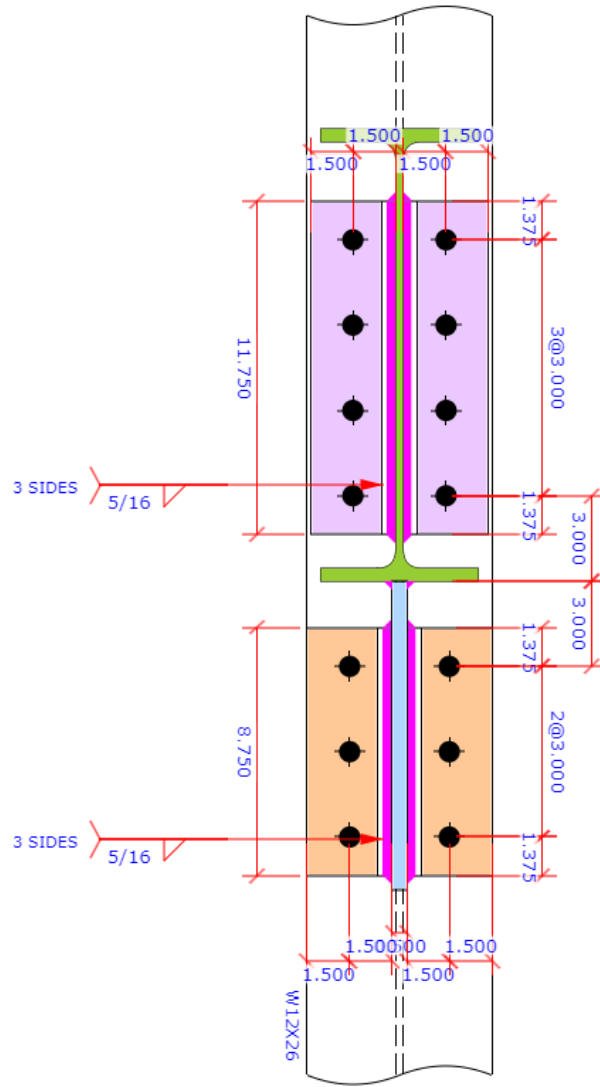
Sketch	Vertical Brace Connection	OCBFBR11	Code=AISC 360-16 ASD
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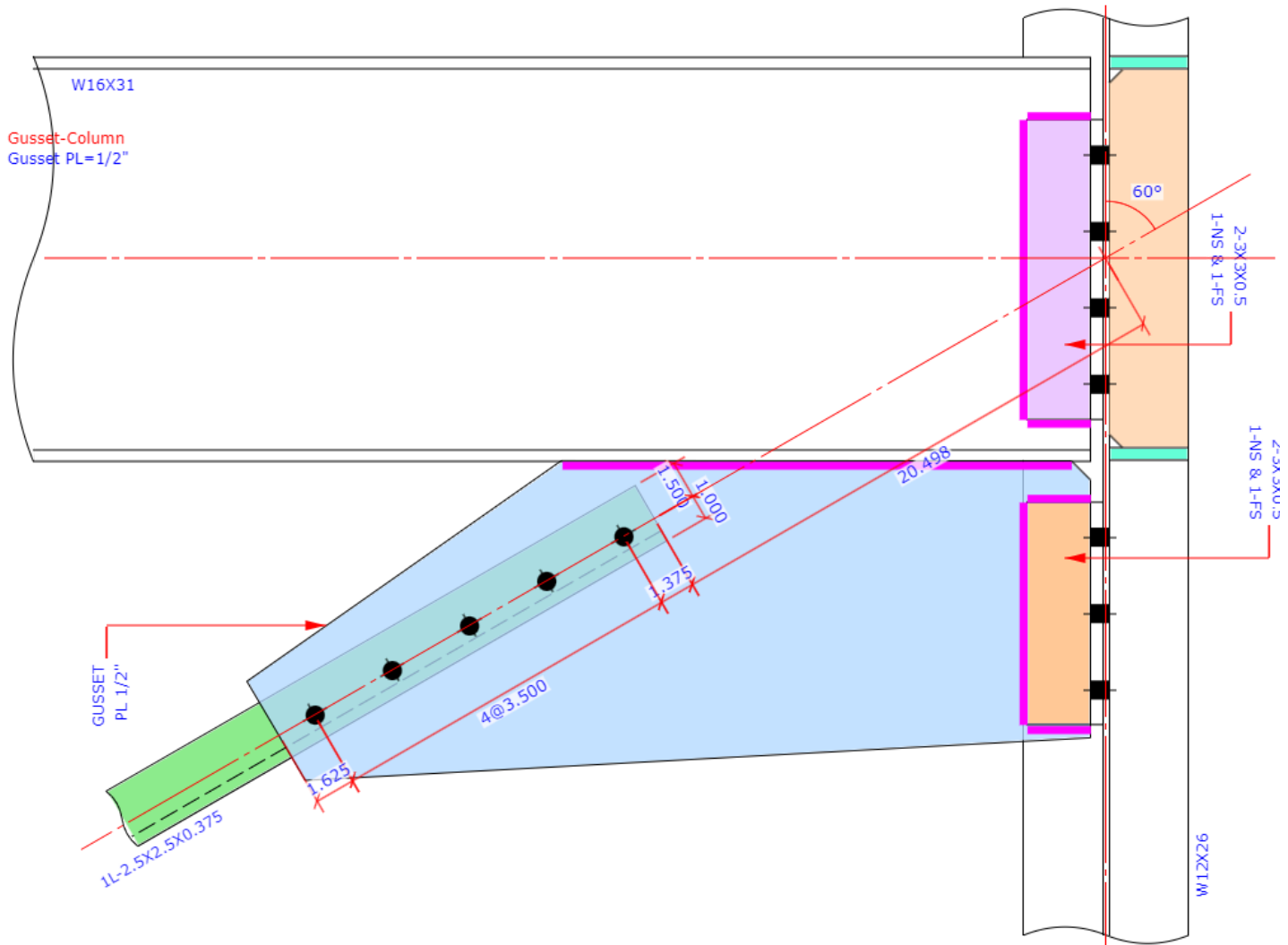
* All Bolts are 3/4" Dia. A325-N



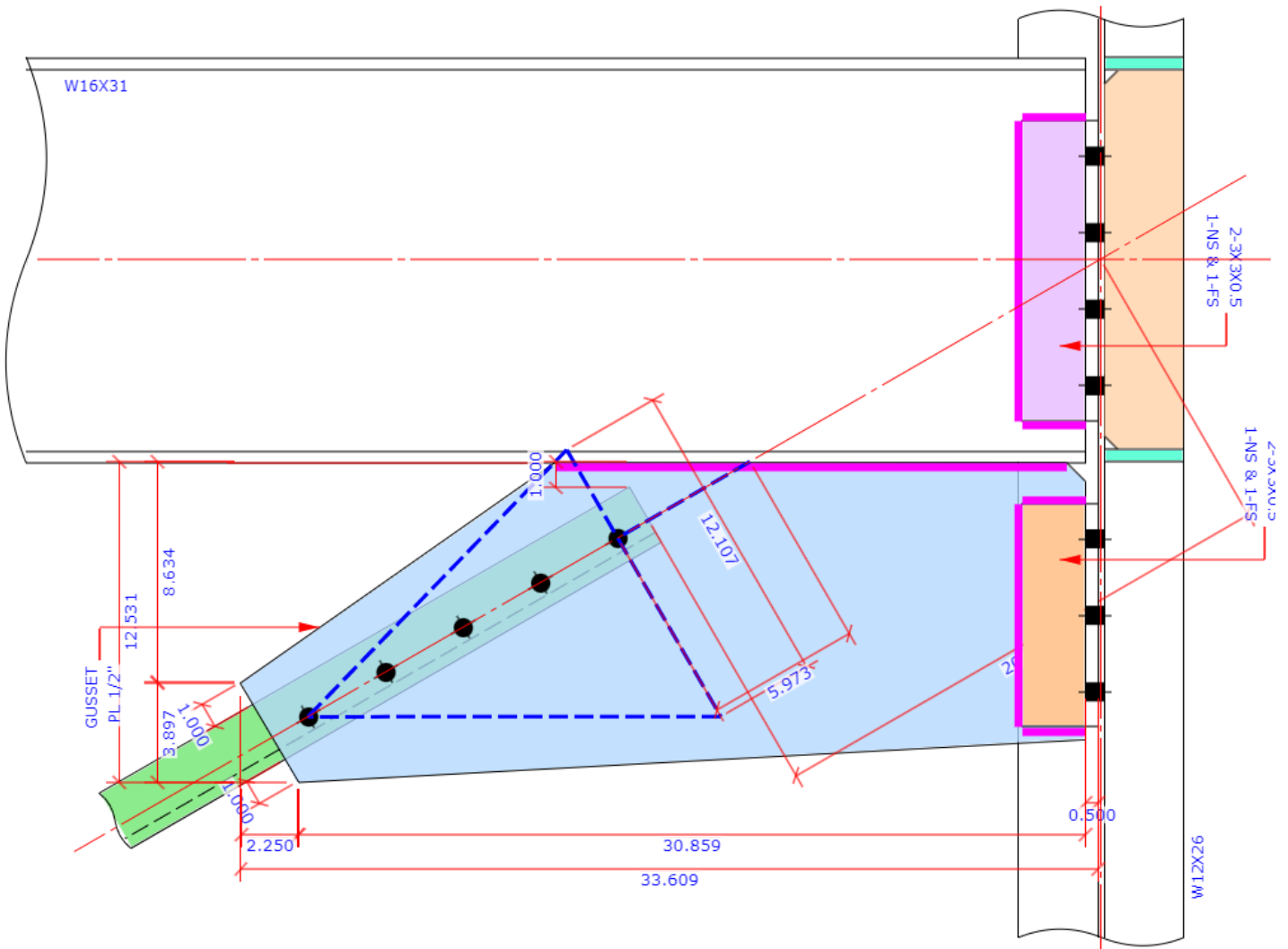


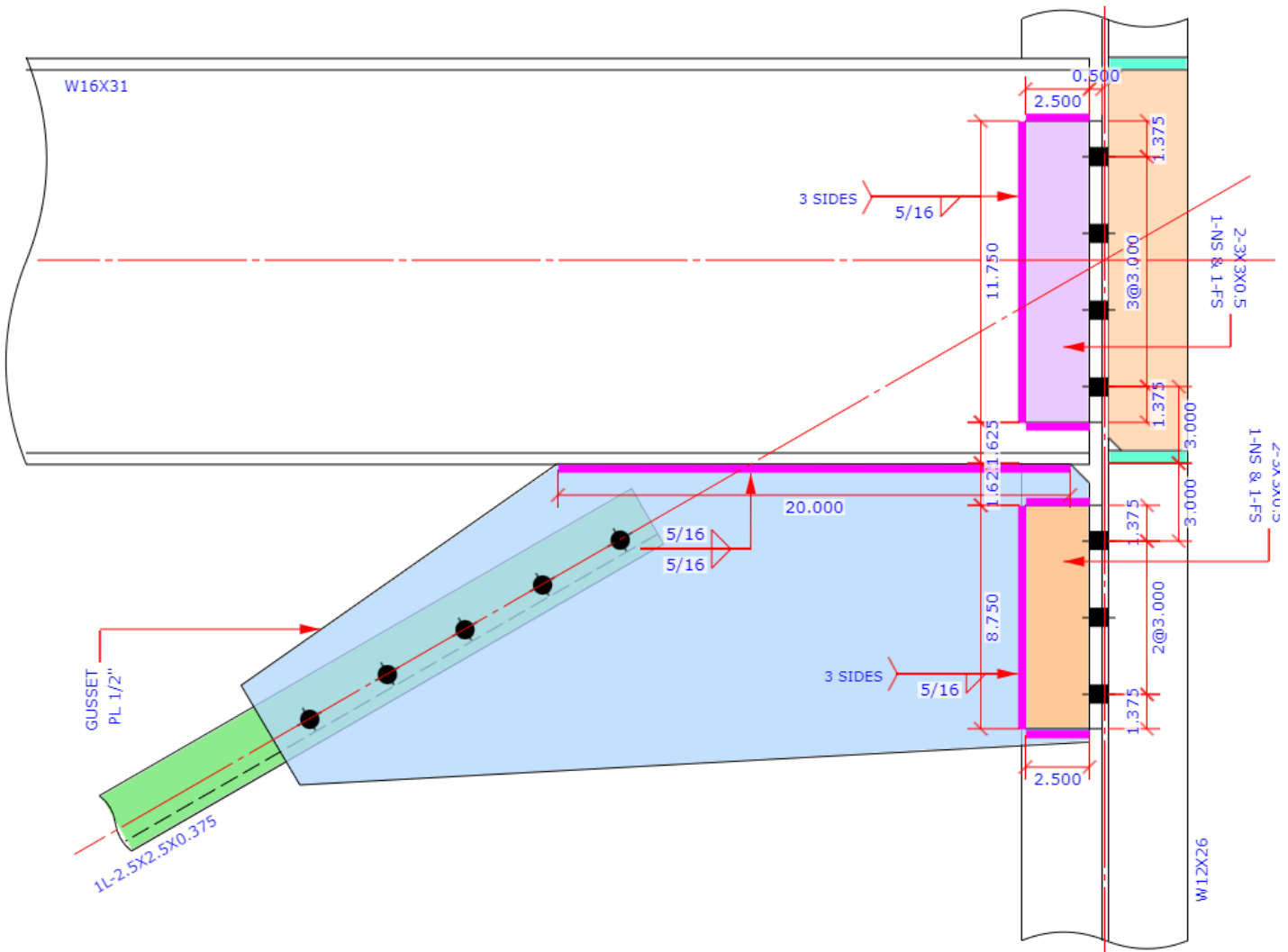


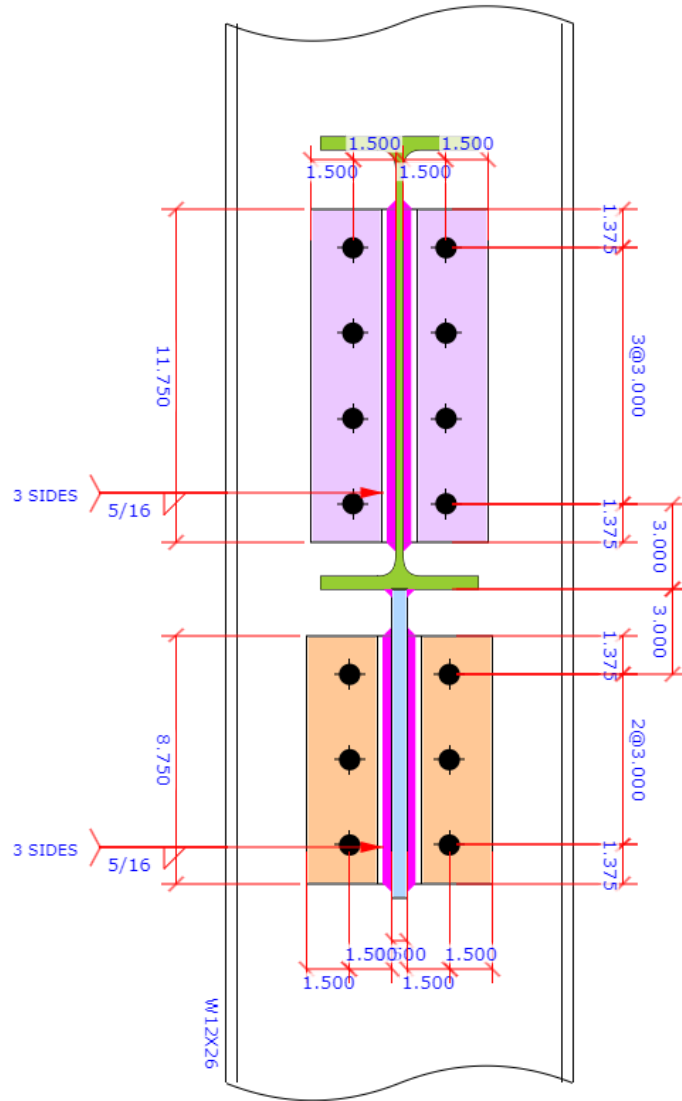
Sketch	Vertical Brace Connection	OCBFBR12	Code=AISC 360-16 ASD
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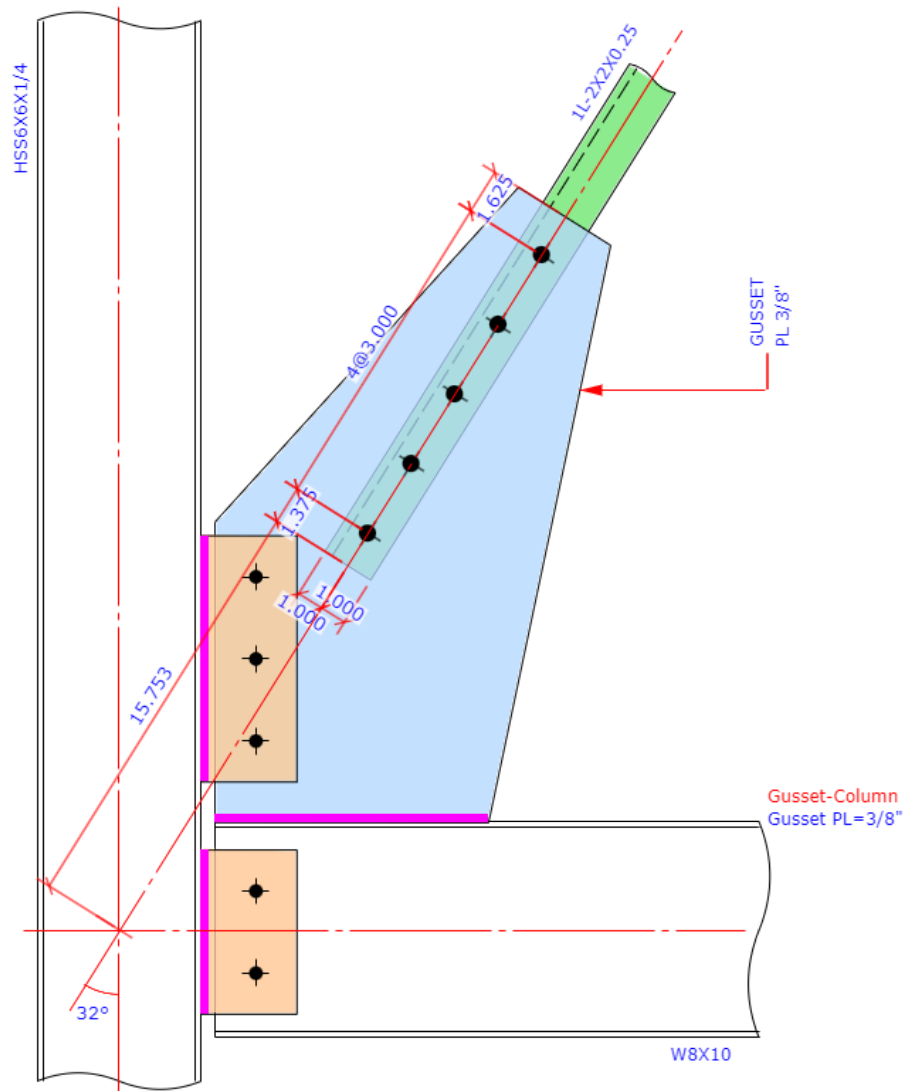
* All Bolts are 3/4" Dia. A325-N



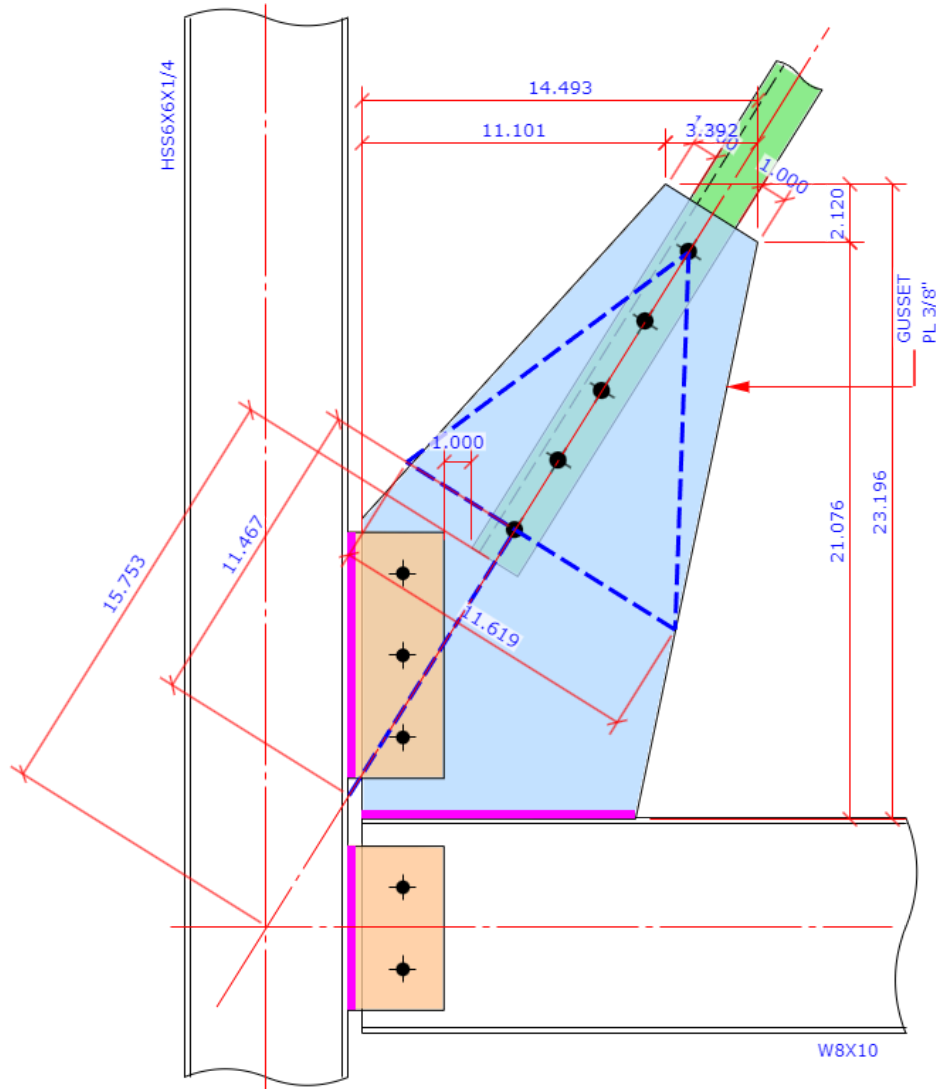


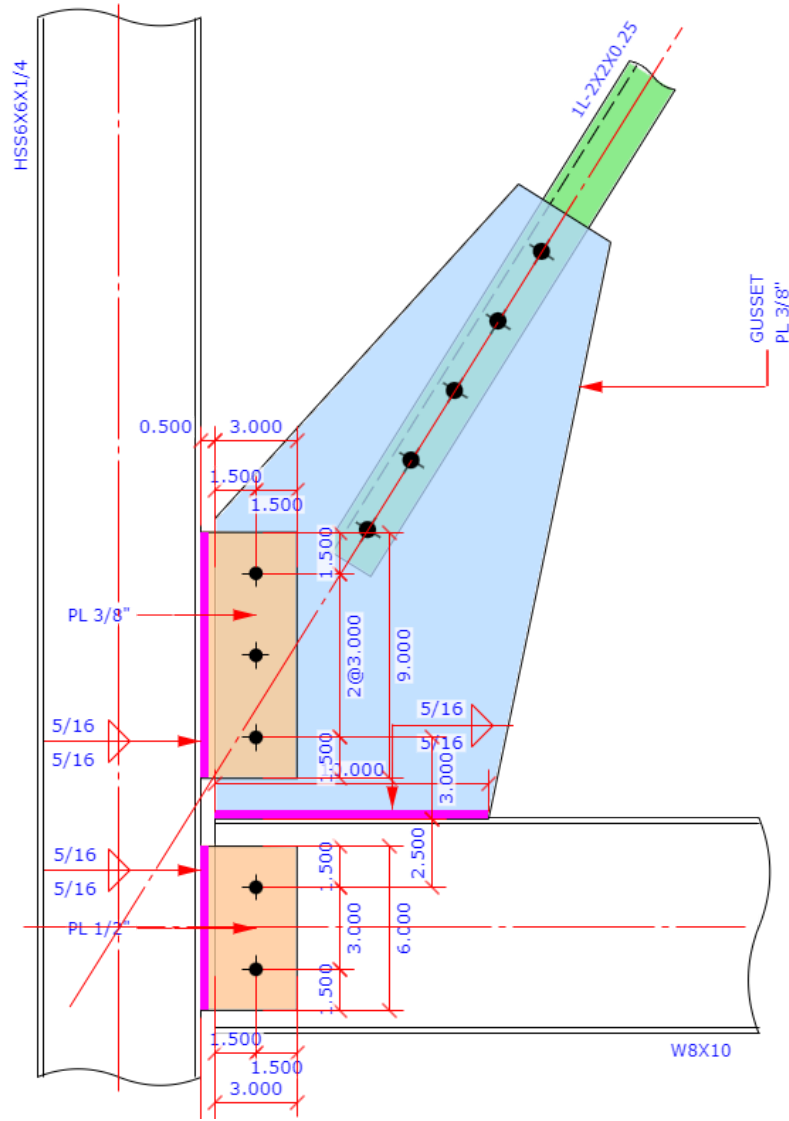


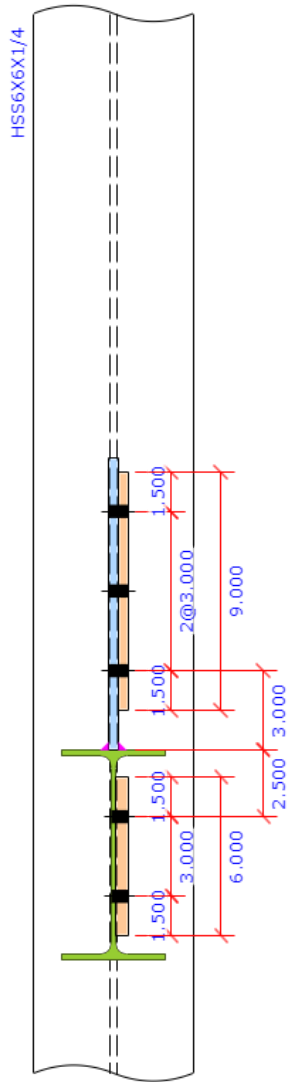
Sketch	Vertical Brace Connection	OCBFRISER	Code=AISC 360-16 ASD
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* Angle to Brace Bolts are 5/8" Dia. A325-N
 * All Other Bolts are 1/2" Dia. Dia. A325-N





