



Underwriters Laboratory UL-90 Letter

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Underwriters Laboratory UL-90 Letter

Contact:
Name: Broadmoor, LLC
Address: 2740 N. Arnoult Road

Project: Riverine and Combatant Craft Operations Facility
Builder PO #:
Jobsite:

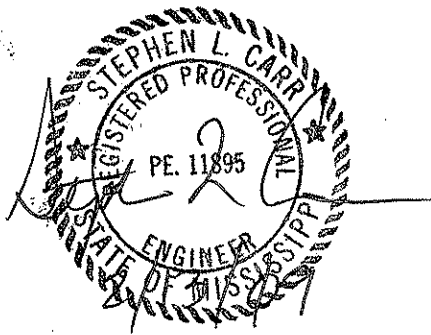
City, State: Metairie, Louisiana 70002

City, State: Stennis Space Center, Mississippi 39529
County, Country: Hancock, United States

The goods listed herein are purchased subject to the VP BUILDINGS terms and conditions of sale and the limitations contained therein.

Roof Covering

Shape	Location	Type	Thickness	Spacing
Operations Building	Wall: 2, Canopy: 2	SLR2	22	UL90 Uplift
Operations Building	Wall: 2, Canopy: 2	SLR2	22	UL90 Uplift
Operations Building	Wall: 4, Canopy: 4	SLR2	22	UL90 Uplift
Operations Building	Roof: A	SLR2	22	UL90 Uplift
Operations Building	Roof: B	SLR2	22	UL90 Uplift
Operations Building Lean-to	Wall: 2, Canopy: 2	SLR2	22	UL90 Uplift
Operations Building Lean-to	Roof: A	SLR2	22	UL90 Uplift





VP Buildings

3200 Players Club Circle
Memphis, TN 38125-8843

REVIEWED
FOR APPR.
MDE
13 FEB 09

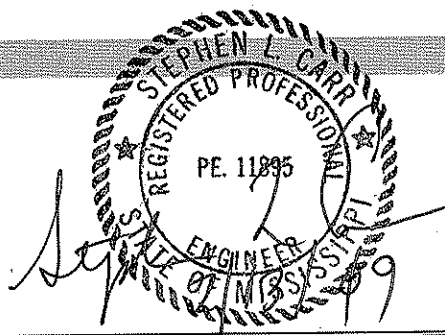
STRUCTURAL DESIGN DATA

Project: Riverine and Combatant Craft Operations Facility
Name: 08-28914 EP1
Builder PO #:
Jobsite:

City, State: Stennis Space Center, Mississippi 39529
County: Hancock
Country: United States

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Calculations For Approval - mde - 12 Feb 09

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Letter of Certification

Contact:
Name: Broadmoor, LLC
Address: 2740 N. Arnoult Road

Project: Riverine and Combatant Craft Operations Facility
Builder PO #:
Jobsite:

City, State: Metairie, Louisiana 70002
Country: United States

City, State: Stennis Space Center, Mississippi 39529
County, Country: Hancock, United States

This is to certify that the above referenced VP BUILDINGS project has been designed for the applicable portions of the following Building Code and in accordance with the order documents which have stipulated the following applied environmental loads and conditions:

Overall Building Description

Shape	Overall Width	Overall Length	Floor Area (sq. ft.)	Wall Area (sq. ft.)	Roof Area (sq. ft.)	Max. Eave Height	Min. Eave Height 2	Max. Roof Pitch	Min. Roof Pitch	Peak Height
Operations Building	58/0/0	120/6/0	6989	8153	8461	24/7/0	24/7/0	5.000:12	5.000:12	36/8/0
Operations Building Lean-to	27/6/0	58/0/0	1595	1796	1791	22/10/0	13/8/0	4.000:12		
Total For All Shapes			8584	9949	10252					

Loads and Codes - Shape: Operations Building

City: Stennis Space Center County: Hancock
Building Code: 2006 International Building Code
Building Use: Standard Occupancy Structure

State: Mississippi
Built Up: 05AISC - ASD
Cold Form: 04AISI - ASD

Country: United States
Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
Wind Exposure (Factor): B (0.705)
Parts Wind Exposure Factor: 0.705

Wind Enclosure: Enclosed
Wind Importance Factor: 1.000
Topographic Factor: 1.0000
Hurricane Prone Region
Windborne Debris Region
Impact Resistant Covering
Base Elevation: 0/0/0
Primary Zone Strip Width: 15/3/12
Parts / Portions Zone Strip Width: 5/9/10
Basic Wind Pressure: 25.92 psf

Snow Load

Ground Snow Load: 5.00 psf
Design Snow (Sloped): 2.30 psf
Snow Exposure Category (Factor): 1 Fully Exposed Seismic Hazard / Use Group: Group 1 (0.90)
Snow Importance: 1.000
Thermal Category (Factor): Heated (1.00)
Ground / Roof Conversion: 0.70
% Snow Used in Seismic: 0.00
Seismic Snow Load: 0.00 psf
Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
Mapped Spectral Response - S1: 5.10 %g
Seismic Importance: 1.000
Seismic Performance / Design Category: B
Framing Seismic Period: 0.3628
Bracing Seismic Period: 0.2208
Framing R-Factor: 3.0000
Bracing R-Factor: 3.0000
Soil Profile Type: Stiff soil (D, 4)
Diaphragm Condition: Flexible
Frame Redundancy Factor: 1.0000
Brace Redundancy Factor: 1.0000
Frame Seismic Factor (Cs): 0.0420 x W
Brace Seismic Factor (Cs): 0.0420 x W

Operations Building : Mezzanine 1 @ 12/9/0

Floor Type	Non-Composite	Loading Type	Office
Top of Floor	12/9/0	Floor Dead Load	50.00 psf
Total Thickness of Deck + Topping	0/3/0	Floor Live Load	100.00 psf Not Reducible
Top of Joist	12/6/0	Collateral Load	5.00 psf
Min. Clearance from Floor to Joist	11/4/0	Partition Load:	10.00 psf
Min. Clearance from Floor to Rafter	9/6/0	Floor Live Load Deflection	360
Mezzanine Category	Entire Floor	Floor Dead + Floor Live Deflection	240
Bracing Category	Unbraced		

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Loads and Codes - Shape: Operations Building Lean-to

City: Stennis Space Center County: Hancock
Building Code: 2006 International Building Code

State: Mississippi
Built Up: 05AISC - ASD

Country: United States
Rainfall: 10.00 inches per hour



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Building Use: Standard Occupancy Structure

Cold Form: 04AISI - ASD

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
Primaries Wind Exposure (Factor): B (0.608)
Parts Wind Exposure Factor: 0.701

Snow Load

Ground Snow Load: 5.00 psf
Design Snow (Sloped): 2.50 psf
Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
Snow Importance: 1.000
Thermal Category (Factor): Heated (1.00)
Ground / Roof Conversion: 0.70
% Snow Used in Seismic: 0.00
Seismic Snow Load: 0.00 psf
Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
Mapped Spectral Response - S1: 5.10 %g
Seismic Hazard / Use Group: Group 1

Seismic Importance: 1.000
Seismic Performance / Design Category: B
Framing Seismic Period: 0.2859
Bracing Seismic Period: 0.1766
Framing R-Factor: 3.0000
Bracing R-Factor: 3.0000
Soil Profile Type: Stiff soil (D, 4)
Diaphragm Condition: Flexible
Frame Redundancy Factor: 1.0000
Brace Redundancy Factor: 1.0000
Frame Seismic Factor (Cs): 0.0420 x W
Brace Seismic Factor (Cs): 0.0420 x W

Wind Enclosure: Enclosed
Wind Importance Factor: 1.000
Topographic Factor: 1.0000
Hurricane Prone Region
Windborne Debris Region
Impact Resistant Covering
Base Elevation: 0/0/0
Primary Zone Strip Width: 9/1/8
Parts / Portions Zone Strip Width: 5/9/10
Basic Wind Pressure: 22.35, (Parts) 25.76 psf

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

The steel design is in accordance with VP BUILDINGS standard design practices, which have been established based upon pertinent procedures and recommendations of the following organizations:

- American Institute of Steel Construction (AISC)
- American Iron and Steel Institute (AISI)
- American Welding Society (AWS)
- American Society for Testing and Materials (ASTM)
- Canadian Standards Association
- CSA W59-Welded Steel Construction
- Limit State Design of Steel Structures
- Metal Building Manufacturers Association (MBMA)
- VP Buildings is certified by:
 - CSA A660 Certified (Design and Manufacturing)
 - IAS Approved Fabricator
 - Canadian Welding Bureau Div. 1 Certified

VP Buildings has designed the structural steel components of this building in accordance with the Building Code, Steel Specifications, and Standards indicated above. Steel components are designed utilizing the following steel grades unless noted otherwise:

- 3 Plate members fabricated from plate, bar, strip steel or sheets
 - ASTM A529, A572, A1011 - All Grade 55 ksi
- Hot Rolled Shapes (W, S, C, Angles, etc)
 - ASTM A36, or ASTM A36Mod50, A529, A572, A588, A709, A992-All Grade 50 ksi
- Tube and Pipe Sections ASTM A500, Grade B (Fy - 42 ksi pipe, Fy - 46 ksi tube)
- Light Gage Sections ASTM A1011 SS Grade 55 ksi, A653 SS Grade 60 ksi
- Round Rod Bracing ASTM A572 Grade 50 ksi

This certification DOES NOT apply to the design of the foundation or other on-site structures or components not supplied by VP BUILDINGS, nor does it apply to unapproved modifications to framing systems provided by VP BUILDINGS.

Furthermore, it is understood that this certification is based upon the premise that all components furnished by VP BUILDINGS will be erected or constructed in strict compliance with pertinent documents furnished by VP BUILDINGS.

Sincerely,

PE. 11895

VP BUILDINGS
3200 Players Club Circle, Memphis TN 38125-8843

P.E. Prepared by:

MDE

Reviewed by: _____



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Building Loading - Summary Report

Shape: Operations Building

Loads and Codes - Shape: Operations Building

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States.
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Wind Exposure (Factor): B (0.705)
 Parts Wind Exposure Factor: 0.705

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 15/3/12
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 25.92 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.30 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group 1

 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.3628
 Bracing Seismic Period: 0.2208
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Deflection Conditions

Frames are vertically supporting: Ceiling with Flexible Finish
 Frames are laterally supporting: Unreinforced Masonry Wall
 Purlins are supporting: Ceiling with Flexible Finish
 Girts are supporting: Unreinforced Masonry Wall

Operations Building : Mezzanine 1 @ 12/9/0

Floor Type	Non-Composite	Loading Type	Office
Top of Floor	12/9/0	Floor Dead Load	50.00 psf
Total Thickness of Deck + Topping	0/3/0	Floor Live Load	100.00 psf Not Reducible
Top of Joist	12/6/0	Collateral Load	5.00 psf
Min. Clearance from Floor to Joist	11/4/0	Partition Load:	10.00 psf
Min. Clearance from Floor to Rafter	9/6/0	Floor Live Load Deflection	360
Mezzanine Category	Entire Floor	Floor Dead + Floor Live Deflection	240
Bracing Category	Unbraced		

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2



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13	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
17	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
18	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 FL	D + FD + CG + L + FL
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D+FD+CG+L+W1>+FL
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D+FD+CG+L+<W1+FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D+FD+CG+L+W2>+FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D+FD+CG+L+<W2+FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D+FD+CG+S+W1>+FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D+FD+CG+S+<W1+FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D+FD+CG+S+W2>+FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D+FD+CG+S+<W2+FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
41	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
42	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D+FD+CG+E>+EG++FL
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D+FD+CG+<E+EG++FL
47	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB1>	D + FD + CG + WP + WB1>
48	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB1>	D + FD + CU + WP + WB1>
49	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D+FD+CG+L+WP+WB1>
50	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D+FD+CG+S+WP+WB1>
51	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+L+WP+FL+WB1>
52	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+S+WP+FL+WB1>
53	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB1	D + FD + CG + WP + <WB1
54	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB1	D + FD + CU + WP + <WB1
55	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D+FD+CG+L+WP+<WB1
56	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D+FD+CG+S+WP+<WB1
57	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+L+WP+FL+<WB1
58	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+S+WP+FL+<WB1
59	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB2>	D + FD + CG + WP + WB2>
60	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB2>	D + FD + CU + WP + WB2>
61	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D+FD+CG+L+WP+WB2>
62	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D+FD+CG+S+WP+WB2>
63	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+L+WP+FL+WB2>
64	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+S+WP+FL+WB2>
65	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB2	D + FD + CG + WP + <WB2
66	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB2	D + FD + CU + WP + <WB2
67	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D+FD+CG+L+WP+<WB2
68	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D+FD+CG+S+WP+<WB2
69	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+L+WP+FL+<WB2
70	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+S+WP+FL+<WB2
71	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 EB> + 0.700 EG+	D + FD + CG + EB> + EG+
72	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 EB> + 0.700 EG-	D + FD + CU + EB> + EG-
73	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+	D + FD + CG + EB> + EG+
74	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+ + 0.750 FL	D+FD+CG+EB>+EG++FL
75	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <EB + 0.700 EG+	D + FD + CG + <EB + EG+
76	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <EB + 0.700 EG-	D + FD + CU + <EB + EG-
77	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+	D + FD + CG + <EB + EG+
78	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+ + 0.750 FL	D+FD+CG+<EB+EG++FL



Calculations For Approval - mde - 12 Feb 09

Date: 2/13/2009

Time: 6:36:30 AM

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Design Load Combinations - Bracing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W1	<W1
3	System	1.000	1.0 W2>	W2>
4	System	1.000	1.0 <W2	<W2
5	System	1.000	0.700 E>	E>
6	System	1.000	0.700 <E	<E

Design Load Combinations - Purlin

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L	D + CG + L
2	System	1.000	1.0 D + 1.0 CG + 1.0 S	D + CG + S
3	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
4	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SS	D + CG + S + SS
5	System	1.000	1.0 D + 1.0 CG + 1.0 US1*	D + CG + US1*
6	System	1.000	1.0 D + 1.0 CG + 1.0 *US1	D + CG + *US1
7	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 1)
8	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 12)
9	System	1.000	1.0 D + 1.0 CG + 1.0 PH1	D + CG + PH1(Span 1)
10	System	1.000	1.0 D + 1.0 CG + 1.0 PH1	D + CG + PH1(Span 12)
11	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 1 and 2)
12	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 2 and 3)
13	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 3 and 4)
14	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 4 and 5)
15	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 5 and 6)
16	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 6 and 7)
17	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 7 and 8)
18	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 8 and 9)
19	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 9 and 10)
20	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 10 and 11)
21	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 11 and 12)
22	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
23	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
24	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
25	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
26	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
27	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
28	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
29	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
30	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
31	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
32	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
33	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+
34	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
35	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-
36	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
37	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
38	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
39	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
40	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
41	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
42	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
43	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
44	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
45	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
46	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
47	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
48	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
49	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
50	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
51	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2

Design Load Combinations - Girt

No.	Origin	Factor	Application	Description
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1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W2	<W2
3	System	1.000	1.0 WP	WP
4	System	1.000	0.700 E>	E>
5	System	1.000	0.700 <E	<E

Design Load Combinations - Roof - Panel

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 L	D + L
2	System	1.000	1.0 D + 1.0 S	D + S
3	System	1.000	1.0 D + 1.0 S + 1.0 SD	D + S + SD
4	System	1.000	1.0 D + 1.0 S + 1.0 SS	D + S + SS
5	System	1.000	1.0 D + 1.0 US1*	D + US1*
6	System	1.000	1.0 D + 1.0 *US1	D + *US1
7	System	1.000	1.0 D + 1.0 W1>	D + W1>
8	System	1.000	1.0 D + 1.0 <W2	D + <W2
9	System	1.000	0.600 D + 1.0 W1>	D + W1>
10	System	1.000	0.600 D + 1.0 <W2	D + <W2

Design Load Combinations - Wall - Panel

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W2	<W2

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System Derived	1.000	0	240	0.700 WB1>	WB1>
13	System Derived	1.000	0	240	0.700 <WB1	<WB1
14	System Derived	1.000	0	240	0.700 WB2>	WB2>
15	System Derived	1.000	0	240	0.700 <WB2	<WB2
16	System	1.000	200	0	0.700 W1>	W1>
17	System	1.000	200	0	0.700 <W1	<W1
18	System	1.000	200	0	0.700 W2>	W2>
19	System	1.000	200	0	0.700 <W2	<W2
20	System	1.000	200	0	0.700 WP	WP
21	System Derived	1.000	200	0	0.700 WB1>	WB1>
22	System Derived	1.000	200	0	0.700 <WB1	<WB1
23	System Derived	1.000	200	0	0.700 WB2>	WB2>
24	System Derived	1.000	200	0	0.700 <WB2	<WB2
25	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
26	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
27	System Derived	1.000	50	0	1.0 EB>	EB>
28	System Derived	1.000	50	0	1.0 <EB	<EB

Deflection Load Combinations - Purlin

No.	Origin	Factor	Deflection	Application	Description
1	System	1.000	240	0.700 W1>	W1>
2	System	1.000	240	0.700 <W2	<W2
3	System	1.000	240	0.700 WP	WP
4	System	1.000	240	1.0 S	S
5	System	1.000	240	1.0 S + 1.0 SD	S + SD
6	System	1.000	240	1.0 S + 1.0 SS	S + SS
7	System	1.000	240	1.0 US1*	US1*
8	System	1.000	240	1.0 *US1	*US1
9	System	1.000	240	1.0 L	L



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Deflection Load Combinations - Girt

No.	Origin	Factor	Deflection	Application	Description
1	System	1.000	240	0.700 W1>	W1>
2	System	1.000	240	0.700 <W2	<W2
3	System	1.000	240	0.700 WP	WP
4	System	1.000	240	0.500 E>	E>
5	System	1.000	240	0.500 <E	<E

Deflection Load Combinations - Roof - Panel

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	150	150	1.0 S	S
2	System	1.000	150	150	1.0 S + 1.0 SD	S + SD
3	System	1.000	150	150	1.0 S + 1.0 SS	S + SS
4	System	1.000	150	150	1.0 US1*	US1*
5	System	1.000	150	150	1.0 *US1	*US1

User Applied Surface Loads (Local Coordinate System)

Side	Shape	Units	Type	Description	Mag	X-Loc	Y-Loc	Frm	Brc	Grt	Pur	Pnl	Supp.	Dir.	Loc.
B	LN	plf	CG	Folding Partition	120.00	69/0/0	-2/0/0	Y	N	N	N	N	N	IN	OF
B	LN	plf	CG	Folding Partition	120.00	69/0/0	-27/0/0	Y	N	N	N	N	N	IN	OF
B	PT	k	CG	Folding Partition (open)	3.00	69/0/0	-24/0/0	Y	N	N	N	N	N	IN	OF

LOADING WORKSHEETS
 & MEZZANINE
 CALCS FOLLOW →

• Pt. Los C 12.5' EL

$AVX\ COR\ TUBE - MAX\ P = 36.2 + 32.6 = 68.8$
 $L \leq 11' \Rightarrow \frac{13.5 \times 5 \times 1/4\ MIN.}{(CAP = 86.5, 4-5T)}$

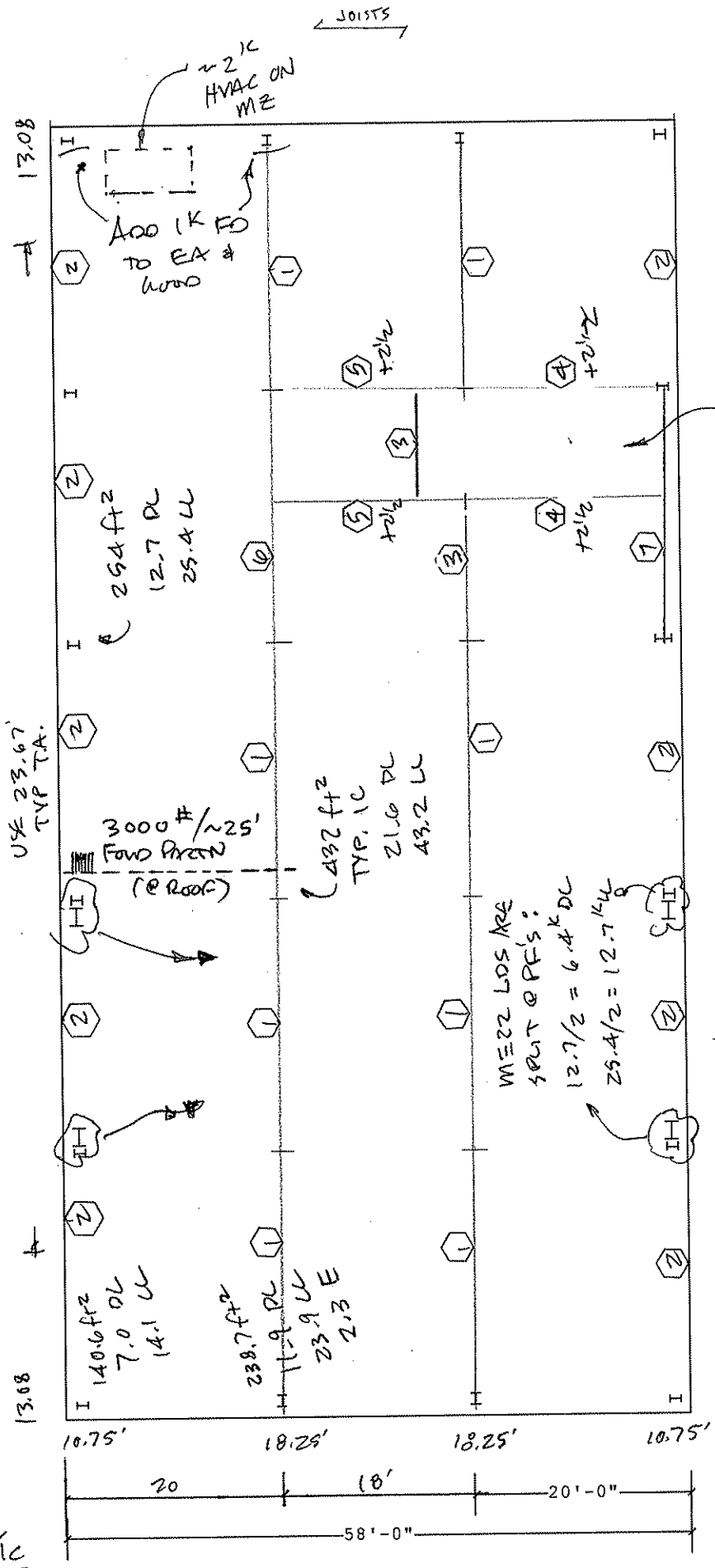
INT. SEISMIC-LONGIT.

$120.5 (18.25) \left(\frac{50}{1000}\right)$
 $= 110.0\ K$

$V = 110 (0.042) = 4.6$

→ ADD 2.3K @ EA OF (4) ENDPOST/IC

$\# @ PF: 4.6 \left(\frac{10.75}{18.25}\right) = 2.7\ K$



Full HT BRICK
 ENCLOSES STAIR TOWERS,
 TO BE SAFE, BEAMS AT
 PERIM STULL CAST "HANGING"
 LANDING.

FL, DL
 $3" C = 27\ \#$
 $20\ WACK = 2\ \#$
 $JOIST = 3\ \#$
 $BMS \leq 3\ \#$

 $35\ \#$
 (< 50, ∴
 CAN 5#
 Cg INCL
 IN 50# DL)



ENGINEERING DATA SHEET

Arkansas Service Center
 P. O. Box 6868
 Pine Bluff, Ar. 71611
 Phone: (870) 534-6030
 Fax: (870) 540-1638

Page: 1 of
 Job #: 08-28914
 Date: 4 FEB 09
 By:

FLOOR
 BEAMS

18" MAX
 DEPTH

1 SPAN $\leq 23.8'$ TA = 18.25 $W_L = .15(18.25) = 2.74 \text{ klf}$

$4/240 \text{ TR LD} = 1.2''$ $M_X = 2328 \text{ ft-lb}$, $V = 32.6$
 $I_{REQ} = 968$ $L_y = l_b \leq 5' (12')$

USE: $1/2 \times 8 \times 3/16 \times 18$

2 SP = 23.8 TA = 10.75 $W = 1.61 \text{ klf}$

$4/240 = 1.2''$ $M_X = 1370$, $V = 19.2$

$I_{REQ} = 334$ $L_y = l_b \leq 5'$

USE: $1/2 \times 6 \times 3/16 \times 18$

3 SP $\leq 13.2'$ TA $\leq \frac{38}{2} = 19'$ $W = 2.85 \text{ klf}$

$4/240 = .66''$ $M_X = 745$ $V = 18.8$

$I_{REQ} = 102$ $L_y = l_b \leq 5'$

USE: $5/16 \times 6 \times 1/8 \times 11$

4 SP $\approx 18.5'$ TA $\leq \frac{4.2}{2} = 7.1$ $W = 1.07 \text{ klf}$

$4/240 = 0.93$ $M_X = 549$ $V = 9.9$

$I_{REQ} = 109$ $L_y = l_b \leq 12'$ (USED LARGER VALUE DUE TO UNCERTAINTY RE: STAIR SUPPORT, DECKING CONN. DIRECTLY TO BEAM TO EOR SOME SUPPORT)

USE: $5/16 \times 6 \times 1/8 \times 12$



ENGINEERING DATA SHEET

Arkansas Service Center
 P. O. Box 6868
 Pine Bluff, Ar. 71611
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 Fax: (870) 540-1638

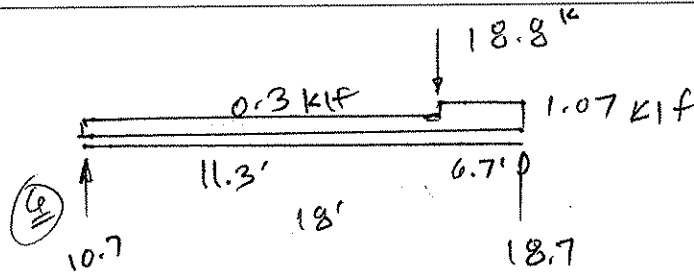
Page: 2 of

Job #:

Date:

By:

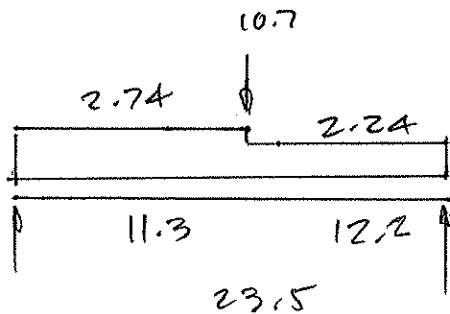
5



$M_x = 1214$
 $V = 18.4$
 $L_x = L_b = 11.3'$

Use: $3/8 \times 8 \times 3/16 \times 14$

4

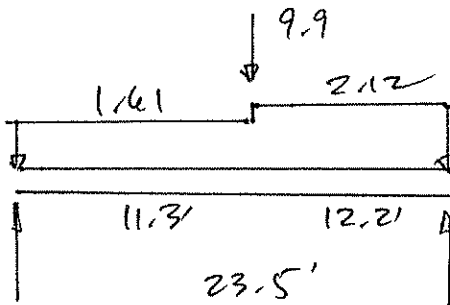


$M_x = 2800$
 $V = 36.2$
 $L_y = L_b \leq 5'$

$\left. \begin{array}{r} 11.25 \\ 18.5 \\ \hline 29.8/2 \\ * 1.5 \\ \hline 2.24 \text{ klf} \end{array} \right\}$

Use: $1/2 \times 8 \times 1/4 \times 18$

7



$M_x = 2240$
 $V = 28.2$
 $L_y = L_b = 12.2$

$\left. \begin{array}{r} 6.25 \\ + 18.5 \\ \hline 24.75 \\ + 1.5 \\ \hline * 1.5 \\ \hline = 2.12 \text{ klf} \end{array} \right\}$

Use: $5/8 \times 8 \times 3/16 \times 18$

Mz Bm #1

Design Data:

AXIAL = -1.00 K
 SHEAR = 32.60 K
 X MOMENT = 2328.00 "-K
 KLX = 23.80 FT
 KLY = 5.00 FT
 LB = 5.00 FT
 RT = 0.00
 CB = 1.00
 CMX = 1.00
 FLANGE FY = 55.00 KSI
 WEB FY = 55.00 KSI
 STRESS FACTOR = 1.00
 UNBRACED POINT DESIGN
 WEB DESIGNED WITH NO STIFFENERS
 AISC PLATE/YEAR = 05AISC

SECTION

0.5000 X 8.0 FLG 0.1875 WEB 18.00 DEPTH
 AREA = 11.19
 IX = 689.43 SX = 76.60 RX = 7.85 ZX = 83.55
 IY = 42.68 SY = 10.67 RY = 1.95 ZY = 16.15
 QS = 1.00
 QA = 0.85
 WEIGHT = 38.07 #/FT

FORCES

ACTUAL P = 1.00 K ALLOWABLE P = 295.92 K
 MX = 2328.00 "-K MX = 2462.31 "-K
 V = 32.60 K V = 32.36 K
 COMBINED STRESS RATIO = 0.897
 SHEAR STRESS RATIO = 1.007

Mz Bm #2

Design Data:

AXIAL = -1.00 K
 SHEAR = 19.20 K
 X MOMENT = 1370.00 "-K
 KLX = 23.80 FT
 KLY = 5.00 FT
 LB = 5.00 FT
 RT = 0.00
 CB = 1.00
 CMX = 1.00
 FLANGE FY = 55.00 KSI
 WEB FY = 55.00 KSI
 STRESS FACTOR = 1.00
 UNBRACED POINT DESIGN
 WEB DESIGNED WITH NO STIFFENERS
 AISC PLATE/YEAR = 05AISC

SECTION

0.5000 X 6.0 FLG 0.1875 WEB 18.00 DEPTH
 AREA = 9.19
 IX = 536.27 SX = 59.59 RX = 7.64 ZX = 66.05
 IY = 18.01 SY = 6.00 RY = 1.40 ZY = 9.15
 QS = 1.00
 QA = 0.83
 WEIGHT = 31.26 #/FT

FORCES

ACTUAL P = 1.00 K ALLOWABLE P = 229.19 K
 MX = 1370.00 "-K MX = 2158.83 "-K
 V = 19.20 K V = 32.36 K
 COMBINED STRESS RATIO = 0.637
 SHEAR STRESS RATIO = 0.593

Mz Bm #3

Design Data:

AXIAL = -1.00 K
SHEAR = 18.80 K
X MOMENT = 745.00 "-K
KLX = 13.20 FT
KLY = 5.00 FT
LB = 5.00 FT
RT = 0.00
CB = 1.00
CMX = 1.00
FLANGE FY = 55.00 KSI
WEB FY = 55.00 KSI
STRESS FACTOR = 1.00
UNBRACED POINT DESIGN
WEB DESIGNED WITH NO STIFFENERS
AISC PLATE/YEAR = 05AISC

SECTION

0.3125 X 6.0 FLG 0.1345 WEB 11.00 DEPTH
AREA = 5.15
IX = 119.63 SX = 21.75 RX = 4.82 ZX = 23.66
IY = 11.25 SY = 3.75 RY = 1.48 ZY = 5.67
QS = 1.00
QA = 0.88
WEIGHT = 17.51 #/FT

FORCES

ACTUAL P = 1.00 K ALLOWABLE P = 138.74 K
MX = 745.00 "-K MX = 753.30 "-K
V = 18.80 K V = 19.60 K
COMBINED STRESS RATIO = 0.993
SHEAR STRESS RATIO = 0.959

Mz Bm #4

Design Data:

AXIAL = -1.00 K
SHEAR = 9.90 K
X MOMENT = 549.00 "-K
KLX = 18.50 FT
KLY = 12.00 FT
LB = 12.00 FT
RT = 0.00
CB = 1.00
CMX = 1.00
FLANGE FY = 55.00 KSI
WEB FY = 55.00 KSI
STRESS FACTOR 1.00
UNBRACED POINT DESIGN
WEB DESIGNED WITH NO STIFFENERS
AISC PLATE/YEAR = 05AISC

SECTION

0.3125 X 6.0 FLG 0.1345 WEB 12.00 DEPTH
AREA = 5.28
IX = 144.59 SX = 24.10 RX = 5.23 ZX = 26.26
IY = 11.25 SY = 3.75 RY = 1.46 ZY = 5.68
QS = 1.00
QA = 0.91
WEIGHT = 17.97 #/FT

FORCES

ACTUAL P = 1.00 K ALLOWABLE P = 77.71 K
MX = 549.00 "-K MX = 584.84 "-K
V = 9.90 K V = 17.79 K
COMBINED STRESS RATIO = 0.894
SHEAR STRESS RATIO = 0.557



Beam Analysis

Job #:

Page:

of

Date:

2/5/2009

Designer:

Ctr:

References: none

Author: Arlo Hulick

Rev. 5

3/25/2004

Description:

Mz Bm #5

Support Points

beam length	18	ft
first support	0	ft.
second support	18	ft.

Note: The beam may be cantilevered at either end.

Do not add self weight to uniform load

Uniform loads:

	#1		#2		#3
starting value	300	plf	1070	plf	plf
ending value	300	plf	1070	plf	plf
starting: x =	0	ft	11.3	ft	ft
ending: x =	11.3	ft	18	ft	ft

Point loads:

	#1		#2		#3
magnitude	18.8	k		k	k
location	11.3	ft		ft	ft

Moment Loads

	#1		#2		#3
magnitude		k"		k"	k"
location		ft		ft	ft

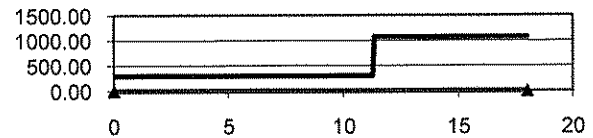
Output

	value		location	
reaction 1	10.66	kips	0.00	ft.
reaction 2	18.70	kips	18.00	ft.
max. moment	1214.0	k-in.	11.22	ft.
neg. moment	-0.04	k-in.	17.94	ft.
max stress	26.99	ksi	11.22	ft.
max. shear	18.59	kips	17.94	ft.
max. deflection	0.535	in.	9.54	ft.
Deflection Ratio	L / 404			

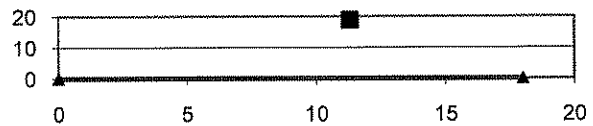
For beam design:

3-plate depth at max stress	14	in.
shear at max stress	7.30311	k
3-plate depth at max shear	0	in.
Max allowable stress		ksi
overstressed segment start		ft.
overstressed segment end		ft.

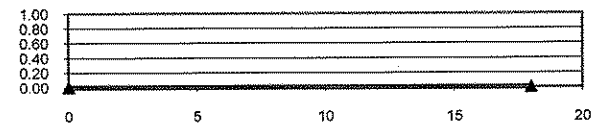
Unif. load plus self wt



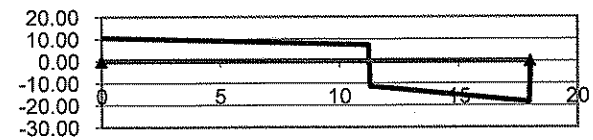
Point Loads



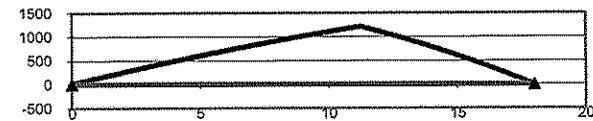
Moment Loads



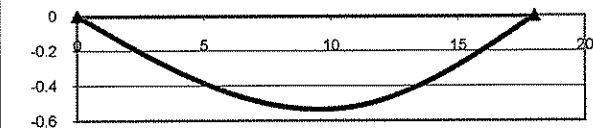
Shear



Moment



Deflection



Mz Bm #5

Design Data:

AXIAL = -1.00 K
SHEAR = 18.60 K
X MOMENT = 1214.00 "-K
KLX = 18.00 FT
KLY = 11.30 FT
LB = 11.30 FT
RT = 0.00
CB = 1.00
CMX = 1.00
FLANGE FY = 55.00 KSI
WEB FY = 55.00 KSI
STRESS FACTOR 1.00
UNBRACED POINT DESIGN
WEB DESIGNED WITH NO STIFFENERS
AISC PLATE/YEAR = 05AISC

SECTION

0.3750 X 8.0 FLG 0.1875 WEB 14.00 DEPTH
AREA = 8.48
IX = 314.88 SX = 44.98 RX = 6.09 ZX = 49.10
IY = 32.01 SY = 8.00 RY = 1.94 ZY = 12.12
QS = 0.98
QA = 0.89
WEIGHT = 28.87 #/FT

FORCES

ACTUAL P = 1.00 K ALLOWABLE P = 222.61 K
MX = 1214.00 "-K MX = 1498.59 "-K
V = 18.60 K V = 41.43 K
COMBINED STRESS RATIO = 0.812
SHEAR STRESS RATIO = 0.449



Beam Analysis

Job #:

Page:

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Date:

2/5/2009

Designer:

Ctr.

References: none

Author: Arlo Hulick

Rev. 5

3/25/2004

Description:

Mz Bm #6

Support Points

beam length 23.5 ft
 first support 0 ft.
 second support 23.5 ft.

Note: The beam may be cantilevered at either end.

Do not add self weight to uniform load

Uniform loads:

	#1	#2	#3
starting value	2740 plf	2240 plf	plf
ending value	2740 plf	2240 plf	plf
starting: x =	0 ft	11.3 ft	ft
ending: x =	11.3 ft	23.5 ft	ft

Point loads:

	#1	#2	#3
magnitude	10.7 k	k	k
location	11.3 ft	ft	ft

Moment Loads

	#1	#2	#3
magnitude	k"	k"	k"
location	ft	ft	ft

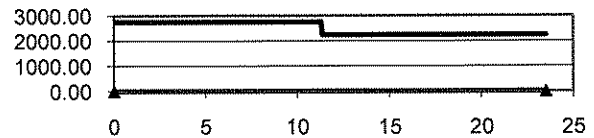
Output

	value	location
reaction 1	36.17 kips	0.00 ft.
reaction 2	32.82 kips	23.50 ft.
max. moment	2800.0 k-in.	11.20 ft.
neg. moment	-0.35 k-in.	23.50 ft.
max stress	35.24 ksi	11.20 ft.
max. shear	36.17 kips	0.00 ft.
max. deflection	1.057 in.	11.59 ft.
Deflection Ratio	L / 267	

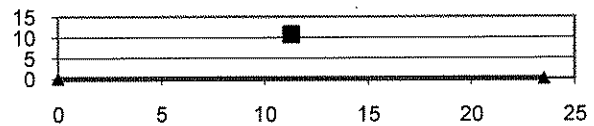
For beam design:

3-plate depth at max stress 18 in.
 shear at max stress 5.57589 k
 3-plate depth at max shear 0 in.
 Max allowable stress ksi
 overstressed segment start ft.
 overstressed segment end ft.

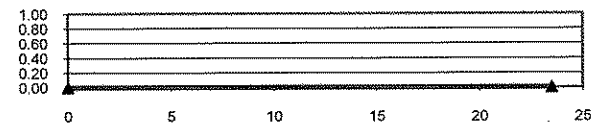
Unif. load plus self wt



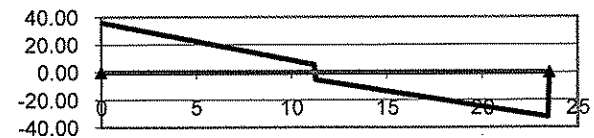
Point Loads



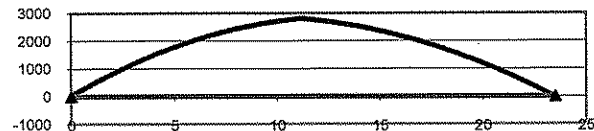
Moment Loads



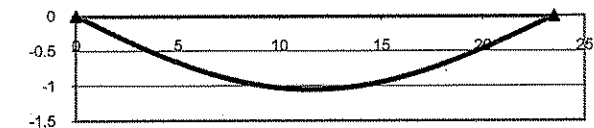
Shear



Moment



Deflection



Mz Bm #6

Design Data:

AXIAL = -1.00 K
 SHEAR = 36.20 K
 X MOMENT = 2800.00 "-K
 KLX = 23.50 FT
 KLY = 5.00 FT
 LB = 5.00 FT
 RT = 0.00
 CB = 1.00
 CMX = 1.00
 FLANGE FY = 55.00 KSI
 WEB FY = 55.00 KSI
 STRESS FACTOR 1.00
 UNBRACED POINT DESIGN
 WEB DESIGNED WITH NO STIFFENERS
 AISC PLATE/YEAR = 05AISC

SECTION

0.5000 X 8.0 FLG 0.2500 WEB 18.00 DEPTH
 AREA = 12.25
 IX = 715.02 SX = 79.45 RX = 7.64 ZX = 88.06
 IY = 42.69 SY = 10.67 RY = 1.87 ZY = 16.27
 QS = 1.00
 QA = 0.88
 WEIGHT = 41.68 #/FT

FORCES

ACTUAL P = 1.00 K ALLOWABLE P = 321.41 K
 MX = 2800.00 "-K MX = 2906.06 "-K
 V = 36.20 K V = 74.01 K
 COMBINED STRESS RATIO = 0.965
 SHEAR STRESS RATIO = 0.489



Beam Analysis

Job #:

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Date:

2/5/2009

Designer:

Ctr:

References: none

Author: Arlo Hulick

Rev. 5

3/25/2004

Description:

Mz Bm #7

Support Points

beam length	23.5	ft
first support	0	ft.
second support	23.5	ft.

Note: The beam may be cantilevered at either end.

Do not add self weight to uniform load

Uniform loads:

	#1		#2		#3
starting value	1610	plf	2120	plf	plf
ending value	1610	plf	2120	plf	plf
starting: x =	0	ft	11.3	ft	ft
ending: x =	11.3	ft	23.5	ft	ft

Point loads:

	#1		#2		#3
magnitude	9.9	k		k	k
location	11.3	ft		ft	ft

Moment Loads

	#1		#2		#3
magnitude		k"		k"	k"
location		ft		ft	ft

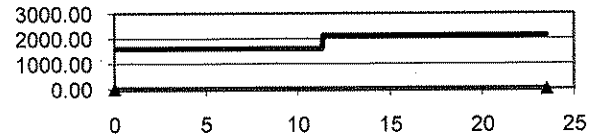
Output

	value		location	
reaction 1	25.67	kips	0.00	ft.
reaction 2	28.28	kips	23.50	ft.
max. moment	2239.6	k-in.	11.20	ft.
neg. moment	-0.28	k-in.	23.42	ft.
max stress	24.33	ksi	11.20	ft.
max. shear	27.96	kips	23.42	ft.
max. deflection	0.727	in.	11.75	ft.
Deflection Ratio	L / 388			

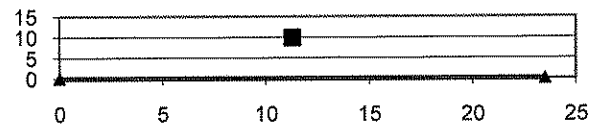
For beam design:

3-plate depth at max stress	18	in.
shear at max stress	7.69738	k
3-plate depth at max shear	0	in.
Max allowable stress		ksi
overstressed segment start		ft.
overstressed segment end		ft.

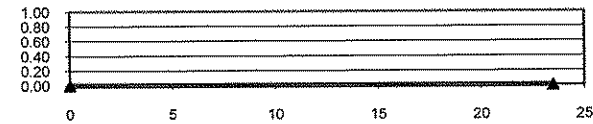
Unif. load plus self wt



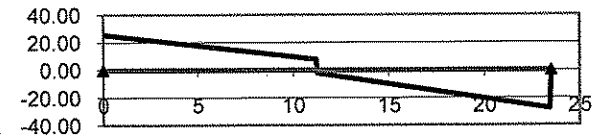
Point Loads



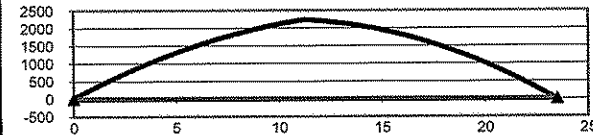
Moment Loads



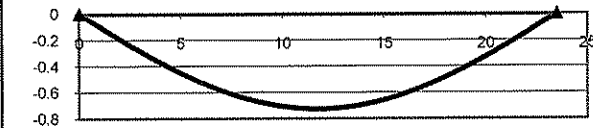
Shear



Moment



Deflection



Mz Bm #7

Design Data:

AXIAL = -1.00 K
 SHEAR = 28.20 K
 X MOMENT = 2240.00 "-K
 KLX = 23.50 FT
 KLY = 12.20 FT
 LB = 12.20 FT
 RT = 0.00
 CB = 1.00
 CMX = 1.00
 FLANGE FY = 55.00 KSI
 WEB FY = 55.00 KSI
 STRESS FACTOR 1.00
 UNBRACED POINT DESIGN
 WEB DESIGNED WITH NO STIFFENERS
 AISC PLATE/YEAR = 05AISC

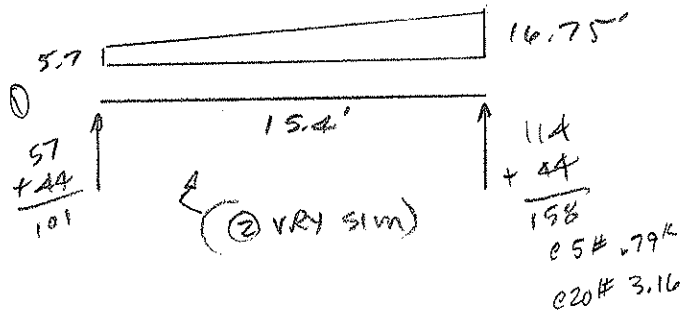
SECTION

0.6250 X 8.0 FLG 0.1875 WEB 18.00 DEPTH
 AREA = 13.14
 IX = 828.48 SX = 92.05 RX = 7.94 ZX = 100.03
 IY = 53.34 SY = 13.34 RY = 2.01 ZY = 20.15
 QS = 1.00
 QA = 0.90
 WEIGHT = 44.71 #/FT

FORCES

ACTUAL P = 1.00 K ALLOWABLE P = 265.58 K
 MX = 2240.00 "-K MX = 2190.53 "-K
 V = 28.20 K V = 33.33 K
 COMBINED STRESS RATIO = 1.024
 SHEAR STRESS RATIO = 0.846

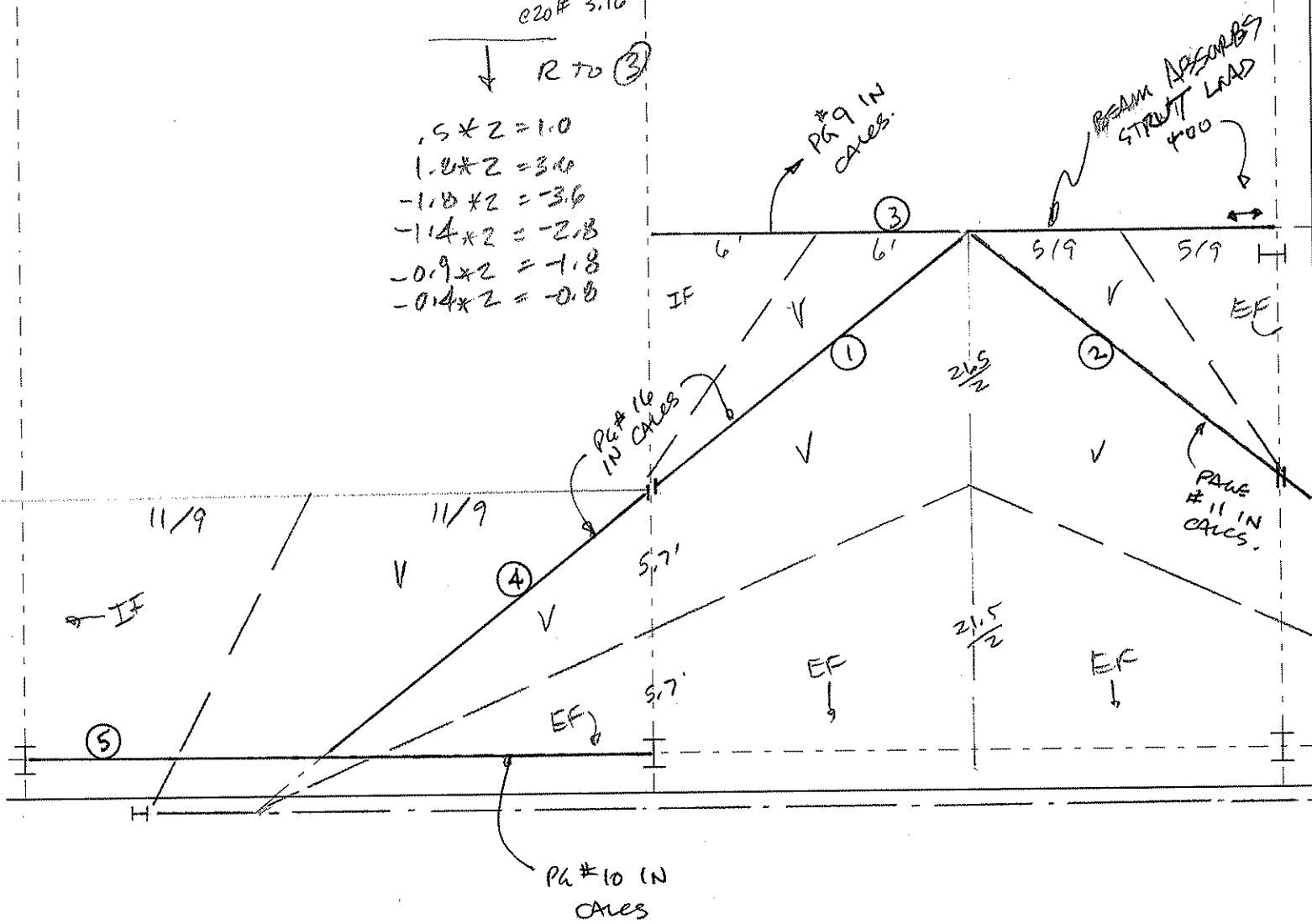
- ① & ④ = VBM LEFT (W4 REF)
- ② = VBR RT (W3 REF)
- ③ = JBM 1 (W1 REF)
- ⑤ = JBM 2 (W1 REF)



30	5#	84
118	20#	335
5.9'	25.9k	16.75'
-104	.68 = 17.4	29.5'
-78	.91 = 13.2	-221
-49	.32 = 8.3	-179
-23	.15 = 3.9	-65

↓ R to ③

$$\begin{aligned}
 .5 \times 2 &= 1.0 \\
 1.0 \times 2 &= 3.0 \\
 -1.0 \times 2 &= -3.6 \\
 -1.4 \times 2 &= -2.8 \\
 -0.9 \times 2 &= -1.8 \\
 -0.4 \times 2 &= -0.8
 \end{aligned}$$



WINDY LOADS & EP2 PORTION



Calculations For Approval - mde - 12 Feb 09

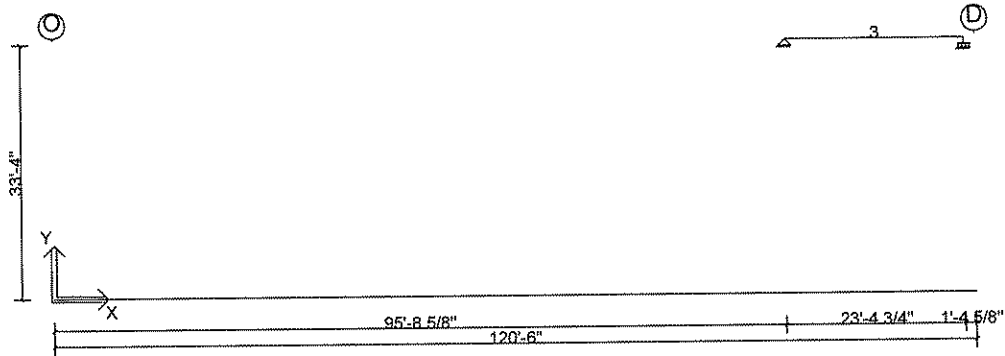
Date: 2/13/2009

Time: 6:36:30 AM

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User Defined Frame Point Loads for Cross Section: 4

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
3	p	D	support point TLK	-1.00	107/7/0	NA	NA	Y	DOWN	1.000	OF
3	k	CG	} TO CORRECT SYSTEM APPLIED LOADING	-1.00	107/8/1	NA	NA	N	DOWN	1.000	OF
3	k	L		-3.60	107/8/1	NA	NA	N	DOWN	1.000	OF
3	k	W1>		3.60	107/8/1	NA	NA	N	UP	1.000	OF
3	k	<W1		2.80	107/8/1	NA	NA	N	UP	1.000	OF
3	k	W2>		1.80	107/8/1	NA	NA	N	UP	1.000	OF
3	k	<W2		0.80	107/8/1	NA	NA	N	UP	1.000	OF





Calculations For Approval - mde - 12 Feb 09

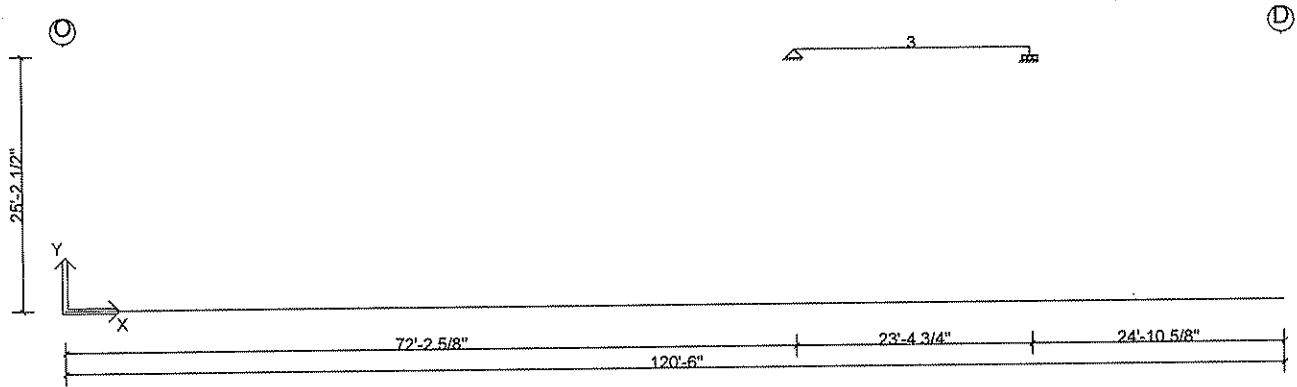
Date: 2/13/2009

Time: 6:36:30 AM

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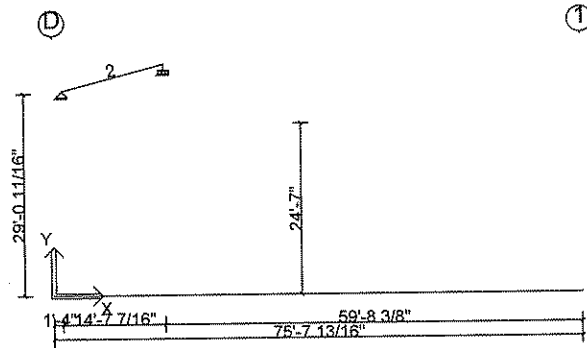
User Defined Frame Point Loads for Cross Section: 7

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
3	p	D	support point TLK	-1.00	90/11/10	NA	NA	Y	DOWN	1.000	OF



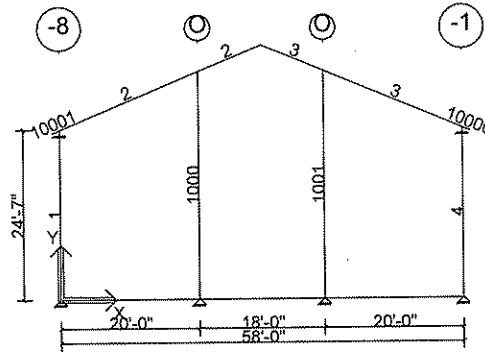
User Defined Frame Line Loads for Cross Section: 6

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
2	plf	CG	} TO CORRECT SYSTEM APPLIED LOADS	-84.00	13/8/10	-30.00	28/9/15	N	DOWN	1.000	OF
2	plf	L		-335.00	13/8/10	-118.00	28/9/15	N	DOWN	1.000	OF
2	plf	W1>		295.00	13/8/10	104.00	28/9/15	N	UP	1.000	OF
2	plf	<W1		221.00	13/8/10	78.00	28/9/15	N	UP	1.000	OF
2	plf	W2>		139.00	13/8/10	49.00	28/9/15	N	UP	1.000	OF
2	plf	<W2		65.00	13/8/10	23.00	28/9/15	N	UP	1.000	OF



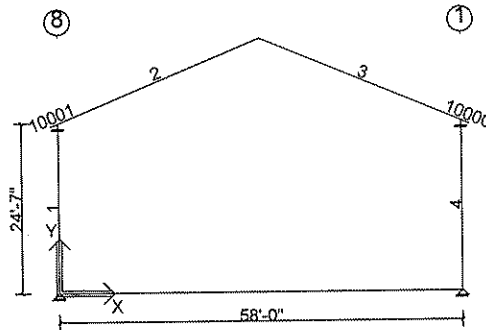
User Defined Frame Point Loads for Cross Section:

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-14.10	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-7.00	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FL	Mezz	-14.10	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-7.00	12/6/0	NA	NA	N	DOWN	1.000	CL
1000	k	FL	Mezz	-23.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1000	k	FD	Mezz	-11.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1000	k	E>	Mezz	-2.30	12/6/0	NA	NA	N	LEFT	1.000	IF
1000	k	<E	Mezz	2.30	12/6/0	NA	NA	N	RIGHT	1.000	IF
1001	k	FL	Mezz	-23.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1001	k	FD	Mezz	-11.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1001	k	E>	Mezz	-2.30	12/6/0	NA	NA	N	LEFT	1.000	IF
1001	k	<E	Mezz	2.30	12/6/0	NA	NA	N	RIGHT	1.000	IF



User Defined Frame Point Loads for Cross Section: M

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
4	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL

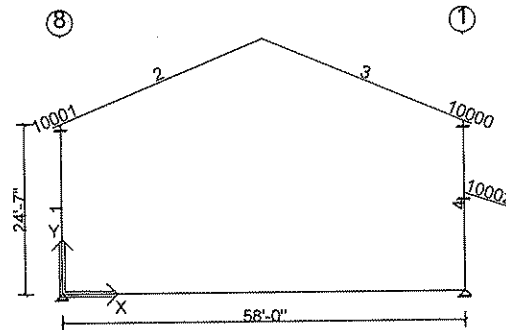


User Defined Frame Point Loads for Cross Section: L

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
3	k	CG	Folding Partition (open)->Resolved From Plane	-2.60	24/0/0	NA	NA	N	DOWN	1.000	OF
4	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL

User Defined Frame Line Loads for Cross Section: L

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
3	plf	CG	Folding Partition->Resolved From Plane	-104.06	2/0/0	-104.06	27/0/0	N	DOWN	1.000	OF

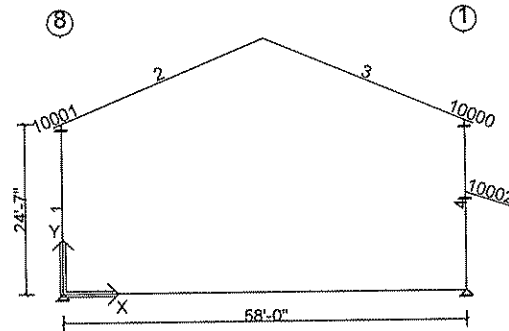


User Defined Frame Point Loads for Cross Section: K

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-25.40	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
3	k	CG	Folding Partition (open)->Resolved From Plane	-0.40	24/0/0	NA	NA	N	DOWN	1.000	OF
4	k	FL	Mezz	-25.40	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL

User Defined Frame Line Loads for Cross Section: K

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
3	plf	CG	Folding Partition->Resolved From Plane	-15.94	2/0/0	-15.94	27/0/0	N	DOWN	1.000	OF





Calculations For Approval - mde - 12 Feb 09

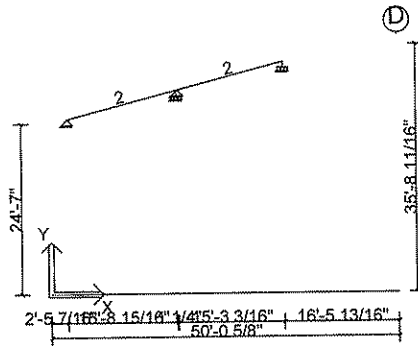
Date: 2/13/2009

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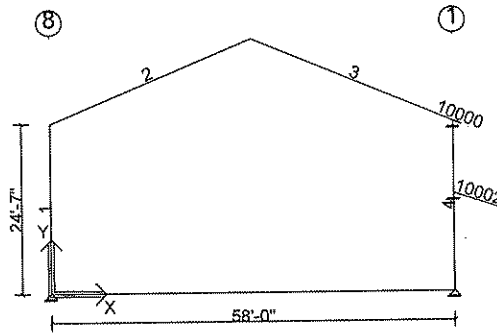
User Defined Frame Line Loads for Cross Section: 8

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
2	plf	CG	} TO CORRECT SYSTEM APPLIED LOADS	-84.00	13/8/10	-30.00	28/9/15	N	DOWN	1.000	OF
2	plf	L		-335.00	13/8/10	-118.00	28/9/15	N	DOWN	1.000	OF
2	plf	W1>		295.00	13/8/10	104.00	28/9/15	N	UP	1.000	OF
2	plf	<W1		221.00	13/8/10	78.00	28/9/15	N	UP	1.000	OF
2	plf	W2>		139.00	13/8/10	49.00	28/9/15	N	UP	1.000	OF
2	plf	<W2		65.00	13/8/10	23.00	28/9/15	N	UP	1.000	OF



User Defined Frame Point Loads for Cross Section: H

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-25.40	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
4	k	FL	Mezz	-25.40	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL



Influence Areas for Cross Section:

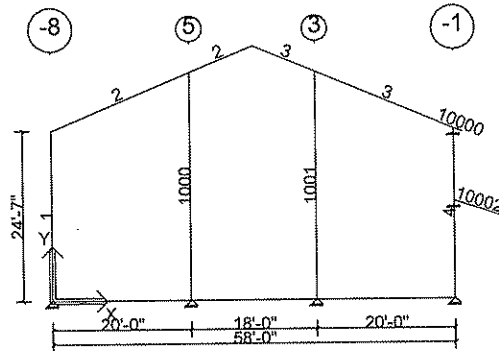
Location	Distance	Left	Right	Total	Surface	Direction	Override	Area (sq. ft.)
118/11/0 - Side 1	0/0/0	23/6/0	0/0/0	23/6/0	Wall 4 (Operations Building)	Leeward		485.88
	24/7/0	23/6/0	0/0/0	23/6/0				
118/11/0 - Side 1	0/0/0	0/0/0	28/10/0	28/10/0	Wall 3 (Operations Building Lean-to)	Leeward		485.88
	13/8/0	0/0/0	28/10/0	28/10/0				

User Defined Frame Point Loads for Cross Section:

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-14.10	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-7.00	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
4	k	FL	Mezz	-14.10	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-8.00	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
1000	k	FL	Mezz	-23.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1000	k	FD	Mezz	-11.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1000	k	E>	Mezz	-2.30	12/6/0	NA	NA	N	LEFT	1.000	IF
1000	k	<E	Mezz	2.30	12/6/0	NA	NA	N	RIGHT	1.000	IF
1001	k	FL	Mezz	-23.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1001	k	FD	Mezz	-12.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1001	k	E>	Mezz	-2.30	12/6/0	NA	NA	N	LEFT	1.000	IF
1001	k	<E	Mezz	2.30	12/6/0	NA	NA	N	RIGHT	1.000	IF

User Defined Frame Line Loads for Cross Section:

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
4	plf	W1>	} WIND FROM LEAN-TO SYSTEM OMITTED.	-146.57	13/8/0	-0.00	22/10/0	N	LEFT	1.000	OF
4	plf	<W1		177.35	13/8/0	0.00	22/10/0	N	RIGHT	1.000	OF
4	plf	W2>		-252.10	13/8/0	-0.00	22/10/0	N	LEFT	1.000	OF
4	plf	<W2		71.82	13/8/0	0.00	22/10/0	N	RIGHT	1.000	OF
4	plf	WP		227.18	13/8/0	0.00	22/10/0	N	RIGHT	1.000	OF
4	plf	W1>		-146.57	0/0/2	-146.57	13/8/0	N	LEFT	1.000	OF
4	plf	<W1		177.35	0/0/2	177.35	13/8/0	N	RIGHT	1.000	OF
4	plf	W2>		-252.10	0/0/2	-252.10	13/8/0	N	LEFT	1.000	OF
4	plf	<W2		71.82	0/0/2	71.82	13/8/0	N	RIGHT	1.000	OF
4	plf	WP		227.18	0/0/2	227.18	13/8/0	N	RIGHT	1.000	OF





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Shape: Operations Building Lean-to

Loads and Codes - Shape: Operations Building Lean-to

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Primaries Wind Exposure (Factor): B (0.608)
 Parts Wind Exposure Factor: 0.701

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 9/1/8
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 22.35, (Parts) 25.76 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.50 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group 1

 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.2859
 Bracing Seismic Period: 0.1766
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Deflection Conditions

Frames are vertically supporting: Ceiling with Flexible Finish
 Frames are laterally supporting: Unreinforced Masonry Wall
 Purlins are supporting: Ceiling with Flexible Finish
 Girts are supporting: Unreinforced Masonry Wall

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L >	D + CG + L >
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S >	D + CG + S >
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
6	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1 (Span 1)
7	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1 (Span 2)
8	System	1.000	1.0 D + 1.0 CG + 1.0 W1 >	D + CG + W1 >
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
10	System	1.000	1.0 D + 1.0 CG + 1.0 W2 >	D + CG + W2 >
11	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
12	System	1.000	0.600 D + 0.600 CU + 1.0 W1 >	D + CU + W1 >
13	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
14	System	1.000	0.600 D + 0.600 CU + 1.0 W2 >	D + CU + W2 >
15	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
16	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1 >	D + CG + L + W1 >
17	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
18	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2 >	D + CG + L + W2 >
19	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
20	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1 >	D + CG + S + W1 >
21	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
22	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2 >	D + CG + S + W2 >
23	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
24	System	1.000	1.0 D + 1.0 CG + 0.700 E > + 0.700 EG+	D + CG + E > + EG+
25	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG+	D + CG + <E + EG+



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26	System	1.000	0.600 D + 0.600 CU + 0.700 E> + 0.700 EG-	D + CU + E> + EG-
27	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG-	D + CU + <E + EG-
28	System	1.000	1.0 D + 1.0 CG + 0.525 E> + 0.525 EG+	D + CG + E> + EG+
29	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG+	D + CG + <E + EG+
30	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
31	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
32	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
33	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
34	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
35	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
36	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
37	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
38	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
39	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
40	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
41	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
42	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
43	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
44	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
45	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2
46	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
47	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
48	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
49	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
50	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-
51	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+

Design Load Combinations - Bracing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W1	<W1
3	System	1.000	1.0 W2>	W2>
4	System	1.000	1.0 <W2	<W2
5	System	1.000	0.700 E>	E>
6	System	1.000	0.700 <E	<E

Design Load Combinations - Purlin

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L	D + CG + L
2	System	1.000	1.0 D + 1.0 CG + 1.0 S	D + CG + S
3	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
4	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 1)
5	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 5)
6	System	1.000	1.0 D + 1.0 CG + 1.0 PH1	D + CG + PH1(Span 1)
7	System	1.000	1.0 D + 1.0 CG + 1.0 PH1	D + CG + PH1(Span 5)
8	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 1 and 2)
9	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 2 and 3)
10	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 3 and 4)
11	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 4 and 5)
12	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
13	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
14	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
15	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
16	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
17	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
18	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
19	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
20	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
21	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
22	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
23	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
24	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
25	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
26	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
27	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
28	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>



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29	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
30	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
31	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
32	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
33	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
34	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
35	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2
36	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
37	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
38	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
39	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+
40	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
41	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-

Design Load Combinations - Girt

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W2	<W2
3	System	1.000	1.0 WP	WP
4	System	1.000	0.700 E>	E>
5	System	1.000	0.700 <E	<E

Design Load Combinations - Roof - Panel

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 L	D + L
2	System	1.000	1.0 D + 1.0 S	D + S
3	System	1.000	1.0 D + 1.0 S + 1.0 SD	D + S + SD
4	System	1.000	1.0 D + 1.0 W1>	D + W1>
5	System	1.000	1.0 D + 1.0 <W2	D + <W2
6	System	1.000	0.600 D + 1.0 W1>	D + W1>
7	System	1.000	0.600 D + 1.0 <W2	D + <W2

