June 10, 2026

CROWN ENTERPRISES
12225 STEPHENS
Warren, MI 48089

21-B-63283
CROWN ENTERPRISES LLC
8100 MELVILLE ST DETROIT, MI 48209
50'0" x 64'0" x 23'10-1/2"

To Whom It May Concern:

This is to certify that materials for the subject structure have been designed in accordance with the order documents, specifically as shown per the attached Engineering Design Criteria Sheet.

Aspects of code compliance as related to use or occupancy, such as sprinkler requirements, are not addressed by these documents.

These materials, when properly erected on an adequate foundation in accordance with the erection drawings as supplied and using the components as furnished, will meet the attached loading requirements.

This certification does not cover field modifications, or the design of materials not furnished by Metallic Building Systems.

The attached design criteria and calculations are to remain with and form part of this Letter of Certification.

The calculations and the metal building they represent are the product of Metallic Building Systems or a division of its affiliate Cornerstone Building Brands. The engineer whose seal appears hereon is employed by either Metallic Building Systems or a division of its affiliate Cornerstone Building Brands and is not the engineer of record for this project.

Cordially,

Metallic Building Systems
Materials for Metal Buildings
A Cornerstone Building Brands Company

Anuradha Khanna, P.E.
Engineer IV



2026.06.15
11:50:28-05'00'

This document has been digitally signed.

DESIGN PACKAGE

BUILDER: CROWN ENTERPRISES
CUSTOMER: CROWN ENTERPRISES LLC
JOB NUMBER: 21-B-63283

TABLE OF CONTENTS

	Page
Design Criteria	1
Drawing Notes	2-3
Deflection Criteria	4
Building A	5-16

Note to Detailing: Eds2Tekla Report (Y)
Original Design Completed thru Change Order # 0
Date: 06/10/2026

Revision History

Rev#	Update Reactions?	Reason for Revision	Pages Revised	Date Revised	Eng.

Design Engineer: Marco Tulio Sánchez Ramirez (Fairview)
Checking Engineer: Krisly Campos
Sealing Engineer: Anuradha Khanna, P.E.

Job Number .....: 21-B-63283
Builder .....: CROWN ENTERPRISES
Jobsite Location .....: CROWN ENTERPRISES LLC, DETROIT, MI

Building Code .....: 2021 MICHIGAN

Building Risk Category .....: Normal (Risk Category II)
Roof Dead Load
Superimposed .....: 2.40 psf
Collateral .....: 5.00 psf
(5.00 psf Other)
Roof Live Load .....: 20.00 psf no reduction

Snow
Ground Snow Load (Pg) .....: 20.00 psf
Snow Importance Factor (I) .: 1.00
Snow Exposure Factor (Ce) ..: 1.00
Thermal Factor (Ct) .....: 1.00
Slope Factor (Cs) .....: 1.00
Sloped Roof Snow (Ps) .....: 14.00 psf
Minimum Roof Snow Load (Pm) : 20.00 psf

Wind
Ultimate Wind Speed (Vult) .: 115 mph
Nominal Wind Speed (Vasd) ..: 89 mph (IBC section 1609.3.1)
Serviceability Wind Speed ..: 75 mph
Ground Elevation Factor ....: 0.98 (645 ft ASL)
Wind Exposure Category .....: C
Exposure Coefficient (MWFRS): 0.936
Enclosure Classification ...: Enclosed Building
Internal Pressure Coef (GCpi): 0.18/-0.18
Unfactored Wall Loads for components not provided by building manufacturer
Zone 5 Areas (within 5.00' of corner) : 28.42 psf pressure -37.89 psf suction
Zone 4 Areas (away from corners) : 28.42 psf pressure -30.79 psf suction
These values are the maximum values required based on a 10 sq ft area.
Components with larger areas may have lower wind loads.

Seismic
Seismic Importance Factor (Ie): 1.00
Seismic Design Category ....: B
Soil Site Class .....: D Stiff Soil (Default)
Ss .....: 0.104 g Sds ....: 0.111 g
S1 .....: 0.046 g Sd1 ....: 0.074 g
Analysis Procedure .....: Equivalent Lateral Force
Column Line All
Basic Force Resisting System H
Response Modification Coefficient (R) 3.00
Seismic Response Coefficient (Cs) 0.04
Design Base Shear in kips (V) 1.28
Basic Structural System (from ASCE 7-16 Table 12.2-1)
H - Steel System not Specifically Detailed for Seismic Resistance

Material properties of steel bar, plate, and sheet used in the fabrication of built-up structural framing members conform to ASTM A529, ASTM A572, or ASTM A1011 with 55 ksi min. yield, except flanges wider than 12" and thicker than 3/8", all flanges thicker than 1", and all webs thicker than 3/8" are 50 ksi min. yield. Rod X-bracing conforms to ASTM A529 or ASTM A572 with 50 ksi min. yield. Cable X-bracing conforms to ASTM A475 7 Strand Extra High-Strength grade. Hot rolled structural shapes conform to ASTM A992, ASTM A529, or ASTM A572 with 50 ksi min. yield. Hot rolled angles, other than flange braces, conform to ASTM A36 minimum. Round and rectangular HSS conforms to ASTM A500 Grade B. Cold-formed steel secondary framing Members conform to ASTM A1011 or ASTM A653 Grade 55 with 55 ksi min. yield. For Canada, material properties conform to CAN/CSA G40.20/G40.21 or equivalent.

Unless otherwise noted, special inspection of fabricated items is not required. Per IBC section 1704.2.5.1, fabricator is approved to perform such work without special inspection through maintenance of IAS AC 472 certification MB-136.

All bolted joints with A325 Type 1 bolts are specified as snug-tightened joints in accordance with the most recent edition of the RCSC Specification for Structural Joints Using ASTM A325 or A490 Bolts. Pre-tensioning methods, including turn-of-nut, calibrated wrench, twist-off-type tension-control bolts or direct-tension-indicator are NOT required. Installation inspection requirements for Snug Tight Bolts (Specification for Structural Joints Section 9.1) is suggested.

Design criteria as noted is as given within order documents and is applied in general accordance with the applicable provisions of the model code and/or specification indicated. Neither the metal building manufacturer nor the certifying engineer declares or attests that the loads as designated are proper for local provisions that may apply or for site specific parameters. The design criteria is supplied by the builder, project owner, or an Architect and/or Engineer of Record for the overall construction project.

This metal building system is designed as an Enclosed Building. Exterior and/or operable components including, but not limited to, doors, windows, vents, etc. ("Components") must be designed to withstand the required component and cladding wind pressures specified by the building code. In order to maintain the metal building system's Enclosed Building condition, all Components shall be closed when wind velocities reach half the designed wind load for the metal building system as shown on the drawings and design criteria documentation. Failure to maintain the metal building system's Enclosed Building condition will violate and void all warranties and certifications applicable to the material supplied by the metal building manufacturer.

Framed openings, walk doors, and open areas shall be located in the bay and elevation as shown in the erection drawings. The cutting or removal of girts shown on the erection drawings due to the addition of framed openings, walk doors, or open areas not shown may void the design certifications supplied by the metal building manufacturer.

Using 8.1 x 6.3125 eave gutter with 4 x 5 downspouts, the roof drainage system has been designed using the method outlined in the MBMA Metal Building Systems

Manual. Downspout locations have not been located on these drawings. The downspouts are to be placed on the building sidewalls at a spacing not to exceed 64 feet with the first downspout from both ends of the gutter run within 32 feet of the end. Downspout spacing that does not exceed the maximum spacing will be in compliance with the building code. The gutter and downspout system as provided by the manufacturer is designed to accommodate 5.86 in/hr rainfall intensity.

Job Number .....: 21-B-63283
Builder .....: CROWN ENTERPRISES
Jobsite Location .....: CROWN ENTERPRISES LLC, DETROIT, MI

The material supplied by the manufacturer has been designed with the following minimum deflection criteria. The actual deflection may be less depending on actual load and actual member length.