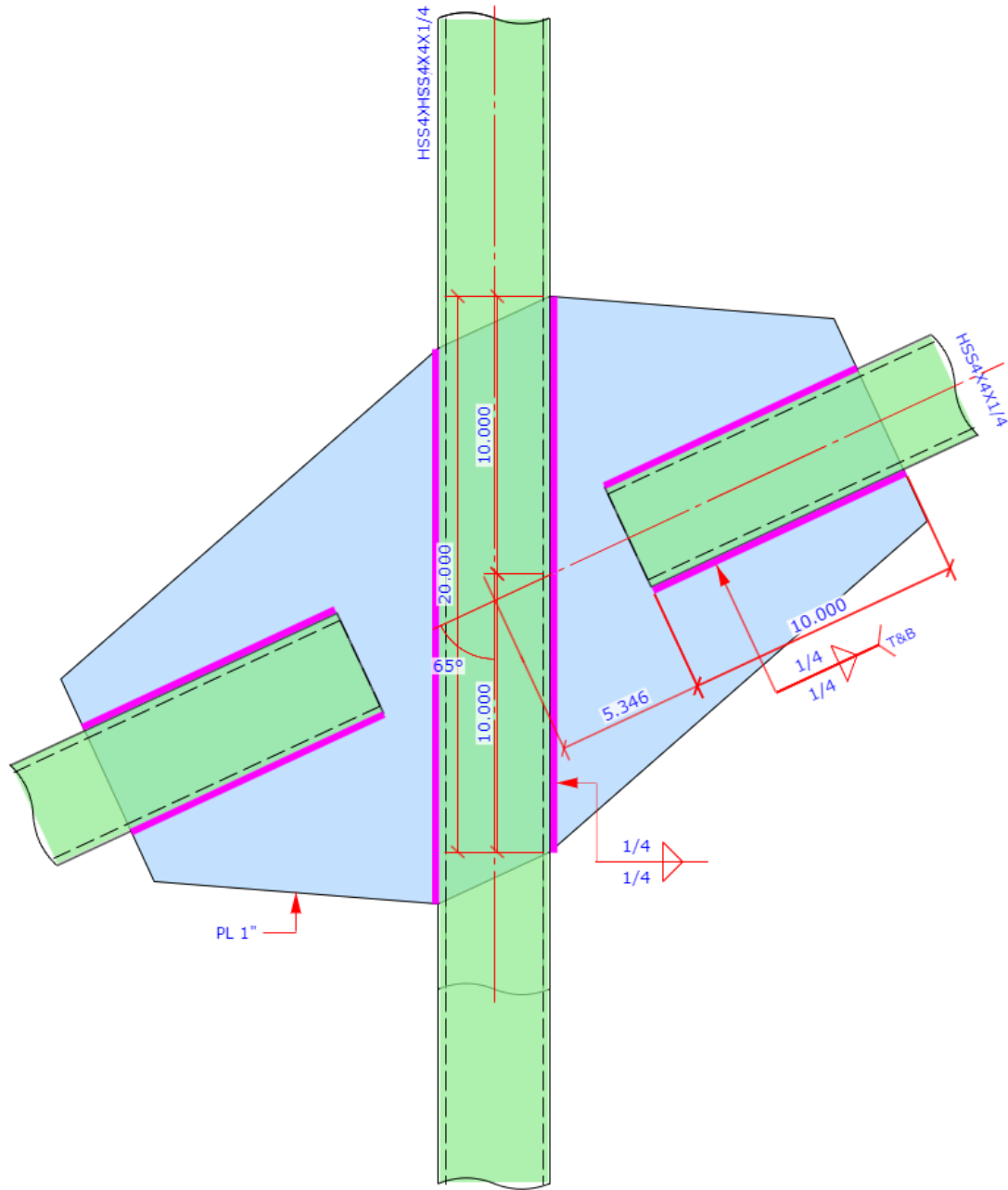


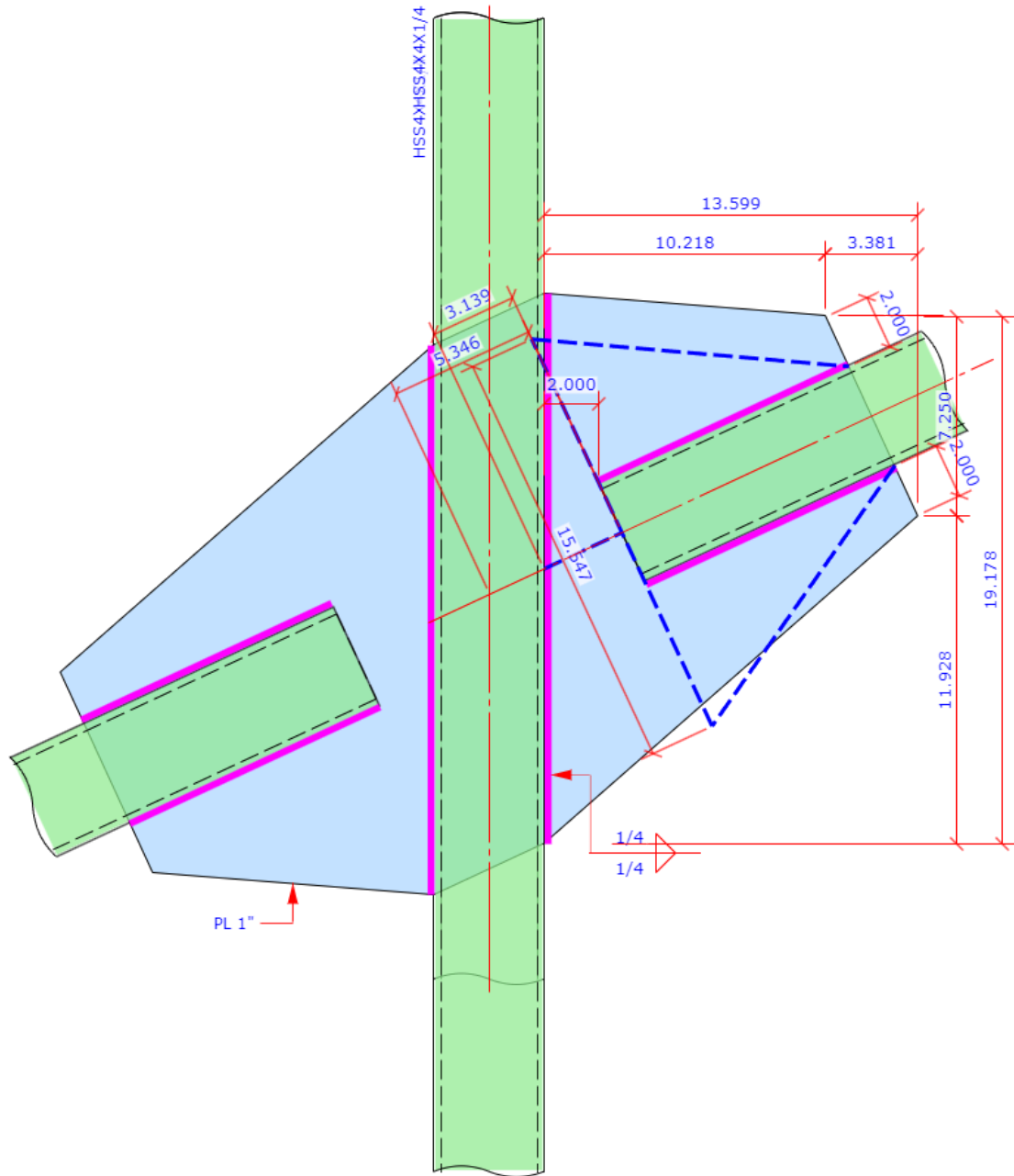
Sketch

Knee Brace Connection

OCBFX1

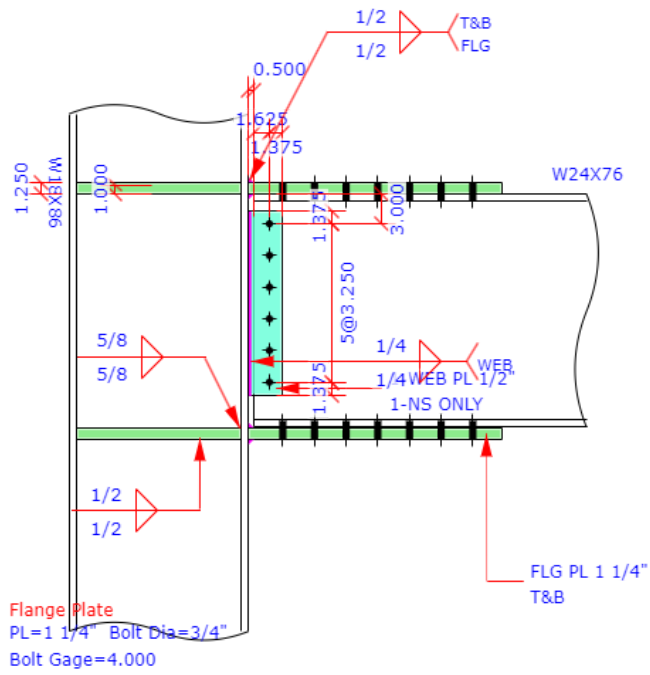
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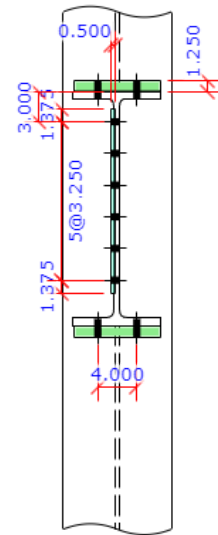
Sketch	Moment Connection - Beam to Column	OMF1	Code=AISC 360-16 ASD
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.250



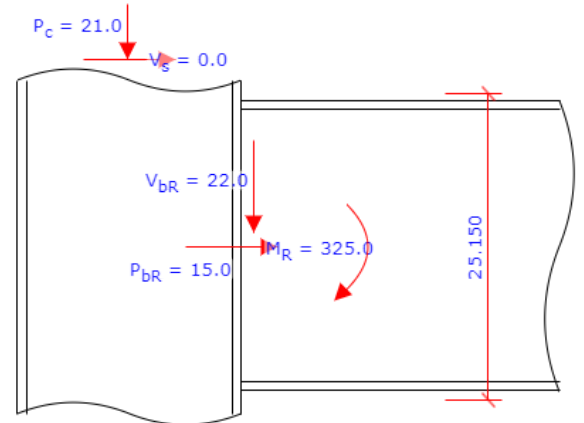
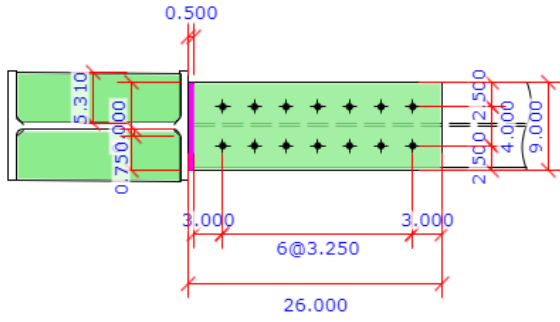
Flange Plate
 PL=1 1/4" Bolt Dia=3/4"
 Bolt Gage=4.000

Web Plate
 2-PL=1/2" Bolt Dia=3/4"

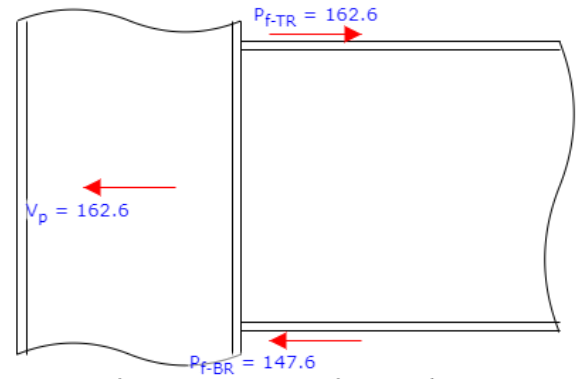


Right Side Beam

* All Flange Plate Bolts are 3/4" Dia. A490-X
 * All Flange Plate Bolts are 3/4" Dia. A325-N



Design Load

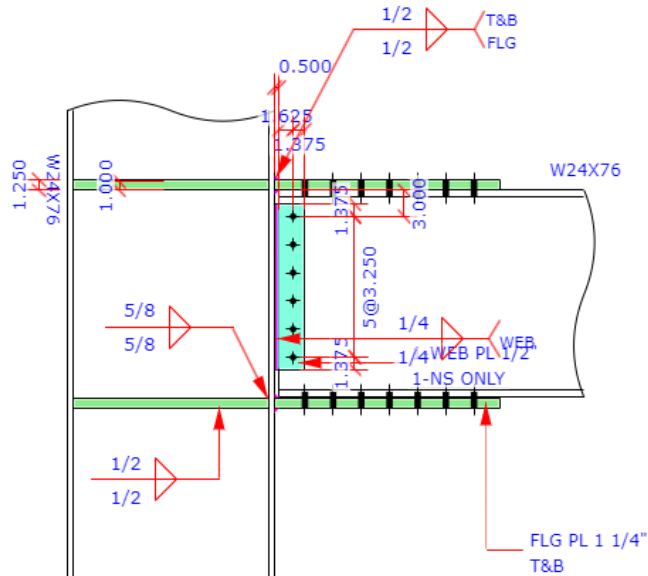


Beam Flange Force & Panel Zone Shear V_p

Seismic Moment and Beam Flange Force Calc

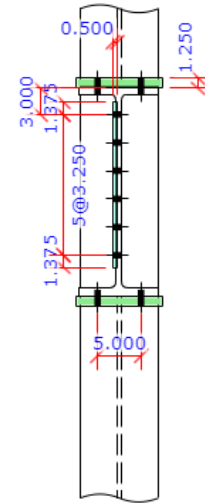
Sketch	Moment Connection - Beam to Column	OMF2	Code=AISC 360-16 ASD
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.250



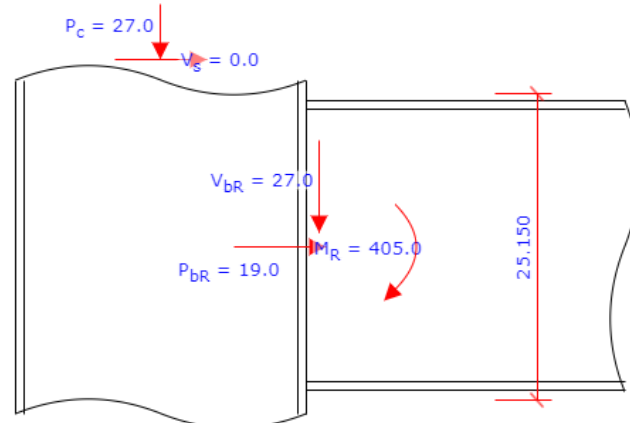
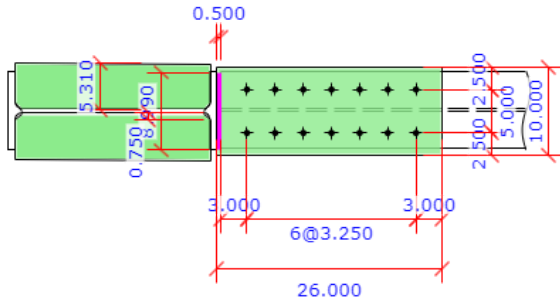
Flange Plate
 PL=1 1/4" Bolt Dia=3/4"
 Bolt Gage=5.000

Web Plate
 2-PL=1/2" Bolt Dia=3/4"

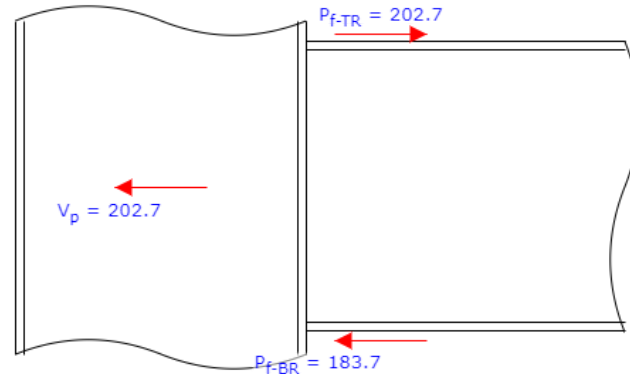


Right Side Beam

* All Flange Plate Bolts are 3/4" Dia. A490-X
 * All Flange Plate Bolts are 3/4" Dia. A325-N



Design Load



Beam Flange Force & Panel Zone Shear V_p

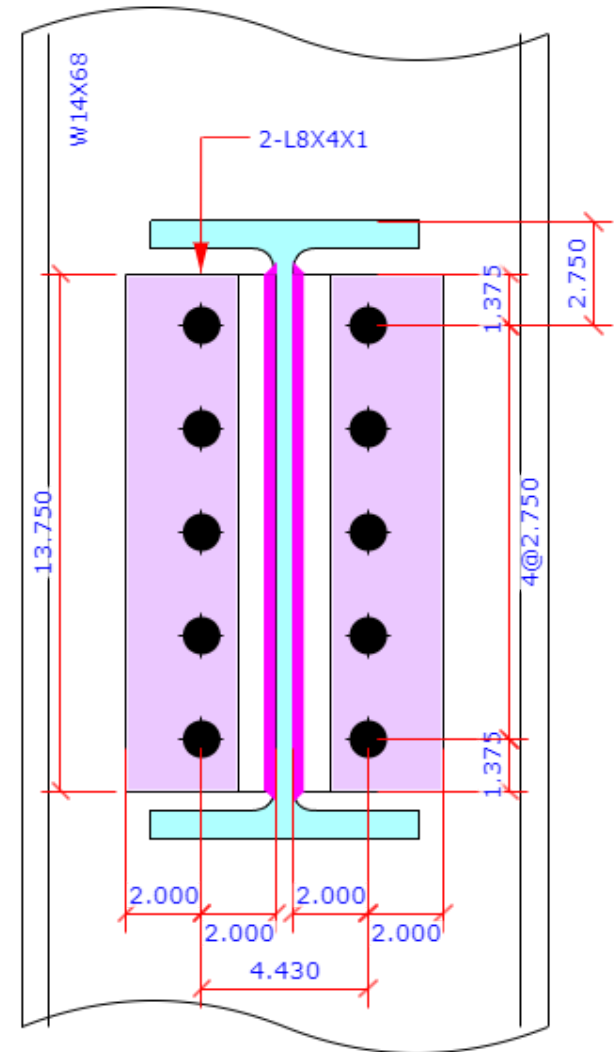
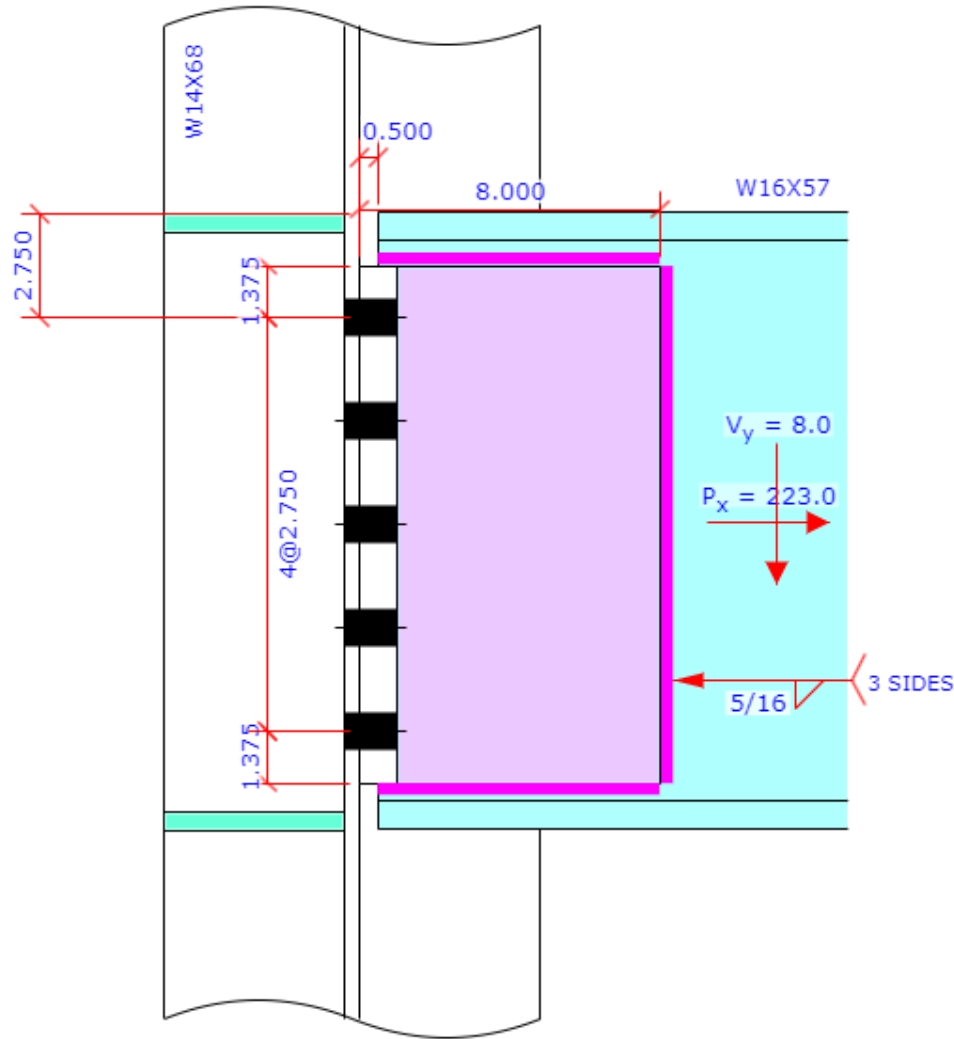
Seismic Moment and Beam Flange Force Calc

Sketch

Shear Connection

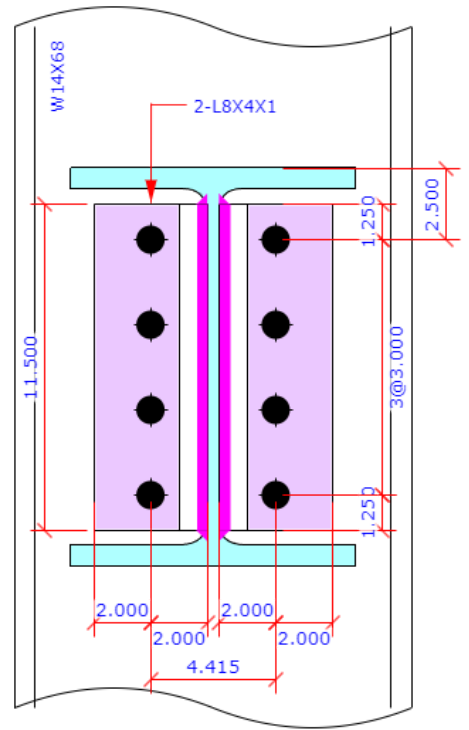
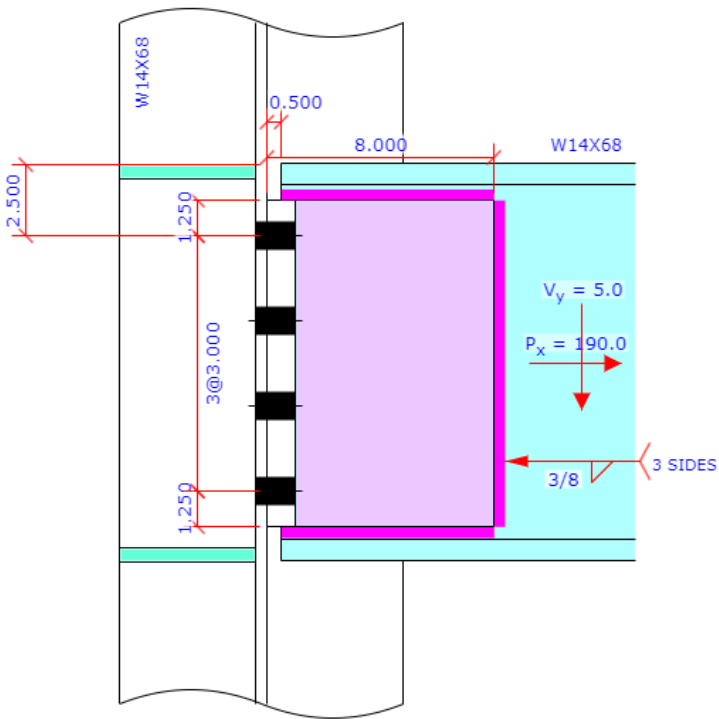
SCBFBC1

Code=AISC 360-16 ASD



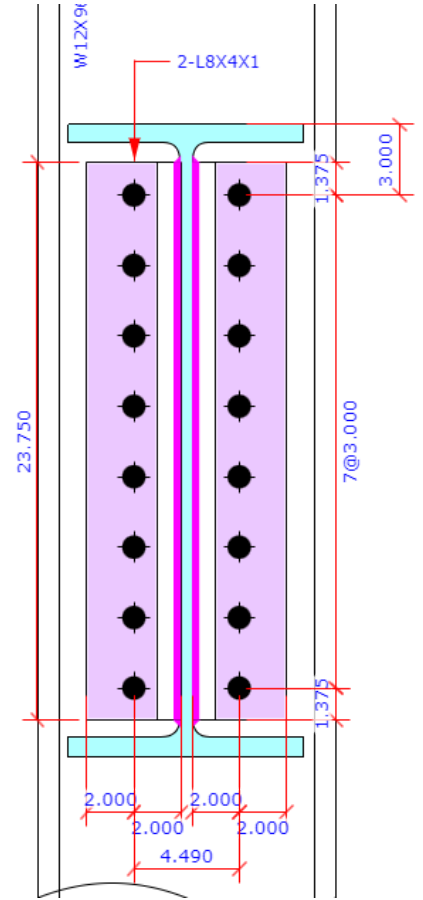
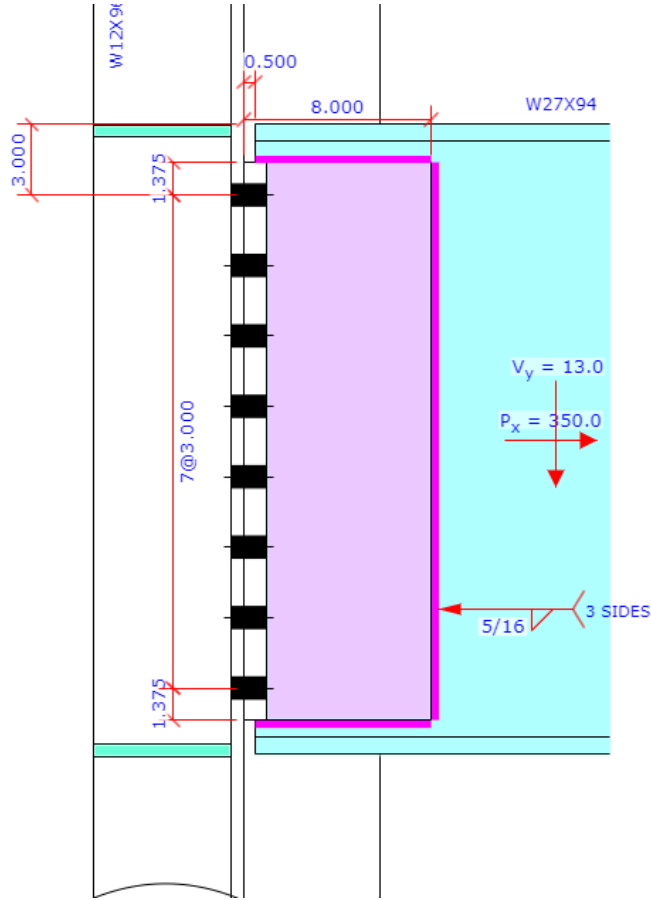
* All Bolts are 1" Dia. A325-N

Sketch	Shear Connection	SCBFBC2	Code=AISC 360-16 ASD
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* All Bolts are 1" Dia. A325-N

Sketch Shear Connection **SCBFBC3** Code=AISC 360-16 ASD



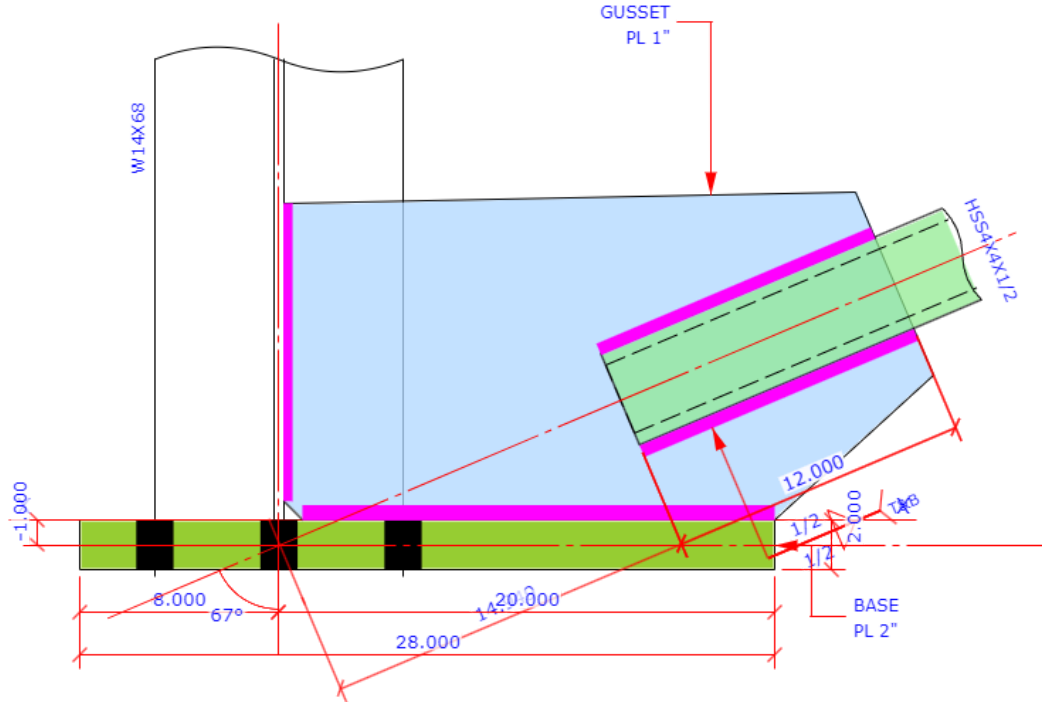
* All Bolts are 1" Dia. A325-N

Sketch

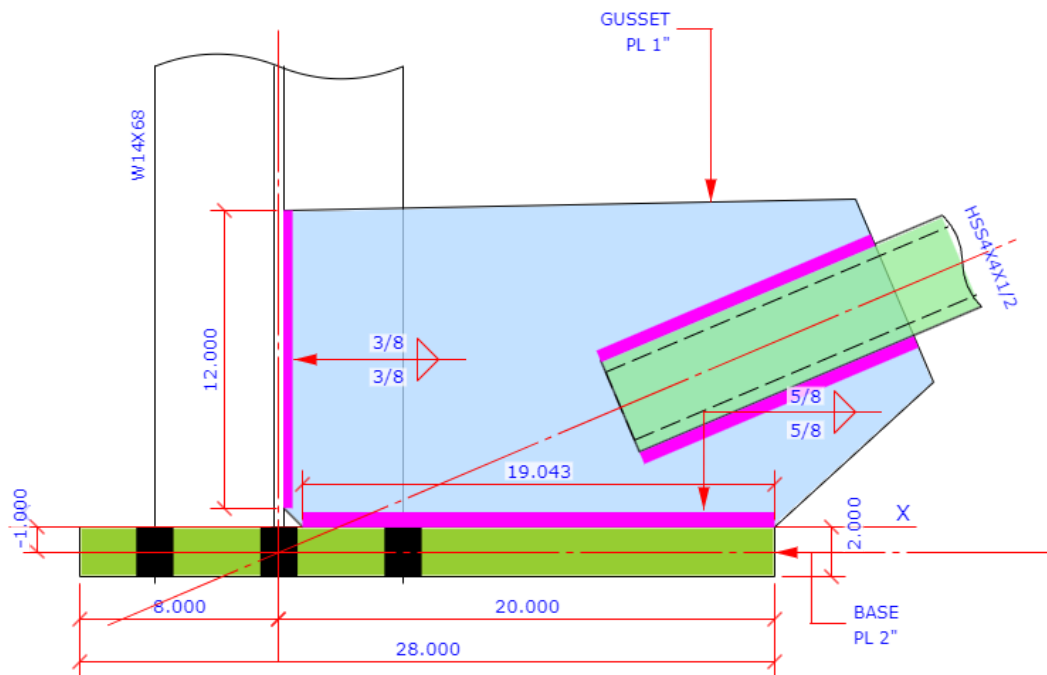
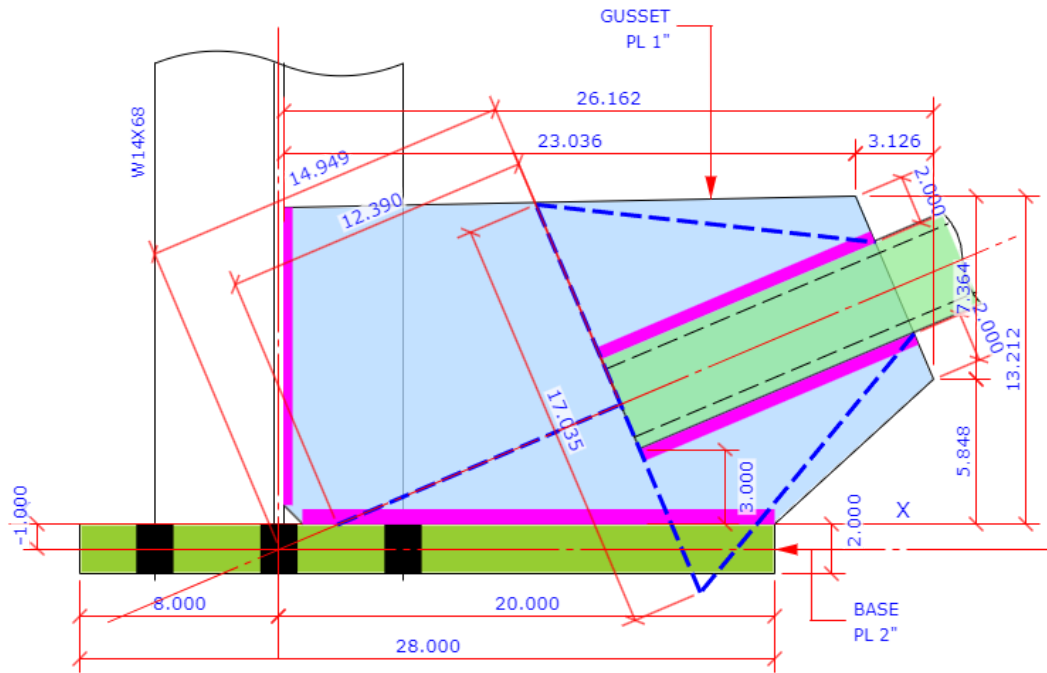
Base Plate Brace Connection