Design Load Combinations - Wall - Panel

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W2	<W2

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	0.700 W1>	W1>
5	System	1.000	0	240	0.700 <W1	<W1
6	System	1.000	0	240	0.700 W2>	W2>
7	System	1.000	0	240	0.700 <W2	<W2
8	System	1.000	0	240	0.700 WP	WP
9	System Derived	1.000	0	240	0.700 WB1>	WB1>
10	System Derived	1.000	0	240	0.700 <WB1	<WB1
11	System Derived	1.000	0	240	0.700 WB2>	WB2>
12	System Derived	1.000	0	240	0.700 <WB2	<WB2
13	System	1.000	200	0	0.700 W1>	W1>
14	System	1.000	200	0	0.700 <W1	<W1
15	System	1.000	200	0	0.700 W2>	W2>
16	System	1.000	200	0	0.700 <W2	<W2
17	System	1.000	200	0	0.700 WP	WP
18	System Derived	1.000	200	0	0.700 WB1>	WB1>
19	System Derived	1.000	200	0	0.700 <WB1	<WB1
20	System Derived	1.000	200	0	0.700 WB2>	WB2>
21	System Derived	1.000	200	0	0.700 <WB2	<WB2
22	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
23	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
24	System Derived	1.000	50	0	1.0 EB>	EB>
25	System Derived	1.000	50	0	1.0 <EB	<EB

Deflection Load Combinations - Purlin



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No.	Origin	Factor	Deflection	Application	Description
1	System	1.000	240	0.700 W1>	W1>
2	System	1.000	240	0.700 <W2	<W2
3	System	1.000	240	0.700 WP	WP
4	System	1.000	240	1.0 S	S
5	System	1.000	240	1.0 S + 1.0 SD	S + SD
6	System	1.000	240	1.0 L	L

Deflection Load Combinations - Girt

No.	Origin	Factor	Deflection	Application	Description
1	System	1.000	240	0.700 W1>	W1>
2	System	1.000	240	0.700 <W2	<W2
3	System	1.000	240	0.700 WP	WP
4	System	1.000	240	0.500 E>	E>
5	System	1.000	240	0.500 <E	<E

Deflection Load Combinations - Roof - Panel

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	150	150	1.0 S	S
2	System	1.000	150	150	1.0 S + 1.0 SD	S + SD



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Reactions - Summary Report

Shape: Operations Building

Builder Contact: Mr. Roy Mouldous
 Name: Broadmoor, LLC
 Address: 2740 N. Arnoult Road

Project: Riverine and Combatant Craft Operations Facility
 Builder PO #:
 Jobsite:

City, State Zip: Metairie, Louisiana 70002
 Country: United States

City, State Zip: Stennis Space Center, Mississippi 39529
 County, Country: Hancock, United States

Loads and Codes - Shape: Operations Building

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi Country: United States
 Built Up: 05AISC - ASD Rainfall: 10.00 inches per hour
 Cold Form: 04AISI - ASD

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Wind Exposure (Factor): B (0.705)
 Parts Wind Exposure Factor: 0.705

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 15/3/12
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 25.92 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.30 psf
 Snow Exposure Category (Factor): 1 Fully Exposed Seismic Hazard / Use Group: Group 1 (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.3628
 Bracing Seismic Period: 0.2208
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Load Type Descriptions

D	Material Dead Weight	C	Collateral Load
CG	Collateral Load for Gravity Cases	CU	Collateral Load for Wind Cases
L	Live Load	ASL^	Alternate Span Live Load, Shifted Right
^ASL	Alternate Span Live Load, Shifted Left	PL2	Partial Live, Full, 2 Spans
L>	Live - Notional Right	<L	Live - Notional Left
S	Snow Load	US1*	Unbalanced Snow Load 1, Shifted Right
US1	Unbalanced Snow Load 1, Shifted Left	US2	Unbalanced Snow Load 2, Shifted Right
*US2	Unbalanced Snow Load 2, Shifted Left	SD	Snow Drift Load
SS	Sliding Snow Load	RS	Rain Surcharge Load
PF1	Partial Load, Full, 1 Span	PH1	Partial Load, Half, 1 Span
PF2	Partial Load, Full, 2 Spans	PH2	Partial Load, Half, 2 Spans
S>	Snow - Notional Right	<S	Snow - Notional Left
MRS	Minimum Roof Snow	MRS>	Minimum Roof Snow - Notional Right
<MRS	Minimum Roof Snow - Notional Left	W	Wind Load
W1>	Wind Load, Case 1, Right	<W1	Wind Load, Case 1, Left
W2>	Wind Load, Case 2, Right	<W2	Wind Load, Case 2, Left
W3>	Wind Load, Case 3, Right	<W3	Wind Load, Case 3, Left
W4>	Wind Load, Case 4, Right	<W4	Wind Load, Case 4, Left
W5>	Wind Load, Case 5, Right	<W5	Wind Load, Case 5, Left
W6>	Wind Load, Case 6, Right	<W6	Wind Load, Case 6, Left
WP	Wind Load, Parallel to Ridge	WPR	Wind Load, Ridge, Right
WPL	Wind Load, Ridge, Left	WPA1	Wind Parallel - Ref A, Case 1
WPA2	Wind Parallel - Ref A, Case 2	WPB1	Wind Parallel - Ref B, Case 1
WPB2	Wind Parallel - Ref B, Case 2	WPC1	Wind Parallel - Ref C, Case 1



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WPC2	Wind Parallel - Ref C, Case 2	WPD1	Wind Parallel - Ref D, Case 1
WPD2	Wind Parallel - Ref D, Case 2	WB1>	Wind Brace Reaction, Case 1, Right
<WB1	Wind Brace Reaction, Case 1, Left	WB2>	Wind Brace Reaction, Case 2, Right
<WB2	Wind Brace Reaction, Case 2, Left	WB3>	Wind Brace Reaction, Case 3, Right
<WB3	Wind Brace Reaction, Case 3, Left	WB4>	Wind Brace Reaction, Case 4, Right
<WB4	Wind Brace Reaction, Case 4, Left	WB5>	Wind Brace Reaction, Case 5, Right
<WB5	Wind Brace Reaction, Case 5, Left	WB6>	Wind Brace Reaction, Case 6, Right
<WB6	Wind Brace Reaction, Case 6, Left	MW	Minimum Wind Load
MWB	Minimum Wind Bracing Reaction	E	Seismic Load
E>	Seismic Load, Right	<E	Seismic Load, Left
EG	Vertical Seismic Effect	EG+	Vertical Seismic Effect, Additive
EG-	Vertical Seismic Effect, Subtractive	EB>	Seismic Brace Reaction, Right
<EB	Seismic Brace Reaction, Left	FL	Floor Live Load
FL*	Alternate Span Floor Live Load, Shifted Right	*FL	Alternate Span Floor Live Load, Shifted Left
FD	Floor Dead Load	AL	Auxiliary Live Load
AL*>	Auxiliary Live Load, Right, Right	*AL>	Auxiliary Live Load, Right, Left
<AL*	Auxiliary Live Load, Left, Right	<*AL	Auxiliary Live Load, Left, Left
AL*	Aux Live, Right	*AL	Aux Live, Left
AL*>(1)	Auxiliary Live Load, Right, Right, Aisle 1	*AL>(1)	Auxiliary Live Load, Right, Left, Aisle 1
<AL*(1)	Auxiliary Live Load, Left, Right, Aisle 1	<*AL(1)	Auxiliary Live Load, Left, Left, Aisle 1
AL*(1)	Aux Live, Right, Aisle 1	*AL(1)	Aux Live, Left, Aisle 1
AL*>(2)	Auxiliary Live Load, Right, Right, Aisle 2	*AL>(2)	Auxiliary Live Load, Right, Left, Aisle 2
<AL*(2)	Auxiliary Live Load, Left, Right, Aisle 2	<*AL(2)	Auxiliary Live Load, Left, Left, Aisle 2
AL*(2)	Aux Live, Right, Aisle 2	*AL(2)	Aux Live, Left, Aisle 2
AL*>(3)	Auxiliary Live Load, Right, Right, Aisle 3	*AL>(3)	Auxiliary Live Load, Right, Left, Aisle 3
<AL*(3)	Auxiliary Live Load, Left, Right, Aisle 3	<*AL(3)	Auxiliary Live Load, Left, Left, Aisle 3
AL*(3)	Aux Live, Right, Aisle 3	*AL(3)	Aux Live, Left, Aisle 3
AL*>(4)	Auxiliary Live Load, Right, Right, Aisle 4	*AL>(4)	Auxiliary Live Load, Right, Left, Aisle 4
<AL*(4)	Auxiliary Live Load, Left, Right, Aisle 4	<*AL(4)	Auxiliary Live Load, Left, Left, Aisle 4
AL*(4)	Aux Live, Right, Aisle 4	*AL(4)	Aux Live, Left, Aisle 4
AL*>(5)	Auxiliary Live Load, Right, Right, Aisle 5	*AL>(5)	Auxiliary Live Load, Right, Left, Aisle 5
<AL*(5)	Auxiliary Live Load, Left, Right, Aisle 5	<*AL(5)	Auxiliary Live Load, Left, Left, Aisle 5
AL*(5)	Aux Live, Right, Aisle 5	*AL(5)	Aux Live, Left, Aisle 5
ALB	Aux Live Bracing Reaction	ALB>	Aux Live Bracing Reaction, Right
<ALB	Aux Live Bracing Reaction, Left	WALB>	Wind, Aux Live Bracing Reaction, Right
<WALB	Wind, Aux Live Bracing Reaction, Left	ALB>(1)	Aux Live Bracing Reaction, Right, Aisle 1
<ALB(1)	Aux Live Bracing Reaction, Left, Aisle 1	WALB>(1)	Wind, Aux Live Bracing Reaction, Right, Aisle 1
<WALB(1)	Wind, Aux Live Bracing Reaction, Left, Aisle 1	ALB>(2)	Aux Live Bracing Reaction, Right, Aisle 2
<ALB(2)	Aux Live Bracing Reaction, Left, Aisle 2	WALB>(2)	Wind, Aux Live Bracing Reaction, Right, Aisle 2
<WALB(2)	Wind, Aux Live Bracing Reaction, Left, Aisle 2	ALB>(3)	Aux Live Bracing Reaction, Right, Aisle 3
<ALB(3)	Aux Live Bracing Reaction, Left, Aisle 3	WALB>(3)	Wind, Aux Live Bracing Reaction, Right, Aisle 3
<WALB(3)	Wind, Aux Live Bracing Reaction, Left, Aisle 3	ALB>(4)	Aux Live Bracing Reaction, Right, Aisle 4
<ALB(4)	Aux Live Bracing Reaction, Left, Aisle 4	WALB>(4)	Wind, Aux Live Bracing Reaction, Right, Aisle 4
<WALB(4)	Wind, Aux Live Bracing Reaction, Left, Aisle 4	ALB>(5)	Aux Live Bracing Reaction, Right, Aisle 5
<ALB(5)	Aux Live Bracing Reaction, Left, Aisle 5	WALB>(5)	Wind, Aux Live Bracing Reaction, Right, Aisle 5
<WALB(5)	Wind, Aux Live Bracing Reaction, Left, Aisle 5	WALB	Wind, Aux Live Bracing Reaction
AD	Auxiliary Dead Load	U0	User Defined Load
U1	User Defined Load - 1	U2	User Defined Load - 2
U3	User Defined Load - 3	U4	User Defined Load - 4
U5	User Defined Load - 5	U6	User Defined Load - 6
U7	User Defined Load - 7	U8	User Defined Load - 8
U9	User Defined Load - 9	UB	User Brace Reaction
UB1	User Brace Reaction - 1	UB2	User Brace Reaction - 2
UB3	User Brace Reaction - 3	UB4	User Brace Reaction - 4
UB5	User Brace Reaction - 5	UB6	User Brace Reaction - 6
UB7	User Brace Reaction - 7	UB8	User Brace Reaction - 8
UB9	User Brace Reaction - 9	R	Rain Load
T	Temperature Load	V	Shear



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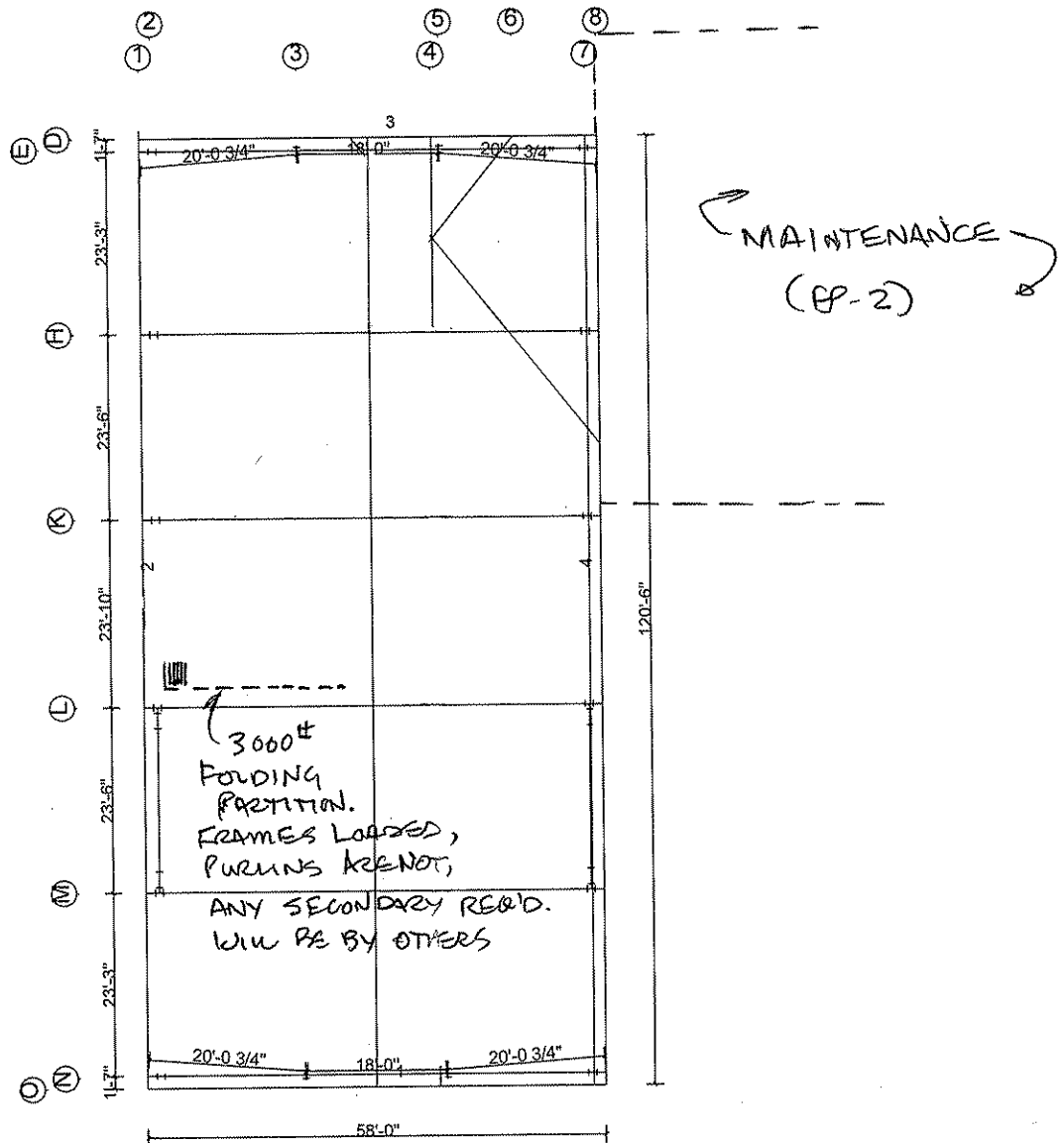
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Overall Building Description

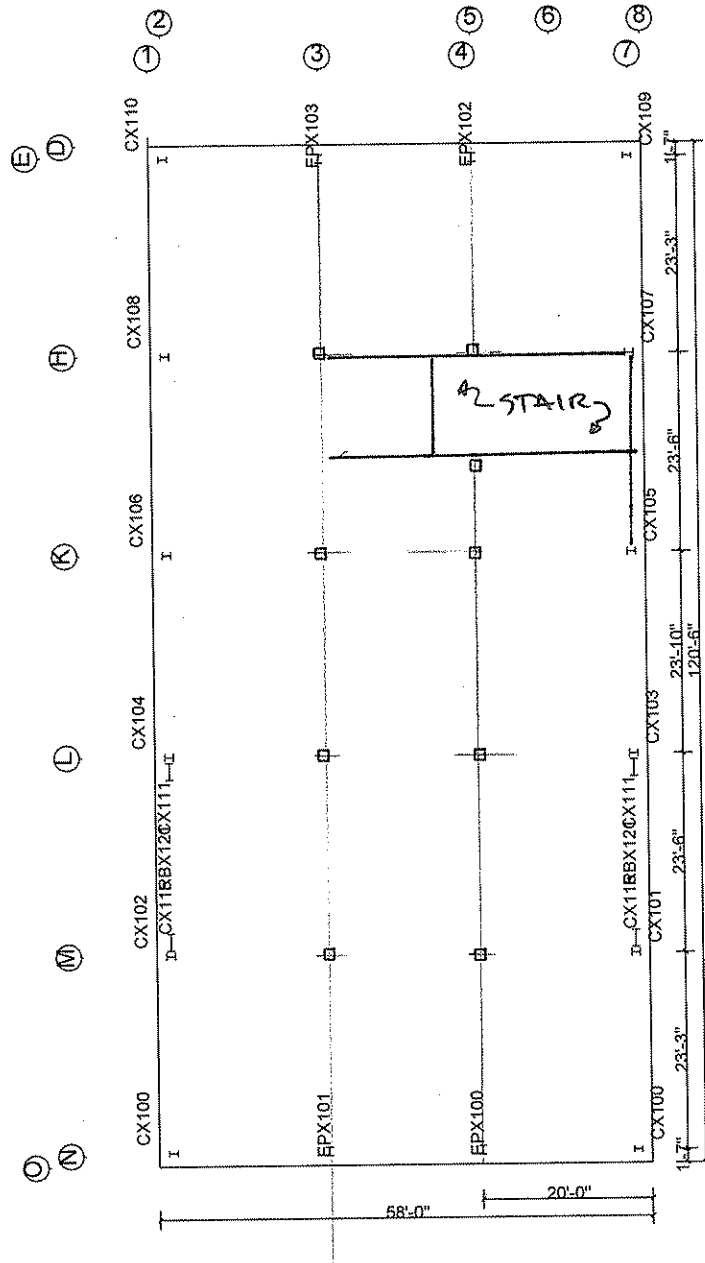
Shape	Overall Width	Overall Length	Floor Area (sq. ft.)	Wall Area (sq. ft.)	Roof Area (sq. ft.)	Max. Eave Height	Min. Eave Height 2	Max. Roof Pitch	Min. Roof Pitch	Peak Height
Operations Building	58/0/0	120/6/0	6989	8153	8461	24/7/0	24/7/0	5.000:12	5.000:12	36/8/0
Operations Building Lean-to	27/6/0	58/0/0	1595	1796	1791	22/10/0	13/8/0	4.000:12		
Total For All Shapes			8584	9949	10252					

Overall Shape Description

Roof 1	Roof 2	From Grid	To Grid	Width	Length	Eave Ht.	Eave Ht. 2	Pitch	Pitch 2	Dist. to Ridge	Peak Height
A	B	1-	1-O	58/0/0	120/6/0	24/7/0	24/7/0	5.000:12	5.000:12	29/0/0	36/8/0



Operations Building : Mezzanine 1 @ 12/9/0



- FORM DECK BY VP. PROPERTIES SHOWN ON ERECTION DRAWINGS
- FLOOR LOAD CALCS & DESIGNS FOUND AFTER PG #8, THIS PKG.
- JOIST CALCULATIONS ARE NOT AVAILABLE UNTIL ORDER IS FINALIZED.

Wall: 2

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
17	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
18	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L + FL
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D+FD+CG+L+W1>+FL
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D+FD+CG+L+<W1+FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D+FD+CG+L+W2>+FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D+FD+CG+L+<W2+FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D+FD+CG+S+W1>+FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D+FD+CG+S+<W1+FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D+FD+CG+S+W2>+FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D+FD+CG+S+<W2+FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
41	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + <E + EG-
42	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D+FD+CG+E>+EG++FL
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D+FD+CG+<E+EG++FL
47	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB1>	D + FD + CG + WP + WB1>
48	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB1>	D + FD + CU + WP + WB1>
49	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D+FD+CG+L+WP+WB1>
50	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D+FD+CG+S+WP+WB1>
51	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+L+WP+FL+WB1>
52	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+S+WP+FL+WB1>
53	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB1	D + FD + CG + WP + <WB1
54	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB1	D + FD + CU + WP + <WB1
55	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D+FD+CG+L+WP+<WB1
56	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D+FD+CG+S+WP+<WB1
57	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+L+WP+FL+<WB1
58	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+S+WP+FL+<WB1
59	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB2>	D + FD + CG + WP + WB2>
60	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB2>	D + FD + CU + WP + WB2>
61	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D+FD+CG+L+WP+WB2>
62	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D+FD+CG+S+WP+WB2>
63	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+L+WP+FL+WB2>



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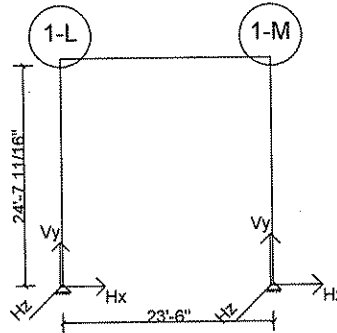
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64	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+S+WP+FL+WB2>
65	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB2	D + FD + CG + WP + <WB2
66	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB2	D + FD + CU + WP + <WB2
67	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D+FD+CG+L+WP+<WB2
68	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D+FD+CG+S+WP+<WB2
69	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+L+WP+FL+<WB2
70	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+S+WP+FL+<WB2
71	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 EB> + 0.700 EG+	D + FD + CG + EB> + EG+
72	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 EB> + 0.700 EG-	D + FD + CU + EB> + EG-
73	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+	D + FD + CG + EB> + EG+
74	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+ + 0.750 FL	D+FD+CG+EB>+EG++FL
75	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <EB + 0.700 EG+	D + FD + CG + <EB + EG+
76	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <EB + 0.700 EG-	D + FD + CU + <EB + EG-
77	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+	D + FD + CG + <EB + EG+
78	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+ + 0.750 FL	D+FD+CG+<EB+EG++FL

Wall: 2
Frame ID: Portal Frame

Frame Type: Portal Frame



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 1

Type		Exterior Column		Exterior Column				
X-Loc		0/0/0		23/6/0				
Grid1 - Grid2		1-L		1-M				
Base Plate W x L (in.)		11 x 25		11 x 25				
Base Plate Thickness (in.)		0.375		0.375				
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750				
Column Base Elev.		100'-1 1/2"		100'-1 1/2"				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	0.0	1.1	-0.0	1.1	-	-	-
FD	Frm	0.3	6.4	-0.3	6.4	-	-	-
CG	Frm	-	-	-	-	-	-	-
L>	Frm	-	-	-	-	-	-	-
<L	Frm	-	-	-	-	-	-	-
S>	Frm	-	-	-	-	-	-	-
<S	Frm	-	-	-	-	-	-	-
S	Frm	-	-	-	-	-	-	-
SD	Frm	-	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-	-
US1*	Frm	-	-	-	-	-	-	-
*US1	Frm	-	-	-	-	-	-	-
W1>	Frm	-	-	-	-	-	-	-
<W1	Frm	-	-	-	-	-	-	-
W2>	Frm	-	-	-	-	-	-	-
<W2	Frm	-	-	-	-	-	-	-
CU	Frm	-	-	-	-	-	-	-
FL	Frm	0.6	12.7	-0.6	12.7	-	-	-
L	Frm	-	-	-	-	-	-	-
E>	Frm	-1.6	-2.0	-1.6	2.0	-	-	-
EG+	Frm	-	0.2	-	0.2	-	-	-
<E	Frm	1.6	2.0	1.6	-2.0	-	-	-
EG-	Frm	-	-0.2	-	-0.2	-	-	-
WP	Frm	-	-	-	-	-	-	-
WB1>	Brc	4.4	10.2	4.2	-10.2	-	-	-
<WB1	Brc	-4.5	-11.0	-4.8	11.0	-	-	-
WB2>	Brc	5.6	13.0	5.4	-13.0	-	-	-
<WB2	Brc	-3.4	-8.2	-3.6	8.2	-	-	-
EB>	Brc	2.3	3.8	2.2	-3.8	-	-	-
<EB	Brc	-2.2	-3.8	-2.3	3.8	-	-	-



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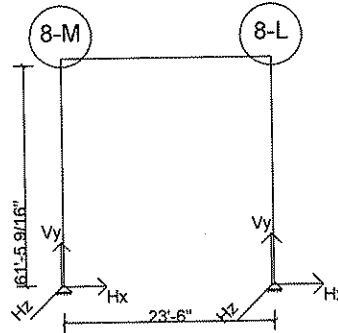
Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	1-L	4.4	54	5.9	59	-	-	-	-	6.5	54	26.7	63	-	-	-	-
23/6/0	1-M	5.1	53	5.2	60	-	-	-	-	8.5	60	25.3	57	-	-	-	-

Wall: 4
Frame ID:Portal Frame

Frame Type:Portal Frame



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 8

Type		Exterior Column		Exterior Column				
X-Loc		0/0/0		23/6/0				
Grid1 - Grid2		8-M		8-L				
Base Plate W x L (in.)		11 x 25		11 x 25				
Base Plate Thickness (in.)		0.375		0.375				
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750				
Column Base Elev.		100'-1 1/2"		100'-1 1/2"				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	0.0	1.1	-0.0	1.1	-	-	-
FD	Frm	0.3	6.4	-0.3	6.4	-	-	-
CG	Frm	-	-	-	-	-	-	-
L>	Frm	-	-	-	-	-	-	-
<L	Frm	-	-	-	-	-	-	-
S>	Frm	-	-	-	-	-	-	-
<S	Frm	-	-	-	-	-	-	-
S	Frm	-	-	-	-	-	-	-
SD	Frm	-	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-	-
US1*	Frm	-	-	-	-	-	-	-
*US1	Frm	-	-	-	-	-	-	-
W1>	Frm	-	-	-	-	-	-	-
<W1	Frm	-	-	-	-	-	-	-
W2>	Frm	-	-	-	-	-	-	-
<W2	Frm	-	-	-	-	-	-	-
CU	Frm	-	-	-	-	-	-	-
FL	Frm	0.6	12.7	-0.6	12.7	-	-	-
L	Frm	-	-	-	-	-	-	-
E>	Frm	1.6	2.0	1.6	-2.0	-	-	-
EG+	Frm	-	0.2	-	0.2	-	-	-
<E	Frm	-1.6	-2.0	-1.6	2.0	-	-	-
EG-	Frm	-	-0.2	-	-0.2	-	-	-
WP	Frm	-	-	-	-	-	-	-
WB1>	Brc	-4.3	-10.5	-4.5	10.5	-	-	-
<WB1	Brc	4.9	11.3	4.7	-11.3	-	-	-
WB2>	Brc	-5.5	-13.3	-5.8	13.3	-	-	-
<WB2	Brc	3.7	8.4	3.5	-8.4	-	-	-
EB>	Brc	-2.2	-3.8	-2.3	3.8	-	-	-
<EB	Brc	2.3	3.8	2.2	-3.8	-	-	-



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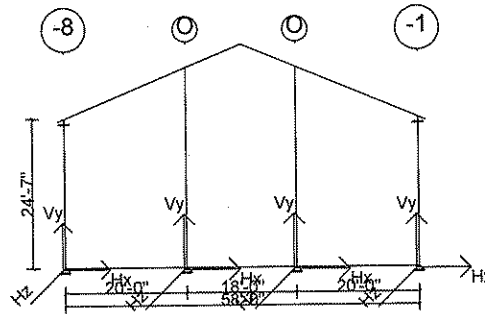
Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	8-M	5.3	60	5.2	53	-	-	-	-	8.8	60	25.5	57	-	-	-	-
23/6/0	8-L	6.1	59	4.5	54	-	-	-	-	6.8	54	27.0	63	-	-	-	-

Wall: 4, Frame at: 1/7/0
Frame ID:CB2 End

Frame Type:Continuous Beam



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section:

Type		Exterior Column		Interior Column			Interior Column			Exterior Column	
X-Loc		0/0/0		20/0/0			38/0/0			58/0/0	
Grid1 - Grid2		-8		5-0			3-0			-1	
Base Plate W x L (in.)		9 x 13		11 x 13			11 x 13			9 x 13	
Base Plate Thickness (in.)		0.375		0.375			0.375			0.375	
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750			4 - 0.750			4 - 0.750	
Column Base Elev.		100'-1 1/2"		100'-1 1/2"			100'-1 1/2"			100'-1 1/2"	
Load Type	Desc.	Hx	Vy	Hx	Hz	Vy	Hx	Hz	Vy	Hx	Vy
D	Frm	0.1	1.6	-	-	2.4	-	-	2.4	-0.1	1.6
FD	Frm	0.1	7.1	-	0.2	11.8	-	0.2	11.8	-0.1	7.1
CG	Frm	0.1	0.9	-	-	1.3	-	-	1.3	-0.1	0.9
L>	Frm	0.2	3.4	-	-	5.3	-	-	5.3	-0.2	3.4
<L	Frm	0.2	3.4	-	-	5.3	-	-	5.3	-0.2	3.4
S>	Frm	0.0	0.4	-	-	0.6	-	-	0.6	-0.0	0.4
<S	Frm	0.0	0.4	-	-	0.6	-	-	0.6	-0.0	0.4
S	Frm	0.0	0.4	-	-	0.6	-	-	0.6	-0.0	0.4
SD	Frm	-	-	-	-	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-	-	-	-	-
US1*	Frm	-	0.3	-	-	1.1	-	-	0.5	-	0.1
*US1	Frm	-	0.1	-	-	0.5	-	-	1.1	-	0.3
W1>	Frm	4.7	0.5	-	7.4	-9.7	-	7.3	2.9	4.8	-7.8
<W1	Frm	-4.8	-7.8	-	-6.6	2.9	-	-6.6	-9.7	-4.7	0.5
W2>	Frm	3.6	3.4	-	-	-9.0	-	-	3.6	5.8	-4.9
<W2	Frm	-5.8	-4.9	-	-	3.6	-	-	-9.0	-3.6	3.4
WP	Frm	2.2	-7.3	-	-	-2.3	-	-	-2.3	-2.2	-7.3
CU	Frm	-	-	-	-	-	-	-	-	-	-
FL	Frm	0.2	14.3	-	0.4	23.7	-	0.4	23.7	-0.2	14.3
L	Frm	0.2	3.4	-	-	5.3	-	-	5.3	-0.2	3.4
E>	Frm	0.7	0.7	-	1.9	-0.9	-	1.9	0.9	0.7	-0.7
EG+	Frm	-	0.2	-	-	0.4	-	-	0.4	-	0.2
<E	Frm	-0.7	-0.7	-	-1.9	0.9	-	-1.9	-0.9	-0.7	0.7
EG-	Frm	-	-0.2	-	-	-0.4	-	-	-0.4	-	-0.2

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left	Load	Hz Right	Load	Hz In	Load	Hz Out	Load	Uplift	Load	Vrt Down	Load	Mom cw	Load	Mom ccw	Load
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		(-Hx) (k)	Case	(Hx) (k)	Case	(-Hz) (k)	Case	(Hz) (k)	Case	(-Vy) (k)	Case	(Vy) (k)	Case	(-Mzz) (in-k)	Case	(Mzz) (in-k)	Case
0/0/0	-8	5.7	17	4.9	9	-	-	-	-	2.6	15	25.4	36	-	-	-	-
20/0/0	5-O	-	-	-	-	6.5	15	7.6	9	1.2	14	40.0	37	-	-	-	-
38/0/0	3-O	-	-	-	-	6.5	15	7.5	9	1.1	15	40.0	36	-	-	-	-
58/0/0	-1	4.9	10	5.7	16	-	-	-	-	2.6	14	25.5	37	-	-	-	-

Wall: 4, Frame at: 24/10/0

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
17	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
18	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D+FD+CG+L+W1>+FL
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D+FD+CG+L+<W1+FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D+FD+CG+L+W2>+FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D+FD+CG+L+<W2+FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D+FD+CG+S+W1>+FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D+FD+CG+S+<W1+FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D+FD+CG+S+W2>+FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D+FD+CG+S+<W2+FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
41	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
42	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D+FD+CG+E>+EG++FL
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D+FD+CG+<E+EG++FL
47	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB1>	D + FD + CG + WP + WB1>
48	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB1>	D + FD + CU + WP + WB1>
49	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D+FD+CG+L+WP+WB1>
50	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D+FD+CG+S+WP+WB1>
51	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+L+WP+FL+WB1>
52	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+S+WP+FL+WB1>
53	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB1	D + FD + CG + WP + <WB1
54	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB1	D + FD + CU + WP + <WB1
55	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D+FD+CG+L+WP+<WB1
56	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D+FD+CG+S+WP+<WB1
57	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+L+WP+FL+<WB1
58	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+S+WP+FL+<WB1
59	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB2>	D + FD + CG + WP + WB2>
60	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB2>	D + FD + CU + WP + WB2>
61	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D+FD+CG+L+WP+WB2>
62	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D+FD+CG+S+WP+WB2>
63	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+L+WP+FL+WB2>



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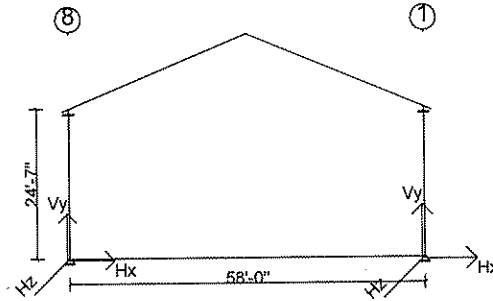
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64	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+S+WP+FL+WB2>
65	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB2	D + FD + CG + WP + <WB2
66	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB2	D + FD + CU + WP + <WB2
67	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D+FD+CG+L+WP+<WB2
68	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D+FD+CG+S+WP+<WB2
69	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+L+WP+FL+<WB2
70	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+S+WP+FL+<WB2
71	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 EB> + 0.700 EG+	D + FD + CG + EB> + EG+
72	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 EB> + 0.700 EG-	D + FD + CU + EB> + EG-
73	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+	D + FD + CG + EB> + EG+
74	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+ + 0.750 FL	D+FD+CG+EB>+EG++FL
75	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <EB + 0.700 EG+	D + FD + CG + <EB + EG+
76	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <EB + 0.700 EG-	D + FD + CU + <EB + EG-
77	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+	D + FD + CG + <EB + EG+
78	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+ + 0.750 FL	D+FD+CG+<EB+EG++FL

Wall: 4, Frame at: 24/10/0

Frame ID:Rigid Frame

Frame Type:Rigid Frame



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: M

Type		Exterior Column		Exterior Column				
X-Loc		0/0/0		58/0/0				
Grid1 - Grid2		M-8		M-1				
Base Plate W x L (in.)		11 x 13		11 x 13				
Base Plate Thickness (in.)		0.375		0.375				
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750				
Column Base Elev.		100'-1 1/2"		100'-1 1/2"				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	0.8	4.8	-0.8	4.9	-	-	-
FD	Frm	0.1	6.4	-0.1	6.4	-	-	-
CG	Frm	0.8	3.5	-0.8	3.5	-	-	-
L>	Frm	3.1	14.1	-3.1	14.1	-	-	-
<L	Frm	3.1	14.1	-3.1	14.1	-	-	-
S>	Frm	0.4	1.6	-0.4	1.6	-	-	-
<S	Frm	0.4	1.6	-0.4	1.6	-	-	-
S	Frm	0.4	1.6	-0.4	1.6	-	-	-
SD	Frm	-	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-	-
US1*	Frm	0.4	2.0	-0.4	1.2	-	-	-
*US1	Frm	0.4	1.2	-0.4	2.0	-	-	-
W1>	Frm	6.7	-7.4	10.4	-14.7	-	-	-
<W1	Frm	-10.4	-14.7	-6.7	-7.4	-	-	-
W2>	Frm	5.4	-1.1	11.7	-8.4	-	-	-
<W2	Frm	-11.7	-8.4	-5.4	-1.1	-	-	-
CU	Frm	-	-	-	-	-	-	-
FL	Frm	0.3	12.7	-0.3	12.7	-	-	-
L	Frm	3.1	14.1	-3.1	14.1	-	-	-
E>	Frm	1.5	0.8	1.5	-0.8	-	-	-
EG+	Frm	0.0	0.3	-0.0	0.3	-	-	-
<E	Frm	-1.5	-0.8	-1.5	0.8	-	-	-
EG-	Frm	-0.0	-0.3	0.0	-0.3	-	-	-
WP	Frm	3.3	-11.7	-3.3	-11.7	-	-	-
WB1>	Brc	-	-	-	-	-	-	-
<WB1	Brc	-	-	-	-	-	-	-
WB2>	Brc	-	-	-	-	-	-	-
<WB2	Brc	-	-	-	-	-	-	-
EB>	Brc	-	-	-	-	-	-	-
<EB	Brc	-	-	-	-	-	-	-



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Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	M-8	11.2	16	9.3	30	-	-	-	-	8.0	14	34.9	27	-	-	-	-
58/0/0	M-1	9.3	31	11.2	15	-	-	-	-	7.9	13	34.9	27	-	-	-	-

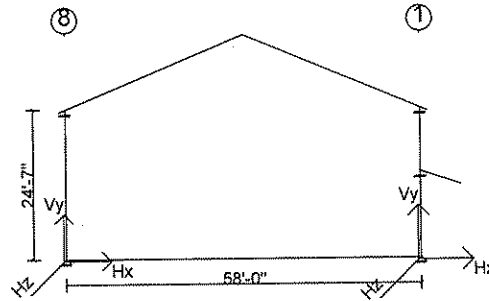
Bracing

X-Loc	Grid	Description
0/0/0	M-8	Portal Frame is next to column. See portal frame section for reactions
58/0/0	M-1	Portal Frame is next to column. See portal frame section for reactions

Wall: 4, Frame at: 48/4/0

Frame ID:Rigid Frame

Frame Type:Rigid Frame



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: L

		Exterior Column 0/0/0		Exterior Column 58/0/0					
Type		L-8		L-1					
X-Loc		L-8		L-1					
Grid1 - Grid2		L-8		L-1					
Base Plate W x L (in.)		11 x 13		11 x 13					
Base Plate Thickness (in.)		0.375		0.375					
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750					
Column Base Elev.		100'-1 1/2"		100'-1 1/2"					
Load Type	Desc.	Hx	Vy	Hx	Vy				
D	Frm	0.9	4.8	-0.9	5.7	-	-	-	-
FD	Frm	0.1	6.4	-0.1	6.4	-	-	-	-
CG	Frm	1.4	4.4	-1.4	8.2	-	-	-	-
L>	Frm	3.5	14.1	-3.5	16.4	-	-	-	-
<L	Frm	3.5	14.1	-3.5	16.4	-	-	-	-
S>	Frm	0.4	1.6	-0.4	2.0	-	-	-	-
<S	Frm	0.4	1.6	-0.4	2.0	-	-	-	-
S	Frm	0.4	1.6	-0.4	2.0	-	-	-	-
SD	Frm	-0.1	-0.1	0.1	1.5	-	-	-	-
SS	Frm	-	-	-	0.1	-	-	-	-
US1*	Frm	0.5	2.0	-0.5	1.3	-	-	-	-
*US1	Frm	0.5	1.2	-0.5	2.0	-	-	-	-
W1>	Frm	6.5	-7.4	9.7	-18.5	-	-	-	-
<W1	Frm	-10.9	-14.9	-6.8	-8.6	-	-	-	-
W2>	Frm	5.2	-1.0	10.9	-12.1	-	-	-	-
<W2	Frm	-12.1	-8.5	-5.5	-2.2	-	-	-	-
CU	Frm	-	-	-	-	-	-	-	-
FL	Frm	0.2	12.7	-0.2	12.7	-	-	-	-
L	Frm	3.5	14.1	-3.5	16.4	-	-	-	-
E>	Frm	1.6	0.9	1.7	-1.0	-	-	-	-
EG+	Frm	0.1	0.4	-0.1	0.5	-	-	-	-
<E	Frm	-1.6	-0.9	-1.7	1.0	-	-	-	-
EG-	Frm	-0.1	-0.4	0.1	-0.5	-	-	-	-
WP	Frm	3.5	-10.9	-4.1	-12.7	-	-	-	-
WB1>	Brc	-	-	-	-	-	-	-	-
<WB1	Brc	-	-	-	-	-	-	-	-
WB2>	Brc	-	-	-	-	-	-	-	-
<WB2	Brc	-	-	-	-	-	-	-	-
EB>	Brc	-	-	-	-	-	-	-	-
<EB	Brc	-	-	-	-	-	-	-	-



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Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	L-8	11.5	16	10.1	30	-	-	-	-	8.2	14	35.6	27	-	-	-	-
58/0/0	L-1	10.3	31	10.4	15	-	-	-	-	11.2	13	42.2	27	-	-	-	-

Bracing

X-Loc	Grid	Description
0/0/0	L-8	Portal Frame is next to column. See portal frame section for reactions
58/0/0	L-1	Portal Frame is next to column. See portal frame section for reactions



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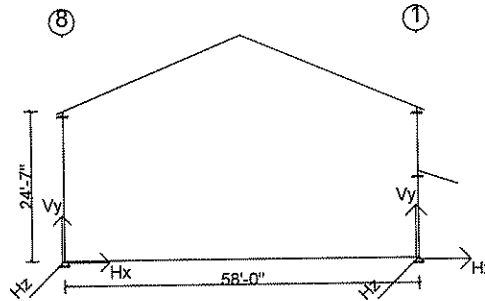
Wall: 4, Frame at: 72/2/0

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D+FD+CG+L+W1>+FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D+FD+CG+L+<W1+FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D+FD+CG+L+W2>+FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D+FD+CG+L+<W2+FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D+FD+CG+L+WP+FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D+FD+CG+S+W1>+FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D+FD+CG+S+<W1+FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D+FD+CG+S+W2>+FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D+FD+CG+S+<W2+FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D+FD+CG+S+WP+FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D+FD+CG+E>+EG+FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D+FD+CG+<E+EG+FL

Wall: 4, Frame at: 72/2/0
Frame ID: Rigid Frame

Frame Type: Rigid Frame



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: K

Type		Exterior Column		Exterior Column				
X-Loc		0/0/0		58/0/0				
Grid1 - Grid2		K-8		K-1				
Base Plate W x L (in.)		11 x 13		11 x 13				
Base Plate Thickness (in.)		0.375		0.375				
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750				
Column Base Elev.		100'-1 1/2"		100'-1 1/2"				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	0.8	4.9	-0.8	6.2	-	-	-
FD	Frm	0.2	12.7	-0.2	12.7	-	-	-
CG	Frm	0.9	3.6	-0.9	5.0	-	-	-
L>	Frm	3.4	14.0	-3.4	17.6	-	-	-
<L	Frm	3.4	14.0	-3.4	17.6	-	-	-
S>	Frm	0.4	1.6	-0.4	2.3	-	-	-
<S	Frm	0.4	1.6	-0.4	2.3	-	-	-
S	Frm	0.4	1.6	-0.4	2.3	-	-	-
SD	Frm	-0.2	-0.2	0.2	2.3	-	-	-
SS	Frm	-0.0	-0.0	0.0	0.2	-	-	-
US1*	Frm	0.5	2.0	-0.5	1.3	-	-	-
*US1	Frm	0.5	1.2	-0.5	2.0	-	-	-
W1>	Frm	6.5	-7.4	9.0	-20.4	-	-	-
<W1	Frm	-10.9	-14.8	-7.0	-9.1	-	-	-
W2>	Frm	5.2	-1.0	10.3	-14.0	-	-	-
<W2	Frm	-12.2	-8.4	-5.7	-2.7	-	-	-
WP	Frm	3.6	-11.0	-4.1	-12.8	-	-	-
CU	Frm	-	-	-	-	-	-	-
FL	Frm	0.5	25.4	-0.5	25.4	-	-	-
L	Frm	3.4	14.0	-3.4	17.6	-	-	-
E>	Frm	1.8	1.0	1.9	-1.0	-	-	-
EG+	Frm	0.0	0.5	-0.0	0.6	-	-	-
<E	Frm	-1.8	-1.0	-1.9	1.0	-	-	-
EG-	Frm	-0.0	-0.5	0.0	-0.6	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
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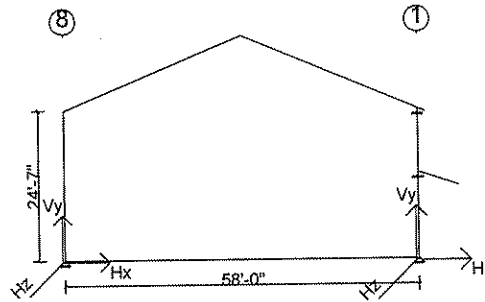
Time: 6:36:30 AM

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0/0/0	K-8	11.5	17	9.8	34	-	-	-	-	4.3	15	50.7	31	-	-	-	-
58/0/0	K-1	10.2	35	9.6	16	-	-	-	-	9.1	14	56.1	31	-	-	-	-

Wall: 4, Frame at: 95/8/0
Frame ID:Rigid Frame

Frame Type:Rigid Frame



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: H

Type		Exterior Column		Exterior Column				
X-Loc		0/0/0		58/0/0				
Grid1 - Grid2		H-8		H-1				
Base Plate W x L (in.)		11 x 13		11 x 13				
Base Plate Thickness (in.)		0.375		0.375				
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750				
Column Base Elev.		100'-1 1/2"		100'-1 1/2"				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	0.9	5.0	-0.9	6.3	-	-	-
FD	Frm	0.2	12.7	-0.2	12.7	-	-	-
CG	Frm	1.1	4.2	-1.1	4.8	-	-	-
L>	Frm	4.2	16.8	-4.2	18.9	-	-	-
<L	Frm	4.2	16.8	-4.2	18.9	-	-	-
S>	Frm	0.4	1.5	-0.4	2.2	-	-	-
<S	Frm	0.4	1.5	-0.4	2.2	-	-	-
S	Frm	0.4	1.5	-0.4	2.2	-	-	-
SD	Frm	-0.2	-0.2	0.2	2.2	-	-	-
SS	Frm	-0.0	-0.0	0.0	0.2	-	-	-
US1*	Frm	0.5	1.9	-0.5	1.2	-	-	-
*US1	Frm	0.5	1.2	-0.5	2.0	-	-	-
W1>	Frm	5.9	-9.8	9.8	-21.7	-	-	-
<W1	Frm	-11.4	-16.5	-6.2	-10.4	-	-	-
W2>	Frm	4.9	-1.8	10.5	-14.5	-	-	-
<W2	Frm	-12.4	-8.7	-5.5	-3.2	-	-	-
WP	Frm	3.2	-11.4	-3.9	-13.5	-	-	-
CU	Frm	-	-	-	-	-	-	-
FL	Frm	0.5	25.4	-0.5	25.4	-	-	-
L	Frm	4.2	16.8	-4.2	18.9	-	-	-
E>	Frm	2.3	1.2	2.1	-1.2	-	-	-
EG+	Frm	0.0	0.5	-0.0	0.6	-	-	-
<E	Frm	-2.3	-1.2	-2.1	1.2	-	-	-
EG-	Frm	-0.0	-0.5	0.0	-0.6	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx)	Load Case	Hz Right (Hx)	Load Case	Hz In (-Hz)	Load Case	Hz Out (Hz)	Load Case	Uplift (-Vy)	Load Case	Vrt Down (Vy)	Load Case	Mom cw (-Mzz)	Load Case	Mom ccw (Mzz)	Load Case
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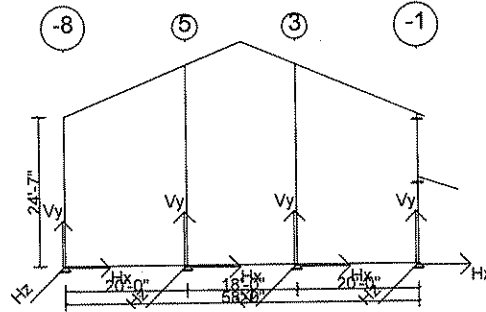
Time: 6:36:30 AM

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		(k)		(k)		(k)		(k)		(k)		(k)		(in-k)		(in-k)	
0/0/0	H-8	11.7	17	10.1	34	-	-	-	-	5.9	15	53.6	31	-	-	-	-
58/0/0	H-1	10.4	35	9.8	16	-	-	-	-	10.3	14	57.0	31	-	-	-	-

Wall: 4, Frame at: 118/11/0
Frame ID:CB2 End

Frame Type:Continuous Beam



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section:

Type		Exterior Column		Interior Column			Interior Column			Exterior Column	
X-Loc		0/0/0		20/0/0			38/0/0			58/0/0	
Grid1 - Grid2		-8		D-5			D-3			-1	
Base Plate W x L (in.)		9 x 13		11 x 13			11 x 13			9 x 13	
Base Plate Thickness (in.)		0.375		0.375			0.375			0.375	
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750			4 - 0.750			4 - 0.750	
Column Base Elev.		100'-1 1/2"		100'-1 1/2"			100'-1 1/2"			100'-1 1/2"	
Load Type	Desc.	Hx	Vy	Hx	Hz	Vy	Hx	Hz	Vy	Hx	Vy
D	Frm	0.0	1.5	-	-0.0	4.1	-	-0.0	3.4	-0.0	2.7
FD	Frm	0.1	7.1	-	0.2	11.8	-	0.2	12.8	-0.1	8.1
CG	Frm	0.0	0.8	-	-0.0	3.7	-	-0.0	2.3	-0.0	1.4
L>	Frm	0.1	3.1	-	-0.1	14.8	-	-0.1	9.2	-0.1	5.7
<L	Frm	0.1	3.1	-	-0.1	14.8	-	-0.1	9.2	-0.1	5.7
S>	Frm	-	0.3	-	-	1.2	-	-	1.1	-	0.8
<S	Frm	-	0.3	-	-	1.2	-	-	1.1	-	0.8
S	Frm	-	0.3	-	-	1.2	-	-	1.1	-	0.8
SD	Frm	-0.1	-0.2	-	-0.0	3.0	-	-0.0	2.5	0.1	1.5
SS	Frm	-	-0.0	-	-	0.0	-	-	-0.0	-	0.1
US1*	Frm	-	0.2	-	-	1.1	-	-	0.5	-	0.1
*US1	Frm	-	0.0	-	-	0.5	-	-	1.1	-	0.3
W1>	Frm	6.7	1.7	-	0.9	-19.0	-	0.9	0.4	6.0	-12.2
<W1	Frm	-7.1	-9.1	-	0.7	-0.5	-	0.7	-13.4	-7.8	0.6
W2>	Frm	5.2	5.7	-	-0.2	-15.8	-	-0.2	2.4	8.3	-9.1
<W2	Frm	-8.5	-5.1	-	0.5	2.6	-	0.5	-11.4	-5.5	3.6
WP	Frm	2.9	-9.0	-	-1.2	-1.8	-	-1.2	-4.6	-5.5	-9.1
CU	Frm	-	-	-	-	-	-	-	-	-	-
FL	Frm	0.2	14.4	-	0.4	23.6	-	0.4	23.6	-0.2	14.4
L	Frm	0.1	3.1	-	-0.1	14.8	-	-0.1	9.2	-0.1	5.7
E>	Frm	1.6	1.4	-	1.8	-1.8	-	1.8	2.1	1.5	-1.6
EG+	Frm	-	0.2	-	-	0.5	-	-	0.4	-	0.3
<E	Frm	-1.6	-1.4	-	-1.8	1.8	-	-1.8	-2.1	-1.5	1.6
EG-	Frm	-	-0.2	-	-	-0.5	-	-	-0.4	-	-0.3

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx)	Load Case	Hz Right (Hx)	Load Case	Hz In (-Hz)	Load Case	Hz Out (Hz)	Load Case	Uplift (-Vy)	Load Case	Vrt Down (Vy)	Load Case	Mom cw (-Mzz)	Load Case	Mom ccw (Mzz)	Load Case
		(k)		(k)		(k)		(k)		(k)		(k)		(in-k)		(in-k)	



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0/0/0	-8	8.4	17	6.8	9	-	-	-	-	3.9	15	26.8	36	-	-	-	-
20/0/0	D-5	-	-	-	-	1.1	48	1.4	45	9.5	14	50.3	37	-	-	-	-
38/0/0	D-3	-	-	-	-	1.1	48	1.4	45	3.7	15	44.9	36	-	-	-	-
58/0/0	-1	7.9	10	8.2	16	-	-	-	-	5.7	14	30.0	37	-	-	-	-



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Shape: Operations Building Lean-to

Loads and Codes - Shape: Operations Building Lean-to

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Primary Wind Exposure (Factor): B (0.608)
 Parts Wind Exposure Factor: 0.701

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.50 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group 1

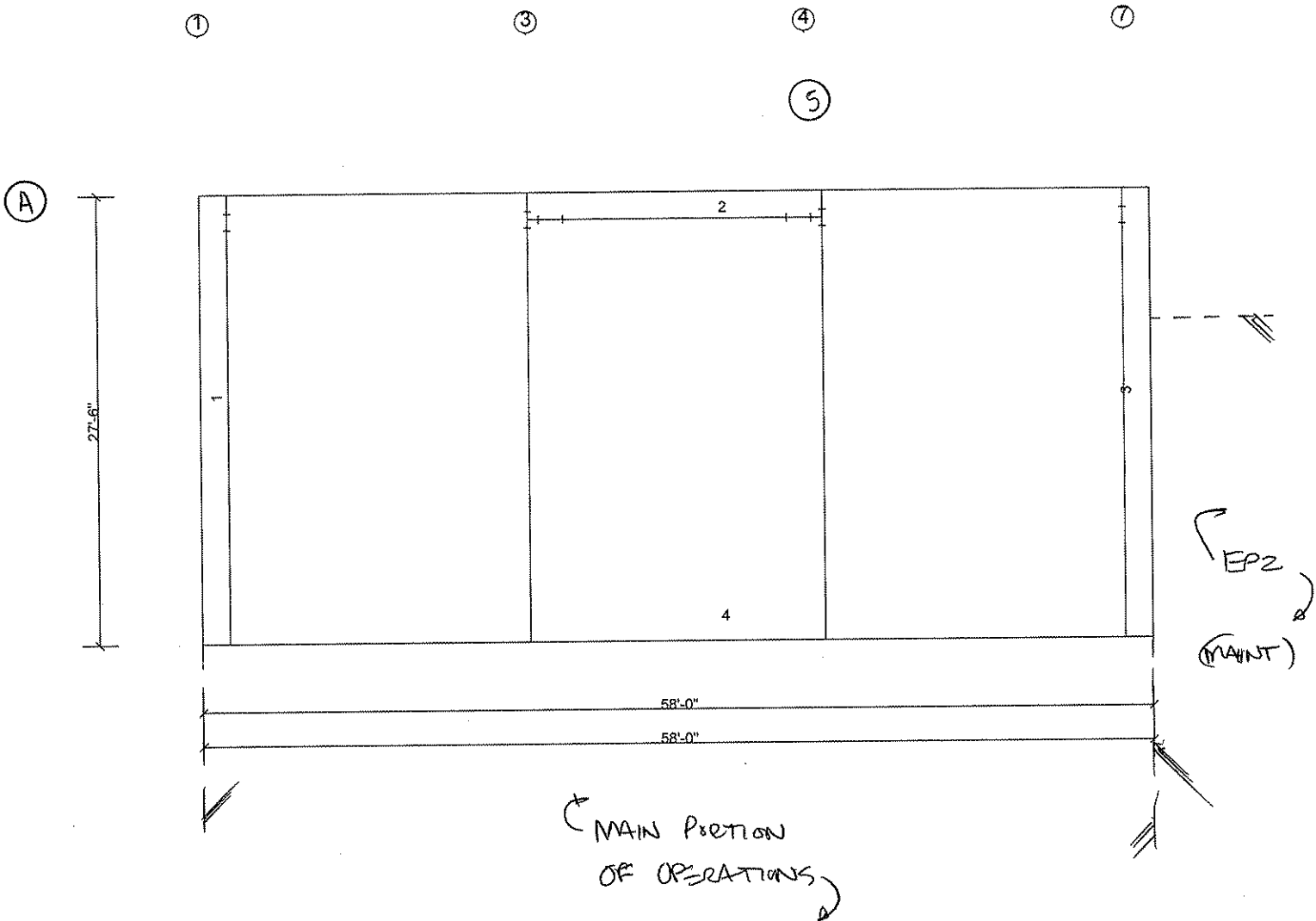
Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 9/1/8
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 22.35, (Parts) 25.76 psf

Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.2859
 Bracing Seismic Period: 0.1766
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Overall Shape Description

Roof 1	Roof 2	From Grid	To Grid	Width	Length	Eave Ht.	Eave Ht. 2	Pitch	Pitch 2	Dist. to Ridge	Peak Height
A		1-	1-O	27/6/0	58/0/0	13/8/0	22/10/0	4.000:12			





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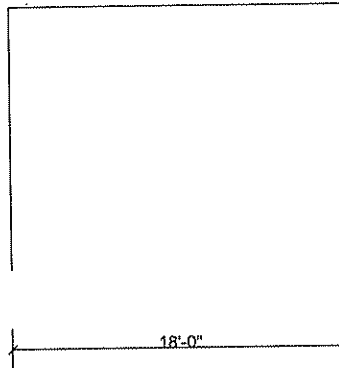
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Wall: 2
Frame ID: Portal Frame

Frame Type: Portal Frame



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: A

Type		Exterior Column		Exterior Column				
X-Loc		0/0/0		18/0/0				
Grid1 - Grid2		A-5		A-3				
Base Plate W x L (in.)		8 x 19		8 x 19				
Base Plate Thickness (in.)		0.375		0.375				
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750				
Column Base Elev.		100'-1 1/2"		100'-1 1/2"				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	0.0	0.3	-0.0	0.3	-	-	-
CG	Frm	-	-	-	-	-	-	-
L>	Frm	-	-	-	-	-	-	-
<L	Frm	-	-	-	-	-	-	-
S>	Frm	-	-	-	-	-	-	-
<S	Frm	-	-	-	-	-	-	-
S	Frm	-	-	-	-	-	-	-
SD	Frm	-	-	-	-	-	-	-
W1>	Frm	-	-	-	-	-	-	-
<W1	Frm	-	-	-	-	-	-	-
W2>	Frm	-	-	-	-	-	-	-
<W2	Frm	-	-	-	-	-	-	-
CU	Frm	-	-	-	-	-	-	-
L	Frm	-	-	-	-	-	-	-
E>	Frm	-	-	-	-	-	-	-
EG+	Frm	-	-	-	-	-	-	-
<E	Frm	-	-	-	-	-	-	-
EG-	Frm	-	-	-	-	-	-	-
WP	Frm	-	-	-	-	-	-	-
WB1>	Brc	3.1	5.1	2.9	-5.1	-	-	-
<WB1	Brc	-2.9	-5.1	-3.1	5.1	-	-	-
WB2>	Brc	3.1	5.1	2.9	-5.1	-	-	-
<WB2	Brc	-2.9	-5.1	-3.1	5.1	-	-	-
EB>	Brc	0.5	0.8	0.5	-0.8	-	-	-
<EB	Brc	-0.5	-0.8	-0.5	0.8	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left	Load	Hz Right	Load	Hz In	Load	Hz Out	Load	Uplift	Load	Vrt Down	Load	Mom cw	Load	Mom ccw	Load
		(-Hx)	Case	(Hx)	Case	(-Hz)	Case	(Hz)	Case	(-Vy)	Case	(Vy)	Case	(-Mzz)	Case	(Mzz)	Case



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		(k)		(k)		(k)		(k)		(k)		(k)		(in-k)		(in-k)	
0/0/0	A-5	2.9	33	3.1	28	-	-	-	-	4.9	33	5.4	28	-	-	-	-
18/0/0	A-3	3.1	32	2.9	29	-	-	-	-	4.9	29	5.4	32	-	-	-	-



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Wall: 2

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L>	D + CG + L>
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S>	D + CG + S>
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
6	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
7	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
8	System	1.000	1.0 D + 1.0 CG + 1.0 W2>	D + CG + W2>
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
10	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
11	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
12	System	1.000	0.600 D + 0.600 CU + 1.0 W2>	D + CU + W2>
13	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
14	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
15	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
16	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2>	D + CG + L + W2>
17	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
18	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
19	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
20	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2>	D + CG + S + W2>
21	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
22	System	1.000	1.0 D + 1.0 CG + 0.700 E> + 0.700 EG+	D + CG + E> + EG+
23	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG+	D + CG + <E + EG+
24	System	1.000	0.600 D + 0.600 CU + 0.700 E> + 0.700 EG-	D + CU + E> + EG-
25	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG-	D + CU + <E + EG-
26	System	1.000	1.0 D + 1.0 CG + 0.525 E> + 0.525 EG+	D + CG + E> + EG+
27	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG+	D + CG + <E + EG+
28	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
29	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
30	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
31	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
32	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
33	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
34	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
35	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
36	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
37	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
38	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
39	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
40	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
41	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
42	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
43	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2
44	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
45	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
46	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
47	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
48	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-
49	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+



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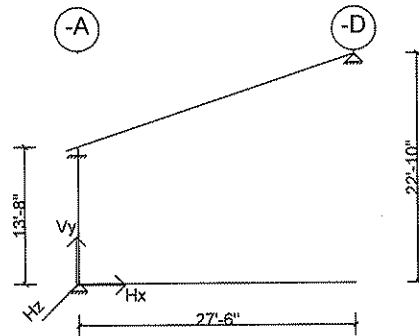
Wall: 2, Frame at: 1/8/0

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L >	D + CG + L >
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S >	D + CG + S >
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
8	System	1.000	1.0 D + 1.0 CG + 1.0 W1 >	D + CG + W1 >
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
10	System	1.000	1.0 D + 1.0 CG + 1.0 W2 >	D + CG + W2 >
11	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
12	System	1.000	1.0 D + 1.0 CG + 1.0 WP	D + CG + WP
13	System	1.000	0.600 D + 0.600 CU + 1.0 W1 >	D + CU + W1 >
14	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
15	System	1.000	0.600 D + 0.600 CU + 1.0 W2 >	D + CU + W2 >
16	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
17	System	1.000	0.600 D + 0.600 CU + 1.0 WP	D + CU + WP
18	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1 >	D + CG + L + W1 >
19	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
20	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2 >	D + CG + L + W2 >
21	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
22	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP	D + CG + L + WP
23	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1 >	D + CG + S + W1 >
24	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
25	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2 >	D + CG + S + W2 >
26	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
27	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP	D + CG + S + WP
28	System	1.000	1.0 D + 1.0 CG + 0.700 E > + 0.700 EG+	D + CG + E > + EG+
29	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG+	D + CG + <E + EG+
30	System	1.000	0.600 D + 0.600 CU + 0.700 E > + 0.700 EG-	D + CU + E > + EG-
31	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG-	D + CU + <E + EG-
32	System	1.000	1.0 D + 1.0 CG + 0.525 E > + 0.525 EG+	D + CG + E > + EG+
33	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG+	D + CG + <E + EG+

Wall: 2, Frame at: 1/8/0
Frame ID:Leanto

Frame Type:Lean - To



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 1

TO MAIN FRAME COLUMN. (TYP.)