BUILDING DEFLECTION LIMITS .....: BLDG-A

Roof Limits	Rafters	Purlins	Panels
Live: L/	180	150	60
Snow: L/	180	180	60
Serviceability Wind: L/	180	180	60
Total Gravity: L/	120	120	60
Total Uplift: L/	N/A	N/A	60

Frame Limits	Sidesway
Live: H/	60
Snow: H/	60
Serviceability Wind: H/	60
Seismic Drift: H/	40
Total Gravity: H/	60
Service Seismic: H/	40

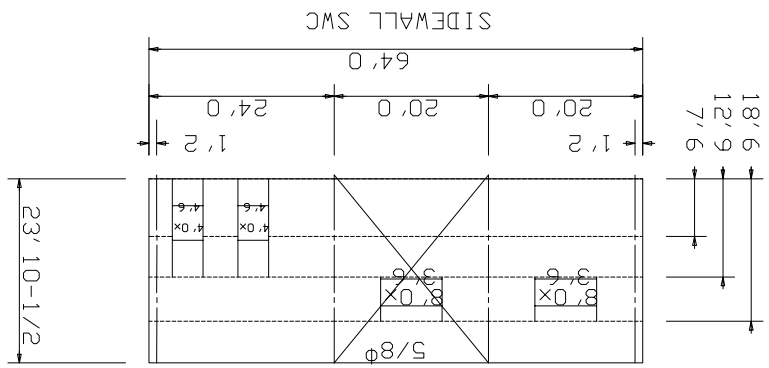
Wall Limits	Limit
Total Wind Panels: L/	60
Total Wind Girts: L/	90
Total Wind EW Columns: L/	120

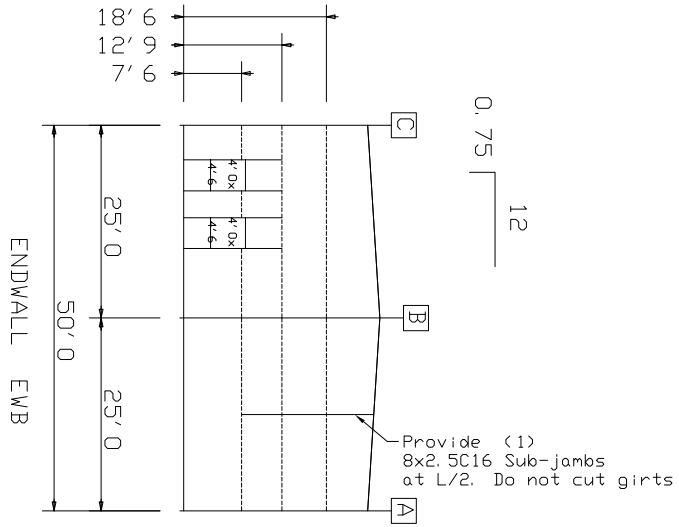
The Service Seismic limit as shown here is at service level loads.

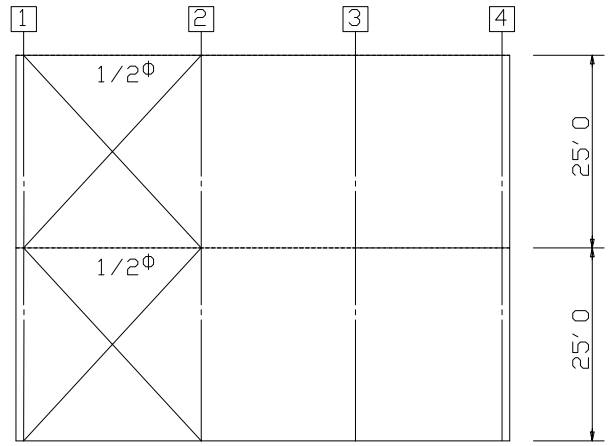
BUILDING A

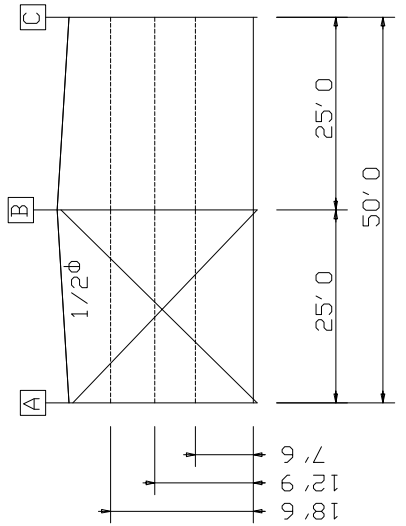
key Strut: x=double Z,
xx=triple Z,
o=pipe(FM)

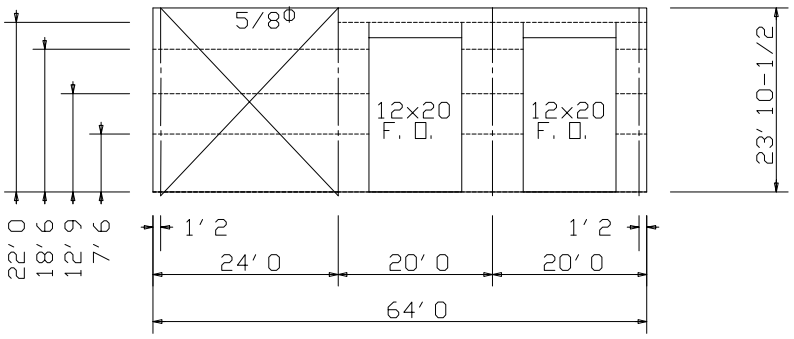
Builder :
CROWN ENTERPRISES
Job No: 63283A run01
Version: ver01-mtsanchez
Tue Jun 9 16:34:00 2026











Owner :
CROWN ENTERPRISES LLC
DETROIT MI 48209

BUILDING-A-DESIGN SUMMARY REPORT

All connections use ASTM F3125 Gr. A325N bolts, unless noted otherwise.
All anchor rods are checked according to ASTM F1554 Gr. 36 strengths.
Rafter flange braces use the optional Concealed Nut attachment
Column flange braces use the optional Concealed Nut attachment

Roof Plane ------- RPA
R:\jobs\Active\Eng\21-B-63283\ver01-mtsanchez\BLDG-A\run01\AroofRPA_01.edf

Panel ..... DLOK
Panel width ..... 24 in.
Panel gage ..... 24 ga.
Purlins ..... 55.0 ksi yield strength
Eave struts ..... 55.0 ksi yield strength

Note to Drafting: Provide G90 galvanized secondary.

Horz. Purlin Spacing: 2@4.3561 3@5'0 1.2879

Bay #	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	24.000	8X2.5Z14	3 points	S 0.000	2.479 C
2	20.000	8X2.5Z16	2 points	C 2.479	1.479 C
3	20.000	8X2.5Z16	2 points	C 1.479	0.000 S

Purlin Clip Use 2 A325 Bolts
@ Level: 2,3,4,5,6
@ Supports: 1,2,3,4
Purlin Stiffened Clips
@ Level: 2,6
@ Supports: 1,2,3,4
Purlin Backup Plate
@ Level: 2,6
@ Supports: 3

Roof Plane ------- RPC
R:\jobs\Active\Eng\21-B-63283\ver01-mtsanchez\BLDG-A\run01\AroofRPC_01.edf

Panel ..... DLOK
Panel width ..... 24 in.
Panel gage ..... 24 ga.
Purlins ..... 55.0 ksi yield strength
Eave struts ..... 55.0 ksi yield strength

Note to Drafting: Provide G90 galvanized secondary.

Horz. Purlin Spacing: 2@4.3561 3@5'0 1.2879

Bay #	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	20.000	8X2.5Z16	2 points	S 0.000	1.479 C
2	20.000	8X2.5Z16	2 points	C 1.479	2.479 C
3	24.000	8X2.5Z14	3 points	C 2.479	0.000 S

Purlin Clip Use 2 A325 Bolts
@ Level: 2,3,4,5,6
@ Supports: 4,3,2,1
Purlin Stiffened Clips
@ Level: 2,6
@ Supports: 4,3,2,1
Purlin Backup Plate
@ Level: 2,6
@ Supports: 3

SWC Eave Strut @ 23.875 (ft): 8X3.5E14 Bays 1
SWC Eave Strut @ 23.875 (ft): 8X3.5E14 Bays 2
SWC Eave Strut @ 23.875 (ft): 8X3.5E14 Bays 3

RPC Purlin Strut @ 25.000 (ft): 8X2.5Z16 Bays 1
RPC Purlin Strut @ 25.000 (ft): 8X2.5Z16 Bays 2
RPC Purlin Strut @ 25.000 (ft): 8X2.5Z14 Bays 3

SWA Eave Strut @ 23.875 (ft): 8X3.5E14 Bays 1
SWA Eave Strut @ 23.875 (ft): 8X3.5E14 Bays 2
SWA Eave Strut @ 23.875 (ft): 8X3.5E14 Bays 3

Note: 1) All roof and wall strut bay numbers are as viewing the roof or wall plane
2) All purlin strut locations for all roof planes are measured from back sidewall
3) All purlin strut rows use the same lap lengths as the main purlin design.
4) Eave strut interior connection at SWA uses (2)-1/2" A325 bolts.
5) Eave strut interior connection at SWC uses (2)-1/2" A325 bolts.
6) Eave strut connection at end-frame uses (4)-1/2" A325 bolts.