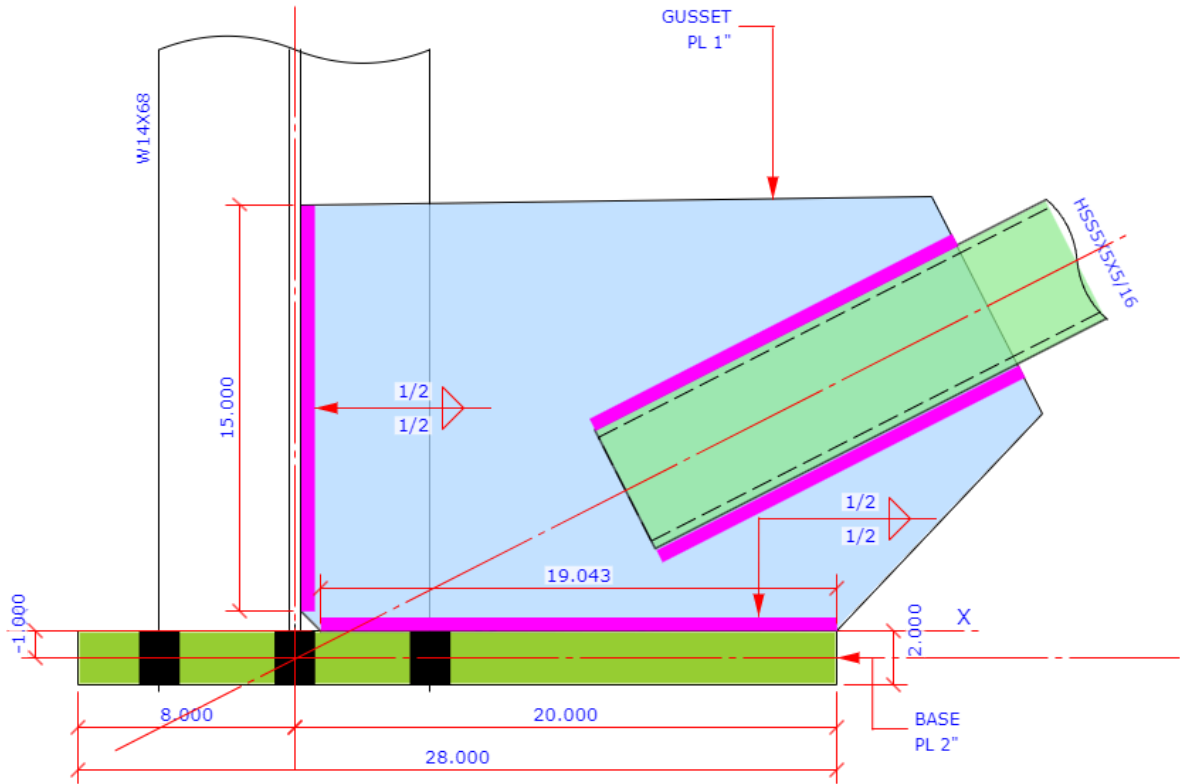
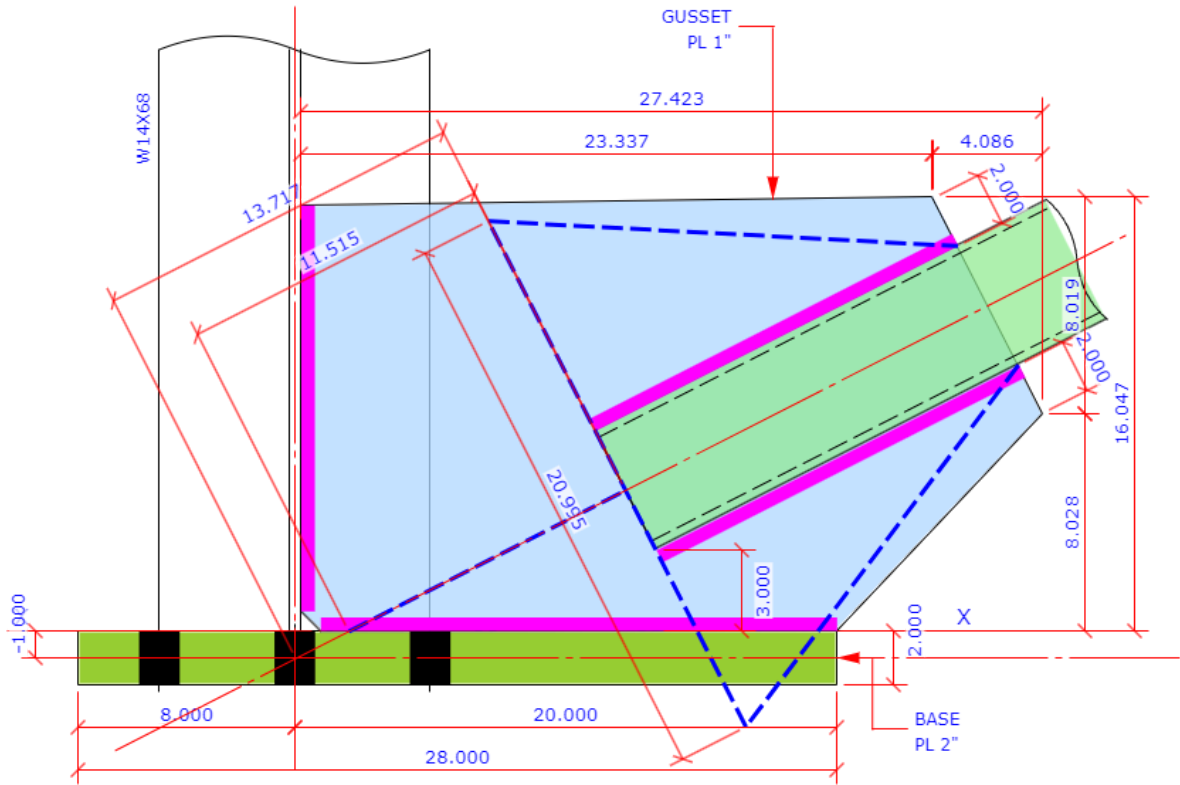
SCBFBP1

Code=AISC 360-16 ASD

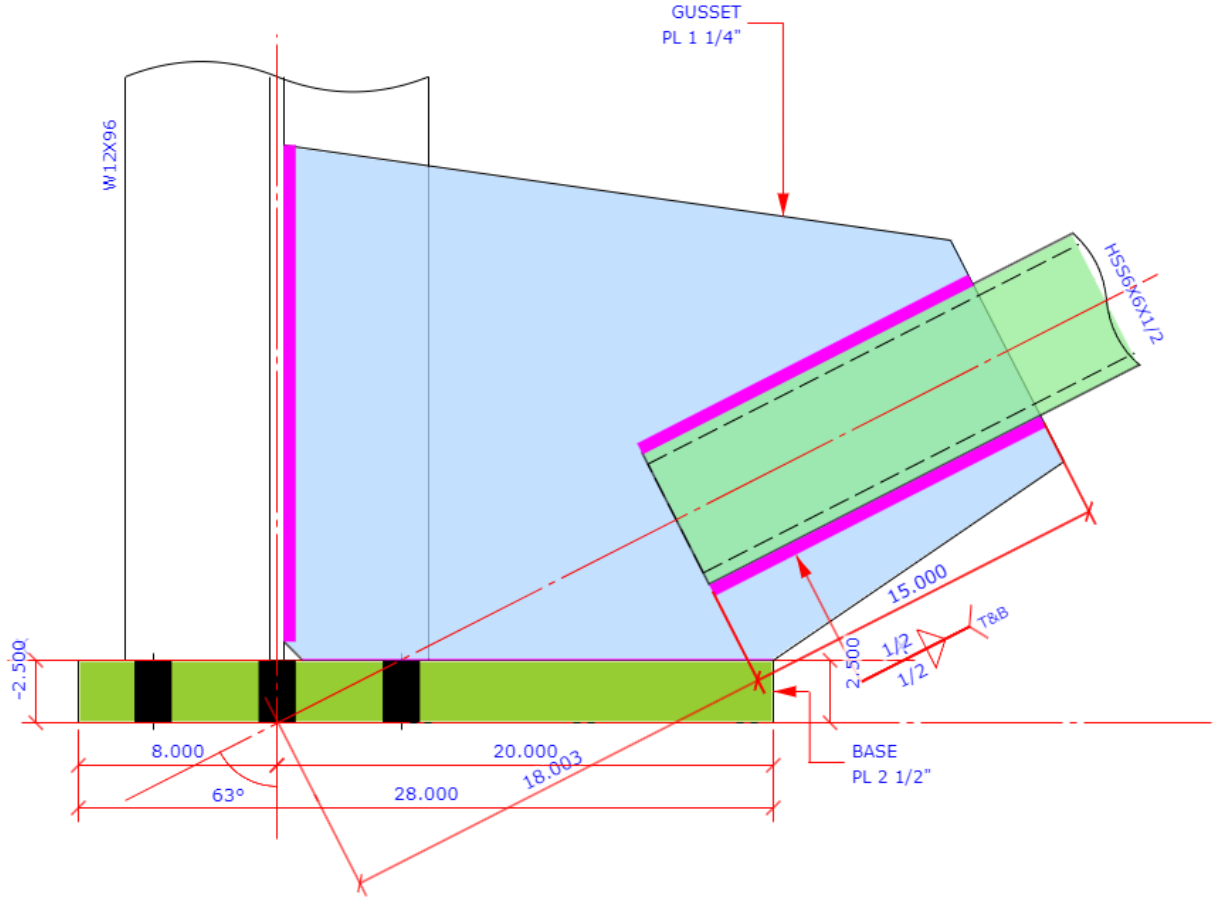


Refer to DWG S-601 for Baseplate & Anchor Bolt Details

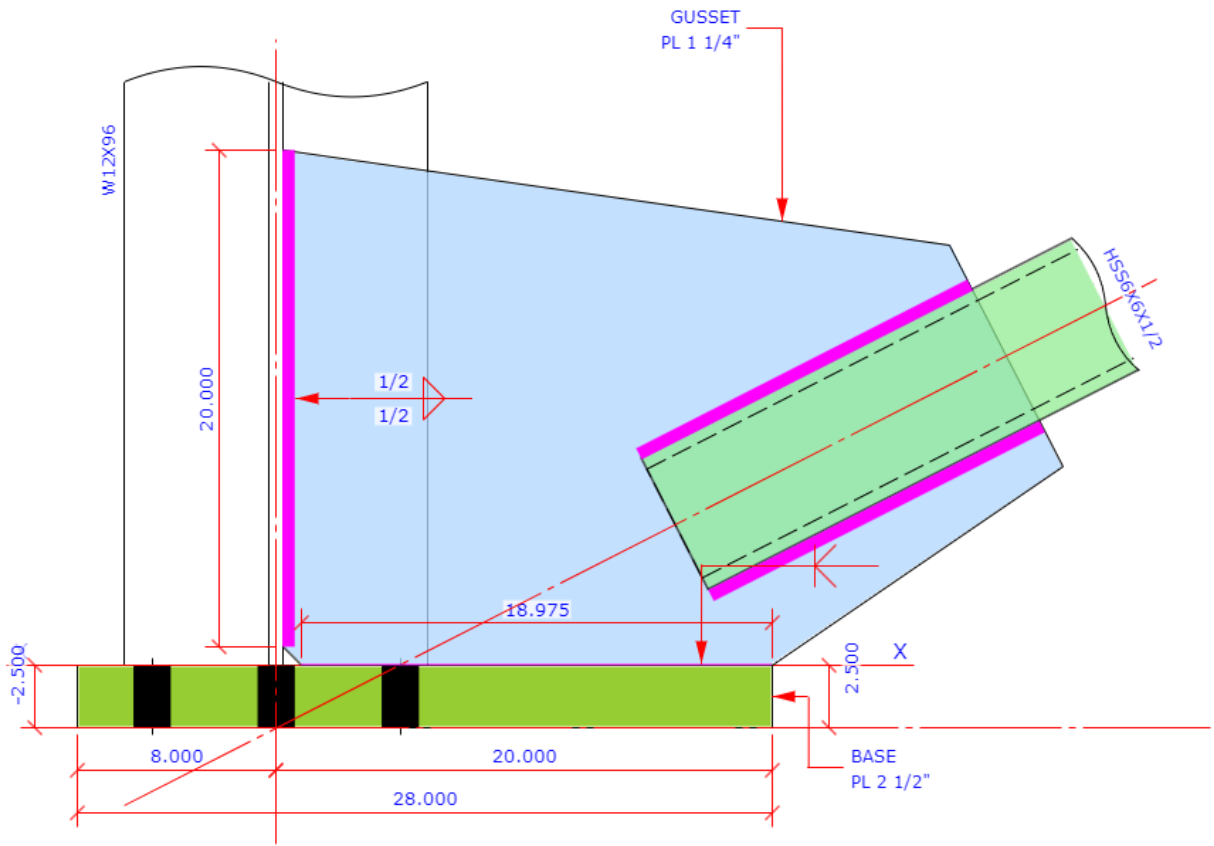
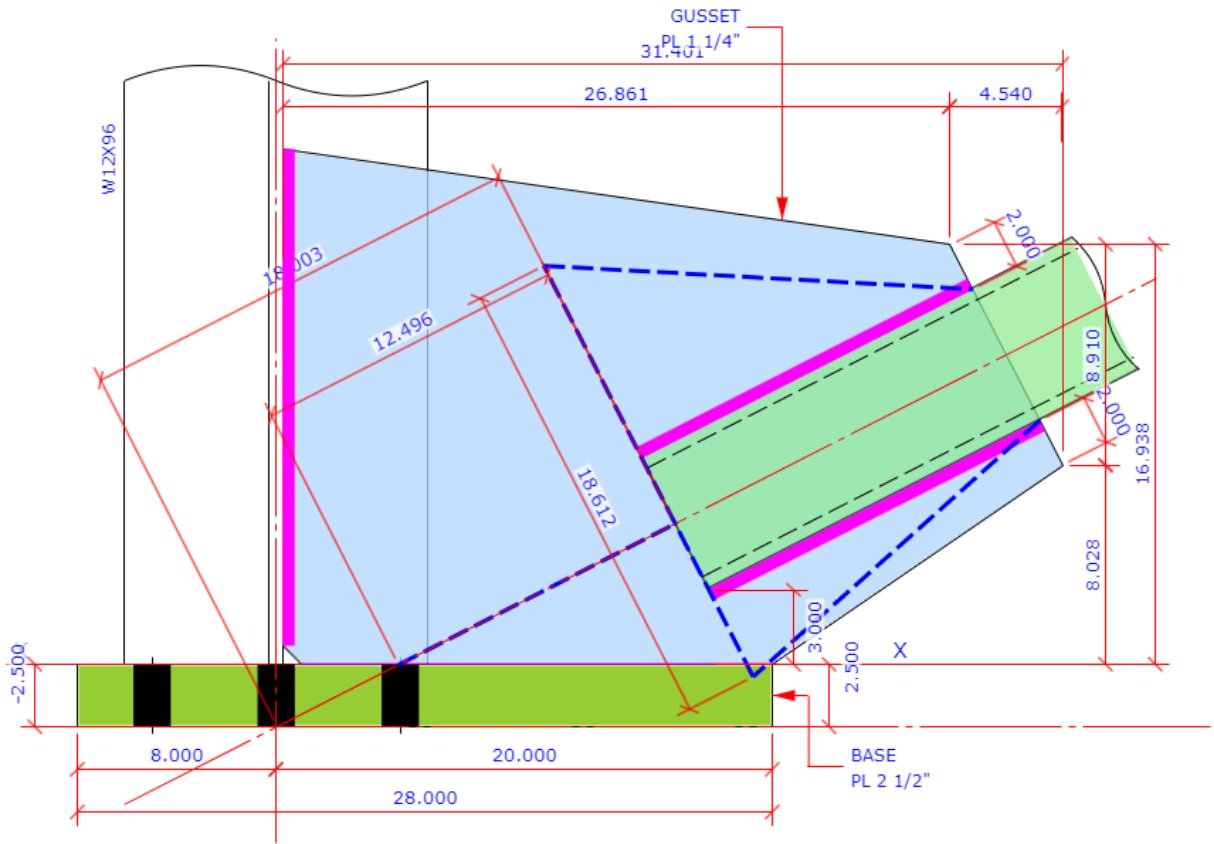




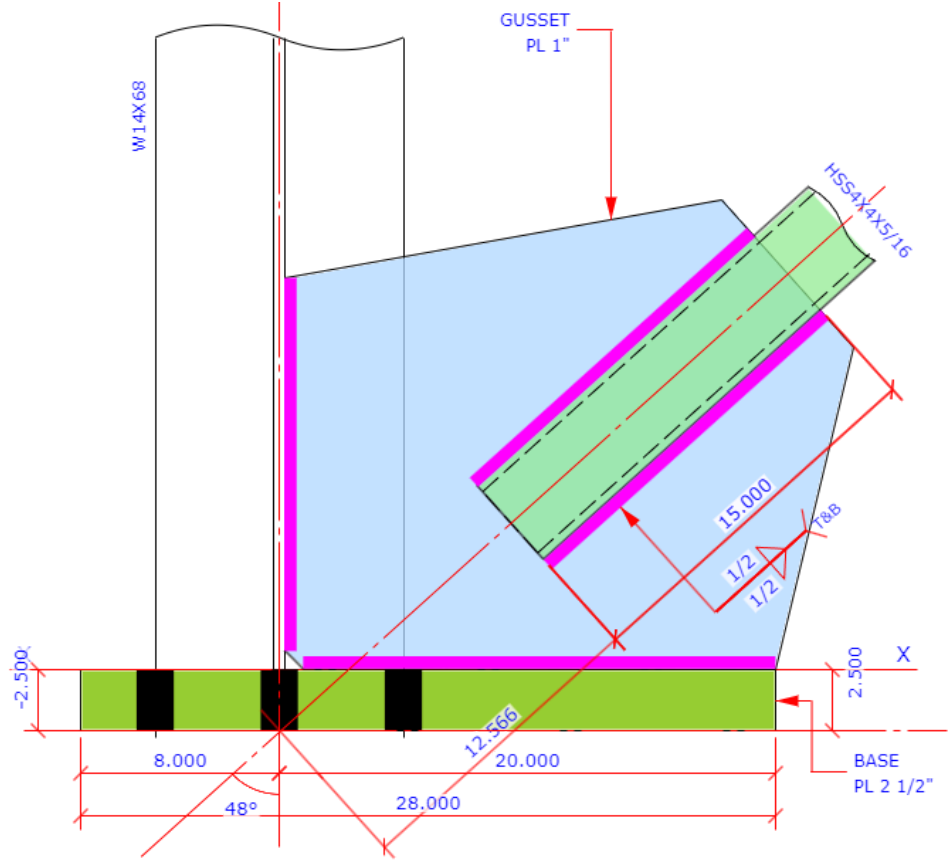
Sketch	Base Plate Brace Connection	SCBFBP3	Code=AISC 360-16 ASD
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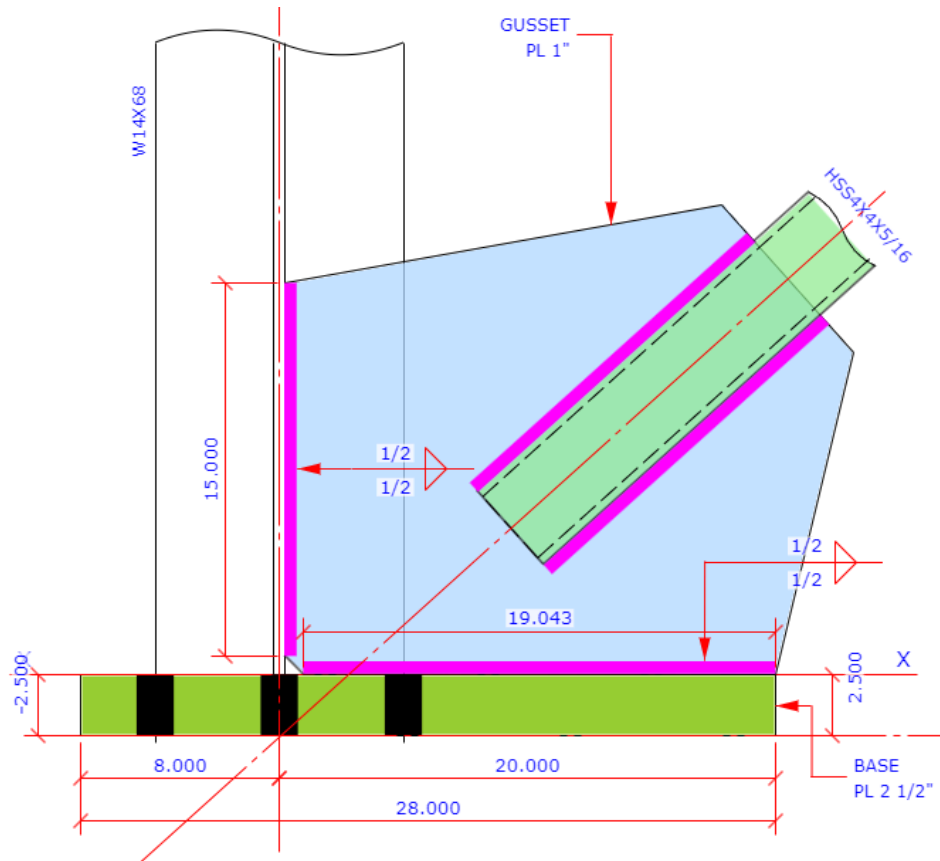
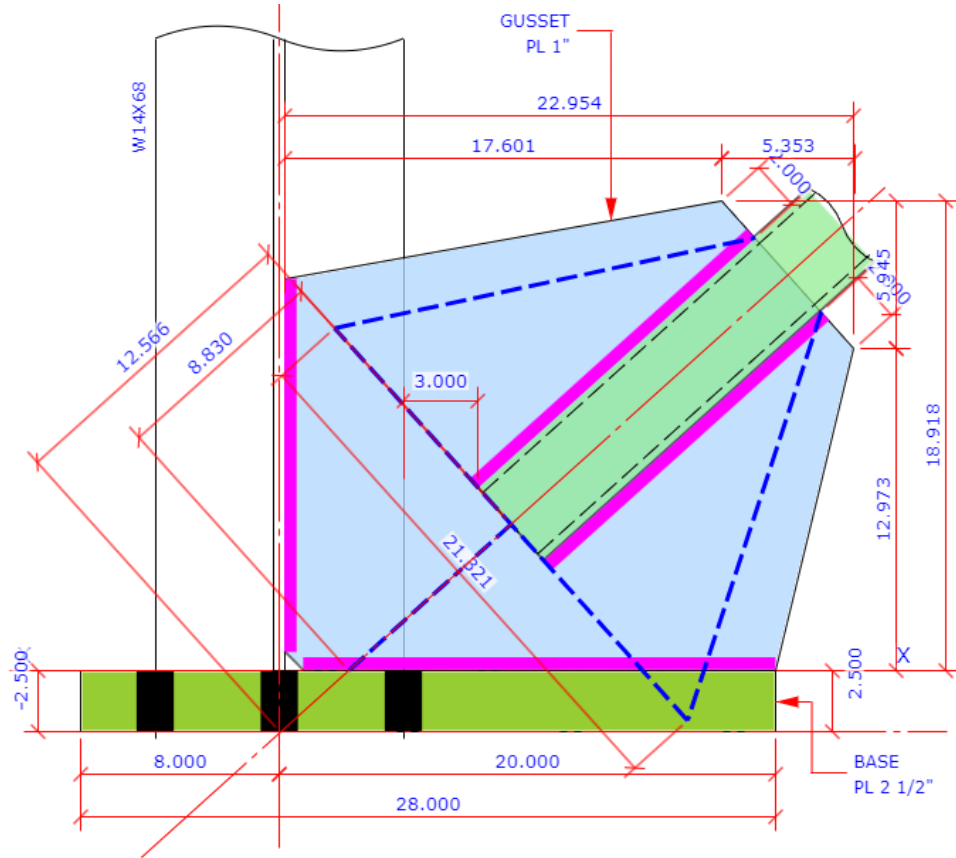
Refer to DWG S-601 for Baseplate & Anchor Bolt Details



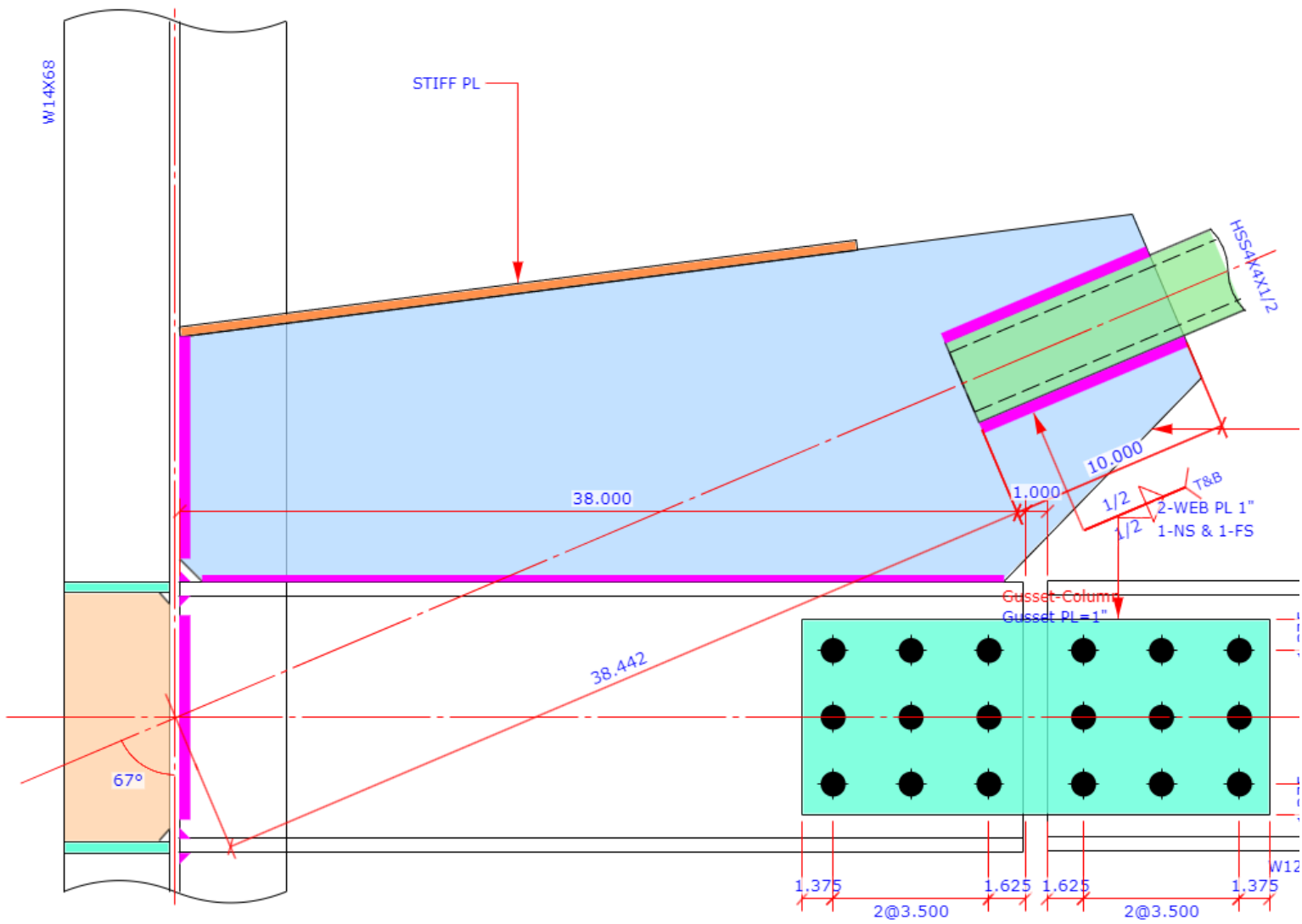
Sketch	Base Plate Brace Connection	SCBFBP4	Code=AISC 360-16 ASD
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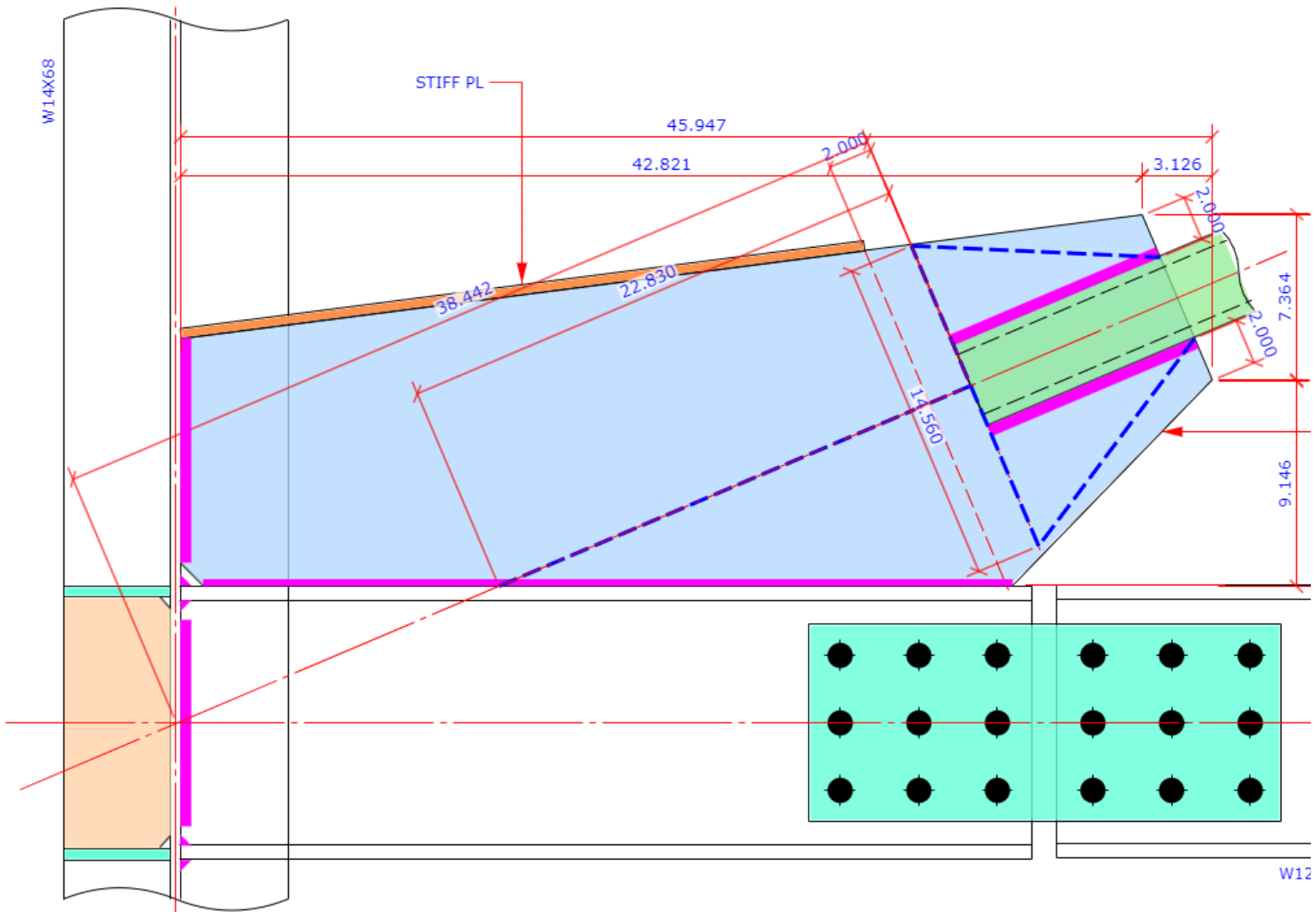
Refer to DWG S-601 for Baseplate & Anchor Bolt Details