Type X-Loc Grid1 - Grid2 Base Plate W x L (in.) Base Plate Thickness (in.) Anchor Rod Qty/Diam. (in.) Column Base Elev.		Exterior Column 0/0/0 -A		Rafter 27/6/0 -D				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	-	1.3	-	0.9	-	-	-
CG	Frm	-	0.9	-	0.7	-	-	-
L>	Frm	-	3.7	-	2.7	-	-	-
<L	Frm	-	3.7	-	2.7	-	-	-
S>	Frm	-	0.5	-	0.3	-	-	-
<S	Frm	-	0.5	-	0.3	-	-	-
S	Frm	-	0.5	-	0.3	-	-	-
SD	Frm	-	0.3	-	1.4	-	-	-
W1>	Frm	0.9	-3.0	2.5	-1.3	-	-	-
<W1	Frm	-0.8	-3.5	1.1	-2.4	-	-	-
W2>	Frm	0.4	-1.3	1.0	-0.5	-	-	-
<W2	Frm	-1.3	-1.9	-0.3	-1.6	-	-	-
WP	Frm	1.2	-4.1	3.4	-1.9	-	-	-
CU	Frm	-	-	-	-	-	-	-
L	Frm	-	3.7	-	2.7	-	-	-
E>	Frm	0.1	-0.0	0.2	0.1	-	-	-
EG+	Frm	-	0.1	-	0.0	-	-	-
<E	Frm	-0.1	0.0	-0.2	-0.1	-	-	-
EG-	Frm	-	-0.1	-	-0.0	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	-A	1.3	11	1.2	12	-	-	-	-	3.3	17	5.9	1	-	-	-	-
27/6/0	-D	0.3	11	3.4	12	-	-	-	-	1.8	14	4.3	1	-	-	-	-



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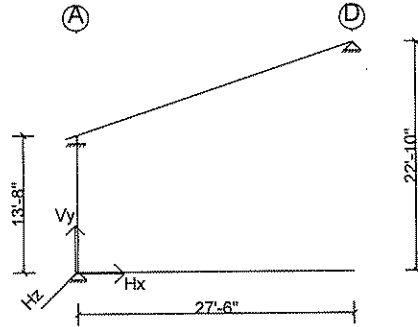
Wall: 2, Frame at: 20/0/0

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L>	D + CG + L>
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S>	D + CG + S>
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
8	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
10	System	1.000	1.0 D + 1.0 CG + 1.0 W2>	D + CG + W2>
11	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
12	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
13	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
14	System	1.000	0.600 D + 0.600 CU + 1.0 W2>	D + CU + W2>
15	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
16	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
17	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
18	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2>	D + CG + L + W2>
19	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
20	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
21	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
22	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2>	D + CG + S + W2>
23	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
24	System	1.000	1.0 D + 1.0 CG + 0.700 E> + 0.700 EG+	D + CG + E> + EG+
25	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG+	D + CG + <E + EG+
26	System	1.000	0.600 D + 0.600 CU + 0.700 E> + 0.700 EG-	D + CU + E> + EG-
27	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG-	D + CU + <E + EG-
28	System	1.000	1.0 D + 1.0 CG + 0.525 E> + 0.525 EG+	D + CG + E> + EG+
29	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG+	D + CG + <E + EG+
30	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
31	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
32	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
33	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
34	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
35	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
36	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
37	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
38	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
39	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
40	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
41	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
42	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
43	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
44	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
45	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2
46	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
47	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
48	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
49	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
50	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-
51	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+

Wall: 2, Frame at: 20/0/0
Frame ID:Leanto

Frame Type:Lean - To



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 5

Type		Exterior Column					
X-Loc		0/0/0					
Grid1 - Grid2		5-A					
Base Plate W x L (in.)		8 x 13					
Base Plate Thickness (in.)		0.375					
Anchor Rod Qty/Diam. (in.)		4 - 0.750					
Column Base Elev.		100'-1 1/2"					
Load Type	Desc.	Hx	Vy				
D	Frm	-	1.9	-	-	-	-
CG	Frm	-	1.5	-	-	-	-
L>	Frm	-	6.0	-	-	-	-
<L	Frm	-	6.0	-	-	-	-
S>	Frm	-	0.8	-	-	-	-
<S	Frm	-	0.8	-	-	-	-
S	Frm	-	0.8	-	-	-	-
SD	Frm	-	0.6	-	-	-	-
W1>	Frm	1.6	-4.9	-	-	-	-
<W1	Frm	-1.3	-5.5	-	-	-	-
W2>	Frm	0.6	-2.1	-	-	-	-
<W2	Frm	-2.2	-2.7	-	-	-	-
CU	Frm	-	-	-	-	-	-
L	Frm	-	6.0	-	-	-	-
E>	Frm	0.2	-0.0	-	-	-	-
EG+	Frm	-	0.1	-	-	-	-
<E	Frm	-0.2	0.0	-	-	-	-
EG-	Frm	-	-0.1	-	-	-	-
WP	Frm	2.0	-5.2	-	-	-	-
WB1>	Brc	-	-	-	-	-	-
<WB1	Brc	-	-	-	-	-	-
WB2>	Brc	-	-	-	-	-	-
<WB2	Brc	-	-	-	-	-	-
EB>	Brc	-	-	-	-	-	-
<EB	Brc	-	-	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left	Load	Hz Right	Load	Hz In	Load	Hz Out	Load	Uplift	Load	Vrt Down	Load	Mom cw	Load	Mom ccw	Load
		(-Hx)	Case	(Hx)	Case	(-Hz)	Case	(Hz)	Case	(-Vy)	Case	(Vy)	Case	(-Mzz)	Case	(Mzz)	Case



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0/0/0	5-A	(k)		(k)		(k)		(k)		(k)		(k)		(in-k)		(in-k)	
		2.2	11	2.0	30	-	-	-	-	4.3	13	9.5	1	-	-	-	-

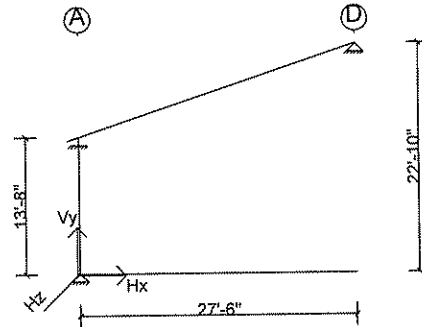
Bracing

X-Loc	Grid	Description
0/0/0	A-5	Portal Frame is next to column. See portal frame section for reactions

Wall: 2, Frame at: 38/0/0

Frame ID:Leanto

Frame Type:Lean - To



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 3

Type		Exterior Column					
X-Loc		0/0/0					
Grid1 - Grid2		3-A					
Base Plate W x L (in.)		8 x 13					
Base Plate Thickness (in.)		0.375					
Anchor Rod Qty/Diam. (in.)		4 - 0.750					
Column Base Elev.		100'-1 1/2"					
Load Type	Desc.	Hx	Vy				
D	Frm	-	1.9	-	-	-	-
CG	Frm	-	1.5	-	-	-	-
L>	Frm	-	6.0	-	-	-	-
<L	Frm	-	6.0	-	-	-	-
S>	Frm	-	0.8	-	-	-	-
<S	Frm	-	0.8	-	-	-	-
S	Frm	-	0.8	-	-	-	-
SD	Frm	-	0.6	-	-	-	-
W1>	Frm	1.6	-4.9	-	-	-	-
<W1	Frm	-1.3	-5.5	-	-	-	-
W2>	Frm	0.6	-2.1	-	-	-	-
<W2	Frm	-2.2	-2.7	-	-	-	-
CU	Frm	-	-	-	-	-	-
L	Frm	-	6.0	-	-	-	-
E>	Frm	0.2	-0.0	-	-	-	-
EG+	Frm	-	0.1	-	-	-	-
<E	Frm	-0.2	0.0	-	-	-	-
EG-	Frm	-	-0.1	-	-	-	-
WP	Frm	2.0	-5.2	-	-	-	-
WB1>	Brc	-	-	-	-	-	-
<WB1	Brc	-	-	-	-	-	-
WB2>	Brc	-	-	-	-	-	-
<WB2	Brc	-	-	-	-	-	-
EB>	Brc	-	-	-	-	-	-
<EB	Brc	-	-	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx)	Load Case	Hz Right (Hx)	Load Case	Hz In (-Hz)	Load Case	Hz Out (Hz)	Load Case	Uplift (-Vy)	Load Case	Vrt Down (Vy)	Load Case	Mom cw (-Mzz)	Load Case	Mom ccw (Mzz)	Load Case
-------	------	---------------	-----------	---------------	-----------	-------------	-----------	-------------	-----------	--------------	-----------	---------------	-----------	---------------	-----------	---------------	-----------



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		(k)		(k)		(k)		(k)		(k)		(k)		(in-k)		(in-k)	
0/0/0	3-A	2.2	11	2.0	30	-	-	-	-	4.3	13	9.5	1	-	-	-	-

Bracing

X-Loc	Grid	Description
0/0/0	A-3	Portal Frame is next to column. See portal frame section for reactions



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Wall: 2, Frame at: 56/4/0

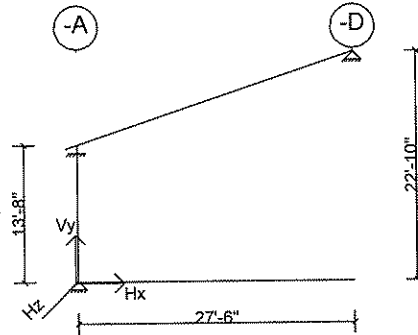
Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L >	D + CG + L >
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S >	D + CG + S >
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
8	System	1.000	1.0 D + 1.0 CG + 1.0 W1 >	D + CG + W1 >
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
10	System	1.000	1.0 D + 1.0 CG + 1.0 W2 >	D + CG + W2 >
11	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
12	System	1.000	1.0 D + 1.0 CG + 1.0 WP	D + CG + WP
13	System	1.000	0.600 D + 0.600 CU + 1.0 W1 >	D + CU + W1 >
14	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
15	System	1.000	0.600 D + 0.600 CU + 1.0 W2 >	D + CU + W2 >
16	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
17	System	1.000	0.600 D + 0.600 CU + 1.0 WP	D + CU + WP
18	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1 >	D + CG + L + W1 >
19	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
20	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2 >	D + CG + L + W2 >
21	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
22	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP	D + CG + L + WP
23	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1 >	D + CG + S + W1 >
24	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
25	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2 >	D + CG + S + W2 >
26	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
27	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP	D + CG + S + WP
28	System	1.000	1.0 D + 1.0 CG + 0.700 E > + 0.700 EG +	D + CG + E > + EG +
29	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG +	D + CG + <E + EG +
30	System	1.000	0.600 D + 0.600 CU + 0.700 E > + 0.700 EG -	D + CU + E > + EG -
31	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG -	D + CU + <E + EG -
32	System	1.000	1.0 D + 1.0 CG + 0.525 E > + 0.525 EG +	D + CG + E > + EG +
33	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG +	D + CG + <E + EG +

Wall: 2, Frame at: 56/4/0

Frame ID:Leanto

Frame Type:Lean - To



Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section:

Type X-Loc Grid1 - Grid2 Base Plate W x L (in.) Base Plate Thickness (in.) Anchor Rod Qty/Diam. (in.) Column Base Elev.		Exterior Column 0/0/0 -A 8 x 13 0.375 4 - 0.750 100'-1 1/2"		Rafter 27/6/0 -D				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	-	1.4	-	1.0	-	-	-
CG	Frm	-	1.0	-	0.8	-	-	-
L>	Frm	-	3.9	-	3.1	-	-	-
<L	Frm	-	3.9	-	3.1	-	-	-
S>	Frm	-	0.5	-	0.4	-	-	-
<S	Frm	-	0.5	-	0.4	-	-	-
S	Frm	-	0.5	-	0.4	-	-	-
SD	Frm	-	0.3	-	1.4	-	-	-
W1>	Frm	0.9	-3.1	2.6	-1.5	-	-	-
<W1	Frm	-0.8	-3.9	1.4	-2.8	-	-	-
W2>	Frm	0.4	-1.4	1.1	-0.7	-	-	-
<W2	Frm	-1.3	-2.3	-0.1	-2.0	-	-	-
WP	Frm	1.2	-4.2	3.5	-2.1	-	-	-
CU	Frm	-	-	-	-	-	-	-
L	Frm	-	3.9	-	3.1	-	-	-
E>	Frm	0.1	-0.0	0.2	0.1	-	-	-
EG+	Frm	-	0.1	-	0.0	-	-	-
<E	Frm	-0.1	0.0	-0.2	-0.1	-	-	-
EG-	Frm	-	-0.1	-	-0.0	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	-A	1.3	11	1.2	12	-	-	-	-	3.4	17	6.3	1	-	-	-	-
27/6/0	-D	0.1	29	3.5	12	-	-	-	-	2.3	14	4.8	1	-	-	-	-



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Bracing - Summary Report

Shape: Operations Building

Loads and Codes - Shape: Operations Building

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Wind Exposure (Factor): B (0.705)
 Parts Wind Exposure Factor: 0.705

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 15/3/12
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 25.92 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.30 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group 1
 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.3628
 Bracing Seismic Period: 0.2208
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Deflection Conditions

Frames are vertically supporting: Ceiling with Flexible Finish
 Frames are laterally supporting: Unreinforced Masonry Wall
 Purlins are supporting: Ceiling with Flexible Finish
 Girts are supporting: Unreinforced Masonry Wall

Operations Building : Mezzanine 1 @ 12/9/0

Floor Type	Non-Composite	Loading Type	Office
Top of Floor	12/9/0	Floor Dead Load	50.00 psf
Total Thickness of Deck + Topping	0/3/0	Floor Live Load	100.00 psf Not Reducible
Top of Joist	12/6/0	Collateral Load	5.00 psf
Min. Clearance from Floor to Joist	11/4/0	Partition Load:	10.00 psf
Min. Clearance from Floor to Rafter	9/6/0	Floor Live Load Deflection	360
Mezzanine Category	Entire Floor	Floor Dead + Floor Live Deflection	240
Bracing Category	Unbraced		

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Design Load Combinations - Bracing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W1	<W1
3	System	1.000	1.0 W2>	W2>
4	System	1.000	1.0 <W2	<W2
5	System	1.000	0.700 E>	E>
6	System	1.000	0.700 <E	<E

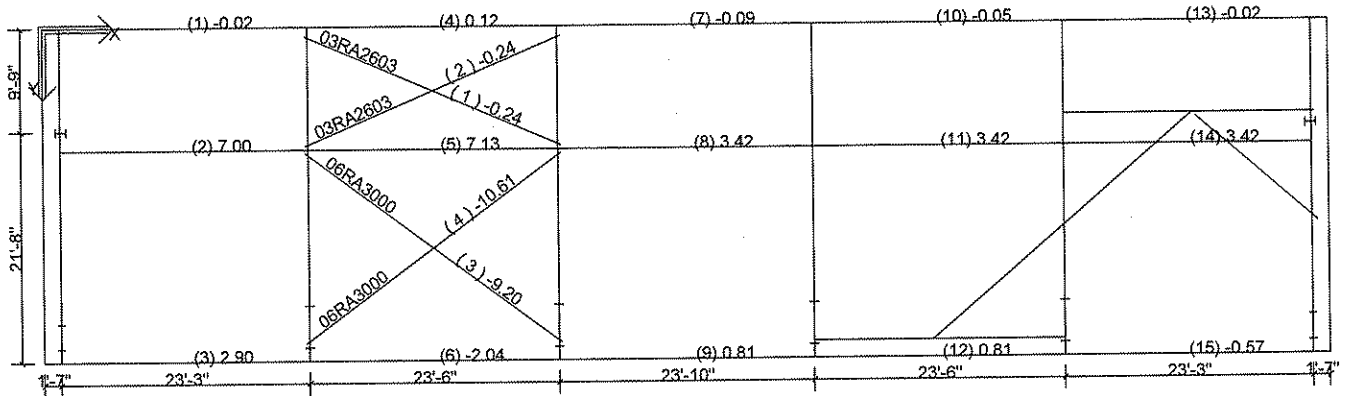


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Diagonal Bracing Member Design Summary: Roof A

Mem. No.	Bracing Shape	Length (ft)	Angle	Design Axial (k)	Seismic Factor	Stress Factor	Stress Ratio	Governing Load Case	Design Status	Comment
1	R 0.375	26.18	28.1	-0.24	1.0000	1.0000	0.100	0.700<E	passed	
2	R 0.375	26.18	28.1	-0.24	1.0000	1.0000	0.100	0.700E>	passed	
3	R 0.75	29.95	41.6	-9.20	1.0000	1.0000	0.854	1.0<W1	passed	
4	R 0.75	29.94	41.6	-10.61	1.0000	1.0000	0.985	1.0W2>	passed	

Mem.	End	Diagonal Connection Design Information
1	Left	Slot: web thk = 3/16 in., F = 0.24k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 3/16 in., F = 0.24k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
2	Left	Slot: web thk = 3/16 in., F = 0.24k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 3/16 in., F = 0.24k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
3	Left	Slot w/ Backing Plate: web thk = 3/16 in., F = 9.20k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 1/8 in., F = 9.20k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
4	Left	Slot w/ Backing Plate: web thk = 1/8 in., F = 10.61k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot w/ Backing Plate: web thk = 3/16 in., F = 10.61k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed

Strut Bracing Member Design Summary: Roof A

Mem. No.	Bracing Shape	Length (ft)	Design Axial (k)	Seismic Factor	Stress Factor	Stress Ratio	Governing Load Case	Design Status	Description
14	3P 6x3/16x0.1345x8	23.25	3.42	1.0000	1.0000	0.274	1.0<W2	passed	End Bay Strut
15	3P 6x3/16x0.1345x8	23.25	-0.57	1.0000	1.0000	0.112	1.0W1>	passed	Eave Strut, Collector

SPANDREL & ROOF BEAM REPLACE THESE

Mem.	End	Strut Connection Design Information
14	Left	Frame Clip Invalid Mark. w/ (2) 3/4 in. A325SC, clip tensile rupture & block shear OK, clip buckling OK, clip to web weld 3/8 fillet both sides, clip to flange weld 7/16 fillet both sides => weld FAILED => FAILED <=
	Right	Frame Clip Invalid Mark. w/ (2) 3/4 in. A325SC, clip tensile rupture & block shear OK, clip buckling OK, clip to web weld 3/8 fillet both sides, clip to flange weld 5/16 fillet both sides => weld FAILED => FAILED <=
15	Left	Frame Clip 6.00x-20.96x0.375 w/ (2) 3/4 in. A325SC, clip tensile rupture & block shear OK, clip buckling OK, Me = 0.60 k-in, web punching shear OK, clip to web weld 3/16 fillet one side, clip to flange weld 3/16 fillet both sides => passed



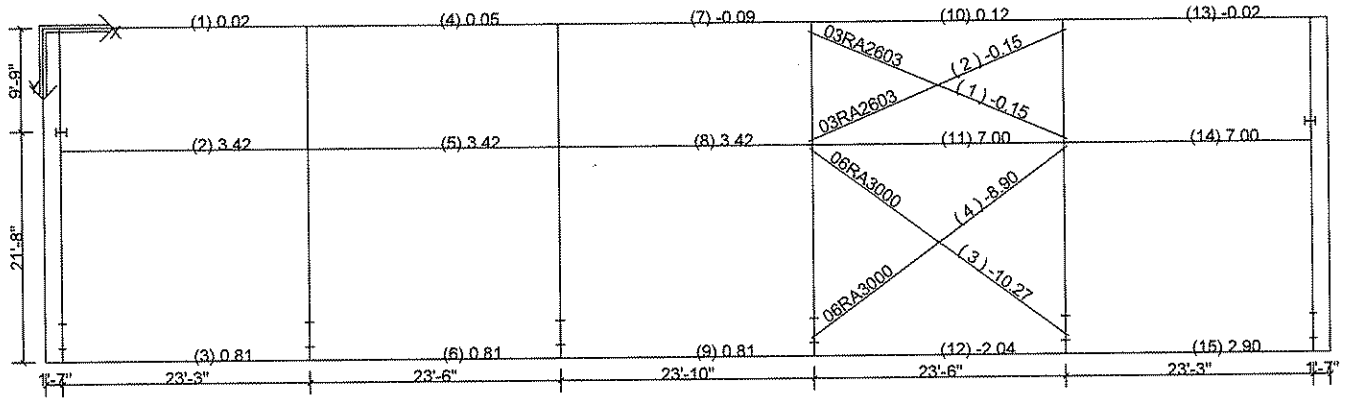
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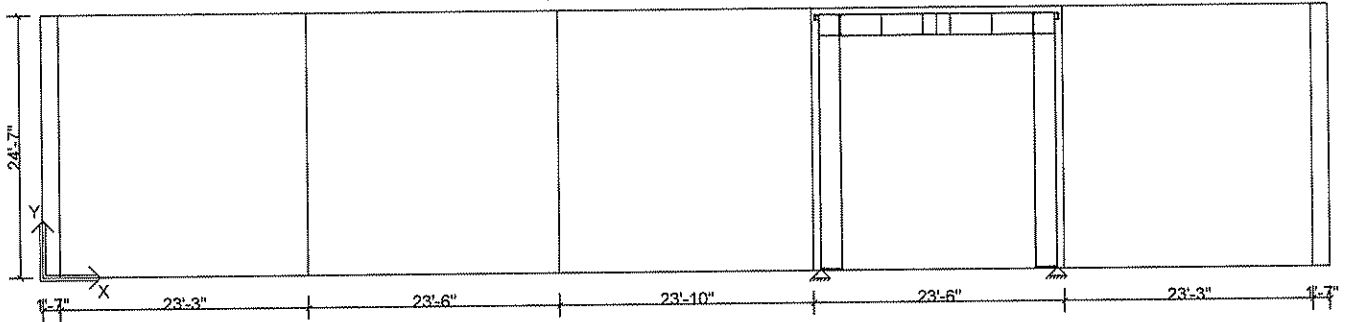
Right | ~~Frame Clip 6.00x-20.71x-0.375 w/ (2) 3/4 in. A325SC, clip tensile rupture & block shear OK, clip buckling OK, Me = 0.00 k-in, web punching shear OK, clip to web weld 3/16 fillet one side, clip to flange weld 3/16 fillet both sides => passed~~



Diagonal Bracing Member Design Summary: Roof B

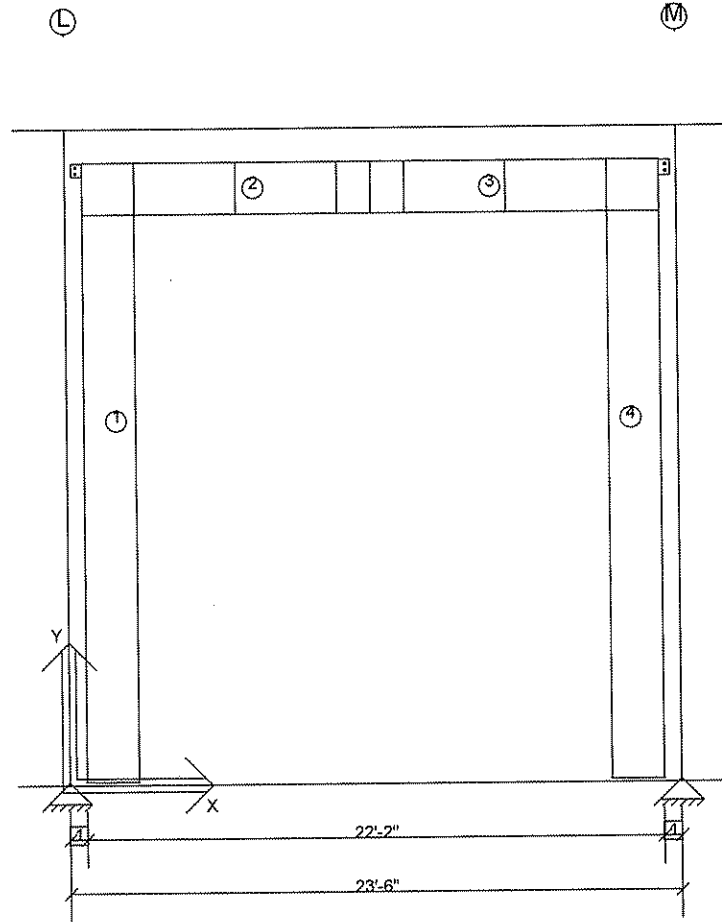
Mem. No.	Bracing Shape	Length (ft)	Angle	Design Axial (k)	Seismic Factor	Stress Factor	Stress Ratio	Governing Load Case	Design Status	Comment
1	R 0.375	26.18	28.1	-0.15	1.0000	1.0000	0.062	0.700E>	passed	
2	R 0.375	26.18	28.1	-0.15	1.0000	1.0000	0.062	0.700<E	passed	
3	R 0.75	29.94	41.6	-10.27	1.0000	1.0000	0.953	1.0W2>	passed	
4	R 0.75	29.95	41.6	-8.90	1.0000	1.0000	0.827	1.0<W1	passed	

Mem.	End	Diagonal Connection Design Information
1	Left	Slot: web thk = 3/16 in., F = 0.15k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 3/16 in., F = 0.15k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
2	Left	Slot: web thk = 3/16 in., F = 0.15k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 3/16 in., F = 0.15k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
3	Left	Slot w/ Backing Plate: web thk = 3/16 in., F = 10.27k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 1/8 in., F = 10.27k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
4	Left	Slot: web thk = 1/8 in., F = 8.90k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 3/16 in., F = 8.90k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed



Location	Portal Frame to Main Frame Connection Design Information
Left Portal	Force = 9.31k, Seismic Factor = 1.00, Stress Increase = 1.00, MZE 5x6x3/8 w/ (2) 3/4 A325SC, Flange weld = 3/16 fillet both sides, buckling OK, web yielding/cripling OK => passed
Left Main	Force = 9.31k, Seismic Factor = 1.00, Stress Increase = 1.00, Haunch Connection, MZE 7x11-3/4x3/8 w/ (2) 3/4 A325SC, Flange weld 3/16 fillet both sides, Web weld 3/16 fillet one side, buckling OK => passed
Right Portal	Force = 10.97k, Seismic Factor = 1.00, Stress Increase = 1.00, MZE 5x7x3/8 w/ (2) 7/8 A325SC, Flange weld = 3/16 fillet both sides, buckling OK, web yielding/cripling OK => passed
Right Main	Force = 10.97k, Seismic Factor = 1.00, Stress Increase = 1.00, Haunch Connection, MZE 7x12-5/8x3/8 w/ (2) 7/8 A325SC, Flange weld 3/16 fillet both sides, Web weld 3/16 fillet one side, buckling OK => passed

Frame Cross Section: 1



Dimension Key

- 1 8"
- 2 1'-3 1/2"

Frame Clearances

Horiz. Clearance between members 1(CX111) and 4(CX115): 18'-2"
 Vert. Clearance at member 1(CX111): 21'-11 5/16"
 Vert. Clearance at member 4(CX115): 21'-11 5/16"
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

SHY OF CLEAR NEEDED, WILL RETURN
 TO RAISE INTO PERM LINE
 BE ABOVE COLUMN @ 22'-3"



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
0/0/0	0/0/0	Portal Frame	0.0000		-	Automatic Design

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
17	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
18	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D+FD+CG+L+W1>+FL
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D+FD+CG+L+<W1+FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D+FD+CG+L+W2>+FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D+FD+CG+L+<W2+FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D+FD+CG+S+W1>+FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D+FD+CG+S+<W1+FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D+FD+CG+S+W2>+FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D+FD+CG+S+<W2+FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
41	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
42	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D+FD+CG+E>+EG++FL
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D+FD+CG+<E+EG++FL
47	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB1>	D + FD + CG + WP + WB1>
48	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB1>	D + FD + CU + WP + WB1>
49	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D+FD+CG+L+WP+WB1>
50	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D+FD+CG+S+WP+WB1>
51	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+L+WP+FL+WB1>
52	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+S+WP+FL+WB1>
53	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB1	D + FD + CG + WP + <WB1
54	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB1	D + FD + CU + WP + <WB1
55	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D+FD+CG+L+WP+<WB1
56	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D+FD+CG+S+WP+<WB1
57	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+L+WP+FL+<WB1
58	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+S+WP+FL+<WB1
59	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB2>	D + FD + CG + WP + WB2>



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60	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB2>	D + FD + CU + WP + WB2>
61	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D+FD+CG+L+WP+WB2>
62	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D+FD+CG+S+WP+WB2>
63	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+L+WP+FL+WB2>
64	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+S+WP+FL+WB2>
65	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB2	D + FD + CG + WP + <WB2
66	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB2	D + FD + CU + WP + <WB2
67	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D+FD+CG+L+WP+<WB2
68	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D+FD+CG+S+WP+<WB2
69	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+L+WP+FL+<WB2
70	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+S+WP+FL+<WB2
71	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 EB> + 0.700 EG+	D + FD + CG + EB> + EG+
72	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 EB> + 0.700 EG-	D + FD + CU + EB> + EG-
73	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+	D + FD + CG + EB> + EG+
74	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+ + 0.750 FL	D+FD+CG+EB>+EG++FL
75	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <EB + 0.700 EG+	D + FD + CG + <EB + EG+
76	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <EB + 0.700 EG-	D + FD + CU + <EB + EG-
77	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+	D + FD + CG + <EB + EG+
78	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+ + 0.750 FL	D+FD+CG+<EB+EG++FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
1	10.00	0.3125	0.1345	24.00	24.00	23.86	815.8	55.00	55.00	BP	KN	3P
2	10.00	0.3125	0.1345	24.00	24.00	11.08	315.9	55.00	55.00	KN	SS	3P
3	10.00	0.3125	0.1345	24.00	24.00	11.08	315.9	55.00	55.00	KN	SS	3P
4	10.00	0.3125	0.1345	24.00	24.00	23.86	815.8	55.00	55.00	BP	KN	3P

Total Frame Weight = 2263.5 (p) (Includes all plates)
 Frame Pricing Weight = 2387.3 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
4	23/6/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 1

Type	X-Loc	Exterior Column	Exterior Column				
	Grid1 - Grid2	1-L	1-M				
	Base Plate W x L (in.)	11 x 25	11 x 25				
	Base Plate Thickness (in.)	0.375	0.375				
	Anchor Rod Qty/Diam. (in.)	4 - 0.750	4 - 0.750				
	Column Base Elev.	100'-1 1/2"	100'-1 1/2"				
Load Type	Desc.	Hx	Vy	Hx	Vy		
D	Frm	0.0	1.1	-0.0	1.1	-	-
FD	Frm	0.3	6.4	-0.3	6.4	-	-
CG	Frm	-	-	-	-	-	-
L>	Frm	-	-	-	-	-	-
<L	Frm	-	-	-	-	-	-
S>	Frm	-	-	-	-	-	-
<S	Frm	-	-	-	-	-	-
S	Frm	-	-	-	-	-	-
SD	Frm	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-
US1*	Frm	-	-	-	-	-	-
*US1	Frm	-	-	-	-	-	-
W1>	Frm	-	-	-	-	-	-
<W1	Frm	-	-	-	-	-	-
W2>	Frm	-	-	-	-	-	-
<W2	Frm	-	-	-	-	-	-
CU	Frm	-	-	-	-	-	-
FL	Frm	0.6	12.7	-0.6	12.7	-	-
L	Frm	-	-	-	-	-	-
E>	Frm	-1.6	-2.0	-1.6	2.0	-	-
EG+	Frm	-	0.2	-	0.2	-	-
<E	Frm	1.6	2.0	1.6	-2.0	-	-



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EG-	Frm	-	-0.2	-	-0.2	-	-	-	-	-	-	-	-	-	-	-	-
WP	Frm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WB1>	Brc	4.4	10.2	4.2	-10.2	-	-	-	-	-	-	-	-	-	-	-	-
<WB1	Brc	-4.5	-11.0	-4.8	11.0	-	-	-	-	-	-	-	-	-	-	-	-
WB2>	Brc	5.6	13.0	5.4	-13.0	-	-	-	-	-	-	-	-	-	-	-	-
<WB2	Brc	-3.4	-8.2	-3.6	8.2	-	-	-	-	-	-	-	-	-	-	-	-
EB>	Brc	2.3	3.8	2.2	-3.8	-	-	-	-	-	-	-	-	-	-	-	-
<EB	Brc	-2.2	-3.8	-2.3	3.8	-	-	-	-	-	-	-	-	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	1-L	4.4	54	5.9	59	-	-	-	-	6.5	54	26.7	63	-	-	-	-
23/6/0	1-M	5.1	53	5.2	60	-	-	-	-	8.5	60	25.3	57	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	2.3	2.1
FD	0.0	0.0	12.8	12.8
CG	0.0	0.0	0.0	0.0
L>	0.0	0.0	0.0	0.0
<L	0.0	0.0	0.0	0.0
S>	0.0	0.0	0.0	0.0
<S	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0
SD	0.0	0.0	0.0	0.0
SS	0.0	0.0	0.0	0.0
US1*	0.0	0.0	0.0	0.0
*US1	0.0	0.0	0.0	0.0
W1>	0.0	0.0	0.0	0.0
<W1	0.0	0.0	0.0	0.0
W2>	0.0	0.0	0.0	0.0
<W2	0.0	0.0	0.0	0.0
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	25.4	25.4
L	0.0	0.0	0.0	0.0
E>	3.2	3.2	0.0	0.0
EG+	0.0	0.0	0.3	0.3
<E	3.2	3.2	0.0	0.0
EG-	0.0	0.0	0.3	0.3
WP	0.0	0.0	0.0	0.0
WB1>	8.6	8.6	0.0	0.0
<WB1	9.3	9.3	0.0	0.0
WB2>	11.0	11.0	0.0	0.0
<WB2	7.0	7.0	0.0	0.0
EB>	4.5	4.5	0.0	0.0
<EB	4.5	4.5	0.0	0.0

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	1-L	1	0.375	11	25	4	0.750	A36	OS-0.1875	OS-0.1875
23/6/0	1-M	4	0.375	11	25	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Weiding Description
1	1	S3	21.83	23.375	N/A	N/A	N/A	0.3750	4.500	Both	F-FP,W-OS-0.1875
1	***	MUST	Use	Alternate	Web	Thick.=	0.2500	*	*	*	*
2	1	S1	3.86	23.375	173.79	2.00	46.75	0.1875	2.000	Opposite Fillet	Std
2	2	S1	7.76	23.375	173.79	2.00	46.75	0.1875	2.000	Opposite Fillet	Std



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3	1	S1	5.19	23.375	173.79	2.00	46.75	0.1875	2.000	Opposite Fillet	Std
3	2	S1	1.29	23.375	173.79	2.00	46.75	0.1875	2.000	Opposite Fillet	Std
4	1	S3	21.83	23.375	N/A	N/A	N/A	0.3750	4.500	Both	F-FP,W-OS-0.1875
4	***	MUST	Use	Alternate	Web	Thick.=	0.2500	*	*	*	*

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1	2	KN(Face)	0.375	10.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
2	1	KN(Face)	0.375	10.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
3	1	KN(Face)	0.375	10.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
4	2	KN(Face)	0.375	10.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	2	78	-0.3	1.7	165.2	Thin plate	106.0	408.6	77	-0.3	1.2	149.4	Thin plate	106.0	408.6
2	1	78	-0.3	1.7	165.2	Thin plate	106.0	408.6	77	-0.3	1.2	149.4	Thin plate	106.0	408.6
3	1	77	-0.3	1.7	165.2	Thin plate	106.0	408.6	78	-0.3	1.2	149.4	Thin plate	106.0	408.6
4	2	77	-0.3	1.7	165.2	Thin plate	106.0	408.6	78	-0.3	1.2	149.4	Thin plate	106.0	408.6

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
0		23/7/0	SFB4106	
0		23/6/8	SFB4106	

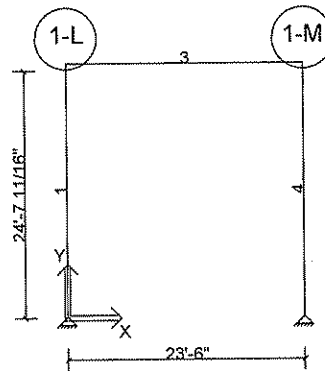
Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mey in-k	Axial + Flexure	Shear
1	21.86	24.00	59	59	-14.1	-6.1	-1501.1	0.0	152.9	8.4	1805.9	488.6	0.88	0.72
2	1.00	24.00	59	57	-5.7	-8.5	-1413.0	0.0	156.5	8.4	1805.9	488.6	0.80	1.01
3	1.00	24.00	59	55	-5.7	-8.7	1456.4	0.0	156.5	8.4	1805.9	488.6	0.82	1.03
4	21.86	24.00	59	60	12.2	-5.2	1412.5	0.0	301.4	8.4	1805.9	488.6	0.80	0.62

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
1	21.86	262.33	262.3	262.3	9.39	9.39	1019.92	52.09	84.99	10.42	92.40	15.73	0.22	7306.62	1.62	1.00	1.00	0.65	0.78
2	1.00	218.00	24.0	24.0	9.39	9.39	1019.92	52.09	84.99	10.42	92.40	15.73	0.22	7306.62	1.00	1.00	1.00	0.65	0.78
3	1.00	218.00	24.0	24.0	9.39	9.39	1019.92	52.09	84.99	10.42	92.40	15.73	0.22	7306.62	1.00	1.00	1.00	0.65	0.78
4	21.86	262.33	262.3	262.3	9.39	9.39	1019.92	52.09	84.99	10.42	92.40	15.73	0.22	7306.62	1.69	1.00	1.00	0.65	1.00

User Defined Frame Point Loads for Cross Section: 1

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	IF
1	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	IF
1	k	E>	Mezz	1.35	12/6/0	NA	NA	N	RIGHT	1.000	IF
1	k	<E	Mezz	-1.35	12/6/0	NA	NA	N	LEFT	1.000	IF
1	k	EB>	Mezz	-1.35	12/6/0	NA	NA	N	LEFT	1.000	IF
1	k	<EB	Mezz	1.35	12/6/0	NA	NA	N	RIGHT	1.000	IF
4	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	IF
4	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	IF
4	k	E>	Mezz	1.35	12/6/0	NA	NA	N	RIGHT	1.000	IF
4	k	<E	Mezz	-1.35	12/6/0	NA	NA	N	LEFT	1.000	IF
4	k	EB>	Mezz	-1.35	12/6/0	NA	NA	N	LEFT	1.000	IF
4	k	<EB	Mezz	1.35	12/6/0	NA	NA	N	RIGHT	1.000	IF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System Derived	1.000	0	240	0.700 WB1>	WB1>
13	System Derived	1.000	0	240	0.700 <WB1	<WB1
14	System Derived	1.000	0	240	0.700 WB2>	WB2>
15	System Derived	1.000	0	240	0.700 <WB2	<WB2
16	System	1.000	200	0	0.700 W1>	W1>
17	System	1.000	200	0	0.700 <W1	<W1
18	System	1.000	200	0	0.700 W2>	W2>
19	System	1.000	200	0	0.700 <W2	<W2
20	System	1.000	200	0	0.700 WP	WP
21	System Derived	1.000	200	0	0.700 WB1>	WB1>
22	System Derived	1.000	200	0	0.700 <WB1	<WB1
23	System Derived	1.000	200	0	0.700 WB2>	WB2>
24	System Derived	1.000	200	0	0.700 <WB2	<WB2
25	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
26	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
27	System Derived	1.000	50	0	1.0 EB>	EB>
28	System Derived	1.000	50	0	1.0 <EB	<EB



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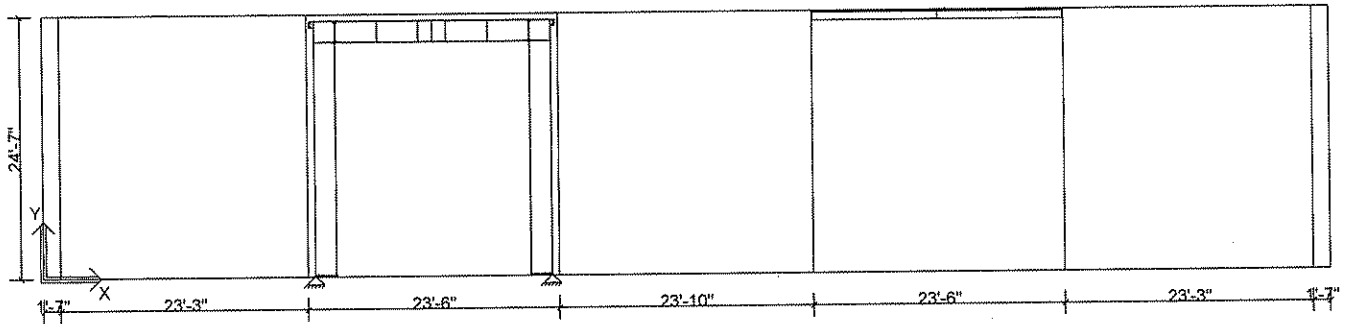
Controlling Frame Deflection Ratios for Cross Section: 1

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/206)	-1.328	4	2	23	WB2>
Max. Vertical Deflection for Span 1	(L/26442)	0.009	4	2	14	WB2>

* Negative horizontal deflection is left

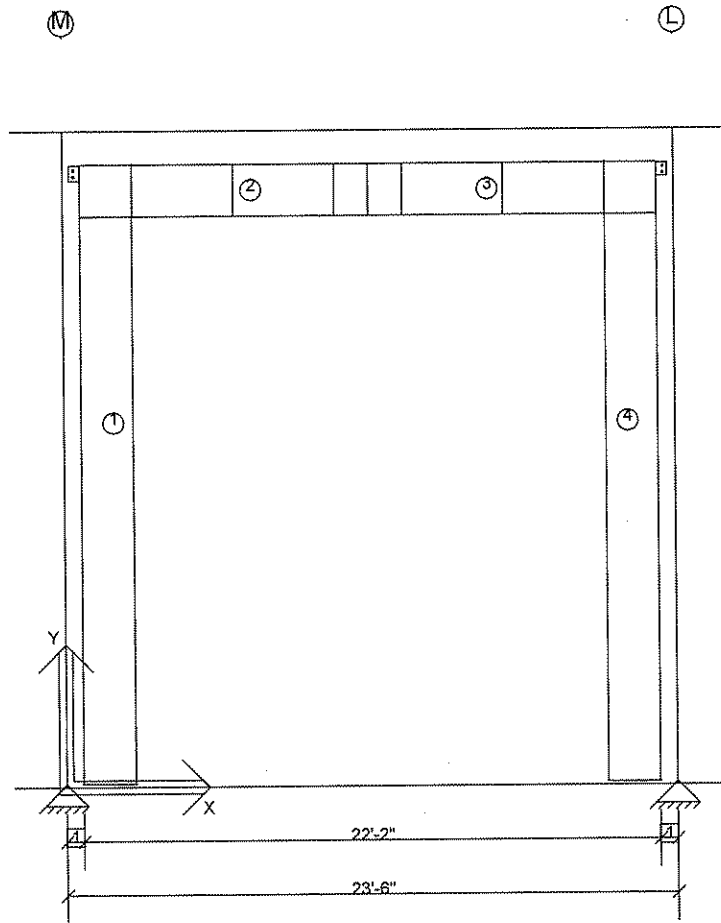
* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



Location	Portal Frame to Main Frame Connection Design Information
Left Portal	Force = 11.23k, Seismic Factor = 1.00, Stress Increase = 1.00, MZE 5x7x3/8 w/ (2) 7/8 A325SC, Flange weld = 3/16 fillet both sides, buckling OK, web yielding/crippling OK => passed
Left Main	Force = 11.23k, Seismic Factor = 1.00, Stress Increase = 1.00, Haunch Connection, MZE 7x13x3/8 w/ (2) 7/8 A325SC, Flange weld 3/16 fillet both sides, Web weld 3/16 fillet one side, buckling OK => passed
Right Portal	Force = 9.54k, Seismic Factor = 1.00, Stress Increase = 1.00, MZE 5x6x3/8 w/ (2) 3/4 A325SC, Flange weld = 3/16 fillet both sides, buckling OK, web yielding/crippling OK => passed
Right Main	Force = 9.54k, Seismic Factor = 1.00, Stress Increase = 1.00, Haunch Connection, MZE 7x11-3/8x3/8 w/ (2) 3/4 A325SC, Flange weld 3/16 fillet both sides, Web weld 3/16 fillet one side, buckling OK => passed

Frame Cross Section: 8



Dimension Key

- 1 8"
- 2 1'-3 1/2"

Frame Clearances

Horiz. Clearance between members 1(CX115) and 4(CX111): 18'-2"
 Vert. Clearance at member 1(CX115): 21'-11 5/16"
 Vert. Clearance at member 4(CX111): 21'-11 5/16") *do*
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
0/0/0	0/0/0	Portal Frame	0.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
17	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
18	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D+FD+CG+L+W1>+FL
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D+FD+CG+L+<W1+FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D+FD+CG+L+W2>+FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D+FD+CG+L+<W2+FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D+FD+CG+S+W1>+FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D+FD+CG+S+<W1+FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D+FD+CG+S+W2>+FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D+FD+CG+S+<W2+FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
41	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
42	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D+FD+CG+E>+EG++FL
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D+FD+CG+<E+EG++FL
47	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB1>	D + FD + CG + WP + WB1>
48	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB1>	D + FD + CU + WP + WB1>
49	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D+FD+CG+L+WP+WB1>
50	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D+FD+CG+S+WP+WB1>
51	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+L+WP+FL+WB1>
52	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+S+WP+FL+WB1>
53	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB1	D + FD + CG + WP + <WB1
54	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB1	D + FD + CU + WP + <WB1
55	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D+FD+CG+L+WP+<WB1
56	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D+FD+CG+S+WP+<WB1
57	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+L+WP+FL+<WB1
58	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+S+WP+FL+<WB1
59	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB2>	D + FD + CG + WP + WB2>



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60	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB2>	D + FD + CU + WP + WB2>
61	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D+FD+CG+L+WP+WB2>
62	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D+FD+CG+S+WP+WB2>
63	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+L+WP+FL+WB2>
64	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+S+WP+FL+WB2>
65	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB2	D + FD + CG + WP + <WB2
66	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB2	D + FD + CU + WP + <WB2
67	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D+FD+CG+L+WP+<WB2
68	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D+FD+CG+S+WP+<WB2
69	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+L+WP+FL+<WB2
70	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+S+WP+FL+<WB2
71	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 EB> + 0.700 EG+	D + FD + CG + EB> + EG+
72	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 EB> + 0.700 EG-	D + FD + CU + EB> + EG-
73	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+	D + FD + CG + EB> + EG+
74	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+ + 0.750 FL	D+FD+CG+EB>+EG++FL
75	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <EB + 0.700 EG+	D + FD + CG + <EB + EG+
76	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <EB + 0.700 EG-	D + FD + CU + <EB + EG-
77	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+	D + FD + CG + <EB + EG+
78	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+ + 0.750 FL	D+FD+CG+<EB+EG++FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
1	10.00	0.3125	0.1345	24.00	24.00	23.86	815.8	55.00	55.00	BP	KN	3P
2	10.00	0.3125	0.1345	24.00	24.00	11.08	315.9	55.00	55.00	KN	SS	3P
3	10.00	0.3125	0.1345	24.00	24.00	11.08	315.9	55.00	55.00	KN	SS	3P
4	10.00	0.3125	0.1345	24.00	24.00	23.86	815.8	55.00	55.00	BP	KN	3P

Total Frame Weight = 2263.5 (p) (includes all plates)
 Frame Pricing Weight = 2387.3 (p) (includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
4	23/6/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 8

Type	Exterior Column	Exterior Column							
X-Loc	0/0/0	23/6/0							
Grid1 - Grid2	8-M	8-L							
Base Plate W x L (in.)	11 x 25	11 x 25							
Base Plate Thickness (in.)	0.375	0.375							
Anchor Rod Qty/Diam. (in.)	4 - 0.750	4 - 0.750							
Column Base Elev.	100'-1 1/2"	100'-1 1/2"							
Load Type	Desc.	Hx	Vy	Hx	Vy				
D	Frm	0.0	1.1	-0.0	1.1	-	-	-	-
FD	Frm	0.3	6.4	-0.3	6.4	-	-	-	-
CG	Frm	-	-	-	-	-	-	-	-
L>	Frm	-	-	-	-	-	-	-	-
<L	Frm	-	-	-	-	-	-	-	-
S>	Frm	-	-	-	-	-	-	-	-
<S	Frm	-	-	-	-	-	-	-	-
S	Frm	-	-	-	-	-	-	-	-
SD	Frm	-	-	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-	-	-
US1*	Frm	-	-	-	-	-	-	-	-
*US1	Frm	-	-	-	-	-	-	-	-
W1>	Frm	-	-	-	-	-	-	-	-
<W1	Frm	-	-	-	-	-	-	-	-
W2>	Frm	-	-	-	-	-	-	-	-
<W2	Frm	-	-	-	-	-	-	-	-
CU	Frm	-	-	-	-	-	-	-	-
FL	Frm	0.6	12.7	-0.6	12.7	-	-	-	-
L	Frm	-	-	-	-	-	-	-	-
E>	Frm	1.6	2.0	1.6	-2.0	-	-	-	-
EG+	Frm	-	0.2	-	0.2	-	-	-	-
<E	Frm	-1.6	-2.0	-1.6	2.0	-	-	-	-



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EG-	Frm	-	-0.2	-	-0.2	-	-	-	-	-	-	-	-	-	-	-	-
WP	Frm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WB1>	Brc	-4.3	-10.5	-4.5	10.5	-	-	-	-	-	-	-	-	-	-	-	-
<WB1	Brc	4.9	11.3	4.7	-11.3	-	-	-	-	-	-	-	-	-	-	-	-
WB2>	Brc	-5.5	-13.3	-5.8	13.3	-	-	-	-	-	-	-	-	-	-	-	-
<WB2	Brc	3.7	8.4	3.5	-8.4	-	-	-	-	-	-	-	-	-	-	-	-
EB>	Brc	-2.2	-3.8	-2.3	3.8	-	-	-	-	-	-	-	-	-	-	-	-
<EB	Brc	2.3	3.8	2.2	-3.8	-	-	-	-	-	-	-	-	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	8-M	5.3	60	5.2	53	-	-	-	-	8.8	60	25.5	57	-	-	-	-
23/6/0	8-L	6.1	59	4.5	54	-	-	-	-	6.8	54	27.0	63	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	2.3	2.1
FD	0.0	0.0	12.8	12.8
CG	0.0	0.0	0.0	0.0
L>	0.0	0.0	0.0	0.0
<L	0.0	0.0	0.0	0.0
S>	0.0	0.0	0.0	0.0
<S	0.0	0.0	0.0	0.0
s	0.0	0.0	0.0	0.0
SD	0.0	0.0	0.0	0.0
SS	0.0	0.0	0.0	0.0
US1*	0.0	0.0	0.0	0.0
*US1	0.0	0.0	0.0	0.0
W1>	0.0	0.0	0.0	0.0
<W1	0.0	0.0	0.0	0.0
W2>	0.0	0.0	0.0	0.0
<W2	0.0	0.0	0.0	0.0
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	25.4	25.4
L	0.0	0.0	0.0	0.0
E>	3.2	3.2	0.0	0.0
EG+	0.0	0.0	0.3	0.3
<E	3.2	3.2	0.0	0.0
EG-	0.0	0.0	0.3	0.3
WP	0.0	0.0	0.0	0.0
WB1>	8.8	8.8	0.0	0.0
<WB1	9.5	9.5	0.0	0.0
WB2>	11.2	11.2	0.0	0.0
<WB2	7.1	7.1	0.0	0.0
EB>	4.5	4.5	0.0	0.0
<EB	4.5	4.5	0.0	0.0

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	8-M	1	0.375	11	25	4	0.750	A36	OS-0.1875	OS-0.1875
23/6/0	8-L	4	0.375	11	25	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
1	1	S3	21.83	23.375	N/A	N/A	N/A	0.3750	4.500	Both	F-FP,W-OS-0.1875
1	***	MUST	Use	Alternate	Web	Thick=	0.2500	*	*	*	*
2	1	S1	3.86	23.375	173.79	2.00	46.75	0.1875	2.000	Opposite Fillet	Std
2	2	S1	7.76	23.375	173.79	2.00	46.75	0.1875	2.000	Opposite Fillet	Std



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3	1	S1	5.19	23.375	173.79	2.00	46.75	0.1875	2.000	Opposite Fillet	Std
3	2	S1	1.29	23.375	173.79	2.00	46.75	0.1875	2.000	Opposite Fillet	Std
4	1	S3	21.83	23.375	N/A	N/A	N/A	0.3750	4.500	Both	F-FP,W-OS-0.1875
4	***	MUST	Use	Alternate	Web	Thick.=	0.2500	*	*	*	*

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration		Pitches 1st/2nd (in.)	Configuration		Pitches 1st/2nd (in.)
									ID	Desc.		ID	Desc.	
1	2	KN(Face)	0.375	10.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
2	1	KN(Face)	0.375	10.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
3	1	KN(Face)	0.375	10.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
4	2	KN(Face)	0.375	10.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	2	77	-0.3	1.7	165.2	Thin plate	106.0	408.6	78	-0.3	1.2	149.5	Thin plate	106.0	408.6
2	1	77	-0.3	1.7	165.2	Thin plate	106.0	408.6	78	-0.3	1.2	149.5	Thin plate	106.0	408.6
3	1	78	-0.3	1.7	165.2	Thin plate	106.0	408.6	77	-0.3	1.2	149.5	Thin plate	106.0	408.6
4	2	78	-0.3	1.7	165.2	Thin plate	106.0	408.6	77	-0.3	1.2	149.5	Thin plate	106.0	408.6

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
0		23/6/8	SFB4106	
0		23/7/0	SFB4106	

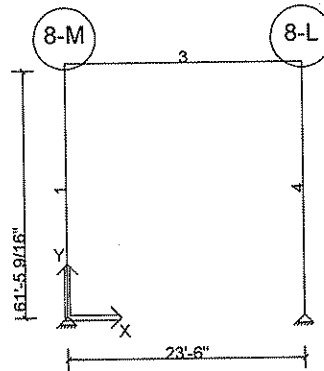
Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
1	21.86	24.00	59	60	12.5	5.4	1445.9	0.0	301.4	8.4	1805.9	488.6	0.82	0.64
2	1.00	24.00	59	55	-5.9	8.7	1490.8	0.0	156.5	8.4	1805.9	488.6	0.84	1.03
3	1.00	24.00	59	57	-5.9	8.7	-1446.4	0.0	156.5	8.4	1805.9	488.6	0.82	1.03
4	21.86	24.00	59	59	-14.4	6.2	-1536.5	0.0	152.9	8.4	1805.9	488.6	0.90	0.74

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
1	21.86	262.33	262.3	262.3	9.39	9.39	1019.92	52.09	84.99	10.42	92.40	15.73	0.22	7306.62	1.69	1.00	1.00	0.65	1.00
2	1.00	218.00	24.0	24.0	9.39	9.39	1019.92	52.09	84.99	10.42	92.40	15.73	0.22	7306.62	1.00	1.00	1.00	0.65	0.78
3	1.00	218.00	24.0	24.0	9.39	9.39	1019.92	52.09	84.99	10.42	92.40	15.73	0.22	7306.62	1.00	1.00	1.00	0.65	0.78
4	21.86	262.33	262.3	262.3	9.39	9.39	1019.92	52.09	84.99	10.42	92.40	15.73	0.22	7306.62	1.62	1.00	1.00	0.65	0.78

User Defined Frame Point Loads for Cross Section: 8

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	IF
1	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	IF
1	k	E>	Mezz	-1.35	12/6/0	NA	NA	N	LEFT	1.000	IF
1	k	<E	Mezz	1.35	12/6/0	NA	NA	N	RIGHT	1.000	IF
1	k	EB>	Mezz	1.35	12/6/0	NA	NA	N	RIGHT	1.000	IF
1	k	<EB	Mezz	-1.35	12/6/0	NA	NA	N	LEFT	1.000	IF
4	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	IF
4	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	IF
4	k	E>	Mezz	-1.35	12/6/0	NA	NA	N	LEFT	1.000	IF
4	k	<E	Mezz	1.35	12/6/0	NA	NA	N	RIGHT	1.000	IF
4	k	EB>	Mezz	1.35	12/6/0	NA	NA	N	RIGHT	1.000	IF
4	k	<EB	Mezz	-1.35	12/6/0	NA	NA	N	LEFT	1.000	IF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System Derived	1.000	0	240	0.700 WB1>	WB1>
13	System Derived	1.000	0	240	0.700 <WB1	<WB1
14	System Derived	1.000	0	240	0.700 WB2>	WB2>
15	System Derived	1.000	0	240	0.700 <WB2	<WB2
16	System	1.000	200	0	0.700 W1>	W1>
17	System	1.000	200	0	0.700 <W1	<W1
18	System	1.000	200	0	0.700 W2>	W2>
19	System	1.000	200	0	0.700 <W2	<W2
20	System	1.000	200	0	0.700 WP	WP
21	System Derived	1.000	200	0	0.700 WB1>	WB1>
22	System Derived	1.000	200	0	0.700 <WB1	<WB1
23	System Derived	1.000	200	0	0.700 WB2>	WB2>
24	System Derived	1.000	200	0	0.700 <WB2	<WB2
25	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
26	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
27	System Derived	1.000	50	0	1.0 EB>	EB>
28	System Derived	1.000	50	0	1.0 <EB	<EB



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Controlling Frame Deflection Ratios for Cross Section: 8

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/201)	1.359	1	2	23	WB2>
Max. Vertical Deflection for Span 1	(L/25830)	-0.009	4	2	14	WB2>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Loads and Codes - Shape: Operations Building Lean-to

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Primaries Wind Exposure (Factor): B (0.608)
 Parts Wind Exposure Factor: 0.701

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 9/1/8
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 22.35,(Parts) 25.76 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.50 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group 1

 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.2859
 Bracing Seismic Period: 0.1766
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

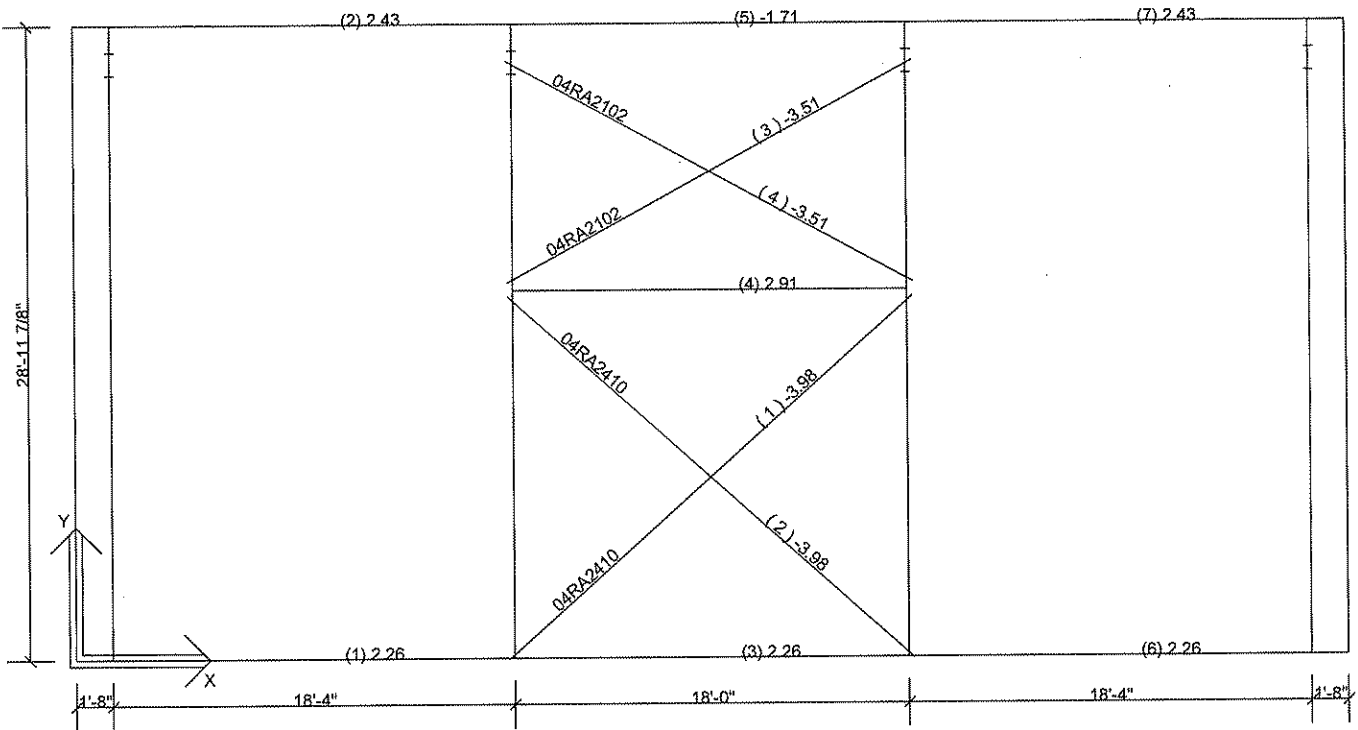
Deflection Conditions

Frames are vertically supporting: Ceiling with Flexible Finish
 Frames are laterally supporting: Unreinforced Masonry Wall
 Purlins are supporting: Ceiling with Flexible Finish
 Girts are supporting: Unreinforced Masonry Wall

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Design Load Combinations - Bracing

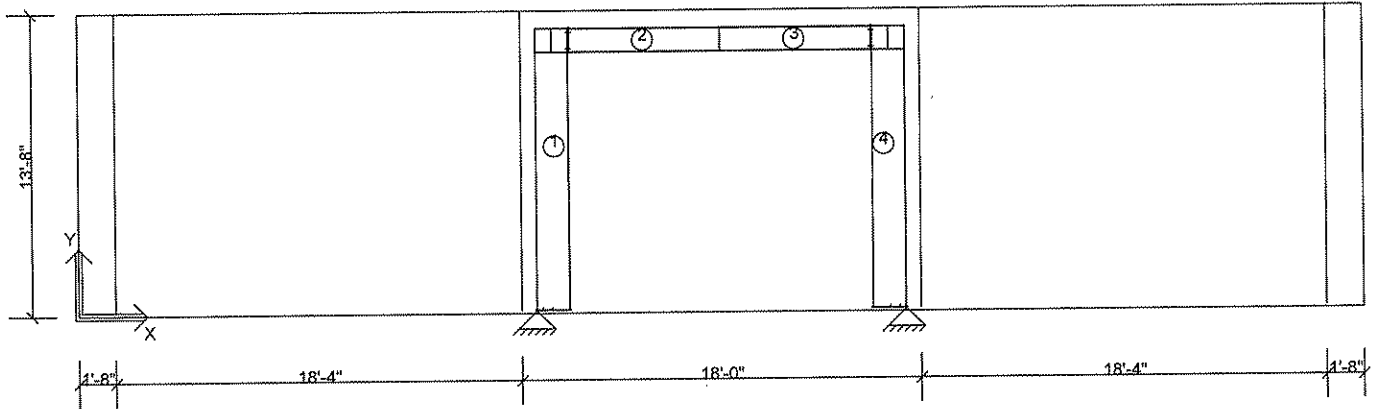
No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W1	<W1
3	System	1.000	1.0 W2>	W2>
4	System	1.000	1.0 <W2	<W2
5	System	1.000	0.700 E>	E>
6	System	1.000	0.700 <E	<E



Diagonal Bracing Member Design Summary: Roof A

Mem. No.	Bracing Shape	Length (ft)	Angle	Design Axial (k)	Seismic Factor	Stress Factor	Stress Ratio	Governing Load Case	Design Status	Comment
1	R 0.5	24.80	41.3	-3.98	1.0000	1.0000	0.706	1.0<W1	passed	
2	R 0.5	24.80	41.3	-3.98	1.0000	1.0000	0.706	1.0W2>	passed	
3	R 0.5	21.14	31.8	-3.51	1.0000	1.0000	0.623	1.0<W1	passed	
4	R 0.5	21.14	31.8	-3.51	1.0000	1.0000	0.623	1.0W2>	passed	

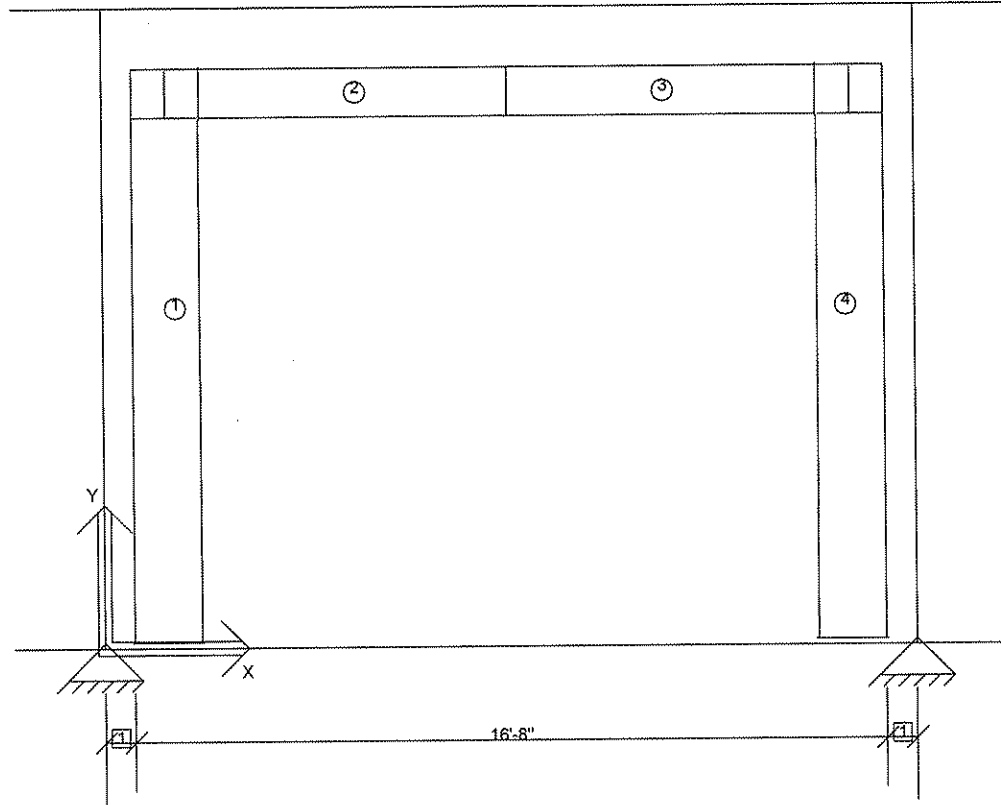
Mem.	End	Diagonal Connection Design Information
1	Left	Slot: web thk = 1/8 in., F = 3.98k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 1/8 in., F = 3.98k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
2	Left	Slot: web thk = 1/8 in., F = 3.98k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 1/8 in., F = 3.98k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
3	Left	Slot: web thk = 1/8 in., F = 3.51k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 1/8 in., F = 3.51k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
4	Left	Slot: web thk = 1/8 in., F = 3.51k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed
	Right	Slot: web thk = 1/8 in., F = 3.51k, E factor = 1.000, stress increase = 1.000, slot offset = 2 in., web/flange weld OK, web direct shear OK, web punching shear OK, tensile fracture of web OK >> passed



Portal Frame to Main Frame Connection Design Information	
Location	
Left Portal	Main frame rafter depth is less than MZE length of 14-3/8 => Not Designed <=
Left Main	Main frame rafter depth is less than MZE length of 14-3/8 => Not Designed <=
Right Portal	*FAILED* Main frame rafter depth is less than MZE length of 14-1/8 => Not Designed <=
Right Main	*FAILED* Main frame rafter depth is less than MZE length of 14-1/8 => Not Designed <=

Frame Cross Section: A

WILL BE HAND FIXED AFTER APPROVAL.