Bracing ---Roof: 1 bays Rod
Plane SWA : 1 bays Rod: Hillside Washers (Raise 6″ X brace std location at the bottom)
Plane SWC : 1 bays Rod: Hillside Washers (Raise 6″ X brace std location at the bottom)
Plane EWB : End Frame
Plane EWD : 1 bays Rod (Raise 6″ X brace std location at the bottom)

Sidewall Plane SWA -- (8.250" Inset columns)
R:\jobs\Active\Eng\21-B-63283\ver01-mtsanchez\BLDG-A\run01\AwallSWA_01.edf

Panel ..... PBR
Panel width ..... 36 in.
Panel gage ..... 26 ga.
Girts ..... 55.0 ksi yield strength

Note to Drafting: Provide G90 galvanized secondary.

Girts Spacing: 7'6 5'3 5'9 3'6

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	7'6	24.000	8X3.5Z12	None	S 0.000	0.000 S
2	7'6	20.000	8X3.5Z14	F.O.	S 0.000	0.000 S
3	7'6	20.000	8X3.5Z14	F.O.	S 0.000	0.000 S
1	12'9	24.000	8X3.5Z12	None	S 0.000	0.000 S
2	12'9	20.000	8X3.5Z14	F.O.	S 0.000	0.000 S
3	12'9	20.000	8X3.5Z14	F.O.	S 0.000	0.000 S
1	18'6	24.000	8X3.5Z12	None	S 0.000	0.000 S
2	18'6	20.000	8X3.5Z14	F.O.	S 0.000	0.000 S
3	18'6	20.000	8X3.5Z14	F.O.	S 0.000	0.000 S
2	22'0	20.000	8X3.5Z12	None	S 0.000	1.479 C
3	22'0	20.000	8X3.5Z14	None	C 1.479	0.000 S

Note: Maximum distance to extend girt from adjacent bay is 36.00 inches.

Framed Openings:

Width	Height	Sill Ht	Jamb	Header/Sill	Bay	Distance
12'0	20'0	N/A	8X2.5C12	8X2.5C16	2	4'0
12'0	20'0	N/A	8X2.5C12	8X2.5C16	3	4'0

Sidewall Plane SWC -- (8.250" Inset columns)
R:\jobs\Active\Eng\21-B-63283\ver01-mtsanchez\BLDG-A\run01\AwallSWC_01.edf

Panel ..... PBR
Panel width ..... 36 in.
Panel gage ..... 26 ga.
Girts ..... 55.0 ksi yield strength

Note to Drafting: Provide G90 galvanized secondary.

Girts Spacing: 7'6 5'3 5'9

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	7'6	20.000	8X2.5Z16	None	S 0.000	1.479 C
2	7'6	20.000	8X2.5Z16	None	C 1.479	0.000 S
3	7'6	24.000	8X2.5Z16	F.O.	S 0.000	0.000 S
1	12'9	20.000	8X2.5Z16	None	S 0.000	1.479 C
2	12'9	20.000	8X2.5Z16	None	C 1.479	3.146 C
3	12'9	24.000	8X2.5Z12	None	C 3.146	0.000 S
1	18'6	20.000	8X2.5Z16	None	S 0.000	1.479 C
2	18'6	20.000	8X2.5Z16	None	C 1.479	1.479 C
3	18'6	24.000	8X2.5Z16	None	C 1.479	0.000 S

Note: Maximum distance to extend girt from adjacent bay is 36.00 inches.

Framed Openings:

Width	Height	Sill Ht	Jamb	Header/Sill	Bay	Distance
8'0	3'6	13'0	8X2.5C16	8X2.5C16	1	6'0
8'0	3'6	13'0	8X2.5C16	8X2.5C16	2	6'0
4'0	4'6	3'6	8X2.5C16	8X2.5C16	3	8'6
4'0	4'6	3'6	8X2.5C16	8X2.5C16	3	17'0

Endwall Plane EWB Design ....RIGID BEARING FRAME
R:\jobs\Active\Eng\21-B-63283\ver01-mtsanchez\BLDG-A\run01\AwallEWB_01.edf

Panel ..... PBR
Panel width ..... 36 in.
Panel gage ..... 26 ga.

Girts ..... 55.0 ksi yield strength

Note to Drafting: Provide G90 galvanized secondary.

Girts Spacing: 7'6 5'3 5'9

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	7'6	24.312	8X3.5Z12	F.O.	S 0.000	0.000 S
2	7'6	24.312	8X3.5Z12	None	S 0.000	0.000 S
1	12'9	24.312	8X3.5Z12	None	S 0.000	2.479 C
2	12'9	24.312	8X3.5Z12	None	C 2.479	0.000 S
1	18'6	24.312	8X3.5Z14	None	S 0.000	1.479 C
2	18'6	24.312	8X3.5Z14	None	C 1.479	0.000 S

Note : Maximum distance to extend girt from adjacent bay is 36.00 inches.

Framed Openings:

Width	Height	Sill Ht	Jamb	Header/Sill	Bay	Distance
4'0	4'6	3'6	8X2.5C16	8X2.5C16	1	4'6
4'0	4'6	3'6	8X2.5C16	8X2.5C16	1	12'0

Columns ----- (8.250" Inset columns)

Col #	Dist. from left	Description Member Size Ident.	Base Elev (ft)	Base plate design information Thickness & rods
1-B	25.000'	Interior Frame Column, Refer to Frame Profile 1		
		Flange Brace C-Type @ ~~8.0,~~ 13.25, 19.00 elev.		

Endwall Column to Bridge Channel Connections:

Col. No.	Strut-to-Column Clip Endwall Plane 1
Plane SWC:	
1-B	At Peak, Type 3 Conn.,(4)-1/2" A325N CF Brdg Channel (0.375") w/ (4)-3/4" A325N bolts W8x13 Column Extension w/ 12.000" lap length 8X2.5C12 Bridge Channel
Plane SWA:	

Endwall Plane EWD Design ....BEARING FRAME
R:\jobs\Active\Eng\21-B-63283\ver01-mtsanchez\BLDG-A\run01\AwallEWD_01.edf

Panel ..... PBR
Panel width ..... 36 in.
Panel gage ..... 26 ga.

Rafters -----

Mem #	Description Member Size Identification	Length (ft)	Start (ft)	End (ft)
1	5x0.25/0.134/9.5 50.0 ksi	23.859	0.000	23.859
	Connections... Left : Type-V SEP 6.000" X 3/8" (4)-1/2" A325N Bolts			
	Right: Type-III SEP 6.000" X 3/8" (4)-1/2" A325N Bolts			
2	5x0.25/0.134/9.5 50.0 ksi	23.859	23.859	47.718
	Connections... Left : Type-III SEP 6.000" X 3/8" (4)-1/2" A325N Bolts			
	Right: Type-V SEP 6.000" X 3/8" (4)-1/2" A325N Bolts			

Flange Braces at following purlins (horizontal distance from eave) :
Plane SWA: 8.712, 13.712, 18.712 FB = C-Type (Typ)
Plane SWC: 8.712, 13.712, 18.712

Girts ..... 55.0 ksi yield strength

Note to Drafting: Provide G90 galvanized secondary.

Girts Spacing: 7'6 5'3 5'9

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	7'6	24.312	8X3.5Z14	None	S 0.000	1.479 C
2	7'6	24.312	8X3.5Z14	None	C 1.479	0.000 S
1	12'9	24.312	8X3.5Z14	None	S 0.000	1.479 C
2	12'9	24.312	8X3.5Z14	None	C 1.479	0.000 S
1	18'6	24.312	8X3.5Z14	None	S 0.000	1.479 C
2	18'6	24.312	8X3.5Z14	None	C 1.479	0.000 S

Note : Maximum distance to extend girt from adjacent bay is 36.00 inches.