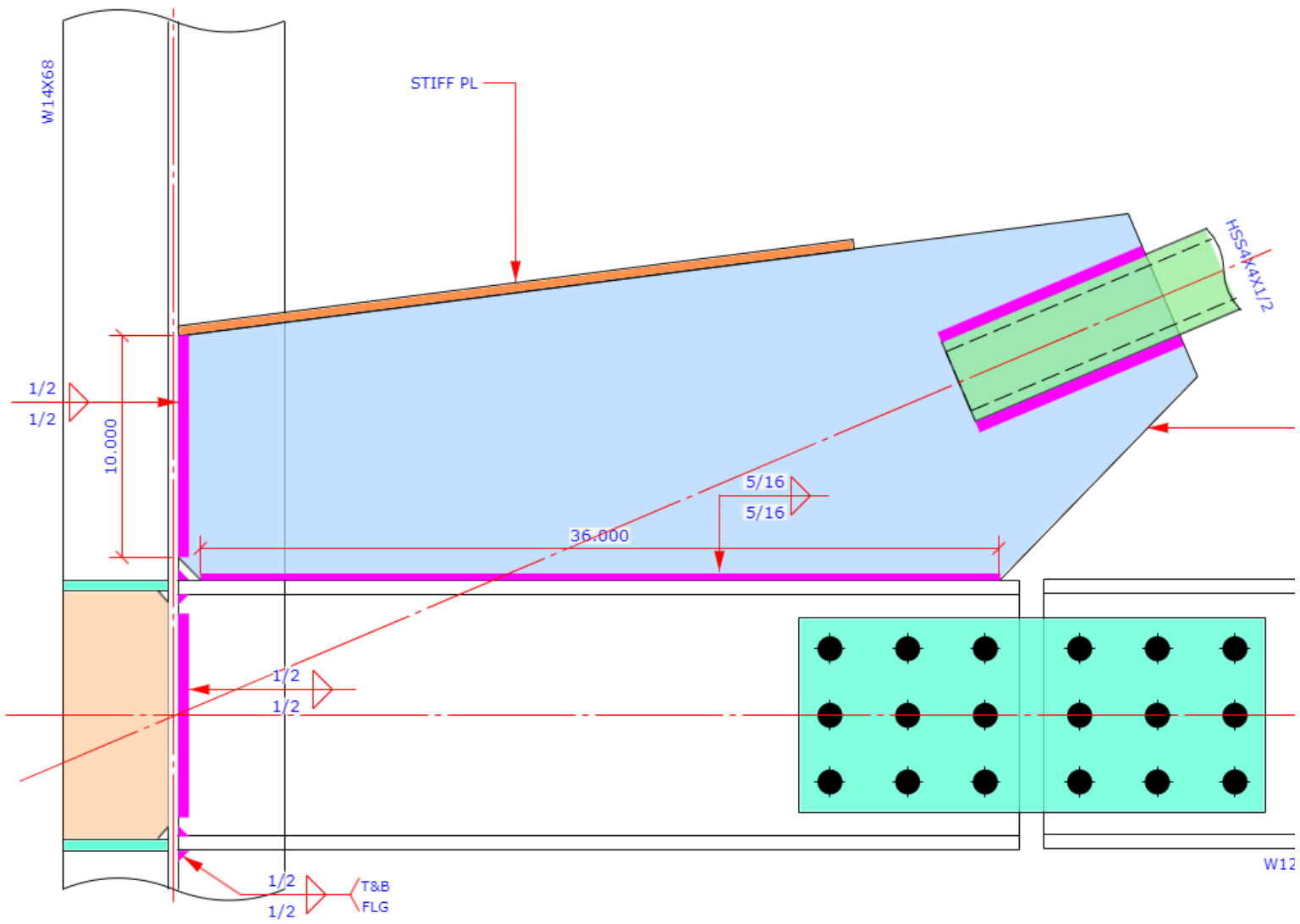


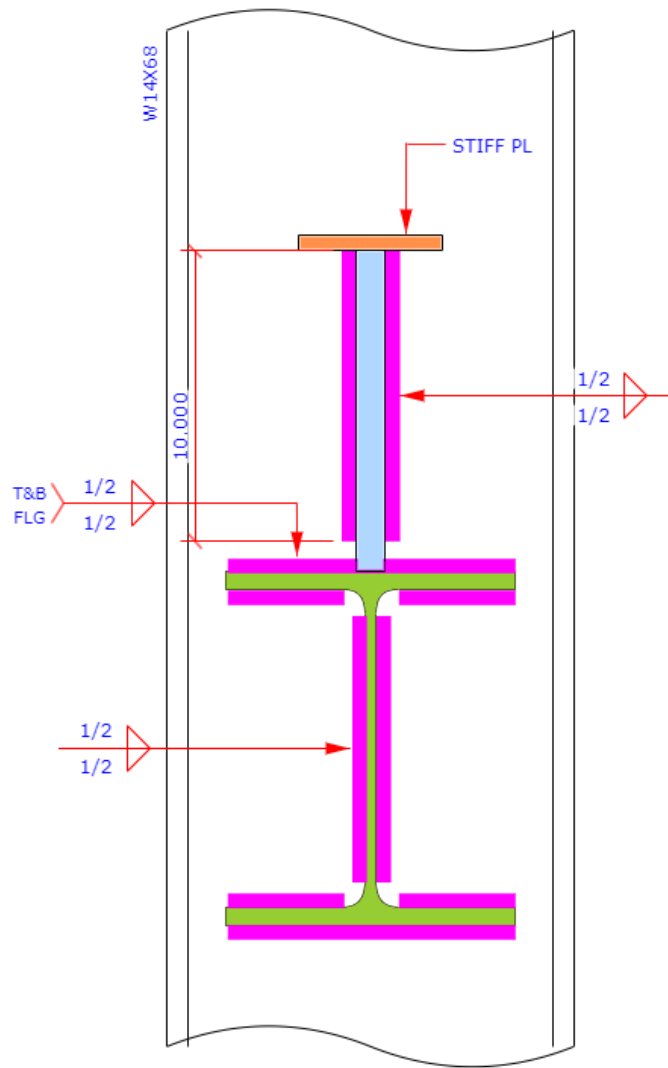
Sketch	Vertical Brace Connection	SCBFBR1	Code=AISC 360-16 ASD
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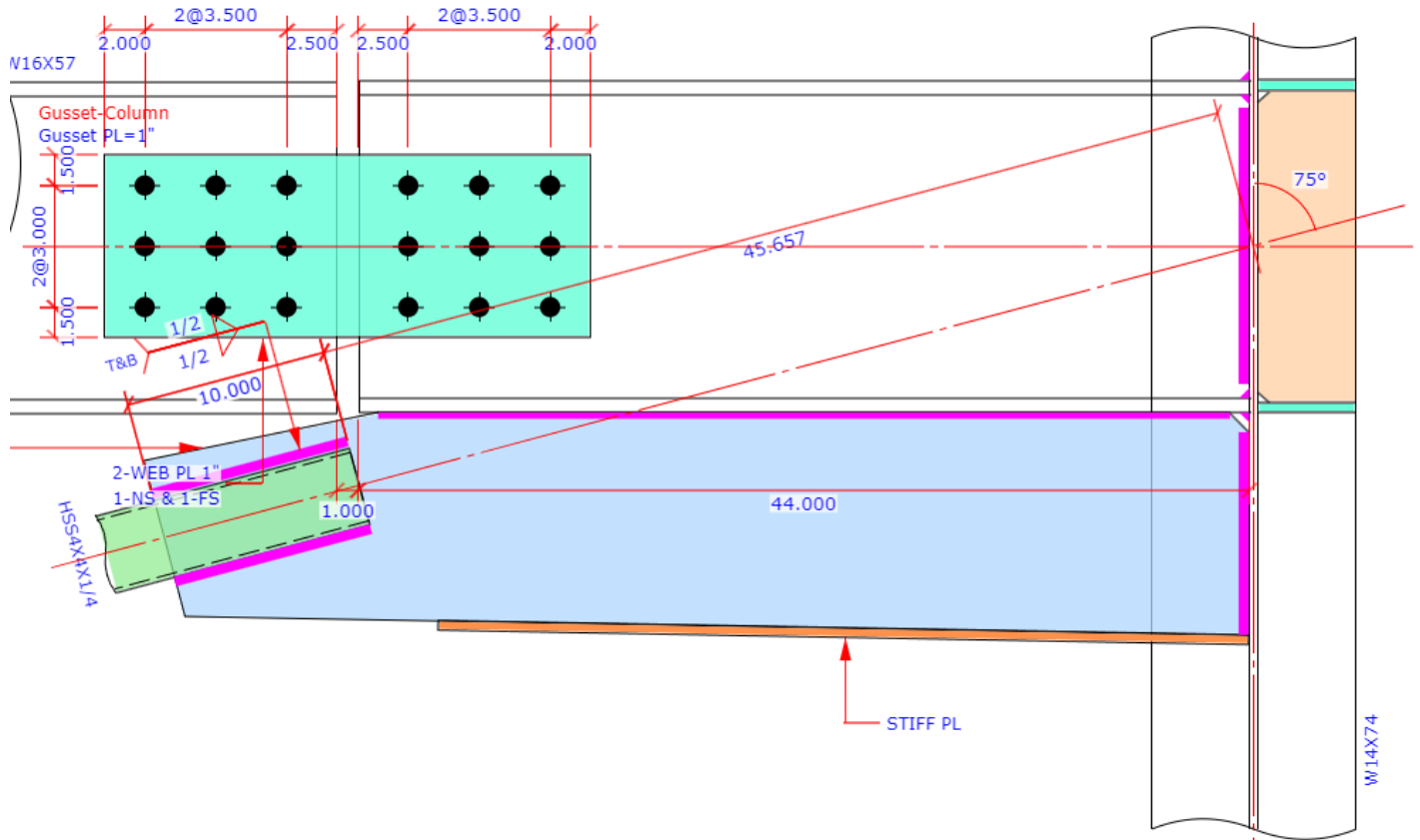
* All Bolts are 1" Dia. A325-N



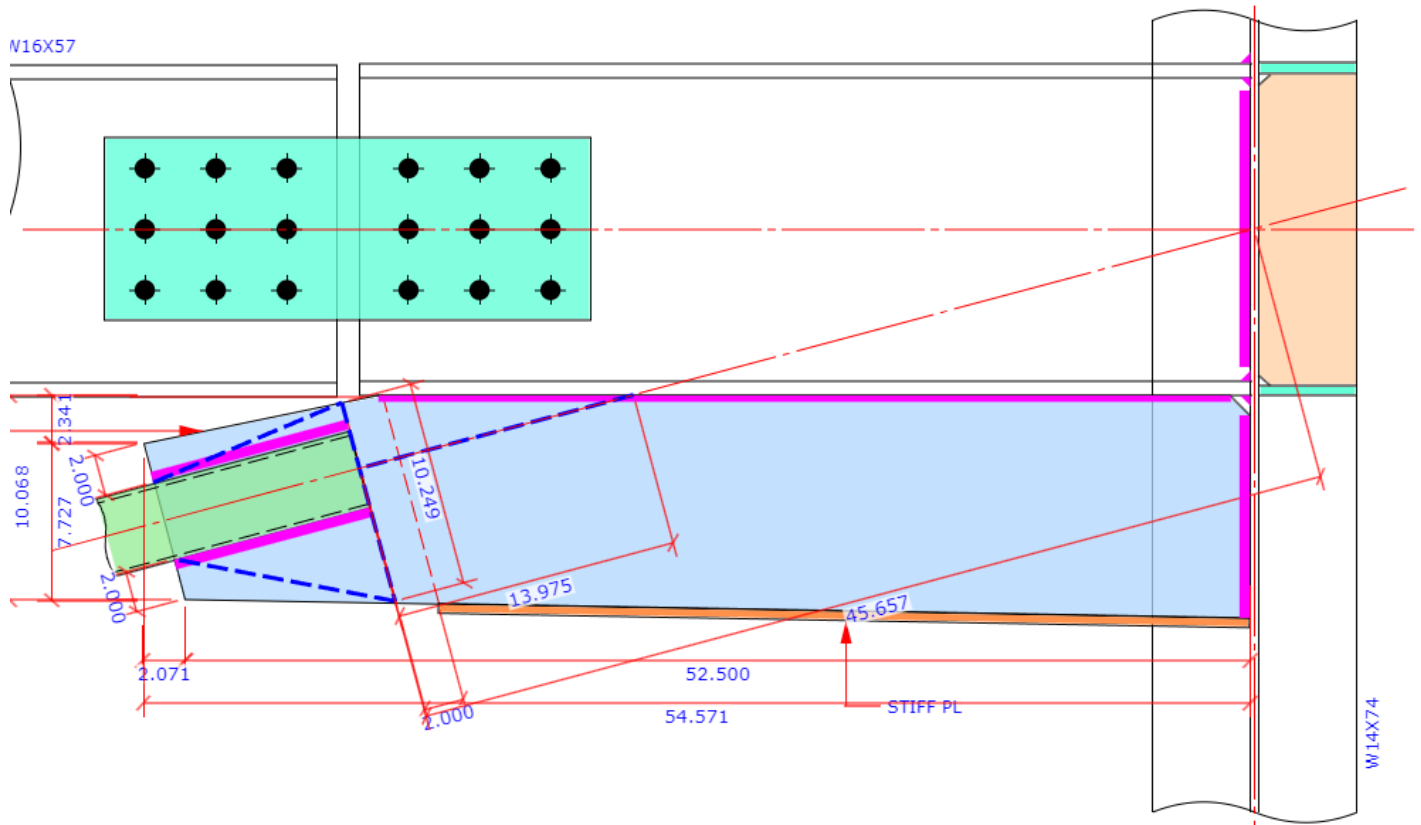


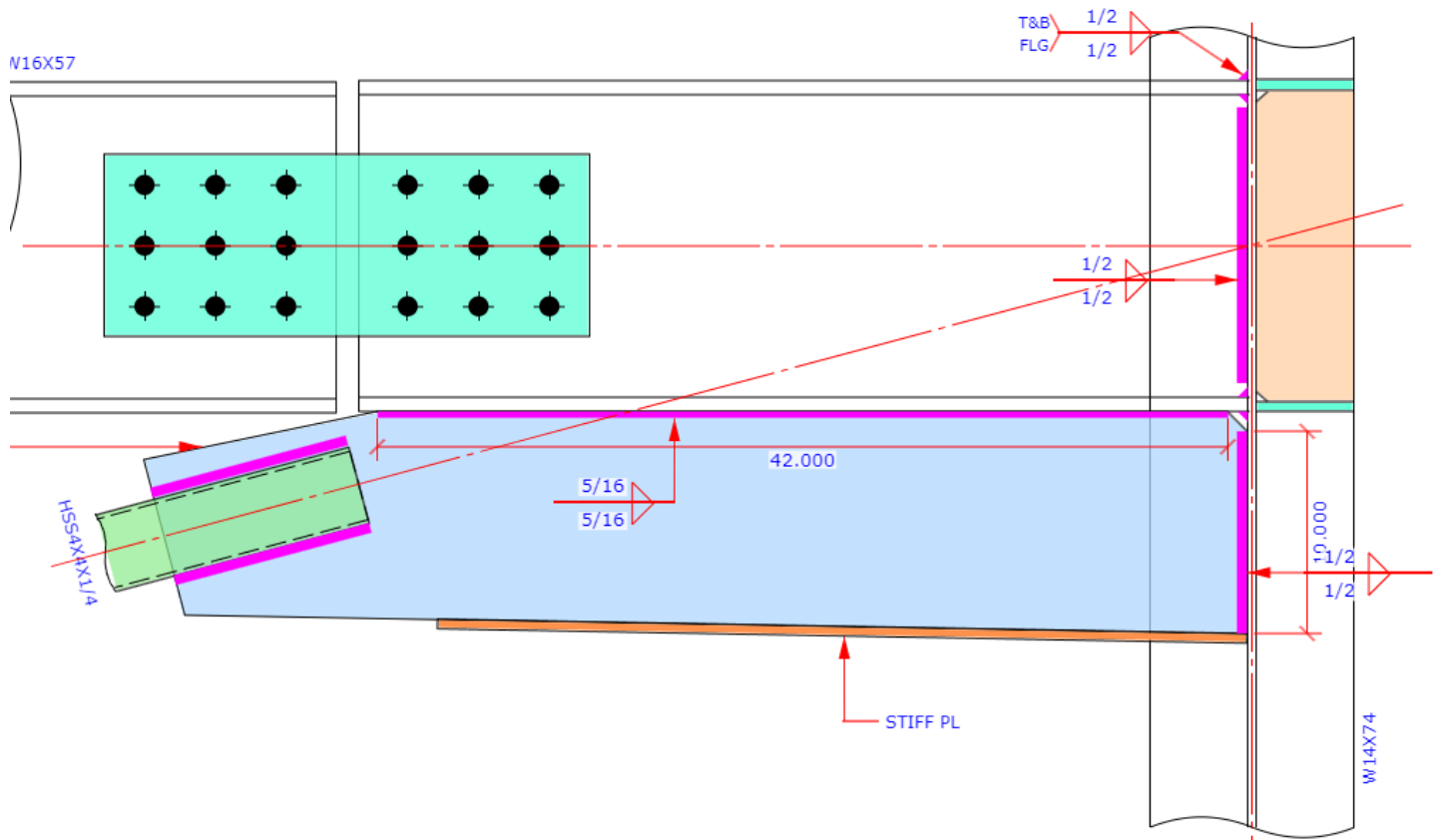


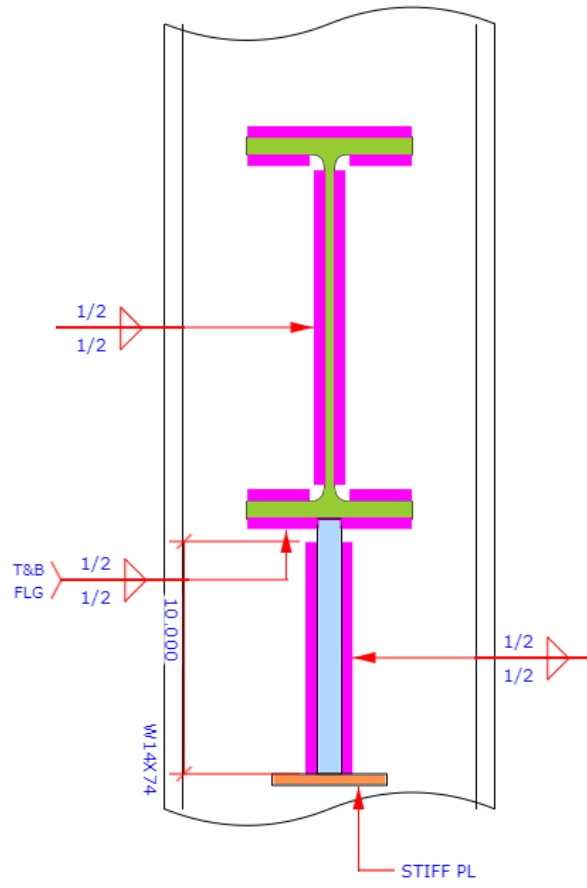
Sketch	Vertical Brace Connection	SCBFBR2	Code=AISC 360-16 ASD
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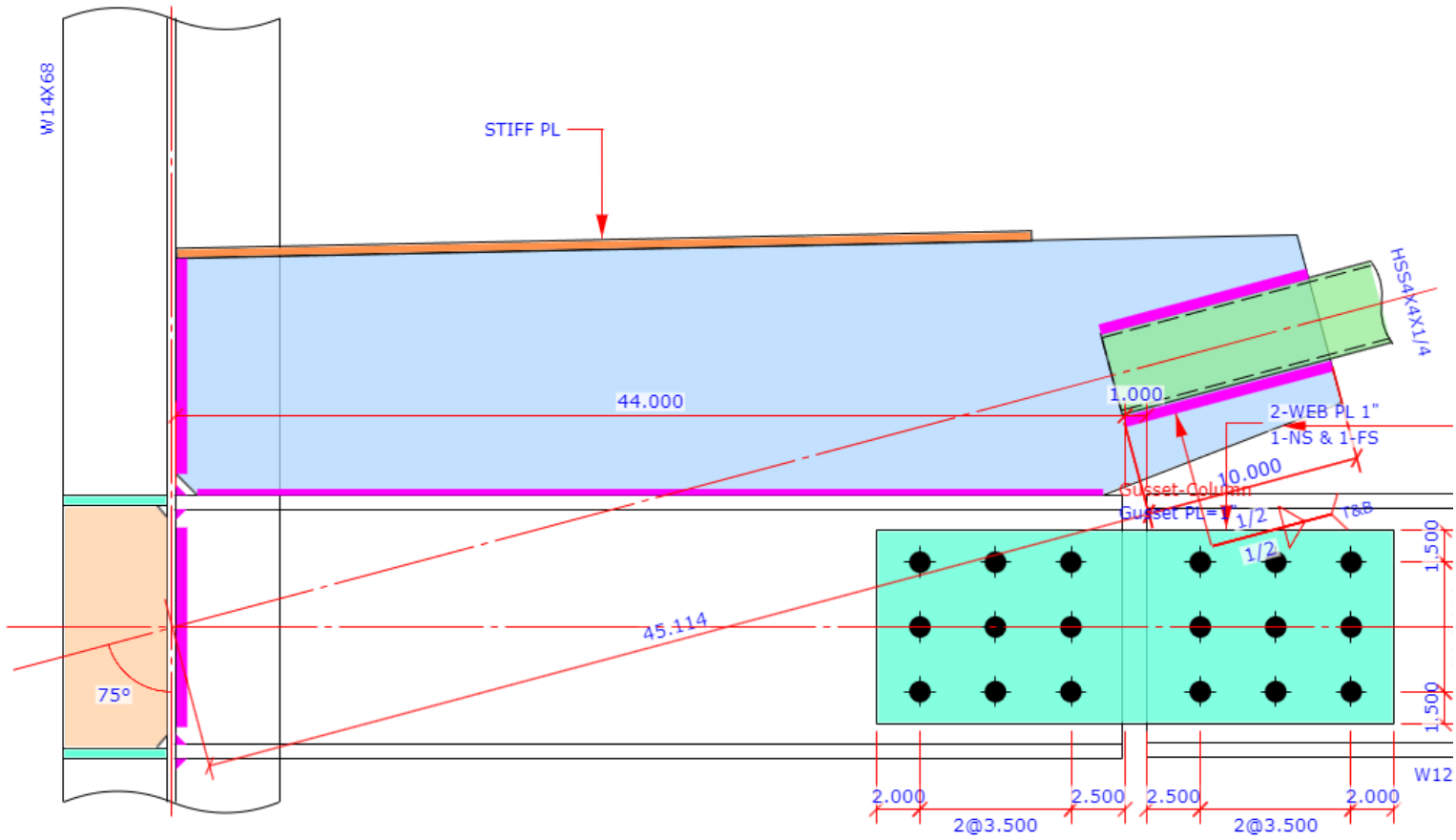
* All Bolts are 1" Dia. A325-N



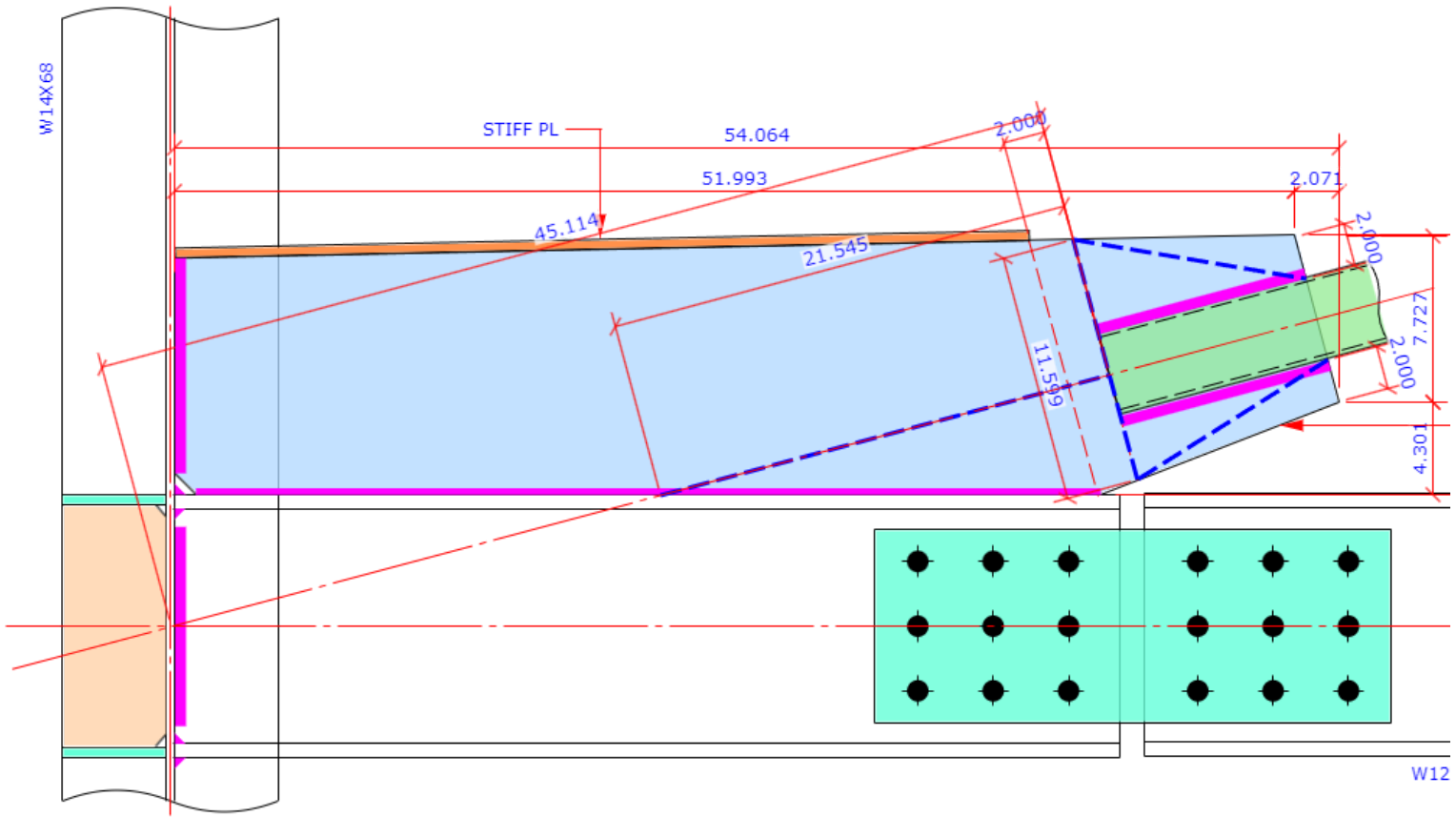


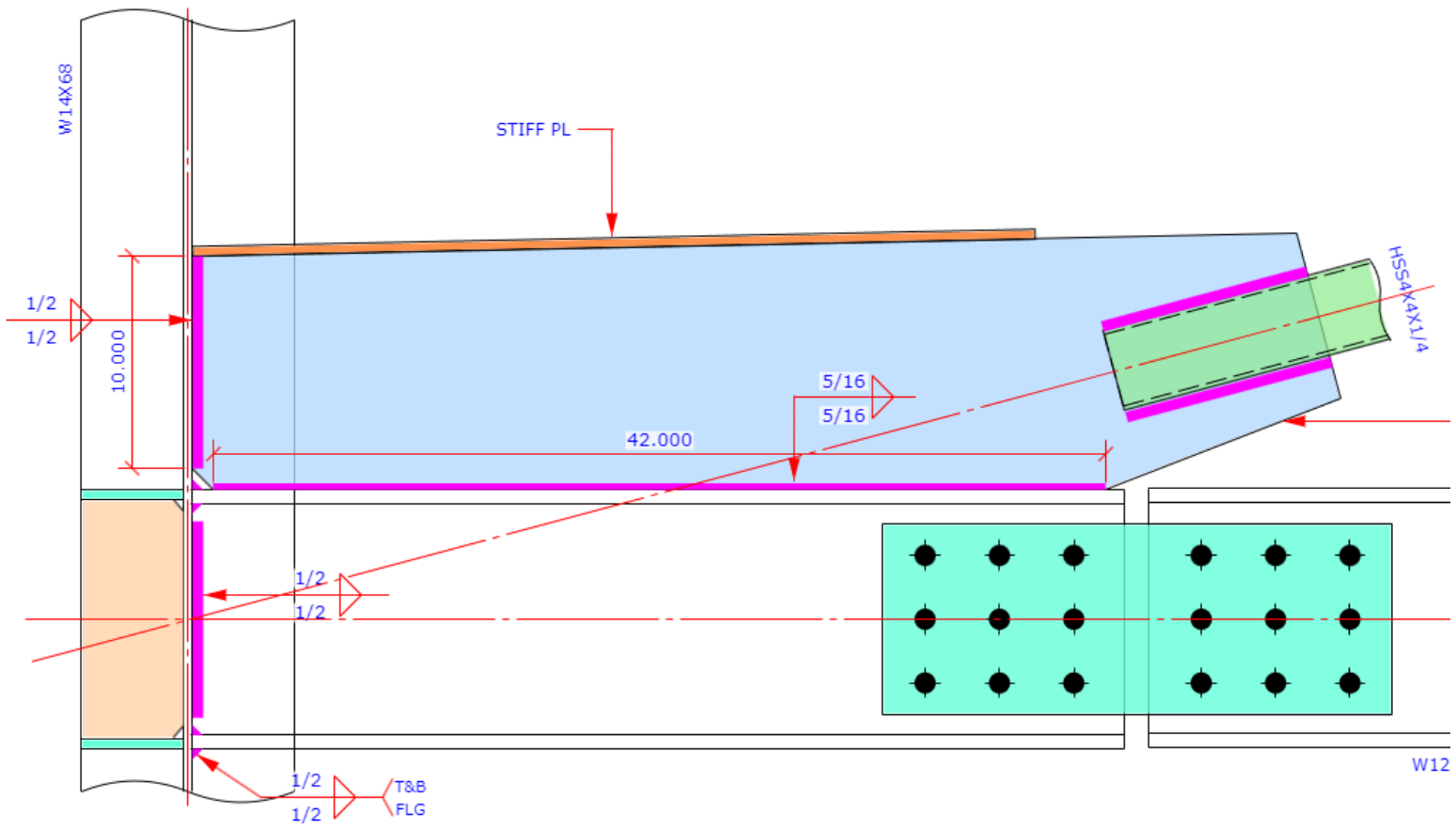


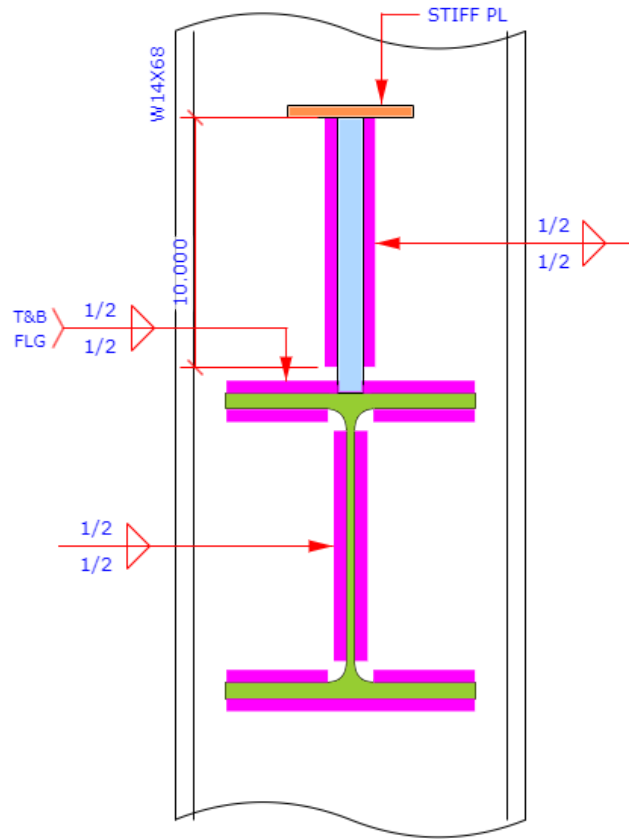
Sketch	Vertical Brace Connection	SCBFBR3	Code=AISC 360-16 ASD
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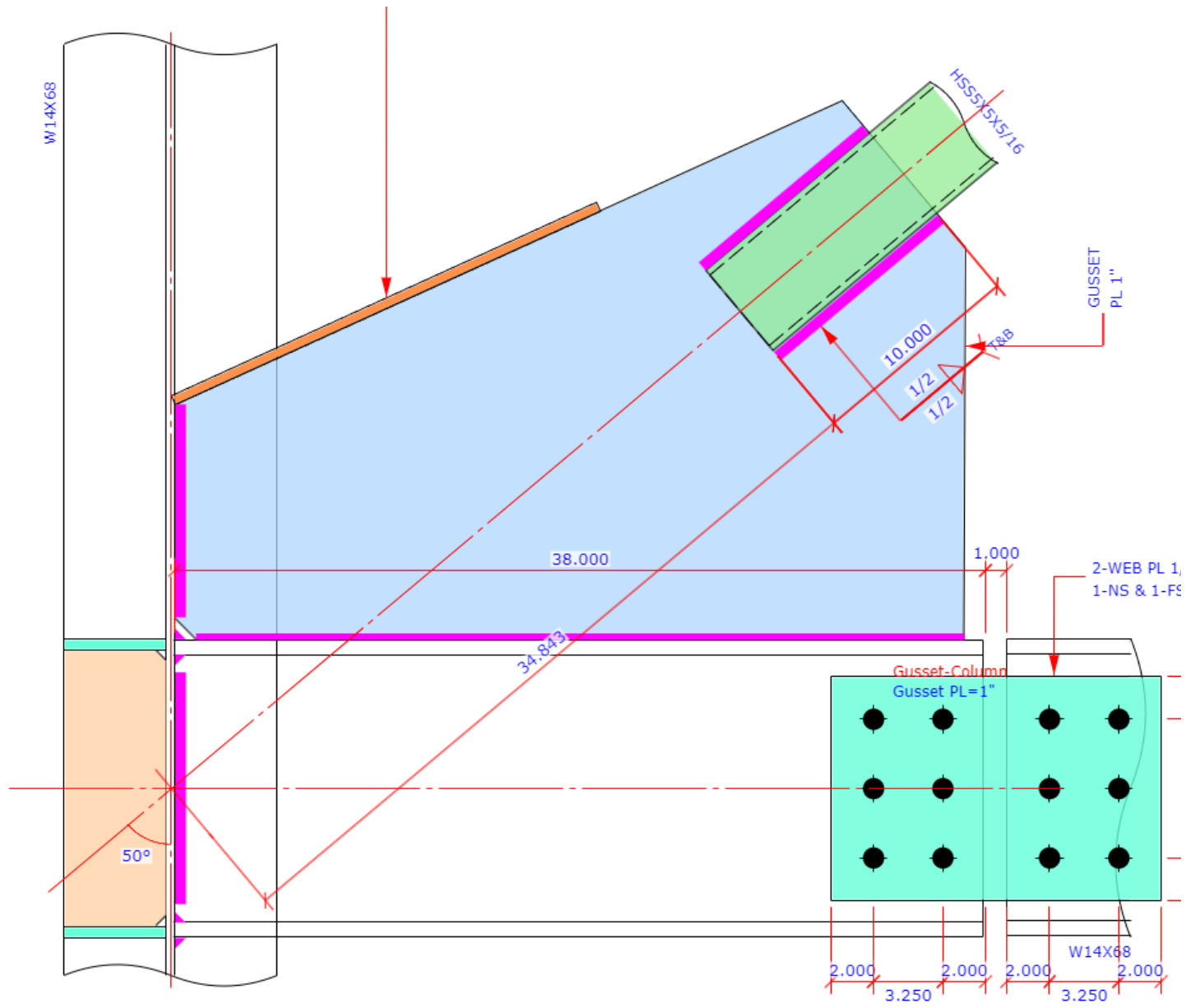
* All Bolts are 1" Dia. A325-N