Dimension Key

- 1 8"
- 2 1'-4 3/16"

Frame Clearances

- Horiz. Clearance between members 1(CX116) and 4(CX116): 13'-8"
- Vert. Clearance at member 1(CX116): 11'-9"
- Vert. Clearance at member 4(CX116): 11'-9"
- Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
0/0/0	0/0/0	Portal Frame	0.0000		-	Automatic Design

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L>	D + CG + L>
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S>	D + CG + S>
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
6	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
7	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
8	System	1.000	1.0 D + 1.0 CG + 1.0 W2>	D + CG + W2>
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
10	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
11	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
12	System	1.000	0.600 D + 0.600 CU + 1.0 W2>	D + CU + W2>
13	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
14	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
15	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
16	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2>	D + CG + L + W2>
17	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
18	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
19	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
20	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2>	D + CG + S + W2>
21	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
22	System	1.000	1.0 D + 1.0 CG + 0.700 E> + 0.700 EG+	D + CG + E> + EG+
23	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG+	D + CG + <E + EG+
24	System	1.000	0.600 D + 0.600 CU + 0.700 E> + 0.700 EG-	D + CU + E> + EG-
25	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG-	D + CU + <E + EG-
26	System	1.000	1.0 D + 1.0 CG + 0.525 E> + 0.525 EG+	D + CG + E> + EG+
27	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG+	D + CG + <E + EG+
28	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
29	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
30	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
31	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
32	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
33	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
34	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
35	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
36	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
37	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
38	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
39	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
40	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
41	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
42	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
43	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2
44	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
45	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
46	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
47	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
48	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-
49	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
1	6.00	0.1875	0.1345	18.00	18.00	12.75	225.6	55.00	55.00	BP	KN	3P
2	6.00	0.3125	0.1345	13.00	13.00	8.33	134.2	55.00	55.00	KN	SS	3P
3	6.00	0.3125	0.1345	13.00	13.00	8.33	134.2	55.00	55.00	KN	SS	3P
4	6.00	0.1875	0.1345	18.00	18.00	12.75	225.6	55.00	55.00	BP	KN	3P

Total Frame Weight = 719.6 (p) (Includes all plates)



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Frame Pricing Weight = 749.5 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
I	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
4	18/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: A

Type	Exterior Column	Exterior Column			
X-Loc	0/0/0	18/0/0			
Grid1 - Grid2	A-5	A-3			
Base Plate W x L (in.)	8 x 19	8 x 19			
Base Plate Thickness (in.)	0.375	0.375			
Anchor Rod Qty/Diam. (in.)	4 - 0.750	4 - 0.750			
Column Base Elev.	100'-1 1/2"	100'-1 1/2"			
Load Type	Desc.	Hx	Vy	Hx	Vy
D	Frm	0.0	0.3	-0.0	0.3
CG	Frm	-	-	-	-
L>	Frm	-	-	-	-
<L	Frm	-	-	-	-
S>	Frm	-	-	-	-
<S	Frm	-	-	-	-
S	Frm	-	-	-	-
SD	Frm	-	-	-	-
W1>	Frm	-	-	-	-
<W1	Frm	-	-	-	-
W2>	Frm	-	-	-	-
<W2	Frm	-	-	-	-
CU	Frm	-	-	-	-
L	Frm	-	-	-	-
E>	Frm	-	-	-	-
EG+	Frm	-	-	-	-
<E	Frm	-	-	-	-
EG-	Frm	-	-	-	-
WP	Frm	-	-	-	-
WB1>	Brc	3.1	5.1	2.9	-5.1
<WB1	Brc	-2.9	-5.1	-3.1	5.1
WB2>	Brc	3.1	5.1	2.9	-5.1
<WB2	Brc	-2.9	-5.1	-3.1	5.1
EB>	Brc	0.5	0.8	0.5	-0.8
<EB	Brc	-0.5	-0.8	-0.5	0.8

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	A-5	2.9	33	3.1	28	-	-	-	-	4.9	33	5.4	28	-	-	-	-
18/0/0	A-3	3.1	32	2.9	29	-	-	-	-	4.9	29	5.4	32	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	0.7	0.7
CG	0.0	0.0	0.0	0.0
L>	0.0	0.0	0.0	0.0
<L	0.0	0.0	0.0	0.0
S>	0.0	0.0	0.0	0.0
<S	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0
SD	0.0	0.0	0.0	0.0
W1>	0.0	0.0	0.0	0.0
<W1	0.0	0.0	0.0	0.0
W2>	0.0	0.0	0.0	0.0

<W2	0.0	0.0	0.0	0.0
CU	0.0	0.0	0.0	0.0
L	0.0	0.0	0.0	0.0
E>	0.0	0.0	0.0	0.0
EG+	0.0	0.0	0.0	0.0
<E	0.0	0.0	0.0	0.0
EG-	0.0	0.0	0.0	0.0
WP	0.0	0.0	0.0	0.0
WB1>	6.0	6.0	0.0	0.0
<WB1	6.0	6.0	0.0	0.0
WB2>	6.0	6.0	0.0	0.0
<WB2	6.0	6.0	0.0	0.0
EB>	1.0	1.0	0.0	0.0
<EB	1.0	1.0	0.0	0.0

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	A-5	1	0.375	8	19	4	0.750	A36	OS-0.1875	OS-0.1875
18/0/0	A-3	4	0.375	8	19	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
1	1	S3	11.63	17.625	N/A	N/A	N/A	0.3125	2.500	Both	F-FP,W-OS-0.1875
1	2	S11 (S10)		Alternate	Web	Thick.=	0.1644	0.1875	2.500	Opposite Fillet	W-BS-0.1875
4	1	S3	11.63	17.625	N/A	N/A	N/A	0.3125	2.500	Both	F-FP,W-OS-0.1875
4	2	S11 (S10)		Alternate	Web	Thick.=	0.1644	0.1875	2.500	Opposite Fillet	W-BS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1	2	KN(Face)	0.375	6.00	14.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
2	1	KN(Face)	0.375	6.00	14.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
3	1	KN(Face)	0.375	6.00	14.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
4	2	KN(Face)	0.375	6.00	14.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	2	2	-0.0	0.1	1.9	Thin plate	106.0	232.4	0	0.0	0.1	0.0	Thin plate	106.0	232.4
2	1	2	-0.0	0.1	1.9	Thin plate	106.0	232.4	0	0.0	0.1	0.0	Thin plate	106.0	232.4
3	1	1	-0.0	0.1	1.9	Thin plate	106.0	234.0	0	0.0	0.1	0.0	Thin plate	106.0	234.0
4	2	1	-0.0	0.1	1.9	Thin plate	106.0	234.0	0	0.0	0.1	0.0	Thin plate	106.0	234.0

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
1	11.66	18.00	28	28	-5.4	-3.1	-439.9	0.0	71.5	11.1	570.6	105.6	0.81	0.28
2	0.75	13.00	33	28	-3.1	5.2	422.0	0.0	141.5	16.3	908.8	176.6	0.48	0.32
3	0.75	13.00	29	32	-3.1	-5.2	422.0	0.0	141.5	16.3	908.8	176.6	0.48	0.32
4	11.66	18.00	32	32	-5.4	3.1	-440.0	0.0	71.5	11.1	570.6	105.6	0.81	0.28

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
1	11.66	139.98	140.0	140.0	4.62	4.62	239.85	6.75	26.65	2.25	30.48	3.45	0.04	535.70	1.66	1.00	1.00	0.65	0.72
2	0.75	164.00	15.5	15.5	5.41	5.41	172.18	11.25	26.49	3.75	28.94	5.68	0.13	452.84	1.00	1.00	1.08	0.99	0.84
3	0.75	164.00	15.5	15.5	5.41	5.41	172.18	11.25	26.49	3.75	28.94	5.68	0.13	452.84	1.00	1.00	1.08	0.99	0.84



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4	11.66	139.98	140.0	140.0	4.62	4.62	239.85	6.75	26.65	2.25	30.48	3.45	0.04	535.70	1.66	1.00	1.00	0.65	0.72
---	-------	--------	-------	-------	------	------	--------	------	-------	------	-------	------	------	--------	------	------	------	------	------

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	0.700 W1>	W1>
5	System	1.000	0	240	0.700 <W1	<W1
6	System	1.000	0	240	0.700 W2>	W2>
7	System	1.000	0	240	0.700 <W2	<W2
8	System	1.000	0	240	0.700 WP	WP
9	System Derived	1.000	0	240	0.700 WB1>	WB1>
10	System Derived	1.000	0	240	0.700 <WB1	<WB1
11	System Derived	1.000	0	240	0.700 WB2>	WB2>
12	System Derived	1.000	0	240	0.700 <WB2	<WB2
13	System	1.000	200	0	0.700 W1>	W1>
14	System	1.000	200	0	0.700 <W1	<W1
15	System	1.000	200	0	0.700 W2>	W2>
16	System	1.000	200	0	0.700 <W2	<W2
17	System	1.000	200	0	0.700 WP	WP
18	System Derived	1.000	200	0	0.700 WB1>	WB1>
19	System Derived	1.000	200	0	0.700 <WB1	<WB1
20	System Derived	1.000	200	0	0.700 WB2>	WB2>
21	System Derived	1.000	200	0	0.700 <WB2	<WB2
22	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
23	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
24	System Derived	1.000	50	0	1.0 EB>	EB>
25	System Derived	1.000	50	0	1.0 <EB	<EB

Controlling Frame Deflection Ratios for Cross Section: A

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/238)	0.613	1	2	21	<WB2
Max. Vertical Deflection for Span 1	(L/46881)	-0.004	4	2	12	<WB2

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Secondary - Summary Report

Loads and Codes - Shape: Operations Building

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Wind Exposure (Factor): B (0.705)
 Parts Wind Exposure Factor: 0.705

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.30 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group I

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 15/3/12
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 25.92 psf

Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.3628
 Bracing Seismic Period: 0.2208
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Design Load Combinations - Purlin

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L	D + CG + L
2	System	1.000	1.0 D + 1.0 CG + 1.0 S	D + CG + S
3	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
4	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SS	D + CG + S + SS
5	System	1.000	1.0 D + 1.0 CG + 1.0 US1*	D + CG + US1*
6	System	1.000	1.0 D + 1.0 CG + 1.0 *US1	D + CG + *US1
7	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 1)
8	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 12)
9	System	1.000	1.0 D + 1.0 CG + 1.0 PH1	D + CG + PH1(Span 1)
10	System	1.000	1.0 D + 1.0 CG + 1.0 PH1	D + CG + PH1(Span 12)
11	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 1 and 2)
12	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 2 and 3)
13	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 3 and 4)
14	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 4 and 5)
15	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 5 and 6)
16	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 6 and 7)
17	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 7 and 8)
18	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 8 and 9)
19	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 9 and 10)
20	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 10 and 11)
21	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2(Spans 11 and 12)
22	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
23	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
24	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
25	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
26	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
27	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
28	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
29	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
30	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
31	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+



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32	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
33	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+
34	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
35	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-
36	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
37	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
38	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
39	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
40	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
41	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
42	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
43	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
44	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
45	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
46	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
47	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
48	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
49	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
50	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
51	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2

Design Load Combinations - Girt

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W2	<W2
3	System	1.000	1.0 WP	WP
4	System	1.000	0.700 E>	E>
5	System	1.000	0.700 <E	<E

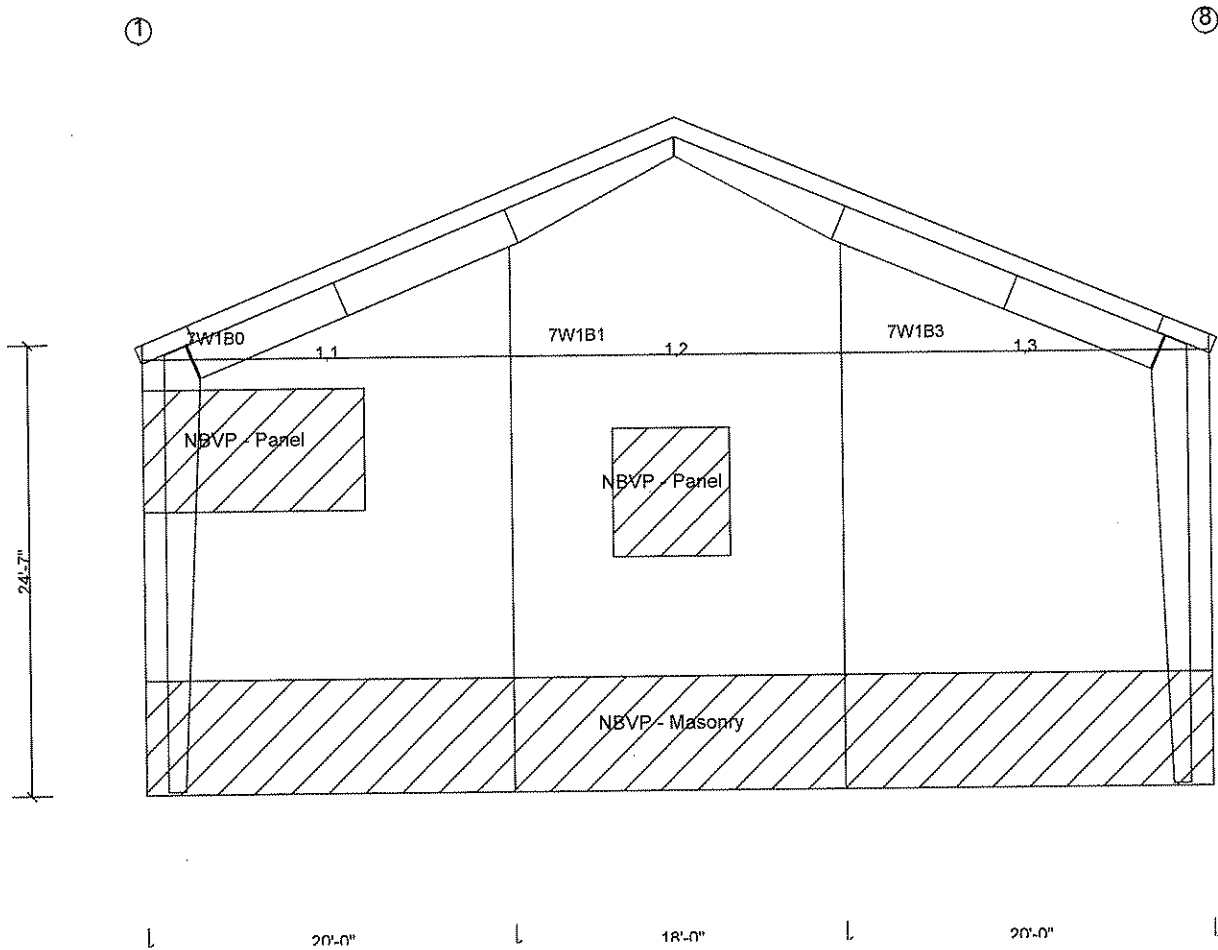
Deflection Load Combinations - Purlin

No.	Origin	Factor	Deflection	Application	Description
1	System	1.000	240	0.700 W1>	W1>
2	System	1.000	240	0.700 <W2	<W2
3	System	1.000	240	0.700 WP	WP
4	System	1.000	240	1.0 S	S
5	System	1.000	240	1.0 S + 1.0 SD	S + SD
6	System	1.000	240	1.0 S + 1.0 SS	S + SS
7	System	1.000	240	1.0 US1*	US1*
8	System	1.000	240	1.0 *US1	*US1
9	System	1.000	240	1.0 L	L

Deflection Load Combinations - Girt

No.	Origin	Factor	Deflection	Application	Description
1	System	1.000	240	0.700 W1>	W1>
2	System	1.000	240	0.700 <W2	<W2
3	System	1.000	240	0.700 WP	WP
4	System	1.000	240	0.500 E>	E>
5	System	1.000	240	0.500 <E	<E

Wall: J





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Spandrel(Id=1,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	7.00	0.1875	0.1345	15.00	15.00	10.00	156.0	55.00	55.00	SS	SS	3P
25001	7.00	0.1875	0.1345	15.00	15.00	9.95	152.0	55.00	55.00	SS	SS	3P

Total Frame Weight = 308.0 (p) (Includes all plates)
 Frame Pricing Weight = 308.0 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Connection Plate							Bolt Group						Edge	Weld	Beam Cope		
Mem.	Jt.	Type	Thick.	Height	Length	Fy	Diam.	Spec/Jt.	Bolts	Rows	Gage	Pitch	'a'	Size	Side	C	Depth
Id	No.		in.	in.	in.	ksi	in.		n	r	in.	in.	in.	in.		in.	in.
1,1	1		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	(0)-0.0000		0.00	0.00
1,1	2	ST	0.375	10.00	4.50	55	0.750	A325X/ST	3	1	0.00	3.00	2.50	(2)-0.1250	FO/FI	4.69	4.00

Required Strength									Available Strength Ratio					Min. Thickness	
Mem.	Jt.	Load	Axial	Shear	Beam Moment	Pr	Angle	Bolt Group	Bolt Shear	Bearing	Rupture	Max. Ratio	Description	Beam Web	Column
Id	No.	Case	k	k	in-k	k	Deg.	C	%	%	%	%		in.	in.
1,1	1	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00		0.0000	0.0000
1,1	2	1	0.00	-5.13	0.00	5.13	0.0	1.99	0.19	0.24	0.25	0.55	OK->CopedBeamFlexure	0.0994	0.0884

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	20/0/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Controlling Cases			Required Strength				Available Strength				Strength Ratios			
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	10.00	15.00	1	1	0.0	-4.3	-280.9	0.0	151.5	13.4	289.9	105.6	0.97	0.32
25001	0.00	15.00	1	1	0.0	5.1	-280.9	0.0	151.5	13.4	289.9	105.6	0.97	0.38

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	10.00	240.00	240.0	240.0	4.59	4.59	179.06	10.72	23.87	3.06	26.63	4.66	0.04	588.11	1.14	1.00	1.06	0.52	1.00
25001	0.00	240.00	240.0	240.0	4.59	4.59	179.06	10.72	23.87	3.06	26.63	4.66	0.04	588.11	1.14	1.00	1.06	0.52	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,1)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/1054)	0.228	25001	1	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=1,2)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	7.00	0.1875	0.1345	14.00	14.00	8.95	132.3	55.00	55.00	SS	SS	3P
25001	7.00	0.1875	0.1345	14.00	14.00	8.95	132.3	55.00	55.00	SS	SS	3P

Total Frame Weight = 264.6 (p) (Includes all plates)
 Frame Pricing Weight = 264.6 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Mem. Id	Jt. No.	Type	Connection Plate				Bolt Group						Edge	Weld	Beam Cope		
			Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
1,2	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO/FI	4.67	3.00
1,2	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO/FI	4.69	3.00

Mem. Id	Jt. No.	Load Case	Required Strength						Available Strength Ratio						Min. Thickness	
			Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.	
1,2	1	I	0.00	-6.05	0.00	6.05	0.0	1.03	0.44	0.55	0.26	0.58	OK->CopedBeamFlexure	0.1021	0.0884	
1,2	2	I	0.00	-6.05	0.00	6.05	0.0	1.03	0.44	0.55	0.26	0.58	OK->CopedBeamFlexure	0.1024	0.0884	

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	18/0/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases				Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mey in-k	Axial + Flexure	Shear		
25000	9.00	14.00	1	1	0.0	-6.1	-338.5	0.0	147.1	14.5	333.5	105.5	1.01	0.42		
25001	0.00	14.00	1	1	0.0	6.1	-338.5	0.0	147.1	14.5	333.5	105.5	1.01	0.42		

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	9.00	216.00	216.0	216.0	4.46	4.46	153.56	10.72	21.94	3.06	24.37	4.66	0.04	511.38	1.14	1.00	1.07	0.54	1.00
25001	0.00	216.00	216.0	216.0	4.46	4.46	153.56	10.72	21.94	3.06	24.37	4.66	0.04	511.38	1.14	1.00	1.07	0.54	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,2)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/839)	0.257	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=1,3)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	7.00	0.1875	0.1345	14.00	14.00	9.95	147.5	55.00	55.00	SS	SS	3P
25001	7.00	0.1875	0.1345	14.00	14.00	10.00	151.4	55.00	55.00	SS	SS	3P

Total Frame Weight = 298.9 (p) (Includes all plates)
 Frame Pricing Weight = 298.9 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Connection Plate							Bolt Group						Edge	Weld	Beam Cope		
Mem. Id	Jt. No.	Type	Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
1,3	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO/FI	4.67	3.00
1,3	2		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	(0)-0.0000		0.00	0.00

Required Strength										Available Strength Ratio					Min. Thickness	
Mem. Id	Jt. No.	Load Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.	
1,3	1	1	0.00	-4.95	0.00	4.95	0.0	1.03	0.36	0.45	0.21	0.54	OK->ColumnWebRupture	0.0955	0.0884	
1,3	2	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00		0.0000	0.0000	

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	20/0/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Controlling Cases			Required Strength				Available Strength				Strength Ratios			
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	10.00	14.00	1	1	0.0	-5.0	-266.5	0.0	147.1	14.5	272.0	105.5	0.98	0.34
25001	0.00	14.00	1	1	0.0	4.1	-266.5	0.0	147.1	14.5	272.0	105.5	0.98	0.29

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	10.00	240.00	240.0	240.0	4.46	4.46	153.56	10.72	21.94	3.06	24.37	4.66	0.04	511.38	1.13	1.00	1.07	0.54	1.00
25001	0.00	240.00	240.0	240.0	4.46	4.46	153.56	10.72	21.94	3.06	24.37	4.66	0.04	511.38	1.13	1.00	1.07	0.54	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,3)

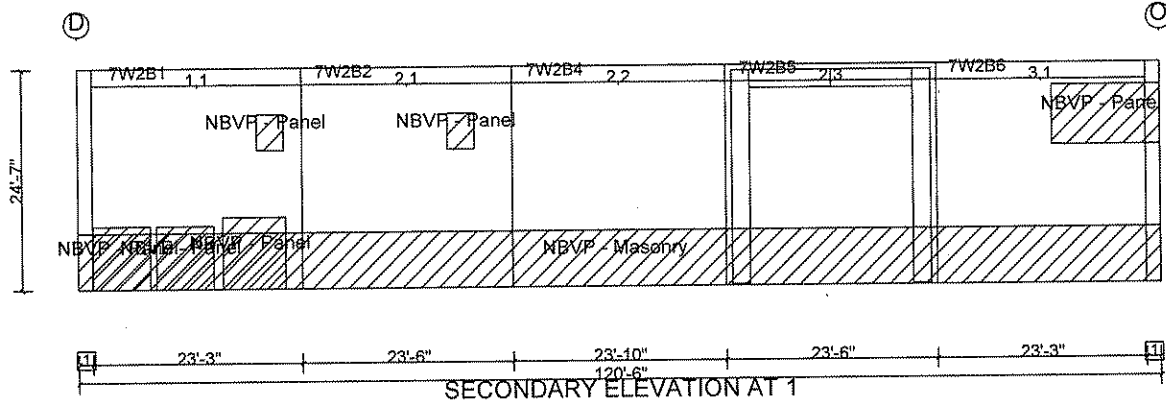
Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/950)	0.253	25001	1	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 2



Dimension Key

1 1'-7"



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Spandrel(Id=1,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	8.00	0.2500	0.1345	9.00	9.00	11.00	190.1	55.00	55.00	SS	SS	3P
25001	8.00	0.2500	0.1345	9.00	9.00	11.58	199.9	55.00	55.00	SS	SS	3P

Total Frame Weight = 390.0 (p) (Includes all plates)
 Frame Pricing Weight = 390.0 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Mem. Id	Jt. No.	Type	Connection Plate				Bolt Group				Edge 'a'	Weld Size	Beam Cope Side	C in.	Depth in.		
			Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r						Gage in.	Pitch in.
1,1	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FI	4.25	0.25
1,1	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.63	1.13

Mem. Id	Jt. No.	Load Case	Required Strength					Available Strength Ratio					Min. Thickness		
			Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
1,1	1	1	0.00	-4.24	0.00	4.24	0.0	1.03	0.31	0.39	0.21	0.39	OK->BearingAt: Beam Web	0.0523	0.1875
1,1	2	1	0.00	-4.10	0.00	4.10	0.0	1.03	0.30	0.38	0.24	0.47	OK->ColumnWebRupture	0.0506	0.0884

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/3/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	11.62	9.00	1	1	0.0	-4.2	-287.2	0.0	169.7	21.4	302.3	159.5	0.95	0.20
25001	0.00	9.00	1	1	0.0	4.1	-287.2	0.0	169.7	21.4	302.3	159.5	0.95	0.19

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.62	279.00	279.0	279.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00
25001	0.00	279.00	279.0	279.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,1)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/413)	0.674	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=2,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	8.00	0.2500	0.1345	9.00	9.00	11.70	202.3	55.00	55.00	SS	SS	3P
25001	8.00	0.2500	0.1345	9.00	9.00	11.70	202.2	55.00	55.00	SS	SS	3P

Total Frame Weight = 404.4 (p) (Includes all plates)
 Frame Pricing Weight = 404.4 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

			Connection Plate					Bolt Group					Edge	Weld	Beam Cope		
Mem. Id	Jt. No.	Type	Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
2,1	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.66	1.13
2,1	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.69	1.13

			Required Strength						Available Strength Ratio						Min. Thickness	
Mem. Id	Jt. No.	Load Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.	
2,1	1	1	0.00	-4.13	0.00	4.13	0.0	1.03	0.30	0.38	0.24	0.47	OK->ColumnWebRupture	0.0509	0.0884	
2,1	2	1	0.00	-4.13	0.00	4.13	0.0	1.03	0.30	0.38	0.24	0.47	OK->ColumnWebRupture	0.0509	0.0884	

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/6/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

			Controlling Cases				Required Strength				Available Strength				Strength Ratios	
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear		
25000	11.75	9.00	1	1	0.0	-4.1	-291.3	0.0	169.7	21.4	297.5	159.5	0.98	0.19		
25001	0.00	9.00	1	1	0.0	4.1	-291.3	0.0	169.7	21.4	297.5	159.5	0.98	0.19		

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.75	282.00	282.0	282.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00
25001	0.00	282.00	282.0	282.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=2,1)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/404)	0.698	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=2,2)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	8.00	0.2500	0.1345	9.00	9.00	11.87	205.2	55.00	55.00	SS	SS	3P
25001	8.00	0.2500	0.1345	9.00	9.00	11.86	205.1	55.00	55.00	SS	SS	3P

Total Frame Weight = 410.3 (p) (Includes all plates)
 Frame Pricing Weight = 410.3 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Mem. Id	Jt. No.	Type	Connection Plate				Bolt Group				Edge 'a'	Weld Size	Beam Cope				
			Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r			Gage in.	Pitch in.	Side	C in.	Depth in.
2,2	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.66	1.13
2,2	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.69	1.13

Mem. Id	Jt. No.	Load Case	Required Strength					Available Strength Ratio					Min. Thickness		
			Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
2,2	1	1	0.00	-4.19	0.00	4.19	0.0	1.03	0.31	0.38	0.24	0.47	OK->ColumnWebRupture	0.0516	0.0884
2,2	2	1	0.00	-4.19	0.00	4.19	0.0	1.03	0.31	0.38	0.24	0.47	OK->ColumnWebRupture	0.0516	0.0884

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/10/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases				Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear		
25000	11.92	9.00	1	1	0.0	-4.2	-299.3	0.0	169.7	21.4	290.9	159.5	1.03	0.20		
25001	0.00	9.00	1	1	0.0	4.2	-299.3	0.0	169.7	21.4	290.9	159.5	1.03	0.20		

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.92	286.00	286.0	286.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00
25001	0.00	286.00	286.0	286.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=2,2)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/387)	0.737	25001	1	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=2,3)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	8.00	0.2500	0.1345	9.00	9.00	11.70	202.3	55.00	55.00	SS	SS	3P
25001	8.00	0.2500	0.1345	9.00	9.00	11.70	202.2	55.00	55.00	SS	SS	3P

Total Frame Weight = 404.4 (p) (Includes all plates)
 Frame Pricing Weight = 404.4 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

			Connection Plate				Bolt Group						Edge	Weld	Beam Cope		
Mem.	Jt.	Type	Thick.	Height	Length	Fy	Diam.	Spec/Jt.	Bolts	Rows	Gage	Pitch	'a'	Size	Side	C	Depth
Id	No.		in.	in.	in.	ksi	in.		n	r	in.	in.	in.	in.		in.	in.
2,3	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.66	1.13
2,3	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.69	1.00

		Required Strength							Available Strength Ratio					Min. Thickness	
Mem.	Jt.	Load	Axial	Shear	Beam Moment	Pr	Angle	Bolt Group	Bolt Shear	Bearing	Rupture	Max. Ratio	Description	Beam Web	Column
Id	No.	Case	k	k	in-k	k	Deg.	C	%	%	%	%		in.	in.
2,3	1	1	0.00	-4.13	0.00	4.13	0.0	1.03	0.30	0.38	0.24	0.47	OK->ColumnWebRupture	0.0509	0.0884
2,3	2	1	0.00	-4.13	0.00	4.13	0.0	1.03	0.30	0.38	0.23	0.47	OK->ColumnWebRupture	0.0509	0.0884

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/6/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

			Controlling Cases				Required Strength				Available Strength				Strength Ratios	
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear		
25000	11.75	9.00	1	1	0.0	-4.1	-291.3	0.0	169.7	21.4	297.5	159.5	0.98	0.19		
25001	0.00	9.00	1	1	0.0	4.1	-291.3	0.0	169.7	21.4	297.5	159.5	0.98	0.19		

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.75	282.00	282.0	282.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00
25001	0.00	282.00	282.0	282.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=2,3)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/404)	0.698	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=3,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	6.00	0.3750	0.1345	9.00	9.00	11.58	218.1	55.00	55.00	SS	SS	3P
25001	6.00	0.3750	0.1345	9.00	9.00	11.00	207.3	55.00	55.00	SS	SS	3P

Total Frame Weight = 425.4 (p) (Includes all plates)
 Frame Pricing Weight = 425.4 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Connection Plate							Bolt Group						Edge	Weld	Beam Cope		
Mem. Id	Jt. No.	Type	Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
3,1	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.66	1.00
3,1	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FI	4.25	0.38

Required Strength									Available Strength Ratio					Min. Thickness	
Mem. Id	Jt. No.	Load Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
3,1	1	1	0.00	-4.10	0.00	4.10	0.0	1.03	0.30	0.38	0.23	0.47	OK->ColumnWebRupture	0.0505	0.0884
3,1	2	1	0.00	-4.15	0.00	4.15	0.0	1.03	0.30	0.38	0.21	0.38	OK->ClipLocalBuckling	0.0511	0.1875

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/3/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	11.63	9.00	1	1	0.0	-4.1	-286.1	0.0	185.1	22.1	278.2	224.0	1.03	0.19
25001	0.00	9.00	1	1	0.0	4.1	-286.1	0.0	185.1	22.1	278.2	224.0	1.03	0.19

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.63	279.00	279.0	279.0	5.61	5.61	90.04	13.50	20.01	4.50	21.69	6.79	0.22	251.10	1.14	1.00	1.08	1.00	1.00
25001	0.00	279.00	279.0	279.0	5.61	5.61	90.04	13.50	20.01	4.50	21.69	6.79	0.22	251.10	1.14	1.00	1.08	1.00	1.00

Deflection Load Combinations - Framing

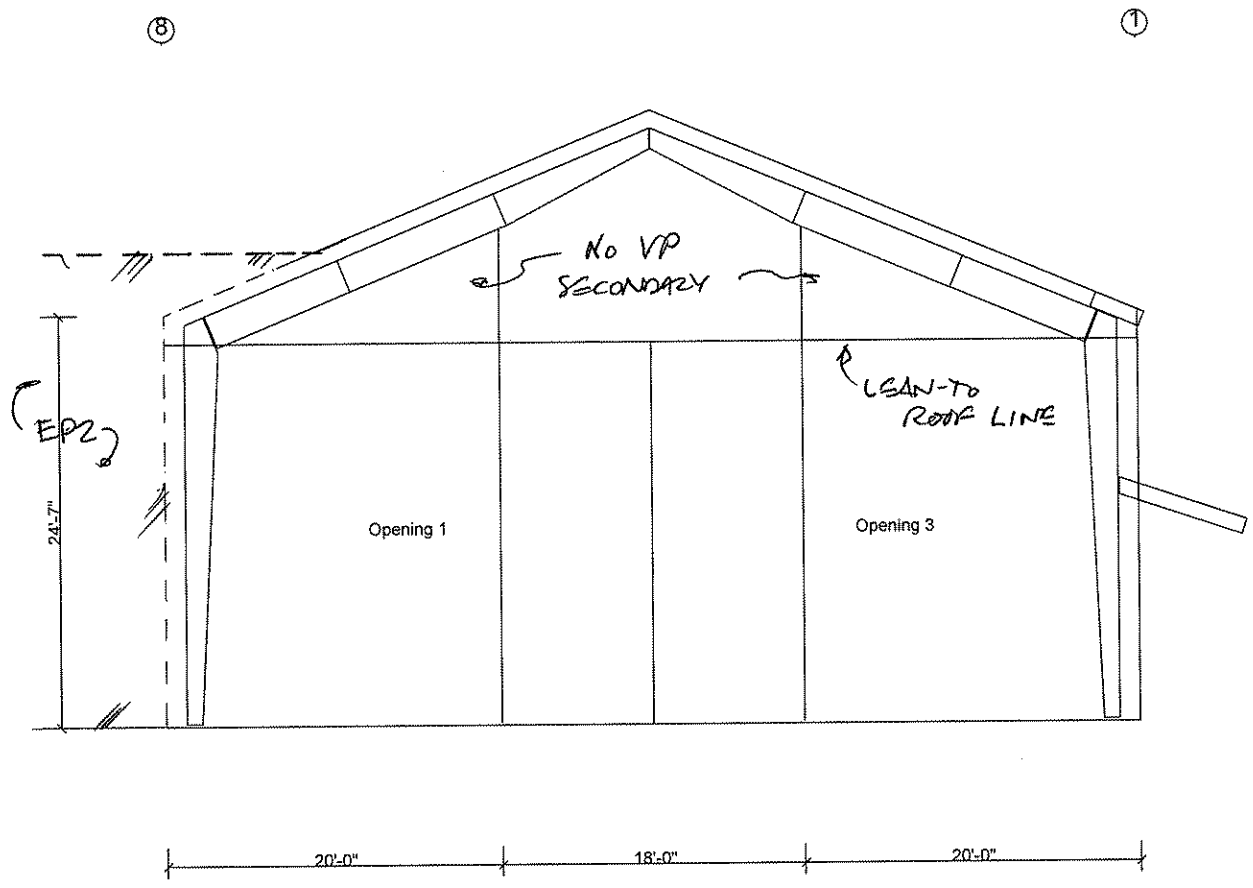
No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=3,1)

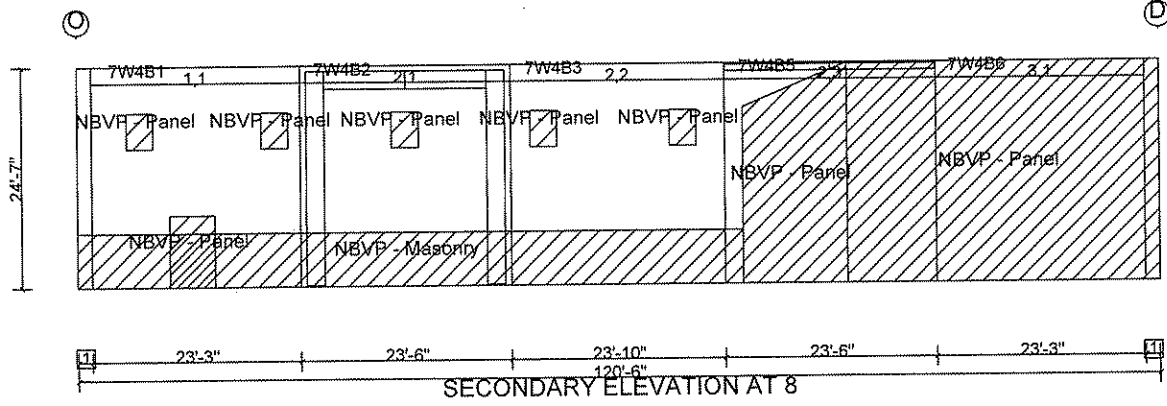
Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/448)	0.623	25001	1	1	W1>

* Negative horizontal deflection is left
 * Negative vertical deflection is down
 Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 3



Wall: 4



Dimension Key

1 1'-7"



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Spandrel(Id=1,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	6.00	0.3750	0.1345	9.00	9.00	11.00	207.3	55.00	55.00	SS	SS	3P
25001	6.00	0.3750	0.1345	9.00	9.00	11.57	218.0	55.00	55.00	SS	SS	3P

Total Frame Weight = 425.3 (p) (Includes all plates)
 Frame Pricing Weight = 425.3 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

			Connection Plate				Bolt Group						Edge	Weld	Beam Cope		
Mem. Id	Jt. No.	Type	Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec./ft.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
1,1	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FI	4.25	0.38
1,1	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.69	1.00

		Required Strength							Available Strength Ratio					Min. Thickness	
Mem. Id	Jt. No.	Load Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
1,1	1	1	0.00	-4.15	0.00	4.15	0.0	1.03	0.30	0.38	0.21	0.38	OK->ClipLocalBuckling	0.0511	0.1875
1,1	2	1	0.00	-4.10	0.00	4.10	0.0	1.03	0.30	0.38	0.23	0.47	OK->ColumnWebRupture	0.0505	0.0884

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/3/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

			Controlling Cases				Required Strength				Available Strength				Strength Ratios	
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear		
25000	11.63	9.00	1	1	0.0	-4.1	-286.1	0.0	185.1	22.1	278.2	224.0	1.03	0.19		
25001	0.00	9.00	1	1	0.0	4.1	-286.1	0.0	185.1	22.1	278.2	224.0	1.03	0.19		

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afh in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.63	279.00	279.0	279.0	5.61	5.61	90.04	13.50	20.01	4.50	21.69	6.79	0.22	251.10	1.14	1.00	1.08	1.00	1.00
25001	0.00	279.00	279.0	279.0	5.61	5.61	90.04	13.50	20.01	4.50	21.69	6.79	0.22	251.10	1.14	1.00	1.08	1.00	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,1)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/448)	0.623	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=2,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	8.00	0.2500	0.1345	9.00	9.00	11.70	202.3	55.00	55.00	SS	SS	3P
25001	8.00	0.2500	0.1345	9.00	9.00	11.70	202.1	55.00	55.00	SS	SS	3P

Total Frame Weight = 404.4 (p) (Includes all plates)
 Frame Pricing Weight = 404.4 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

			Connection Plate					Bolt Group				Edge	Weld	Beam Cope			
Mem. Id	Jt. No.	Type	Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Boilts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
2,1	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.66	1.00
2,1	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.63	1.12

		Required Strength							Available Strength Ratio						Min. Thickness	
Mem. Id	Jt. No.	Load Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.	
2,1	1	1	0.00	-4.13	0.00	4.13	0.0	1.03	0.30	0.38	0.23	0.47	OK->ColumnWebRupture	0.0509	0.0884	
2,1	2	1	0.00	-4.13	0.00	4.13	0.0	1.03	0.30	0.38	0.24	0.47	OK->ColumnWebRupture	0.0509	0.0884	

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/6/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

			Controlling Cases		Required Strength					Available Strength				Strength Ratios	
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear	
25000	11.75	9.00	1	1	0.0	-4.1	-291.3	0.0	169.7	21.4	297.5	159.5	0.98	0.19	
25001	0.00	9.00	1	1	0.0	4.1	-291.3	0.0	169.7	21.4	297.5	159.5	0.98	0.19	

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.75	282.00	282.0	282.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00
25001	0.00	282.00	282.0	282.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=2,1)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/404)	0.698	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=2,2)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	8.00	0.2500	0.1345	9.00	9.00	11.87	205.2	55.00	55.00	SS	SS	3P
25001	8.00	0.2500	0.1345	9.00	9.00	11.87	205.0	55.00	55.00	SS	SS	3P

Total Frame Weight = 410.2 (p) (Includes all plates)
 Frame Pricing Weight = 410.2 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Mem. Id	Jt. No.	Type	Connection Plate				Bolt Group				Edge 'a' in.	Weld Size in.	Beam Cope				
			Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r			Gage in.	Pitch in.	Side	C in.	Depth in.
2,2	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.66	1.12
2,2	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.63	1.12

Mem. Id	Jt. No.	Load Case	Required Strength					Available Strength Ratio						Min. Thickness	
			Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
2,2	1	1	0.00	-4.19	0.00	4.19	0.0	1.03	0.31	0.38	0.24	0.47	OK->ColumnWebRupture	0.0516	0.0884
2,2	2	1	0.00	-4.19	0.00	4.19	0.0	1.03	0.31	0.38	0.24	0.47	OK->ColumnWebRupture	0.0516	0.0884

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/10/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	11.92	9.00	1	1	0.0	-4.2	-299.3	0.0	169.7	21.4	290.9	159.5	1.03	0.20
25001	0.00	9.00	1	1	0.0	4.2	-299.3	0.0	169.7	21.4	290.9	159.5	1.03	0.20

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afh in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.92	286.00	286.0	286.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00
25001	0.00	286.00	286.0	286.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=2,2)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/387)	0.737	25001	1	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=2,3)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	8.00	0.2500	0.1345	9.00	9.00	11.70	202.3	55.00	55.00	SS	SS	3P
25001	8.00	0.2500	0.1345	9.00	9.00	11.70	202.1	55.00	55.00	SS	SS	3P

Total Frame Weight = 404.4 (p) (Includes all plates)
 Frame Pricing Weight = 404.4 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Mem. Id	Jt. No.	Type	Connection Plate			Bolt Group						Edge	Weld	Beam Cope			
			Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
2,3	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.66	1.12
2,3	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.63	1.12

Mem. Id	Jt. No.	Load Case	Required Strength					Available Strength Ratio							Min. Thickness	
			Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.	
2,3	1	1	0.00	-4.13	0.00	4.13	0.0	1.03	0.30	0.38	0.24	0.47	OK->ColumnWebRupture	0.0509	0.0884	
2,3	2	1	0.00	-4.13	0.00	4.13	0.0	1.03	0.30	0.38	0.24	0.47	OK->ColumnWebRupture	0.0509	0.0884	

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/6/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	11.75	9.00	1	1	0.0	-4.1	-291.3	0.0	169.7	21.4	297.5	159.5	0.98	0.19
25001	0.00	9.00	1	1	0.0	4.1	-291.3	0.0	169.7	21.4	297.5	159.5	0.98	0.19

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afh in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.75	282.00	282.0	282.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00
25001	0.00	282.00	282.0	282.0	5.14	5.14	83.47	21.34	18.55	5.33	19.93	8.04	0.09	408.37	1.14	1.00	1.07	0.78	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=2,3)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/404)	0.698	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=3,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	6.00	0.3750	0.1345	9.00	9.00	11.58	218.1	55.00	55.00	SS	SS	3P
25001	6.00	0.3750	0.1345	9.00	9.00	11.00	207.3	55.00	55.00	SS	SS	3P

Total Frame Weight = 425.4 (p) (Includes all plates)
 Frame Pricing Weight = 425.4 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Mem.			Connection Plate				Bolt Group						Edge	Weld	Beam Cope		
Mem. Id	Jt. No.	Type	Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
3,1	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FO	4.66	1.12
3,1	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	FI	4.25	0.38

Mem.			Required Strength					Available Strength Ratio						Min. Thickness	
Mem. Id	Jt. No.	Load Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
3,1	1	1	0.00	-4.09	0.00	4.09	0.0	1.03	0.30	0.37	0.24	0.47	OK->ColumnWebRupture	0.0504	0.0884
3,1	2	1	0.00	-4.09	0.00	4.09	0.0	1.03	0.30	0.37	0.21	0.38	OK->ClipLocalBuckling	0.0504	0.1875

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	23/3/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	11.63	9.00	1	1	0.0	-4.1	-285.3	0.0	185.1	22.1	278.3	224.0	1.03	0.19
25001	0.00	9.00	1	1	0.0	4.1	-285.3	0.0	185.1	22.1	278.3	224.0	1.03	0.19

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	11.63	279.00	279.0	279.0	5.61	5.61	90.04	13.50	20.01	4.50	21.69	6.79	0.22	251.10	1.14	1.00	1.08	1.00	1.00
25001	0.00	279.00	279.0	279.0	5.61	5.61	90.04	13.50	20.01	4.50	21.69	6.79	0.22	251.10	1.14	1.00	1.08	1.00	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=3,1)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span I	(L/449)	0.620	25000	2	1	W1>

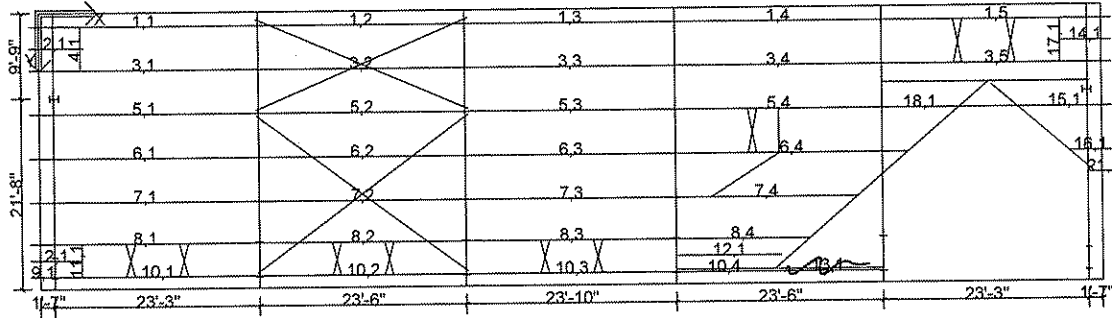
* Negative horizontal deflection is left

* Negative vertical deflection is down

Later deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



Roof: A



Maximum Secondary Designs for Shape Operations Building on Side A

Des Id	Len (ft)	Description	Design Status	Detail Lap (in.)	Exterior					Interior					Exterior						
					% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)
1,1	25.96	11.50x0.065 Z Con	Yes	24					24	24	0.87	0.82	1.02	0.00	24	0.76	0.48	0.72	0.00	24	24
1,2	23.50	11.50x0.065 Z Con	Yes	36	0.76	0.40	0.67	0.00	24	24	0.98	0.67	0.97	0.00	24	0.58	0.36	0.54	0.00	24	24
1,3	23.83	11.50x0.065 Z Con	Yes	36	0.58	0.39	0.56	0.00	24	24	0.62	0.65	0.79	0.00	24	0.52	0.38	0.53	0.00	24	24
1,4	23.50	11.50x0.082 Z Con	Yes	24	0.52	0.33	0.50	0.00	24	24	0.99	0.65	0.96	0.00	24	0.73	0.28	0.59	0.00	24	24
1,5	25.96	11.50x0.082 Z Con	Yes	36	0.81	0.41	0.66	0.00	24	36	0.92	0.00	0.64	0.00	24						
2,1	5.80	11.50x0.065 Z Sim	Yes	0							0.13	0.24	0.26	0.00	24						
3,1	25.96	11.50x0.065 Z Con	Yes	24							0.98	0.00	0.00	0.00	27	0.48	0.33	0.58	0.00	27	24
3,2	23.50	11.50x0.082 Z Con	Yes	36	0.64	0.25	0.47	0.00	24	36	0.68	0.31	0.53	0.00	24	0.50	0.22	0.39	0.00	24	36
3,3	23.83	11.50x0.065 Z Con	Yes	36	0.38	0.29	0.48	0.00	27	24	0.38	0.67	0.77	0.00	27	0.31	0.27	0.41	0.00	27	24
3,4	23.50	11.50x0.082 Z Con	Yes	24	0.41	0.20	0.33	0.00	24	24	0.99	0.35	0.72	0.00	24	0.52	0.10	0.34	0.00	24	24
3,5	25.96	11.50x0.120 Z Con	Yes	24	0.47	0.15	0.36	0.00	24	24	0.92	0.00	0.00	0.00	27						
4,1	5.00	8.50x0.059 C Sim	Yes	0							0.24	0.04	0.06	0.00	24						
5,1	25.96	11.50x0.120 Z Con	Yes	36							0.27	0.07	0.70	0.00	45	0.29	0.06	0.55	0.00	45	36
5,2	23.50	11.50x0.082 Z Con	Yes	36	0.23	0.05	0.49	0.00	45	24	0.33	0.16	1.00	0.00	45	0.20	0.10	0.57	0.00	45	24
5,3	23.83	11.50x0.065 Z Con	Yes	36	0.31	0.25	0.40	0.00	27	36	0.63	0.70	0.95	0.00	27	0.64	0.46	0.79	0.00	27	36
5,4	23.50	11.50x0.065 Z Con	Yes	36	0.64	0.52	0.82	0.00	27	36	1.03	0.00	0.00	0.00	27						
6,1	25.96	11.50x0.065 Z Con	Yes	36							0.96	0.00	0.68	0.00	27	0.61	0.50	0.79	0.00	27	36
6,2	23.50	11.50x0.065 Z Con	Yes	36	0.61	0.45	0.76	0.00	27	36	0.59	0.68	0.90	0.00	27	0.40	0.38	0.55	0.00	27	36
6,3	23.83	11.50x0.065 Z Con	Yes	36	0.40	0.39	0.55	0.00	27	36	0.61	0.70	0.93	0.00	27	0.63	0.46	0.78	0.00	27	36
6,4	26.30	11.50x0.065 Z Con	Yes	36	0.63	0.51	0.81	0.00	27	36	0.97	0.00	0.69	0.00	27						
7,1	25.96	11.50x0.065 Z Con	Yes	24							0.95	0.00	0.68	0.00	27	0.58	0.49	0.76	0.00	27	24
7,2	23.50	11.50x0.065 Z Con	Yes	36	0.58	0.43	0.72	0.00	27	36	0.73	0.72	1.03	0.00	27	0.41	0.38	0.55	0.00	27	36
7,3	23.83	11.50x0.065 Z Con	Yes	36	0.41	0.39	0.57	0.00	27	24	0.64	0.72	0.96	0.00	27	0.53	0.43	0.68	0.00	27	24
7,4	20.53	11.50x0.065 Z Con	Yes	24	0.53	0.46	0.70	0.00	27	24	0.60	0.78	0.98	0.00	27						
8,1	25.96	11.50x0.065 Z Con	Yes	24							0.56	0.73	0.92	0.00	27	0.49	0.43	0.65	0.00	27	24
8,2	23.50	11.50x0.065 Z Con	Yes	36	0.49	0.37	0.62	0.00	27	24	0.62	0.62	0.88	0.00	27	0.39	0.34	0.52	0.00	27	24
8,3	23.83	11.50x0.065 Z Con	Yes	36	0.39	0.37	0.54	0.00	27	24	0.42	0.61	0.74	0.00	27	0.34	0.35	0.49	0.00	27	24
8,4	15.07	11.50x0.065 Z Con	Yes	24	0.34	0.27	0.44	0.00	27	24	0.42	0.45	0.61	0.00	27						
9,1	2.71	11.50x0.065 Z Sim	Yes	0							0.03	0.00	0.02	0.00	24						
10,1	23.25	11.50x0.082 Z Sim	Yes	0							0.90	0.00	0.00	0.00	24						
10,2	23.50	11.50x0.082 Z Sim	Yes	0							0.85	0.00	0.56	0.00	24						
10,3	23.83	11.50x0.082 Z Sim	Yes	0							0.88	0.00	0.58	0.00	24						
10,4	10.72	11.50x0.065 Z Sim	Yes	0							0.36	0.00	0.24	0.00	24						
11,1	3.77	8.50x0.059 C Sim	Yes	0							0.14	0.03	0.04	0.00	24						
12,1	11.95	11.50x0.065 Z Sim	Yes	0							0.00	0.19	0.00	0.36	27						



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13,1	12.78	11.50x0.065 Z Sim	Yes	0						0.69	0.01	0.46	0.00	24
14,1	5.80	11.50x0.065 Z Sim	Yes	0						0.13	0.24	0.26	0.00	24
15,1	10.67	11.50x0.082 Z Sim	Yes	0						0.00	0.34	0.00	0.82	27
16,1	4.86	11.50x0.065 Z Sim	Yes	0						0.00	0.32	0.00	0.60	27
17,1	5.00	8.50x0.059 C Sim	Yes	0						0.39	0.06	0.09	0.00	24
18,1	8.57	11.50x0.065 Z Sim	Yes	0						0.52	0.01	0.37	0.00	27
19,1	5.00	8.50x0.059 C Sim	Yes	0										
20,1	3.77	8.50x0.059 C Sim	Yes	0										
21,1	1.96	11.50x0.065 Z Sim	Yes	0						0.03	0.01	0.02	0.00	24

Maximum Secondary Deflections for Shape Operations Building on Side A

Design Id	Segment	Deflection(in.)	Ratio	Location(ft)	Load Case	Description
1	1	0.45	(L/615)	12.71	1	W1>
1	2	-0.05	(L/5468)	38.46	9	L
1	3	0.25	(L/1161)	61.46	1	W1>
1	4	-0.08	(L/3668)	92.29	1	W1>
1	5	0.52	(L/541)	109.79	1	W1>
2	1	-	-	-	-	-
3	1	0.39	(L/716)	12.71	1	W1>
3	2	-0.04	(L/7594)	29.46	1	W1>
3	3	0.23	(L/1218)	61.46	1	W1>
3	4	0.12	(L/2439)	90.79	9	L
3	5	-0.53	(L/529)	109.29	9	L
4	1	-	-	-	-	-
5	1	-0.20	(L/1392)	12.71	9	L
5	2	-0.08	(L/3579)	38.96	9	L
5	3	-0.09	(L/3309)	59.96	9	L
5	4	-0.40	(L/704)	86.79	9	L
6	1	-0.36	(L/769)	12.71	9	L
6	2	-0.08	(L/3483)	38.96	9	L
6	3	-0.09	(L/3053)	59.96	9	L
6	4	-0.38	(L/742)	86.79	9	L
7	1	-0.37	(L/761)	12.71	9	L
7	2	-0.07	(L/4088)	38.96	9	L
7	3	-0.14	(L/2059)	60.46	9	L
7	4	-0.23	(L/1062)	85.29	9	L
8	1	0.34	(L/823)	12.71	1	W1>
8	2	0.05	(L/6093)	38.46	1	W1>
8	3	-0.20	(L/1440)	61.46	9	L
8	4	0.00	(L/7709)	76.79	9	L
9	1	-	-	-	-	-
10	1	0.60	(L/465)	11.50	1	W1>
10	2	0.58	(L/483)	35.25	1	W1>
10	3	0.62	(L/463)	58.75	1	W1>
10	4	0.04	(L/3057)	76.08	1	W1>
11	1	-	-	-	-	-
12	1	0.05	(L/2761)	6.00	1	W1>
13	1	0.12	(L/1331)	6.50	1	W1>
14	1	-	-	-	-	-
15	1	0.00	(L/3814)	4.00	1	W1>
16	1	-	-	-	-	-
17	1	-	-	-	-	-
18	1	-0.04	(L/2883)	4.50	9	L
19	1	-	-	-	-	-
20	1	-	-	-	-	-
21	1	-	-	-	-	-

Purlin Anchorage Forces for Shape Operations Building, Roof A, Panel Type is SLR2, Pitch = 5.000:12

Bay	Thickness	Force(k)	Ld Case	# Purlins	Length	Simple?	Diaphragm Width	Allowable Defl	Actual Defl
1	0.065	-15.39	1	8	25.96	N	31.42	0.865	0.000
2	0.065	-13.91	1	7	23.50	N	31.42	0.783	0.000
3	0.065	-14.11	1	7	23.83	N	31.42	0.794	0.000
4	0.065	-14.57	1	8	26.30	N	31.42	0.877	0.000
5	0.082	-8.32	1	4	25.96	N	31.42	0.865	0.000



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Frm-Line	Force(k)	Anch. Allow	Required Clips	Actual Clips	Diaphragm Allow	Diaphragm Shr	Stress
1.	0.89	0.00	0	0	0.017	0.000	0.000
2	1.23	0.00	0	0	0.017	0.000	0.000
3	1.16	0.00	0	0	0.017	0.000	0.000
4	1.13	0.00	0	0	0.017	0.000	0.000
5	0.97	0.00	0	0	0.017	0.000	0.000



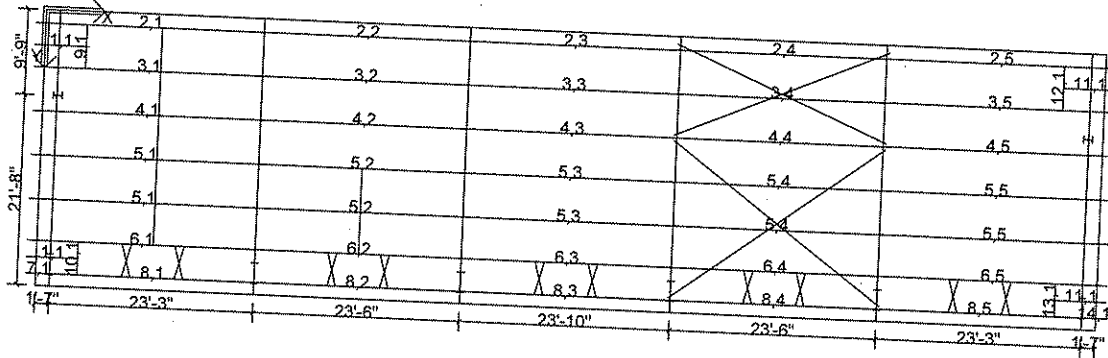
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Roof: B



Maximum Secondary Designs for Shape Operations Building on Side B

Des Id	Len (ft)	Description	Design Status	Detail Lap (in.)	Exterior				Interior				Exterior									
					% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)	
1,1	5.80	11.50x0.065 Z Sim	Yes	0																		
2,1	25.96	11.50x0.065 Z Con	Yes	24							0.13	0.24	0.26	0.00	24							
2,2	23.50	11.50x0.065 Z Con	Yes	36	0.76	0.40	0.67	0.00	24	24	0.87	0.82	1.02	0.00	24	0.76	0.48	0.72	0.00	24	24	
2,3	23.83	11.50x0.065 Z Con	Yes	24	0.58	0.39	0.56	0.00	24	24	0.98	0.67	0.97	0.00	24	0.58	0.36	0.54	0.00	24	24	
2,4	23.50	11.50x0.065 Z Con	Yes	36	0.52	0.33	0.50	0.00	24	24	0.62	0.65	0.79	0.00	24	0.52	0.38	0.53	0.00	24	24	
2,5	25.96	11.50x0.082 Z Con	Yes	36	0.81	0.41	0.66	0.00	24	36	0.99	0.65	0.96	0.00	24	0.73	0.28	0.59	0.00	24	24	
3,1	25.96	11.50x0.065 Z Con	Yes	36							0.92	0.00	0.64	0.00	24							
3,2	23.50	11.50x0.065 Z Con	Yes	36	0.60	0.44	0.74	0.00	27	36	0.98	0.00	0.70	0.00	27	0.60	0.50	0.78	0.00	27	36	
3,3	23.83	11.50x0.065 Z Con	Yes	24	0.45	0.42	0.62	0.00	27	24	0.58	0.66	0.88	0.00	27	0.45	0.39	0.60	0.00	27	36	
3,4	23.50	11.50x0.065 Z Con	Yes	36	0.43	0.38	0.58	0.00	27	24	0.46	0.69	0.83	0.00	27	0.43	0.42	0.60	0.00	27	24	
3,5	25.96	11.50x0.082 Z Con	Yes	36	0.70	0.34	0.56	0.00	24	36	0.62	0.68	0.92	0.00	27	0.63	0.26	0.52	0.00	24	24	
4,1	25.96	11.50x0.082 Z Con	Yes	24							0.85	0.00	0.55	0.00	27							
4,2	23.50	11.50x0.065 Z Con	Yes	36	0.45	0.29	0.54	0.00	27	24	0.47	0.00	0.80	0.00	49	0.45	0.33	0.56	0.00	27	24	
4,3	23.83	11.50x0.065 Z Con	Yes	24	0.44	0.42	0.61	0.00	27	24	0.71	0.73	1.02	0.00	27	0.44	0.39	0.59	0.00	27	24	
4,4	23.50	11.50x0.120 Z Con	Yes	36	0.22	0.04	0.50	0.00	45	24	0.52	0.71	0.88	0.00	27	0.15	0.05	0.29	0.00	49	24	
4,5	25.96	11.50x0.120 Z Con	Yes	24	0.23	0.04	0.44	0.00	45	24	0.31	0.05	0.74	0.00	45	0.23	0.03	0.44	0.00	45	24	
5,1	25.96	11.50x0.065 Z Con	Yes	36							0.27	0.00	0.70	0.00	45							
5,2	23.50	11.50x0.065 Z Con	Yes	36	0.60	0.44	0.74	0.00	27	36	0.98	0.00	0.69	0.00	27	0.60	0.50	0.78	0.00	27	36	
5,3	23.83	11.50x0.065 Z Con	Yes	24	0.45	0.42	0.61	0.00	27	24	0.58	0.66	0.88	0.00	27	0.45	0.39	0.59	0.00	27	36	
5,4	23.50	11.50x0.065 Z Con	Yes	36	0.45	0.39	0.59	0.00	27	36	0.31	0.63	0.70	0.00	27	0.45	0.42	0.61	0.00	27	24	
5,5	25.96	11.50x0.065 Z Con	Yes	36	0.60	0.50	0.78	0.00	27	36	0.58	0.66	0.88	0.00	27	0.60	0.44	0.74	0.00	27	36	
6,1	25.96	11.50x0.065 Z Con	Yes	24							0.98	0.00	0.69	0.00	27							
6,2	23.50	11.50x0.065 Z Con	Yes	36	0.49	0.37	0.62	0.00	27	24	0.57	0.73	0.92	0.00	27	0.49	0.43	0.65	0.00	27	24	
6,3	23.83	11.50x0.065 Z Con	Yes	24	0.38	0.36	0.53	0.00	27	24	0.62	0.62	0.88	0.00	27	0.38	0.34	0.51	0.00	27	24	
6,4	23.50	11.50x0.065 Z Con	Yes	36	0.37	0.33	0.49	0.00	27	24	0.41	0.60	0.73	0.00	27	0.37	0.36	0.51	0.00	27	24	
6,5	25.96	11.50x0.065 Z Con	Yes	24	0.53	0.48	0.71	0.00	27	24	0.69	0.64	0.94	0.00	27	0.67	0.32	0.58	0.00	24	24	
7,1	2.71	11.50x0.065 Z Sim	Yes	0							0.60	0.81	1.01	0.00	27							
8,1	23.25	11.50x0.082 Z Sim	Yes	0							0.03	0.00	0.02	0.00	24							
8,2	23.50	11.50x0.082 Z Sim	Yes	0							0.90	0.00	0.00	0.00	24							
8,3	23.83	11.50x0.082 Z Sim	Yes	0							0.86	0.00	0.56	0.00	24							
8,4	23.50	11.50x0.082 Z Sim	Yes	0							0.88	0.00	0.58	0.00	24							
8,5	23.25	11.50x0.082 Z Sim	Yes	0							0.86	0.00	0.56	0.00	24							
9,1	5.00	8.50x0.059 C Sim	Yes	0							0.91	0.00	0.60	0.00	24							
10,1	3.77	8.50x0.059 C Sim	Yes	0							0.24	0.04	0.06	0.00	24							
11,1	5.80	11.50x0.065 Z Sim	Yes	0							0.14	0.03	0.04	0.00	24							
											0.13	0.24	0.26	0.00	24							



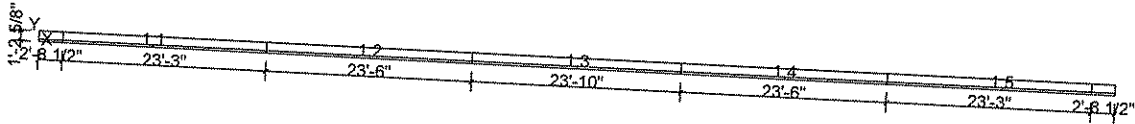
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Wall: 2 - Canopy 1



Maximum Secondary Designs for Shape Operations Building on Side 2

Des Id	Len (ft)	Description	Design Status	Detail Lap (in.)	Exterior					Interior					Exterior				
					% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	% Bnd	% Shr	% Cmb	% Wcp
1,1	25.96	11.50x0.065 Z Sim	Yes	0															
1,2	23.50	11.50x0.065 Z Sim	Yes	0						0.88	0.00	0.41	0.00	24					
1,3	23.83	11.50x0.065 Z Sim	Yes	0						0.92	0.00	0.43	0.00	24					
1,4	23.50	11.50x0.065 Z Sim	Yes	0						0.95	0.00	0.44	0.00	24					
1,5	25.96	11.50x0.065 Z Sim	Yes	0						0.92	0.00	0.43	0.00	24					
										0.88	0.00	0.00	0.00	24					

Maximum Secondary Deflections for Shape Operations Building on Side 2

Design Id	Segment	Deflection(in.)	Ratio	Location(ft)	Load Case	Description
1	1	0.36	(L/772)	14.21	1	
1	2	0.39	(L/725)	37.46	1	W1>
1	3	0.41	(L/694)	61.46	1	W1>
1	4	0.39	(L/725)	84.79	1	W1>
1	5	0.36	(L/772)	108.29	1	W1>

Purlin Anchorage Forces for Shape Operations Building, Roof Wall: 2 - Canopy 1, Panel Type is SLR2, Pitch = 5.000:12

Bay	Thickness	Force(k)	Ld Case	# Purlins	Length	Simple?	Diaphragm Width	Allowable Defl	Actual Defl
Frm-Line		Force(k)	Anch. Allow	Required Clips	Actual Clips	Diaphragm Allow	Diaphragm Shr		Stress



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Wall: 2 - Canopy 2

6.9-14/16"	1,1	1,2	1,3	1,4	1,5
	2,1	2,2	2,3	2,4	2,5
	3,1	3,2	3,3	3,4	3,5
	76-5 1/2"				

* SPACING PURLINS TO BE MODIFIED AFTER APPR.

Maximum Secondary Designs for Shape Operations Building on Side 2

Des Id	Len (ft)	Description	Design Status	Detail Lap (in.)	Exterior					Interior					Exterior								
					% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)		
1,1	2.71	11.50x0.065 Z Sim	Yes	0																			
1,2	23.25	11.50x0.120 Z Sim	No	0							0.08	0.00	0.04	0.00	24								
1,3	23.50	11.50x0.120 Z Sim	No	*0							1.34	0.00	0.63	0.00	24								
1,4	23.83	11.50x0.120 Z Sim	No	0							1.36	0.00	0.64	0.00	24								
1,5	3.17	11.50x0.065 Z Sim	Yes	0							1.40	0.00	0.00	0.00	24								
2,1	2.71	11.50x0.065 Z Sim	Yes	0							0.11	0.01	0.05	0.00	24								
2,2	23.25	11.50x0.120 Z Sim	Yes	0							0.05	0.00	0.02	0.00	24								
2,3	23.50	11.50x0.120 Z Sim	Yes	0							0.80	0.00	0.00	0.00	24								
2,4	23.83	11.50x0.120 Z Sim	Yes	0							0.81	0.00	0.00	0.00	24								
2,5	3.17	11.50x0.065 Z Sim	Yes	0							0.84	0.00	0.00	0.00	24								
3,1	2.71	11.50x0.065 Z Sim	Yes	0							0.07	0.01	0.03	0.00	24								
3,2	23.25	11.50x0.082 Z Sim	Yes	0							0.03	0.00	0.01	0.00	24								
3,3	23.50	11.50x0.082 Z Sim	Yes	0							0.78	0.00	0.37	0.00	24								
3,4	23.83	11.50x0.082 Z Sim	Yes	0							0.80	0.00	0.37	0.00	24								
3,5	3.17	11.50x0.065 Z Sim	Yes	0							0.82	0.00	0.00	0.00	24								
											0.04	0.00	0.02	0.00	24								

Maximum Secondary Deflections for Shape Operations Building on Side 2

Design Id	Segment	Deflection(in.)	Ratio	Location(ft)	Load Case	Description
1	1	-	-	-	-	-
1	2	0.74	(L/375)	14.21	1	-
1	3	0.77	(L/365)	37.96	1	WI>
1	4	0.82	(L/349)	61.46	1	WI>
1	5	-	-	-	-	WI>
2	1	-	-	-	-	-
2	2	0.45	(L/618)	14.21	1	-
2	3	0.47	(L/602)	37.96	1	WI>
2	4	0.50	(L/575)	61.46	1	WI>
2	5	-	-	-	-	WI>
3	1	-	-	-	-	-
3	2	0.38	(L/733)	14.21	1	-
3	3	0.39	(L/714)	37.96	1	WI>
3	4	0.42	(L/681)	61.46	1	WI>
3	5	-	-	-	-	WI>

Purlin Anchorage Forces for Shape Operations Building, Roof Wall: 2 - Canopy 2, Panel Type is SLR2, Pitch = 4.000:12

Bay	Thickness	Force(k)	Ld Case	# Purlins	Length	Simple?	Diaphragm Width	Allowable Defl	Actual Defl
Frm-Line	Force(k)	Anch. Allow	Required Clips	Actual Clips	Diaphragm Allow	Diaphragm Shr	Stress		



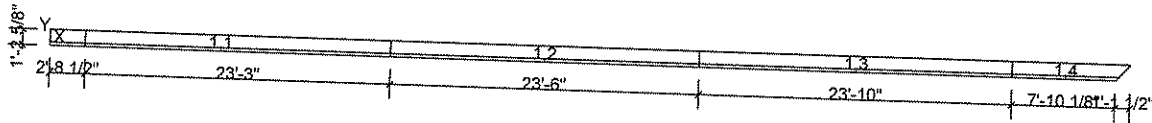
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Wall: 4 - Canopy 1



Maximum Secondary Designs for Shape Operations Building on Side 4

Des Id	Len (ft)	Description	Design Status	Detail Lap (in.)	Exterior					Interior				Exterior					
					% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	% Bnd	% Shr	% Cmb	% Wcp
1,1	25.96	11.50x0.065 Z Sim	Yes	0						0.88	0.00	0.41	0.00	24					
1,2	23.50	11.50x0.065 Z Sim	Yes	0						0.92	0.00	0.43	0.00	24					
1,3	23.83	11.50x0.065 Z Sim	Yes	0						0.94	0.00	0.44	0.00	24					
1,4	8.07	11.50x0.065 Z Sim	Yes	0						0.13	0.00	0.06	0.00	24					

Maximum Secondary Deflections for Shape Operations Building on Side 4

Design Id	Segment	Deflection(in.)	Ratio	Location(ft)	Load Case	Description
1	1	0.36	(L/766)	14.21	1	W1>
1	2	0.39	(L/725)	37.96	1	W1>
1	3	0.41	(L/697)	61.46	1	W1>
1	4	-	-	-	-	W1>

Purlin Anchorage Forces for Shape Operations Building, Roof Wall: 4 - Canopy 1, Panel Type is SLR2, Pitch = 5.000:12

Bay	Thickness	Force(k)	Ld Case	# Purlins	Length	Simple?	Diaphragm Width	Allowable Defl	Actual Defl
Frm-Line	Force(k)	Anch. Allow	Required Clips	Actual Clips	Diaphragm Allow	Diaphragm Shr	Stress		



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Loads and Codes - Shape Operations Building Lean-to

City: Stennis Space Center County: Hancock State: Mississippi
 Building Code: 2006 International Building Code Built Up: 05AISC - ASD Country: United States
 Building Use: Standard Occupancy Structure Cold Form: 04AISI - ASD Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load
 Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Primary Wind Exposure (Factor): B (0.608)
 Parts Wind Exposure Factor: 0.701

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 9/1/8
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 22.35, (Parts) 25.76 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.50 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group 1
 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.2859
 Bracing Seismic Period: 0.1766
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Design Load Combinations - Purlin

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L	D + CG + L
2	System	1.000	1.0 D + 1.0 CG + 1.0 S	D + CG + S
3	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
4	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1 (Span 1)
5	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1 (Span 5)
6	System	1.000	1.0 D + 1.0 CG + 1.0 PH1	D + CG + PH1 (Span 1)
7	System	1.000	1.0 D + 1.0 CG + 1.0 PH1	D + CG + PH1 (Span 5)
8	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2 (Spans 1 and 2)
9	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2 (Spans 2 and 3)
10	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2 (Spans 3 and 4)
11	System	1.000	1.0 D + 1.0 CG + 1.0 PF2	D + CG + PF2 (Spans 4 and 5)
12	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
13	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
14	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
15	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
16	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
17	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
18	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
19	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
20	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
21	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
22	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
23	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
24	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
25	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
26	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
27	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
28	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
29	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
30	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
31	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
32	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2



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33	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
34	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
35	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2
36	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
37	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
38	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
39	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+
40	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
41	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-

Design Load Combinations - Girt

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 W1>	W1>
2	System	1.000	1.0 <W2	<W2
3	System	1.000	1.0 WP	WP
4	System	1.000	0.700 E>	E>
5	System	1.000	0.700 <E	<E

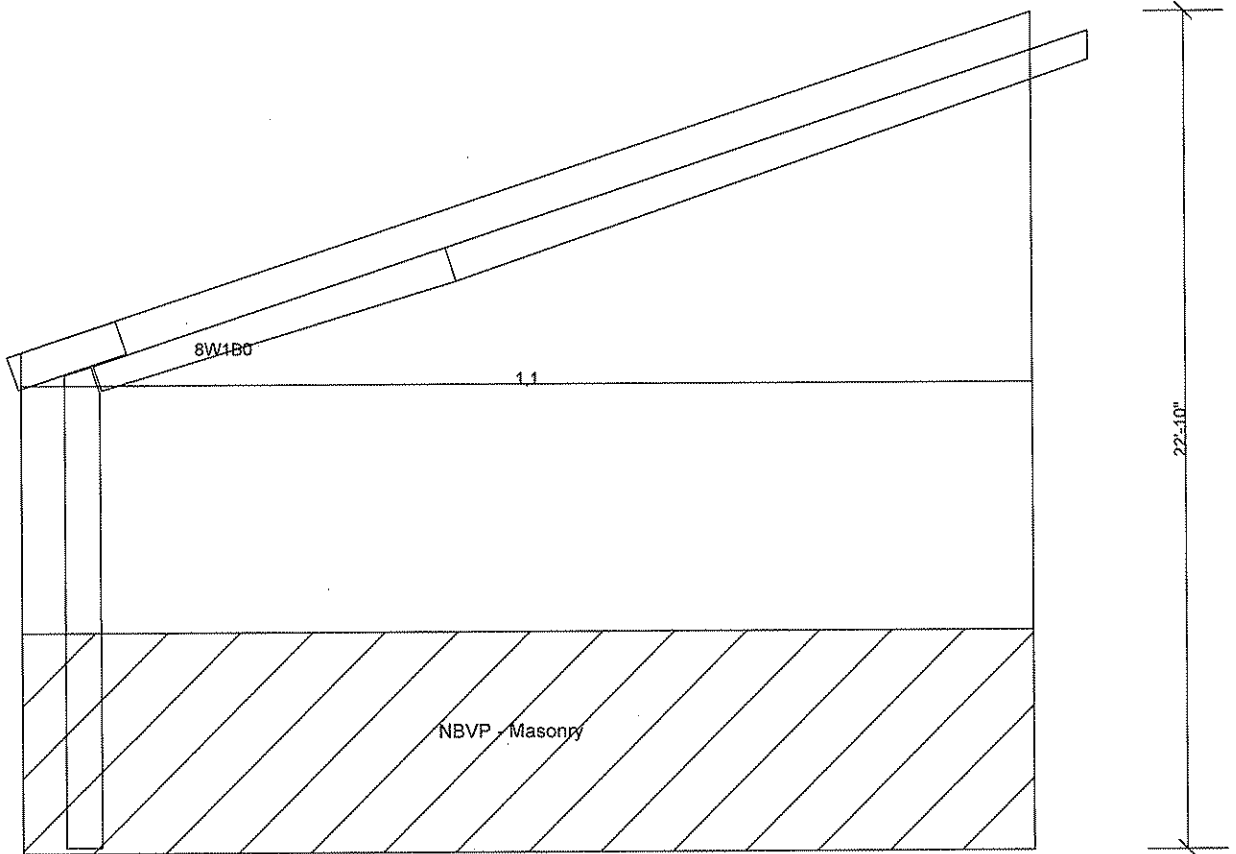
Deflection Load Combinations - Purlin

No.	Origin	Factor	Deflection	Application	Description
1	System	1.000	240	0.700 W1>	W1>
2	System	1.000	240	0.700 <W2	<W2
3	System	1.000	240	0.700 WP	WP
4	System	1.000	240	1.0 S	S
5	System	1.000	240	1.0 S + 1.0 SD	S + SD
6	System	1.000	240	1.0 L	L

Deflection Load Combinations - Girt

No.	Origin	Factor	Deflection	Application	Description
1	System	1.000	240	0.700 W1>	W1>
2	System	1.000	240	0.700 <W2	<W2
3	System	1.000	240	0.700 WP	WP
4	System	1.000	240	0.500 E>	E>
5	System	1.000	240	0.500 <E	<E

Wall: 1





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Spandrel(Id=1,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	8.00	0.2500	0.1345	18.00	18.00	13.75	296.8	55.00	55.00	SS	SS	3P
25001	8.00	0.2500	0.1345	18.00	18.00	13.75	312.8	55.00	55.00	SS	SS	3P

Total Frame Weight = 609.6 (p) (Includes all plates)
 Frame Pricing Weight = 610.4 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Connection Plate							Bolt Group						Edge	Weld	Beam Cope		
Mem. Id	Jt. No.	Type	Thick in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
1,1	1		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	(0)-0.0000		0.00	0.00
1,1	2		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	(0)-0.0000		0.00	0.00

