January 05, 2017

GENERAL STEEL CORPORATION
10639 BRADFORD RD
LITTLETON,CO 80127-4208 US

15-B-64095
HOLGUIN ROOFING INC
36900 ANNAPOLIS RD
ANNAPOLIS, CA 95412-9702
40'-0" x 70'-0" x 17'-0"

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 Star 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 Star Building Systems or a division of its affiliate NCI Building Systems. The engineer whose seal appears hereon is employed by either Star Building Systems or a division of its affiliate NCI Building Systems and is not the engineer of record for this project.

Cordially,

Star Building Systems
Materials for Metal Buildings
An NCI Company

Allen D. Hurtz, P.E.
Director of Engineering

REGISTERED PROFESSIONAL ENGINEER
ALLEN D. HURTZ
C61574
CIVIL
STATE OF CALIFORNIA

Jan 6 2017

DESIGN PACKAGE

BUILDER: GENERAL STEEL CORPORATION
CUSTOMER: HOLGUIN ROOFING INC
JOB NUMBER: 14-B-86612

TABLE OF CONTENTS

Original Design Completed thru Change Order # 0
Revision History

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

Project Engineer: Matt Dotta (Oklahoma City)
Checking Engineer: Vinay Joseph
Signing Engineer: Matt Dotta, P.E.

STAR BUILDING SYSTEMS®
AN NCI COMPANY

May 29, 2015

GENERAL STEEL CORPORATION
BUILDER SERVICES GROUP
LITTLETON, CO 80127-4208

14-B-86612
HOLGUIN ROOFING INC
ANNAPOLIS, CA
45'0" x 70'0" x 17'0"

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.

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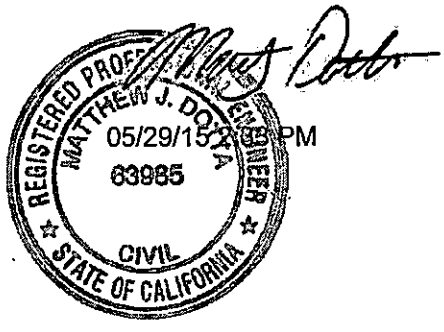
Cordially,

Star Building Systems
Materials for Metal Buildings
An NCI Company

Matthew J. Dotta, P.E.
Regional Engineer



8600 South I-35 Service Road • Oklahoma City, OK 73149 • 405.636.2010 • starbuildings.com

Job Number	14-B-86612
Builder	GENERAL STEEL CORPORATION
Jobsite Location	HOLGUIN ROOFING INC,ANNAPOLIS,California
Building Code	2013 CALIFORNIA
Building Risk Category	Normal (Risk Category II)
Roof Dead Load	
Superimposed	2.25 psf
Collateral	0.50 psf
(0.50 psf Other)	
Roof Live Load	20.00 psf reduction allowed

Wind

Ultimate Wind Speed (Vult) ...	115.00 mph
Nominal Wind Speed (Vasd)	89 mph (IBC section 1609.3.1)
Wind Exposure Category	C
Internal Pressure Coef (GCpi)	0.18/-0.18

Loads for components not provided by building manufacturer

Corner Areas (within 4.50' of corner)	27.08 psf pressure -36.11 psf suction
Other Areas	27.08 psf pressure -29.34 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	E		
Soil Site Class	D Stiff Soil		
Ss	2.164 g	Sds	1.442 g
S1	1.030 g	Sd1	1.030 g
Analysis Procedure	Equivalent Lateral Force		

Column Line	1 & 4	2-3	SWA & SWC
Basic Force Resisting System	B3	C4	B3
Response Modification Coefficient (R)	3.25	3.50	3.25
Seismic Response Coefficient (Cs)	0.308	0.286	0.308
Design Base Shear in kips (V)	1.280	3.17	5.39

Basic Structural System (from ASCE 7-10 Table 12.2-1)

B3 - Ordinary Steel Concentrically Braced Frame

C4 - Ordinary Steel Moment Frame

BOLT TIGHTENTING - Bolted joints with ASTM A325 Type 1 bolts greater than 1/2" diameter are specified as pretensioned joints in accordance with the Specification for Structural Joints Using High-Strength Bolts, December 31, 2009. Pretensioning can be accomplished by using the turn-of-nut method of tightening, calibrated wrench, twist-off-type tension-control bolts or direct-tension-indicator as acceptable to the Inspecting Agency and Building Official. Installation inspection requirements for pretensioned joints (Specification for Structural Joints Section 9.2) using turn-of-nut method is suggested. The connections on this project are not slip critical.