Endwall Plane EWD continued

Columns ----- (8.250" Inset columns)

Col #	Dist. from left	Description Member Size Ident.	Base Elev (ft)	Base plate design information Thickness & rods
4-A	0.000'	BU 6x.25/.134x10	-0.5000'	0.375" BP thk w/(4)-0.750" A36
4-B	25.000'	BU 5x.25/.134x10	-0.5000'	0.375" BP thk w/(4)-0.750" A36
		Flange Brace C-Type @	8.0, 13.25 elev.	
4-C	50.000'	BU 5x.25/.134x10	-0.5000'	0.375" BP thk w/(4)-0.750" A36

Endwall Column to Bridge Channel Connections:

Col. No.	Strut-to-Column Clip Endwall Plane 4
Plane SWA:	
4-B	At Peak, Type 3 Conn.,(4)-1/2" A325N
	CF Brdg Channel (0.375") w/ (4)-3/4" A325N bolts
	W8x13 Column Extension w/ 12.000" lap length
	8X2.5C12 Bridge Channel
Plane SWC:	

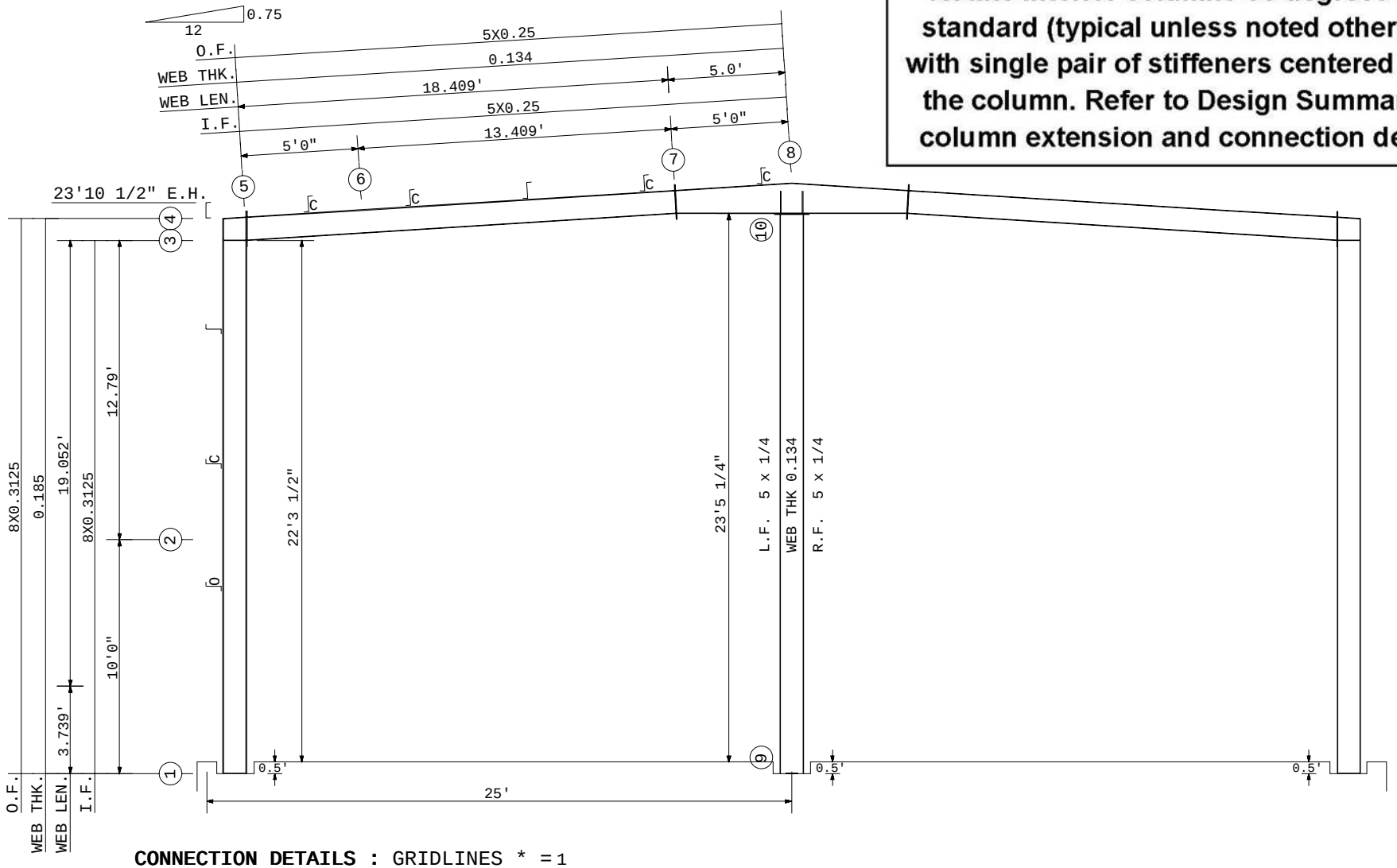
Frames -----	Type	Span	Live	Wind	Eave	Trib	Grid Labels
	CS	50.000	20.00/115.00		23.88/	21.42	2
	CS	50.000	20.00/115.00		23.88/	19.42	3
	MS	50.000	20.00/115.00		23.88/	12.58	1

Note: Use square anchor rod layout.

LOCATION: Gridlines 1
DETAIL FILE: ctive\eng\21-B-63283\ver01-mtsanchez\BLDG-A\Drftg\x03L
BOLTS:A325 SNUG TIGHT WEIGHT: 2176 lbs
PURLINS(horz. from eave) :8"-Z 2@4'4 1/4",3@5'
GIRTS (vert. from floor): 8"-Z 7'6",5'3",5'9"(8.25")

(1) All sectional dimensions are in inches.
(2) All Flange lengths are measured along outer flange.
(3) Left Column Flange Braces use the Optional Concealed Nut Attachment
(4) Rafter Flange Braces use the Optional Concealed Nut Attachment
(5) Right Column Flange Braces use the Optional Concealed Nut Attachment

Rotate interior columns 90 degrees from standard (typical unless noted otherwise) with single pair of stiffeners centered above the column. Refer to Design Summary for column extension and connection details.