Required Strength										Available Strength Ratio				Min. Thickness	
Mem. Id	Jt. No.	Load Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
1,1	1	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00		0.0000	0.0000
1,1	2	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00		0.0000	0.0000

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	27/6/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Controlling Cases			Required Strength				Available Strength				Strength Ratios			
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	13.75	18.00	1	1	0.0	-4.0	-383.7	0.0	209.7	11.3	378.0	250.2	1.02	0.35
25001	2.29	18.00	1	1	0.0	5.6	-385.1	0.0	209.7	11.3	378.0	250.2	1.02	0.49

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	13.75	330.00	330.0	330.0	6.35	6.35	375.15	21.34	41.68	5.33	45.80	8.08	0.10	1680.61	1.13	1.00	1.00	0.65	1.00
25001	2.29	330.00	330.0	330.0	6.35	6.35	375.15	21.34	41.68	5.33	45.80	8.08	0.10	1680.61	1.13	1.00	1.00	0.65	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,1)

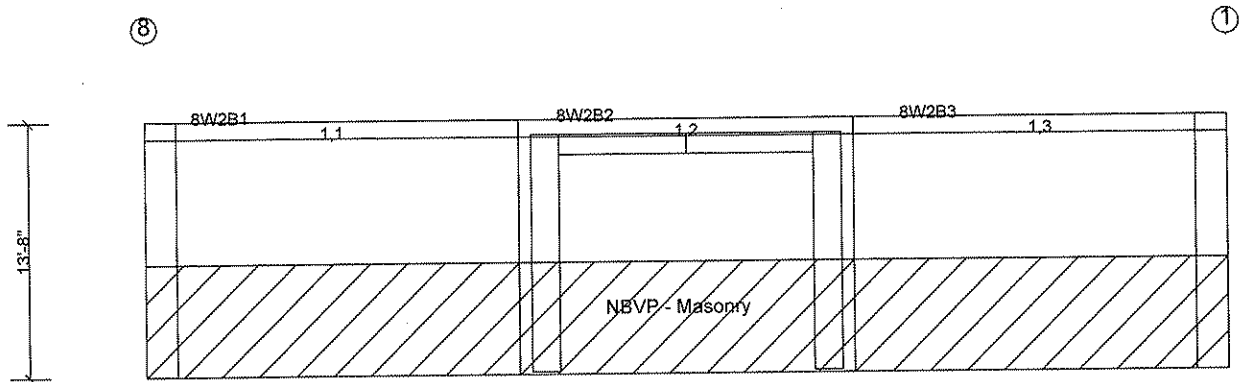
Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/1173)	0.281	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 2



Dimension Key
1 1'-8"

18'-4" 1 18'-0" 1 18'-4" 18'-4" 18'-4"



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Spandrel(Id=1,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	5.00	0.1345	0.1345	12.00	12.00	1.67	16.6	55.00	55.00	SS	SS	3P
25001	5.00	0.1875	0.1345	12.00	12.00	9.17	107.3	55.00	55.00	SS	SS	3P
25002	5.00	0.1875	0.1345	12.00	12.00	9.13	106.8	55.00	55.00	SS	SS	3P

Total Frame Weight = 230.6 (p) (Includes all plates)

Spandrel Beam Connection Design (ASD)

Mem.		Jt.		Connection Plate					Bolt Group				Edge	Weld	Beam Cope		
Id	No.	Type	Thick.	Height	Length	Fy	Diam.	Spec/Jt.	Bolts	Rows	Gage	Pitch	'a'	Size	Side	C	Depth
			in.	in.	in.	ksi	in.		n	r	in.	in.	in.	in.		in.	in.
1,1	1		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	(0)-0.0000		0.00	0.00
1,1	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	None	0.00	0.00

Mem.		Jt.		Required Strength					Available Strength Ratio					Min. Thickness	
Id	No.	Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
1,1	1	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	99.00	RemoveInsetBeamCantilever	0.0000	0.0000
1,1	2	1	0.00	-1.86	0.00	1.86	0.0	1.03	0.14	0.17	0.06	0.66	OK->ColumnWebRupture	0.0229	0.0884

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	1/8/0	0/0/0		Yes	Yes	No	0/0/0	0/0/0
25002	20/0/0	0/0/0	No	Yes	No	0/0/0	0/0/0	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Controlling Cases			Required Strength				Available Strength				Strength Ratios			
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	1.67	12.00	1	1	0.0	0.4	3.7	0.0	96.5	16.7	70.7	39.0	0.05	0.02
25001	9.17	12.00	1	1	0.0	-2.0	-101.8	0.0	113.5	17.0	102.2	55.4	1.00	0.11
25002	0.00	12.00	1	1	0.0	1.9	-101.8	0.0	113.5	17.0	102.2	55.4	1.00	0.11

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	1.67	240.00	240.0	240.0	2.92	2.92	65.44	2.80	10.91	1.12	12.61	1.73	0.02	98.71	1.20	1.00	1.15	0.59	1.00
25001	9.17	240.00	240.0	240.0	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.20	1.00	1.13	0.84	1.00
25002	0.00	240.00	240.0	240.0	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.20	1.00	1.13	0.84	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,1)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/1611)	0.149	25002	1	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=1,2)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	5.00	0.1875	0.1345	10.00	10.00	8.96	96.6	55.00	55.00	SS	SS	3P
25001	5.00	0.1875	0.1345	10.00	10.00	8.96	96.6	55.00	55.00	SS	SS	3P

Total Frame Weight = 193.2 (p) (Includes all plates)
 Frame Pricing Weight = 193.2 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Connection Plate							Bolt Group						Edge	Weld	Beam Cope		
Mem. Id	Jt. No.	Type	Thick. in.	Height in.	Length in.	Fy ksi	Diam. in.	Spec/Jt.	Bolts n	Rows r	Gage in.	Pitch in.	'a' in.	Size in.	Side	C in.	Depth in.
1,2	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	None	0.00	0.00
1,2	2	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	None	0.00	0.00

Required Strength									Available Strength Ratio					Min. Thickness	
Mem. Id	Jt. No.	Load Case	Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.
1,2	1	1	0.00	-1.85	0.00	1.85	0.0	1.03	0.14	0.17	0.08	0.66	OK->ColumnWebRupture	0.0228	0.0884
1,2	2	1	0.00	-1.85	0.00	1.85	0.0	1.03	0.14	0.17	0.08	0.66	OK->ColumnWebRupture	0.0228	0.0884

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	18/0/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Controlling Cases			Required Strength				Available Strength				Strength Ratios			
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	9.00	10.00	1	1	0.0	-1.8	-99.7	0.0	104.6	20.7	100.8	57.4	0.99	0.09
25001	0.00	10.00	1	1	0.0	1.8	-99.7	0.0	104.6	20.7	100.8	57.4	0.99	0.09

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	9.00	216.00	216.0	216.0	3.17	3.17	55.13	3.91	11.03	1.56	12.31	2.39	0.03	94.08	1.14	1.00	1.12	0.87	1.00
25001	0.00	216.00	216.0	216.0	3.17	3.17	55.13	3.91	11.03	1.56	12.31	2.39	0.03	94.08	1.14	1.00	1.12	0.87	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,2)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/1018)	0.212	25000	2	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=1,3)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	5.00	0.1875	0.1345	12.00	12.00	9.13	106.8	55.00	55.00	SS	SS	3P
25001	5.00	0.1875	0.1345	12.00	12.00	9.17	107.3	55.00	55.00	SS	SS	3P
25002	5.00	0.1345	0.1345	12.00	12.00	1.67	16.6	55.00	55.00	SS	SS	3P

Total Frame Weight = 230.6 (p) (Includes all plates)

Spandrel Beam Connection Design (ASD)

Mem.		Connection Plate						Bolt Group				Edge	Weld	Beam Cope			
Jt.	Type	Thick.	Height	Length	Fy	Diam.	Spec/Jt.	Bolts	Rows	Gage	Pitch	'a'	Size	Side	C	Depth	
Id	No.	in.	in.	in.	ksi	in.		n	r	in.	in.	in.	in.		in.	in.	
1,3	1	ST	0.375	7.00	4.50	55	0.750	A325X/ST	2	1	0.00	3.00	2.50	(2)-0.1250	None	0.00	0.00
1,3	2		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	(0)-0.0000		0.00	0.00

Mem.		Required Strength							Available Strength Ratio						Min. Thickness	
Jt.	Load	Axial	Shear	Beam Moment	Pr	Angle	Bolt Group	Bolt Shear	Bearing	Rupture	Max. Ratio	Description		Beam Web	Column	
Id	No.	Case	k	k	in-k	k	Deg.	C	%	%	%	%			in.	in.
1,3	1	1	0.00	-1.86	0.00	1.86	0.0	1.03	0.14	0.17	0.06	0.66	OK->ColumnWebRupture		0.0229	0.0884
1,3	2	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	99.00	RemoveInsetBeamCantilever		0.0000	0.0000

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	18/4/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Controlling Cases			Required Strength				Available Strength				Strength Ratios			
Mem. No.	Loc. ft	Depth in.	Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	9.17	12.00	1	1	0.0	-1.9	-101.8	0.0	113.5	17.0	99.3	55.4	1.03	0.11
25001	0.00	12.00	1	1	0.0	2.0	-101.8	0.0	113.5	17.0	99.3	55.4	1.03	0.11
25002	0.00	12.00	1	1	0.0	-0.4	3.7	0.0	96.5	16.7	68.7	39.0	0.05	0.02

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	9.17	240.00	240.0	240.0	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.17	1.00	1.13	0.84	1.00
25001	0.00	240.00	240.0	240.0	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.17	1.00	1.13	0.84	1.00
25002	0.00	240.00	240.0	240.0	2.92	2.92	65.44	2.80	10.91	1.12	12.61	1.73	0.02	98.71	1.17	1.00	1.15	0.59	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,3)

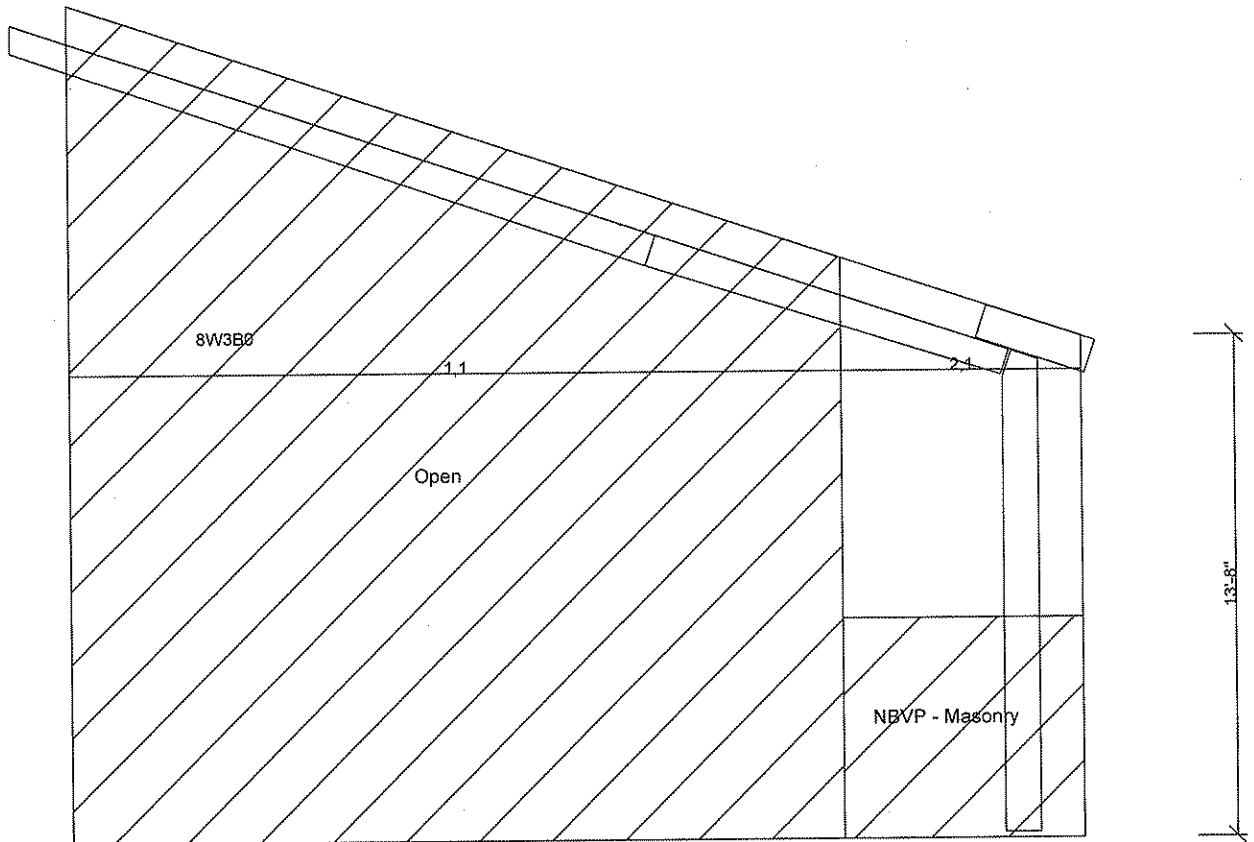
Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/1611)	0.149	25001	1	1	W1>

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

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Spandrel(Id=1,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	5.00	0.1345	0.1345	9.00	9.00	10.50	96.1	55.00	55.00	SS	SS	3P
25001	5.00	0.1345	0.1345	9.00	9.00	10.50	96.1	55.00	55.00	SS	SS	3P

Total Frame Weight = 192.2 (p) (Includes all plates)
 Frame Pricing Weight = 193.8 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Mem. Id	Jt. No.	Type	Connection Plate				Bolt Group				Edge	Weid	Beam Cope				
			Thick.	Height	Length	Fy	Diam.	Spec/Jt.	BoIts	Rows	Gage	Pitch	'a'	Size	Side	C	Depth
1,1	1		in.	in.	in.	ksi	in.		n	r	in.	in.	in.		in.	in.	
1,1	1		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	(0)-0.0000		0.00	0.00
1,1	2		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	(0)-0.0000		0.00	0.00

Mem. Id	Jt. No.	Load Case	Required Strength					Available Strength Ratio						Min. Thickness		
			Axial k	Shear k	Beam Moment in-k	Pr k	Angle Deg.	Bolt Group C	Bolt Shear %	Bearing %	Rupture %	Max. Ratio %	Description	Beam Web in.	Column in.	
1,1	1	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00		0.0000	0.0000
1,1	2	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00		0.0000	0.0000

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25001	21/0/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	10.50	9.00	4	1	0.0	-0.0	-0.8	0.0	83.1	20.9	49.6	39.0	0.02	0.00
25001	0.00	9.00	4	1	0.0	0.0	-0.8	0.0	83.1	20.9	49.6	39.0	0.02	0.00

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	10.50	252.00	252.0	252.0	2.52	2.52	33.89	2.80	7.53	1.12	8.53	1.72	0.02	55.09	1.14	1.00	1.13	0.67	1.00
25001	0.00	252.00	252.0	252.0	2.52	2.52	33.89	2.80	7.53	1.12	8.53	1.72	0.02	55.09	1.14	1.00	1.13	0.67	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Controlling Frame Deflection Ratios for Cross Section: Spandrel(Id=1,1)

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/61753)	-0.004	25001	1	5	<E

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Spandrel(Id=2,1)

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
25000	5.00	0.1345	0.1345	9.00	9.00	6.50	61.7	55.00	55.00	SS	SS	3P

Total Frame Weight = 61.7 (p) (Includes all plates)
 Frame Pricing Weight = 62.5 (p) (Includes all pieces)

Spandrel Beam Connection Design (ASD)

Mem.	Jt.	Type	Connection Plate				Bolt Group						Edge	Weld	Beam Cope			
			Thick.	Height	Length	Fy	Diam.	Spec/Jt.	Bofts	Rows	Gage	Pitch	'a'	Size	Side	C	Depth	
Id	No.		in.	in.	in.	ksi	in.		n	r	in.	in.	in.	in.		in.	in.	
2,1	1		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	0.00	(0)-0.0000		0.00	0.00
2,1	2		0.000	0.00	0.00	0	0.000		0	0	0.00	0.00	0.00	0.00	(0)-0.0000		0.00	0.00

Mem.	Jt.	Load	Required Strength					Available Strength Ratio						Min. Thickness		
			Axial	Shear	Beam Moment	Pr	Angle	Bolt Group	Bolt Shear	Bearing	Rupture	Max. Ratio	Description	Beam Web	Column	
Id	No.	Case	k	k	in-k	k	Deg.	C	%	%	%	%	%		in.	in.
2,1	1	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00		0.0000	0.0000
2,1	2	-1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00		0.0000	0.0000

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
25000	0/0/0	0/0/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
25000	6/6/0	0/0/0	No	Yes	No	0/0/0	0/0/0	0.0000

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

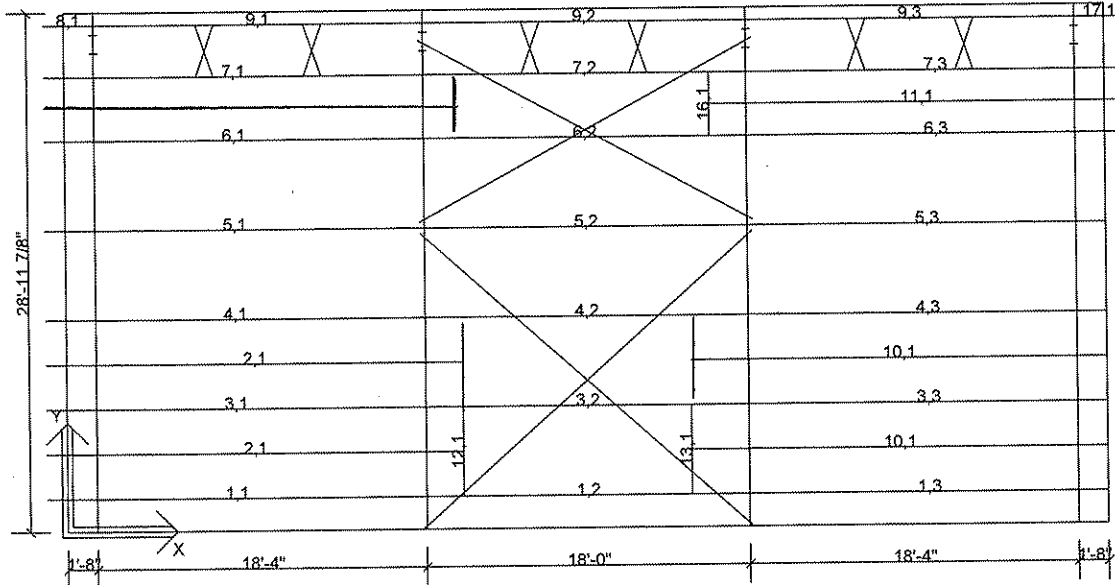
Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
25000	3.25	9.00	1	1	0.0	0.9	-18.2	0.0	83.1	20.9	169.5	39.0	0.11	0.04

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
25000	3.25	78.00	78.0	78.0	2.52	2.52	33.89	2.80	7.53	1.12	8.53	1.72	0.02	55.09	1.14	1.00	1.13	0.67	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	240	240	0.700 W1>	W1>
2	System	1.000	240	240	0.700 <W2	<W2
3	System	1.000	240	240	0.700 WP	WP
4	System	1.000	240	240	0.500 E>	E>
5	System	1.000	240	240	0.500 <E	<E

Roof: A



Maximum Secondary Designs for Shape Operations Building Lean-to on Side A

Des Id	Len (ft)	Description	Design Status	Detail Lap (in.)	Exterior					Interior					Exterior						
					% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)
1,1	21.12	11.50x0.065 Z Con	Yes	24							0.99	0.01	0.69	0.00	14	0.60	0.55	0.70	0.00	14	24
1,2	18.00	11.50x0.065 Z Con	Yes	24	0.60	0.36	0.56	0.00	14	24	0.73	0.50	0.72	0.00	14	0.54	0.36	0.53	0.00	14	24
1,3	20.00	11.50x0.065 Z Con	Yes	24	0.54	0.48	0.62	0.00	14	24	0.89	0.00	0.63	0.00	14						
2,1	23.20	11.50x0.082 Z Sim	Yes	0							0.69	0.00	0.00	0.00	14						
3,1	21.12	11.50x0.065 Z Con	Yes	24							0.46	0.61	0.69	0.00	14	0.48	0.37	0.51	0.00	14	24
3,2	18.00	11.50x0.065 Z Con	Yes	24	0.48	0.35	0.49	0.00	14	24	0.44	0.56	0.64	0.00	14	0.45	0.34	0.47	0.00	14	24
3,3	20.00	11.50x0.065 Z Con	Yes	24	0.45	0.34	0.46	0.00	14	24	0.45	0.55	0.64	0.00	14						
4,1	21.12	11.50x0.065 Z Con	Yes	24							0.43	0.58	0.65	0.00	14	0.45	0.35	0.48	0.00	14	24
4,2	18.00	11.50x0.065 Z Con	Yes	24	0.45	0.33	0.46	0.00	14	24	0.48	0.53	0.63	0.00	14	0.46	0.33	0.46	0.00	14	24
4,3	20.00	11.50x0.065 Z Con	Yes	24	0.46	0.35	0.48	0.00	14	24	0.44	0.58	0.66	0.00	14						
5,1	21.12	11.50x0.065 Z Con	Yes	24							0.29	0.62	0.69	0.00	17	0.33	0.38	0.51	0.00	17	24
5,2	18.00	11.50x0.065 Z Con	Yes	24	0.33	0.32	0.46	0.00	17	24	0.38	0.50	0.62	0.00	17	0.48	0.31	0.46	0.00	14	24
5,3	20.00	11.50x0.065 Z Con	Yes	24	0.34	0.39	0.52	0.00	17	24	0.30	0.64	0.71	0.00	17						
6,1	21.12	11.50x0.065 Z Con	Yes	24							0.27	0.54	0.61	0.00	17	0.30	0.33	0.45	0.00	17	24
6,2	18.00	11.50x0.065 Z Con	Yes	24	0.30	0.28	0.41	0.00	17	24	0.53	0.44	0.58	0.00	14	0.46	0.29	0.44	0.00	14	24
6,3	21.12	11.50x0.065 Z Con	Yes	24	0.46	0.38	0.50	0.00	14	24	0.40	0.63	0.69	0.00	14						
7,1	21.12	11.50x0.065 Z Con	Yes	24							0.20	0.42	0.46	0.00	17	0.22	0.26	0.34	0.00	17	24
7,2	18.00	11.50x0.065 Z Con	Yes	24	0.22	0.21	0.31	0.00	17	24	0.72	0.41	0.66	0.00	14	0.56	0.31	0.51	0.00	14	24
7,3	21.12	11.50x0.065 Z Con	Yes	24	0.56	0.52	0.65	0.00	14	24	0.95	0.00	0.66	0.00	14						
8,1	2.79	11.50x0.065 Z Sim	Yes	0							0.02	0.00	0.02	0.00	14						
9,1	18.33	11.50x0.065 Z Sim	Yes	0							0.72	0.00	0.47	0.00	14						
9,2	18.00	11.50x0.065 Z Sim	Yes	0							0.71	0.00	0.47	0.00	14						
9,3	18.33	11.50x0.120 Z Sim	Yes	0							0.64	0.00	0.00	0.00	14						
10,1	23.20	11.50x0.065 Z Sim	Yes	0							0.93	0.00	0.61	0.00	14						
11,1	23.20	11.50x0.065 Z Sim	Yes	0							0.87	0.00	0.57	0.00	14						



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12,1	5.00	8.50x0.059 C Sim	Yes	0						0.22	0.03	0.05	0.00	14					
13,1	5.00	8.50x0.059 C Sim	Yes	0						0.29	0.05	0.07	0.00	14					
14,1	5.00	8.50x0.059 C Sim	Yes	0						0.22	0.03	0.05	0.00	14					
15,1	5.00	8.50x0.059 C Sim	Yes	0						0.29	0.05	0.07	0.00	14					
16,1	3.57	8.50x0.059 C Sim	Yes	0						0.13	0.03	0.04	0.00	14					
17,1	2.79	11.50x0.065 Z Sim	Yes	0						0.04	0.01	0.02	0.00	14					

Maximum Secondary Deflections for Shape Operations Building Lean-to on Side A

Design Id	Segment	Deflection(in.)	Ratio	Location(ft)	Load Case	Description
1	1	0.29	(L/760)	11.29	1	W1>
1	2	-0.08	(L/2706)	27.63	1	W1>
1	3	0.26	(L/832)	49.13	1	W1>
2	1	0.28	(L/799)	11.79	1	W1>
3	1	0.15	(L/1444)	10.79	1	W1>
3	2	-0.07	(L/3101)	30.13	6	L
3	3	0.14	(L/1562)	49.63	1	W1>
4	1	0.15	(L/1469)	10.79	1	W1>
4	2	0.00	(L/7764)	30.13	6	L
4	3	0.16	(L/1396)	49.63	1	W1>
5	1	0.17	(L/1260)	10.79	1	W1>
5	2	0.00	(L/8845)	24.63	1	W1>
5	3	0.19	(L/1145)	49.13	1	W1>
6	1	0.15	(L/1422)	10.79	1	W1>
6	2	0.00	(L/7276)	34.63	1	W1>
6	3	0.19	(L/1139)	49.13	1	W1>
7	1	0.14	(L/1580)	11.29	1	W1>
7	2	-0.08	(L/2836)	33.13	1	W1>
7	3	0.28	(L/787)	49.13	1	W1>
8	1	-	-	-	-	-
9	1	0.25	(L/883)	9.00	1	W1>
9	2	0.24	(L/903)	27.33	1	W1>
9	3	0.30	(L/731)	45.33	1	W1>
10	1	0.31	(L/704)	12.20	1	W1>
11	1	0.29	(L/751)	11.08	1	W1>
12	1	-	-	-	-	-
13	1	-	-	-	-	-
14	1	-	-	-	-	-
15	1	-	-	-	-	-
16	1	-	-	-	-	-
17	1	-	-	-	-	-

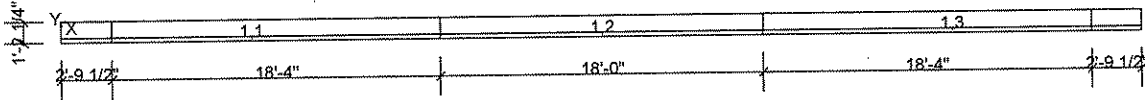
Purlin Anchorage Forces for Shape Operations Building Lean-to, Roof A, Panel Type is SLR2, Pitch = 4.000:12

Bay	Thickness	Force(k)	Ld Case	# Purlins	Length	Simple?	Diaphragm Width	Allowable Defl	Actual Defl
1	0.065	-12.02	1	8	23.20	N	28.99	0.773	0.000
2	0.065	-2.96	1	0	23.20	Y	28.99	0.773	0.000
3	0.065	-9.43	1	7	18.00	N	28.99	0.600	0.000

Frm-Line	Force(k)	Anch. Allow	Required Clips	Actual Clips	Diaphragm Allow	Diaphragm Shr	Stress
1	0.34	0.00	0	0	0.017	0.000	0.000
2	0.25	0.00	0	0	0.017	0.000	0.000
3	0.20	0.00	0	0	0.017	0.000	0.000



Wall: 2 - Canopy 1



Maximum Secondary Designs for Shape Operations Building Lean-to on Side 2

Des Id	Len (ft)	Description	Design Status	Detail Lap (in.)	Exterior					Interior					Exterior						
					% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	% Bnd	% Shr	% Cmb	% Wcp	Ld Cs	Lap (in.)
1,1	21.13	11.50x0.082 Z Sim	Yes	0							0.71	0.00	0.33	0.00	14						
1,2	18.00	11.50x0.065 Z Sim	Yes	0							1.02	0.00	0.00	0.00	14						
1,3	21.12	11.50x0.082 Z Sim	Yes	0							0.70	0.00	0.00	0.00	14						

Maximum Secondary Deflections for Shape Operations Building Lean-to on Side 2

Design Id	Segment	Deflection(in.)	Ratio	Location(ft)	Load Case	Description
1	1	0.21	(L/1061)	11.79	1	W1>
1	2	0.24	(L/889)	30.13	1	W1>
1	3	0.21	(L/1072)	48.13	1	W1>

Purlin Anchorage Forces for Shape Operations Building Lean-to, Roof Wall: 2 - Canopy 1, Panel Type is SLR2, Pitch = 4.000:12

Bay	Thickness	Force(k)	Ld Case	# Purlins	Length	Simple?	Diaphragm Width	Allowable Defl	Actual Defl
Frm-Line	Force(k)	Anch. Allow	Required Clips	Actual Clips	Diaphragm Allow	Diaphragm Shr	Stress		



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Framing - Summary Report

Loads and Codes - Shape: Operations Building

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Wind Exposure (Factor): B (0.705)
 Parts Wind Exposure Factor: 0.705

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 15/3/12
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 25.92 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.30 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group 1

 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.3628
 Bracing Seismic Period: 0.2208
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Deflection Conditions

Frames are vertically supporting: Ceiling with Flexible Finish
 Frames are laterally supporting: Unreinforced Masonry Wall
 Purlins are supporting: Ceiling with Flexible Finish
 Girts are supporting: Unreinforced Masonry Wall

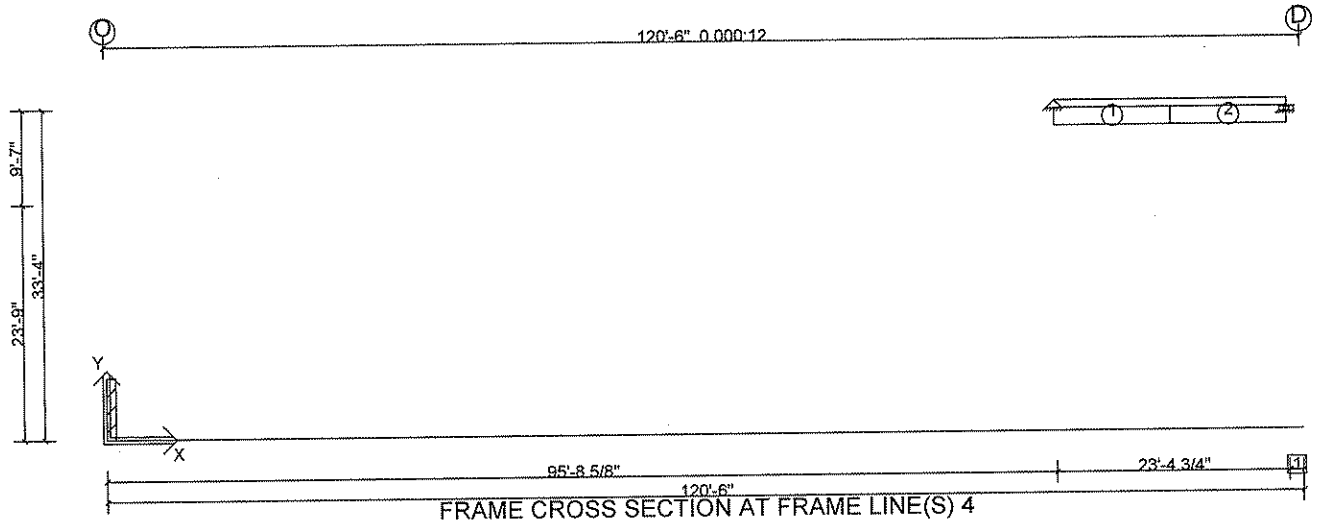
Operations Building : Mezzanine 1 @ 12/9/0

Floor Type	Non-Composite	Loading Type	Office
Top of Floor	12/9/0	Floor Dead Load	50.00 psf
Total Thickness of Deck + Topping	0/3/0	Floor Live Load	100.00 psf Not Reducible
Top of Joist	12/6/0	Collateral Load	5.00 psf
Min. Clearance from Floor to Joist	11/4/0	Partition Load:	10.00 psf
Min. Clearance from Floor to Rafter	9/6/0	Floor Live Load Deflection	360
Mezzanine Category	Entire Floor	Floor Dead + Floor Live Deflection	240
Bracing Category	Unbraced		

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Wall: 1, Frame at: 37/0/0

Frame Cross Section: 4



Dimension Key

1 1'-4 5/8"

Frame Clearances

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
37/0/0	9/0/0	Jack Beam 1	90.0000		0/1/0	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L >	D + FD + CG + L >
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S >	D + FD + CG + S >
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1 >	D + FD + CG + W1 >
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2 >	D + FD + CG + W2 >
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1 >	D + FD + CU + W1 >
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2 >	D + FD + CU + W2 >
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 >	D + FD + CG + L + W1 >
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 >	D + FD + CG + L + W2 >
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 >	D + FD + CG + S + W1 >
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 >	D + FD + CG + S + W2 >
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L > + 0.750 FL	D + FD + CG + L > + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 > + 0.750 FL	D + FD + CG + L + W1 > + FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D + FD + CG + L + <W1 + FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 > + 0.750 FL	D + FD + CG + L + W2 > + FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D + FD + CG + L + <W2 + FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D + FD + CG + L + WP + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 > + 0.750 FL	D + FD + CG + S + W1 > + FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D + FD + CG + S + <W1 + FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 > + 0.750 FL	D + FD + CG + S + W2 > + FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D + FD + CG + S + <W2 + FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D + FD + CG + S + WP + FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E > + 0.700 EG+	D + FD + CG + E > + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E > + 0.700 EG-	D + FD + CU + E > + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+	D + FD + CG + E > + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+ + 0.750 FL	D + FD + CG + E > + EG+ + FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D + FD + CG + <E + EG+ + FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
1	6.00	0.1875	0.1345	21.00	21.00	11.70	213.5	55.00	55.00	SS	SS	3P
2	6.00	0.2500	0.1345	21.00	21.00	11.70	247.1	55.00	55.00	SS	SS	3P



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Total Frame Weight = 460.5 (p) (Includes all plates)
 Frame Pricing Weight = 466.6 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	95/8/10	33/4/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
2	119/1/6	33/4/0	No	Yes	No	0/0/0	0/0/0	0.0000

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
95/8/10	33/4/0	-	-	-	-	-	-	-	-	3.0	15	4.8	1	-	-	-	-
119/1/6	33/4/0	-	-	-	-	-	-	-	-	3.1	15	5.0	1	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	0.6	0.6
FD	0.0	0.0	0.0	0.0
CG	0.0	0.0	1.9	1.9
L>	0.0	0.0	7.3	7.3
<L	0.0	0.0	7.3	7.3
S>	0.0	0.0	0.0	0.0
<S	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0
SD	0.0	0.0	0.0	0.0
SS	0.0	0.0	0.0	0.0
US1*	0.0	0.0	0.0	0.0
*US1	0.0	0.0	0.0	0.0
W1>	0.0	0.0	6.3	6.3
<W1	0.0	0.0	6.4	6.4
W2>	0.0	0.0	2.6	2.6
<W2	0.0	0.0	2.5	2.5
WP	0.0	0.0	0.1	0.1
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	0.0	0.0
L	0.0	0.0	7.3	7.3
E>	0.1	0.0	0.0	0.0
EG+	0.0	0.0	0.0	0.0
<E	0.1	0.0	0.0	0.0
EG-	0.0	0.0	0.0	0.0

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration	Pitches 1st/2nd (in.)	Configuration	Pitches 1st/2nd (in.)		
1	1	SIP	0.375	6.00	22.00	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50
2	2	SIP	0.500	6.00	22.00	0.750	A325/	3.00	12	Flush	2.50	13	Flush	2.50

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Ld Cs	Required Strength - In			Available Strength - In		
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)		Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	1	38		3.9	0.0		0.0	292.5	2		4.8	0.0		0.0	292.5
2	2	15		3.2	866.4		0.0	887.0	38		3.5	1033.0		0.0	1088.7

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
1	11.70	21.00	1	1	0.0	4.8	658.9	0.0	165.8	9.5	697.4	105.6	0.94	0.51
2	11.70	21.00	25	1	0.0	-5.0	1033.0	0.0	190.0	9.6	1027.2	111.4	1.01	0.52



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Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	lxx in.4	lyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
1	11.70	280.75	142.4	142.4	5.02	5.02	342.00	6.75	32.57	2.25	37.72	3.47	0.04	731.41	1.66	1.00	1.00	0.65	1.00
2	11.70	280.75	138.4	138.4	5.76	5.76	419.50	9.00	39.95	3.00	45.26	4.59	0.08	969.21	1.23	1.00	1.00	0.84	1.00



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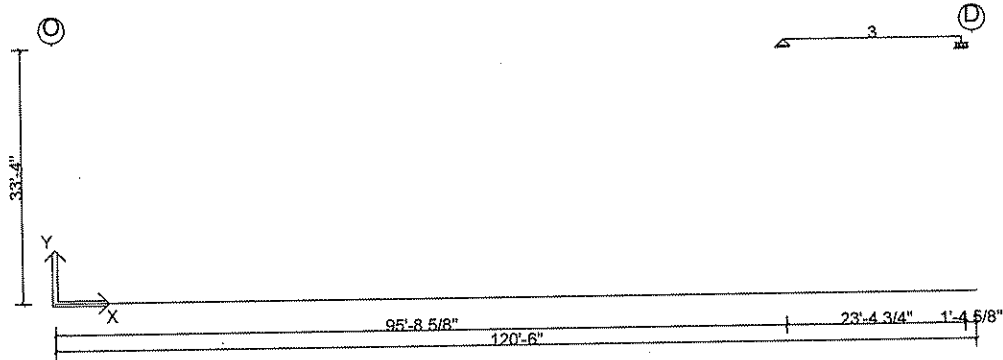
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User Defined Frame Point Loads for Cross Section: 4

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
3	p	D	support point TLK	-1.00	107/7/0	NA	NA	Y	DOWN	1.000	OF
3	k	CG		-1.00	107/8/1	NA	NA	N	DOWN	1.000	OF
3	k	L		-3.60	107/8/1	NA	NA	N	DOWN	1.000	OF
3	k	W1>		3.60	107/8/1	NA	NA	N	UP	1.000	OF
3	k	<W1		2.80	107/8/1	NA	NA	N	UP	1.000	OF
3	k	W2>		1.80	107/8/1	NA	NA	N	UP	1.000	OF
3	k	<W2		0.80	107/8/1	NA	NA	N	UP	1.000	OF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System	1.000	200	0	0.700 W1>	W1>
13	System	1.000	200	0	0.700 <W1	<W1
14	System	1.000	200	0	0.700 W2>	W2>
15	System	1.000	200	0	0.700 <W2	<W2
16	System	1.000	200	0	0.700 WP	WP
17	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
18	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section: 4

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/915)	-0.307	2	1	1	L

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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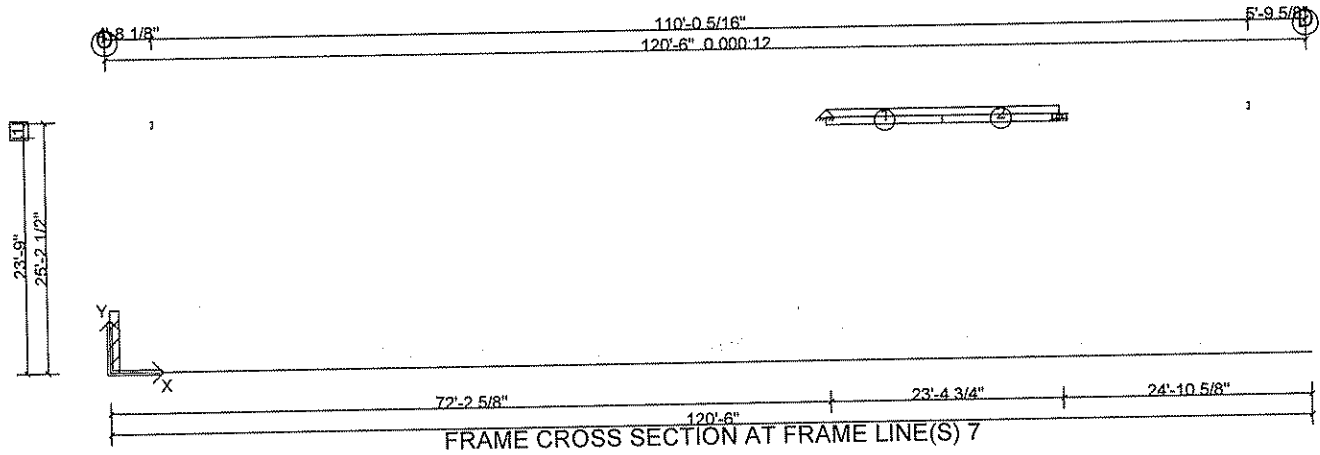
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Wall: 1, Frame at: 56/6/0

Frame Cross Section: 7



Dimension Key

1 1'-5 1/2"

Frame Clearances

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
56/6/0	10/9/0	Jack Beam 2	90.0000		0/1/0	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L >	D + FD + CG + L >
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S >	D + FD + CG + S >
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1 >	D + FD + CG + W1 >
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2 >	D + FD + CG + W2 >
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1 >	D + FD + CU + W1 >
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2 >	D + FD + CU + W2 >
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 >	D + FD + CG + L + W1 >
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 >	D + FD + CG + L + W2 >
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 >	D + FD + CG + S + W1 >
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 >	D + FD + CG + S + W2 >
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L > + 0.750 FL	D + FD + CG + L > + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 > + 0.750 FL	D + FD + CG + L + W1 > + FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D + FD + CG + L + <W1 + FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 > + 0.750 FL	D + FD + CG + L + W2 > + FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D + FD + CG + L + <W2 + FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D + FD + CG + L + WP + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 > + 0.750 FL	D + FD + CG + S + W1 > + FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D + FD + CG + S + <W1 + FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 > + 0.750 FL	D + FD + CG + S + W2 > + FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D + FD + CG + S + <W2 + FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D + FD + CG + S + WP + FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E > + 0.700 EG+	D + FD + CG + E > + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E > + 0.700 EG-	D + FD + CU + E > + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+	D + FD + CG + E > + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+ + 0.750 FL	D + FD + CG + E > + EG+ + FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D + FD + CG + <E + EG+ + FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
1	5.00	0.1875	0.1345	9.00	9.00	11.70	126.9	55.00	55.00	SS	SS	3P
2	5.00	0.1875	0.1345	9.00	9.00	11.70	126.9	55.00	55.00	SS	SS	3P



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Total Frame Weight = 253.7 (p) (Includes all plates)
 Frame Pricing Weight = 255.3 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	72/2/10	25/2/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
2	95/7/6	25/2/8	No	Yes	No	0/0/0	0/0/0	0.0000

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
72/2/10	25/2/8	-	-	-	-	-	-	-	-	-	-	0.2	1	-	-	-	-
95/7/6	25/2/8	-	-	-	-	-	-	-	-	-	-	0.2	1	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	0.3	0.3
FD	0.0	0.0	0.0	0.0
CG	0.0	0.0	0.0	0.0
L>	0.0	0.0	0.1	0.1
<L	0.0	0.0	0.1	0.1
S>	0.0	0.0	0.0	0.0
<S	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0
SD	0.0	0.0	0.0	0.0
SS	0.0	0.0	0.0	0.0
US1*	0.0	0.0	0.0	0.0
*US1	0.0	0.0	0.0	0.0
W1>	0.0	0.0	0.0	0.0
<W1	0.0	0.0	0.0	0.0
W2>	0.0	0.0	0.0	0.0
<W2	0.0	0.0	0.0	0.0
WP	0.0	0.0	0.0	0.0
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	0.0	0.0
L	0.0	0.0	0.1	0.1
E>	0.0	0.0	0.0	0.0
EG+	0.0	0.0	0.0	0.0
<E	0.0	0.0	0.0	0.0
EG-	0.0	0.0	0.0	0.0

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration		Pitches 1st/2nd (in.)	Configuration		Pitches 1st/2nd (in.)
			ID	Desc.	ID	Desc.	ID	Desc.						
1	1	SIP	0.375	6.00	10.00	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50
2	2	SIP	0.375	6.00	10.00	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	1	35		0.2	0.0		0.0	101.0	37		0.2	0.0		0.0	101.0
2	2	51		0.2	0.0		0.0	101.0	43		0.2	0.1		0.0	101.0

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
1	11.70	9.00	24	1	0.0	0.2	18.7	0.0	100.2	21.1	88.2	58.4	0.21	0.01
2	0.00	9.00	1	1	0.0	-0.2	17.3	0.0	100.2	21.1	86.5	58.4	0.20	0.01



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Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	lxx in.4	lyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
1	11.70	280.75	225.0	225.0	3.04	3.04	43.60	3.91	9.69	1.56	10.76	2.38	0.03	75.87	1.14	1.00	1.11	0.88	1.00
2	0.00	280.75	225.0	225.0	3.04	3.04	43.60	3.91	9.69	1.56	10.76	2.38	0.03	75.87	1.12	1.00	1.11	0.88	1.00



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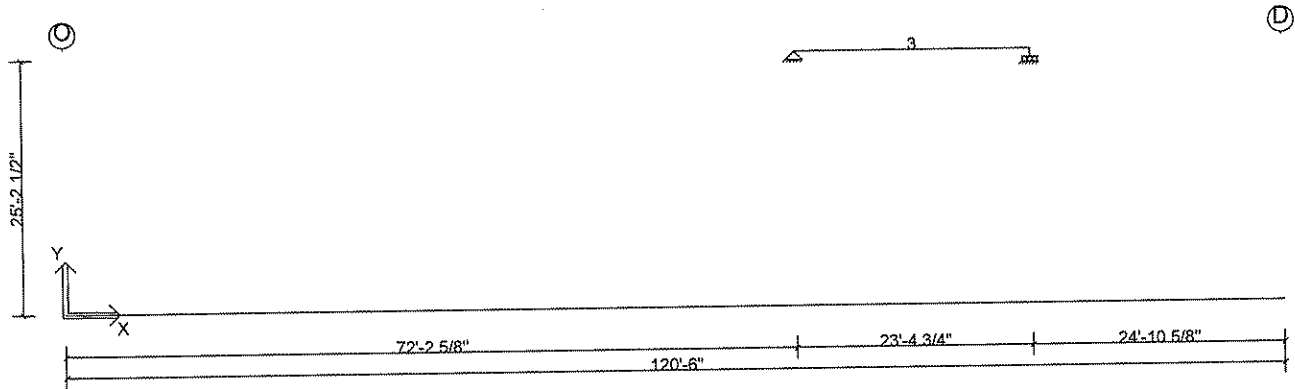
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User Defined Frame Point Loads for Cross Section: 7

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
3	p	D	support point TLK	-1.00	90/11/10		NA	Y	DOWN	1.000	OF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System	1.000	200	0	0.700 W1>	W1>
13	System	1.000	200	0	0.700 <W1	<W1
14	System	1.000	200	0	0.700 W2>	W2>
15	System	1.000	200	0	0.700 <W2	<W2
16	System	1.000	200	0	0.700 WP	WP
17	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
18	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section: 7

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/20191)	-0.014	1	2	1	L

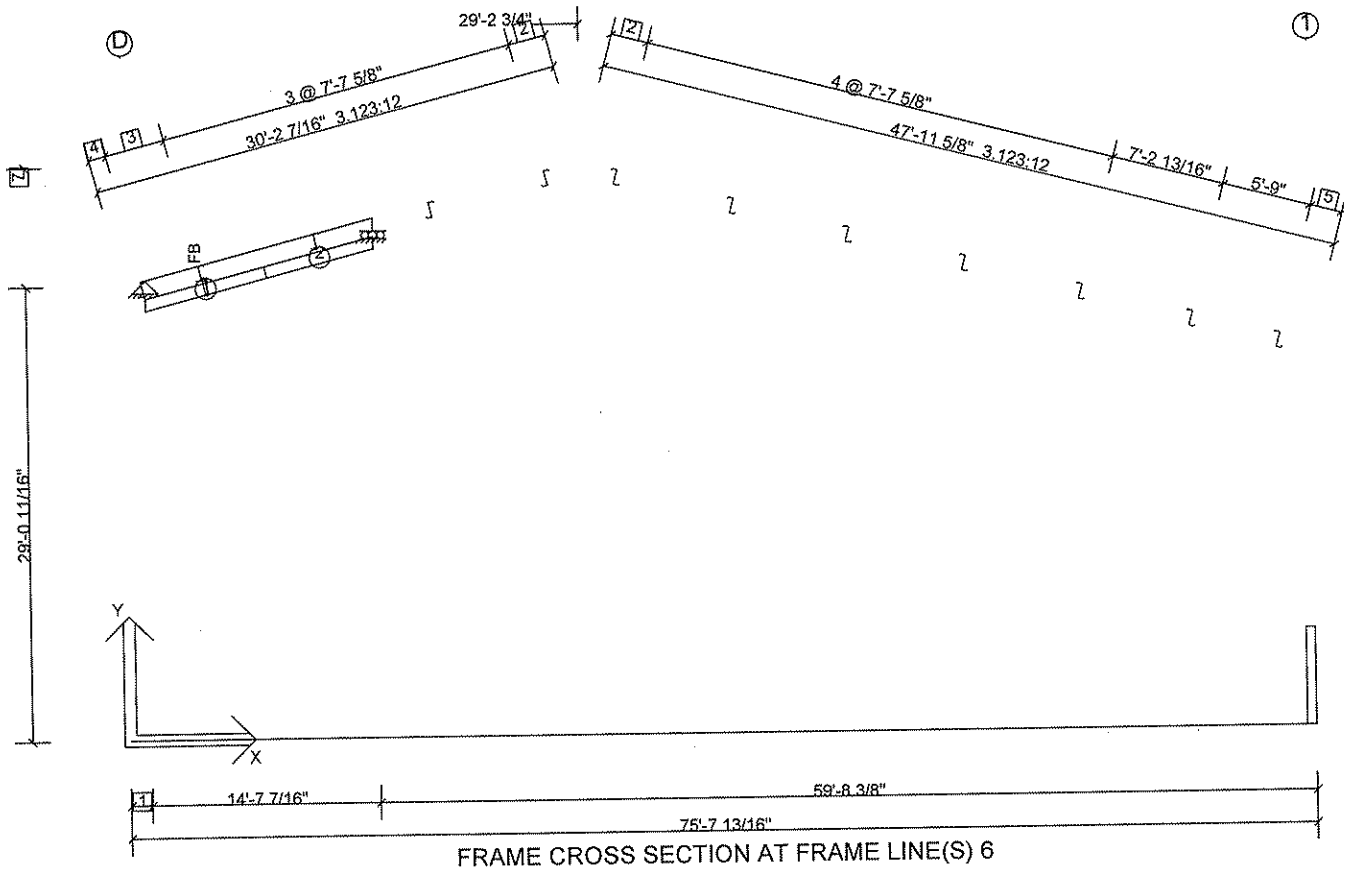
* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 3, Frame at: 10/8/14

Frame Cross Section: 6



- Dimension Key**
- 1 1'-4"
 - 2 2'-4 11/16"
 - 3 3'-9 13/16"
 - 4 1'-1 1/8"
 - 5 2'-0 11/16"
 - 6 1'-10"
 - 7 36'-8" Ridge Ht.

Frame Clearances
 Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
10/8/14	9/3/0	Valley Beam Right	51.3402		0/1/0	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D + FD + CG + L + W1> + FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D + FD + CG + L + <W1 + FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D + FD + CG + L + W2> + FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D + FD + CG + L + <W2 + FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D + FD + CG + L + WP + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D + FD + CG + S + W1> + FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D + FD + CG + S + <W1 + FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D + FD + CG + S + W2> + FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D + FD + CG + S + <W2 + FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D + FD + CG + S + WP + FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D + FD + CG + E> + EG+ + FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D + FD + CG + <E + EG+ + FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
1	5.00	0.1875	0.1345	9.00	9.00	7.55	88.4	55.00	55.00	SS	SS	3P
2	5.00	0.1875	0.1345	9.00	9.00	7.55	80.1	55.00	55.00	SS	SS	3P



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Total Frame Weight = 168.5 (p) (Includes all plates)
 Frame Pricing Weight = 174.5 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
2	15/11/7	33/2/8	No	Yes	No	0/0/0	0/0/0	0.0000
1	1/4/0	29/4/14	Yes	Yes	No	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 6

Type X-Loc Grid1 - Grid2 Base Plate W x L (in.) Base Plate Thickness (in.) Anchor Rod Qty/Diam. (in.) Column Base Elev.		Rafter 15/11/7 y=33/2/8						
Load Type	Desc.	Hx	Vy					
D	Frm	-	0.1	-	-	-	-	-
FD	Frm	-	-	-	-	-	-	-
CG	Frm	-	0.5	-	-	-	-	-
L>	Frm	-	1.8	-	-	-	-	-
<L	Frm	-	1.8	-	-	-	-	-
S>	Frm	-	-	-	-	-	-	-
<S	Frm	-	-	-	-	-	-	-
S	Frm	-	-	-	-	-	-	-
SD	Frm	-	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-	-
US1*	Frm	-	-	-	-	-	-	-
*US1	Frm	-	-	-	-	-	-	-
W1>	Frm	-	-1.8	-	-	-	-	-
<W1	Frm	-	-1.4	-	-	-	-	-
W2>	Frm	-	-0.9	-	-	-	-	-
<W2	Frm	-	-0.4	-	-	-	-	-
WP	Frm	-	-0.0	-	-	-	-	-
CU	Frm	-	-	-	-	-	-	-
FL	Frm	-	-	-	-	-	-	-
L	Frm	-	1.8	-	-	-	-	-
E>	Frm	-	-	-	-	-	-	-
EG+	Frm	-	0.0	-	-	-	-	-
<E	Frm	-	-	-	-	-	-	-
EG-	Frm	-	-0.0	-	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
1/4/0	29/4/14	-	-	-	-	-	-	-	-	1.1	14	1.9	1	-	-	-	-
15/11/7	33/2/8	-	-	-	-	-	-	-	-	1.8	14	2.4	1	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	0.2	0.2
FD	0.0	0.0	0.0	0.0
CG	0.0	0.0	0.8	0.8
L>	0.0	0.0	3.3	3.3
<L	0.0	0.0	3.3	3.3
S>	0.0	0.0	0.0	0.0
<S	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0
SD	0.0	0.0	0.0	0.0
SS	0.0	0.0	0.0	0.0



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US1*	0.0	0.0	0.0	0.0
*US1	0.0	0.0	0.0	0.0
W1>	1.5	0.0	2.9	2.9
<W1	1.1	0.0	2.2	2.2
W2>	0.7	0.0	1.4	1.4
<W2	0.3	0.0	0.6	0.6
WP	0.0	0.0	0.0	0.0
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	0.0	0.0
L	0.0	0.0	3.3	3.3
E>	0.1	0.0	0.0	0.0
EG+	0.0	0.0	0.0	0.0
<E	0.1	0.0	0.0	0.0
EG-	0.0	0.0	0.0	0.0

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1	1	SIP	0.375	6.00	10.30	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50
2	2	SIP	0.375	6.00	10.30	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Ld Cs	Required Strength - In			Available Strength - In		
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)		Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	1	2		1.8	0.1		0.0	101.0	48		0.0	0.0		0.0	101.0
2	2	2		2.3	0.0		0.0	101.0	14		1.7	0.0		0.0	101.0

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
1	3/10/0	25/3/8	FB2060	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mox in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
1	7.55	9.00	1	1	-0.0	1.8	97.2	0.0	68.3	21.1	292.8	58.4	0.33	0.09
2	0.00	9.00	1	1	-0.0	-2.3	97.2	0.0	68.3	21.1	292.8	58.4	0.33	0.11

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
1	7.55	181.28	138.9	91.6	3.04	3.04	43.60	3.91	9.69	1.56	10.76	2.38	0.03	75.87	1.11	1.00	1.11	0.88	0.89
2	0.00	181.28	138.9	91.6	3.04	3.04	43.60	3.91	9.69	1.56	10.76	2.38	0.03	75.87	1.11	1.00	1.11	0.88	0.89



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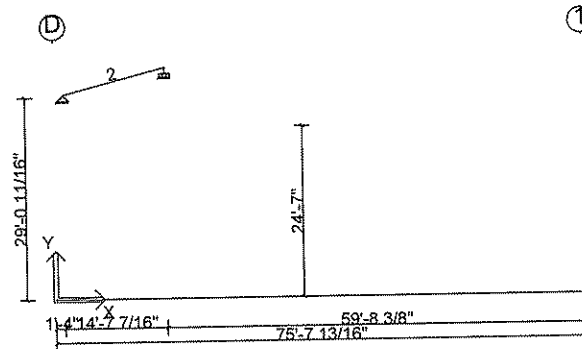
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User Defined Frame Line Loads for Cross Section: 6

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
2	plf	CG		-84.00	13/8/10	-30.00	28/9/15	N	DOWN	1.000	OF
2	plf	L		-335.00	13/8/10	-118.00	28/9/15	N	DOWN	1.000	OF
2	plf	W1>		295.00	13/8/10	104.00	28/9/15	N	UP	1.000	OF
2	plf	<W1		221.00	13/8/10	78.00	28/9/15	N	UP	1.000	OF
2	plf	W2>		139.00	13/8/10	49.00	28/9/15	N	UP	1.000	OF
2	plf	<W2		65.00	13/8/10	23.00	28/9/15	N	UP	1.000	OF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System	1.000	200	0	0.700 W1>	W1>
13	System	1.000	200	0	0.700 <W1	<W1
14	System	1.000	200	0	0.700 W2>	W2>
15	System	1.000	200	0	0.700 <W2	<W2
16	System	1.000	200	0	0.700 WP	WP
17	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
18	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section: 6

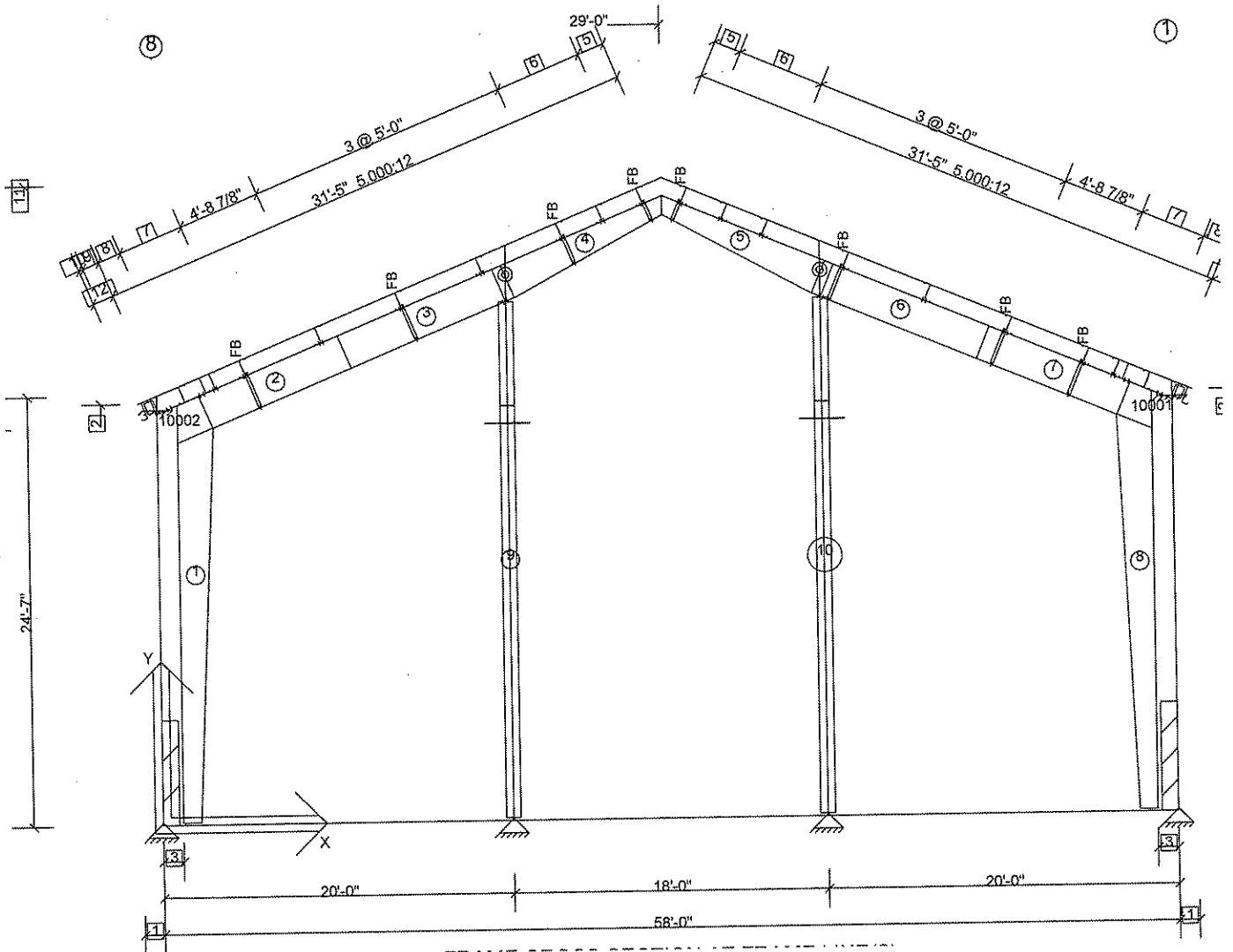
Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/894)	-0.196	2	1	1	L

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 4, Frame at: 1/7/0
 Frame Cross Section:



Dimension Key

- 1 1'-1 1/2"
- 2 24'-1 3/8"
- 3 1'-2"
- 4 1'-10"
- 5 1'-6 13/16"
- 6 2 @ 2'-6"
- 7 2 @ 1'-10 9/16"
- 8 1'-4 3/16"
- 9 11 5/8"
- 10 3"
- 11 36'-8" Ridge Ht.
- 12 1'-2 5/8" 5.000:12

Frame Clearances

Horiz. Clearance between members 1(CX100) and 8(CX100): 51'-7 5/8"
 Vert. Clearance at member 1(CX100): 22'-7 15/16"



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Vert. Clearance at member 8(CX100): 22'-7 15/16"
Vert. Clearance at member 9(EPX100): 29'-8 9/16"
Vert. Clearance at member 10(EPX101): 29'-8 9/16"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
1/7/0	13/2/8	CB2 End	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D + FD + CG + L + W1> + FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D + FD + CG + L + <W1 + FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D + FD + CG + L + W2> + FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D + FD + CG + L + <W2 + FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D + FD + CG + L + WP + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D + FD + CG + S + W1> + FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D + FD + CG + S + <W1 + FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D + FD + CG + S + W2> + FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D + FD + CG + S + <W2 + FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D + FD + CG + S + WP + FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 EG> + 0.700 EG+	D + FD + CG + E> + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D + FD + CG + E> + EG+ + FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D + FD + CG + <E + EG+ + FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
10002	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P



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1	8.00	0.3750	0.1644	12.00	24.00	23.91	761.8	55.00	55.00	BP	KN	3P
2	5.00	0.2500	0.1345	24.00	24.00	9.98	187.1	55.00	55.00	KN	SS	3P
3	5.00	0.1875	0.1345	24.00	24.00	10.13	174.1	55.00	55.00	SS	SS	3P
4	5.00	0.1875	0.1345	24.00	12.00	10.04	150.2	55.00	55.00	SS	SP	3P
5	5.00	0.1875	0.1345	12.00	24.00	10.04	150.2	55.00	55.00	SP	SS	3P
6	5.00	0.1875	0.1345	24.00	24.00	10.12	174.0	55.00	55.00	SS	SS	3P
7	5.00	0.2500	0.1345	24.00	24.00	9.99	187.2	55.00	55.00	SS	KN	3P
8	8.00	0.3750	0.1644	12.00	24.00	23.91	761.8	55.00	55.00	BP	KN	3P
9	10.00	0.5000	0.1644	12.00	12.00	29.59	1220.8	55.00	55.00	BP	CP	3P
10	10.00	0.5000	0.1644	12.00	12.00	29.59	1220.8	55.00	55.00	BP	CP	3P

Total Frame Weight = 5056.6 (p) (Includes all plates)
 Frame Pricing Weight = 5252.8 (p) (Includes all pieces)

Frame Member Releases

Member	Joint 1	Joint 2
9	No	Yes
10	No	Yes

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
8	58/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
9	20/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
10	38/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	58/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000
10002	0/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section:

Type		Exterior Column		Interior Column			Interior Column			Exterior Column		
X-Loc		0/0/0		20/0/0			38/0/0			58/0/0		
Grid1 - Grid2		-8		5-0			3-0			-1		
Base Plate W x L (in.)		9 x 13		11 x 13			11 x 13			9 x 13		
Base Plate Thickness (in.)		0.375		0.375			0.375			0.375		
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750			4 - 0.750			4 - 0.750		
Column Base Elev.		100'-1 1/2"		100'-1 1/2"			100'-1 1/2"			100'-1 1/2"		
Load Type	Desc.	Hx	Vy	Hx	Hz	Vy	Hx	Hz	Vy	Hx	Vy	
D	Frm	0.1	1.6	-	-	2.4	-	-	2.4	-0.1	1.6	-
FD	Frm	0.1	7.1	-	0.2	11.8	-	0.2	11.8	-0.1	7.1	-
CG	Frm	0.1	0.9	-	-	1.3	-	-	1.3	-0.1	0.9	-
L>	Frm	0.2	3.4	-	-	5.3	-	-	5.3	-0.2	3.4	-
<L	Frm	0.2	3.4	-	-	5.3	-	-	5.3	-0.2	3.4	-
S>	Frm	0.0	0.4	-	-	0.6	-	-	0.6	-0.0	0.4	-
<S	Frm	0.0	0.4	-	-	0.6	-	-	0.6	-0.0	0.4	-
S	Frm	0.0	0.4	-	-	0.6	-	-	0.6	-0.0	0.4	-
SD	Frm	-	-	-	-	-	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-	-	-	-	-	-
US1*	Frm	-	0.3	-	-	1.1	-	-	0.5	-	0.1	-
*US1	Frm	-	0.1	-	-	0.5	-	-	1.1	-	0.3	-
W1>	Frm	4.7	0.5	-	7.4	-9.7	-	7.3	2.9	4.8	-7.8	-
<W1	Frm	-4.8	-7.8	-	-6.6	2.9	-	-6.6	-9.7	-4.7	0.5	-
W2>	Frm	3.6	3.4	-	-	-9.0	-	-	3.6	5.8	-4.9	-
<W2	Frm	-5.8	-4.9	-	-	3.6	-	-	-9.0	-3.6	3.4	-
WP	Frm	2.2	-7.3	-	-	-2.3	-	-	-2.3	-2.2	-7.3	-
CU	Frm	-	-	-	-	-	-	-	-	-	-	-
FL	Frm	0.2	14.3	-	0.4	23.7	-	0.4	23.7	-0.2	14.3	-
L	Frm	0.2	3.4	-	-	5.3	-	-	5.3	-0.2	3.4	-
E>	Frm	0.7	0.7	-	1.9	-0.9	-	1.9	0.9	0.7	-0.7	-
EG+	Frm	-	0.2	-	-	0.4	-	-	0.4	-	0.2	-
<E	Frm	-0.7	-0.7	-	-1.9	0.9	-	-1.9	-0.9	-0.7	0.7	-
EG-	Frm	-	-0.2	-	-	-0.4	-	-	-0.4	-	-0.2	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx)	Load Case	Hz Right (Hx)	Load Case	Hz In (-Hz)	Load Case	Hz Out (Hz)	Load Case	Uplift (-Vy)	Load Case	Vrt Down (Vy)	Load Case	Mom cw (-Mzz)	Load Case	Mom ccw (Mzz)	Load Case
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		(k)		(k)		(k)		(k)		(k)		(k)		(k)	(in-k)		(in-k)	
0/0/0	-8	5.7	17	4.9	9	-	-	-	-	2.6	15	25.4	36	-	-	-	-	-
20/0/0	5-O	-	-	-	-	6.5	15	7.6	9	1.2	14	40.0	37	-	-	-	-	-
38/0/0	3-O	-	-	-	-	6.5	15	7.5	9	1.1	15	40.0	36	-	-	-	-	-
58/0/0	-1	4.9	10	5.7	16	-	-	-	-	2.6	14	25.5	37	-	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	8.3	8.1
FD	0.0	0.0	37.8	37.8
CG	0.0	0.0	4.4	4.4
L>	0.0	0.0	17.5	17.5
<L	0.0	0.0	17.5	17.5
S>	0.0	0.0	2.0	2.0
<S	0.0	0.0	2.0	2.0
S	0.0	0.0	2.0	2.0
SD	0.0	0.0	0.0	0.0
SS	0.0	0.0	0.0	0.0
US1*	0.0	0.0	2.0	2.0
*US1	0.0	0.0	2.0	2.0
W1>	9.4	9.4	14.1	14.1
<W1	9.4	9.4	14.1	14.1
W2>	9.4	9.4	6.9	6.9
<W2	9.4	9.4	6.9	6.9
WP	0.0	0.0	19.3	19.3
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	76.0	76.0
L	0.0	0.0	17.5	17.5
E>	1.3	1.3	0.0	0.0
EG+	0.0	0.0	1.2	1.2
<E	1.3	1.3	0.0	0.0
EG-	0.0	0.0	1.2	1.2