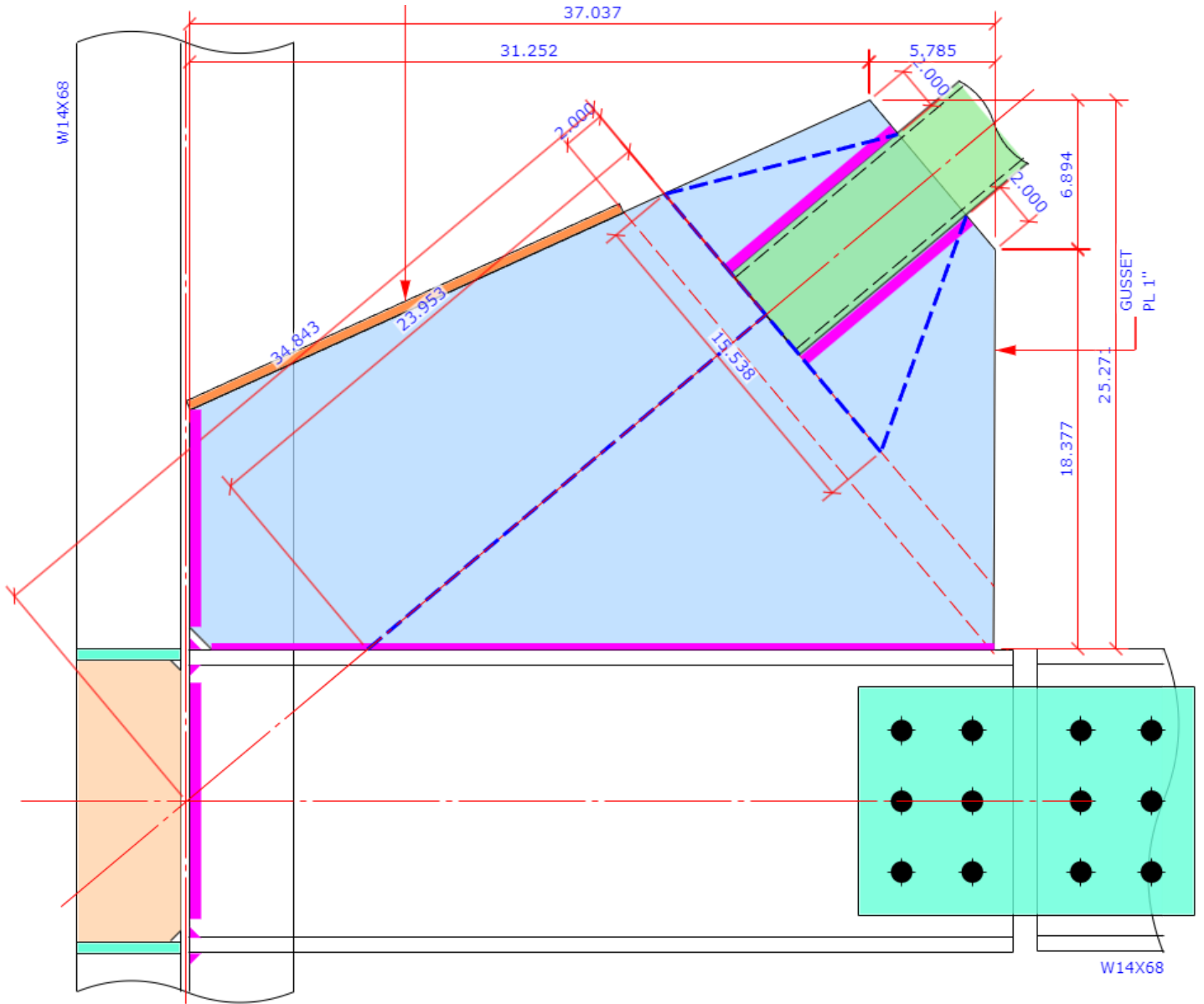


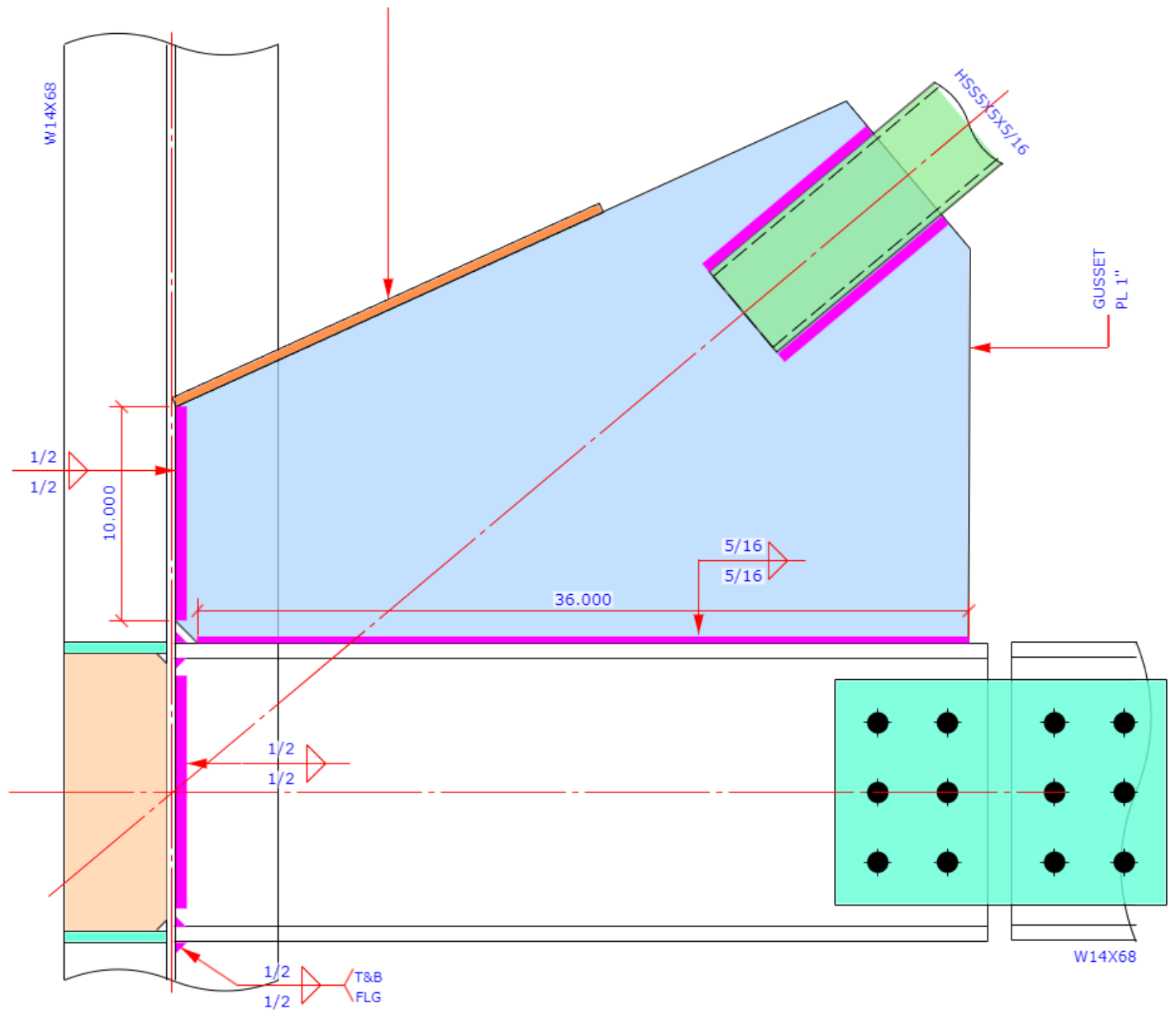


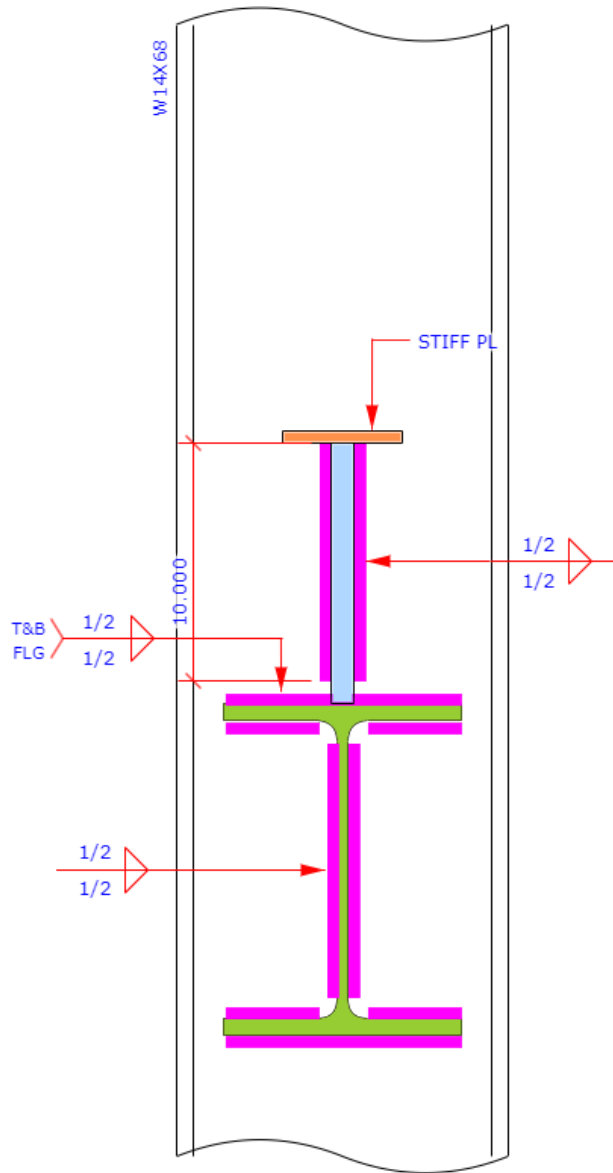
Sketch	Vertical Brace Connection	SCBFBR4	Code=AISC 360-16 ASD
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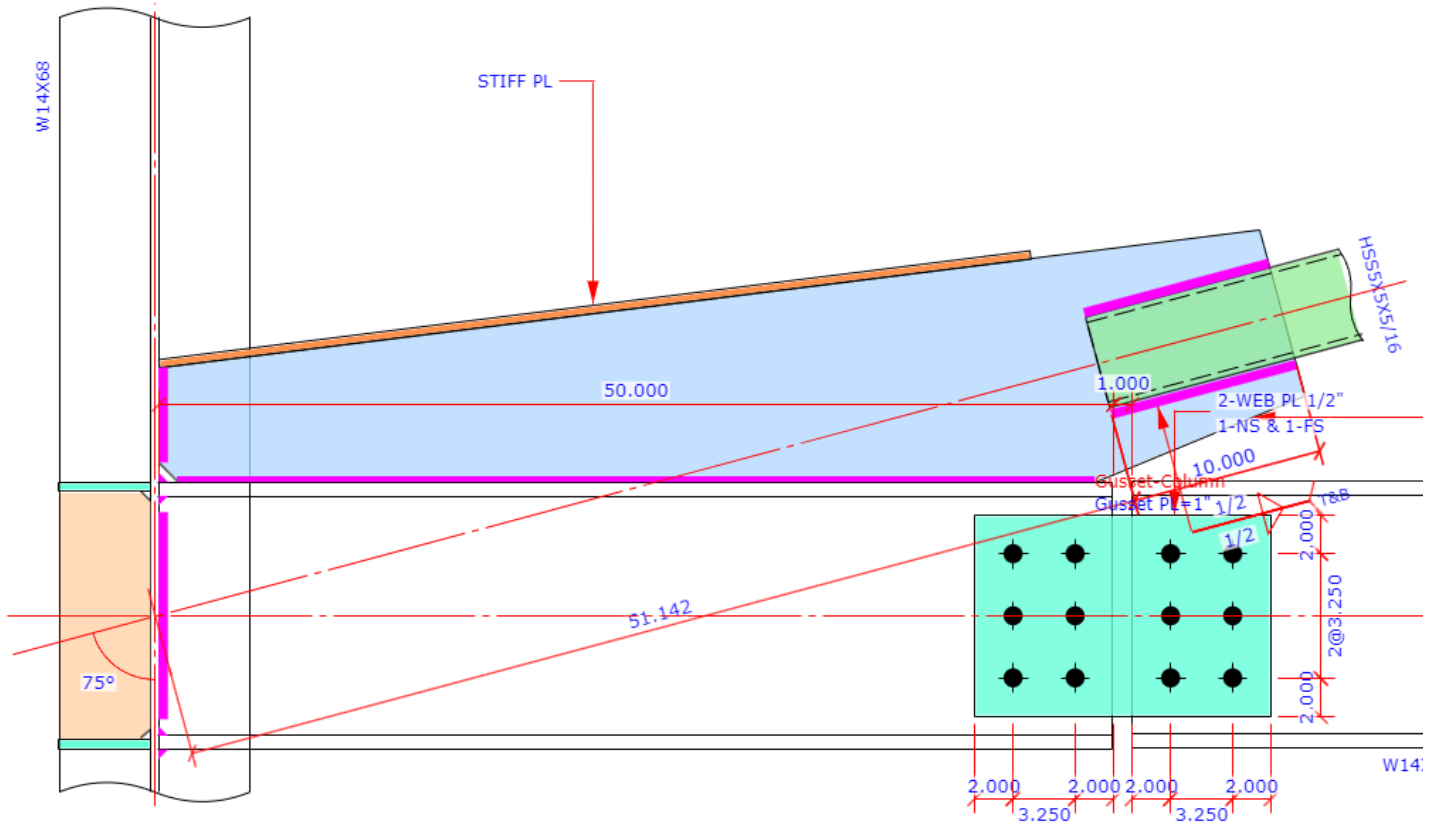
* All Bolts are 1" Dia. A325-N



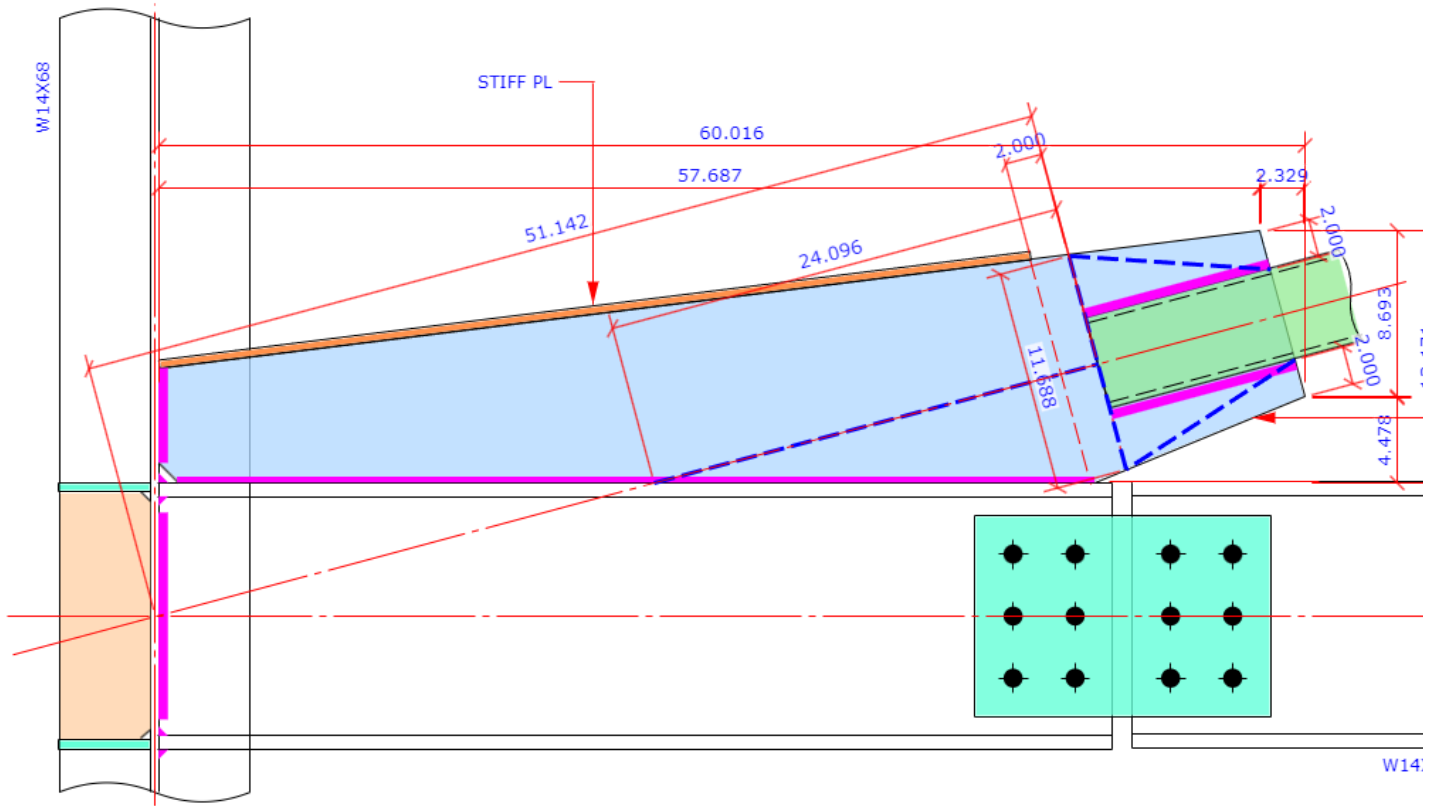


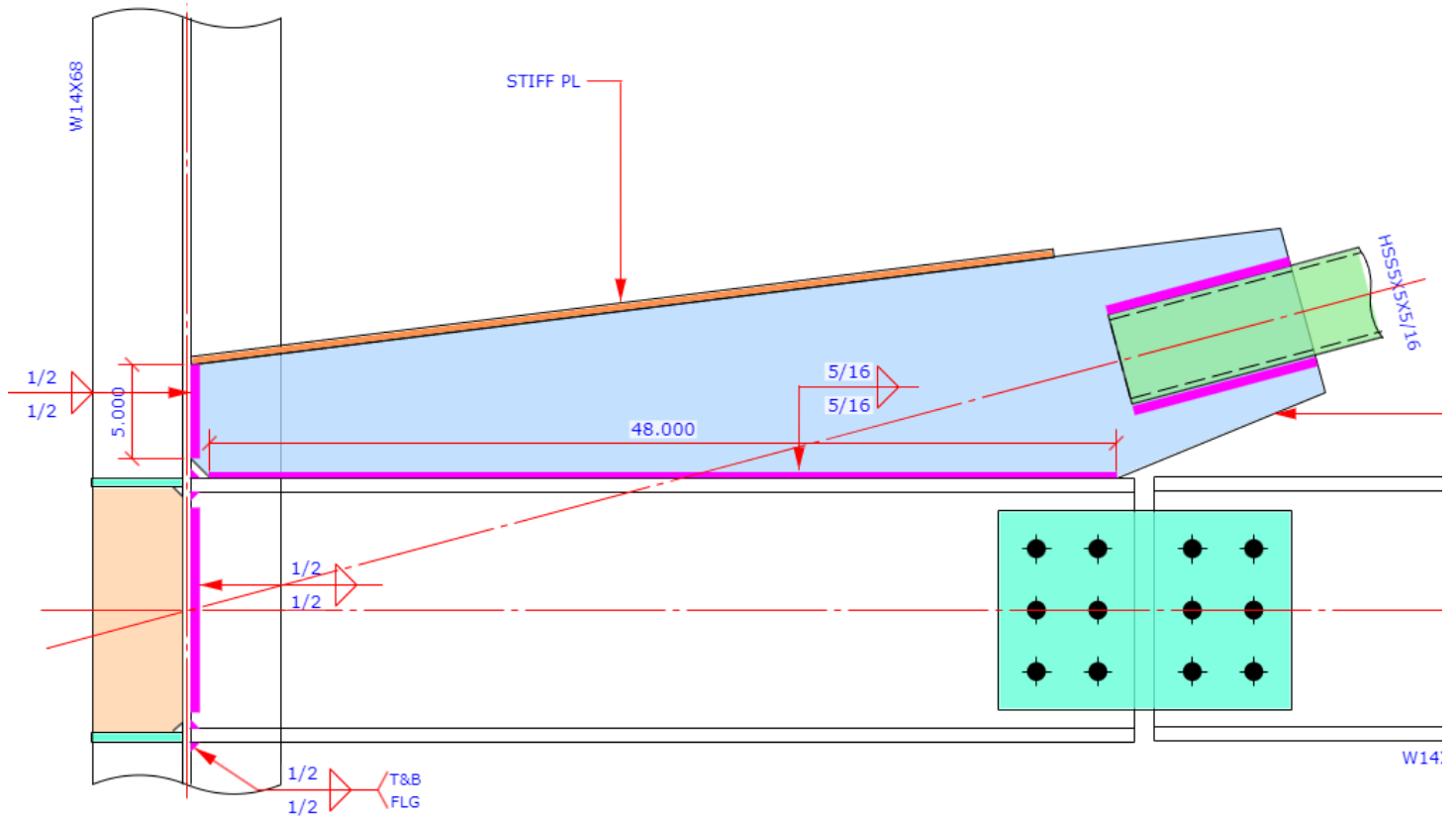


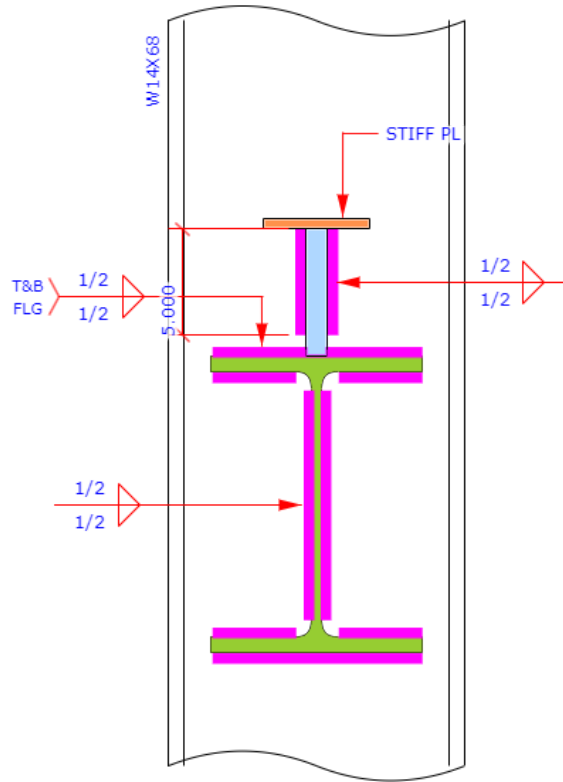
Sketch	Vertical Brace Connection	SCBFBR5	Code=AISC 360-16 ASD
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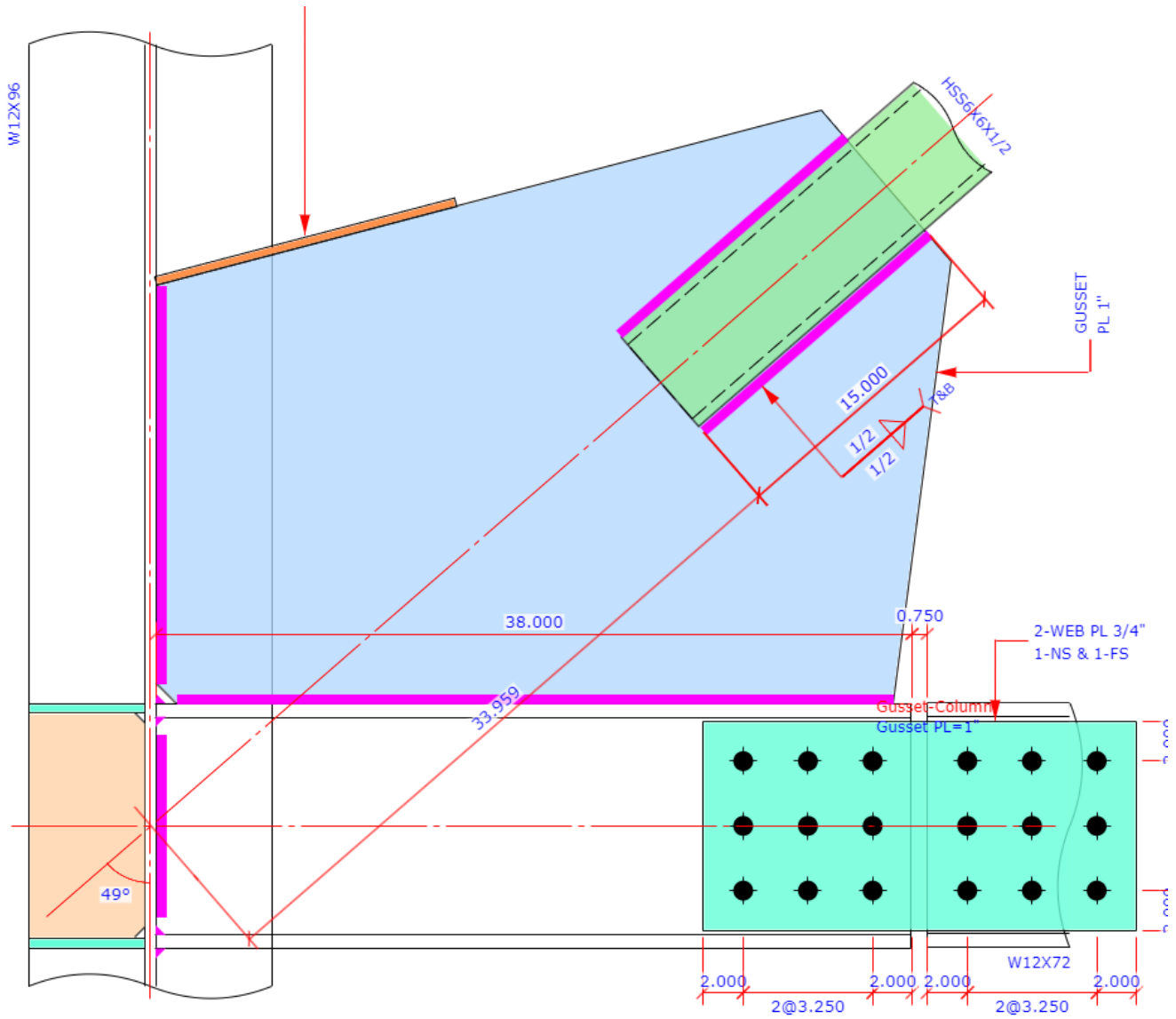
* All Bolts are 1" Dia. A325-N