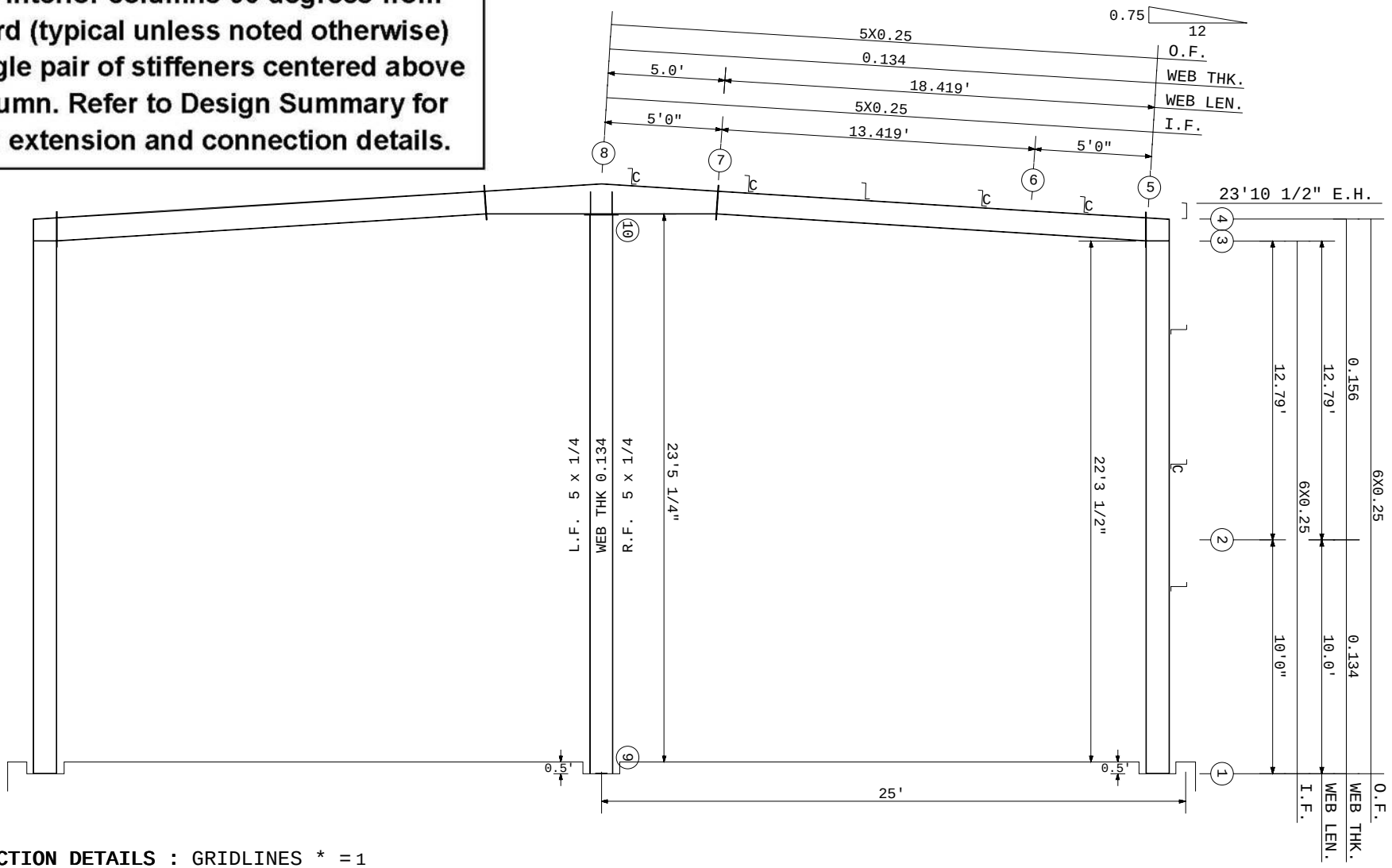
CONNECTION DETAILS : GRIDLINES * = 1

Location	(1)*-C	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)*-B	(10)
Web Dep.	11.5	11.5	11.5	N/A	11.5	11.5	11.5	15.1906	11.5	11.5
Type	BASE	SPLICE	HORZ STF	CAP (EXT)	2E/2E	SPLICE	2E/1I	SPLICE	BASE	CAP/STF
Plate(DN)	8.0X0.375	N/A	3.875X0.25	8.0X0.25	8.0X0.5	N/A	6.0X0.375	N/A	6.0X0.375	6.0X0.375
Plate(UP)	N/A	N/A	N/A	N/A	6.0X0.5	N/A	6.0X0.375	N/A	N/A	2.375X0.3125
Bolts	(4)-3/4	N/A	N/A	N/A	(8)-3/4	N/A	(6)-3/4	N/A	(4)-5/8	(4)-1/2

LOCATION: Gridlines 1
DETAIL FILE: ctive\eng\21-B-63283\ver01-mtsanchez\BLDG-A\Drftg\x03R
BOLTS:A325 SNUG TIGHT WEIGHT: 2176 lbs
PURLINS(horz. from eave) :8"-Z 2@4'4 1/4",3@5'
GIRTS (vert. from floor): 8"-Z 7'6",5'3",5'9"(8.25")

(1) All sectional dimensions are in inches.
(2) All Flange lengths are measured along outer flange.
(3) Left Column Flange Braces use the Optional Concealed Nut Attachment
(4) Rafter Flange Braces use the Optional Concealed Nut Attachment
(5) Right Column Flange Braces use the Optional Concealed Nut Attachment

Rotate interior columns 90 degrees from standard (typical unless noted otherwise) with single pair of stiffeners centered above the column. Refer to Design Summary for column extension and connection details.

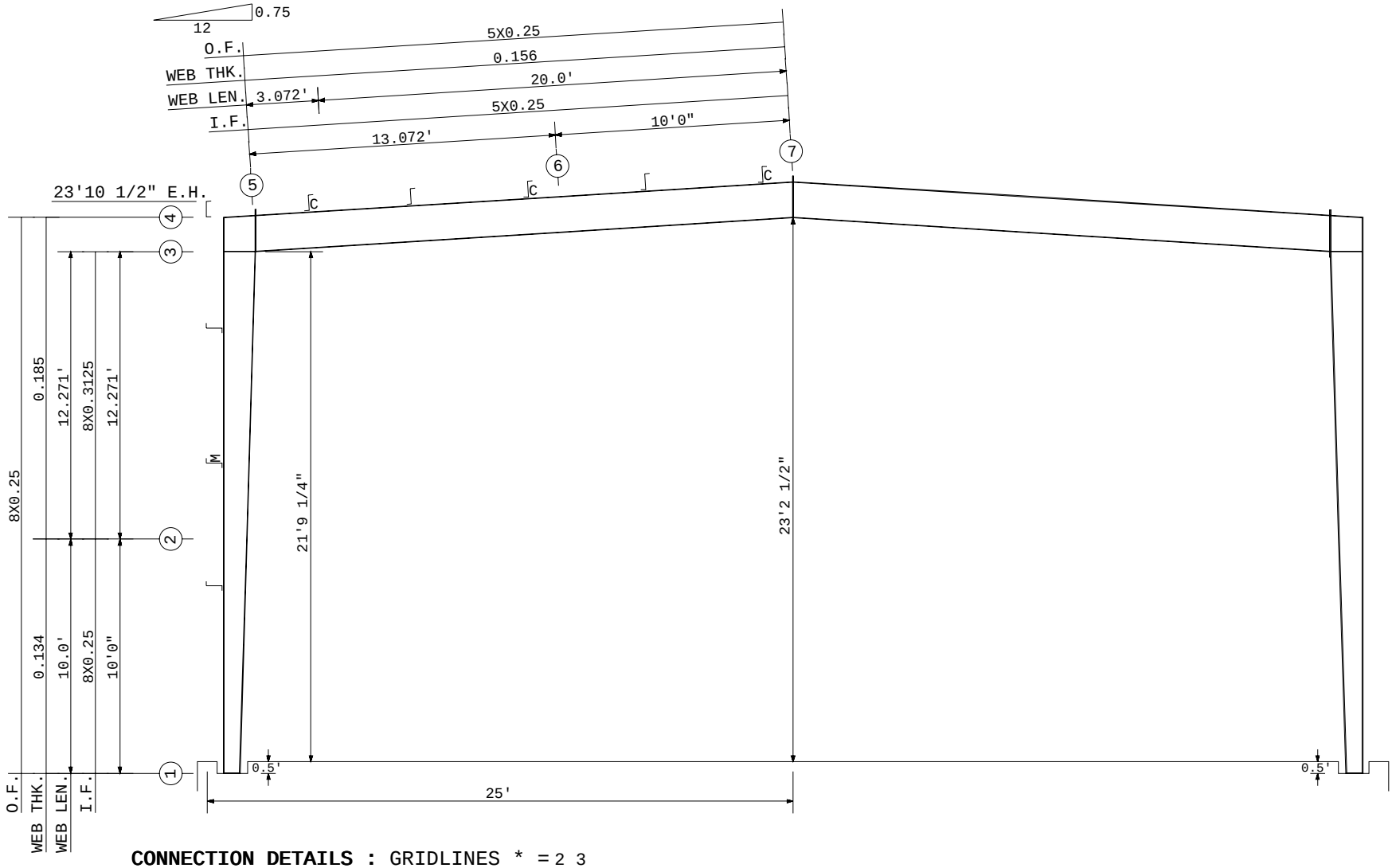


CONNECTION DETAILS : GRIDLINES * = 1

Location	(1)*-A	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)*-B	(10)
Web Dep.	11.5	11.5	11.5	N/A	11.5	11.5	11.5	15.1906	11.5	11.5
Type	BASE	SPLICE	HORZ STF	CAP (EXT)	2E/2E	SPLICE	2E/1I	SPLICE	BASE	CAP/STF
Plate(DN)	6.0X0.375	N/A	2.875X0.25	6.0X0.25	6.0X0.375	N/A	6.0X0.375	N/A	6.0X0.375	6.0X0.375
Plate(UP)	N/A	N/A	N/A	N/A	6.0X0.375	N/A	6.0X0.375	N/A	N/A	2.375X0.3125
Bolts	(4)-3/4	N/A	N/A	N/A	(8)-3/4	N/A	(6)-3/4	N/A	(4)-5/8	(4)-1/2

LOCATION: Gridlines 2 3
DETAIL FILE: ctive\eng\21-B-63283\ver01-mtsanchez\BLDG-A\Drftg\x02L
BOLTS:A325 SNUG TIGHT WEIGHT: 2227 lbs
PURLINS(horz. from eave) :8"-Z 2@4'4 1/4",3@5'
GIRTS (vert. from floor): 8"-Z 7'6",5'3",5'9"(8.25")