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	-8	1	0.375	9	13	4	0.750	A36	OS-0.1875	OS-0.1875
20/0/0	5-O	9	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875
38/0/0	3-O	10	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875
58/0/0	-1	8	0.375	9	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
1	1	S9	21.72	22.944	139.56	N/A	N/A	0.3125	3.500	Both	W-OS-0.1875
3	1	S2	9.59	23.625	175.65	N/A	N/A	0.1875	2.000	Both	F-OS-0.1875,W-OS-0.1875
6	1	S2	0.54	23.625	175.65	N/A	N/A	0.1875	2.000	Both	F-OS-0.1875,W-OS-0.1875
8	1	S9	21.72	22.944	139.56	N/A	N/A	0.3125	3.500	Both	W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration		Pitches 1st/2nd (in.)	Configuration		Pitches 1st/2nd (in.)
									ID	Desc.		ID	Desc.	
1	2	KN(Face)	0.500	8.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
2	1	KN(Face)	0.500	6.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
4	2	SP	0.375	6.00	14.05	0.750	A325X/ST	3.00	11	Flush	0.00	11	Flush	0.00
5	1	SP	0.375	6.00	14.05	0.750	A325X/ST	3.00	11	Flush	0.00	11	Flush	0.00
7	2	KN(Face)	0.500	6.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
8	2	KN(Face)	0.500	8.00	25.00	0.750	A325X/ST	3.00	11	Flush	2.00	11	Flush	2.00
9	2	CP	0.375	11.00	13.00	0.500	A325/	3.00	11	Flush	3.00	11	Flush	3.00
10	2	CP	0.375	11.00	13.00	0.500	A325/	3.00	11	Flush	3.00	11	Flush	3.00

Required Strength - Out	Available Strength - Out	Required Strength - In	Available Strength - In
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Mem. No.	Jt. No.	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	2	11	-3.5	4.3	748.7	Thin plate	106.0	749.9	15	3.5	5.7	711.9	Thin plate	106.0	749.9
2	1	11	-3.5	4.3	748.7	Thin plate	106.0	749.9	15	3.5	5.7	711.9	Thin plate	106.0	749.9
4	2	16	0.7	1.7	9.5	Thin plate	106.0	205.2	13	7.3	3.2	148.2	Thin plate	106.0	218.2
5	1	16	0.7	1.7	9.5	Thin plate	106.0	205.2	13	7.3	3.2	148.2	Thin plate	106.0	218.2
7	2	12	-3.5	4.3	748.3	Thin plate	106.0	750.9	14	3.5	5.7	712.9	Thin plate	106.0	750.9
8	2	12	-3.5	4.3	748.3	Thin plate	106.0	750.9	14	3.5	5.7	712.9	Thin plate	106.0	750.9
9	2	0	0.0	0.0	0.0		0.0	0.0	0	0.0	0.0	0.0		0.0	0.0
10	2	0	0.0	0.0	0.0		0.0	0.0	0	0.0	0.0	0.0		0.0	0.0

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
2	2/11/0	26/3/10	FB3024	
3	4/0/1	16/6/13	FB3024	
4	3/10/8	6/6/13	FB2110	
4	8/10/8	1/6/13	FB2070	
5	1/2/0	1/6/13	FB2070	
6	1/1/8	11/6/13	FB3024	
7	1/0/1	21/6/13	FB3024	
7	5/8/15	26/3/10	FB3024	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.48	11.50	1	1	0.2	0.5	-13.0	0.0	94.2	17.5	204.7	39.0	0.06	0.03
10002	2.48	11.50	1	1	0.2	-0.5	-13.0	0.0	88.2	17.5	204.7	39.0	0.06	0.03
1	15.05	20.00	12	18	2.7	3.5	661.8	0.0	302.4	18.9	1016.5	341.6	0.66	0.23
2	0.65	24.00	11	15	-3.5	-5.7	-748.7	0.0	108.7	8.3	1089.4	95.5	0.70	0.68
3	0.00	24.00	14	14	0.1	5.7	-344.0	0.0	166.7	8.2	759.0	50.1	0.45	0.69
4	0.00	24.00	22	35	0.1	3.5	-266.5	0.0	166.7	8.2	656.2	50.1	0.41	0.43
5	0.21	12.00	13	34	7.3	-3.6	148.2	0.0	113.5	17.0	407.7	55.4	0.40	0.43
6	9.99	24.00	15	15	0.1	-5.7	-343.4	0.0	166.7	8.2	863.1	50.1	0.40	0.69
7	8.66	24.00	12	14	-3.5	5.7	-748.3	0.0	108.7	8.3	1089.4	95.5	0.70	0.68
8	15.05	20.00	11	18	2.7	-3.5	661.7	0.0	302.4	18.9	1016.4	341.6	0.66	0.23
9	12.38	12.00	35	9	-40.2	-7.6	567.4	0.0	99.6	33.0	1252.6	768.2	0.61	0.23
10	12.38	12.00	34	9	-40.2	-7.6	-581.4	0.0	99.6	33.0	1080.6	768.2	0.69	0.23

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
10002	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	15.05	270.94	270.9	270.9	9.16	9.16	675.51	32.01	67.55	8.00	74.11	12.13	0.31	3081.81	1.20	1.00	1.03	0.92	1.00
2	0.65	223.82	15.9	15.9	5.66	5.66	498.01	5.21	41.50	2.09	48.26	3.23	0.07	735.13	1.00	1.00	1.00	0.94	0.62
3	0.00	223.82	116.9	116.9	5.05	5.05	413.60	3.91	34.47	1.56	41.09	2.45	0.04	554.42	1.33	1.00	1.00	0.78	1.00
4	0.00	119.73	120.1	120.1	5.05	5.05	413.60	3.91	34.47	1.56	41.09	2.45	0.04	554.42	1.19	1.00	1.00	0.78	1.00
5	0.21	119.73	23.1	23.1	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.06	1.00	1.13	0.84	1.00
6	9.99	223.82	120.0	120.0	5.05	5.05	413.60	3.91	34.47	1.56	41.09	2.45	0.04	554.42	1.96	1.00	1.00	0.78	1.00
7	8.66	223.82	35.0	35.0	5.66	5.66	498.01	5.21	41.50	2.09	48.26	3.23	0.07	735.13	1.09	1.00	1.00	0.94	0.62
8	15.05	270.94	270.9	270.9	9.16	9.16	675.51	32.01	67.55	8.00	74.11	12.13	0.31	3081.81	1.20	1.00	1.03	0.92	1.00
9	12.38	368.00	355.0	355.0	11.81	11.81	349.07	83.34	58.18	16.67	62.47	25.07	0.85	2755.34	1.21	1.00	1.07	1.00	1.00
10	12.38	368.00	355.0	355.0	11.81	11.81	349.07	83.34	58.18	16.67	62.47	25.07	0.85	2755.34	1.04	1.00	1.07	1.00	1.00



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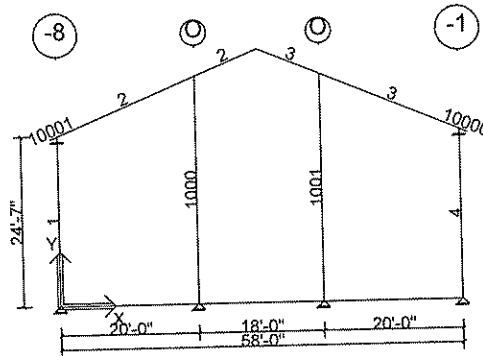
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User Defined Frame Point Loads for Cross Section:

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-14.10	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-7.00	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FL	Mezz	-14.10	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-7.00	12/6/0	NA	NA	N	DOWN	1.000	CL
1000	k	FL	Mezz	-23.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1000	k	FD	Mezz	-11.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1000	k	E>	Mezz	-2.30	12/6/0	NA	NA	N	LEFT	1.000	IF
1000	k	<E	Mezz	2.30	12/6/0	NA	NA	N	RIGHT	1.000	IF
1001	k	FL	Mezz	-23.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1001	k	FD	Mezz	-11.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1001	k	E>	Mezz	-2.30	12/6/0	NA	NA	N	LEFT	1.000	IF
1001	k	<E	Mezz	2.30	12/6/0	NA	NA	N	RIGHT	1.000	IF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System	1.000	200	0	0.700 W1>	W1>
13	System	1.000	200	0	0.700 <W1	<W1
14	System	1.000	200	0	0.700 W2>	W2>
15	System	1.000	200	0	0.700 <W2	<W2
16	System	1.000	200	0	0.700 WP	WP
17	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
18	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section:

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/202)	-1.378	1	2	12	W1>
Max. Vertical Deflection for Span 1	(L/1765)	0.121	3	1	7	W1>
Max. Vertical Deflection for Span 2	(L/3053)	-0.071	5	1	11	WP
Max. Vertical Deflection for Span 3	(L/1765)	0.121	6	2	8	<W1

* Negative horizontal deflection is left

* Negative vertical deflection is down



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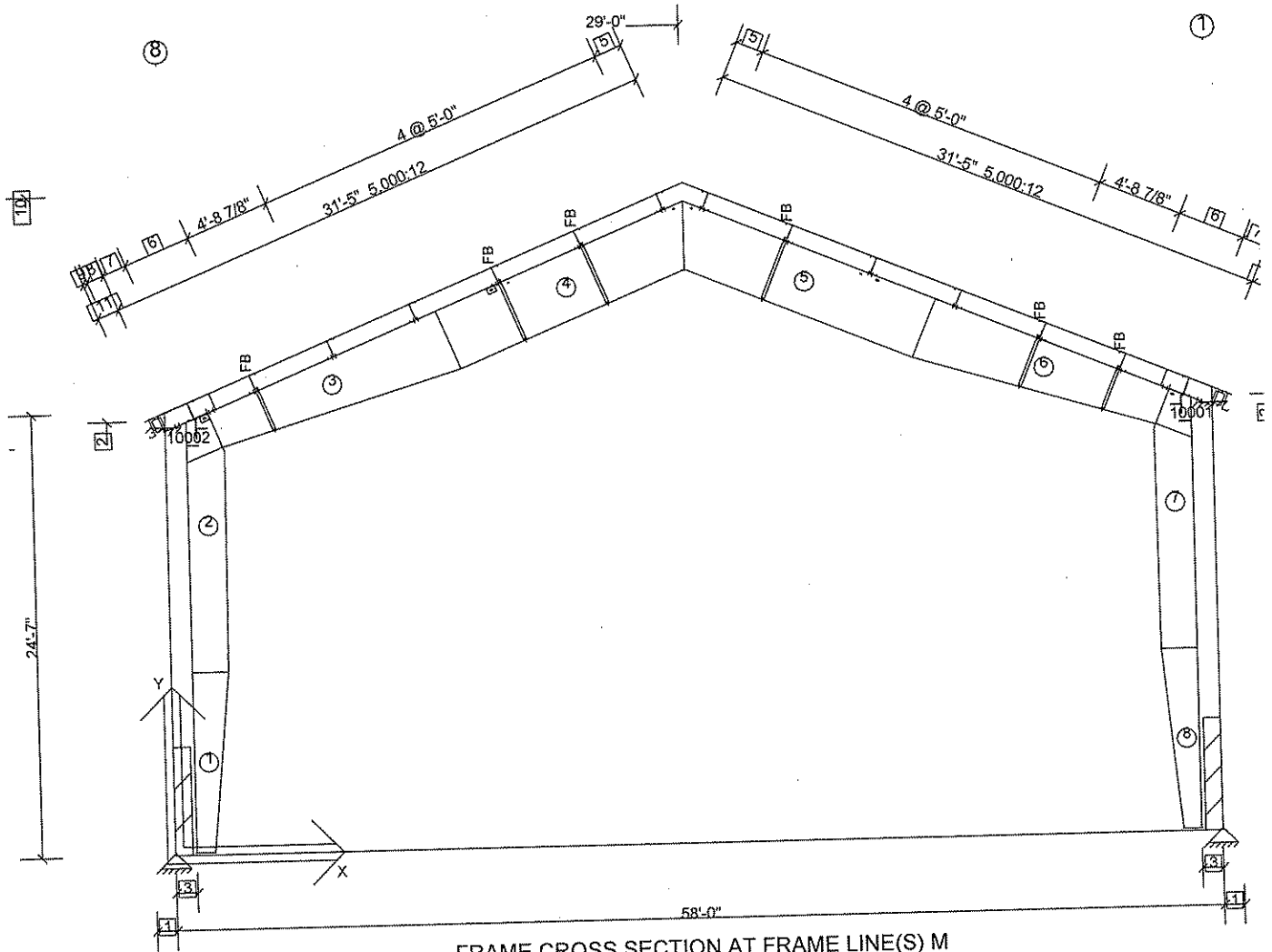
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Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 4, Frame at: 24/10/0

Frame Cross Section: M



Dimension Key

- 1 1'-1 1/2"
- 2 24'-1 3/8"
- 3 1'-2"
- 4 1'-10"
- 5 1'-6 13/16"
- 6 3'-9 3/16"
- 7 1'-4 3/16"
- 8 11 5/8"
- 9 3"
- 10 36'-8" Ridge Ht.
- 11 1'-2 5/8" 5.000:12

Frame Clearances

- Horiz. Clearance between members 1(CX101) and 7(CX102): 51'-6 15/16"
- Horiz. Clearance between members 1(CX101) and 8(CX102): 51'-8"
- Horiz. Clearance between members 2(CX101) and 7(CX102): 51'-5 7/8"



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Horiz. Clearance between members 2(CX101) and 8(CX102): 51'-6 15/16"
Vert. Clearance at member 2(CX101): 22'-4 3/4"
Vert. Clearance at member 7(CX102): 22'-4 3/4"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
24/10/0	23/4/8	Rigid Frame	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L >	D + FD + CG + L >
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S >	D + FD + CG + S >
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1 >	D + FD + CG + W1 >
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2 >	D + FD + CG + W2 >
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1 >	D + FD + CU + W1 >
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2 >	D + FD + CU + W2 >
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
17	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
18	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 >	D + FD + CG + L + W1 >
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 >	D + FD + CG + L + W2 >
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 >	D + FD + CG + S + W1 >
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 >	D + FD + CG + S + W2 >
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L > + 0.750 FL	D + FD + CG + L > + FL
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 > + 0.750 FL	D + FD + CG + L + W1 > + FL
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D + FD + CG + L + <W1 + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 > + 0.750 FL	D + FD + CG + L + W2 > + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D + FD + CG + L + <W2 + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 > + 0.750 FL	D + FD + CG + S + W1 > + FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D + FD + CG + S + <W1 + FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 > + 0.750 FL	D + FD + CG + S + W2 > + FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D + FD + CG + S + <W2 + FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E > + 0.700 EG+	D + FD + CG + E > + EG+
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
41	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E > + 0.700 EG-	D + FD + CU + E > + EG-
42	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+	D + FD + CG + E > + EG+
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+ + 0.750 FL	D + FD + CG + E > + EG+ + FL
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D + FD + CG + <E + EG+ + FL
47	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB1 >	D + FD + CG + WP + WB1 >
48	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB1 >	D + FD + CU + WP + WB1 >
49	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1 >	D + FD + CG + L + WP + WB1 >
50	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1 >	D + FD + CG + S + WP + WB1 >
51	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB1 >	D + FD + CG + L + WP + FL + WB1 >
52	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB1 >	D + FD + CG + S + WP + FL + WB1 >
53	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB1	D + FD + CG + WP + <WB1
54	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB1	D + FD + CU + WP + <WB1
55	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + FD + CG + L + WP + <WB1
56	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + FD + CG + S + WP + <WB1
57	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB1	D + FD + CG + L + WP + FL + <WB1
58	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB1	D + FD + CG + S + WP + FL + <WB1
59	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB2 >	D + FD + CG + WP + WB2 >



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60	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB2>	D + FD + CU + WP + WB2>
61	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D+FD+CG+L+WP+WB2>
62	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D+FD+CG+S+WP+WB2>
63	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+L+WP+FL+WB2>
64	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+S+WP+FL+WB2>
65	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB2	D + FD + CG + WP + <WB2
66	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB2	D + FD + CU + WP + <WB2
67	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D+FD+CG+L+WP+<WB2
68	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D+FD+CG+S+WP+<WB2
69	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+L+WP+FL+<WB2
70	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+S+WP+FL+<WB2
71	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 EG+	D + FD + CG + EB> + EG+
72	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 EB> + 0.700 EG-	D + FD + CU + EB> + EG-
73	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+	D + FD + CG + EB> + EG+
74	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+ + 0.750 FL	D+FD+CG+EB>+EG++FL
75	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <EB + 0.700 EG+	D + FD + CG + <EB + EG+
76	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <EB + 0.700 EG-	D + FD + CU + <EB + EG-
77	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+	D + FD + CG + <EB + EG+
78	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+ + 0.750 FL	D+FD+CG+<EB+EG++FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
10002	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
1	10.00	0.5000	0.1875	12.00	24.00	10.00	463.5	55.00	55.00	BP	SS	3P
2	10.00	0.5000	0.1875	24.00	24.00	13.91	716.2	55.00	55.00	SS	KN	3P
3	6.00	0.5000	0.1875	25.00	42.00	15.15	595.3	55.00	55.00	KN	SS	3P
4	6.00	0.3125	0.1875	42.00	42.00	15.00	587.1	55.00	55.00	SS	SP	3P
5	6.00	0.3125	0.1875	42.00	42.00	15.00	587.1	55.00	55.00	SP	SS	3P
6	6.00	0.5000	0.1875	42.00	25.00	15.15	595.3	55.00	55.00	SS	KN	3P
7	10.00	0.5000	0.1875	24.00	24.00	13.90	716.1	55.00	55.00	SS	KN	3P
8	10.00	0.5000	0.1875	12.00	24.00	10.00	463.6	55.00	55.00	BP	SS	3P

Total Frame Weight = 4792.8 (p) (Includes all plates)
 Frame Pricing Weight = 5028.0 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
8	58/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	58/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000
10002	0/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: M

Type	Exterior Column	Exterior Column			
X-Loc	0/0/0	58/0/0			
Grid1 - Grid2	M-8	M-1			
Base Plate W x L (in.)	11 x 13	11 x 13			
Base Plate Thickness (in.)	0.375	0.375			
Anchor Rod Qty/Diam. (in.)	4 - 0.750	4 - 0.750			
Column Base Elev.	100'-1 1/2"	100'-1 1/2"			
Load Type	Hx	Vy	Hx	Vy	
D	0.8	4.8	-0.8	4.9	-
FD	0.1	6.4	-0.1	6.4	-
CG	0.8	3.5	-0.8	3.5	-
L>	3.1	14.1	-3.1	14.1	-
<L	3.1	14.1	-3.1	14.1	-
S>	0.4	1.6	-0.4	1.6	-
<S	0.4	1.6	-0.4	1.6	-
S	0.4	1.6	-0.4	1.6	-
SD	-	-	-	-	-
SS	-	-	-	-	-
US1*	0.4	2.0	-0.4	1.2	-
*US1	0.4	1.2	-0.4	2.0	-
WI>	6.7	-7.4	10.4	-14.7	-
<WI	-10.4	-14.7	-6.7	-7.4	-



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Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
2	1	S9	11.67	24.043	128.23	N/A	N/A	0.5000	4.500	Both	W-OS-0.1875
2	***	MUST	Use	Alternate	Web	Thick.=	0.2500	*	*	*	*
7	1	S9	11.66	24.043	128.23	N/A	N/A	0.5000	4.500	Both	W-OS-0.1875
7	***	MUST	Use	Alternate	Web	Thick.=	0.2500	*	*	*	*

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc. (in.)	Pitches 1st/2nd (in.)	Configuration ID	Desc. (in.)	Pitches 1st/2nd (in.)
2	2	KN(Face)	0.500	10.00	30.50	0.750	A325X/ST	3.00	32	Extended	3.50/2.00	32	Extended	3.50/2.00
3	1	KN(Face)	0.500	6.00	30.50	0.750	A325X/ST	3.00	32	Extended	3.50/2.00	32	Extended	3.50/2.00
4	2	SP	0.375	6.00	46.50	0.750	A325X/ST	3.00	11	Flush	0.00	12	Flush	2.00
5	1	SP	0.375	6.00	46.50	0.750	A325X/ST	3.00	11	Flush	0.00	12	Flush	2.00
6	2	KN(Face)	0.500	6.00	30.50	0.750	A325X/ST	3.00	32	Extended	3.50/2.00	32	Extended	3.50/2.00
7	2	KN(Face)	0.500	10.00	30.50	0.750	A325X/ST	3.00	32	Extended	3.50/2.00	32	Extended	3.50/2.00

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In				Available Strength - In		
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
2	2	32	-10.3	12.8	1786.7	Thin plate	212.1	1753.5	14	6.9	9.6	1671.7	Thin plate	212.1	1753.5
3	1	32	-10.3	12.8	1786.7	Thin plate	212.1	1753.5	14	6.9	9.6	1671.7	Thin plate	212.1	1753.5
4	2	14	8.1	2.4	296.3	Thin plate	106.0	903.5	1	-4.6	1.4	1241.2	Thin plate	159.0	1123.0
5	1	14	8.1	2.4	296.3	Thin plate	106.0	903.5	1	-4.6	1.4	1241.2	Thin plate	159.0	1123.0
6	2	33	-10.3	12.8	1785.5	Thin plate	212.1	1753.5	13	6.9	9.5	1673.3	Thin plate	212.1	1753.5
7	2	33	-10.3	12.8	1785.5	Thin plate	212.1	1753.5	13	6.9	9.5	1673.3	Thin plate	212.1	1753.5

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
3	2/11/6	26/3/10	FB4020	
4	3/10/0	11/6/13	FB5000	
4	8/10/0	6/6/13	FB5000	
5	6/2/0	6/6/13	FB5000	
6	6/2/0	21/6/13	FB4060	
6	10/10/14	26/3/10	FB4020	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.48	11.50	1	1	0.4	0.8	-20.7	0.0	94.2	17.5	204.7	39.0	0.10	0.05
10002	2.48	11.50	1	1	0.4	-0.8	-20.7	0.0	88.2	17.5	204.7	39.0	0.10	0.05
1	10.01	24.00	16	14	2.0	6.4	1023.0	0.0	472.3	23.6	3275.1	749.7	0.31	0.27
2	12.48	24.00	32	32	-18.4	-7.5	-1791.5	0.0	349.3	23.6	4138.8	749.7	0.46	0.32
3	3.59	28.62	9	2	1.1	14.1	-1120.0	0.0	347.5	19.5	1577.1	305.0	0.71	0.72
4	0.00	42.00	13	21	4.0	7.2	-1020.1	0.0	379.8	12.7	1339.1	183.2	0.77	0.56
5	14.27	42.00	14	22	4.0	-7.2	-1018.3	0.0	379.8	12.7	1359.5	183.2	0.75	0.56
6	13.87	25.00	33	1	-10.3	-14.1	-1785.5	0.0	240.1	22.6	2971.5	304.0	0.62	0.72
7	12.48	24.00	13	33	11.8	7.5	1686.3	0.0	457.2	23.6	3381.1	749.7	0.51	0.32
8	10.01	24.00	15	13	2.0	-6.4	1022.9	0.0	472.3	23.6	3141.5	749.7	0.33	0.27

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
10002	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	10.01	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.95	1.28	1.00	1.02	0.94	1.00
2	12.48	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.95	1.65	1.00	1.02	0.94	0.82



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3	3.59	337.72	35.4	35.4	11.18	11.18	1515.39	18.02	105.90	6.01	120.12	9.24	0.56	3561.18	1.01	1.00	1.00	1.00	1.00
4	0.00	337.72	177.0	177.0	11.51	11.51	2735.97	11.27	130.28	3.76	158.41	5.99	0.21	4897.57	1.01	1.00	1.00	0.96	1.00
5	14.27	337.72	180.1	180.1	11.51	11.51	2735.97	11.27	130.28	3.76	158.41	5.99	0.21	4897.57	1.06	1.00	1.00	0.96	1.00
6	13.87	337.72	35.4	35.4	10.50	10.50	1116.51	18.01	89.32	6.00	100.50	9.21	0.55	2703.12	1.11	1.00	1.01	1.00	0.74
7	12.48	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.95	1.29	1.00	1.02	0.94	1.00
8	10.01	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.95	1.23	1.00	1.02	0.94	1.00



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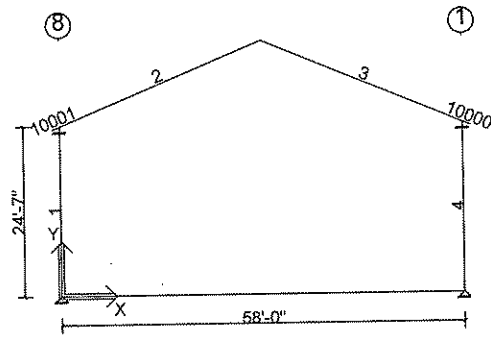
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User Defined Frame Point Loads for Cross Section: M

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
4	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System Derived	1.000	0	240	0.700 WB1>	WB1>
13	System Derived	1.000	0	240	0.700 <WB1	<WB1
14	System Derived	1.000	0	240	0.700 WB2>	WB2>
15	System Derived	1.000	0	240	0.700 <WB2	<WB2
16	System	1.000	200	0	0.700 W1>	W1>
17	System	1.000	200	0	0.700 <W1	<W1
18	System	1.000	200	0	0.700 W2>	W2>
19	System	1.000	200	0	0.700 <W2	<W2
20	System	1.000	200	0	0.700 WP	WP
21	System Derived	1.000	200	0	0.700 WB1>	WB1>
22	System Derived	1.000	200	0	0.700 <WB1	<WB1
23	System Derived	1.000	200	0	0.700 WB2>	WB2>
24	System Derived	1.000	200	0	0.700 <WB2	<WB2
25	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
26	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
27	System Derived	1.000	50	0	1.0 EB>	EB>
28	System Derived	1.000	50	0	1.0 <EB	<EB

Controlling Frame Deflection Ratios for Cross Section: M

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/218)	-1.274	7	2	16	W1>



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Max. Vertical Deflection for Span 1	(L/1517)	-0.424	4	2	1	L
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* Negative horizontal deflection is left

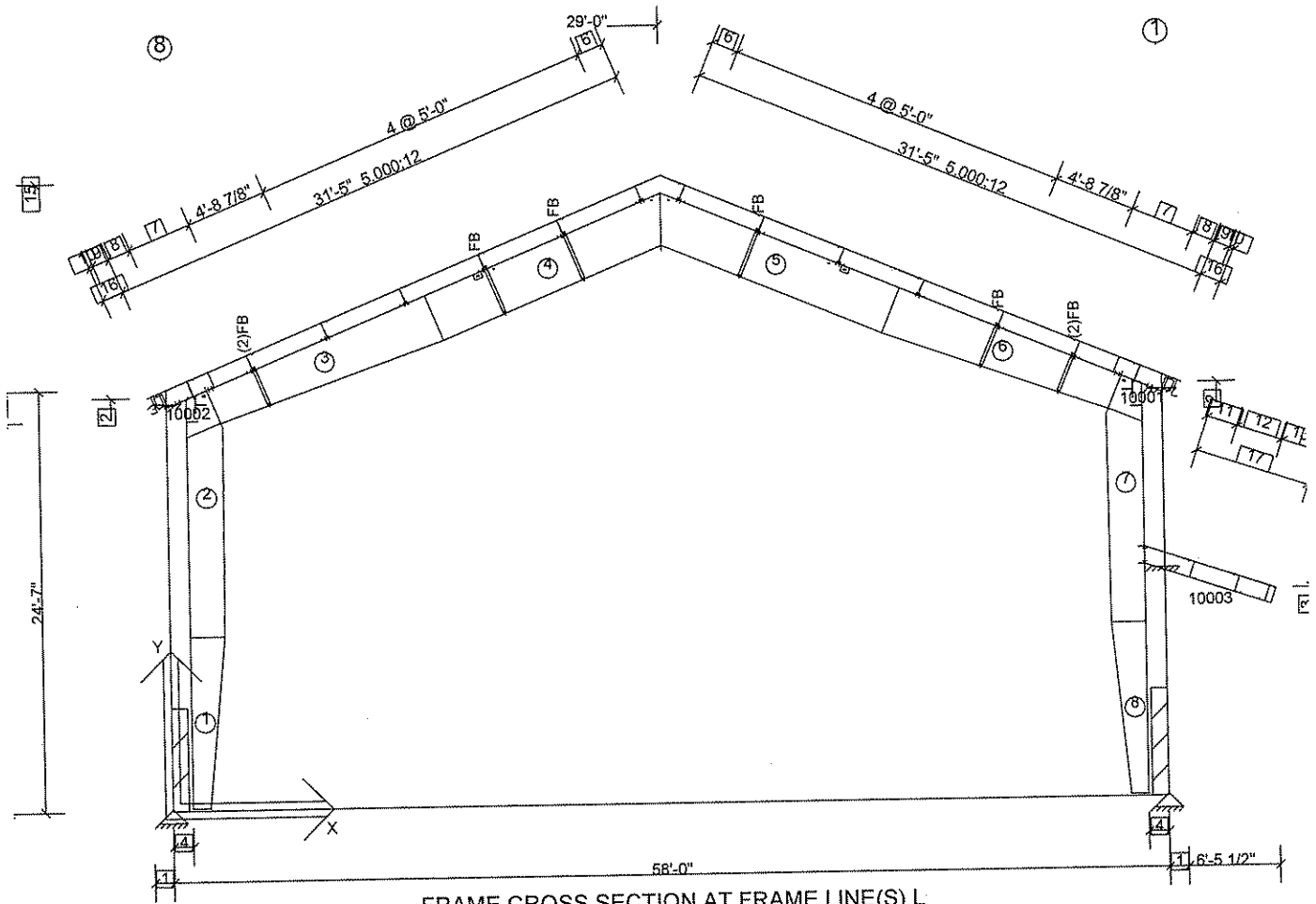
* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



Wall: 4, Frame at: 48/4/0

Frame Cross Section: L



FRAME CROSS SECTION AT FRAME LINE(S) L

Dimension Key

- 1 1'-1 1/2"
- 2 24'-1 3/8"
- 3 12'-0"
- 4 1'-2"
- 5 1'-10"
- 6 1'-6 13/16"
- 7 3'-9 3/16"
- 8 1'-4 3/16"
- 9 11 5/8"
- 10 3"
- 11 1'-9 13/16"
- 12 2'-9 3/16"
- 13 1'-10 3/16"
- 14 4 1/2"
- 15 36'-8" Ridge Ht.
- 16 1'-2 5/8" 5.000:12
- 17 6'-9 11/16" 4.000:12



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Frame Clearances

Horiz. Clearance between members 1(CX103) and 7(CX104): 51'-6 7/8"
Horiz. Clearance between members 1(CX103) and 8(CX104): 51'-8"
Horiz. Clearance between members 2(CX103) and 7(CX104): 51'-5 13/16"
Horiz. Clearance between members 2(CX103) and 8(CX104): 51'-6 7/8"
Vert. Clearance at member 2(CX103): 22'-4 5/8"
Vert. Clearance at member 7(CX104): 22'-4 5/8"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
48/4/0	23/8/0	Rigid Frame	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
17	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
18	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D+FD+CG+L+W1>+FL
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D+FD+CG+L+<W1+FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D+FD+CG+L+W2>+FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D+FD+CG+L+<W2+FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D+FD+CG+S+W1>+FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D+FD+CG+S+<W1+FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D+FD+CG+S+W2>+FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D+FD+CG+S+<W2+FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
41	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
42	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D+FD+CG+E>+EG++FL
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D+FD+CG+<E+EG++FL
47	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB1>	D + FD + CG + WP + WB1>
48	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB1>	D + FD + CU + WP + WB1>
49	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D+FD+CG+L+WP+WB1>
50	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D+FD+CG+S+WP+WB1>
51	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+L+WP+FL+WB1>
52	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB1>	D+FD+CG+S+WP+FL+WB1>
53	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB1	D + FD + CG + WP + <WB1
54	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB1	D + FD + CU + WP + <WB1
55	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D+FD+CG+L+WP+<WB1
56	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D+FD+CG+S+WP+<WB1
57	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+L+WP+FL+<WB1
58	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB1	D+FD+CG+S+WP+FL+<WB1
59	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 WB2>	D + FD + CG + WP + WB2>



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60	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 WB2>	D + FD + CU + WP + WB2>
61	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D+FD+CG+L+WP+WB2>
62	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D+FD+CG+S+WP+WB2>
63	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+L+WP+FL+WB2>
64	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 WB2>	D+FD+CG+S+WP+FL+WB2>
65	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP + 1.0 <WB2	D + FD + CG + WP + <WB2
66	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP + 1.0 <WB2	D + FD + CU + WP + <WB2
67	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D+FD+CG+L+WP+<WB2
68	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D+FD+CG+S+WP+<WB2
69	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+L+WP+FL+<WB2
70	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL + 0.750 <WB2	D+FD+CG+S+WP+FL+<WB2
71	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 EB> + 0.700 EG+	D + FD + CG + EB> + EG+
72	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 EB> + 0.700 EG-	D + FD + CU + EB> + EG-
73	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+	D + FD + CG + EB> + EG+
74	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 EB> + 0.525 EG+ + 0.750 FL	D+FD+CG+EB>+EG++FL
75	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <EB + 0.700 EG+	D + FD + CG + <EB + EG+
76	System Derived	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <EB + 0.700 EG-	D + FD + CU + <EB + EG-
77	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+	D + FD + CG + <EB + EG+
78	System Derived	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <EB + 0.525 EG+ + 0.750 FL	D+FD+CG+<EB+EG++FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Fig Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
10003	5.00	0.1345	0.1345	11.50	11.50	8.04	86.8	55.00	55.00	SS	SS	3P
10002	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
1	10.00	0.5000	0.1875	12.00	24.00	10.00	463.5	55.00	55.00	BP	SS	3P
2	10.00	0.6250	0.1875	24.00	24.00	13.91	841.0	55.00	55.00	SS	KN	3P
3	6.00	0.5000	0.1875	25.00	34.00	15.15	565.8	55.00	55.00	KN	SS	3P
4	6.00	0.3125	0.1644	34.00	34.00	15.00	477.2	55.00	55.00	SS	SP	3P
5	6.00	0.3125	0.1644	34.00	34.00	15.00	477.2	55.00	55.00	SP	SS	3P
6	6.00	0.5000	0.1875	34.00	25.00	15.15	565.8	55.00	55.00	SS	KN	3P
7	10.00	0.6250	0.1875	24.00	24.00	13.90	840.9	55.00	55.00	SS	KN	3P
8	10.00	0.5000	0.1875	12.00	24.00	10.00	463.6	55.00	55.00	BP	SS	3P

Total Frame Weight = 4850.4 (p) (Includes all plates)
 Frame Pricing Weight = 5089.9 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
8	58/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	58/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000
10003	58/0/0	14/1/13	Yes	Yes	Yes	0/0/0	0/0/0	0.0000
10002	0/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: L

Type	X-Loc	Exterior Column	Exterior Column					
	Grid1 - Grid2	0/0/0	58/0/0					
	Base Plate W x L (in.)	L-8	L-1					
	Base Plate Thickness (in.)	11 x 13	11 x 13					
	Anchor Rod Qty/Diam. (in.)	0.375	0.375					
	Column Base Elev.	4 - 0.750	4 - 0.750					
		100'-1 1/2"	100'-1 1/2"					
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	0.9	4.8	-0.9	5.7	-	-	-
FD	Frm	0.1	6.4	-0.1	6.4	-	-	-
CG	Frm	1.4	4.4	-1.4	8.2	-	-	-
L>	Frm	3.5	14.1	-3.5	16.4	-	-	-
<L	Frm	3.5	14.1	-3.5	16.4	-	-	-
S>	Frm	0.4	1.6	-0.4	2.0	-	-	-
<S	Frm	0.4	1.6	-0.4	2.0	-	-	-
S	Frm	0.4	1.6	-0.4	2.0	-	-	-
SD	Frm	-0.1	-0.1	0.1	1.5	-	-	-
SS	Frm	-	-	-	0.1	-	-	-
US1*	Frm	0.5	2.0	-0.5	1.3	-	-	-
*US1	Frm	0.5	1.2	-0.5	2.0	-	-	-



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W1>	Frm	6.5	-7.4	9.7	-18.5	-	-	-	-
<W1	Frm	-10.9	-14.9	-6.8	-8.6	-	-	-	-
W2>	Frm	5.2	-1.0	10.9	-12.1	-	-	-	-
<W2	Frm	-12.1	-8.5	-5.5	-2.2	-	-	-	-
CU	Frm	-	-	-	-	-	-	-	-
FL	Frm	0.2	12.7	-0.2	12.7	-	-	-	-
L	Frm	3.5	14.1	-3.5	16.4	-	-	-	-
E>	Frm	1.6	0.9	1.7	-1.0	-	-	-	-
EG+	Frm	0.1	0.4	-0.1	0.5	-	-	-	-
<E	Frm	-1.6	-0.9	-1.7	1.0	-	-	-	-
EG-	Frm	-0.1	-0.4	0.1	-0.5	-	-	-	-
WP	Frm	3.5	-10.9	-4.1	-12.7	-	-	-	-
WB1>	Brc	-	-	-	-	-	-	-	-
<WB1	Brc	-	-	-	-	-	-	-	-
WB2>	Brc	-	-	-	-	-	-	-	-
<WB2	Brc	-	-	-	-	-	-	-	-
EB>	Brc	-	-	-	-	-	-	-	-
<EB	Brc	-	-	-	-	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	L-8	11.5	16	10.1	30	-	-	-	-	8.2	14	35.6	27	-	-	-	-
58/0/0	L-1	10.3	31	10.4	15	-	-	-	-	11.2	13	42.2	27	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	10.8	10.5
FD	0.0	0.0	12.8	12.8
CG	0.0	0.0	12.6	12.6
L>	0.0	0.0	30.5	30.5
<L	0.0	0.0	30.5	30.5
S>	0.0	0.0	3.7	3.7
<S	0.0	0.0	3.7	3.7
S	0.0	0.0	3.7	3.7
SD	0.0	0.0	1.4	1.4
SS	0.0	0.0	0.1	0.1
US1*	0.0	0.0	3.3	3.3
*US1	0.0	0.0	3.2	3.2
W1>	16.1	16.1	25.9	25.9
<W1	17.7	17.7	23.4	23.4
W2>	16.1	16.1	13.1	13.1
<W2	17.7	17.7	10.6	10.6
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	25.4	25.4
L	0.0	0.0	30.5	30.5
E>	3.3	3.4	0.0	0.1
EG+	0.0	0.0	0.8	0.8
<E	3.3	3.4	0.0	0.1
EG-	0.0	0.0	0.8	0.8
WP	0.6	0.6	23.6	23.6
WB1>	0.0	0.0	0.0	0.0
<WB1	0.0	0.0	0.0	0.0
WB2>	0.0	0.0	0.0	0.0
<WB2	0.0	0.0	0.0	0.0
EB>	0.0	0.0	0.0	0.0
<EB	0.0	0.0	0.0	0.0

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web



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0/0/0	L-8	1	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875
58/0/0	L-1	8	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
2	1	S9	11.67	23.849	127.19	N/A	N/A	0.5000	4.500	Both	W-OS-0.1875
2	***	MUST Use		Alternate	Web	Thick.=	0.3125	*	*	*	*
7	1	S9	11.67	23.849	127.19	N/A	N/A	0.5000	4.500	Both	W-OS-0.1875
7	***	MUST Use		Alternate	Web	Thick.=	0.3125	*	*	*	*
7	3	S5	4.39	23.164	123.54	N/A	N/A	0.1875	4.750	Both	W-OS-0.1875
7	4	S5	3.39	23.070	123.04	N/A	N/A	0.1875	4.750	Both	W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1000	2	CIP	0.375	6.00	13.12	0.500	A325N/ST	3.00	11	Flush	1.50	11	Flush	1.50
3	2	KN(Face)	0.625	10.00	30.75	0.750	A325X/ST	3.00	31	Extended	3.75	31	Extended	3.75
2	1	KN(Face)	0.625	6.00	30.75	0.750	A325X/ST	3.00	31	Extended	3.75	31	Extended	3.75
4	2	SP	0.375	6.00	40.83	0.750	A325X/ST	3.00	11	Flush	0.00	31	Extended	3.94
5	1	SP	0.375	6.00	40.83	0.750	A325X/ST	3.00	11	Flush	0.00	31	Extended	3.94
6	2	KN(Face)	0.625	6.00	30.75	0.750	A325X/ST	3.00	31	Extended	3.75	31	Extended	3.75
7	2	KN(Face)	0.625	10.00	30.75	0.750	A325X/ST	3.00	31	Extended	3.75	31	Extended	3.75

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1000	2	1	1.0	3.1	175.6	Thick plate	37.7	186.6	13	0.2	3.3	182.7	Thick plate	37.7	186.6
3	2	32	-11.6	12.9	2015.1	Thick plate	159.0	1948.3	14	7.5	9.5	1775.3	Thick plate	159.0	1948.3
2	1	32	-11.6	12.9	2015.1	Thick plate	159.0	1948.3	14	7.5	9.5	1775.3	Thick plate	159.0	1948.3
4	2	14	8.5	2.2	178.1	Thin plate	106.0	722.3	49	3.7	2.1	892.2	Thin plate	159.0	1199.1
5	1	14	8.5	2.2	178.1	Thin plate	106.0	722.3	49	3.7	2.1	892.2	Thin plate	159.0	1199.1
6	2	33	-12.9	16.5	2128.6	Thick plate	159.0	1953.2	13	7.5	9.5	1772.4	Thick plate	159.0	1953.2
7	2	33	-12.9	16.5	2128.6	Thick plate	159.0	1953.2	13	7.5	9.5	1772.4	Thick plate	159.0	1953.2

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
3	2/11/6	26/3/10	(2)FB3044	
4	3/10/0	11/6/13	FB4060	
4	8/10/0	6/6/13	FB4060	
5	6/2/0	6/6/13	FB4060	
6	6/2/0	21/6/13	FB4030	
6	10/10/14	26/3/10	(2)FB3044	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.48	11.50	1	1	0.4	0.9	-21.0	0.0	94.2	17.5	204.7	39.0	0.10	0.05
10003	8.04	11.50	13	13	0.2	-3.3	182.7	0.0	94.2	17.5	204.7	39.0	0.89	0.19
10002	2.48	11.50	1	1	0.4	-0.9	-21.0	0.0	88.2	17.5	204.7	39.0	0.10	0.05
1	10.01	24.00	16	21	2.2	-7.0	1064.5	0.0	472.3	23.6	3309.5	749.7	0.32	0.30
2	12.48	24.00	32	32	-19.2	-8.4	-2015.8	0.0	445.7	24.1	5292.5	1037.8	0.40	0.35
3	3.59	26.92	9	2	0.6	15.9	-1210.0	0.0	336.3	20.8	1522.9	304.5	0.80	0.71
4	0.00	34.00	13	32	4.4	7.6	-925.4	0.0	304.8	10.7	1087.8	179.2	0.86	0.71
5	14.41	34.00	14	33	4.3	-7.6	-934.4	0.0	304.8	10.7	1118.6	179.2	0.84	0.71
6	13.86	25.00	33	1	-12.9	-19.6	-2128.6	0.0	240.0	22.6	2971.5	304.0	0.74	0.87
7	12.48	24.00	33	33	-23.0	8.7	-2157.6	0.0	445.7	24.1	5292.5	1037.8	0.43	0.36
8	10.01	24.00	33	22	-41.2	7.0	-891.2	0.0	169.5	23.6	3426.2	749.7	0.31	0.30



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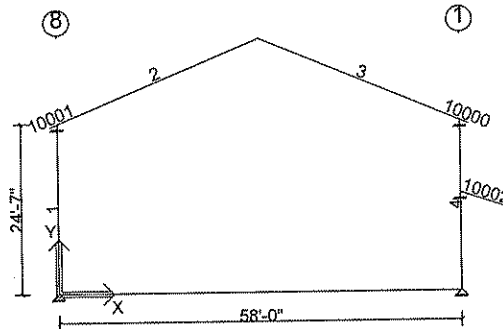
Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	lxx in.4	lyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
10003	8.04	96.45	96.4	96.4	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
10002	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	10.01	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.95	1.29	1.00	1.02	0.94	1.00
2	12.48	269.94	269.9	269.9	16.77	16.77	1891.85	104.18	157.65	20.84	170.35	31.45	1.68	14230.63	1.65	1.00	1.02	1.00	0.84
3	3.59	339.23	35.4	35.4	10.86	10.86	1318.83	18.01	98.00	6.00	110.73	9.23	0.56	3142.66	1.01	1.00	1.00	1.00	1.00
4	0.00	339.23	176.9	176.9	9.24	9.24	1573.26	11.26	92.54	3.75	108.94	5.85	0.17	3195.26	1.01	1.00	1.00	0.96	1.00
5	14.41	339.23	180.0	180.0	9.24	9.24	1573.26	11.26	92.54	3.75	108.94	5.85	0.17	3195.27	1.08	1.00	1.00	0.96	1.00
6	13.86	339.23	35.4	35.4	10.50	10.50	1116.51	18.01	89.32	6.00	100.50	9.21	0.55	2703.12	1.12	1.00	1.01	1.00	0.74
7	12.48	269.94	269.9	269.9	16.77	16.77	1891.85	104.18	157.65	20.84	170.35	31.45	1.68	14230.63	1.34	1.00	1.02	1.00	0.84
8	10.01	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.95	1.39	1.00	1.02	0.94	0.86

User Defined Frame Point Loads for Cross Section: L

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
3	k	CG	Folding Partition (open)->Resolved From Plane	-2.60	24/0/0	NA	NA	N	DOWN	1.000	OF
4	k	FL	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-6.40	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL

User Defined Frame Line Loads for Cross Section: L

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
3	plf	CG	Folding Partition->Resolved From Plane	-104.06	2/0/0	-104.06	27/0/0	N	DOWN	1.000	OF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System Derived	1.000	0	240	0.700 WB1>	WB1>
13	System Derived	1.000	0	240	0.700 <WB1	<WB1
14	System Derived	1.000	0	240	0.700 WB2>	WB2>
15	System Derived	1.000	0	240	0.700 <WB2	<WB2
16	System	1.000	200	0	0.700 W1>	W1>
17	System	1.000	200	0	0.700 <W1	<W1
18	System	1.000	200	0	0.700 W2>	W2>
19	System	1.000	200	0	0.700 <W2	<W2
20	System	1.000	200	0	0.700 WP	WP
21	System Derived	1.000	200	0	0.700 WB1>	WB1>
22	System Derived	1.000	200	0	0.700 <WB1	<WB1
23	System Derived	1.000	200	0	0.700 WB2>	WB2>
24	System Derived	1.000	200	0	0.700 <WB2	<WB2
25	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
26	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
27	System Derived	1.000	50	0	1.0 EB>	EB>



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28	System Derived	1.000	50	0	1.0 <EB	<EB
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Controlling Frame Deflection Ratios for Cross Section: L

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/205)	1.353	2	2	17	<W1
Max. Vertical Deflection for Span 1	(L/1254)	-0.513	5	1	1	L

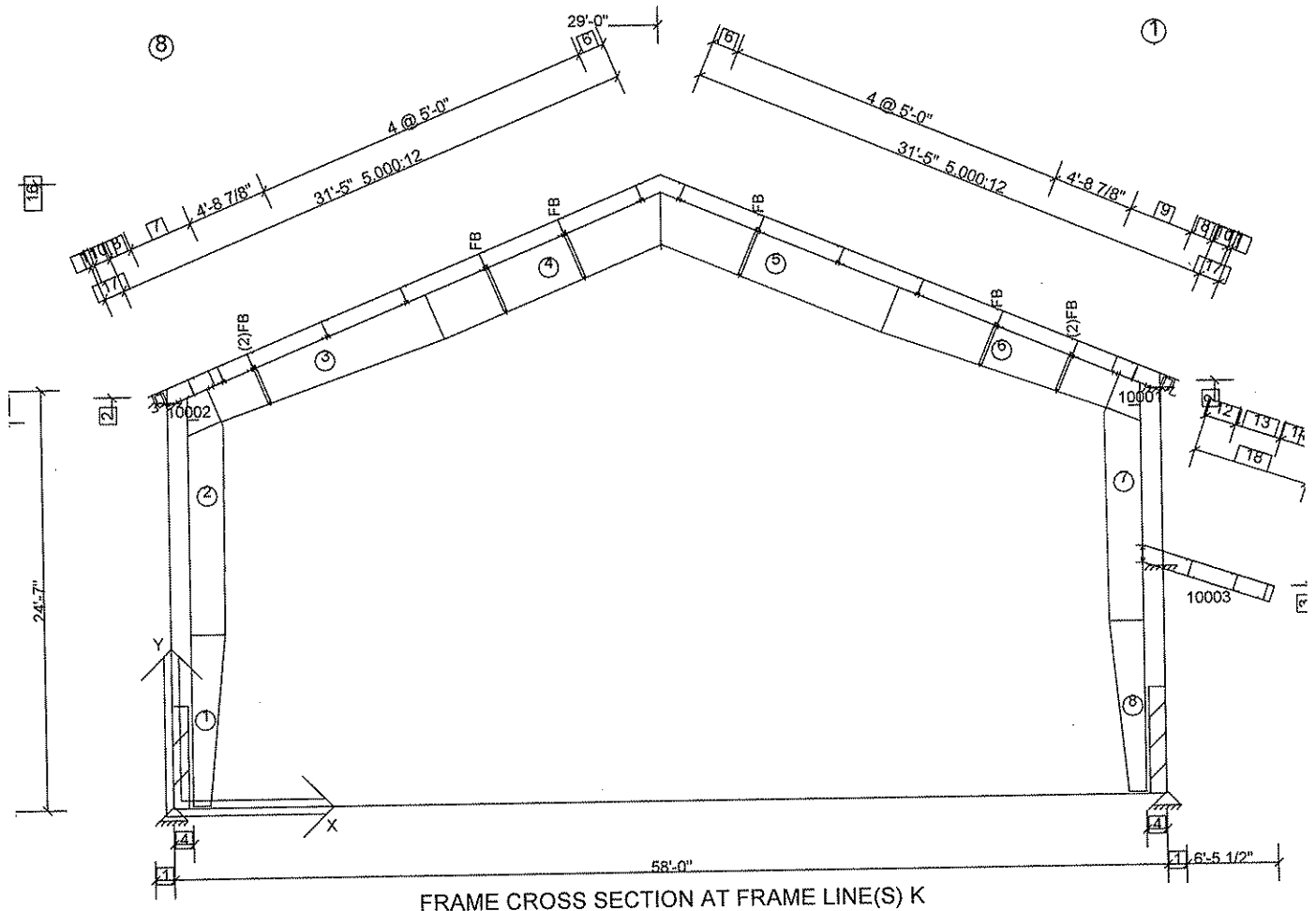
* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



Wall: 4. Frame at: 7/2/2/0
 Frame Cross Section: K



- Dimension Key**
- 1 1'-1 1/2"
 - 2 24'-1 3/8"
 - 3 12'-0"
 - 4 1'-2"
 - 5 1'-10"
 - 6 1'-6 13/16"
 - 7 2 @ 1'-10 9/16"
 - 8 1'-4 3/16"
 - 9 3'-9 3/16"
 - 10 11 5/8"
 - 11 3"
 - 12 1'-9 13/16"
 - 13 2'-9 3/16"
 - 14 1'-10 3/16"
 - 15 4 1/2"
 - 16 36'-8" Ridge Ht.
 - 17 1'-2 5/8" 5.000:12
 - 18 6'-9 11/16" 4.000:12



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Frame Clearances

Horiz. Clearance between members 1(CX105) and 7(CX106): 51'-6 7/8"
Horiz. Clearance between members 1(CX105) and 8(CX106): 51'-8"
Horiz. Clearance between members 2(CX105) and 7(CX106): 51'-5 13/16"
Horiz. Clearance between members 2(CX105) and 8(CX106): 51'-6 7/8"
Vert. Clearance at member 2(CX105): 22'-4 5/8"
Vert. Clearance at member 7(CX106): 22'-4 5/8"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
72/2/0	16/6/8	Rigid Frame	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D + FD + CG + L + W1> + FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D + FD + CG + L + <W1 + FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D + FD + CG + L + W2> + FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D + FD + CG + L + <W2 + FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D + FD + CG + L + WP + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D + FD + CG + S + W1> + FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D + FD + CG + S + <W1 + FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D + FD + CG + S + W2> + FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D + FD + CG + S + <W2 + FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D + FD + CG + S + WP + FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D + FD + CG + E> + EG+ + FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D + FD + CG + <E + EG+ + FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
10003	5.00	0.1875	0.1345	11.50	11.50	8.04	104.0	55.00	55.00	SS	SS	3P



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10002	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
1	10.00	0.5000	0.1875	12.00	24.00	10.00	463.5	55.00	55.00	BP	SS	3P
2	10.00	0.6250	0.1875	24.00	24.00	13.91	836.8	55.00	55.00	SS	KN	3P
3	6.00	0.5000	0.1875	25.00	34.00	15.15	563.2	55.00	55.00	KN	SS	3P
4	6.00	0.3125	0.1644	34.00	34.00	15.00	477.2	55.00	55.00	SS	SP	3P
5	6.00	0.3125	0.1644	34.00	34.00	15.00	477.2	55.00	55.00	SP	SS	3P
6	6.00	0.5000	0.1875	34.00	25.00	15.15	565.8	55.00	55.00	SS	KN	3P
7	10.00	0.6250	0.1875	24.00	24.00	13.90	840.9	55.00	55.00	SS	KN	3P
8	10.00	0.5000	0.1875	12.00	24.00	10.00	463.6	55.00	55.00	BP	SS	3P

Total Frame Weight = 4860.9 (p) (Includes all plates)
 Frame Pricing Weight = 5076.2 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
8	58/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	58/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000
10003	58/0/0	14/1/13	Yes	Yes	Yes	0/0/0	0/0/0	0.0000
10002	0/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: K

Type		Exterior Column		Exterior Column					
X-Loc		0/0/0		58/0/0					
Grid1 - Grid2		K-8		K-1					
Base Plate W x L (in.)		11 x 13		11 x 13					
Base Plate Thickness (in.)		0.375		0.375					
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750					
Column Base Elev.		100'-1 1/2"		100'-1 1/2"					
Load Type	Desc.	Hx	Vy	Hx	Vy				
D	Frm	0.8	4.9	-0.8	6.2	-	-	-	-
FD	Frm	0.2	12.7	-0.2	12.7	-	-	-	-
CG	Frm	0.9	3.6	-0.9	5.0	-	-	-	-
L>	Frm	3.4	14.0	-3.4	17.6	-	-	-	-
<L	Frm	3.4	14.0	-3.4	17.6	-	-	-	-
S>	Frm	0.4	1.6	-0.4	2.3	-	-	-	-
<S	Frm	0.4	1.6	-0.4	2.3	-	-	-	-
S	Frm	0.4	1.6	-0.4	2.3	-	-	-	-
SD	Frm	-0.2	-0.2	0.2	2.3	-	-	-	-
SS	Frm	-0.0	-0.0	0.0	0.2	-	-	-	-
US1*	Frm	0.5	2.0	-0.5	1.3	-	-	-	-
*US1	Frm	0.5	1.2	-0.5	2.0	-	-	-	-
W1>	Frm	6.5	-7.4	9.0	-20.4	-	-	-	-
<W1	Frm	-10.9	-14.8	-7.0	-9.1	-	-	-	-
W2>	Frm	5.2	-1.0	10.3	-14.0	-	-	-	-
<W2	Frm	-12.2	-8.4	-5.7	-2.7	-	-	-	-
WP	Frm	3.6	-11.0	-4.1	-12.8	-	-	-	-
CU	Frm	-	-	-	-	-	-	-	-
FL	Frm	0.5	25.4	-0.5	25.4	-	-	-	-
L	Frm	3.4	14.0	-3.4	17.6	-	-	-	-
E>	Frm	1.8	1.0	1.9	-1.0	-	-	-	-
EG+	Frm	0.0	0.5	-0.0	0.6	-	-	-	-
<E	Frm	-1.8	-1.0	-1.9	1.0	-	-	-	-
EG-	Frm	-0.0	-0.5	0.0	-0.6	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	K-8	11.5	17	9.8	34	-	-	-	-	4.3	15	50.7	31	-	-	-	-
58/0/0	K-1	10.2	35	9.6	16	-	-	-	-	9.1	14	56.1	31	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load	Reaction	Load	Reaction



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	(k)	(k)	(k)	(k)
D	0.0	0.0	11.4	11.0
FD	0.0	0.0	25.4	25.4
CG	0.0	0.0	8.6	8.6
L>	0.0	0.0	31.6	31.6
<L	0.0	0.0	31.6	31.6
S>	0.0	0.0	3.9	3.9
<S	0.0	0.0	3.9	3.9
S	0.0	0.0	3.9	3.9
SD	0.0	0.0	2.1	2.1
SS	0.0	0.0	0.1	0.1
US1*	0.0	0.0	3.2	3.2
*US1	0.0	0.0	3.2	3.2
W1>	15.5	15.5	27.8	27.8
<W1	17.9	17.9	24.0	24.0
W2>	15.5	15.5	15.0	15.0
<W2	17.9	17.9	11.1	11.1
WP	0.5	0.5	23.8	23.8
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	50.8	50.8
L	0.0	0.0	31.6	31.6
E>	3.7	3.7	0.0	0.0
EG+	0.0	0.0	1.1	1.1
<E	3.7	3.7	0.0	0.0
EG-	0.0	0.0	1.1	1.1

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	K-8	1	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875
58/0/0	K-1	8	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
2	1	S9	11.67	23.849	127.19	N/A	N/A	0.5000	4.500	Both	W-OS-0.1875
2	***	MUST Use		Alternate	Web	Thick.=	0.2500	*	*	*	*
7	1	S9	11.67	23.849	127.19	N/A	N/A	0.5000	4.500	Both	W-OS-0.1875
7	***	MUST Use		Alternate	Web	Thick.=	0.3125	*	*	*	*
7	3	S5	4.39	23.164	123.54	N/A	N/A	0.1875	4.750	Both	W-OS-0.1875
7	4	S5	3.40	23.070	123.04	N/A	N/A	0.1875	4.750	Both	W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1000	2	CIP	0.500	6.00	13.12	0.500	A325N/ST	3.00	12	Flush	1.50	12	Flush	1.50
3	2	KN(Face)	0.625	10.00	28.38	0.750	A325X/ST	3.00	13	Flush	2.00/2.00	31	Extended	3.75/2.00
3	1	KN(Face)	0.625	6.00	28.38	0.750	A325X/ST	3.00	13	Flush	2.00/2.00	31	Extended	3.75/2.00
4	2	SP	0.375	6.00	40.83	0.750	A325X/ST	3.00	11	Flush	0.00	31	Extended	3.94
5	1	SP	0.375	6.00	40.83	0.750	A325X/ST	3.00	11	Flush	0.00	31	Extended	3.94
6	2	KN(Face)	0.625	6.00	30.75	0.750	A325X/ST	3.00	31	Extended	3.75	31	Extended	3.75
7	2	KN(Face)	0.625	10.00	30.75	0.750	A325X/ST	3.00	31	Extended	3.75	31	Extended	3.75

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1000	2	1	1.6	4.7	270.2	Thick plate	56.5	345.7	14	0.3	5.1	283.5	Thick plate	56.5	345.7
3	2	36	-11.0	12.3	1870.9	Thin plate	212.1	1745.5	15	7.5	9.6	1793.6	Thick plate	159.0	1948.3
3	1	36	-11.0	12.3	1870.9	Thin plate	212.1	1745.5	15	7.5	9.6	1793.6	Thick plate	159.0	1948.3
4	2	15	8.4	2.3	183.1	Thin plate	106.0	722.3	25	4.4	1.5	847.3	Thin plate	159.0	1199.1
5	1	15	8.4	2.3	183.1	Thin plate	106.0	722.3	25	4.4	1.5	847.3	Thin plate	159.0	1199.1
6	2	37	-11.5	13.6	2126.2	Thick plate	159.0	1943.3	14	7.4	9.5	1784.2	Thick plate	159.0	1943.3
7	2	37	-11.5	13.6	2126.2	Thick plate	159.0	1943.3	14	7.4	9.5	1784.2	Thick plate	159.0	1943.3



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Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
3	2/11/6	26/3/10	(2)FB3044	
4	3/10/0	11/6/13	FB4060	
4	8/10/0	6/6/13	FB4060	
5	6/2/0	6/6/13	FB4060	
6	6/2/0	21/6/13	FB4030	
6	10/10/14	26/3/10	(2)FB3044	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.48	11.50	1	1	0.4	0.9	-21.0	0.0	94.2	17.5	204.7	39.0	0.10	0.05
10003	8.04	11.50	14	14	0.3	-5.1	283.5	0.0	111.3	17.8	352.3	55.9	0.81	0.29
10002	2.48	11.50	1	1	0.3	-0.8	-19.3	0.0	88.2	17.5	204.7	39.0	0.10	0.05
1	10.01	24.00	36	15	-50.6	7.0	-782.6	0.0	169.5	23.6	4269.5	749.7	0.33	0.30
2	12.48	24.00	15	36	11.9	-8.2	1807.9	0.0	532.1	24.1	4966.2	1037.8	0.38	0.34
3	3.59	26.92	9	2	1.2	15.3	-1095.4	0.0	336.3	20.8	1491.1	304.5	0.74	0.68
4	0.00	34.00	14	23	4.3	7.0	-926.4	0.0	304.8	10.7	1087.4	179.2	0.86	0.65
5	14.41	34.00	15	37	4.3	-7.7	-943.4	0.0	304.8	10.7	1118.9	179.2	0.85	0.72
6	13.86	25.00	37	1	-11.5	-16.7	-2126.2	0.0	240.0	22.6	2971.5	304.0	0.74	0.74
7	12.48	24.00	37	37	-19.8	8.8	-2126.9	0.0	445.7	24.1	5292.5	1037.8	0.42	0.36
8	10.01	24.00	37	24	-54.8	6.6	-828.1	0.0	169.5	23.6	3426.5	749.7	0.38	0.28

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
10003	8.04	96.45	96.4	96.4	3.37	3.37	75.43	3.91	13.12	1.56	14.77	2.39	0.03	125.05	1.00	1.00	1.13	0.85	1.00
10002	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	10.01	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.9	1.68	1.00	1.02	0.94	0.86
2	12.48	269.94	269.9	269.9	16.77	16.77	1891.85	104.18	157.65	20.84	170.35	31.45	1.68	14230.6	1.47	1.00	1.02	1.00	1.00
3	3.59	339.23	35.4	35.4	10.86	10.86	1318.83	18.01	98.00	6.00	110.73	9.23	0.56	3142.66	1.01	1.00	1.00	1.00	1.00
4	0.00	339.23	176.9	176.9	9.24	9.24	1573.26	11.26	92.54	3.75	108.94	5.85	0.17	3195.26	1.01	1.00	1.00	0.96	1.00
5	14.41	339.23	180.0	180.0	9.24	9.24	1573.26	11.26	92.54	3.75	108.94	5.85	0.17	3195.27	1.08	1.00	1.00	0.96	1.00
6	13.86	339.23	35.4	35.4	10.50	10.50	1116.50	18.01	89.32	6.00	100.50	9.21	0.55	2703.10	1.10	1.00	1.01	1.00	0.74
7	12.48	269.94	269.9	269.9	16.77	16.77	1891.85	104.18	157.65	20.84	170.35	31.45	1.68	14230.6	1.34	1.00	1.02	1.00	0.84
8	10.01	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.9	1.39	1.00	1.02	0.94	0.86



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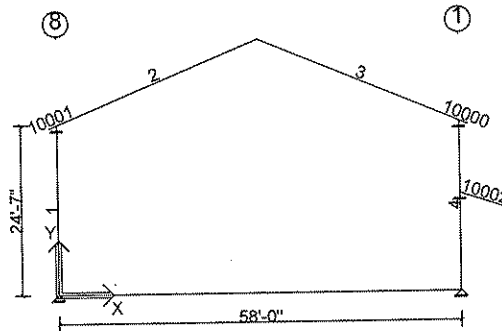
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User Defined Frame Point Loads for Cross Section: K

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.	
1	k	FL	Mezz	-25.40	12/6/0		NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-12.70	12/6/0		NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0		NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0		NA	NA	N	RIGHT	1.000	CL
3	k	CG	Folding Partition (open)->Resolved From Plane	-0.40	24/0/0		NA	NA	N	DOWN	1.000	OF
4	k	FL	Mezz	-25.40	12/6/0		NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-12.70	12/6/0		NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0		NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0		NA	NA	N	RIGHT	1.000	CL

User Defined Frame Line Loads for Cross Section: K

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
3	plf	CG	Folding Partition->Resolved From Plane	-15.94	2/0/0	-15.94	27/0/0	N	DOWN	1.000	OF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System	1.000	200	0	0.700 W1>	W1>
13	System	1.000	200	0	0.700 <W1	<W1
14	System	1.000	200	0	0.700 W2>	W2>
15	System	1.000	200	0	0.700 <W2	<W2
16	System	1.000	200	0	0.700 WP	WP
17	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
18	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section: K

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/205)	1.356	2	2	13	<W1
Max. Vertical Deflection for Span 1	(L/1247)	-0.516	4	2	1	L

* Negative horizontal deflection is left
 * Negative vertical deflection is down



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Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
81/5/0	11/9/0	Valley Beam Left	38.6598		0/1/0	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L >	D + FD + CG + L >
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S >	D + FD + CG + S >
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1 >	D + FD + CG + W1 >
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2 >	D + FD + CG + W2 >
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1 >	D + FD + CU + W1 >
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2 >	D + FD + CU + W2 >
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 >	D + FD + CG + L + W1 >
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 >	D + FD + CG + L + W2 >
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 >	D + FD + CG + S + W1 >
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 >	D + FD + CG + S + W2 >
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L > + 0.750 FL	D + FD + CG + L > + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 > + 0.750 FL	D + FD + CG + L + W1 > + FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D + FD + CG + L + <W1 + FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 > + 0.750 FL	D + FD + CG + L + W2 > + FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D + FD + CG + L + <W2 + FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D + FD + CG + L + WP + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 > + 0.750 FL	D + FD + CG + S + W1 > + FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D + FD + CG + S + <W1 + FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 > + 0.750 FL	D + FD + CG + S + W2 > + FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D + FD + CG + S + <W2 + FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D + FD + CG + S + WP + FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E > + 0.700 EG+	D + FD + CG + E > + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E > + 0.700 EG-	D + FD + CU + E > + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+	D + FD + CG + E > + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+ + 0.750 FL	D + FD + CG + E > + EG+ + FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D + FD + CG + <E + EG+ + FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
1	5.00	0.1875	0.1345	9.00	9.00	8.13	94.4	55.00	55.00	SS	SS	3P



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2	5.00	0.1875	0.1345	9.00	9.00	8.14	86.1	55.00	55.00	SS	SS	3P
3	5.00	0.1875	0.1345	9.00	9.00	7.89	91.8	55.00	55.00	SS	SS	3P
4	5.00	0.1875	0.1345	9.00	9.00	7.89	83.5	55.00	55.00	SS	SS	3P

Total Frame Weight = 355.8 (p) (Includes all plates)
 Frame Pricing Weight = 358.9 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
4	33/6/13	33/3/14	No	Yes	No	0/0/0	0/0/0	0.0000
3	18/3/10	29/4/3	Yes	Yes	No	0/0/0	0/0/0	0.0000
3	18/2/6	29/3/13	No	Yes	No	0/0/0	0/0/0	0.0000
1	2/5/7	25/2/11	Yes	Yes	No	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 8

Type X-Loc Grid1 - Grid2 Base Plate W x L (in.) Base Plate Thickness (in.) Anchor Rod Qty/Diam. (in.) Column Base Elev.		Rafter 2/5/7 y=25/2/11		Rafter 33/6/13 y=33/3/14				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	-	0.1	-	0.1	-	-	-
FD	Frm	-	-	-	-	-	-	-
CG	Frm	-	-	-	0.5	-	-	-
L>	Frm	-	0.0	-	1.8	-	-	-
<L	Frm	-	0.0	-	1.8	-	-	-
S>	Frm	-	-	-	-	-	-	-
<S	Frm	-	-	-	-	-	-	-
S	Frm	-	-	-	-	-	-	-
SD	Frm	-	-	-	-	-	-	-
SS	Frm	-	-	-	-	-	-	-
US1*	Frm	-	-	-	-	-	-	-
*US1	Frm	-	-	-	-	-	-	-
W1>	Frm	-	-0.0	-	-1.8	-	-	-
<W1	Frm	-	-	-	-1.3	-	-	-
W2>	Frm	-	-	-	-0.8	-	-	-
<W2	Frm	-	-	-	-0.4	-	-	-
WP	Frm	-	-	-	-0.0	-	-	-
CU	Frm	-	-	-	-	-	-	-
FL	Frm	-	-	-	-	-	-	-
L	Frm	-	0.0	-	1.8	-	-	-
E>	Frm	-	-	-	-	-	-	-
EG+	Frm	-	-	-	0.0	-	-	-
<E	Frm	-	-	-	-	-	-	-
EG-	Frm	-	-	-	-0.0	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hrz left (-Hx) (k)	Load Case	Hrz Right (Hx) (k)	Load Case	Hrz In (-Hz) (k)	Load Case	Hrz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
2/5/7	25/2/11	-	-	-	-	-	-	-	-	-	-	0.1	1	-	-	-	-
18/2/6	29/3/13	-	-	-	-	-	-	-	-	-	-	0.1	1	-	-	-	-
18/3/10	29/4/3	-	-	-	-	-	-	-	-	1.1	14	2.0	1	-	-	-	-
33/6/13	33/3/14	-	-	-	-	-	-	-	-	1.7	14	2.4	1	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	0.4	0.3
FD	0.0	0.0	0.0	0.0
CG	0.0	0.0	0.8	0.8