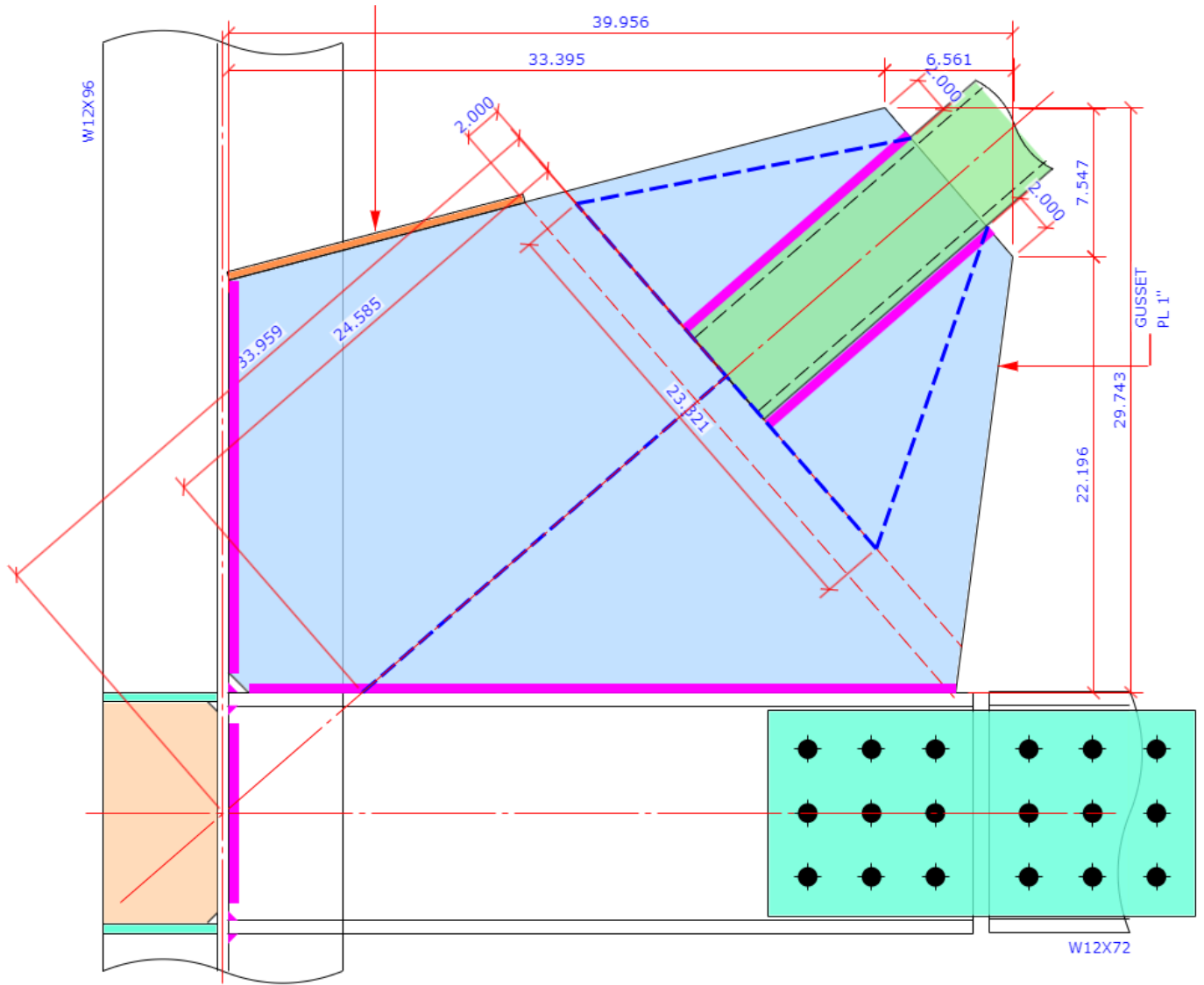


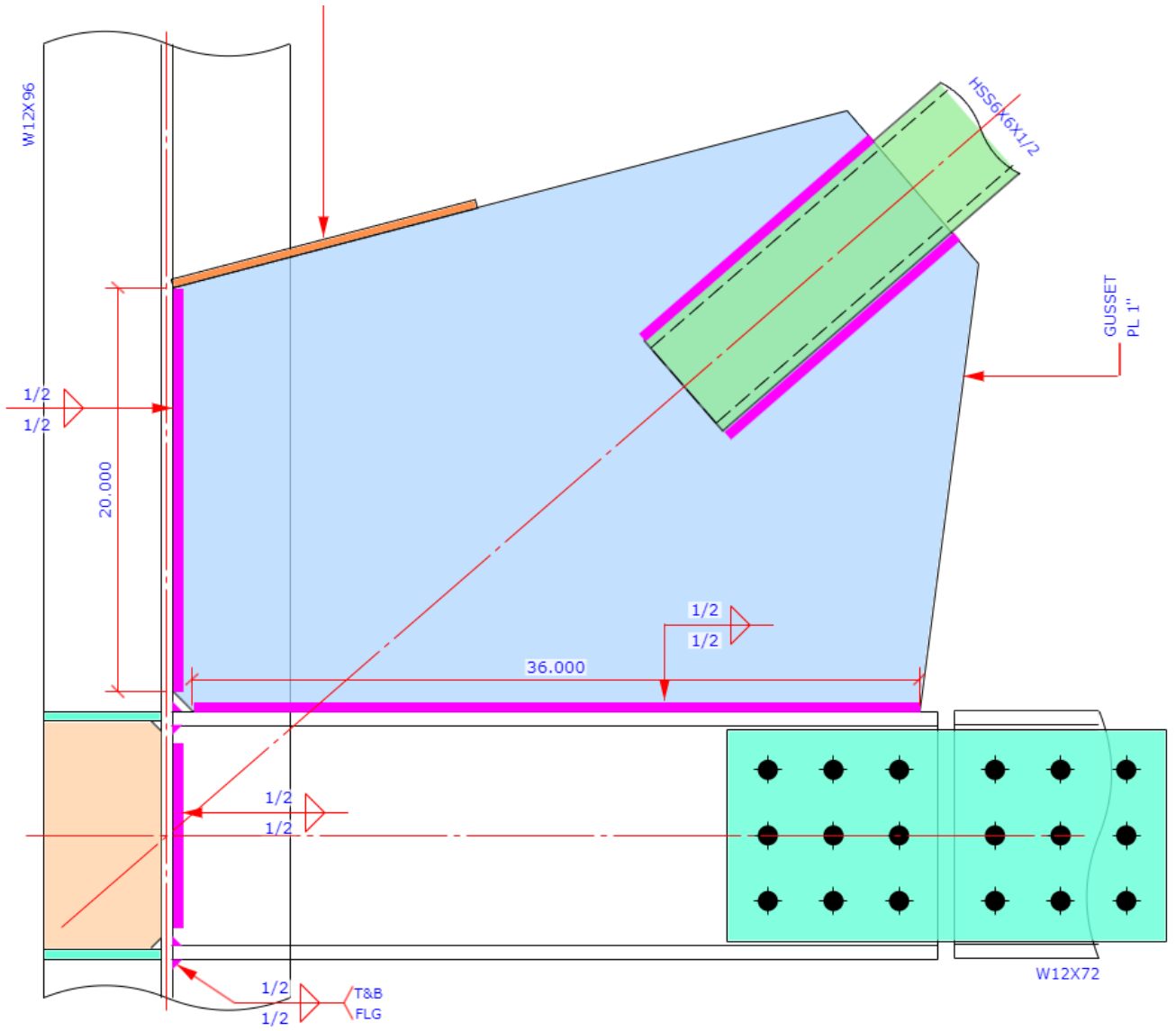


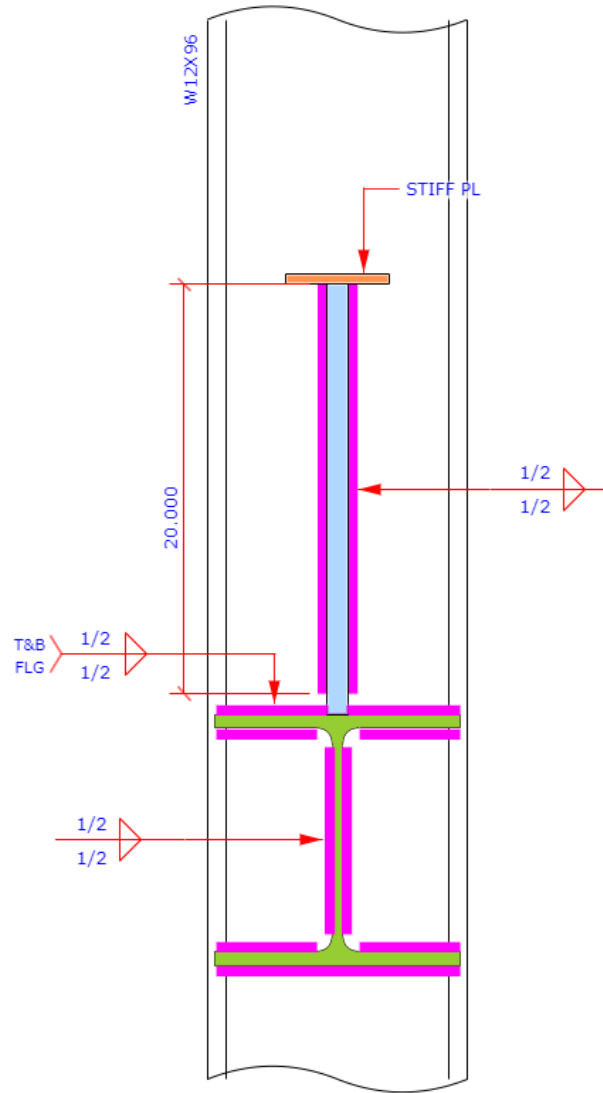
Sketch	Vertical Brace Connection	SCBFBR6	Code=AISC 360-16 ASD
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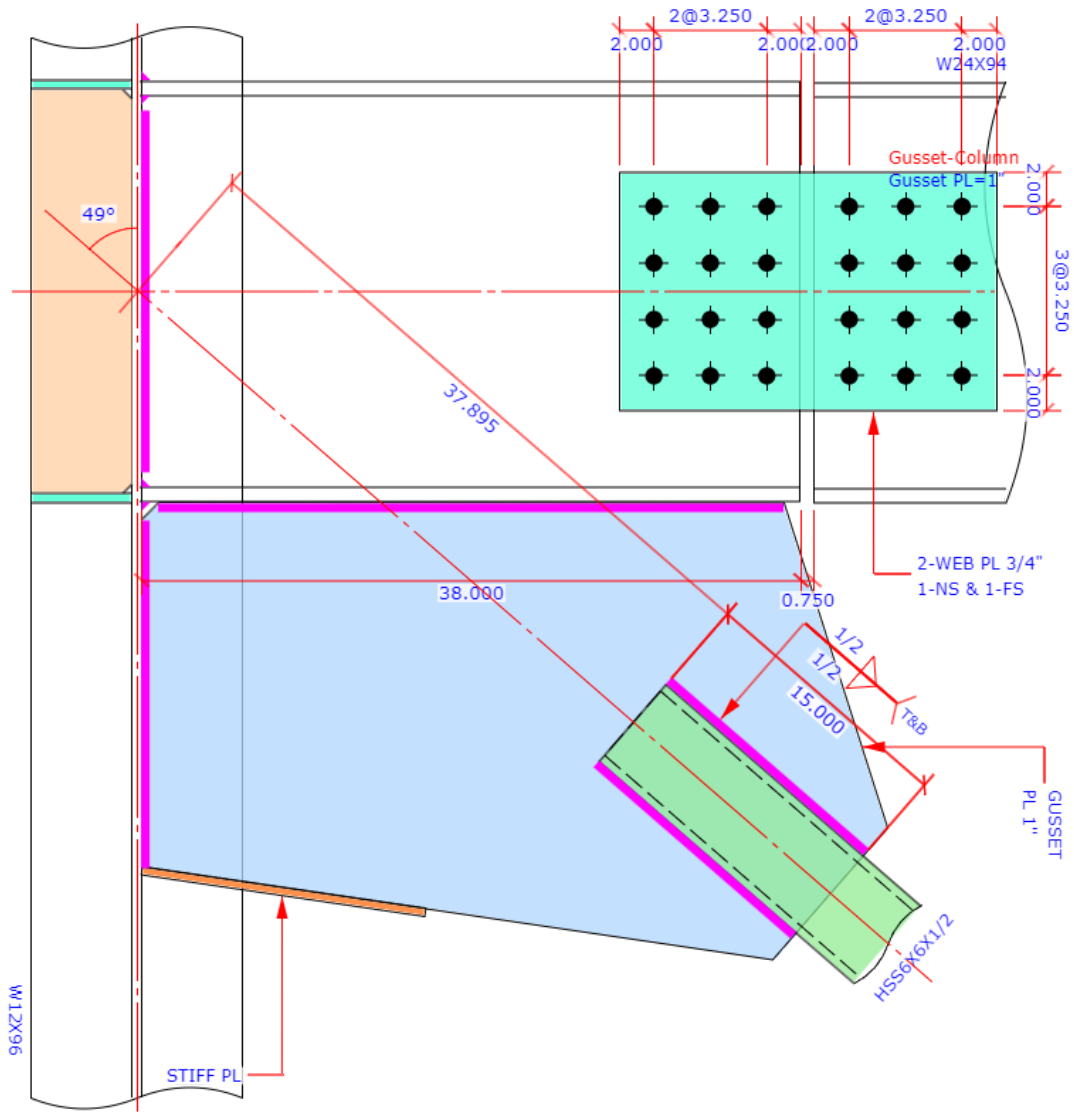
* All Bolts are 1" Dia. A325-N



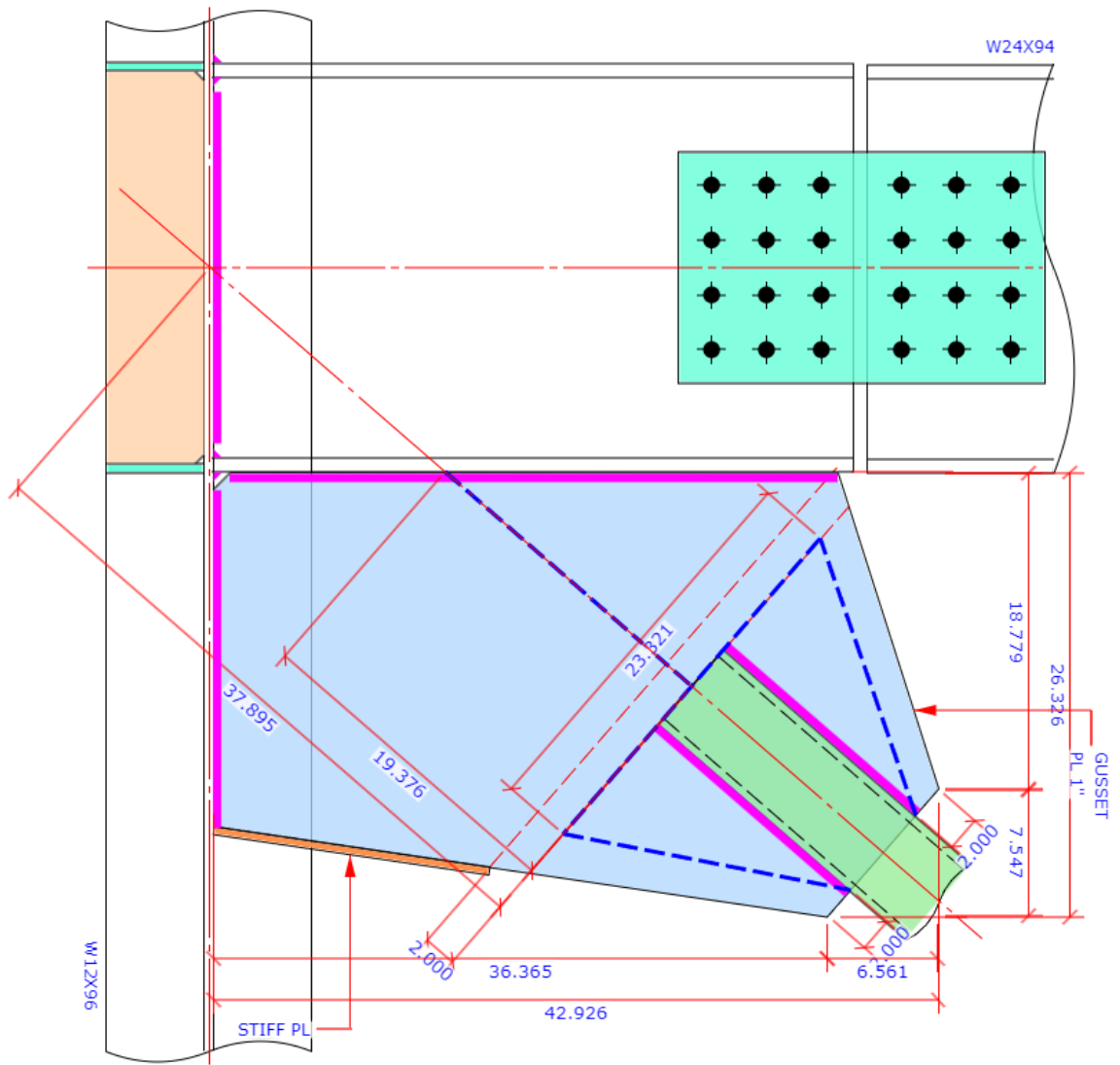


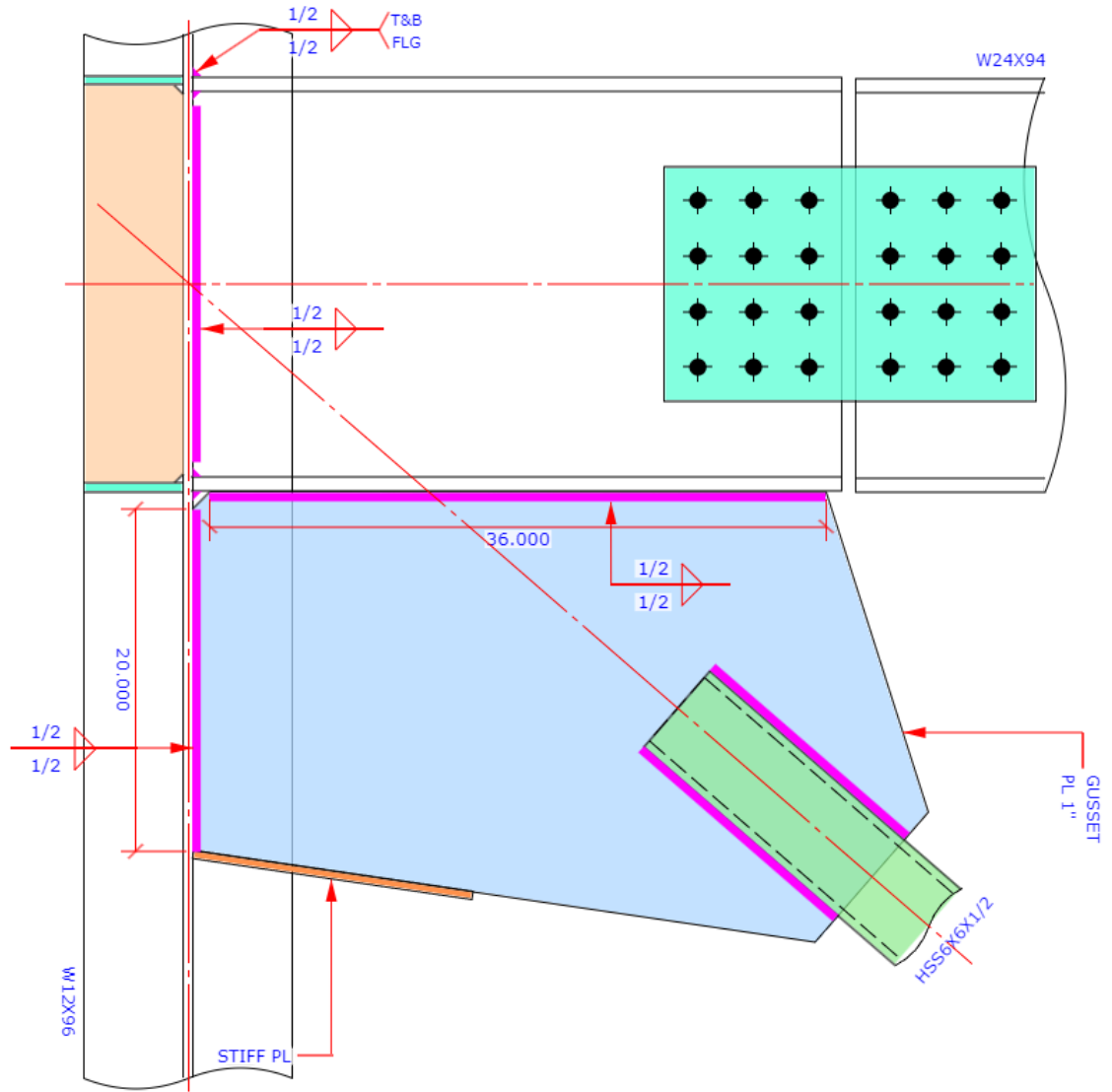


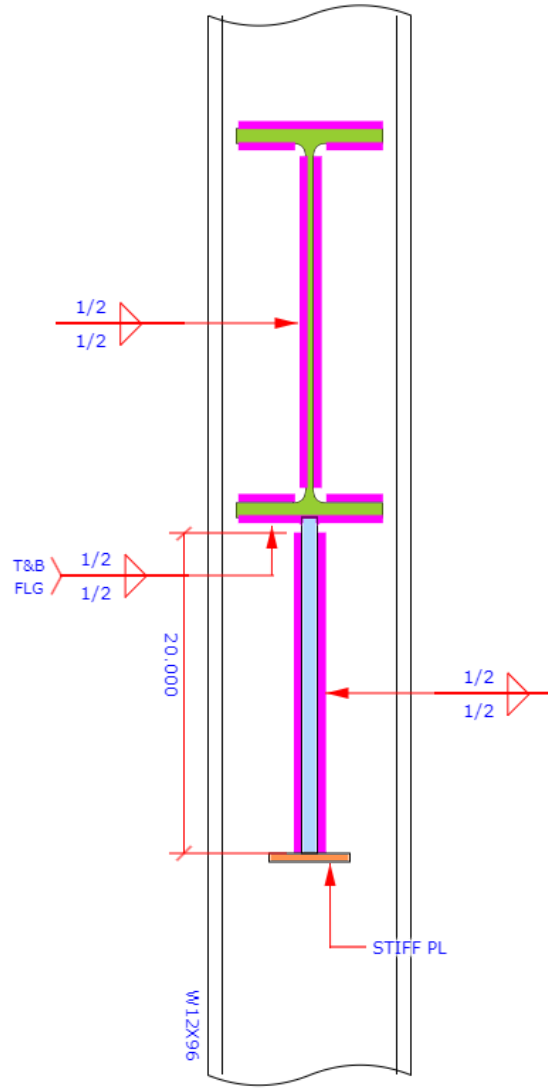
Sketch	Vertical Brace Connection	SCBFBR7	Code=AISC 360-16 ASD
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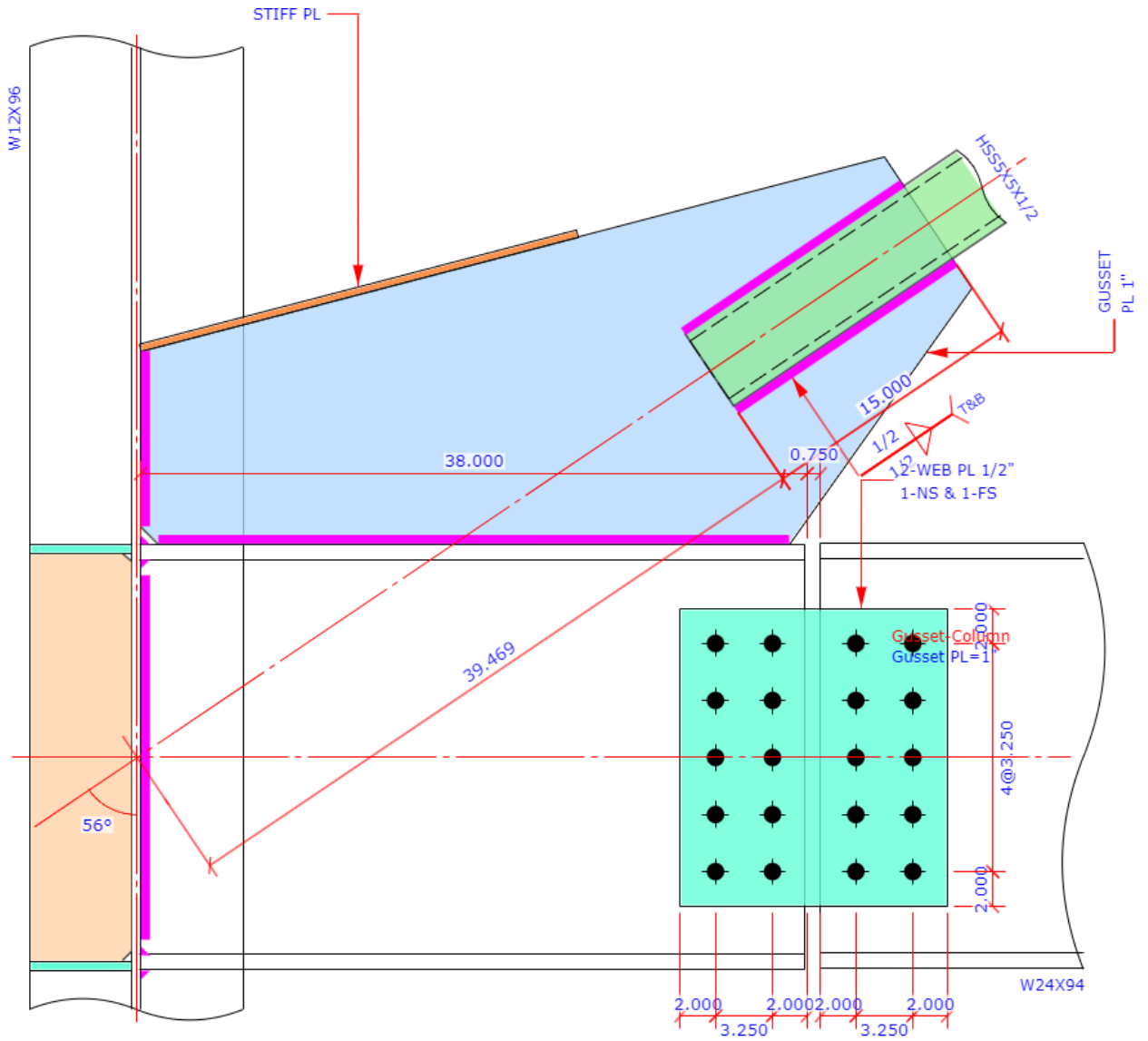
* All Bolts are 1" Dia. A325-N