Material properties of steel bar, plate, and sheet used in the fabrication of built-up structural framing members conform to ASTM A529, ASTM A572, ASTM A1011 SS, or ASTM A1011 HSLAS with a minimum yield point of 50 ksi. Material properties of hot rolled structural shapes conform to ASTM A992, ASTM A529, or ASTM A572 with a minimum specified yield point of 50 ksi. Hot rolled angles, other than flange braces, conform to ASTM 36 minimum. Hollow structural shapes conform to ASTM A500 grade B, minimum yield point is 42 ksi for round HSS and 46 ksi for rectangular HSS. Material properties of cold-formed light gage steel members conform to the requirements of ASTM A1011 SS Grade 55, ASTM A1011 HSLAS Grade 55 Class 1, ASTM A653 SS Grade 55, or ASTM A653 HSLAS Grade 55 Class 1 with a minimum yield point of 55 ksi. For Canada, material properties conform to CAN/CSA G40.20/G40.21 or equivalent.

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.

This metal building system is designed as enclosed. All exterior components (i.e. doors, windows, vents, etc.) must be designed to withstand the specified wind loading for the design of components and cladding in accordance with the specified building code.

Job Number 14-B-86612
Builder ..... GENERAL STEEL CORPORATION
Jobsite Location ..... HOLGUIN ROOFING INC, ANNAPOLIS, California

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
Wind L/	180	180	60
Total Gravity L/	120	120	60
Total Uplift L/	N/A	N/A	60

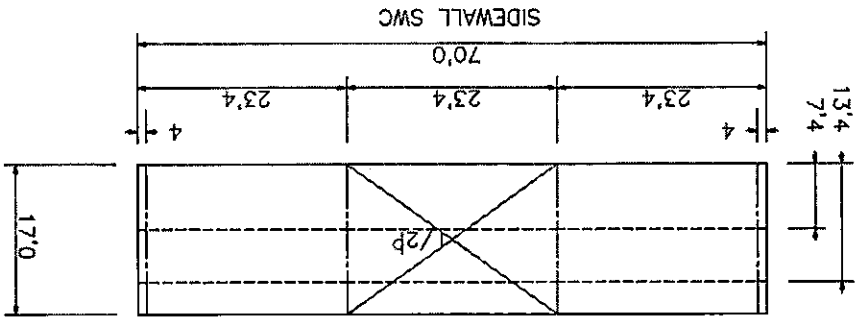
Frame Limits	Sidesway
Live H/	60
Snow H/	60
Wind H/	60
Seismic Drift H/	40
Total Gravity H/	60
Total Wind H/	60
Service Seismic H/	50

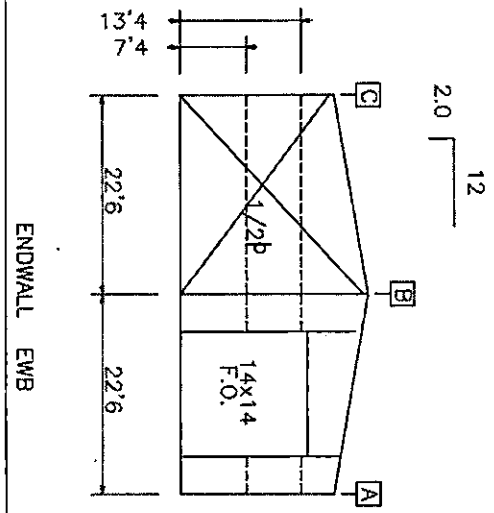
Wall Limits	Limit
Total Wind Panels L/	60
Total Wind Girts L/	90
Total Wind EW Columns L/	120