(1) All sectional dimensions are in inches.
(2) All Flange lengths are measured along outer flange.
(3) Left Column Flange Braces use the Optional Concealed Nut Attachment
(4) Rafter Flange Braces use the Optional Concealed Nut Attachment
(5) Right Column Flange Braces use the Optional Concealed Nut Attachment

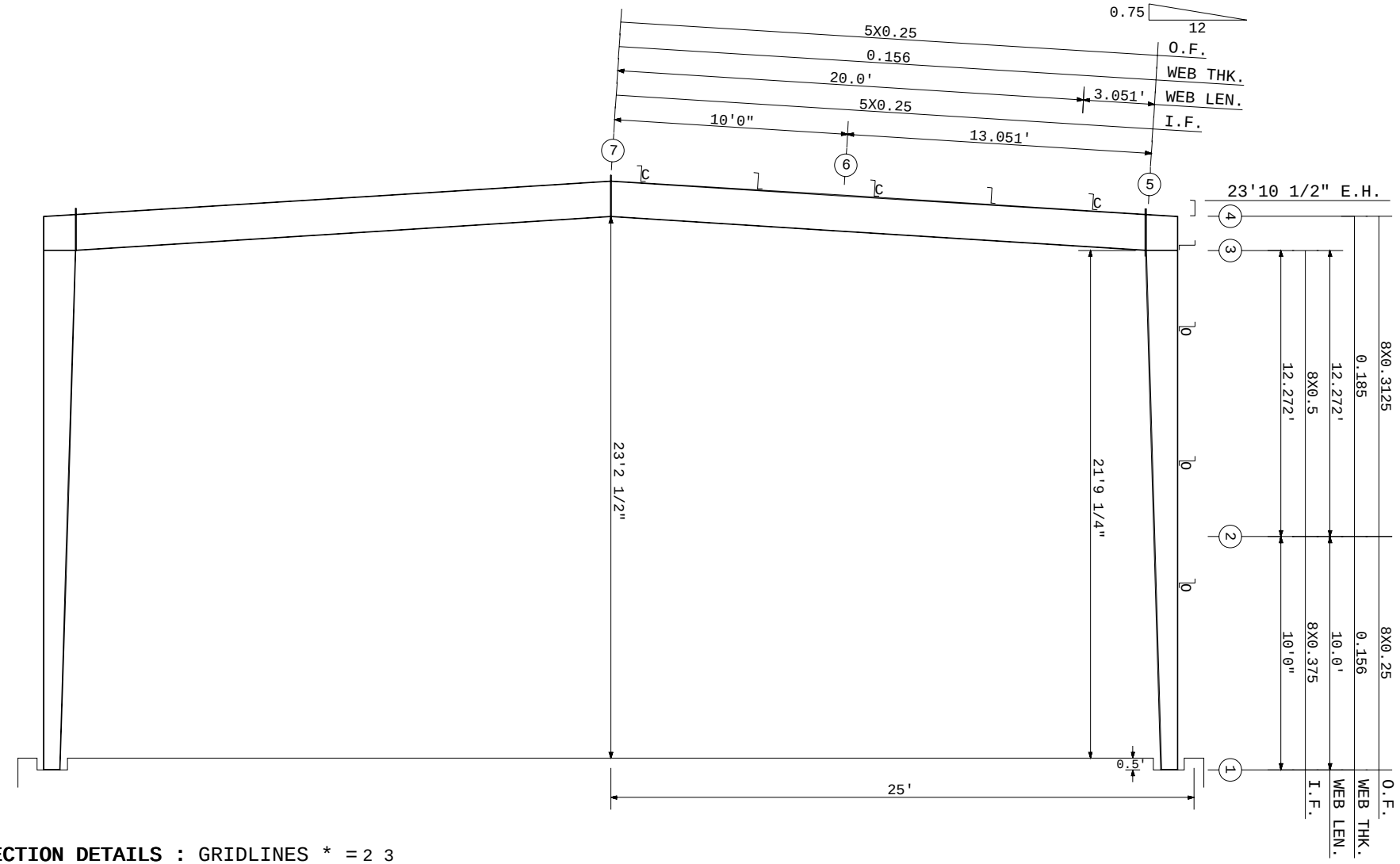


CONNECTION DETAILS : GRIDLINES * = 2 3

Location	(1)*-C	(2)	(3)	(4)	(5)	(6)	(7)
Web Dep.	8.0	11.5922	16.0	N/A	18.0	18.0	18.0
Type	BASE	SPLICE	HORZ STF	CAP (EXT)	2E/2F	SPLICE	2E/2E
Plate(DN)	8.0X0.375	N/A	3.875X0.25	8.0X0.25	8.0X0.5	N/A	6.0X0.5
Plate(UP)	N/A	N/A	N/A	N/A	6.0X0.5	N/A	6.0X0.5
Bolts	(4)-3/4	N/A	N/A	N/A	(8)-3/4	N/A	(8)-3/4

LOCATION: Gridlines 2 3
DETAIL FILE: ctive\eng\21-B-63283\ver01-mtsanchez\BLDG-A\Drftg\x02R
BOLTS:A325 SNUG TIGHT WEIGHT: 2227 lbs
PURLINS(horz. from eave) :8"-Z 2@4'4 1/4",3@5'
GIRTS (vert. from floor): 8"-Z 7'6",5'3",5'9",3'6"(8.25")

(1) All sectional dimensions are in inches.
(2) All Flange lengths are measured along outer flange.
(3) Left Column Flange Braces use the Optional Concealed Nut Attachment
(4) Rafter Flange Braces use the Optional Concealed Nut Attachment
(5) Right Column Flange Braces use the Optional Concealed Nut Attachment



CONNECTION DETAILS : GRIDLINES * = 2 3

Location	(1)*-A	(2)	(3)	(4)	(5)	(6)	(7)
Web Dep.	8.0	11.5920	16.0	N/A	18.0	18.0	18.0
Type	BASE	SPLICE	HORZ STF	CAP (EXT)	3E/2E	SPLICE	2E/2E
Plate(DN)	8.0X0.375	N/A	3.875X0.25	8.0X0.25	8.0X0.5	N/A	6.0X0.5
Plate(UP)	N/A	N/A	N/A	N/A	6.0X0.5	N/A	6.0X0.5
Bolts	(4)-3/4	N/A	N/A	N/A	(10)-3/4	N/A	(8)-3/4

Building: BLDG-A

CDS file name: 21-B-63283_BLDG-A_Eds2Tekla.cds

Planes

Name	File
SWA	\ver01-mtsanchez\BLDG-A\run01\AwallSWA_01.edf
EWD	\ver01-mtsanchez\BLDG-A\run01\AwallEWD_01.edf
SWC	\ver01-mtsanchez\BLDG-A\run01\AwallSWC_01.edf
EWB	\ver01-mtsanchez\BLDG-A\run01\AwallEWB_01.edf
RPA	\ver01-mtsanchez\BLDG-A\run01\AroofRPA_01.edf
RPC	\ver01-mtsanchez\BLDG-A\run01\AroofRPC_01.edf

Frames

Frame Line	Left Frame	Left File	Right Frame	Right File
1	E	\ver01-mtsanchez\BLDG-A\Drftg\x03L	F	\ver01-mtsanchez\BLDG-A\Drftg\x03R
2	C	\ver01-mtsanchez\BLDG-A\Drftg\x02L	D	\ver01-mtsanchez\BLDG-A\Drftg\x02R
3	C	\ver01-mtsanchez\BLDG-A\Drftg\x02L	D	\ver01-mtsanchez\BLDG-A\Drftg\x02R