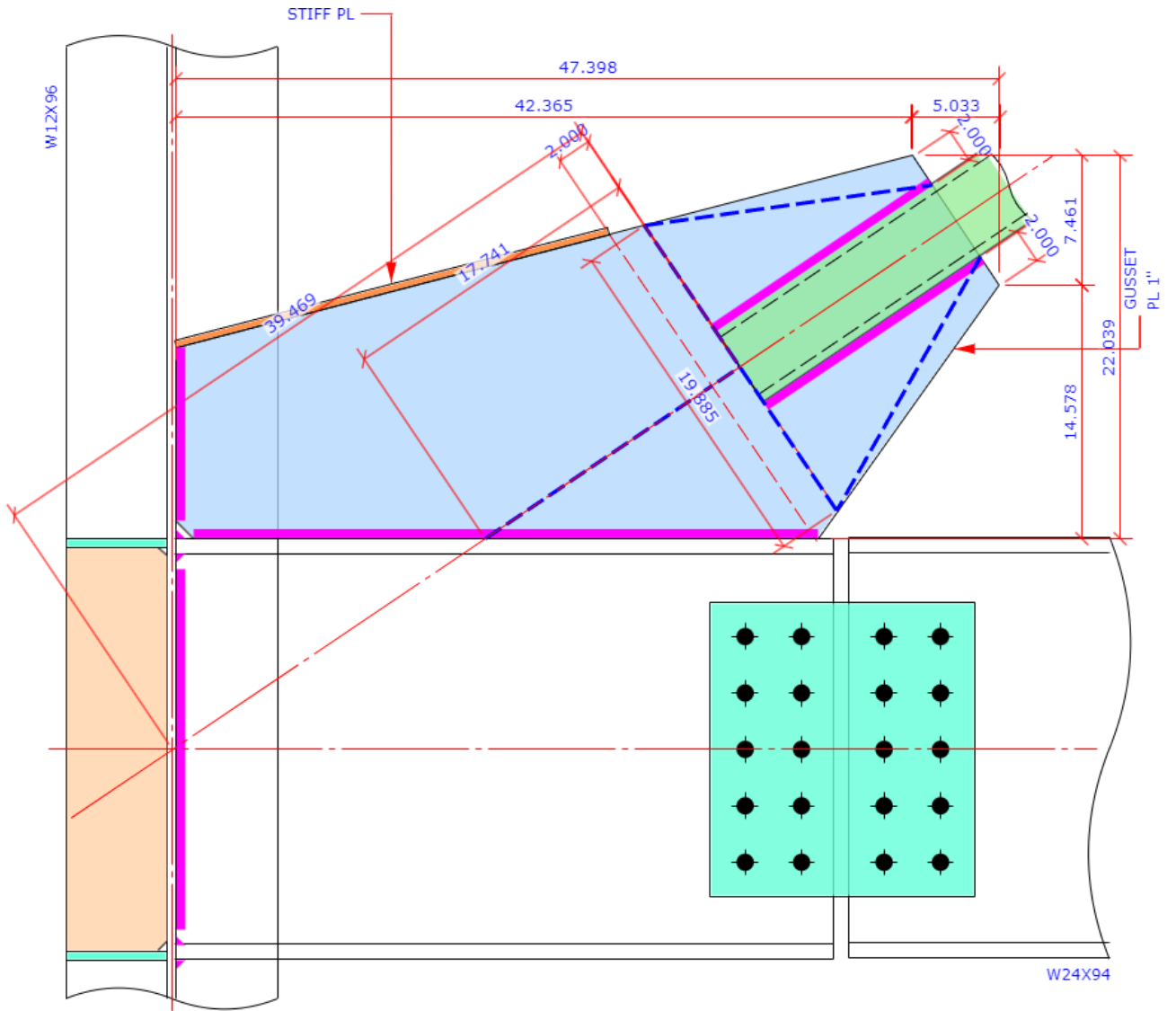


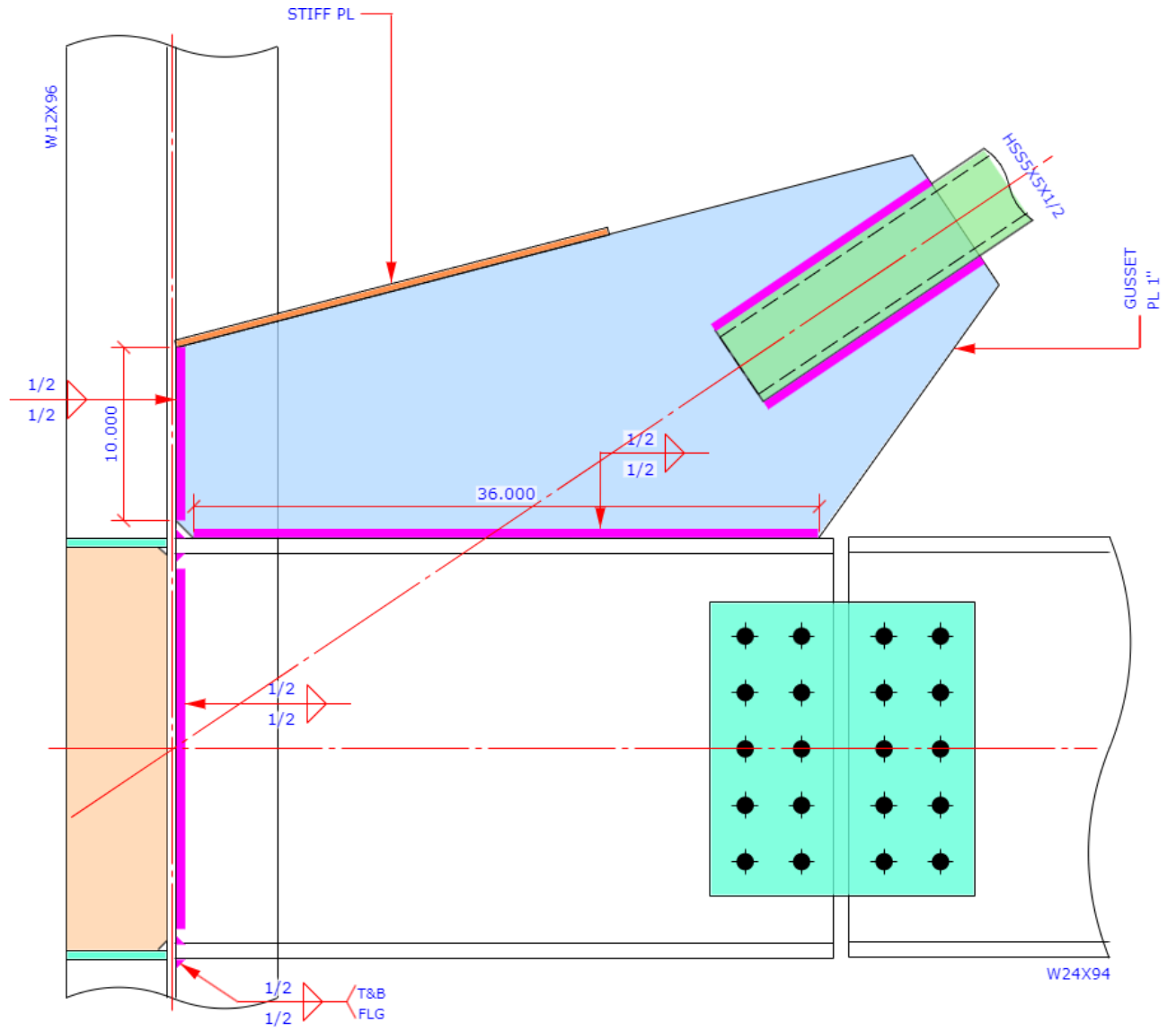


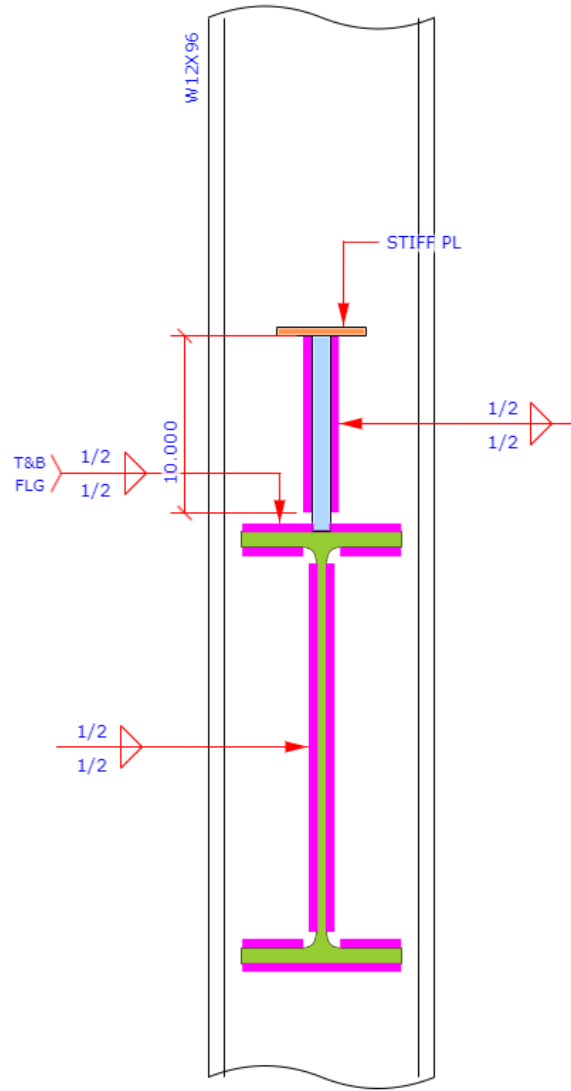
Sketch	Vertical Brace Connection	SCBFBR8	Code=AISC 360-16 ASD
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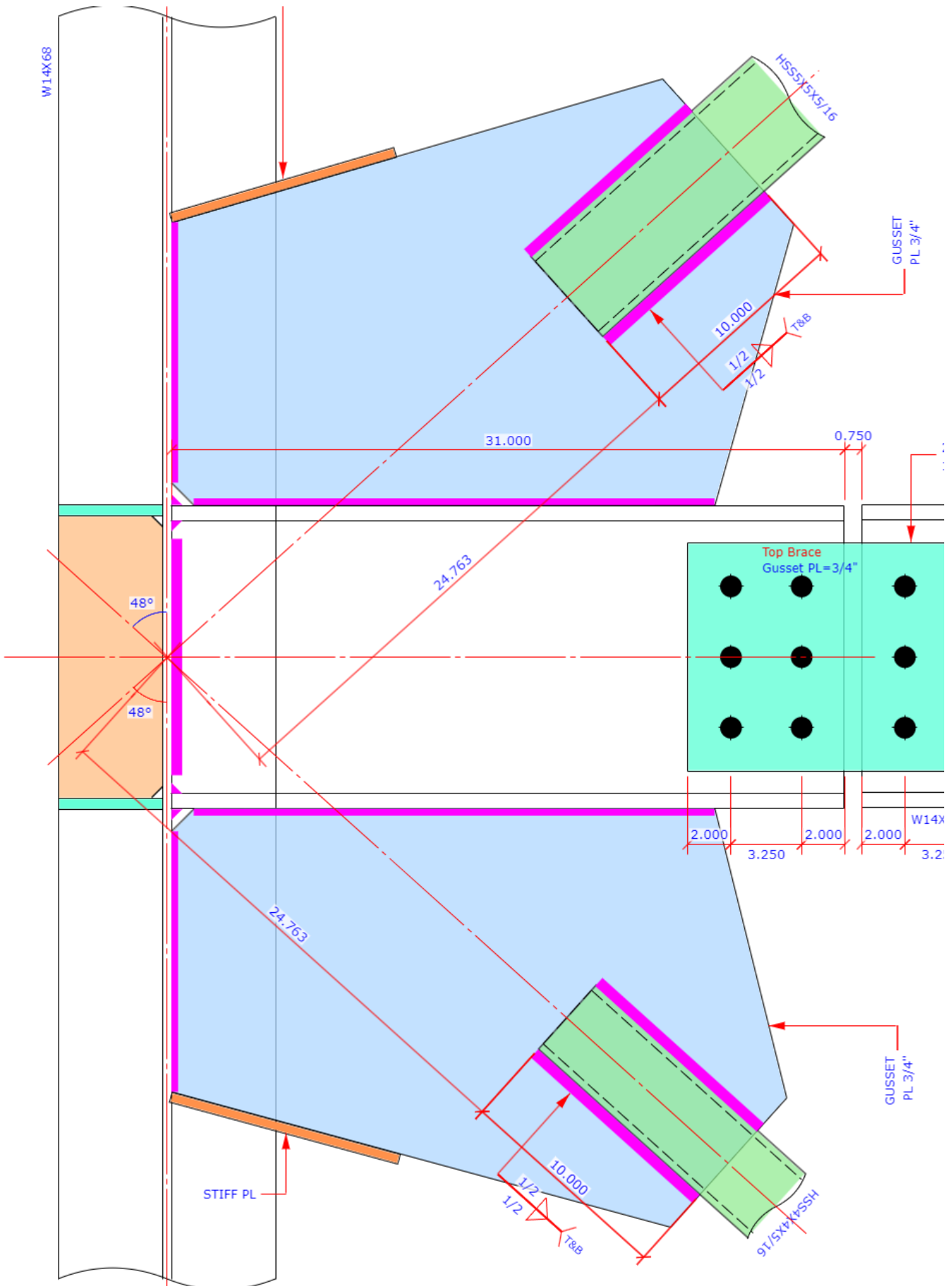
* All Bolts are 1" Dia. A325-N



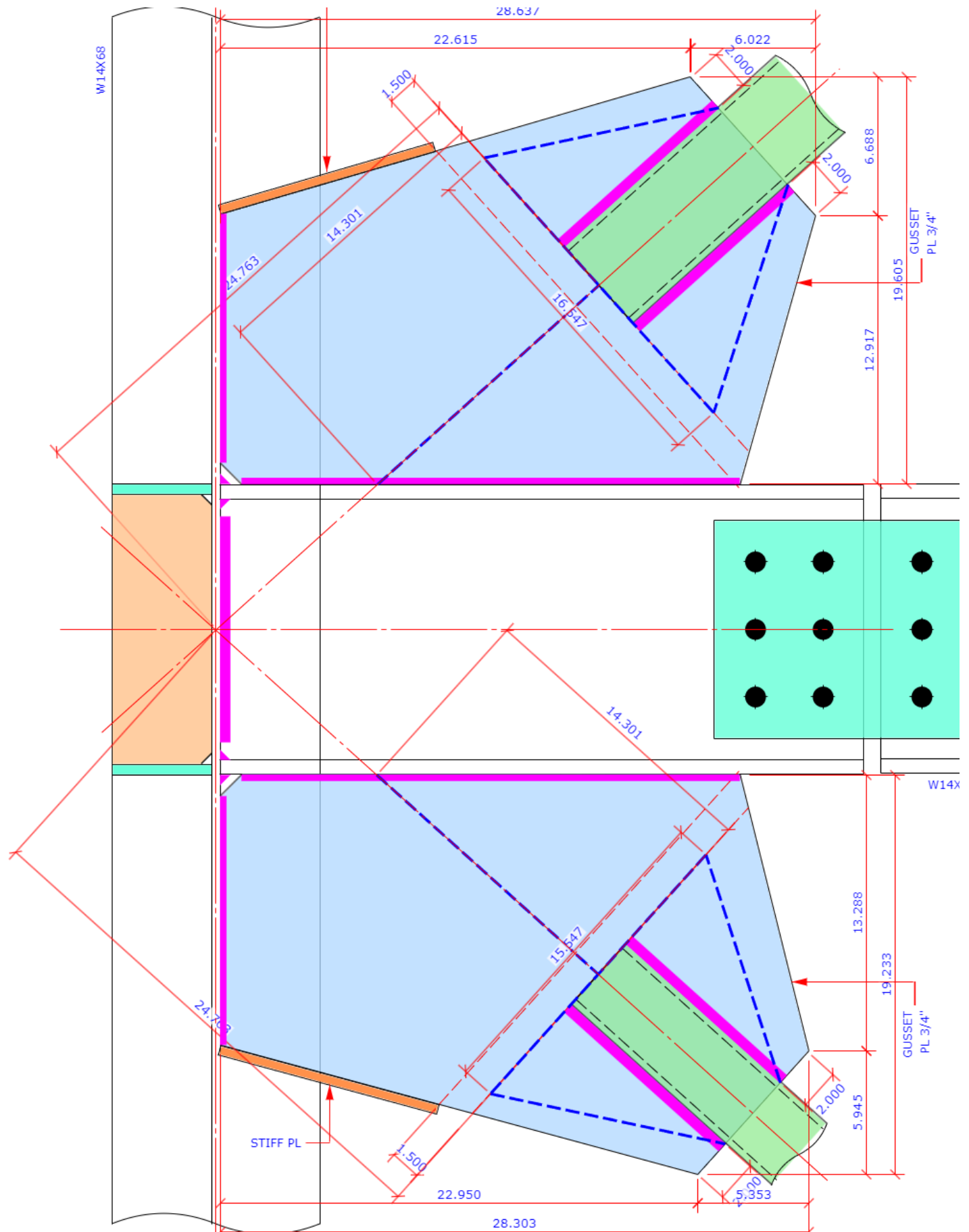


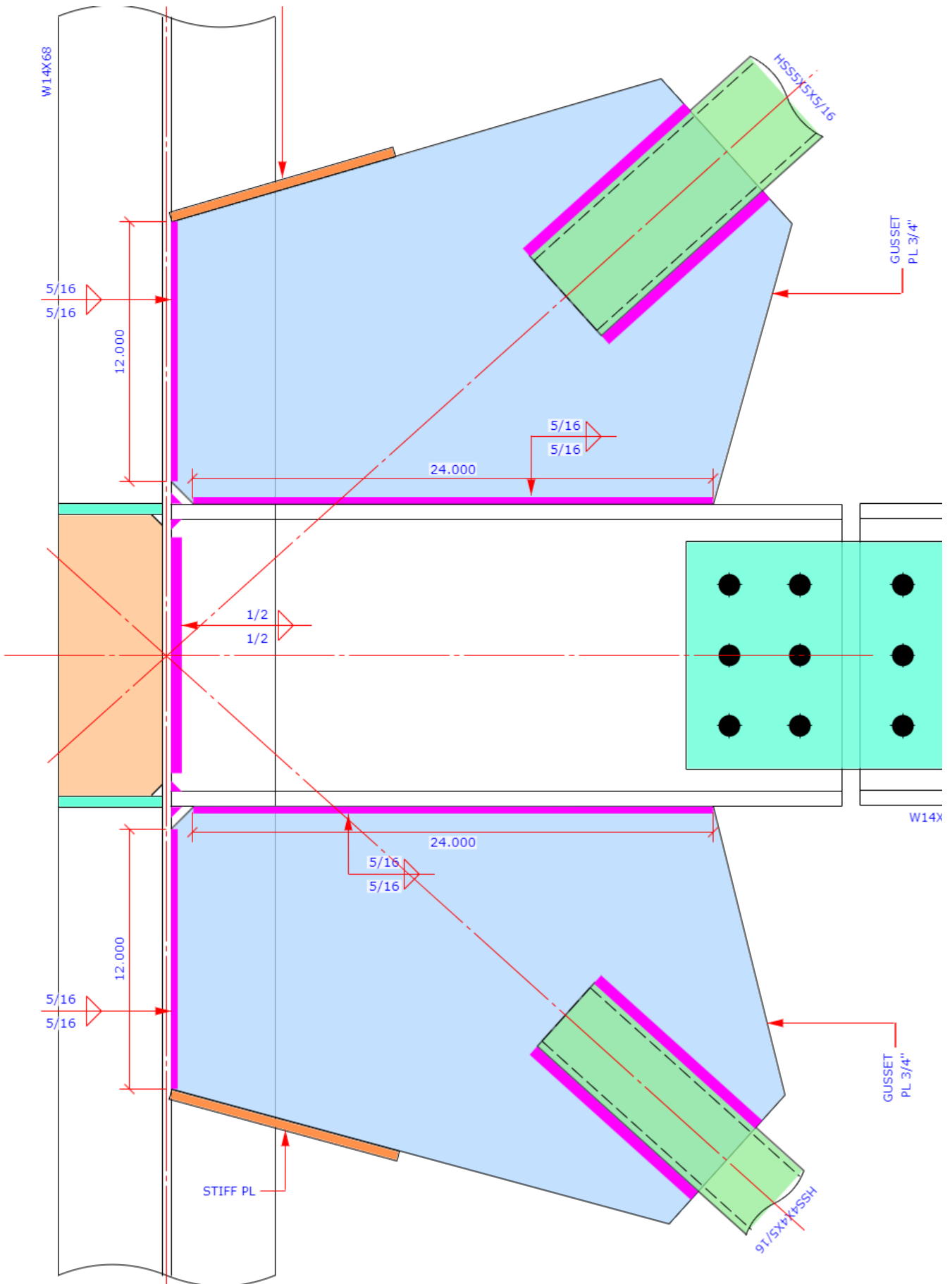


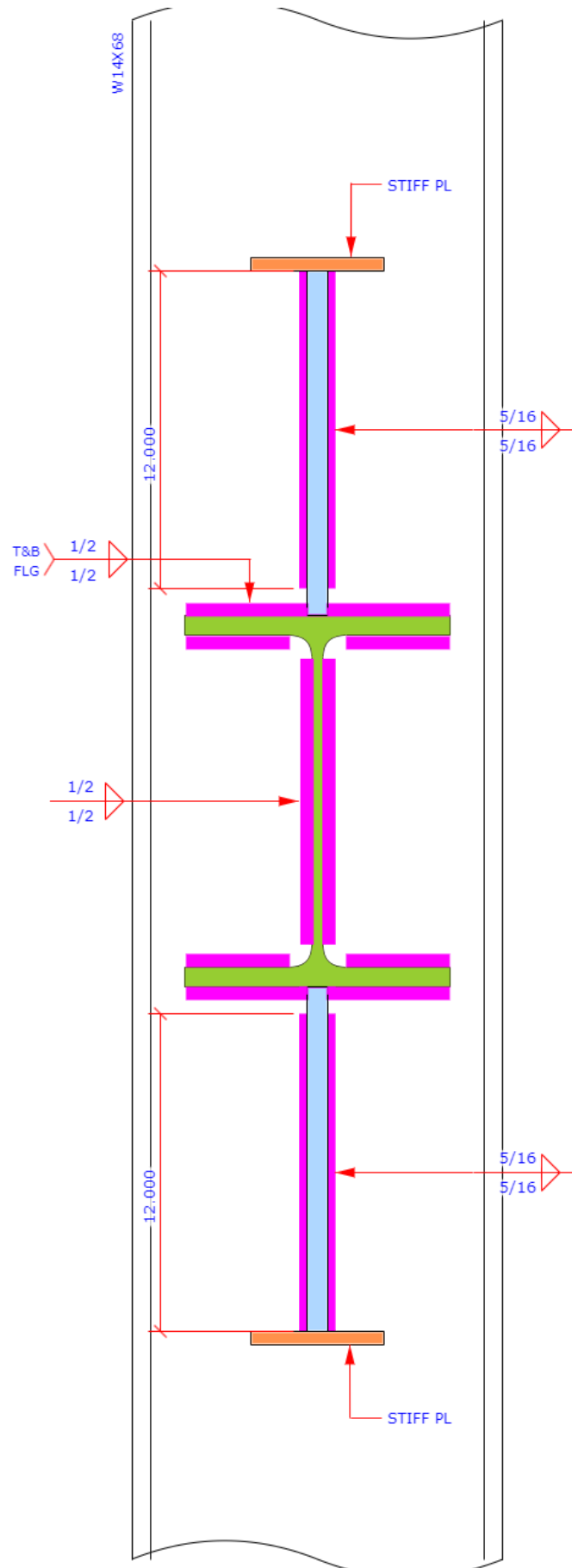
Sketch	Vertical Brace Connection	SCBFBR9	Code=AISC 360-16 ASD
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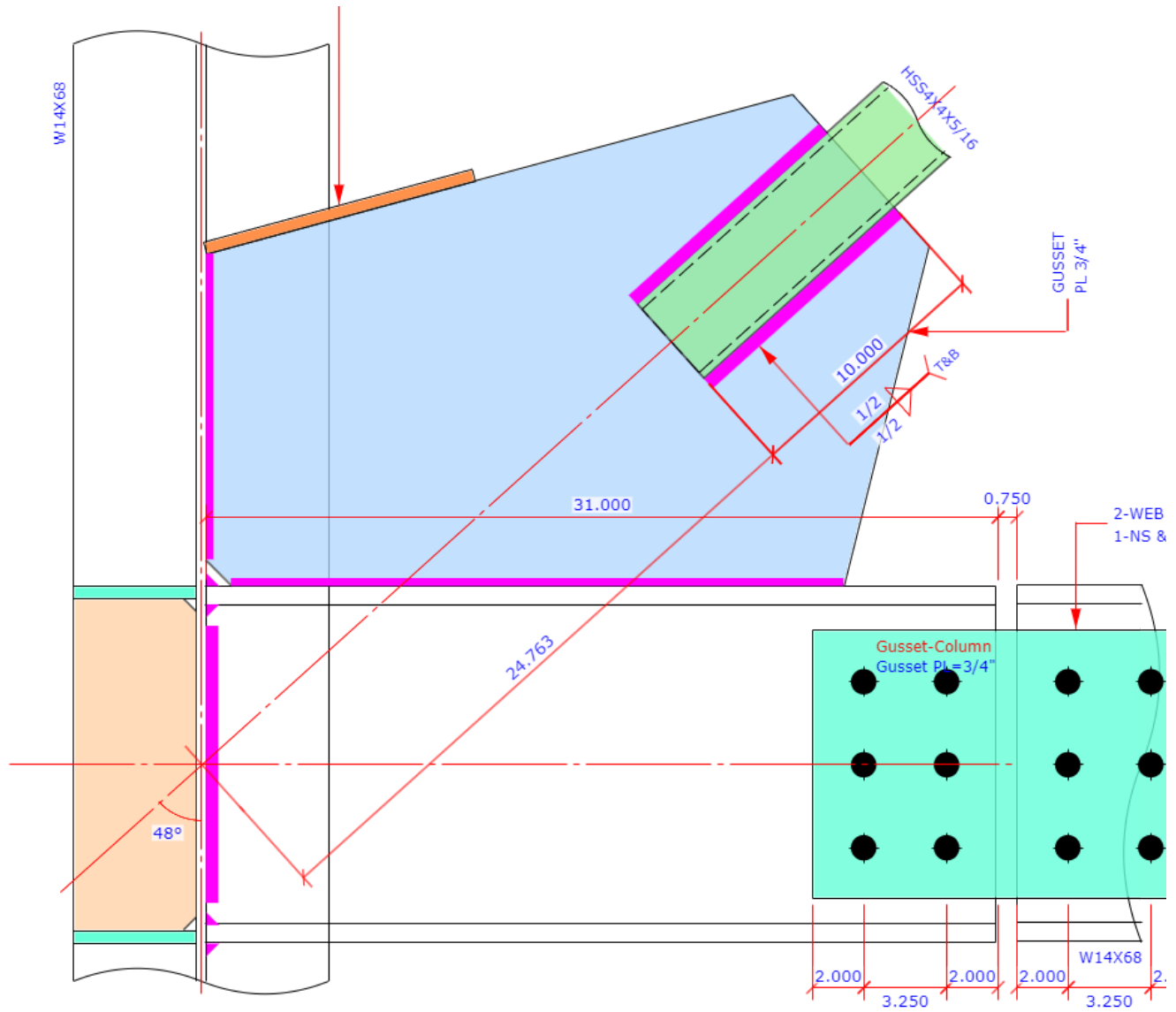
* All Bolts are 1" Dia. A325-N



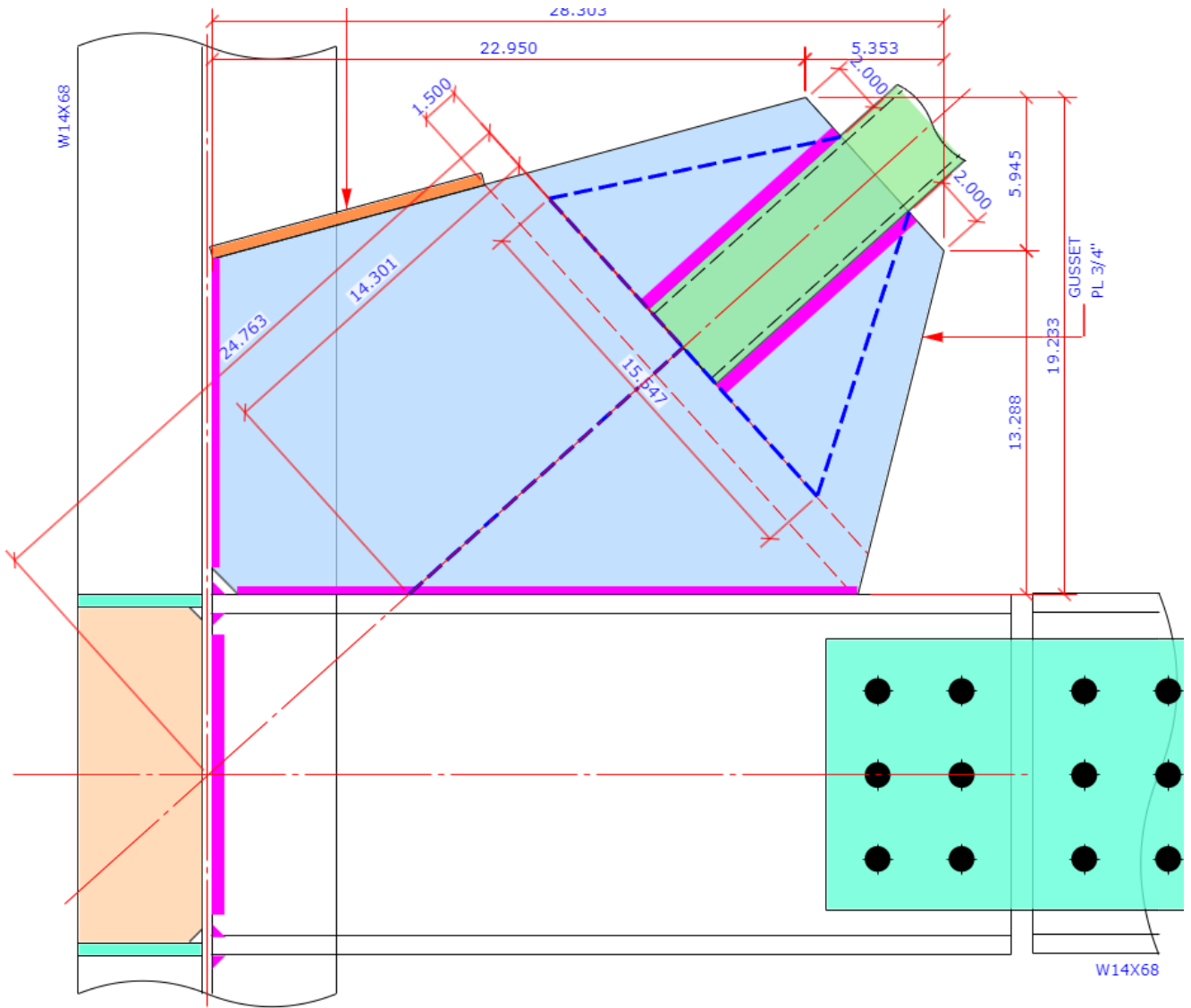


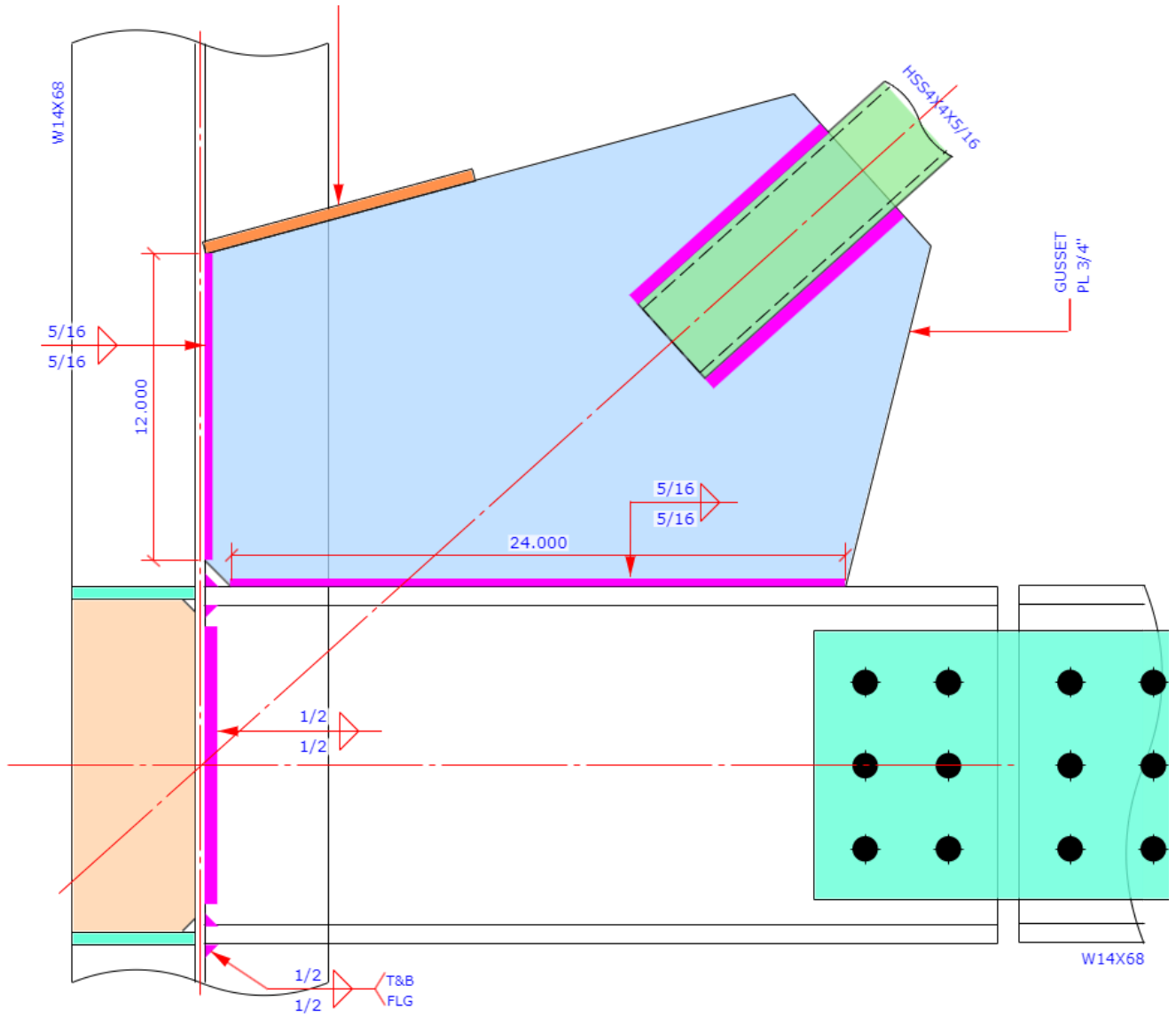


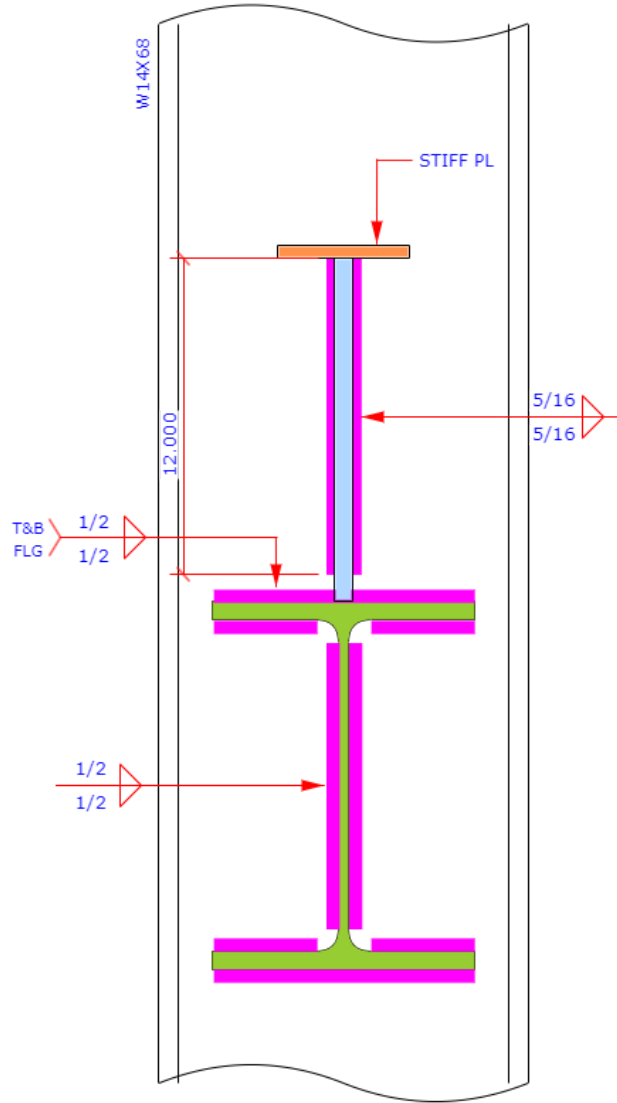
Sketch	Vertical Brace Connection	SCBFBR10	Code=AISC 360-16 ASD
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* All Bolts are 1" Dia. A325-N