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L>	0.0	0.0	3.4	3.4
<L	0.0	0.0	3.4	3.4
S>	0.0	0.0	0.0	0.0
<S	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0
SD	0.0	0.0	0.0	0.0
SS	0.0	0.0	0.0	0.0
US1*	0.0	0.0	0.0	0.0
*US1	0.0	0.0	0.0	0.0
W1>	1.5	0.0	3.0	3.0
<W1	1.1	0.0	2.2	2.2
W2>	0.7	0.0	1.4	1.4
<W2	0.3	0.0	0.7	0.6
WP	0.0	0.0	0.0	0.0
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	0.0	0.0
L	0.0	0.0	3.4	3.4
E>	0.1	0.0	0.0	0.0
EG+	0.0	0.0	0.0	0.0
<E	0.1	0.0	0.0	0.0
EG-	0.0	0.0	0.0	0.0

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages in/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1	1	SIP	0.375	6.00	10.30	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50
2	2	SIP	0.375	6.00	10.30	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50
3	1	SIP	0.375	6.00	10.30	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50
4	2	SIP	0.375	6.00	10.30	0.500	A325/	3.00	11	Flush	2.50	11	Flush	2.50

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Ld Cs	Required Strength - In			Available Strength - In		
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)		Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	1	2		0.1	0.0		0.0	101.0	0		0.0	0.0		0.0	101.0
2	2	52		0.1	0.0		0.0	101.0	6		0.1	0.0		0.0	101.0
3	1	2		1.9	0.0		0.0	101.0	48		0.0	0.0		0.0	101.0
4	2	2		2.3	0.0		0.0	101.0	14		1.7	0.0		0.0	101.0

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
1	8.13	9.00	1	1	-0.0	0.1	4.9	0.0	66.9	21.1	292.8	58.4	0.02	0.00
2	1.36	9.00	1	1	0.0	-0.1	4.8	0.0	100.2	21.1	110.5	58.4	0.04	0.00
3	7.89	9.00	1	1	-0.0	1.9	106.0	0.0	16.4	21.1	116.4	58.4	0.83	0.09
4	1.31	9.00	1	1	0.1	-2.3	105.4	0.0	100.2	21.1	116.5	58.4	0.91	0.11

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
1	8.13	195.23	195.2	195.2	3.04	3.04	43.60	3.91	9.69	1.56	10.76	2.38	0.03	75.87	1.14	1.00	1.11	0.88	0.90
2	1.36	195.23	195.2	195.2	3.04	3.04	43.60	3.91	9.69	1.56	10.76	2.38	0.03	75.87	1.14	1.00	1.11	0.88	1.00
3	7.89	189.29	189.3	189.3	3.04	3.04	43.60	3.91	9.69	1.56	10.76	2.38	0.03	75.87	1.14	1.00	1.11	0.88	1.00
4	1.31	189.29	189.3	189.3	3.04	3.04	43.60	3.91	9.69	1.56	10.76	2.38	0.03	75.87	1.14	1.00	1.11	0.88	1.00



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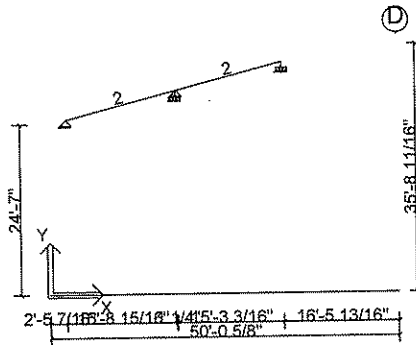
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User Defined Frame Line Loads for Cross Section: 8

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
2	plf	CG		-84.00	13/8/10	-30.00	28/9/15	N	DOWN	1.000	OF
2	plf	L		-335.00	13/8/10	-118.00	28/9/15	N	DOWN	1.000	OF
2	plf	W1>		295.00	13/8/10	104.00	28/9/15	N	UP	1.000	OF
2	plf	<W1		221.00	13/8/10	78.00	28/9/15	N	UP	1.000	OF
2	plf	W2>		139.00	13/8/10	49.00	28/9/15	N	UP	1.000	OF
2	plf	<W2		65.00	13/8/10	23.00	28/9/15	N	UP	1.000	OF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System	1.000	200	0	0.700 W1>	W1>
13	System	1.000	200	0	0.700 <W1	<W1
14	System	1.000	200	0	0.700 W2>	W2>
15	System	1.000	200	0	0.700 <W2	<W2
16	System	1.000	200	0	0.700 WP	WP
17	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
18	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section: 8

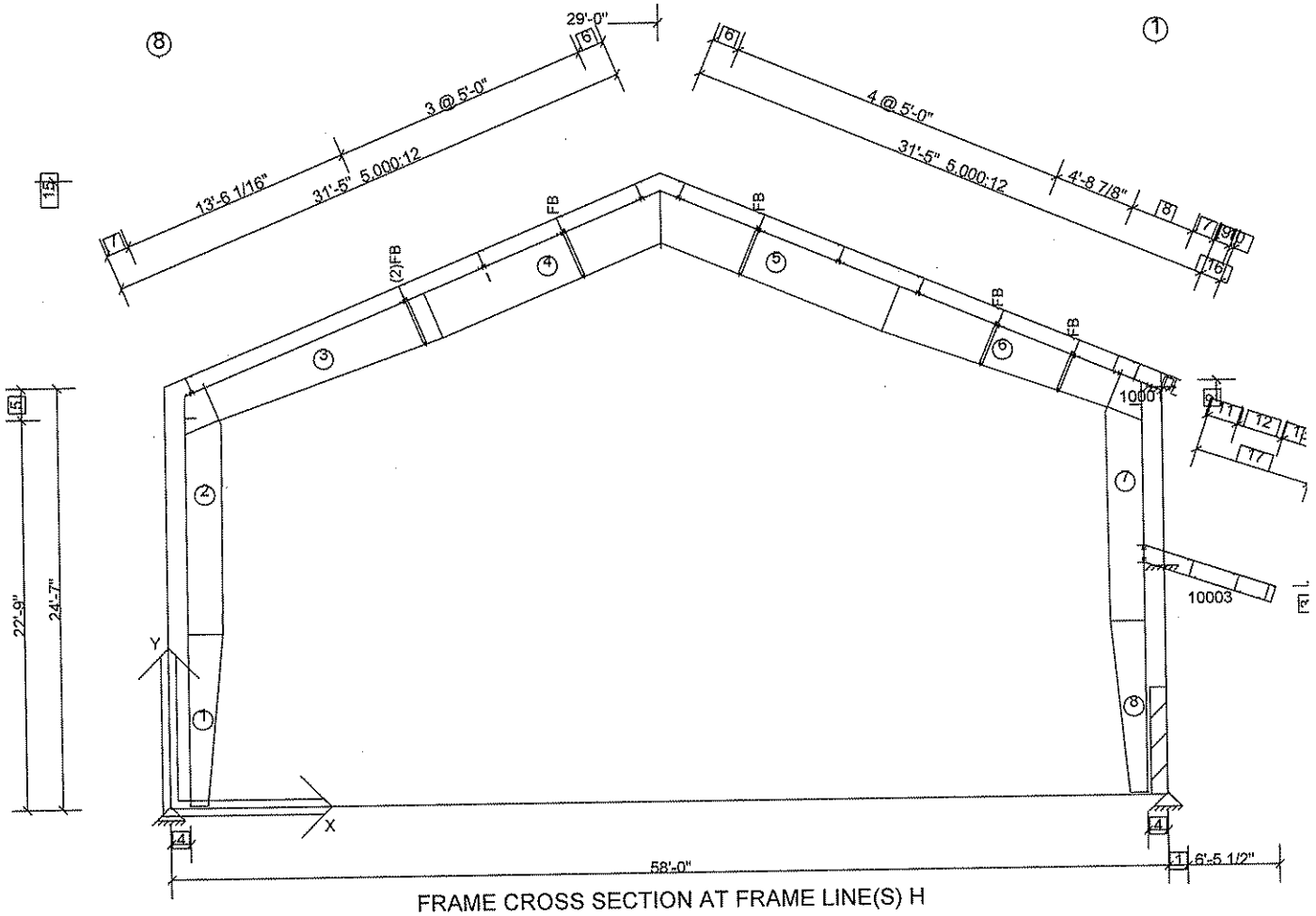
Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Vertical Deflection for Span 1	(L/99999)	-0.002	2	1	1	L
Max. Vertical Deflection for Span 2	(L/786)	-0.233	3	2	1	L

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 4, Frame at: 95/8/0
 Frame Cross Section: H



FRAME CROSS SECTION AT FRAME LINE(S) H

Dimension Key

- 1 1'-1 1/2"
- 2 24'-1 3/8"
- 3 12'-0"
- 4 1'-2"
- 5 1'-10"
- 6 1'-6 13/16"
- 7 1'-4 3/16"
- 8 3'-9 3/16"
- 9 11 5/8"
- 10 3"
- 11 1'-9 13/16"
- 12 2'-9 3/16"
- 13 1'-10 3/16"
- 14 4 1/2"
- 15 36'-8" Ridge Ht.
- 16 1'-2 5/8" 5.000:12
- 17 6'-9 11/16" 4.000:12



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Frame Clearances

Horiz. Clearance between members 1(CX107) and 7(CX108): 51'-6 3/4"

Horiz. Clearance between members 1(CX107) and 8(CX108): 51'-8"

Horiz. Clearance between members 2(CX107) and 7(CX108): 51'-5 5/8"

Horiz. Clearance between members 2(CX107) and 8(CX108): 51'-6 7/8"

Vert. Clearance at member 2(CX107): 22'-4 5/8"

Vert. Clearance at member 7(CX108): 22'-4 5/16"

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
95/8/0	18/9/0	Rigid Frame	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L>	D + FD + CG + L>
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S>	D + FD + CG + S>
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1>	D + FD + CG + W1>
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2>	D + FD + CG + W2>
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1>	D + FD + CU + W1>
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2>	D + FD + CU + W2>
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1>	D + FD + CG + L + W1>
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2>	D + FD + CG + L + W2>
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1>	D + FD + CG + S + W1>
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2>	D + FD + CG + S + W2>
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L> + 0.750 FL	D + FD + CG + L> + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1> + 0.750 FL	D+FD+CG+L+W1>+FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D+FD+CG+L+<W1+FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2> + 0.750 FL	D+FD+CG+L+W2>+FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D+FD+CG+L+<W2+FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D+FD+CG+L+WP+FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1> + 0.750 FL	D+FD+CG+S+W1>+FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D+FD+CG+S+<W1+FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2> + 0.750 FL	D+FD+CG+S+W2>+FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D+FD+CG+S+<W2+FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D+FD+CG+S+WP+FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E> + 0.700 EG+	D + FD + CG + E> + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E> + 0.700 EG-	D + FD + CU + E> + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+	D + FD + CG + E> + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E> + 0.525 EG+ + 0.750 FL	D+FD+CG+E>+EG+FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D+FD+CG+<E+EG+FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
10003	5.00	0.1875	0.1345	11.50	11.50	8.04	104.0	55.00	55.00	SS	SS	3P



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1	10.00	0.5000	0.1875	12.00	24.00	10.00	463.5	55.00	55.00	BP	SS	3P
2	10.00	0.6250	0.1875	24.00	24.00	13.91	841.0	55.00	55.00	SS	KN	3P
3	6.00	0.5000	0.1875	25.00	34.00	15.15	565.8	55.00	55.00	KN	SS	3P
4	6.00	0.3750	0.1644	34.00	34.00	15.00	512.8	55.00	55.00	SS	SP	3P
5	6.00	0.3750	0.1644	34.00	34.00	15.00	512.8	55.00	55.00	SP	SS	3P
6	6.00	0.5000	0.1875	34.00	25.00	15.15	566.6	55.00	55.00	SS	KN	3P
7	10.00	0.6250	0.1875	24.00	24.00	13.90	842.2	55.00	55.00	SS	KN	3P
8	10.00	0.5000	0.1875	12.00	24.00	10.00	463.6	55.00	55.00	BP	SS	3P

Total Frame Weight = 4906.7 (p) (Includes all plates)
 Frame Pricing Weight = 5091.5 (p) (Includes all pieces)

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
8	58/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	58/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000
10003	58/0/0	14/1/13	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: H

Type		Exterior Column		Exterior Column				
X-Loc		0/0/0		58/0/0				
Grid1 - Grid2		H-8		H-1				
Base Plate W x L (in.)		11 x 13		11 x 13				
Base Plate Thickness (in.)		0.375		0.375				
Anchor Rod Qty/Diam. (in.)		4 - 0.750		4 - 0.750				
Column Base Elev.		100'-1 1/2"		100'-1 1/2"				
Load Type	Desc.	Hx	Vy	Hx	Vy			
D	Frm	0.9	5.0	-0.9	6.3	-	-	-
FD	Frm	0.2	12.7	-0.2	12.7	-	-	-
CG	Frm	1.1	4.2	-1.1	4.8	-	-	-
L>	Frm	4.2	16.8	-4.2	18.9	-	-	-
<L	Frm	4.2	16.8	-4.2	18.9	-	-	-
S>	Frm	0.4	1.5	-0.4	2.2	-	-	-
<S	Frm	0.4	1.5	-0.4	2.2	-	-	-
S	Frm	0.4	1.5	-0.4	2.2	-	-	-
SD	Frm	-0.2	-0.2	0.2	2.2	-	-	-
SS	Frm	-0.0	-0.0	0.0	0.2	-	-	-
US1*	Frm	0.5	1.9	-0.5	1.2	-	-	-
*US1	Frm	0.5	1.2	-0.5	2.0	-	-	-
W1>	Frm	5.9	-9.8	9.8	-21.7	-	-	-
<W1	Frm	-11.4	-16.5	-6.2	-10.4	-	-	-
W2>	Frm	4.9	-1.8	10.5	-14.5	-	-	-
<W2	Frm	-12.4	-8.7	-5.5	-3.2	-	-	-
WP	Frm	3.2	-11.4	-3.9	-13.5	-	-	-
CU	Frm	-	-	-	-	-	-	-
FL	Frm	0.5	25.4	-0.5	25.4	-	-	-
L	Frm	4.2	16.8	-4.2	18.9	-	-	-
E>	Frm	2.3	1.2	2.1	-1.2	-	-	-
EG+	Frm	0.0	0.5	-0.0	0.6	-	-	-
<E	Frm	-2.3	-1.2	-2.1	1.2	-	-	-
EG-	Frm	-0.0	-0.5	0.0	-0.6	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	H-8	11.7	17	10.1	34	-	-	-	-	5.9	15	53.6	31	-	-	-	-
58/0/0	H-1	10.4	35	9.8	16	-	-	-	-	10.3	14	57.0	31	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)



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D	0.0	0.0	11.6	11.3
FD	0.0	0.0	25.4	25.4
CG	0.0	0.0	9.0	9.0
L>	0.0	0.0	35.8	35.8
<L	0.0	0.0	35.8	35.8
S>	0.0	0.0	3.7	3.7
<S	0.0	0.0	3.7	3.7
S	0.0	0.0	3.7	3.7
SD	0.0	0.0	2.1	2.1
SS	0.0	0.0	0.1	0.1
US1*	0.0	0.0	3.1	3.1
*US1	0.0	0.0	3.2	3.2
W1>	17.3	15.6	31.1	31.5
<W1	16.1	17.6	26.6	26.9
W2>	16.0	15.4	16.1	16.3
<W2	17.3	17.9	11.7	11.8
WP	0.7	0.7	24.9	24.9
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	50.8	50.8
L	0.0	0.0	35.8	35.8
E>	4.4	4.4	0.0	0.0
EG+	0.0	0.0	1.1	1.1
<E	4.4	4.4	0.0	0.0
EG-	0.0	0.0	1.1	1.1

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	H-8	1	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875
58/0/0	H-1	8	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
2	1	S9	11.67	23.849	127.19	N/A	N/A	0.5000	4.500	Both	W-OS-0.1875
2	***	MUST	Use	Alternate	Web	Thick.=	0.3125	*	*	*	*
7	1	S9	11.67	23.989	127.94	N/A	N/A	0.5000	4.500	Both	W-OS-0.1875
7	***	MUST	Use	Alternate	Web	Thick.=	0.3125	*	*	*	*
7	3	S5	4.39	23.216	123.82	N/A	N/A	0.1875	4.750	Both	W-OS-0.1875
7	4	S5	3.40	23.111	123.26	N/A	N/A	0.1875	4.750	Both	W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1000	2	CIP	0.500	6.00	13.12	0.500	A325N/ST	3.00	12	Flush	1.50	12	Flush	1.50
3	2	KN(Face)	0.625	10.00	30.75	0.750	A325X/ST	3.00	31	Extended	3.75	31	Extended	3.75
3	1	KN(Face)	0.625	6.00	30.75	0.750	A325X/ST	3.00	31	Extended	3.75	31	Extended	3.75
4	2	SP	0.375	6.00	40.83	0.750	A325X/ST	3.00	11	Flush	0.00	31	Extended	4.00
5	1	SP	0.375	6.00	40.83	0.750	A325X/ST	3.00	11	Flush	0.00	31	Extended	4.00
6	2	KN(Face)	0.625	6.00	31.50	0.875	A325X/ST	3.50	31	Extended	4.00	31	Extended	4.00
7	2	KN(Face)	0.625	10.00	31.50	0.875	A325X/ST	3.50	31	Extended	4.00	31	Extended	4.00

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Ld Cs	Required Strength - In			Available Strength - In		
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)		Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1000	2	1	1.6	4.7	266.9	Thick plate	56.5	345.7	14	0.2	5.1	280.0	Thick plate	56.5	345.7
3	2	36	-12.6	14.7	1975.0	Thick plate	159.0	1948.3	15	8.5	11.6	1886.9	Thick plate	159.0	1948.3
3	1	36	-12.6	14.7	1975.0	Thick plate	159.0	1948.3	15	8.5	11.6	1886.9	Thick plate	159.0	1948.3
4	2	15	8.4	0.8	323.2	Thin plate	106.0	720.9	25	4.7	0.5	1023.9	Thin plate	159.0	1197.4
5	1	15	8.4	0.8	323.2	Thin plate	106.0	720.9	25	4.7	0.5	1023.9	Thin plate	159.0	1197.4
6	2	37	-12.3	14.0	2293.9	Thin plate	216.5	2145.0	14	8.6	10.4	1966.5	Thin plate	216.5	2145.0
7	2	37	-12.3	14.0	2293.9	Thin plate	216.5	2145.0	14	8.6	10.4	1966.5	Thin plate	216.5	2145.0



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Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
3	12/8/4	16/6/13	(2)FB4050	
4	8/10/0	6/6/13	FB4054	
5	6/2/0	6/6/13	FB4054	
6	6/2/0	21/6/13	FB4030	
6	10/10/14	26/3/10	FB3044	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.48	11.50	1	1	0.4	0.8	-20.7	0.0	94.2	17.5	204.7	39.0	0.10	0.05
10003	8.04	11.50	14	14	0.2	-5.1	280.0	0.0	111.3	17.8	352.3	55.9	0.80	0.28
1	10.01	24.00	36	15	-52.9	7.4	-834.8	0.0	169.5	23.6	4281.3	749.7	0.35	0.31
2	12.48	24.00	36	36	-20.8	-8.7	-1998.0	0.0	445.7	24.1	5292.5	1037.8	0.40	0.36
3	0.64	25.00	36	2	-12.6	19.1	-1975.0	0.0	240.0	22.6	2971.5	304.0	0.69	0.85
4	5.74	34.00	1	2	-8.8	8.3	1408.1	0.0	192.6	10.8	3137.0	230.2	0.47	0.77
5	14.41	34.00	15	1	5.3	-8.7	-908.8	0.0	328.9	10.8	1291.8	230.2	0.71	0.81
6	13.86	25.00	37	1	-12.3	-17.6	-2293.9	0.0	240.0	22.6	2971.5	304.0	0.80	0.78
7	12.48	24.00	37	37	-20.4	9.4	-2291.0	0.0	445.7	24.1	5292.5	1037.8	0.46	0.39
8	10.01	24.00	37	24	-55.4	7.2	-902.9	0.0	169.5	23.6	3427.8	749.7	0.40	0.30

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
10003	8.04	96.45	96.4	96.4	3.37	3.37	75.43	3.91	13.12	1.56	14.77	2.39	0.03	125.05	1.00	1.00	1.13	0.85	1.00
1	10.01	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.95	1.68	1.00	1.02	0.94	0.86
2	12.48	269.94	269.9	269.9	16.77	16.77	1891.85	104.18	157.65	20.84	170.35	31.45	1.68	14230.63	1.68	1.00	1.02	1.00	0.84
3	0.64	339.23	16.5	16.5	10.50	10.50	1116.50	18.01	89.32	6.00	100.50	9.21	0.55	2703.11	1.00	1.00	1.01	1.00	0.74
4	5.74	339.23	120.0	60.0	9.97	9.97	1775.63	13.51	104.45	4.50	121.09	6.97	0.26	3819.39	1.09	1.00	1.00	1.00	0.60
5	14.41	339.23	180.0	180.0	9.97	9.97	1775.64	13.51	104.45	4.50	121.09	6.97	0.26	3819.39	1.04	1.00	1.00	1.00	1.00
6	13.86	339.23	35.4	35.4	10.50	10.50	1116.50	18.01	89.32	6.00	100.50	9.21	0.55	2703.10	1.09	1.00	1.01	1.00	0.74
7	12.48	269.94	269.9	269.9	16.77	16.77	1891.85	104.18	157.65	20.84	170.35	31.45	1.68	14230.63	1.35	1.00	1.02	1.00	0.84
8	10.01	269.94	269.9	269.9	14.31	14.31	1570.94	83.35	130.91	16.67	142.30	25.20	0.88	11506.95	1.39	1.00	1.02	0.94	0.86



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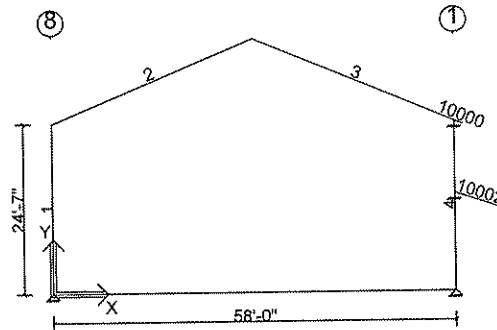
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User Defined Frame Point Loads for Cross Section: H

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-25.40	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
4	k	FL	Mezz	-25.40	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-12.70	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP
12	System	1.000	200	0	0.700 W1>	W1>
13	System	1.000	200	0	0.700 <W1	<W1
14	System	1.000	200	0	0.700 W2>	W2>
15	System	1.000	200	0	0.700 <W2	<W2
16	System	1.000	200	0	0.700 WP	WP
17	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
18	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section: H

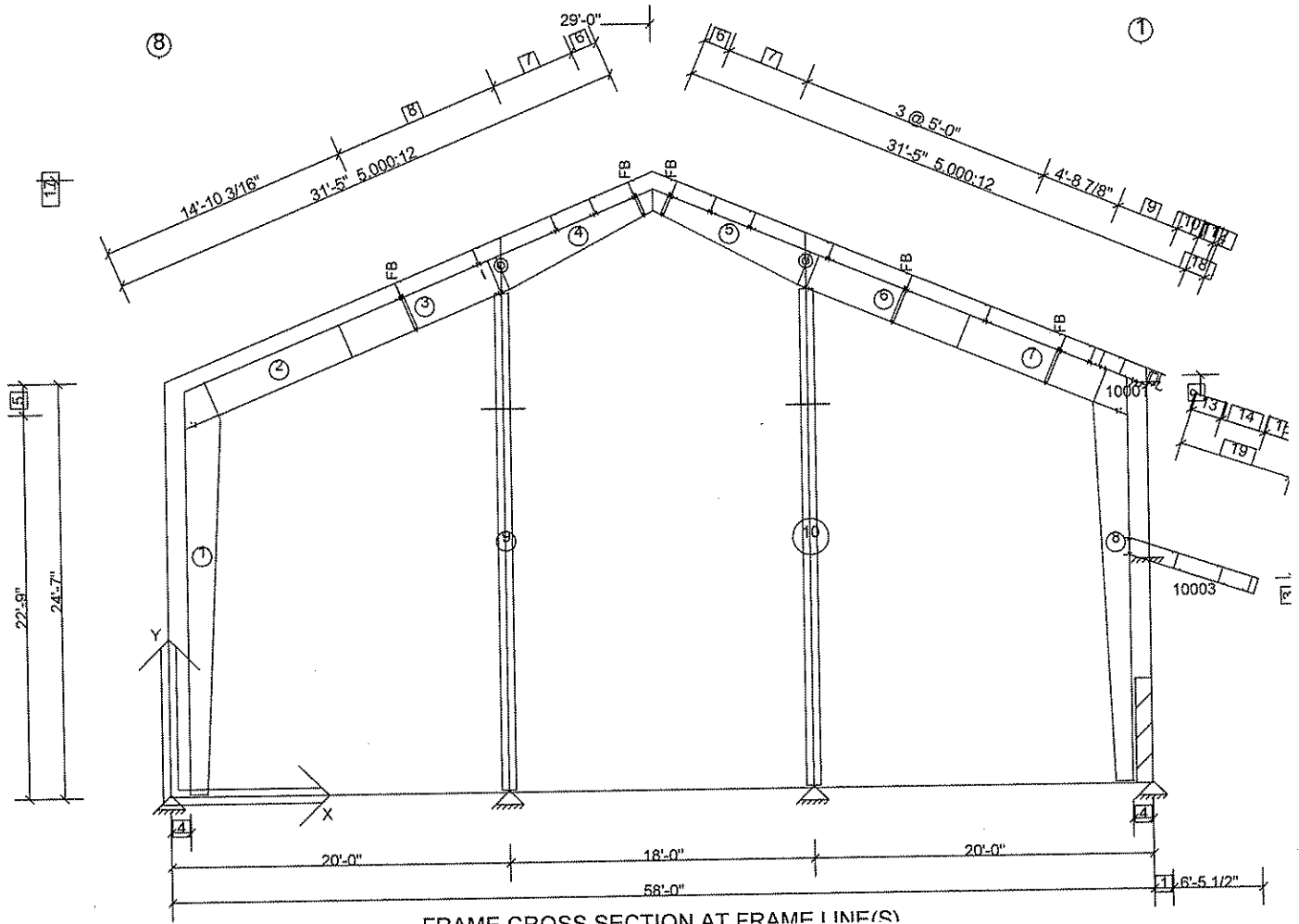
Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/193)	-1.436	7	2	12	W1>
Max. Vertical Deflection for Span 1	(L/1053)	-0.611	4	2	1	L

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 4, Frame at: 118/11/0
 Frame Cross Section:



FRAME CROSS SECTION AT FRAME LINE(S)

Dimension Key

- 1 1'-1 1/2"
- 2 24'-1 3/8"
- 3 12'-0"
- 4 1'-2"
- 5 1'-10"
- 6 1'-6 13/16"
- 7 2 @ 2'-6"
- 8 2 @ 5'-0"
- 9 2 @ 1'-10 9/16"
- 10 1'-4 3/16"
- 11 11 5/8"
- 12 3"
- 13 1'-9 13/16"
- 14 2'-9 3/16"
- 15 1'-10 3/16"
- 16 4 1/2"
- 17 36'-8" Ridge Ht.
- 18 1'-2 5/8" 5.000:12
- 19 6'-9 11/16" 4.000:12



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Frame Clearances

Horiz. Clearance between members 1(CX109) and 8(CX110): 51'-6 3/4"

Vert. Clearance at member 1(CX109): 22'-4 3/4"

Vert. Clearance at member 8(CX110): 22'-6 13/16"

Vert. Clearance at member 9(EPX102): 29'-7 7/16"

Vert. Clearance at member 10(EPX103): 29'-7 7/16"

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
118/11/0	13/2/8	CB2 End	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 L >	D + FD + CG + L >
2	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <L	D + FD + CG + <L
3	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S >	D + FD + CG + S >
4	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <S	D + FD + CG + <S
5	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SD	D + FD + CG + S + SD
6	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 S + 1.0 SS	D + FD + CG + S + SS
7	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 US1*	D + FD + CG + US1*
8	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 *US1	D + FD + CG + *US1
9	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W1 >	D + FD + CG + W1 >
10	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W1	D + FD + CG + <W1
11	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 W2 >	D + FD + CG + W2 >
12	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 <W2	D + FD + CG + <W2
13	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 WP	D + FD + CG + WP
14	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W1 >	D + FD + CU + W1 >
15	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W1	D + FD + CU + <W1
16	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 W2 >	D + FD + CU + W2 >
17	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 <W2	D + FD + CU + <W2
18	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 1.0 WP	D + FD + CU + WP
19	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 1.0 FL	D + FD + CG + FL
20	System	1.000	1.0 D + 1.0 FD + 1.0 CG	D + FD + CG
21	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 >	D + FD + CG + L + W1 >
22	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1	D + FD + CG + L + <W1
23	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 >	D + FD + CG + L + W2 >
24	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2	D + FD + CG + L + <W2
25	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP	D + FD + CG + L + WP
26	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 >	D + FD + CG + S + W1 >
27	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1	D + FD + CG + S + <W1
28	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 >	D + FD + CG + S + W2 >
29	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2	D + FD + CG + S + <W2
30	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP	D + FD + CG + S + WP
31	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L > + 0.750 FL	D + FD + CG + L > + FL
32	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 <L + 0.750 FL	D + FD + CG + <L + FL
33	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 FL	D + FD + CG + S + FL
34	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W1 > + 0.750 FL	D + FD + CG + L + W1 > + FL
35	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W1 + 0.750 FL	D + FD + CG + L + <W1 + FL
36	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 W2 > + 0.750 FL	D + FD + CG + L + W2 > + FL
37	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 <W2 + 0.750 FL	D + FD + CG + L + <W2 + FL
38	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 L + 0.750 WP + 0.750 FL	D + FD + CG + L + WP + FL
39	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W1 > + 0.750 FL	D + FD + CG + S + W1 > + FL
40	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W1 + 0.750 FL	D + FD + CG + S + <W1 + FL
41	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 W2 > + 0.750 FL	D + FD + CG + S + W2 > + FL
42	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 <W2 + 0.750 FL	D + FD + CG + S + <W2 + FL
43	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 S + 0.750 WP + 0.750 FL	D + FD + CG + S + WP + FL
44	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.750 FL	D + FD + CG + FL
45	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 E > + 0.700 EG+	D + FD + CG + E > + EG+
46	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.700 <E + 0.700 EG+	D + FD + CG + <E + EG+
47	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 E > + 0.700 EG-	D + FD + CU + E > + EG-
48	System	1.000	0.600 D + 0.600 FD + 0.600 CU + 0.700 <E + 0.700 EG-	D + FD + CU + <E + EG-
49	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+	D + FD + CG + E > + EG+
50	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+	D + FD + CG + <E + EG+
51	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 E > + 0.525 EG+ + 0.750 FL	D + FD + CG + E > + EG+ + FL
52	System	1.000	1.0 D + 1.0 FD + 1.0 CG + 0.525 <E + 0.525 EG+ + 0.750 FL	D + FD + CG + <E + EG+ + FL

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.69	34.3	55.00	55.00	SS	SS	3P
10003	5.00	0.1345	0.1345	11.50	11.50	8.04	86.8	55.00	55.00	SS	SS	3P



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1	8.00	0.5000	0.1875	12.00	24.00	23.91	960.9	55.00	55.00	BP	KN	3P
2	5.00	0.3750	0.1644	25.00	25.00	9.95	250.3	55.00	55.00	KN	SS	3P
3	5.00	0.2500	0.1345	25.00	25.00	10.13	199.7	55.00	55.00	SS	SS	3P
4	5.00	0.2500	0.1345	25.00	14.00	10.08	178.5	55.00	55.00	SS	SP	3P
5	5.00	0.2500	0.1345	14.00	25.00	10.08	178.5	55.00	55.00	SP	SS	3P
6	5.00	0.2500	0.1345	25.00	25.00	10.11	199.4	55.00	55.00	SS	SS	3P
7	5.00	0.3750	0.1644	25.00	25.00	9.96	248.8	55.00	55.00	SS	KN	3P
8	8.00	0.5000	0.1875	12.00	24.00	23.91	953.7	55.00	55.00	BP	KN	3P
9	10.00	0.3750	0.1644	12.00	12.00	29.50	969.4	55.00	55.00	BP	CP	3P
10	10.00	0.3750	0.1644	12.00	12.00	29.50	969.4	55.00	55.00	BP	CP	3P

Total Frame Weight = 5229.8 (p) (Includes all plates)
 Frame Pricing Weight = 5408.0 (p) (Includes all pieces)

Frame Member Releases

Member	Joint 1	Joint 2
9	No	Yes
10	No	Yes

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
8	58/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
9	20/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
10	38/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	58/0/0	24/7/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000
10003	58/0/0	14/1/13	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section:

Type	Exterior Column	Interior Column	Interior Column	Exterior Column									
X-Loc	0/0/0	20/0/0	38/0/0	58/0/0									
Grid1 - Grid2	-8	D-5	D-3	-1									
Base Plate W x L (in.)	9 x 13	11 x 13	11 x 13	9 x 13									
Base Plate Thickness (in.)	0.375	0.375	0.375	0.375									
Anchor Rod Qty/Diam. (in.)	4 - 0.750	4 - 0.750	4 - 0.750	4 - 0.750									
Column Base Elev.	100'-1 1/2"	100'-1 1/2"	100'-1 1/2"	100'-1 1/2"									
Load Type	Desc.	Hx	Vy	Hx	Hz	Vy	Hx	Hz	Vy	Hx	Vy		
D	Frm	0.0	1.5	-	-0.0	4.1	-	-0.0	3.4	-0.0	2.7	-	-
FD	Frm	0.1	7.1	-	0.2	11.8	-	0.2	12.8	-0.1	8.1	-	-
CG	Frm	0.0	0.8	-	-0.0	3.7	-	-0.0	2.3	-0.0	1.4	-	-
L>	Frm	0.1	3.1	-	-0.1	14.8	-	-0.1	9.2	-0.1	5.7	-	-
<L	Frm	0.1	3.1	-	-0.1	14.8	-	-0.1	9.2	-0.1	5.7	-	-
S>	Frm	-	0.3	-	-	1.2	-	-	1.1	-	0.8	-	-
<S	Frm	-	0.3	-	-	1.2	-	-	1.1	-	0.8	-	-
S	Frm	-	0.3	-	-	1.2	-	-	1.1	-	0.8	-	-
SD	Frm	-0.1	-0.2	-	-0.0	3.0	-	-0.0	2.5	0.1	1.5	-	-
SS	Frm	-	-0.0	-	-	0.0	-	-	-0.0	-	0.1	-	-
US1*	Frm	-	0.2	-	-	1.1	-	-	0.5	-	0.1	-	-
*US1	Frm	-	0.0	-	-	0.5	-	-	1.1	-	0.3	-	-
W1>	Frm	6.7	1.7	-	0.9	-19.0	-	0.9	0.4	6.0	-12.2	-	-
<W1	Frm	-7.1	-9.1	-	0.7	-0.5	-	0.7	-13.4	-7.8	0.6	-	-
W2>	Frm	5.2	5.7	-	-0.2	-15.8	-	-0.2	2.4	8.3	-9.1	-	-
<W2	Frm	-8.5	-5.1	-	0.5	2.6	-	0.5	-11.4	-5.5	3.6	-	-
WP	Frm	2.9	-9.0	-	-1.2	-1.8	-	-1.2	-4.6	-5.5	-9.1	-	-
CU	Frm	-	-	-	-	-	-	-	-	-	-	-	-
FL	Frm	0.2	14.4	-	0.4	23.6	-	0.4	23.6	-0.2	14.4	-	-
L	Frm	0.1	3.1	-	-0.1	14.8	-	-0.1	9.2	-0.1	5.7	-	-
E>	Frm	1.6	1.4	-	1.8	-1.8	-	1.8	2.1	1.5	-1.6	-	-
EG+	Frm	-	0.2	-	-	0.5	-	-	0.4	-	0.3	-	-
<E	Frm	-1.6	-1.4	-	-1.8	1.8	-	-1.8	-2.1	-1.5	1.6	-	-
EG-	Frm	-	-0.2	-	-	-0.5	-	-	-0.4	-	-0.3	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx)	Load Case	Hz Right (Hx)	Load Case	Hz In (-Hz)	Load Case	Hz Out (Hz)	Load Case	Uplift (-Vy)	Load Case	Vrt Down (Vy)	Load Case	Mom cw (-Mzz)	Load Case	Mom ccw (Mzz)	Load Case
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		(k)		(k)		(k)		(k)		(k)		(k)		(in-k)		(in-k)	
0/0/0	-8	8.4	17	6.8	9	-	-	-	-	3.9	15	26.8	36	-	-	-	-
20/0/0	D-5	-	-	-	-	1.1	48	1.4	45	9.5	14	50.3	37	-	-	-	-
38/0/0	D-3	-	-	-	-	1.1	48	1.4	45	3.7	15	44.9	36	-	-	-	-
58/0/0	-1	7.9	10	8.2	16	-	-	-	-	5.7	14	30.0	37	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	12.0	11.7
FD	0.0	0.0	39.8	39.8
CG	0.0	0.0	8.2	8.2
L>	0.0	0.0	32.7	32.7
<L	0.0	0.0	32.7	32.7
S>	0.0	0.0	3.4	3.4
<S	0.0	0.0	3.4	3.4
s	0.0	0.0	3.4	3.4
SD	0.0	0.0	6.7	6.7
SS	0.0	0.0	0.1	0.1
US1*	0.0	0.0	1.9	1.9
*US1	0.0	0.0	2.0	2.0
W1>	14.4	12.6	28.7	29.1
<W1	13.3	14.8	22.1	22.5
W2>	14.2	13.5	16.6	16.8
<W2	13.4	14.0	10.2	10.3
WP	2.6	2.6	24.5	24.5
CU	0.0	0.0	0.0	0.0
FL	0.0	0.0	76.0	76.0
L	0.0	0.0	32.7	32.7
E>	3.1	3.1	0.2	0.2
EG+	0.0	0.0	1.4	1.4
<E	3.1	3.1	0.2	0.2
EG-	0.0	0.0	1.4	1.4

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	-8	1	0.375	9	13	4	0.750	A36	OS-0.1875	OS-0.1875
20/0/0	D-5	9	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875
38/0/0	D-3	10	0.375	11	13	4	0.750	A36	OS-0.1875	OS-0.1875
58/0/0	-1	8	0.375	9	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
1	1	S9	21.64	23.750	126.67	N/A	N/A	0.3750	3.500	Both	W-OS-0.1875
3	1	S2	9.59	24.500	182.16	N/A	N/A	0.1875	2.000	Both	F-OS-0.1875,W-OS-0.1875
6	1	S2	0.54	24.500	182.16	N/A	N/A	0.1875	2.000	Both	F-OS-0.1875,W-OS-0.1875
8	1	S9	21.64	22.816	121.68	N/A	N/A	0.3750	3.500	Both	W-OS-0.1875
8	2	S5	14.36	18.850	100.53	N/A	N/A	0.1875	3.500	Both	W-OS-0.1875
8	3	S5	13.36	18.305	97.63	N/A	N/A	0.1875	3.500	Both	W-OS-0.1875
9	1	S2	21.76	11.250	68.43	N/A	N/A	0.1875	4.750	Both	F-BS-0.1875,W-OS-0.1875
10	1	S2	21.76	11.250	68.43	N/A	N/A	0.1875	4.750	Both	F-BS-0.1875,W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
			1000	2	CIP	0.375	6.00	13.12	0.500	A325N/ST	3.00	11	Flush	1.50
3	1	KN(Face)	0.500	8.00	28.25	0.750	A325X/ST	3.00	12	Flush	2.00	31	Extended	3.50
1	2	KN(Face)	0.500	6.00	28.25	0.750	A325X/ST	3.00	12	Flush	2.00	31	Extended	3.50
4	2	SP	0.375	6.00	16.21	0.750	A325X/ST	3.00	11	Flush	0.00	11	Flush	0.00
5	1	SP	0.375	6.00	16.21	0.750	A325X/ST	3.00	11	Flush	0.00	11	Flush	0.00
7	2	KN(Face)	0.500	6.00	26.00	0.750	A325X/ST	3.00	12	Flush	2.00	12	Flush	2.00



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8	2	KN(Face)	0.500	8.00	26.00	0.750	A325X/ST	3.00	12	Flush	2.00	12	Flush	2.00
9	2	CP	0.375	11.00	13.00	0.500	A325/	3.00	11	Flush	3.00	11	Flush	3.00
10	2	CP	0.375	11.00	13.00	0.500	A325/	3.00	11	Flush	3.00	11	Flush	3.00

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Ld Cs	Required Strength - In			Available Strength - In		
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)		Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1000	2	1	1.0	2.9	166.6	Thick plate	37.7	186.6	14	0.2	3.1	173.0	Thick plate	37.7	186.6
3	1	11	-5.1	5.7	992.0	Thin plate	159.0	976.0	10	4.5	6.6	1012.8	Thin plate	159.0	1357.1
1	2	11	-5.1	5.7	992.0	Thin plate	159.0	976.0	10	4.5	6.6	1012.8	Thin plate	159.0	1357.1
2	1	11	-5.1	5.7	992.0	Thin plate	159.0	976.0	10	4.5	6.6	1012.8	Thin plate	159.0	1357.1
4	2	16	-0.0	2.6	32.1	Thin plate	106.0	247.5	13	8.3	4.2	181.6	Thin plate	106.0	263.1
5	1	16	-0.0	2.6	32.1	Thin plate	106.0	247.5	13	8.3	4.2	181.6	Thin plate	106.0	263.1
7	2	12	-4.2	5.6	982.1	Thin plate	159.0	969.1	14	3.5	6.6	902.9	Thin plate	159.0	969.1
8	2	12	-4.2	5.6	982.1	Thin plate	159.0	969.1	14	3.5	6.6	902.9	Thin plate	159.0	969.1
9	2	0	0.0	0.0	0.0		0.0	0.0	0		0.0	0.0		0.0	0.0
10	2	0	0.0	0.0	0.0		0.0	0.0	0		0.0	0.0		0.0	0.0

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
3	4/0/7	16/6/13	FB3030	
4	8/10/15	1/6/13	FB2080	
5	1/2/0	1/6/13	FB2080	
6	6/1/1	16/6/13	FB3030	
7	5/8/9	26/3/10	FB3030	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.48	11.50	1	1	0.2	0.5	-13.0	0.0	94.2	17.5	204.7	39.0	0.06	0.03
10003	8.04	11.50	14	14	0.2	-3.1	173.0	0.0	94.2	17.5	204.7	39.0	0.85	0.18
1	14.99	20.00	12	18	3.0	5.0	865.7	0.0	381.6	28.8	1421.3	533.5	0.61	0.21
2	0.63	25.00	16	15	-4.6	-7.2	-963.6	0.0	50.8	14.9	1051.2	160.1	0.93	0.48
3	10.02	25.00	35	37	5.3	-7.5	-363.2	0.0	191.2	8.0	481.2	95.6	0.77	0.94
4	0.00	25.00	37	1	-4.1	8.2	-329.8	0.0	24.2	8.0	447.2	95.6	0.71	1.02
5	9.96	25.00	9	21	1.3	-3.6	-245.6	0.0	191.2	8.0	441.2	95.6	0.56	0.45
6	0.00	25.00	34	15	3.7	-6.9	-264.5	0.0	191.2	8.0	478.1	95.6	0.56	0.86
7	8.67	25.00	12	37	-4.2	-6.9	-982.1	0.0	170.0	14.9	1604.2	160.1	0.62	0.46
8	14.99	20.00	11	18	3.1	-4.8	926.0	0.0	381.6	28.8	1518.6	533.5	0.61	0.20
9	12.38	12.00	38	13	-47.5	-3.7	258.7	0.0	75.1	32.2	898.1	458.4	0.72	0.11
10	12.38	12.00	36	13	-45.7	-3.7	118.0	0.0	75.1	32.2	840.2	458.4	0.63	0.11

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.48	29.79	29.8	29.8	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
10003	8.04	96.45	96.4	96.4	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	14.99	269.86	269.9	269.9	11.56	11.56	867.84	42.68	86.78	10.67	94.92	16.17	0.71	4056.99	1.17	1.00	1.06	1.00	1.00
2	0.63	224.03	16.2	16.2	7.74	7.74	763.91	7.82	61.11	3.13	70.34	4.85	0.21	1185.72	1.00	1.00	1.00	1.00	0.79
3	10.02	224.03	180.1	180.1	5.80	5.80	547.70	5.21	43.82	2.09	51.12	3.24	0.07	798.37	1.30	1.00	1.00	0.94	1.00
4	0.00	119.50	180.1	180.1	5.80	5.80	547.70	5.21	43.82	2.09	51.12	3.24	0.07	798.37	1.31	1.00	1.00	0.94	0.78
5	9.96	119.50	180.1	180.1	5.80	5.80	547.70	5.21	43.82	2.09	51.12	3.24	0.07	798.37	1.27	1.00	1.00	0.94	1.00
6	0.00	224.03	180.1	180.1	5.80	5.80	547.70	5.21	43.82	2.09	51.12	3.24	0.07	798.37	1.32	1.00	1.00	0.94	1.00
7	8.67	224.03	35.4	35.4	7.74	7.74	763.91	7.82	61.11	3.13	70.34	4.85	0.21	1185.73	1.09	1.00	1.00	1.00	0.67
8	14.99	269.86	269.9	269.9	11.56	11.56	867.84	42.68	86.78	10.67	94.92	16.17	0.71	4056.99	1.25	1.00	1.06	1.00	1.00
9	12.38	367.47	354.0	354.0	9.35	9.35	272.98	62.50	45.50	12.50	48.80	18.83	0.37	2111.71	1.32	1.00	1.07	0.87	1.00
10	12.38	367.47	354.0	354.0	9.35	9.35	272.98	62.50	45.50	12.50	48.80	18.83	0.37	2111.71	1.24	1.00	1.07	0.87	1.00

Influence Areas for Cross Section:

Location	Distance	Left	Right	Total	Surface	Direction	Override	Area (sq. ft.)
118/11/0 - Side 1	0/0/0 24/7/0	23/6/0 23/6/0	0/0/0 0/0/0	23/6/0 23/6/0	Wall 4 (Operations Building)	Leeward		485.88



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118/11/0 - Side 1	0/0/0	0/0/0	28/10/0	28/10/0	Wall 3 (Operations Building Lean- to)	Leeward		485.88
	13/8/0	0/0/0	28/10/0	28/10/0				



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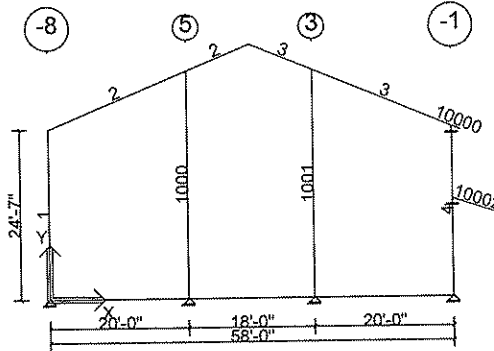
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User Defined Frame Point Loads for Cross Section:

Side	Units	Type	Description	Mag1	Loc1	Offset	H or V	Supp.	Dir.	Coef.	Loc.
1	k	FL	Mezz	-14.10	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	FD	Mezz	-7.00	12/6/0	NA	NA	N	DOWN	1.000	CL
1	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
1	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
4	k	FL	Mezz	-14.10	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	FD	Mezz	-8.00	12/6/0	NA	NA	N	DOWN	1.000	CL
4	k	E>	MW	-0.63	12/0/0	NA	NA	N	LEFT	1.000	CL
4	k	<E	MW	0.63	12/0/0	NA	NA	N	RIGHT	1.000	CL
1000	k	FL	Mezz	-23.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1000	k	FD	Mezz	-11.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1000	k	E>	Mezz	-2.30	12/6/0	NA	NA	N	LEFT	1.000	IF
1000	k	<E	Mezz	2.30	12/6/0	NA	NA	N	RIGHT	1.000	IF
1001	k	FL	Mezz	-23.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1001	k	FD	Mezz	-12.90	12/6/0	NA	NA	N	DOWN	1.000	IF
1001	k	E>	Mezz	-2.30	12/6/0	NA	NA	N	LEFT	1.000	IF
1001	k	<E	Mezz	2.30	12/6/0	NA	NA	N	RIGHT	1.000	IF

User Defined Frame Line Loads for Cross Section:

Side	Units	Type	Description	Mag1	Loc1	Mag2	Loc2	Supp.	Dir.	Coef.	Loc.
4	plf	W1>		-146.57	13/8/0	-0.00	22/10/0	N	LEFT	1.000	OF
4	plf	<W1		177.35	13/8/0	0.00	22/10/0	N	RIGHT	1.000	OF
4	plf	W2>		-252.10	13/8/0	-0.00	22/10/0	N	LEFT	1.000	OF
4	plf	<W2		71.82	13/8/0	0.00	22/10/0	N	RIGHT	1.000	OF
4	plf	WP		227.18	13/8/0	0.00	22/10/0	N	RIGHT	1.000	OF
4	plf	W1>		-146.57	0/0/2	-146.57	13/8/0	N	LEFT	1.000	OF
4	plf	<W1		177.35	0/0/2	177.35	13/8/0	N	RIGHT	1.000	OF
4	plf	W2>		-252.10	0/0/2	-252.10	13/8/0	N	LEFT	1.000	OF
4	plf	<W2		71.82	0/0/2	71.82	13/8/0	N	RIGHT	1.000	OF
4	plf	WP		227.18	0/0/2	227.18	13/8/0	N	RIGHT	1.000	OF



Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	1.0 S + 1.0 SS	S + SS
5	System	1.000	0	240	1.0 US1*	US1*
6	System	1.000	0	240	1.0 *US1	*US1
7	System	1.000	0	240	0.700 W1>	W1>
8	System	1.000	0	240	0.700 <W1	<W1
9	System	1.000	0	240	0.700 W2>	W2>
10	System	1.000	0	240	0.700 <W2	<W2
11	System	1.000	0	240	0.700 WP	WP



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12	System	1.000	200	0	0.700 W1>	W1>
13	System	1.000	200	0	0.700 <W1	<W1
14	System	1.000	200	0	0.700 W2>	W2>
15	System	1.000	200	0	0.700 <W2	<W2
16	System	1.000	200	0	0.700 WP	WP
17	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
18	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section:

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/199)	1.393	8	2	13	<W1
Max. Vertical Deflection for Span 1	(L/1948)	0.110	2	2	7	W1>
Max. Vertical Deflection for Span 2	(L/4239)	-0.051	4	2	11	WP
Max. Vertical Deflection for Span 3	(L/1943)	0.110	6	2	8	<W1

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Loads and Codes - Shape: Operations Building Lean-to

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Building Code: 2006 International Building Code
Building Use: Standard Occupancy Structure

State: Mississippi
Built Up: 05AISC - ASD
Cold Form: 04AISI - ASD

Country: United States
Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
Primaries Wind Exposure (Factor): B (0.608)
Parts Wind Exposure Factor: 0.701

Wind Enclosure: Enclosed
Wind Importance Factor: 1.000
Topographic Factor: 1.0000
Hurricane Prone Region
Windborne Debris Region
Impact Resistant Covering
Base Elevation: 0/0/0
Primary Zone Strip Width: 9/1/8
Parts / Portions Zone Strip Width: 5/9/10
Basic Wind Pressure: 22.35,(Parts) 25.76 psf

Snow Load

Ground Snow Load: 5.00 psf
Design Snow (Sloped): 2.50 psf
Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
Snow Importance: 1.000
Thermal Category (Factor): Heated (1.00)
Ground / Roof Conversion: 0.70
% Snow Used in Seismic: 0.00
Seismic Snow Load: 0.00 psf
Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
Mapped Spectral Response - S1: 5.10 %g
Seismic Hazard / Use Group: Group 1

Seismic Importance: 1.000
Seismic Performance / Design Category: B
Framing Seismic Period: 0.2859
Bracing Seismic Period: 0.1766
Framing R-Factor: 3.0000
Bracing R-Factor: 3.0000
Soil Profile Type: Stiff soil (D, 4)
Diaphragm Condition: Flexible
Frame Redundancy Factor: 1.0000
Brace Redundancy Factor: 1.0000
Frame Seismic Factor (Cs): 0.0420 x W
Brace Seismic Factor (Cs): 0.0420 x W

Deflection Conditions

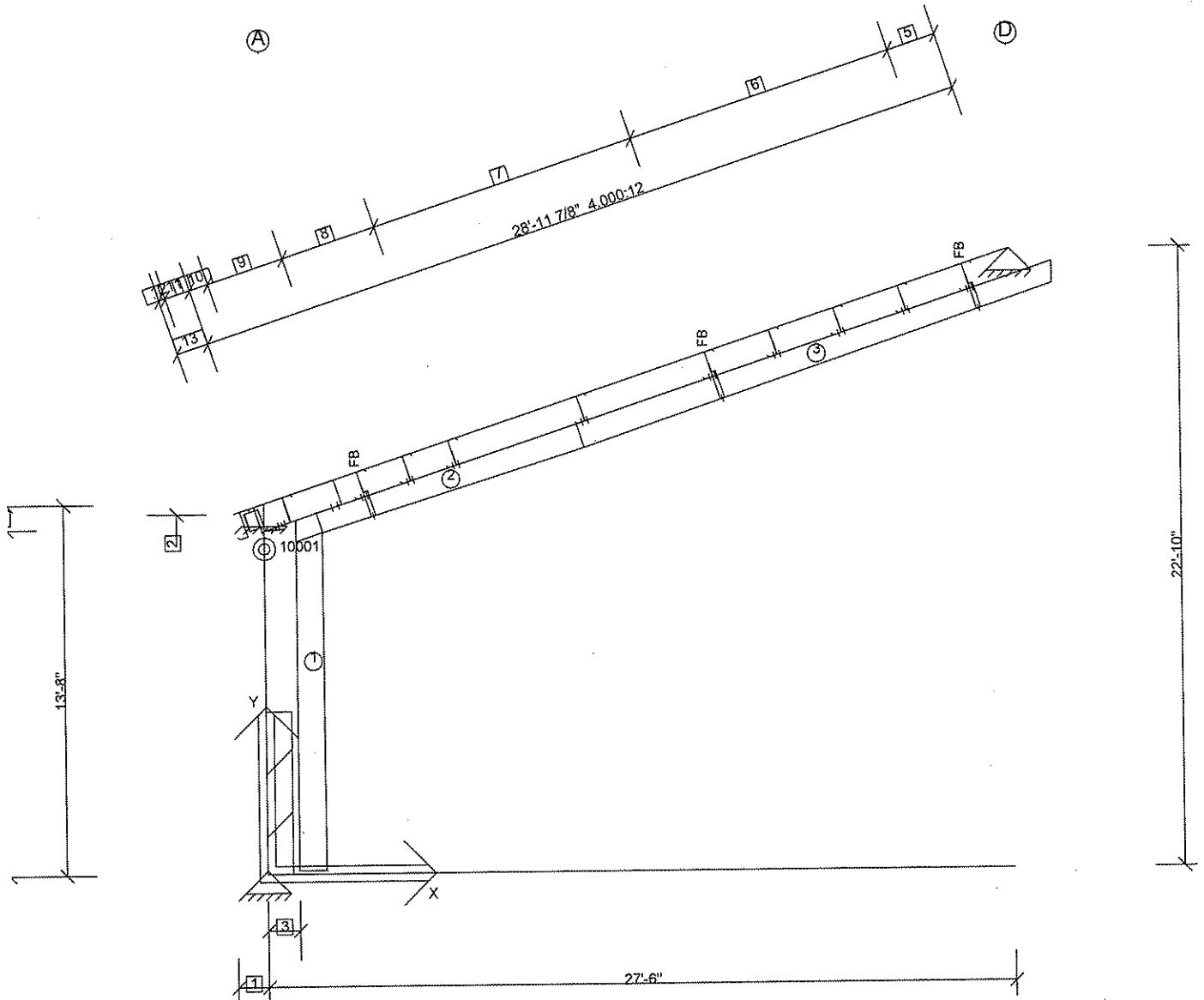
Frames are vertically supporting: Ceiling with Flexible Finish
Frames are laterally supporting: Unreinforced Masonry Wall
Purlins are supporting: Ceiling with Flexible Finish
Girts are supporting: Unreinforced Masonry Wall

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.



Wall: 2, Frame at: 1/8/0

Frame Cross Section:



Dimension Key

- 1 1'-1 1/2"
- 2 13'-3 1/2"
- 3 1'-2"
- 4 11"
- 5 1'-9 13/16"
- 6 4 @ 2'-6"
- 7 2 @ 5'-0"
- 8 2 @ 1'-9 7/16"
- 9 2'-10 9/16"
- 10 8 9/16"
- 11 11 1/4"
- 12 3"
- 13 1'-2 1/4" 4.000:12



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Frame Clearances

Vert. Clearance at member 1(CX112): 12'-7 1/16"

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
1/8/0	10/10/0	Leanto	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L>	D + CG + L>
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S>	D + CG + S>
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
6	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1 (Span 1)
7	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1 (Span 2)
8	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
10	System	1.000	1.0 D + 1.0 CG + 1.0 W2>	D + CG + W2>
11	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
12	System	1.000	1.0 D + 1.0 CG + 1.0 WP	D + CG + WP
13	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
14	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
15	System	1.000	0.600 D + 0.600 CU + 1.0 W2>	D + CU + W2>
16	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
17	System	1.000	0.600 D + 0.600 CU + 1.0 WP	D + CU + WP
18	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
19	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
20	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2>	D + CG + L + W2>
21	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
22	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP	D + CG + L + WP
23	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
24	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
25	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2>	D + CG + S + W2>
26	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
27	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP	D + CG + S + WP
28	System	1.000	1.0 D + 1.0 CG + 0.700 E> + 0.700 EG+	D + CG + E> + EG+
29	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG+	D + CG + <E + EG+
30	System	1.000	0.600 D + 0.600 CU + 0.700 E> + 0.700 EG-	D + CU + E> + EG-
31	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG-	D + CU + <E + EG-
32	System	1.000	1.0 D + 1.0 CG + 0.525 E> + 0.525 EG+	D + CG + E> + EG+
33	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG+	D + CG + <E + EG+

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.62	34.4	55.00	55.00	SS	SS	3P
1	5.00	0.1875	0.1345	12.00	12.00	12.92	172.5	55.00	55.00	BP	KN	3P
2	5.00	0.2500	0.1345	9.00	11.00	10.92	136.1	55.00	55.00	KN	SS	3P
3	5.00	0.2500	0.1345	11.00	9.29	18.81	242.0	55.00	55.00	SS	SS	3P

Total Frame Weight = 585.0 (p) (Includes all plates)
 Frame Pricing Weight = 632.9 (p) (Includes all pieces)

Frame Member Releases

Member	Joint 1	Joint 2
I	No	Yes

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
3	27/6/0	22/10/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	0/0/0	13/8/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section:

Type	Exterior Column	Rafter
X-Loc	0/0/0	27/6/0
Grid1 - Grid2	-A	-D



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Base Plate W x L (in.)		8 x 13							
Base Plate Thickness (in.)		0.375							
Anchor Rod Qty/Diam. (in.)		4 - 0.750							
Column Base Elev.		100'-1 1/2"							
Load Type	Desc.	Hx	Vy	Hx	Vy				
D	Frm	-	1.3	-	0.9	-	-	-	-
CG	Frm	-	0.9	-	0.7	-	-	-	-
L>	Frm	-	3.7	-	2.7	-	-	-	-
<L	Frm	-	3.7	-	2.7	-	-	-	-
S>	Frm	-	0.5	-	0.3	-	-	-	-
<S	Frm	-	0.5	-	0.3	-	-	-	-
S	Frm	-	0.5	-	0.3	-	-	-	-
SD	Frm	-	0.3	-	1.4	-	-	-	-
W1>	Frm	0.9	-3.0	2.5	-1.3	-	-	-	-
<W1	Frm	-0.8	-3.5	1.1	-2.4	-	-	-	-
W2>	Frm	0.4	-1.3	1.0	-0.5	-	-	-	-
<W2	Frm	-1.3	-1.9	-0.3	-1.6	-	-	-	-
WP	Frm	1.2	-4.1	3.4	-1.9	-	-	-	-
CU	Frm	-	-	-	-	-	-	-	-
L	Frm	-	3.7	-	2.7	-	-	-	-
E>	Frm	0.1	-0.0	0.2	0.1	-	-	-	-
EG+	Frm	-	0.1	-	0.0	-	-	-	-
<E	Frm	-0.1	0.0	-0.2	-0.1	-	-	-	-
EG-	Frm	-	-0.1	-	-0.0	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	-A	1.3	11	1.2	12	-	-	-	-	3.3	17	5.9	1	-	-	-	-
27/6/0	-D	0.3	11	3.4	12	-	-	-	-	1.8	14	4.3	1	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	2.3	2.2
CG	0.0	0.0	1.6	1.6
L>	0.0	0.0	6.4	6.4
<L	0.0	0.0	6.4	6.4
S>	0.0	0.0	0.8	0.8
<S	0.0	0.0	0.8	0.8
S	0.0	0.0	0.8	0.8
SD	0.0	0.0	1.7	1.7
W1>	3.4	3.4	4.3	4.3
<W1	0.3	0.3	5.9	5.9
W2>	1.4	1.4	1.9	1.9
<W2	1.7	1.7	3.5	3.5
WP	4.6	4.6	6.0	6.0
CU	0.0	0.0	0.0	0.0
L	0.0	0.0	6.4	6.4
E>	0.3	0.3	0.0	0.1
EG+	0.0	0.0	0.1	0.1
<E	0.3	0.3	0.0	0.1
EG-	0.0	0.0	0.1	0.1

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	-A	I	0.375	8	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem.	Stiff.	Desc.	Loc.	Web Depth	h/t	a/h	a	Thick.	Width	Side	Welding



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No.	No.		(ft)	(in.)		(in.)	(in.)	(in.)		Description	
1	1	S9	12.10	11.461	85.21	N/A	N/A	0.2500	2.000	Both	W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1	2	KN(Face)	0.375	6.00	9.50	0.750	A325/	3.00	11	Flush	2.50	11	Flush (0)	2.50
2	1	KN(Face)	0.375	6.00	10.00	0.750	A325/	3.00	11	Flush	2.50	11	Flush	2.50
3	2	SIP	0.375	5.00	9.79	0.500	A325/	3.00	12	Flush (0)	2.50/2.50		Flush (0)	2.50/2.50

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	2	17		2.3	6.3		0.0	119.9	11		0.0	7.8		0.0	119.9
2	1	17		2.3	6.3		0.0	119.9	11		0.0	7.8		0.0	119.9
3	2	0		0.0	0.0		0.0	0.0	0		0.0	0.0		0.0	0.0

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
2	1/10/9	25/4/11	FB2050	
3	5/4/0	11/9/13	FB2054	
3	15/4/0	1/9/13	FB2050	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.42	11.50	1	1	0.1	-0.4	-10.0	0.0	88.2	17.5	204.7	39.0	0.05	0.02
1	6.23	12.00	16	16	1.1	1.3	50.5	0.0	113.5	17.0	197.4	55.4	0.26	0.08
2	10.52	11.00	17	1	2.5	4.4	-179.0	0.0	129.1	19.1	252.9	96.5	0.72	0.20
3	5.33	10.47	1	1	0.2	-4.1	338.3	0.0	112.5	20.2	382.2	96.7	0.89	0.19

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.42	28.99	29.0	29.0	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	6.23	149.56	149.6	149.6	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.00	1.00	1.13	0.84	1.00
2	10.52	327.28	162.9	162.9	3.91	3.91	85.21	5.21	15.49	2.08	17.14	3.17	0.06	150.53	1.13	1.00	1.11	0.99	1.00
3	5.33	327.28	162.9	60.0	3.84	3.84	76.06	5.21	14.56	2.08	16.08	3.17	0.06	135.49	1.13	1.00	1.10	1.00	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	0.700 W1>	W1>
5	System	1.000	0	240	0.700 <W1	<W1
6	System	1.000	0	240	0.700 W2>	W2>
7	System	1.000	0	240	0.700 <W2	<W2
8	System	1.000	0	240	0.700 WP	WP
9	System	1.000	200	0	0.700 W1>	W1>
10	System	1.000	200	0	0.700 <W1	<W1
11	System	1.000	200	0	0.700 W2>	W2>
12	System	1.000	200	0	0.700 <W2	<W2
13	System	1.000	200	0	0.700 WP	WP
14	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
15	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section:

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/8551)	-0.018	1	2	13	WP
Max. Vertical Deflection for Span 1	(L/308)	-1.020	3	1	1	L



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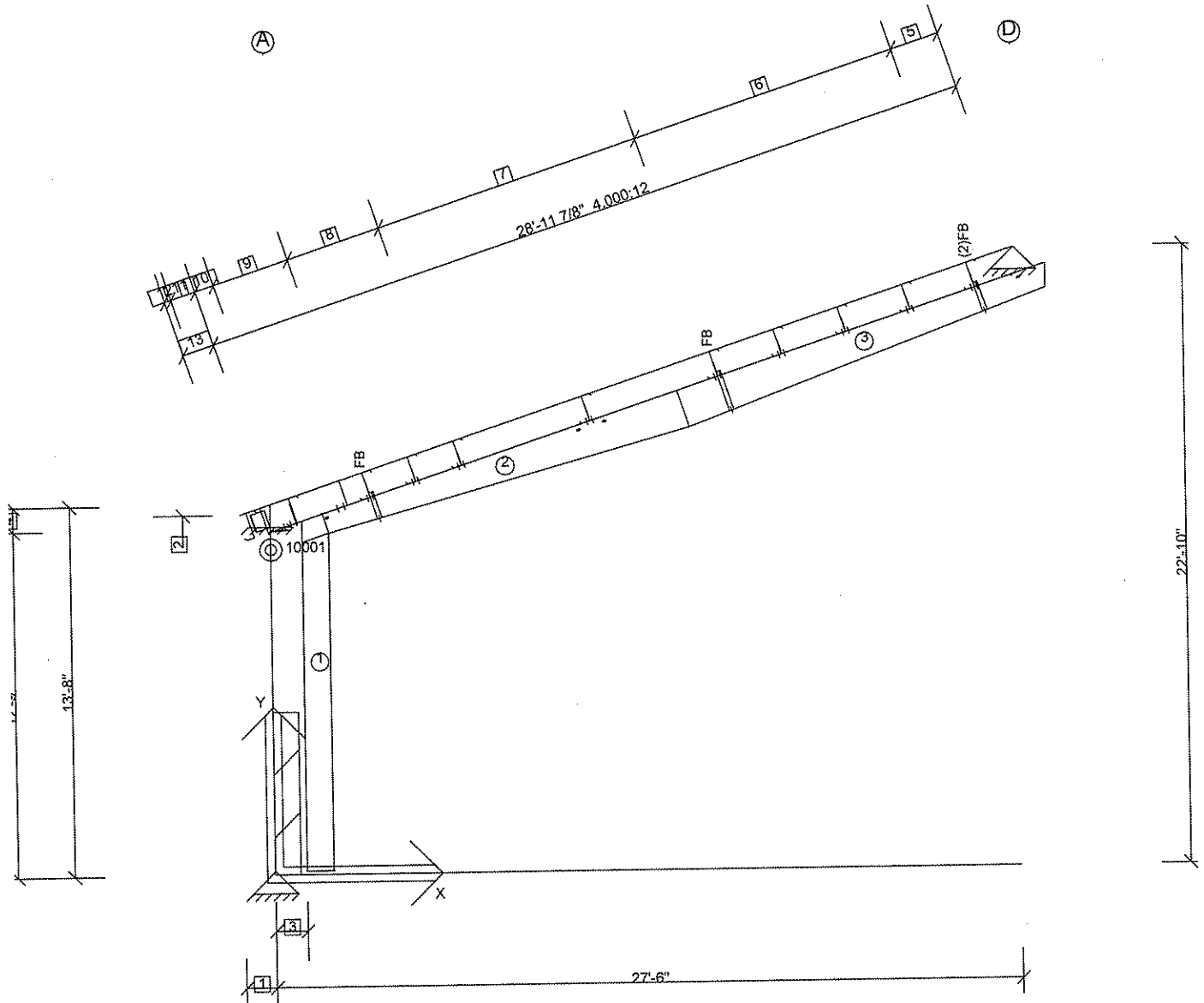
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* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 2, Frame at: 20/0/0
 Frame Cross Section: 5



Dimension Key

- 1 1'-1 1/2"
- 2 13'-3 1/2"
- 3 1'-2"
- 4 11"
- 5 1'-9 13/16"
- 6 4 @ 2'-6"
- 7 2 @ 5'-0"
- 8 2 @ 1'-9 7/16"
- 9 2'-10 9/16"
- 10 8 9/16"
- 11 11 1/4"
- 12 3"
- 13 1'-2 1/4" 4.000:12



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Frame Clearances

Vert. Clearance at member 1(CX113): 12'-7 1/16"