Portal Frames

Plane Name	Bay	Frame	File

REACTIONS

BUILDER: CROWN ENTERPRISES
CUSTOMER: CROWN ENTERPRISES LLC
JOB NUMBER: 21-B-63283

Notes

1. The reactions provided are based on the Order Documents at the time of mailing. Any changes to building loads or dimensions may change the reactions. The reactions will be superseded and voided by any future mailing.
2. The reactions provided have been created with the following layout (unless noted otherwise).
    a. A reaction table is provided with the reactions for each load group.
    b. Rigid Frames
    See Note 3.
    c. Endwalls
        1. See Note 3.
    d. X-Bracing
        1. X- Bracing reactions are included in values shown in the reaction tables.
        2. For IBC and UBC based building codes, when x-bracing is present in the sidewall, individual longitudinal seismic loads (RBUPEQ, RBDWEQ, E+, E- and LEQ) do **not** include the amplification factor, W
        3. For IBC and UBC based building codes, when x-bracing is present in the endwall, individual transverse seismic loads (EL & ER) do **not** include the amplification factor, W
    e. The metal building manufacturer is responsible only for the portion of the anchor rod design pertaining to the transfer of forces between the base plate bearing and the anchor rod's shear and tension. The metal building manufacturer is not responsible for the anchor rod embedment for transfer of forces to the foundation. The metal building manufacturer does not design and is not responsible for the design, material, and construction of the foundation embedments. The end use customer shall assure that adequate provisions are made to the foundation design for loads imposed by column reactions of the building, other imposed loads, and bearing capacity of the soil and other conditions of the building site. It is recommended that the anchorage and foundation of the building be designed by a registered professional engineer competent in the design of such structures.
        i. (ref. Appendix A3 of the MBMA Metal Building Systems Manual)
    f. Anchor rods are ASTM F1554 Gr. 36 material unless noted otherwise on the anchor rod layout drawing.
3. Reactions are provided as un-factored for each load group applied to the column. The factors applied to load groups for the steel column design may be different than the factors used in the foundation design. The foundation engineer shall apply the appropriate load factors and combine the reactions in accordance with the building code and design specifications for proper foundation design.
    a. For projects using ultimate design wind speeds such as 2012 IBC, 2015 IBC, or Florida building code, the wind load reactions are at a **strength** value with a load factor of 1.0.
    b. For IBC codes, the seismic reactions provided are at a **strength** level with a load factor of 1.0, and do not contain the rho factor.
    The manufacturer does not provide "maximum" load combination reactions. However, the individual load reactions provided may be used by the foundation engineer to determine the applicable load combinations for his/her design procedures and allow for an economical foundation design.

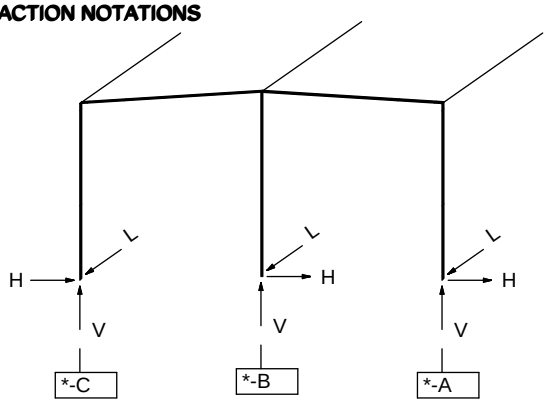
SUPPORT REACTIONS FOR EACH LOAD GROUP

***LOCATION: Gridlines:** 1

TIME:11:49:10

NOTES:(1) All reactions are in kips and kip-ft.
(2) The seismic overstrength factor (Omega) is not included in the "RBDWEQ" and "RBUPEQ" Load Group reactions.
Seismic "BASE-ONLY" combination reactions include an overstrength factor of: 2.500
(3) Primary wind load cases are not concurrent.
(4) X-bracing reactions (RBPULW and RBUPEQ) are combined with LWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 1

COLUMN	*-C			*-A			*-B		
LOAD GROUP	H	V	L	H	V	L	H	V	L
DL	0.0	1.1	-0.0	-0.0	0.9	-0.0	0.0	1.5	-0.0
COLL	0.1	0.7	-0.0	-0.1	0.7	-0.0	-0.0	1.7	-0.0
SNOW	0.3	2.9	-0.0	-0.3	2.9	-0.0	-0.0	6.8	-0.0
LL	0.3	2.9	-0.0	-0.3	2.9	-0.0	-0.0	6.8	-0.0
RBDWEQ	-0.0	-0.0	0.0	0.0	0.7	-0.0	-0.0	-0.0	-0.0
EQ	-0.2	-0.2	-0.0	-0.1	0.1	-0.0	-0.0	0.1	-0.2
RBUPEQ	0.0	0.0	-0.0	-0.0	-0.7	-0.6	0.0	-0.0	-0.0
WL1	-4.3	-7.4	-0.0	-3.7	-1.1	-0.0	-0.0	-7.7	-0.0
WL2	-5.3	-5.7	-0.0	-2.6	0.6	-0.0	-0.0	-5.2	-0.0
WL3	4.2	-0.2	-0.0	3.7	-6.5	-0.0	0.0	-9.5	-0.0
WL4	3.2	1.5	-0.0	4.8	-4.8	-0.0	0.0	-7.0	-0.0
LWL1	2.0	-5.4	2.5	-1.7	-3.3	-0.0	-0.0	-7.5	-5.2
RBUPLW	0.1	0.1	-0.0	-0.1	-6.3	-5.8	0.0	-0.1	-0.0
LWL2	1.7	-3.4	2.5	-1.9	-5.4	-0.0	-0.0	-7.4	-5.2
LWL3	0.9	-3.7	-2.9	-0.6	-1.6	-0.0	0.0	-5.0	5.2
LWL4	0.6	-1.6	-2.9	-0.9	-3.7	-0.0	0.0	-4.9	5.2
SBAL	0.2	2.0	-0.0	-0.2	2.0	-0.0	-0.0	4.8	-0.0
RS	0.1	0.4	-0.0	-0.1	2.4	-0.0	0.0	4.0	-0.0

LOAD GROUP DESCRIPTION

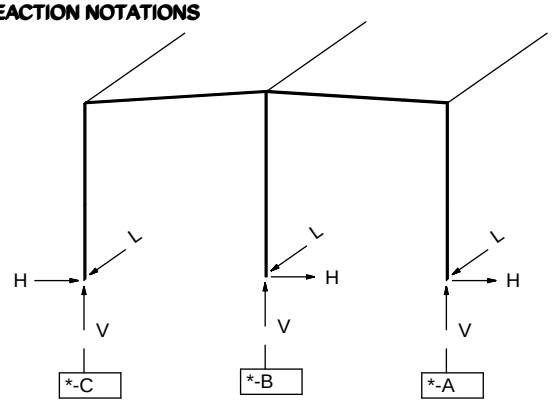
DL	:	Roof Dead Load
COLL	:	Roof Collateral Load
SNOW	:	Roof Snow Load
LL	:	Roof Live Load
RBDWEQ	:	Downward Acting Rod Brace Load from Long. Seismic
EQ	:	Lateral Seismic Load [parallel to plane of frame]
RBUPEQ	:	Upward Acting Rod Brace Load from Long. Seismic
WL1	:	Wind from Left to Right with +GCpi
WL2	:	Wind from Left to Right with -GCpi
WL3	:	Wind from Right to Left with +GCpi
WL4	:	Wind from Right to Left with -GCpi
LWL1	:	Windward Corner Left with +GCpi
RBUPLW	:	Upward Acting Rod Brace Load from Long. Wind
LWL2	:	Windward Corner Right with +GCpi
LWL3	:	Windward Corner Left with -GCpi
LWL4	:	Windward Corner Right with -GCpi
SBAL	:	Code Calculated Balanced Roof Snow Load
RS	:	Unbalanced Right Roof Snow Load

SUPPORT REACTIONS FOR EACH LOAD GROUP

***LOCATION: Gridlines:** 1

NOTES:(1) All reactions are in kips and kip-ft. **TIME:**11:49:10
(2) The seismic overstrength factor (Omega) is not included in the "RBDWEQ" and "RBUPEQ" Load Group reactions.
Seismic "BASE-ONLY" combination reactions include an overstrength factor of: 2.500
(3) Primary wind load cases are not concurrent.
(4) X-bracing reactions (RBPULW and RBUPEQ) are combined with LWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 1

COLUMN	*-C			*-A			*-B		
LOAD GROUP	H	V	L	H	V	L	H	V	L
LS	0.1	2.4	-0.0	-0.1	0.4	-0.0	-0.0	4.0	-0.0
RBDWLW	-0.0	-0.0	-0.0	0.0	6.3	-0.0	-0.0	-0.0	-0.0

LOAD GROUP DESCRIPTION

LS : Unbalanced Left Roof Snow Load
RBDWLW : Downward Acting Rod Brace Load from Long. Wind

SUPPORT REACTIONS FOR EACH LOAD GROUP

***LOCATION: Gridlines:** 2 3

NOTES:(1) All reactions are in kips and kip-ft.