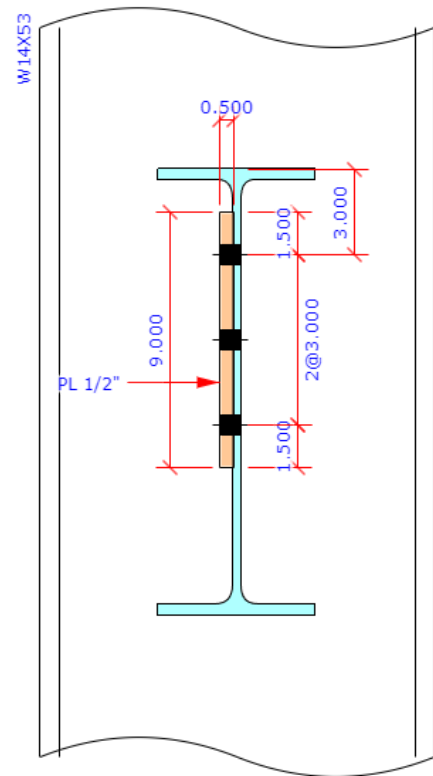
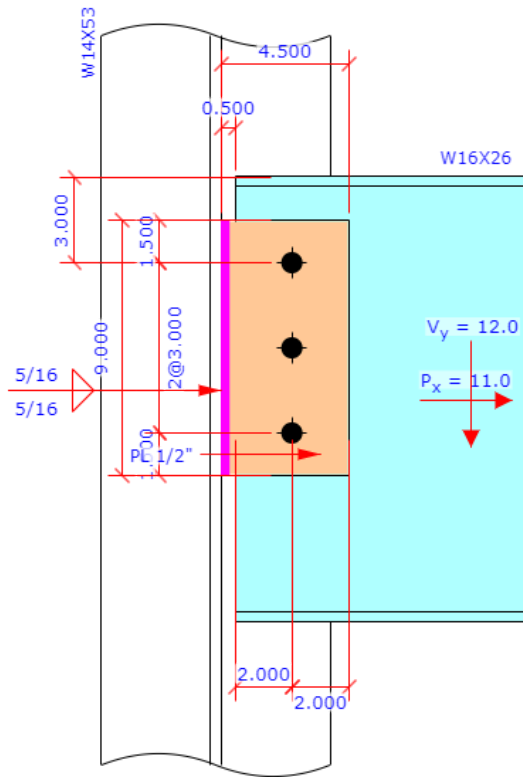


Sketch

Shear Connection

ST1

Code=AISC 360-16 ASD



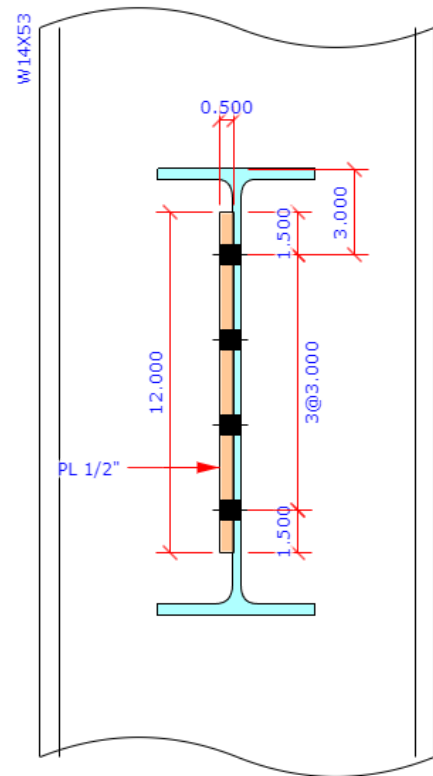
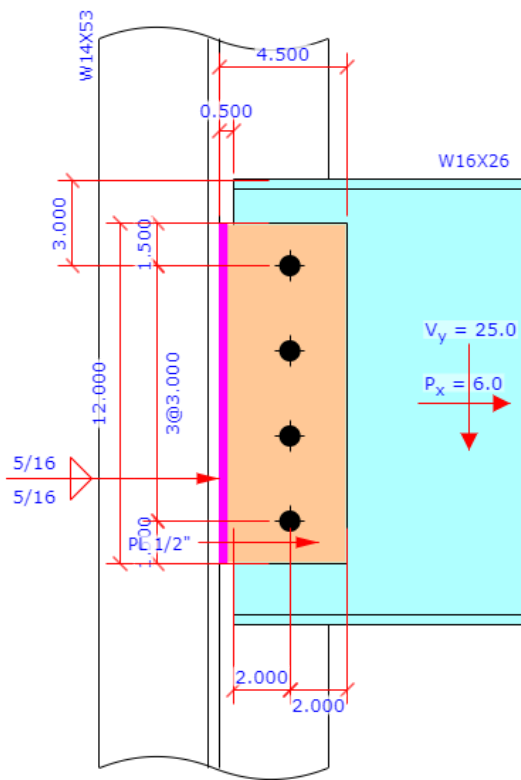
- * All Bolts are 3/4" Dia. A325-N
- * Add 1/2" Column Web Stiffener Plates for End Columns

Sketch

Shear Connection

ST3

Code=AISC 360-16 ASD



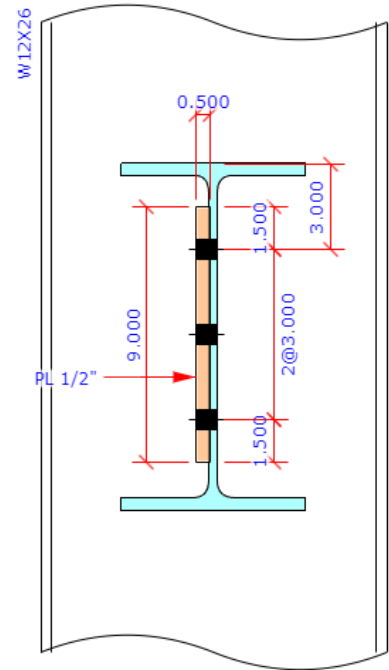
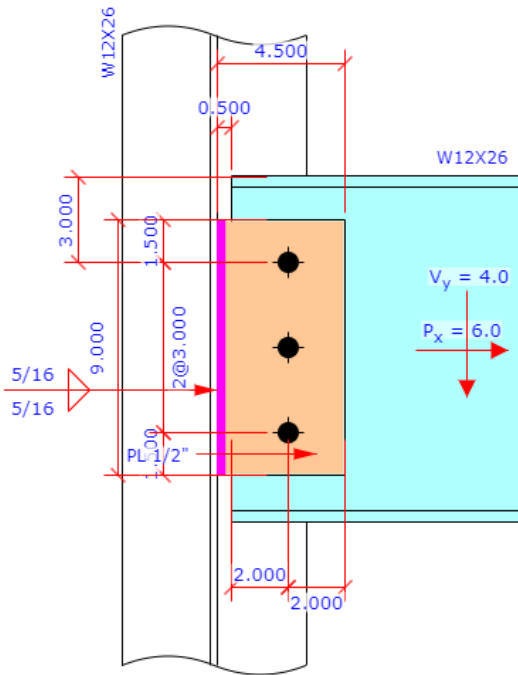
- * All Bolts are 3/4" Dia. A325-N
- * Add 1/2" Column Web Stiffener Plates for End Columns

Sketch

Shear Connection

ST4

Code=AISC 360-16 ASD



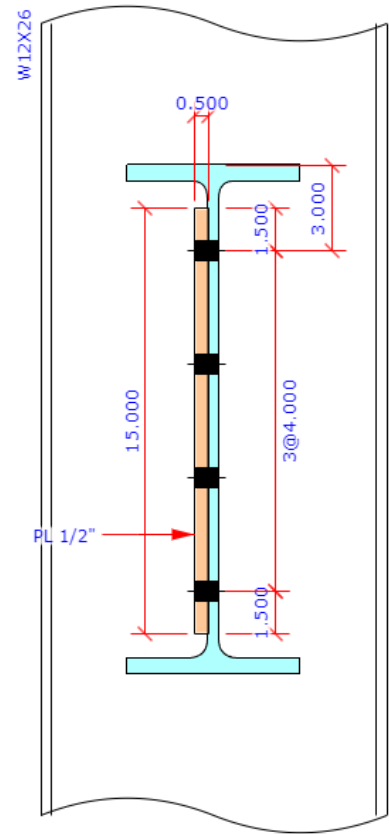
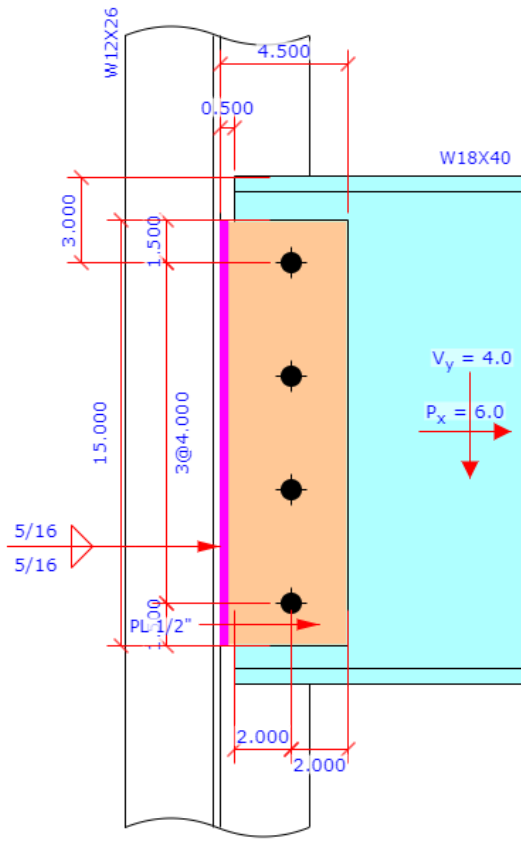
- * All Bolts are 3/4" Dia. A325-N
- * Add 1/2" Column Web Stiffener Plates for End Columns

Sketch

Shear Connection

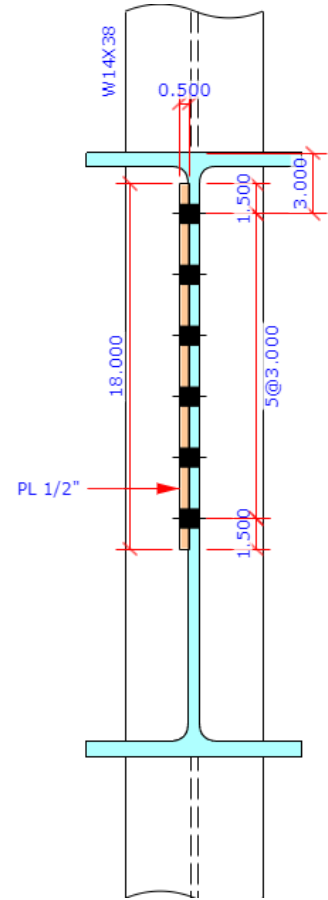
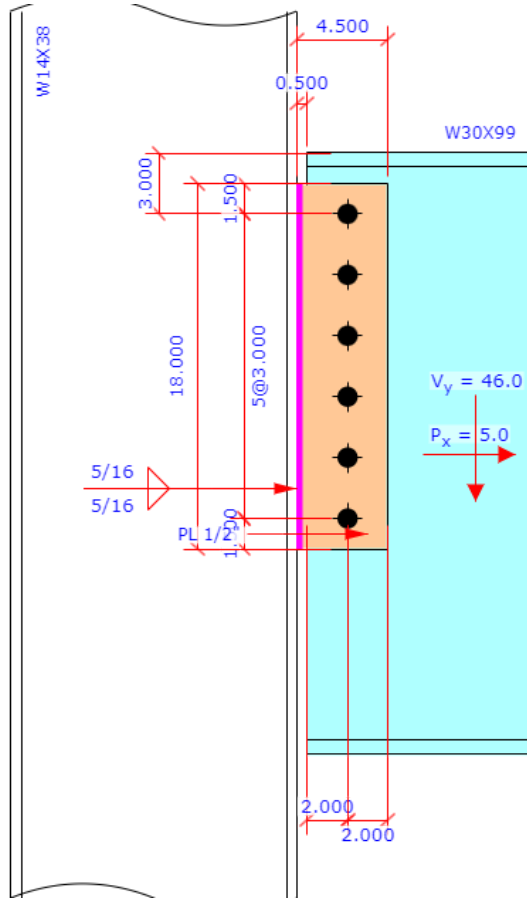
ST5

Code=AISC 360-16 ASD



- * All Bolts are 3/4" Dia. A325-N
- * Add 1/2" Column Web Stiffener Plates for End Columns

Sketch	Shear Connection	ST6	Code=AISC 360-16 ASD
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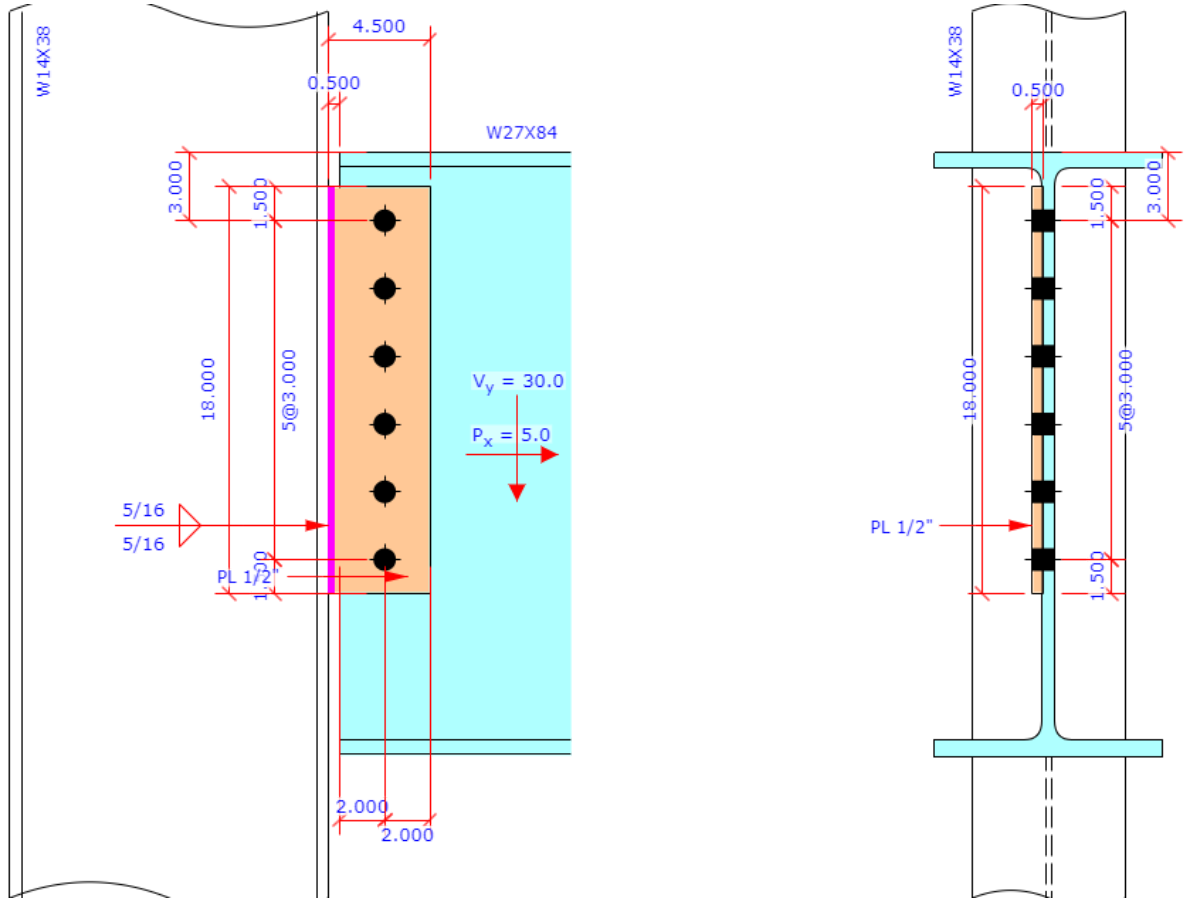
* All Bolts are 3/4" Dia. A325-N
 * Add 1/2" Column Web Stiffener Plates for End Columns

Sketch

Shear Connection

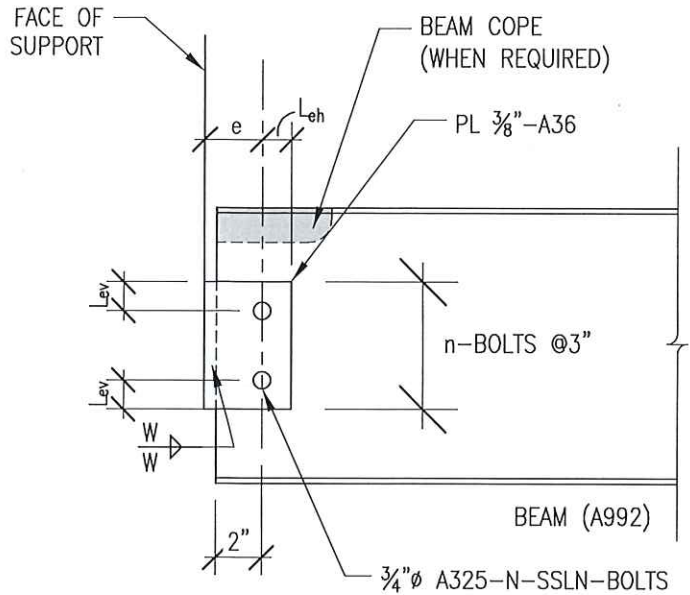
ST7

Code=AISC 360-16 ASD



- * All Bolts are 3/4" Dia. A325-N
- * Add 1/2" Column Web Stiffener Plates for End Columns

GENERIC SINGLE-PLATE CONNECTIONS AISC 13th EDITION MANUAL - ASD



DESIGN LIMITATIONS:

1. $e = 2 \frac{1}{2}$ " (3" MAX) --- PER PAGE 10-104
2. $L_{eh} \geq 2 \cdot d_b$ --- PER PAGE 10-101
USE $L_{eh} = 1 \frac{1}{2}$ " (FOR THIS DESIGN)
3. L_{ev} --- SEE TABLE 33.4
USE $L_{ev} = 1 \frac{1}{2}$ " (FOR THIS DESIGN)
4. CONNECTION TO HSS (A500-B):
 - a. $b/t < 35.1$ --- PER PAGE 10-158
 - b. $t_{wall} \geq \frac{1}{4}$ " --- PER EQ. K1-10
5. CONNECTION TO GIRDER WEBS (FOR $\frac{1}{4}$ " WELD)
 - a. FOR ONE-SIDED CONNECTION t_{wg} IS LESS THAN $\frac{3}{16}$ ", MULTIPLY CAPACITY BY FACTOR $[t_{wg}/0.1875]$
 - b. FOR TWO-SIDED CONNECTION: IF GIRDER WEB THICKNESS (t_{wg}) IS LESS THAN $\frac{3}{8}$ ", MULTIPLY CAPACITY BY THE FACTOR $[t_{wg}/0.375]$.

NO. OF BOLT ROWS	APPLICABLE BEAM SIZE	WELD SIZE	CONNECTION CAPACITY	MINIMUM BEAM WEB THICKNESS, $t_{w_{min}}$	
				UNCOPEd	COPEd AT TOP FLANGE
2	W12, W10, W8	$\frac{1}{4}$ "	21.20 KIPS	0.18 IN.	0.20 IN.
3	W18, W16, W14, W12	$\frac{1}{4}$ "	31.80 KIPS	0.18 IN.	0.22 IN.
4	W24, W21, W18, W16	$\frac{1}{4}$ "	42.40 KIPS	0.18 IN.	0.23 IN.
5	W30, W27, W24, W21, W18	$\frac{1}{4}$ "	53.00 KIPS	0.18 IN.	0.23 IN.
6	W40, W36, W33, W30, W27, W24, W21	$\frac{1}{4}$ "	63.60 KIPS	0.18 IN.	0.24 IN.
7	W44, W40, W36, W33, W30, W27, W24	$\frac{1}{4}$ "	74.20 KIPS	0.18 IN.	0.24 IN.
8	W44, W40, W36, W33, W30	$\frac{1}{4}$ "	84.80 KIPS	0.18 IN.	0.24 IN.
9	W44, W40, W36, W33	$\frac{1}{4}$ "	95.40 KIPS	0.18 IN.	0.24 IN.
10	W44, W40, W36	$\frac{1}{4}$ "	106.00 KIPS	0.18 IN.	0.24 IN.

NOTE:

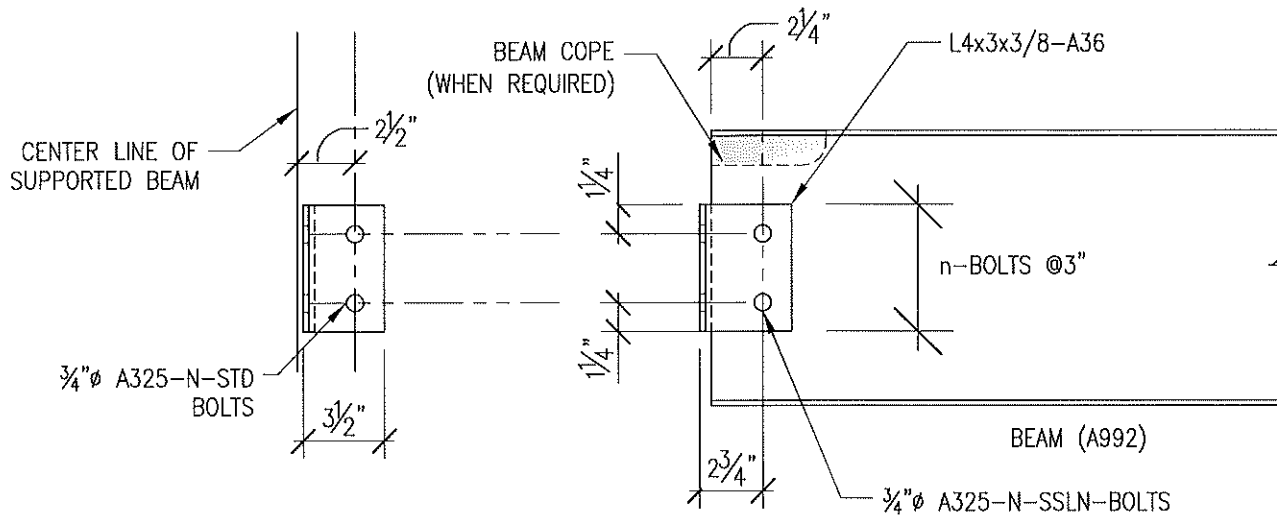
1. FOR BEAM WEBS LESS THAN $t_{w_{min}}$, MULTIPLY THE ABOVE BY $t_w/t_{w_{min}}$
2. WELD CLASSIFICATION = E70XX



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(410) 742-7299

JOB NAME CPFD - Freezer Additions
JOB NUMBER 221205 FILE _____
DRAWN BY _____ DATE _____
SHEET NO. _____ OF _____ SCALE _____

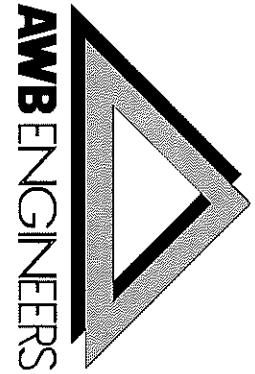
GENERIC-ALL-BOLTED SINGLE-ANGLE CONNECTION AISC 13th EDITION MANUAL - ASD



NO. OF BOLT ROWS	ANGLE SIZE	APPLICABLE BEAM SIZE	C (TABLE 10-10)	CONNECTION CAPACITY	MINIMUM BEAM WEB THICKNESS, $t_{w_{min}}$	
					UNCOPED	COPED AT TOP FLANGE
2	L4x3½x¾x5½	W12, W10, W8	1.03	10.92 KIPS	0.09 IN.	0.10 IN.
3	L4x3½x¾x8½	W18, W16, W14, W12, W10* *LIMITED TO W10x12, 15, 17, 19, 22, 26, 30	1.99	21.09 KIPS	0.12 IN.	0.14 IN.
4	L4x3½x¾x11½	W24, W21, W18, W16	3.07	32.54 KIPS	0.14 IN.	0.17 IN.
5	L4x3½x¾x14½	W30, W27, W24, W21, W18	4.15	43.99 KIPS	0.15 IN.	0.19 IN.
6	L4x3½x¾x17½	W40, W36, W33, W30, W27, W24, W21	5.22	55.33 KIPS	0.16 IN.	0.20 IN.
7	L4x3½x¾x20½	W44, W40, W36, W33, W30, W27, W24	6.27	66.46 KIPS	0.16 IN.	0.21 IN.
8	L4x3½x¾x23½	W44, W40, W36, W33, W30	7.31	77.49 KIPS	0.17 IN.	0.21 IN.
9	L4x3½x¾x26½	W44, W40, W36, W33	8.34	88.40 KIPS	0.17 IN.	0.22 IN.
10	L4x3½x¾x29½	W44, W40, W36	9.37	99.32 KIPS	0.17 IN.	0.22 IN.

NOTE:

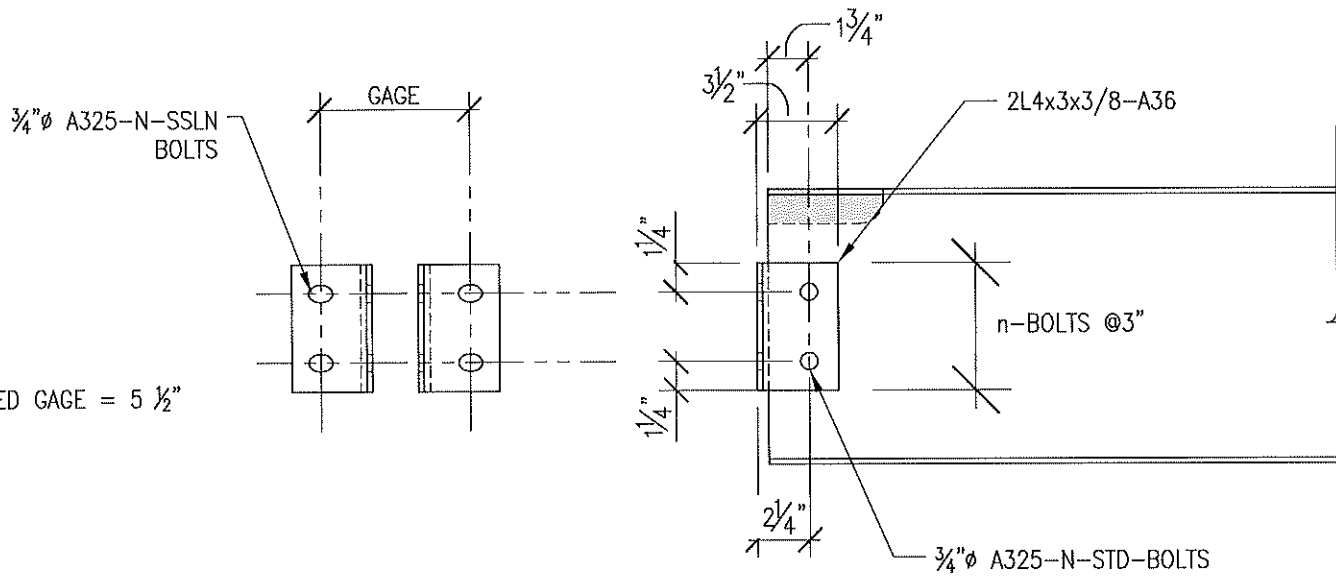
- FOR BEAM WEBS LESS THAN $t_{w_{min}}$, MULTIPLY THE ABOVE CONNECTION BY $t_w/t_{w_{min}}$
- FOR GIRDER WEBS LESS THAN 0.18, MULTIPLY THE ABOVE BY CONNECTION $t_w/0.18$



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 SCALE _____

GENERIC ALL-BOLTED DOUBLE-ANGLE CONNECTIONS AISC 13th EDITION MANUAL-ASD



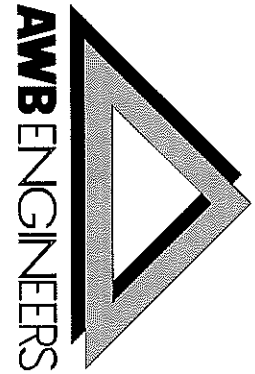
NOTE:

- RECOMMENDED GAGE = 5 1/2"
- OSL=4"

NO. OF BOLT ROWS	ANGLE SIZE	APPLICABLE BEAM SIZE	CONNECTION CAPACITY	MINIMUM BEAM WEB THICKNESS, $t_{w\min}$	
				UNCOPEDED	COPEDED AT TOP FLANGE
2	2L4x3 1/2x3/8x5 1/2	W12, W10, W8	42.40 KIPS	0.36 IN.	0.44 IN.
3	2L4x3 1/2x3/8x8 1/2	W18, W16, W14, W12, W10* *LIMITED TO W10x12, 15, 17, 19, 22, 26, 30	63.60 KIPS	0.36 IN.	0.46 IN.
4	2L4x3 1/2x3/8x11 1/2	W24, W21, W18, W16	84.80 KIPS	0.36 IN.	0.47 IN.
5	2L4x3 1/2x3/8x14 1/2	W30, W27, W24, W21, W18	106.00 KIPS	0.36 IN.	0.48 IN.
6	2L4x3 1/2x3/8x17 1/2	W40, W36, W33, W30, W27, W24, W21	127.20 KIPS	0.36 IN.	0.48 IN.
7	2L4x3 1/2x3/8x20 1/2	W44, W40, W36, W33, W30, W27, W24	148.40 KIPS	0.36 IN.	0.49 IN.
8	2L4x3 1/2x3/8x23 1/2	W44, W40, W36, W33, W30	169.60 KIPS	0.36 IN.	0.49 IN.
9	2L4x3 1/2x3/8x26 1/2	W44, W40, W36, W33	190.80 KIPS	0.36 IN.	0.49 IN.
10	2L4x3 1/2x3/8x29 1/2	W44, W40, W36	212.00 KIPS	0.36 IN.	0.50 IN.

NOTE:

1. FOR BEAM WEBS LESS THAN $t_{w\min}$, MULTIPLY THE ABOVE BY CONNECTION $t_w/t_{w\min}$ *



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