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
20/0/0	18/2/0	Leanto	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L>	D + CG + L>
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S>	D + CG + S>
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
6	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1 (Span 1)
7	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1 (Span 2)
8	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
10	System	1.000	1.0 D + 1.0 CG + 1.0 W2>	D + CG + W2>
11	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
12	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
13	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
14	System	1.000	0.600 D + 0.600 CU + 1.0 W2>	D + CU + W2>
15	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
16	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
17	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
18	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2>	D + CG + L + W2>
19	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
20	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
21	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
22	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2>	D + CG + S + W2>
23	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
24	System	1.000	1.0 D + 1.0 CG + 0.700 E> + 0.700 EG+	D + CG + E> + EG+
25	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG+	D + CG + <E + EG+
26	System	1.000	0.600 D + 0.600 CU + 0.700 E> + 0.700 EG-	D + CU + E> + EG-
27	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG-	D + CU + <E + EG-
28	System	1.000	1.0 D + 1.0 CG + 0.525 E> + 0.525 EG+	D + CG + E> + EG+
29	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG+	D + CG + <E + EG+
30	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
31	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
32	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
33	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
34	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
35	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
36	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
37	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
38	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
39	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
40	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
41	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
42	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
43	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
44	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
45	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2
46	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
47	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
48	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
49	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB + 0.700 EG+	D + CG + <EB + EG+
50	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB + 0.700 EG-	D + CU + <EB + EG-
51	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB + 0.525 EG+	D + CG + <EB + EG+

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.62	34.4	55.00	55.00	SS	SS	3P
1	5.00	0.1875	0.1345	12.00	12.00	12.92	172.5	55.00	55.00	BP	KN	3P
2	5.00	0.2500	0.1345	9.00	17.00	14.65	203.1	55.00	55.00	KN	SS	3P



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3	5.00	0.2500	0.1345	17.00	10.21	14.65	211.0	55.00	55.00	SS	SS	3P
---	------	--------	--------	-------	-------	-------	-------	-------	-------	----	----	----

Total Frame Weight = 621.0 (p) (Includes all plates)
 Frame Pricing Weight = 678.2 (p) (Includes all pieces)

Frame Member Releases

Member	Joint 1	Joint 2
1	No	Yes

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
3	27/6/0	22/10/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	0/0/0	13/8/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 5

Type		Exterior Column					
X-Loc		0/0/0					
Grid1 - Grid2		5-A					
Base Plate W x L (in.)		8 x 13					
Base Plate Thickness (in.)		0.375					
Anchor Rod Qty/Diam. (in.)		4 - 0.750					
Column Base Elev.		100'-1 1/2"					
Load Type	Desc.	Hx	Vy				
D	Frm	-	1.9	-	-	-	-
CG	Frm	-	1.5	-	-	-	-
L>	Frm	-	6.0	-	-	-	-
<L	Frm	-	6.0	-	-	-	-
S>	Frm	-	0.8	-	-	-	-
<S	Frm	-	0.8	-	-	-	-
S	Frm	-	0.8	-	-	-	-
SD	Frm	-	0.6	-	-	-	-
W1>	Frm	1.6	-4.9	-	-	-	-
<W1	Frm	-1.3	-5.5	-	-	-	-
W2>	Frm	0.6	-2.1	-	-	-	-
<W2	Frm	-2.2	-2.7	-	-	-	-
CU	Frm	-	-	-	-	-	-
L	Frm	-	6.0	-	-	-	-
E>	Frm	0.2	-0.0	-	-	-	-
EG+	Frm	-	0.1	-	-	-	-
<E	Frm	-0.2	0.0	-	-	-	-
EG-	Frm	-	-0.1	-	-	-	-
WP	Frm	2.0	-5.2	-	-	-	-
WB1>	Brc	-	-	-	-	-	-
<WB1	Brc	-	-	-	-	-	-
WB2>	Brc	-	-	-	-	-	-
<WB2	Brc	-	-	-	-	-	-
EB>	Brc	-	-	-	-	-	-
<EB	Brc	-	-	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	5-A	2.2	11	2.0	30	-	-	-	-	4.3	13	9.5	1	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	3.3	3.3
CG	0.0	0.0	2.6	2.6
L>	0.0	0.0	10.4	10.4
<L	0.0	0.0	10.4	10.4



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S>	0.0	0.0	1.3	1.3
<S	0.0	0.0	1.3	1.3
S	0.0	0.0	1.3	1.3
SD	0.0	0.0	3.3	3.3
W1>	5.6	5.6	6.9	7.0
<W1	0.3	0.3	9.3	9.3
W2>	2.3	2.3	2.9	2.9
<W2	3.0	3.0	5.3	5.3
CU	0.0	0.0	0.0	0.0
L	0.0	0.0	10.4	10.4
E>	0.5	0.5	0.0	0.1
EG+	0.1	0.0	0.2	0.2
<E	0.5	0.5	0.0	0.1
EG-	0.1	0.0	0.2	0.2
WP	6.7	6.7	7.3	7.3
WB1>	0.0	0.0	0.0	0.0
<WB1	0.0	0.0	0.0	0.0
WB2>	0.0	0.0	0.0	0.0
<WB2	0.0	0.0	0.0	0.0
EB>	0.0	0.0	0.0	0.0
<EB	0.0	0.0	0.0	0.0

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Boits	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	5-A	1	0.375	8	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
1	1	S9	12.10	11.461	85.21	N/A	N/A	0.2500	2.000	Both	W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1	2	KN(Face)	0.375	6.00	9.50	0.750	A325/	3.00	11	Flush	2.50	11	Flush (0)	2.50
2	1	KN(Face)	0.375	6.00	10.00	0.750	A325/	3.00	11	Flush	2.50	11	Flush	2.50
3	2	SIP	0.375	5.00	10.78	0.500	A325/	3.00	12	Flush (0)	2.50		Flush (0)	2.50

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Ld Cs	Required Strength - In			Available Strength - In		
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)		Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	2	43		2.8	9.8		0.0	119.9	19		4.3	14.0		0.0	119.9
2	1	43		2.8	9.8		0.0	119.9	19		4.3	14.0		0.0	119.9
3	2	0		0.0	0.0		0.0	0.0	0		0.0	0.0		0.0	0.0

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
2	1/10/9	25/4/11	FB2054	
3	1/7/4	11/9/13	FB2090	
3	11/7/4	1/9/13	(2)FB2060	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength			Strength Ratios		
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.42	11.50	1	1	0.2	-0.6	-14.7	0.0	88.2	17.5	204.7	39.0	0.07	0.04
1	6.23	12.00	15	15	1.6	2.2	84.1	0.0	113.5	17.0	198.7	55.4	0.43	0.13
2	10.86	15.04	1	1	-0.6	7.3	577.4	0.0	90.9	13.6	597.5	95.5	0.97	0.34
3	1.61	16.26	1	1	0.2	-6.4	606.6	0.0	139.6	12.6	657.1	95.2	0.92	0.32



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Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	lxx in.4	lyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.42	28.99	29.0	29.0	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	6.23	149.56	149.6	149.6	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.00	1.00	1.13	0.84	1.00
2	10.86	342.12	162.9	60.0	4.46	4.46	171.16	5.21	22.76	2.08	25.59	3.19	0.06	284.95	1.15	1.00	1.06	0.96	0.77
3	1.61	342.12	162.9	60.0	4.61	4.61	203.08	5.21	25.03	2.08	28.28	3.20	0.07	332.48	1.15	1.00	1.04	0.95	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	0.700 W1>	W1>
5	System	1.000	0	240	0.700 <W1	<W1
6	System	1.000	0	240	0.700 W2>	W2>
7	System	1.000	0	240	0.700 <W2	<W2
8	System	1.000	0	240	0.700 WP	WP
9	System Derived	1.000	0	240	0.700 WB1>	WB1>
10	System Derived	1.000	0	240	0.700 <WB1	<WB1
11	System Derived	1.000	0	240	0.700 WB2>	WB2>
12	System Derived	1.000	0	240	0.700 <WB2	<WB2
13	System	1.000	200	0	0.700 W1>	W1>
14	System	1.000	200	0	0.700 <W1	<W1
15	System	1.000	200	0	0.700 W2>	W2>
16	System	1.000	200	0	0.700 <W2	<W2
17	System	1.000	200	0	0.700 WP	WP
18	System Derived	1.000	200	0	0.700 WB1>	WB1>
19	System Derived	1.000	200	0	0.700 <WB1	<WB1
20	System Derived	1.000	200	0	0.700 WB2>	WB2>
21	System Derived	1.000	200	0	0.700 <WB2	<WB2
22	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
23	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
24	System Derived	1.000	50	0	1.0 EB>	EB>
25	System Derived	1.000	50	0	1.0 <EB	<EB

Controlling Frame Deflection Ratios for Cross Section: 5

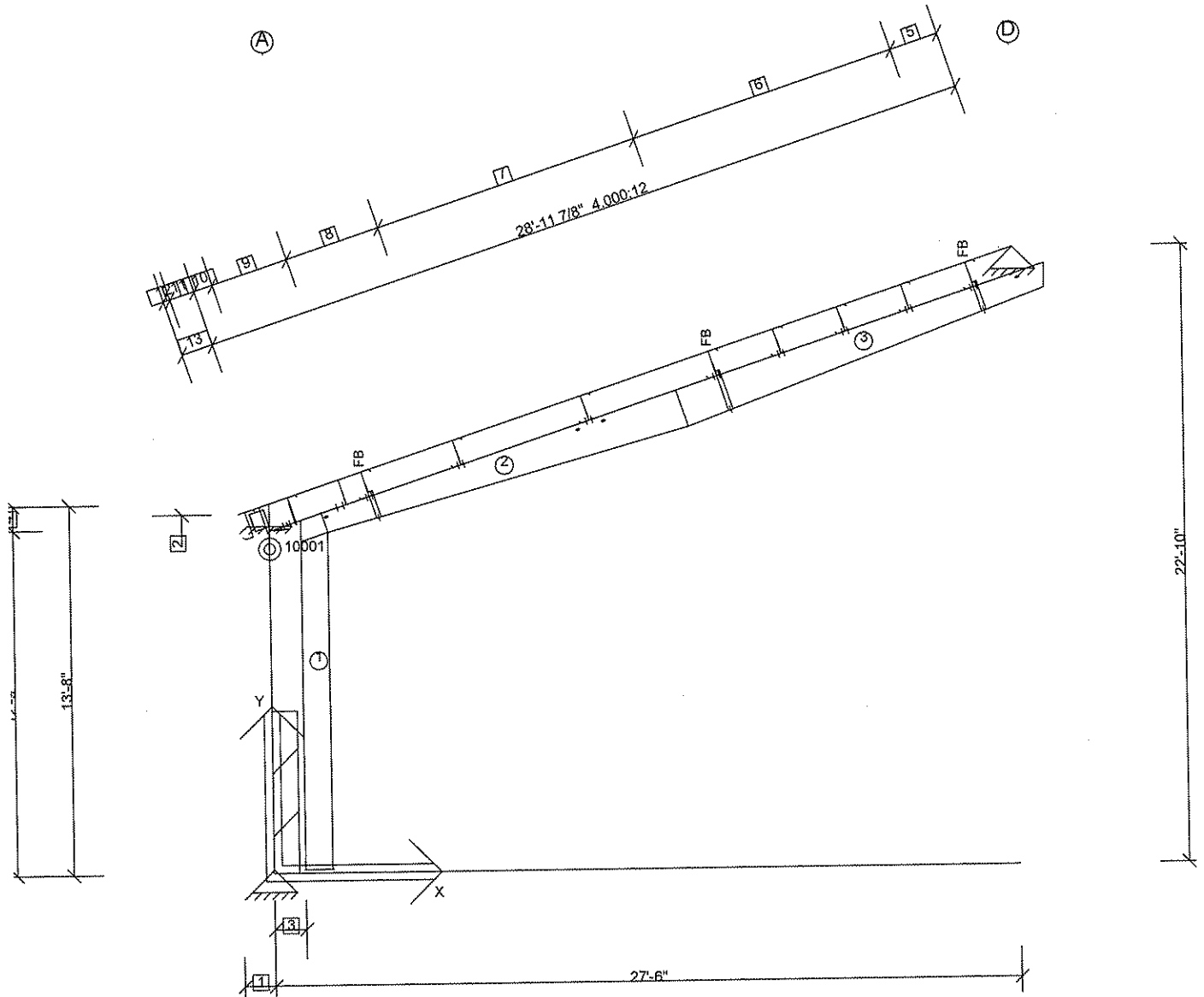
Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/3936)	-0.039	1	2	17	WP
Max. Vertical Deflection for Span 1	(L/321)	-1.023	2	2	1	L

* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 2, Frame at: 38/0/0
 Frame Cross Section: 3



Dimension Key

- 1 1'-1 1/2"
- 2 13'-3 1/2"
- 3 1'-2"
- 4 11"
- 5 1'-9 13/16"
- 6 4 @ 2'-6"
- 7 2 @ 5'-0"
- 8 3'-6 7/8"
- 9 2'-10 9/16"
- 10 8 9/16"
- 11 11 1/4"
- 12 3"
- 13 1'-2 1/4" 4,000:12



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Frame Clearances

Vert. Clearance at member 1(CX114): 12'-7 1/16"

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
38/0/0	18/2/0	Leanto	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L>	D + CG + L>
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S>	D + CG + S>
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
6	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 1)
7	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 2)
8	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
10	System	1.000	1.0 D + 1.0 CG + 1.0 W2>	D + CG + W2>
11	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
12	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
13	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
14	System	1.000	0.600 D + 0.600 CU + 1.0 W2>	D + CU + W2>
15	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
16	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
17	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
18	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2>	D + CG + L + W2>
19	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
20	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
21	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
22	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2>	D + CG + S + W2>
23	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
24	System	1.000	1.0 D + 1.0 CG + 0.700 E> + 0.700 EG+	D + CG + E> + EG+
25	System	1.000	1.0 D + 1.0 CG + 0.700 <E> + 0.700 EG+	D + CG + <E> + EG+
26	System	1.000	0.600 D + 0.600 CU + 0.700 E> + 0.700 EG-	D + CU + E> + EG-
27	System	1.000	0.600 D + 0.600 CU + 0.700 <E> + 0.700 EG-	D + CU + <E> + EG-
28	System	1.000	1.0 D + 1.0 CG + 0.525 E> + 0.525 EG+	D + CG + E> + EG+
29	System	1.000	1.0 D + 1.0 CG + 0.525 <E> + 0.525 EG+	D + CG + <E> + EG+
30	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB1>	D + CG + WP + WB1>
31	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB1>	D + CU + WP + WB1>
32	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB1>	D + CG + L + WP + WB1>
33	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB1>	D + CG + S + WP + WB1>
34	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB1	D + CG + WP + <WB1
35	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB1	D + CU + WP + <WB1
36	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB1	D + CG + L + WP + <WB1
37	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB1	D + CG + S + WP + <WB1
38	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 WB2>	D + CG + WP + WB2>
39	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 WB2>	D + CU + WP + WB2>
40	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 WB2>	D + CG + L + WP + WB2>
41	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 WB2>	D + CG + S + WP + WB2>
42	System Derived	1.000	1.0 D + 1.0 CG + 1.0 WP + 1.0 <WB2	D + CG + WP + <WB2
43	System Derived	1.000	0.600 D + 0.600 CU + 1.0 WP + 1.0 <WB2	D + CU + WP + <WB2
44	System Derived	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP + 0.750 <WB2	D + CG + L + WP + <WB2
45	System Derived	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP + 0.750 <WB2	D + CG + S + WP + <WB2
46	System Derived	1.000	1.0 D + 1.0 CG + 0.700 EB> + 0.700 EG+	D + CG + EB> + EG+
47	System Derived	1.000	0.600 D + 0.600 CU + 0.700 EB> + 0.700 EG-	D + CU + EB> + EG-
48	System Derived	1.000	1.0 D + 1.0 CG + 0.525 EB> + 0.525 EG+	D + CG + EB> + EG+
49	System Derived	1.000	1.0 D + 1.0 CG + 0.700 <EB> + 0.700 EG+	D + CG + <EB> + EG+
50	System Derived	1.000	0.600 D + 0.600 CU + 0.700 <EB> + 0.700 EG-	D + CU + <EB> + EG-
51	System Derived	1.000	1.0 D + 1.0 CG + 0.525 <EB> + 0.525 EG+	D + CG + <EB> + EG+

Frame Member Sizes

Mem. No.	Fig Width (in.)	Fig Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Fig Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.62	34.4	55.00	55.00	SS	SS	3P
1	5.00	0.1875	0.1345	12.00	12.00	12.92	172.5	55.00	55.00	BP	KN	3P
2	5.00	0.2500	0.1345	9.00	17.00	14.65	203.1	55.00	55.00	KN	SS	3P



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3	5.00	0.2500	0.1345	17.00	10.21	14.65	211.0	55.00	55.00	SS	SS	3P
								Total Frame Weight = 621.0	(p)	(Includes all plates)		
								Frame Pricing Weight = 672.1	(p)	(Includes all pieces)		

Frame Member Releases

Member	Joint 1	Joint 2
1	No	Yes

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
3	27/6/0	22/10/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	0/0/0	13/8/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section: 3

Type	Exterior Column								
X-Loc	0/0/0								
Grid1 - Grid2	3-A								
Base Plate W x L (in.)	8 x 13								
Base Plate Thickness (in.)	0.375								
Anchor Rod Qty/Diam. (in.)	4 - 0.750								
Column Base Elev.	100'-1 1/2"								
Load Type	Desc.	Hx	Vy						
D	Frm	-	1.9	-	-	-	-	-	-
CG	Frm	-	1.5	-	-	-	-	-	-
L>	Frm	-	6.0	-	-	-	-	-	-
<L	Frm	-	6.0	-	-	-	-	-	-
S>	Frm	-	0.8	-	-	-	-	-	-
<S	Frm	-	0.8	-	-	-	-	-	-
S	Frm	-	0.8	-	-	-	-	-	-
SD	Frm	-	0.6	-	-	-	-	-	-
W1>	Frm	1.6	-4.9	-	-	-	-	-	-
<W1	Frm	-1.3	-5.5	-	-	-	-	-	-
W2>	Frm	0.6	-2.1	-	-	-	-	-	-
<W2	Frm	-2.2	-2.7	-	-	-	-	-	-
CU	Frm	-	-	-	-	-	-	-	-
L	Frm	-	6.0	-	-	-	-	-	-
E>	Frm	0.2	-0.0	-	-	-	-	-	-
EG+	Frm	-	0.1	-	-	-	-	-	-
<E	Frm	-0.2	0.0	-	-	-	-	-	-
EG-	Frm	-	-0.1	-	-	-	-	-	-
WP	Frm	2.0	-5.2	-	-	-	-	-	-
WB1>	Brc	-	-	-	-	-	-	-	-
<WB1	Brc	-	-	-	-	-	-	-	-
WB2>	Brc	-	-	-	-	-	-	-	-
<WB2	Brc	-	-	-	-	-	-	-	-
EB>	Brc	-	-	-	-	-	-	-	-
<EB	Brc	-	-	-	-	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	3-A	2.2	11	2.0	30	-	-	-	-	4.3	13	9.5	1	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	3.3	3.3
CG	0.0	0.0	2.6	2.6
L>	0.0	0.0	10.4	10.4
<L	0.0	0.0	10.4	10.4



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S>	0.0	0.0	1.3	1.3
<S	0.0	0.0	1.3	1.3
S	0.0	0.0	1.3	1.3
SD	0.0	0.0	3.3	3.3
W1>	5.6	5.6	7.0	7.0
<W1	0.3	0.3	9.3	9.3
W2>	2.3	2.3	2.9	2.9
<W2	3.0	3.0	5.3	5.3
CU	0.0	0.0	0.0	0.0
L	0.0	0.0	10.4	10.4
E>	0.5	0.5	0.0	0.1
EG+	0.1	0.0	0.2	0.2
<E	0.5	0.5	0.0	0.1
EG-	0.1	0.0	0.2	0.2
WP	6.7	6.7	7.2	7.2
WB1>	0.0	0.0	0.0	0.0
<WB1	0.0	0.0	0.0	0.0
WB2>	0.0	0.0	0.0	0.0
<WB2	0.0	0.0	0.0	0.0
EB>	0.0	0.0	0.0	0.0
<EB	0.0	0.0	0.0	0.0

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	3-A	1	0.375	8	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem. No.	Stiff. No.	Desc.	Loc. (ft)	Web Depth (in.)	h/t	a/h	a (in.)	Thick. (in.)	Width (in.)	Side	Welding Description
1	1	S9	12.10	11.461	85.21	N/A	N/A	0.2500	2.000	Both	W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)	Configuration ID	Desc.	Pitches 1st/2nd (in.)
1	2	KN(Face)	0.375	6.00	9.50	0.750	A325/	3.00	11	Flush	2.50	11	Flush (0)	2.50
2	1	KN(Face)	0.375	6.00	10.00	0.750	A325/	3.00	11	Flush	2.50	11	Flush	2.50
3	2	SIP	0.375	5.00	10.78	0.500	A325/	3.00	12	Flush (0)	2.50		Flush (0)	2.50

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	2	43		2.8	9.7		0.0	119.9	19		4.3	13.9		0.0	119.9
2	1	43		2.8	9.7		0.0	119.9	19		4.3	13.9		0.0	119.9
3	2	0		0.0	0.0		0.0	0.0	0		0.0	0.0		0.0	0.0

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
2	1/10/9	25/4/11	FB2054	
3	1/7/4	11/9/13	FB2090	
3	11/7/4	1/9/13	FB2060	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.42	11.50	1	1	0.2	-0.6	-14.7	0.0	88.2	17.5	204.7	39.0	0.07	0.04
1	6.23	12.00	15	15	1.6	2.2	84.1	0.0	113.5	17.0	198.7	55.4	0.43	0.13
2	10.86	15.04	1	1	-0.6	7.3	577.4	0.0	90.9	13.6	597.5	95.5	0.97	0.34
3	1.61	16.26	1	1	0.2	-6.4	606.6	0.0	139.6	12.6	657.1	95.2	0.92	0.32



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Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.42	28.99	29.0	29.0	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	6.23	149.56	149.6	149.6	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.00	1.00	1.13	0.84	1.00
2	10.86	342.12	162.9	60.0	4.46	4.46	171.16	5.21	22.76	2.08	25.59	3.19	0.06	284.95	1.15	1.00	1.06	0.96	0.77
3	1.61	342.12	162.9	60.0	4.61	4.61	203.08	5.21	25.03	2.08	28.28	3.20	0.07	332.48	1.15	1.00	1.04	0.95	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	0.700 W1>	W1>
5	System	1.000	0	240	0.700 <W1	<W1
6	System	1.000	0	240	0.700 W2>	W2>
7	System	1.000	0	240	0.700 <W2	<W2
8	System	1.000	0	240	0.700 WP	WP
9	System Derived	1.000	0	240	0.700 WB1>	WB1>
10	System Derived	1.000	0	240	0.700 <WB1	<WB1
11	System Derived	1.000	0	240	0.700 WB2>	WB2>
12	System Derived	1.000	0	240	0.700 <WB2	<WB2
13	System	1.000	200	0	0.700 W1>	W1>
14	System	1.000	200	0	0.700 <W1	<W1
15	System	1.000	200	0	0.700 W2>	W2>
16	System	1.000	200	0	0.700 <W2	<W2
17	System	1.000	200	0	0.700 WP	WP
18	System Derived	1.000	200	0	0.700 WB1>	WB1>
19	System Derived	1.000	200	0	0.700 <WB1	<WB1
20	System Derived	1.000	200	0	0.700 WB2>	WB2>
21	System Derived	1.000	200	0	0.700 <WB2	<WB2
22	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
23	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-
24	System Derived	1.000	50	0	1.0 EB>	EB>
25	System Derived	1.000	50	0	1.0 <EB	<EB

Controlling Frame Deflection Ratios for Cross Section: 3

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/3971)	-0.038	1	2	17	WP
Max. Vertical Deflection for Span 1	(L/321)	-1.023	3	1	1	L

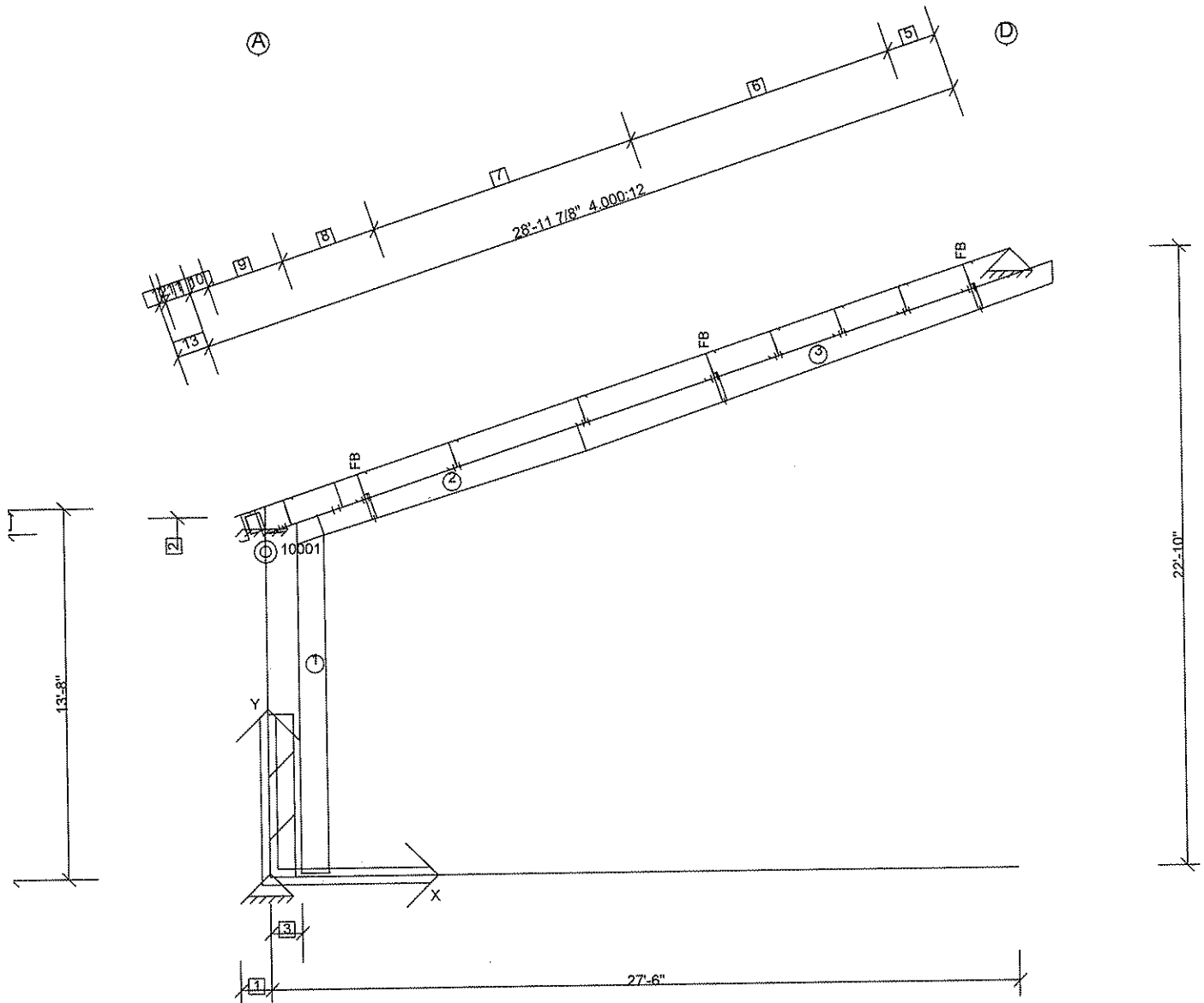
* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.

Wall: 2, Frame at: 56/4/0

Frame Cross Section:



Dimension Key

- 1 1'-1 1/2"
- 2 13'-3 1/2"
- 3 1'-2"
- 4 11"
- 5 1'-9 13/16"
- 6 4 @ 2'-6"
- 7 2 @ 5'-0"
- 8 3'-6 7/8"
- 9 2'-10 9/16"
- 10 8 9/16"
- 11 11 1/4"
- 12 3"
- 13 1'-2 1/4" 4.000:12



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Frame Clearances

Vert. Clearance at member 1(CX112): 12'-7 1/16"

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



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Frame Location Design Parameters:

Location	Avg. Bay Space	Description	Angle	Group	Trib. Override	Design Status
56/4/0	10/10/0	Leanto	90.0000		-	Stress Check

Design Load Combinations - Framing

No.	Origin	Factor	Application	Description
1	System	1.000	1.0 D + 1.0 CG + 1.0 L>	D + CG + L>
2	System	1.000	1.0 D + 1.0 CG + 1.0 <L	D + CG + <L
3	System	1.000	1.0 D + 1.0 CG + 1.0 S>	D + CG + S>
4	System	1.000	1.0 D + 1.0 CG + 1.0 <S	D + CG + <S
5	System	1.000	1.0 D + 1.0 CG + 1.0 S + 1.0 SD	D + CG + S + SD
6	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 1)
7	System	1.000	1.0 D + 1.0 CG + 1.0 PF1	D + CG + PF1(Span 2)
8	System	1.000	1.0 D + 1.0 CG + 1.0 W1>	D + CG + W1>
9	System	1.000	1.0 D + 1.0 CG + 1.0 <W1	D + CG + <W1
10	System	1.000	1.0 D + 1.0 CG + 1.0 W2>	D + CG + W2>
11	System	1.000	1.0 D + 1.0 CG + 1.0 <W2	D + CG + <W2
12	System	1.000	1.0 D + 1.0 CG + 1.0 WP	D + CG + WP
13	System	1.000	0.600 D + 0.600 CU + 1.0 W1>	D + CU + W1>
14	System	1.000	0.600 D + 0.600 CU + 1.0 <W1	D + CU + <W1
15	System	1.000	0.600 D + 0.600 CU + 1.0 W2>	D + CU + W2>
16	System	1.000	0.600 D + 0.600 CU + 1.0 <W2	D + CU + <W2
17	System	1.000	0.600 D + 0.600 CU + 1.0 WP	D + CU + WP
18	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W1>	D + CG + L + W1>
19	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W1	D + CG + L + <W1
20	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 W2>	D + CG + L + W2>
21	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 <W2	D + CG + L + <W2
22	System	1.000	1.0 D + 1.0 CG + 0.750 L + 0.750 WP	D + CG + L + WP
23	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W1>	D + CG + S + W1>
24	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W1	D + CG + S + <W1
25	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 W2>	D + CG + S + W2>
26	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 <W2	D + CG + S + <W2
27	System	1.000	1.0 D + 1.0 CG + 0.750 S + 0.750 WP	D + CG + S + WP
28	System	1.000	1.0 D + 1.0 CG + 0.700 E> + 0.700 EG+	D + CG + E> + EG+
29	System	1.000	1.0 D + 1.0 CG + 0.700 <E + 0.700 EG+	D + CG + <E + EG+
30	System	1.000	0.600 D + 0.600 CU + 0.700 E> + 0.700 EG-	D + CU + E> + EG-
31	System	1.000	0.600 D + 0.600 CU + 0.700 <E + 0.700 EG-	D + CU + <E + EG-
32	System	1.000	1.0 D + 1.0 CG + 0.525 E> + 0.525 EG+	D + CG + E> + EG+
33	System	1.000	1.0 D + 1.0 CG + 0.525 <E + 0.525 EG+	D + CG + <E + EG+

Frame Member Sizes

Mem. No.	Flg Width (in.)	Flg Thk (in.)	Web Thk (in.)	Depth1 (in.)	Depth2 (in.)	Length (ft)	Weight (p)	Flg Fy (ksi)	Web Fy (ksi)	Splice Jt.1	Codes Jt.2	Shape
10001	5.00	0.1345	0.1345	11.50	11.50	1.62	34.4	55.00	55.00	SS	SS	3P
1	5.00	0.1875	0.1345	12.00	12.00	12.92	172.5	55.00	55.00	BP	KN	3P
2	5.00	0.2500	0.1345	9.00	12.00	10.92	138.4	55.00	55.00	KN	SS	3P
3	5.00	0.2500	0.1345	12.00	9.43	18.81	246.8	55.00	55.00	SS	SS	3P

Total Frame Weight = 592.2 (p) (Includes all plates)
 Frame Pricing Weight = 638.6 (p) (Includes all pieces)

Frame Member Releases

Member	Joint 1	Joint 2
1	No	Yes

Boundary Condition Summary

Member	X-Loc	Y-Loc	Supp. X	Supp. Y	Moment	Displacement X(in.)	Displacement Y(in.)	Displacement ZZ(rad.)
1	0/0/0	0/1/8	Yes	Yes	No	0/0/0	0/0/0	0.0000
3	27/6/0	22/10/0	Yes	Yes	No	0/0/0	0/0/0	0.0000
10001	0/0/0	13/8/0	Yes	Yes	Yes	0/0/0	0/0/0	0.0000

Values shown are resisting forces of the foundation.

Reactions - Unfactored Load Type at Frame Cross Section:

Type	Exterior Column	Rafter
X-Loc	0/0/0	27/6/0
Grid1 - Grid2	-A	-D



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Base Plate W x L (in.)		8 x 13							
Base Plate Thickness (in.)		0.375							
Anchor Rod Qty/Diam. (in.)		4 - 0.750							
Column Base Elev.		100'-1 1/2"							
Load Type	Desc.	Hx	Vy	Hx	Vy				
D	Frm	-	1.4	-	1.0	-	-	-	-
CG	Frm	-	1.0	-	0.8	-	-	-	-
L>	Frm	-	3.9	-	3.1	-	-	-	-
<L	Frm	-	3.9	-	3.1	-	-	-	-
S>	Frm	-	0.5	-	0.4	-	-	-	-
<S	Frm	-	0.5	-	0.4	-	-	-	-
S	Frm	-	0.5	-	0.4	-	-	-	-
SD	Frm	-	0.3	-	1.4	-	-	-	-
W1>	Frm	0.9	-3.1	2.6	-1.5	-	-	-	-
<W1	Frm	-0.8	-3.9	1.4	-2.8	-	-	-	-
W2>	Frm	0.4	-1.4	1.1	-0.7	-	-	-	-
<W2	Frm	-1.3	-2.3	-0.1	-2.0	-	-	-	-
WP	Frm	1.2	-4.2	3.5	-2.1	-	-	-	-
CU	Frm	-	-	-	-	-	-	-	-
L	Frm	-	3.9	-	3.1	-	-	-	-
E>	Frm	0.1	-0.0	0.2	0.1	-	-	-	-
EG+	Frm	-	0.1	-	0.0	-	-	-	-
<E	Frm	-0.1	0.0	-0.2	-0.1	-	-	-	-
EG-	Frm	-	-0.1	-	-0.0	-	-	-	-

Maximum Combined Reactions Summary with Factored Loads - Framing

Note: All reactions based on 2nd order structural analysis using the Direct Analysis Method

X-Loc	Grid	Hz left (-Hx) (k)	Load Case	Hz Right (Hx) (k)	Load Case	Hz In (-Hz) (k)	Load Case	Hz Out (Hz) (k)	Load Case	Uplift (-Vy) (k)	Load Case	Vrt Down (Vy) (k)	Load Case	Mom cw (-Mzz) (in-k)	Load Case	Mom ccw (Mzz) (in-k)	Load Case
0/0/0	-A	1.3	11	1.2	12	-	-	-	-	3.4	17	6.3	1	-	-	-	-
27/6/0	-D	0.1	29	3.5	12	-	-	-	-	2.3	14	4.8	1	-	-	-	-

Sum of Forces with Reactions Check - Framing

Load Type	Horizontal		Vertical	
	Load (k)	Reaction (k)	Load (k)	Reaction (k)
D	0.0	0.0	2.4	2.3
CG	0.0	0.0	1.7	1.7
L>	0.0	0.0	7.0	7.0
<L	0.0	0.0	7.0	7.0
S>	0.0	0.0	0.9	0.9
<S	0.0	0.0	0.9	0.9
S	0.0	0.0	0.9	0.9
SD	0.0	0.0	1.7	1.7
W1>	3.5	3.5	4.5	4.5
<W1	0.6	0.6	6.7	6.7
W2>	1.5	1.5	2.1	2.1
<W2	1.4	1.4	4.3	4.3
WP	4.7	4.7	6.3	6.3
CU	0.0	0.0	0.0	0.0
L	0.0	0.0	7.0	7.0
E>	0.3	0.3	0.0	0.1
EG+	0.0	0.0	0.1	0.1
<E	0.3	0.3	0.0	0.1
EG-	0.0	0.0	0.1	0.1

Base Plate Summary

X-Loc	Grid	Mem. No.	Thickness (in.)	Width (in.)	Length (in.)	Num. Of Bolts	Bolt Diam. (in.)	Type	Welds to Flange	Welds to Web
0/0/0	-A	1	0.375	8	13	4	0.750	A36	OS-0.1875	OS-0.1875

Web Stiffener Summary

Mem.	Stiff.	Desc.	Loc.	Web Depth	h/t	a/h	a	Thick.	Width	Side	Welding



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No.	No.		(ft)	(in.)		(in.)	(in.)	(in.)		Description
1	1	S9	12.10	11.461	85.21	N/A	N/A	0.2500	2.000	Both W-OS-0.1875

Bolted End-Plate Moment Connections (AISC DG-16) - Fy = 55 ksi

Mem. No.	Jt. No.	Type	End-Plate Dimensions			Bolt			Outside Flange			Inside Flange		
			Thick. (in.)	Width (in.)	Length (in.)	Diam. (in.)	Spec/Joint	Gages In/Out (in.)	Configuration ID	Desc. (in.)	Pitches 1st/2nd (in.)	Configuration ID	Desc. (in.)	Pitches 1st/2nd (in.)
1	2	KN(Face)	0.375	6.00	9.50	0.750	A325/	3.00	11	Flush	2.50	11	Flush (0)	2.50
2	1	KN(Face)	0.375	6.00	10.00	0.750	A325/	3.00	11	Flush	2.50	11	Flush	2.50
3	2	SIP	0.375	5.00	9.95	0.500	A325/	3.00	12	Flush (0)	2.50/2.50		Flush (0)	2.50/2.50

Mem. No.	Jt. No.	Ld Cs	Required Strength - Out			Available Strength - Out			Required Strength - In			Available Strength - In			
			Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)	Ld Cs	Axial (k)	Shear (k)	Moment (in-k)	Design Proc.	Shear (k)	Moment (in-k)
1	2	17		2.4	6.9		0.0	119.9	21		2.5	7.5		0.0	119.9
2	1	17		2.4	6.9		0.0	119.9	21		2.5	7.5		0.0	119.9
3	2	0		0.0	0.0		0.0	0.0	0		0.0	0.0		0.0	0.0

Flange Brace Summary

Member	From Member Joint 1	From Side Point 1	Part	Design Note
2	1/10/9	25/4/11	FB2050	
3	5/4/0	11/9/13	FB2060	
3	15/4/0	1/9/13	FB2050	

Frame Design Member Summary - Controlling Load Case and Maximum Combined Stresses per Member (Locations are from Joint 1)

Mem. No.	Loc. ft	Depth in.	Controlling Cases		Required Strength				Available Strength				Strength Ratios	
			Axial + Flexure	Shear	Axial Pr k	Shear Vr k	Mom-x Mrx in-k	Mom-y Mry in-k	Axial Pc k	Shear Vc k	Mom-x Mcx in-k	Mom-y Mcy in-k	Axial + Flexure	Shear
10001	2.42	11.50	1	1	0.1	-0.4	-10.0	0.0	88.2	17.5	204.7	39.0	0.05	0.02
1	6.23	12.00	16	16	1.4	1.3	50.5	0.0	113.5	17.0	198.4	55.4	0.26	0.08
2	10.52	12.00	14	1	0.3	4.7	-194.8	0.0	133.5	17.4	265.3	96.3	0.74	0.22
3	5.33	11.20	1	1	0.2	-4.5	374.1	0.0	115.9	18.8	414.5	96.5	0.90	0.21

Mem. No.	Loc. ft	Lx in.	Ly/Lt in.	Lb in.	Ag in.2	Afn in.2	Ixx in.4	Iyy in.4	Sx in.3	Sy in.3	Zx in.3	Zy in.3	J in.4	Cw in.6	Cb	Rpg	Rpc	Qs	Qa
10001	2.42	28.99	29.0	29.0	2.86	2.86	59.32	2.80	10.32	1.12	11.88	1.73	0.02	90.56	1.00	1.00	1.15	0.60	1.00
1	6.23	149.56	149.6	149.6	3.44	3.44	83.02	3.91	13.84	1.56	15.62	2.40	0.03	136.35	1.00	1.00	1.13	0.84	1.00
2	10.52	327.29	162.9	162.9	4.05	4.05	103.35	5.21	17.22	2.08	19.13	3.18	0.06	179.85	1.15	1.00	1.11	0.98	1.00
3	5.33	327.29	162.9	60.0	3.94	3.94	88.22	5.21	15.79	2.08	17.49	3.17	0.06	155.43	1.13	1.00	1.11	0.99	1.00

Deflection Load Combinations - Framing

No.	Origin	Factor	Def H	Def V	Application	Description
1	System	1.000	0	240	1.0 L	L
2	System	1.000	0	240	1.0 S	S
3	System	1.000	0	240	1.0 S + 1.0 SD	S + SD
4	System	1.000	0	240	0.700 W1>	W1>
5	System	1.000	0	240	0.700 <W1	<W1
6	System	1.000	0	240	0.700 W2>	W2>
7	System	1.000	0	240	0.700 <W2	<W2
8	System	1.000	0	240	0.700 WP	WP
9	System	1.000	200	0	0.700 W1>	W1>
10	System	1.000	200	0	0.700 <W1	<W1
11	System	1.000	200	0	0.700 W2>	W2>
12	System	1.000	200	0	0.700 <W2	<W2
13	System	1.000	200	0	0.700 WP	WP
14	System	1.000	50	0	1.0 E> + 1.0 EG-	E> + EG-
15	System	1.000	50	0	1.0 <E + 1.0 EG-	<E + EG-

Controlling Frame Deflection Ratios for Cross Section:

Description	Ratio	Deflection (in.)	Member	Joint	Load Case	Load Case Description
Max. Horizontal Deflection	(H/6917)	-0.022	1	2	13	WP
Max. Vertical Deflection for Span 1	(L/322)	-0.978	2	2	1	L



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* Negative horizontal deflection is left

* Negative vertical deflection is down

Lateral deflections of primary frames are calculated on a bare frame basis and do not include resistance from systems such as roof and endwall diaphragms. Therefore, these deflections may be considerably overstated.



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Covering - Summary Report

Shape: Operations Building

Loads and Codes - Shape: Operations Building

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Wind Exposure (Factor): B (0.705)
 Parts Wind Exposure Factor: 0.705

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.0000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 15/3/12
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 25.92 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.30 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - S1: 5.10 %g
 Seismic Hazard / Use Group: Group 1
 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.3628
 Bracing Seismic Period: 0.2208
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Covering Design Loads - Wall: 1

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
End Zone	psf	W1>	Need Lower and Upper Girt	40.95	0/0/0	41.000	1.00	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.58	0/0/0	50.000	0.61	IN	1.180
End Zone	psf	W1>	Need Lower and Upper Girt	40.95	52/2/6	41.000	1.00	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.58	52/2/6	50.000	0.61	IN	1.180
Interior Area	psf	W1>	Need Lower and Upper Girt	33.17	5/9/10	41.000	0.81	OUT	-1.280
Interior Area	psf	<W2	Need Lower and Upper Girt	30.58	5/9/10	50.000	0.61	IN	1.180

Covering Design Loads - Wall: 2

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
End Zone	psf	W1>	Need Lower and Upper Girt	40.95	0/0/0	41.000	1.00	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.58	0/0/0	50.000	0.61	IN	1.180
End Zone	psf	W1>	Need Lower and Upper Girt	40.95	114/8/6	41.000	1.00	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.58	114/8/6	50.000	0.61	IN	1.180
Interior Area	psf	W1>	Need Lower and Upper Girt	33.17	0/0/0	41.000	0.81	OUT	-1.280
Interior Area	psf	<W2	Need Lower and Upper Girt	30.58	0/0/0	50.000	0.61	IN	1.180

Covering Design Loads - Wall: 3

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
End Zone	psf	W1>	Need Lower and Upper Girt	40.95	0/0/0	41.000	1.00	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.58	0/0/0	50.000	0.61	IN	1.180
End Zone	psf	W1>	Need Lower and Upper Girt	40.95	52/2/6	41.000	1.00	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.58	52/2/6	50.000	0.61	IN	1.180
Interior Area	psf	W1>	Need Lower and Upper Girt	33.17	5/9/10	41.000	0.81	OUT	-1.280
Interior Area	psf	<W2	Need Lower and Upper Girt	30.58	5/9/10	50.000	0.61	IN	1.180

Covering Design Loads - Wall: 4

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
End Zone	psf	W1>	Need Lower and Upper Girt	40.95	0/0/0	41.000	1.00	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.58	0/0/0	50.000	0.61	IN	1.180



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Interior Area	psf	W1>	Need Lower and Upper Girt	33.17	5/9/10	41.000	0.81	OUT	-1.280
Interior Area	psf	<W2	Need Lower and Upper Girt	30.58	5/9/10	59.000	0.88	IN	1.180

Covering Design Loads - Roof: A

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
Entire Surface	psf	L	Standard Spacing is Adequate	21.80	-1/1/8	86.000	0.25	IN	1.000
Entire Surface	psf	S	Standard Spacing is Adequate	2.30	-1/1/8	86.000	0.03	IN	1.000
Entire Surface	psf	US1*	Standard Spacing is Adequate	2.30	-1/1/8	86.000	0.03	IN	1.000
Entire Surface	psf	US1*	Standard Spacing is Adequate	14.81	-1/1/8	86.000	0.17	IN	1.000
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	4/8/2	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	4/8/2	86.000	0.23	IN	0.680
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	-1/1/8	99.000	0.95	OUT	-3.700
Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	-1/1/8	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	0/0/0	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	0/0/0	86.000	0.23	IN	0.680
Side Zone in Extension	psf	W1>	Standard Spacing is Adequate	55.22	0/0/0	57.000	0.97	OUT	-2.200
Side Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	0/0/0	86.000	0.17	IN	0.500
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	0/0/0	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	0/0/0	86.000	0.23	IN	0.680
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	0/0/0	99.000	0.95	OUT	-3.700
Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	0/0/0	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	115/9/14	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	115/9/14	86.000	0.23	IN	0.680
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	115/9/14	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	115/9/14	86.000	0.23	IN	0.680
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	120/6/0	99.000	0.95	OUT	-3.700
Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	120/6/0	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	120/6/0	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	120/6/0	86.000	0.23	IN	0.680
Side Zone in Extension	psf	W1>	Standard Spacing is Adequate	55.22	120/6/0	57.000	0.97	OUT	-2.200
Side Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	120/6/0	86.000	0.17	IN	0.500
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	120/6/0	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	120/6/0	86.000	0.23	IN	0.680
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	120/6/0	99.000	0.95	OUT	-3.700
Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	120/6/0	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	114/8/6	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	114/8/6	86.000	0.23	IN	0.680
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	114/8/6	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	114/8/6	86.000	0.23	IN	0.680
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	77/5/10	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	77/5/10	86.000	0.23	IN	0.680
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	81/1/10	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	81/1/10	86.000	0.23	IN	0.680
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	73/2/14	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	73/2/14	86.000	0.23	IN	0.680
Interior Area	psf	W1>	Standard Spacing is Adequate	26.19	4/8/2	57.000	0.46	OUT	-1.080
Interior Area	psf	<W2	Standard Spacing is Adequate	19.42	4/8/2	86.000	0.23	IN	0.680

Covering Design Loads - Roof: B

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
Entire Surface	psf	L	Standard Spacing is Adequate	21.80	-1/1/8	86.000	0.25	IN	1.000
Entire Surface	psf	S	Standard Spacing is Adequate	4.10	-1/1/8	86.000	0.05	IN	1.000
Entire Surface	psf	*US1	Standard Spacing is Adequate	4.10	-1/1/8	86.000	0.05	IN	1.000
Entire Surface	psf	*US1	Standard Spacing is Adequate	16.48	-1/1/8	86.000	0.19	IN	1.000
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	4/8/2	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	4/8/2	86.000	0.23	IN	0.680
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	-1/1/8	99.000	0.95	OUT	-3.700



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Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	-1/1/8	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	0/0/0	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	0/0/0	86.000	0.23	IN	0.680
Side Zone in Extension	psf	W1>	Standard Spacing is Adequate	55.22	0/0/0	57.000	0.97	OUT	-2.200
Side Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	0/0/0	86.000	0.17	IN	0.500
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	0/0/0	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	0/0/0	86.000	0.23	IN	0.680
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	0/0/0	99.000	0.95	OUT	-3.700
Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	0/0/0	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	115/9/14	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	115/9/14	86.000	0.23	IN	0.680
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	115/9/14	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	115/9/14	86.000	0.23	IN	0.680
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	120/6/0	99.000	0.95	OUT	-3.700
Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	120/6/0	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	120/6/0	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	120/6/0	86.000	0.23	IN	0.680
Side Zone in Extension	psf	W1>	Standard Spacing is Adequate	55.22	120/6/0	57.000	0.97	OUT	-2.200
Side Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	120/6/0	86.000	0.17	IN	0.500
Corner Zone	psf	W1>	Non-std Spacing: 3/6/0 Required	75.43	120/6/0	75.000	1.01	OUT	-2.980
Corner Zone	psf	<W2	Standard Spacing is Adequate	19.42	120/6/0	86.000	0.23	IN	0.680
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	120/6/0	99.000	0.95	OUT	-3.700
Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.76	120/6/0	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	46.92	115/9/14	57.000	0.82	OUT	-1.880
Side Zone	psf	<W2	Standard Spacing is Adequate	19.42	115/9/14	86.000	0.23	IN	0.680
Interior Area	psf	W1>	Standard Spacing is Adequate	26.19	4/8/2	57.000	0.46	OUT	-1.080
Interior Area	psf	<W2	Standard Spacing is Adequate	19.42	4/8/2	86.000	0.23	IN	0.680

Covering Design Loads - Wall: 2 - Canopy: 1

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
Entire Surface	psf	L	Standard Spacing is Adequate	21.80	0/0/0	74.000	0.29	IN	1.000
Entire Surface	psf	S	Standard Spacing is Adequate	5.06	0/0/0	74.000	0.07	IN	1.000
Entire Surface	psf	*US1	Standard Spacing is Adequate	5.06	0/0/0	74.000	0.07	IN	1.000
Corner Zone	psf	W1>	No Resolution Available	94.09	0/0/0	-1.000		OUT	-3.700
Corner Zone	psf	<W2	Standard Spacing is Adequate	14.76	0/0/0	74.000	0.20	IN	0.500
Corner Zone	psf	W1>	No Resolution Available	94.09	116/11/6	-1.000		OUT	-3.700
Corner Zone	psf	<W2	Standard Spacing is Adequate	14.76	116/11/6	74.000	0.20	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	55.22	5/9/10	57.000	0.97	OUT	-2.200
Side Zone	psf	<W2	Standard Spacing is Adequate	14.76	5/9/10	74.000	0.20	IN	0.500

Covering Design Loads - Wall: 2 - Canopy: 2

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
Entire Surface	psf	L	Standard Spacing is Adequate	21.80	0/0/0	74.000	0.29	IN	1.000
Entire Surface	psf	S	Standard Spacing is Adequate	5.34	0/0/0	74.000	0.07	IN	1.000
Entire Surface	psf	*US1	Standard Spacing is Adequate	5.34	0/0/0	74.000	0.07	IN	1.000
Snow Drift	psf	SD	Standard Spacing is Adequate	31.67	1/1/8	74.000	0.43	IN	1.000
Sliding Snow Load	psf	SS	Standard Spacing is Adequate	2.72	1/1/8	74.000	0.04	IN	1.000
Snow Drift	psf	SD	Standard Spacing is Adequate	31.97	0/0/0	74.000	0.43	IN	1.000
Corner Zone	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	0/0/0	99.000	0.95	OUT	-3.700
Corner Zone	psf	<W2	Standard Spacing is Adequate	14.76	0/0/0	74.000	0.20	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	55.22	5/9/10	57.000	0.97	OUT	-2.200
Side Zone	psf	<W2	Standard Spacing is Adequate	14.76	5/9/10	74.000	0.20	IN	0.500
Corner Zone	psf	W1>	Non-std Spacing: 2/6/0 Required	94.09	70/7/14	99.000	0.95	OUT	-3.700
Corner Zone	psf	<W2	Standard Spacing is Adequate	14.76	70/7/14	74.000	0.20	IN	0.500

Covering Design Loads - Wall: 4 - Canopy: 1

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
Entire Surface	psf	L	Standard Spacing is Adequate	21.80	0/0/0	74.000	0.29	IN	1.000
Entire Surface	psf	S	Standard Spacing is Adequate	5.06	0/0/0	74.000	0.07	IN	1.000



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Entire Surface	psf	US1*	Standard Spacing is Adequate	5.06	0/0/0	74.000	0.07	IN	1.000
Side Zone	psf	W1>	Standard Spacing is Adequate	55.22	0/0/0	57.000	0.97	OUT	-2.200
Side Zone	psf	<W2	Standard Spacing is Adequate	14.76	0/0/0	74.000	0.20	IN	0.500
Corner Zone	psf	W1>	No Resolution Available	94.09	74/4/6	-1.000		OUT	-3.700
Corner Zone	psf	<W2	Standard Spacing is Adequate	14.76	74/4/6	74.000	0.20	IN	0.500

WALLS ARE EP12, 22GA. HATS ON BLOCK (NBVP) MUST BE SPACED PER NEXT PAGE

Panel Data

Wall/Roof	Type	Thickness	Finish	Color	Direction	Gable Dir	Max. Length
Wall: 1	Panel Rib	26	KXL	Standard Color	Left to Right	Left to Right	41/0/0
Location: 2	NBVP - Masonry	11 1/4"	psf = 50.00	Supported by others=no			
Location: 3	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 4	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Wall: 2	Panel Rib	26	KXL	Standard Color	Left to Right	Left to Right	41/0/0
Location: 2	NBVP - Masonry	11 1/4"	psf = 50.00	Supported by others=no			
Location: 3	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 4	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 5	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 6	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 7	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 8	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Canopy: 1	SLR2	22	AEP	Standard Color	System Generated	Not Applicable	40/0/0
Canopy: 2	SLR2	22	AEP	Standard Color	System Generated	Not Applicable	40/0/0
Wall: 3	Panel Rib	26	KXL	Standard Color	Left to Right	Left to Right	41/0/0
Wall: 4	Panel Rib	26	KXL	Standard Color	Left to Right	Left to Right	41/0/0
Location: 2	NBVP - Masonry	11 1/4"	psf = 50.00	Supported by others=no			
Location: 3	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 4	NBVP - Panel	1/16"	psf = 50.00	Supported by others=no			
Location: 5	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 6	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 7	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 8	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 9	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Location: 10	NBVP - Panel	1/16"	psf = 1.00	Supported by others=no			
Canopy: 3	SLR2	22	AEP	Standard Color	System Generated	Not Applicable	40/0/0
Roof: A	SLR2	22	AEP	Standard Color	System Generated	Not Applicable	40/0/0
Roof: B	SLR2	22	AEP	Standard Color	System Generated	Not Applicable	40/0/0
Mezzanine 1 @ 12/9/0	NBVP - Panel	0'-0"	psf = 0.00	Supported by others=no			

Fastener Data

Wall/Roof	Type	Length	Spacing	Washers	Insul. Block	Mod. Ctrl.	Ice Damming
Wall: 1	Color Match Carbon	Standard Option	Standard Option	No	None	No	No
Location: 2	Not Applicable						
Location: 3	Not Applicable						
Location: 4	Not Applicable						
Wall: 2	Color Match Carbon	Standard Option	Standard Option	No	None	No	No
Location: 2	Not Applicable						
Location: 3	Not Applicable						
Location: 4	Not Applicable						
Location: 5	Not Applicable						
Location: 6	Not Applicable						
Location: 7	Not Applicable						
Location: 8	Not Applicable						
Canopy: 1	Stainless Steel Capped	Standard Option	UL90 Uplift	Yes	Thermal Block	No	No
Canopy: 2	Stainless Steel Capped	Standard Option	UL90 Uplift	Yes	Thermal Block	No	No
Wall: 3	Color Match Carbon	Standard Option	Standard Option	No	None	No	No
Wall: 4	Color Match Carbon	Standard Option	Standard Option	No	None	No	No
Location: 2	Not Applicable						
Location: 3	Not Applicable						
Location: 4	Not Applicable						
Location: 5	Not Applicable						
Location: 6	Not Applicable						
Location: 7	Not Applicable						
Location: 8	Not Applicable						
Location: 9	Not Applicable						
Location: 10	Not Applicable						

FLUSH PANEL - Allowable Wind Load vs. Span (psf)

ANY (1) SPAN OR
(2) SPAN PANELS

Panel Designation:	Pressure Direction	Simple Span Condition - Maximum Span						
		2.0 ft.	2.5 ft.	3.0 ft.	3.5 ft.	4.0 ft.	4.5 ft.	5.0 ft.
FP12 -24 Ga. Steel ¹	Inward	99	60	35	22	15	10	8
	Outward	29	29	29	29	29	23	18
FP12 -22 Ga. Steel ¹	Inward	155	88	51	32	21	15	11
	Outward	45	45	45	45	45	35	27
FP12 -.032 Al. ¹	Inward	67	34	20	12	8	6	4
	Outward	18	18	18	18	18	14	10

Allowable loads **do not** include a 4/3 stress increase for wind load cases.

Table Notes:

1. ASTM E-72, Ting (9/91)

Panel Designation:	Pressure Direction	3 Span Condition - Maximum Span						
		2.0 ft.	2.5 ft.	3.0 ft.	3.5 ft.	4.0 ft.	4.5 ft.	5.0 ft.
FP12 -24 Ga. Steel ¹	Inward	143	92	64	47	36	28	21
	Outward	29	29	29	29	29	28	22
FP12 -22 Ga. Steel ¹	Inward	223	143	99	73	56	40	29
	Outward	45	45	45	45	45	38	31
FP12 -.032 Al. ¹	Inward	116	74	52	33	22	16	11
	Outward	18	18	18	18	18	18	16

3 SPAN &
MORE PANELS.

Allowable loads **do not** include a 4/3 stress increase for wind load cases.

Table Notes:

1. ASTM E-72, Ting (9/91)

HAT SECTIONS ON BLOCK (NBVA)
SUPPORT PANELS. SPACING SHOULD NOT
EXCEED 3'-6" / 4' AS NOTED ABOVE.



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Canopy: 3	Stainless Steel Capped	Standard Option	UL90 Uplift	Yes	Thermal Block	No	No
Roof: A	Stainless Steel Capped	Standard Option	UL90 Uplift	Yes	Thermal Block	No	No
Roof: B	Stainless Steel Capped	Standard Option	UL90 Uplift	Yes	Thermal Block	No	No
Mezzanine 1 @ 12/9/0	Not Applicable						

Shape: Operations Building Lean-to

Loads and Codes - Shape: Operations Building Lean-to

City: Stennis Space Center County: Hancock
 Building Code: 2006 International Building Code
 Building Use: Standard Occupancy Structure

State: Mississippi
 Built Up: 05AISC - ASD
 Cold Form: 04AISI - ASD

Country: United States
 Rainfall: 10.00 inches per hour

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
 Collateral Uplift: 0.00 psf

Roof Covering + Second. Dead Load: Varies
 Frame Weight (assumed for seismic): 2.50 psf

Live Load

Live Load: 20.00 psf Not Reducible

Wind Load

Wind Speed: 130.00 mph
 Primaries Wind Exposure (Factor): B (0.608)
 Parts Wind Exposure Factor: 0.701

Wind Enclosure: Enclosed
 Wind Importance Factor: 1.000
 Topographic Factor: 1.000
 Hurricane Prone Region
 Windborne Debris Region
 Impact Resistant Covering
 Base Elevation: 0/0/0
 Primary Zone Strip Width: 9/1/8
 Parts / Portions Zone Strip Width: 5/9/10
 Basic Wind Pressure: 22.35,(Parts) 25.76 psf

Snow Load

Ground Snow Load: 5.00 psf
 Design Snow (Sloped): 2.50 psf
 Snow Exposure Category (Factor): 1 Fully Exposed (0.90)
 Snow Importance: 1.000
 Thermal Category (Factor): Heated (1.00)
 Ground / Roof Conversion: 0.70
 % Snow Used in Seismic: 0.00
 Seismic Snow Load: 0.00 psf
 Unobstructed, Slippery Roof

Seismic Load

Mapped Spectral Response - Ss: 11.80 %g
 Mapped Spectral Response - SI: 5.10 %g
 Seismic Hazard / Use Group: Group 1
 Seismic Importance: 1.000
 Seismic Performance / Design Category: B
 Framing Seismic Period: 0.2859
 Bracing Seismic Period: 0.1766
 Framing R-Factor: 3.0000
 Bracing R-Factor: 3.0000
 Soil Profile Type: Stiff soil (D, 4)
 Diaphragm Condition: Flexible
 Frame Redundancy Factor: 1.0000
 Brace Redundancy Factor: 1.0000
 Frame Seismic Factor (Cs): 0.0420 x W
 Brace Seismic Factor (Cs): 0.0420 x W

Per Article 2.9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site.

Covering Design Loads - Wall: 1

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
End Zone	psf	W1>	Need Lower and Upper Girt	40.71	0/0/0	41.000	0.99	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.40	0/0/0	50.000	0.61	IN	1.180
Interior Area	psf	W1>	Need Lower and Upper Girt	32.98	5/9/10	41.000	0.80	OUT	-1.280
Interior Area	psf	<W2	Need Lower and Upper Girt	30.40	5/9/10	50.000	0.61	IN	1.180

Covering Design Loads - Wall: 2

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
End Zone	psf	W1>	Need Lower and Upper Girt	40.71	0/0/0	49.000	0.83	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.40	0/0/0	60.000	0.51	IN	1.180
End Zone	psf	W1>	Need Lower and Upper Girt	40.71	52/2/6	49.000	0.83	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.40	52/2/6	60.000	0.51	IN	1.180
Interior Area	psf	W1>	Need Lower and Upper Girt	32.98	5/9/10	49.000	0.67	OUT	-1.280
Interior Area	psf	<W2	Need Lower and Upper Girt	30.40	5/9/10	60.000	0.51	IN	1.180

Covering Design Loads - Wall: 3

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
End Zone	psf	W1>	Need Lower and Upper Girt	40.71	21/8/6	41.000	0.99	OUT	-1.580
End Zone	psf	<W2	Need Lower and Upper Girt	30.40	21/8/6	50.000	0.61	IN	1.180

Covering Design Loads - Roof: A

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
Entire Surface	psf	L	Standard Spacing is Adequate	21.80	-1/1/8	86.000	0.25	IN	1.000
Entire Surface	psf	S	Standard Spacing is Adequate	2.50	-1/1/8	86.000	0.03	IN	1.000
Snow Drift	psf	SD	Standard Spacing is Adequate	28.39	58/0/0	86.000	0.33	IN	1.000
Snow Drift	psf	SD	Standard Spacing is Adequate	33.89	48/4/0	86.000	0.39	IN	1.000



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Snow Drift	psf	SD	Standard Spacing is Adequate	39.39	38/8/0	86.000	0.46	IN	1.000
Snow Drift	psf	SD	Standard Spacing is Adequate	39.39	29/0/0	86.000	0.46	IN	1.000
Snow Drift	psf	SD	Standard Spacing is Adequate	33.89	19/4/0	86.000	0.39	IN	1.000
Snow Drift	psf	SD	Standard Spacing is Adequate	28.39	9/8/0	86.000	0.33	IN	1.000
Corner Zone	psf	W1>	Non-std Spacing: 3/3/0 Required	77.55	22/0/14	80.000	0.97	OUT	-3.080
Corner Zone	psf	<W2	Standard Spacing is Adequate	16.74	22/0/14	86.000	0.19	IN	0.580
Corner Zone in Extension	psf	W1>	Non-std Spacing: 2/6/0 Required	93.53	0/0/0	99.000	0.94	OUT	-3.700
Corner Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.68	0/0/0	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	44.06	0/0/0	57.000	0.77	OUT	-1.780
Side Zone	psf	<W2	Standard Spacing is Adequate	16.74	0/0/0	86.000	0.19	IN	0.580
Side Zone in Extension	psf	W1>	Standard Spacing is Adequate	54.88	0/0/0	57.000	0.96	OUT	-2.200
Side Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.68	0/0/0	86.000	0.17	IN	0.500
Corner Zone	psf	W1>	Non-std Spacing: 3/3/0 Required	77.55	35/11/2	80.000	0.97	OUT	-3.080
Corner Zone	psf	<W2	Standard Spacing is Adequate	16.74	35/11/2	86.000	0.19	IN	0.580
Corner Zone	psf	W1>	Non-std Spacing: 3/3/0 Required	77.55	34/9/10	80.000	0.97	OUT	-3.080
Corner Zone	psf	<W2	Standard Spacing is Adequate	16.74	34/9/10	86.000	0.19	IN	0.580
Side Zone	psf	W1>	Standard Spacing is Adequate	44.06	0/0/0	57.000	0.77	OUT	-1.780
Side Zone	psf	<W2	Standard Spacing is Adequate	16.74	0/0/0	86.000	0.19	IN	0.580
Side Zone in Extension	psf	W1>	Standard Spacing is Adequate	54.88	0/0/0	57.000	0.96	OUT	-2.200
Side Zone in Extension	psf	<W2	Standard Spacing is Adequate	14.68	0/0/0	86.000	0.17	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	44.06	4/8/2	57.000	0.77	OUT	-1.780
Side Zone	psf	<W2	Standard Spacing is Adequate	16.74	4/8/2	86.000	0.19	IN	0.580
Side Zone	psf	W1>	Standard Spacing is Adequate	44.06	52/2/6	57.000	0.77	OUT	-1.780
Side Zone	psf	<W2	Standard Spacing is Adequate	16.74	52/2/6	86.000	0.19	IN	0.580
Side Zone	psf	W1>	Standard Spacing is Adequate	44.06	22/0/14	57.000	0.77	OUT	-1.780
Side Zone	psf	<W2	Standard Spacing is Adequate	16.74	22/0/14	86.000	0.19	IN	0.580
Interior Area	psf	W1>	Standard Spacing is Adequate	36.33	4/8/2	57.000	0.64	OUT	-1.480
Interior Area	psf	<W2	Standard Spacing is Adequate	16.74	4/8/2	86.000	0.19	IN	0.580

Covering Design Loads - Wall: 2 - Canopy: 1

Zone	Units	Type	Description	Actual	Loc1	Allow.	Ratio	Dir.	Coef.
Entire Surface	psf	L	Standard Spacing is Adequate	21.80	0/0/0	74.000	0.29	IN	1.000
Entire Surface	psf	S	Standard Spacing is Adequate	5.34	0/0/0	74.000	0.07	IN	1.000
Side Zone	psf	W1>	Standard Spacing is Adequate	54.88	0/0/0	57.000	0.96	OUT	-2.200
Side Zone	psf	<W2	Standard Spacing is Adequate	14.68	0/0/0	74.000	0.20	IN	0.500
Corner Zone	psf	W1>	No Resolution Available	93.53	0/0/0	-1.000		OUT	-3.700
Corner Zone	psf	<W2	Standard Spacing is Adequate	14.68	0/0/0	74.000	0.20	IN	0.500
Side Zone	psf	W1>	Standard Spacing is Adequate	54.88	0/0/0	57.000	0.96	OUT	-2.200
Side Zone	psf	<W2	Standard Spacing is Adequate	14.68	0/0/0	74.000	0.20	IN	0.500
Corner Zone	psf	W1>	No Resolution Available	93.53	53/3/14	-1.000		OUT	-3.700
Corner Zone	psf	<W2	Standard Spacing is Adequate	14.68	53/3/14	74.000	0.20	IN	0.500

Panel Data

22 GA FP12 PS2 PREVIOUS NOTES

Wall/Roof	Type	Thickness	Finish	Color	Direction	Gable Dir	Max. Length
Wall: 1	Panel Rib	26	KXL	Standard Color	Left to Right	Left to Right	41/0/0
Location: 2	NBVP - Masonry	11 1/4"	psf = 50.00	Supported by others=no			
Wall: 2	Panel Rib	26	KXL	Standard Color	Left to Right	Left to Right	41/0/0
Location: 2	NBVP - Masonry	11 1/4"	psf = 50.00	Supported by others=no			
Canopy: 1	SLR2	22	AEP	Standard Color	System Generated	Not Applicable	40/0/0
Wall: 3	Panel Rib	26	KXL	Standard Color	Left to Right	Left to Right	41/0/0
Location: 2	NBVP - Masonry	11 1/4"	psf = 50.00	Supported by others=no			
Location: 3	Open		Exposed to wind				
Wall: 4	Panel Rib	26	KXL	Standard Color	Left to Right	Left to Right	41/0/0
Location: 2	NBVP - Masonry	11 1/4"	psf = 50.00	Supported by others=no			
Roof: A	SLR2	22	AEP	Standard Color	System Generated	Not Applicable	40/0/0

Fastener Data

Wall/Roof	Type	Length	Spacing	Washers	Insul. Block	Mod. Ctrl.	Ice Damming
Wall: 1	Color Match Carbon	Standard Option	Standard Option	No	None	No	No
Location: 2	Not Applicable						
Wall: 2	Color Match Carbon	Standard Option	Standard Option	No	None	No	No
Location: 2	Not Applicable						
Canopy: 1	Stainless Steel Capped	Standard Option	UL90 Uplift	Yes	Thermal Block	No	No
Wall: 3	Color Match Carbon	Standard Option	Standard Option	No	None	No	No



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Location: 2	Not Applicable						
Location: 3	Not Applicable						
Wall: 4	Color Match Carbon	Standard Option	Standard Option	No	None	No	No
Location: 2	Not Applicable						
Roof: A	Stainless Steel Capped	Standard Option	UL90 Uplift	Yes	Thermal Block	No	No