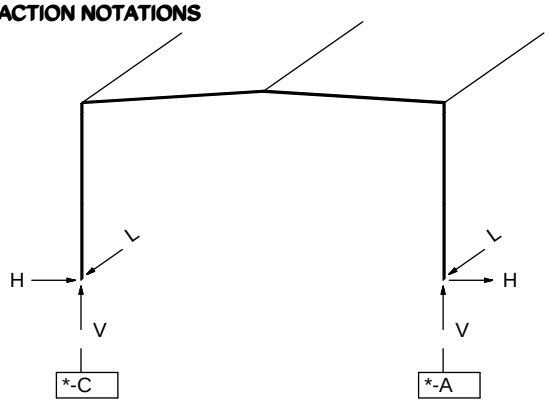
TIME:12:05:25

(2) The seismic overstrength factor (Omega) is not included in the "RBDWEQ" and "RBUPEQ" Load Group reactions.
Seismic "BASE-ONLY" combination reactions include an overstrength factor of: 2.500

(3) Primary wind load cases are not concurrent.

(4) X-bracing reactions (RBPULW and RBUPEQ) are combined with LWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 2 3

COLUMN	*-C			*-A		
LOAD GROUP	H	V	L	H	V	L
DL	0.5	2.2	-0.0	-0.5	2.3	-0.0
COLL	0.7	2.7	-0.0	-0.7	2.7	-0.0
SNOW	2.8	10.7	-0.0	-2.8	10.7	-0.0
LL	2.8	10.7	-0.0	-2.8	10.7	-0.0
RBDWEQ	-0.0	0.8	-0.0	0.0	0.7	-0.0
EQ	-0.2	-0.2	-0.0	-0.2	0.2	-0.0
RBUPEQ	0.0	-0.8	-0.6	-0.0	-0.7	-0.6
WL1	-6.2	-13.4	-0.0	-2.8	-6.6	-0.0
WL2	-7.1	-8.4	-0.0	-1.9	-1.5	-0.0
WL3	2.6	-6.5	-0.0	6.4	-13.5	-0.0
WL4	1.8	-1.5	-0.0	7.3	-8.4	-0.0
LWL1	1.3	-11.0	-0.0	-1.0	-9.0	-0.0
RBUPLW	0.1	-7.2	-5.8	-0.1	-6.3	-5.8
LWL2	1.0	-9.0	-0.0	-1.3	-11.1	-0.0
LWL3	0.5	-6.0	-0.0	-0.2	-3.9	-0.0
LWL4	0.2	-3.9	-0.0	-0.5	-6.0	-0.0
SBAL	1.9	7.5	-0.0	-1.9	7.5	-0.0
RS	1.6	4.2	-0.0	-1.6	7.6	-0.0

LOAD GROUP DESCRIPTION

DL	:	Roof Dead Load
COLL	:	Roof Collateral Load
SNOW	:	Roof Snow Load
LL	:	Roof Live Load
RBDWEQ	:	Downward Acting Rod Brace Load from Long. Seismic
EQ	:	Lateral Seismic Load [parallel to plane of frame]
RBUPEQ	:	Upward Acting Rod Brace Load from Long. Seismic
WL1	:	Wind from Left to Right with +GCpi
WL2	:	Wind from Left to Right with -GCpi
WL3	:	Wind from Right to Left with +GCpi
WL4	:	Wind from Right to Left with -GCpi
LWL1	:	Windward Corner Left with +GCpi
RBUPLW	:	Upward Acting Rod Brace Load from Long. Wind
LWL2	:	Windward Corner Right with +GCpi
LWL3	:	Windward Corner Left with -GCpi
LWL4	:	Windward Corner Right with -GCpi
SBAL	:	Code Calculated Balanced Roof Snow Load
RS	:	Unbalanced Right Roof Snow Load

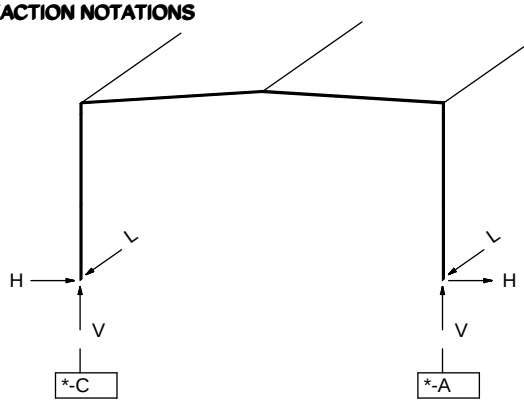
SUPPORT REACTIONS FOR EACH LOAD GROUP

***LOCATION: Gridlines:** 2 3

TIME:12:05:25

NOTES:(1) All reactions are in kips and kip-ft.
(2) The seismic overstrength factor (Omega) is not included in the "RBDWEQ" and "RBUPEQ" Load Group reactions.
Seismic "BASE-ONLY" combination reactions include an overstrength factor of: 2.500
(3) Primary wind load cases are not concurrent.
(4) X-bracing reactions (RBPULW and RBUPEQ) are combined with LWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 2 3

COLUMN	*-C			*-A		
LOAD GROUP	H	V	L	H	V	L
LS	1.6	7.5	-0.0	-1.6	4.2	-0.0
RBDWLW	-0.0	7.2	-0.0	0.0	6.3	-0.0

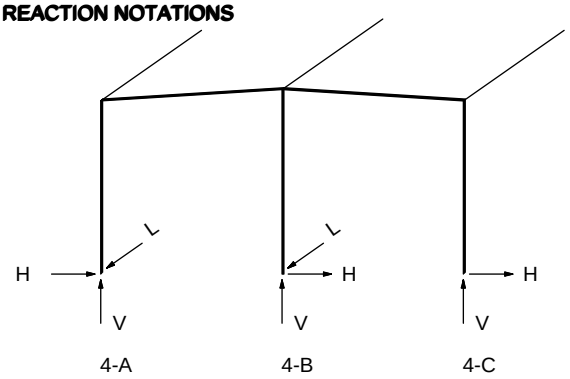
LOAD GROUP DESCRIPTION

LS : Unbalanced Left Roof Snow Load
RBDWLW : Downward Acting Rod Brace Load from Long. Wind

SUPPORT REACTIONS FOR EACH LOAD GROUP
NOTE: All reactions are in kips and kip-ft.

TIME:16:33:48

REACTION NOTATIONS



LOAD GROUP REACTION TABLE

COLUMN	4-A			4-B			4-C		
LOAD GROUP	H	V	L	H	V	L	H	V	L
D	0.0	0.8	0.	0.	1.2	0.0	0.0	0.8	0.
C	0.0	0.7	0.	0.	1.3	0.0	0.0	0.7	0.
L	0.1	2.8	0.	0.	5.0	0.0	-0.1	2.8	0.
S	0.1	2.8	0.	0.	5.0	0.0	-0.1	2.8	0.
SBAL	0.0	1.9	0.	0.	3.5	0.0	0.0	1.9	0.
SUR	0.0	2.3	0.	0.	3.0	0.0	0.0	0.6	0.
SUL	0.0	0.6	0.	0.	3.0	0.0	0.0	2.3	0.
W+	-0.1	-6.6	3.1	0.	-11.5	6.5	0.1	-6.6	0.
W-	-0.1	-6.6	-3.6	0.	-11.5	-7.2	0.1	-6.6	0.
WR	-0.1	-3.5	0.	3.2	-14.6	0.0	0.1	-6.6	0.
WL	-3.3	-9.9	0.	0.	-8.2	0.0	0.1	-6.6	0.
E+	0.	0.	0.0	0.	0.	0.1	0.	0.	0.
E-	0.	0.	0.0	0.	0.	-0.1	0.	0.	0.
ER	0.	0.2	0.	0.2	-0.2	0.	0.	0.	0.
EL	-0.2	-0.2	0.	0.	0.2	0.	0.	0.	0.

LOAD GROUP DESCRIPTION

D	:	Dead load
C	:	Collateral load
L	:	Live load
S	:	Uniform snow load
SBAL	:	Balanced roof snow
SUR	:	Unbalanced snow - Wind from right to left
SUL	:	Unbalanced snow - Wind from left to right
W+	:	Wind load as an inward acting pressure
W-	:	Wind load as an outward acting suction
WR	:	Wind force from the right
WL	:	Wind force from the left
E+	:	Seismic force acting inward
E-	:	Seismic force acting outward
ER	:	Seismic force from right
EL	:	Seismic force from left