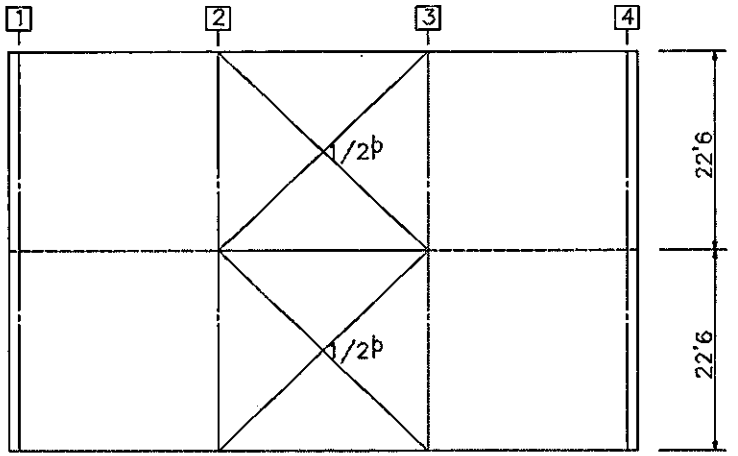
The Service Seismic limit as shown here is at service level loads.

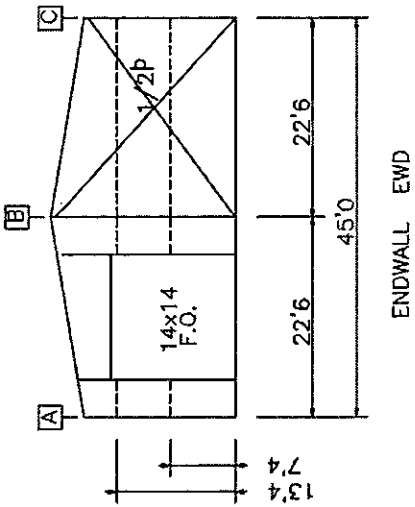
key Strut: x=double Z,
xx=triple Z,
o=pipe(FM)

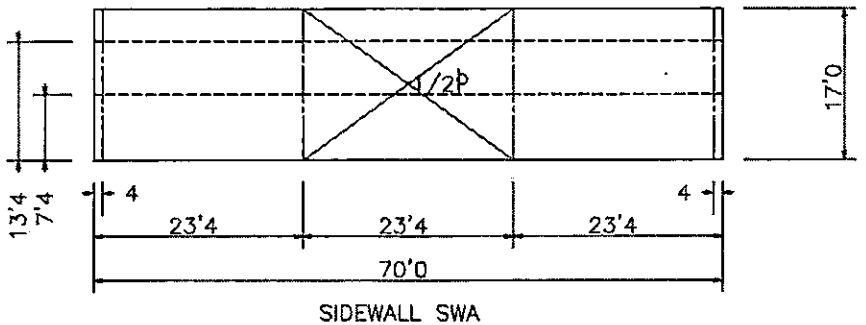
Builder :
GENERAL STEEL CORPORATIO
Job No: 86612A run01
Version: ver01-mjdotta
Fri May 29 11:31:09 2015











Owner :
HOLGUIN ROOFING INC
ANNAPOLIS CA 95412
P.O. M19913

Star Building Systems, OKC, OK
Design Summary Program User: mjdotta Job Number: 86612A
Design Summary Report Version: 5.04.0 run01 Date: 05/29/15
Start Time: 11:31:07
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M A I N B U I L D I N G D E S I G N S U M M A R Y R E P O R T

All connections use ASTM A325N bolts, unless noted otherwise.
All anchor rods are checked according to ASTM F1554 Gr. 36 strengths.

ROOF PLANE ------- RPA
R:\Jobs\Active\ENG\14-B-86612\ver01-mjdotta\Bldg-A\run01\AroofRPA_01.edf

Panel PBR26
Purlins ..... 55.0 ksi Yield Strength
Eave Struts ..... 55.0 ksi Yield Strength

PURLIN SPACING : 2@3.1489 3@5'0 1.2022

Bay #	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	23.333	8X2.5Z16	None	S 0.000	2.479 C
2	23.333	8X2.5Z16	None	C 2.479	2.479 C
3	23.333	8X2.5Z16	None	C 2.479	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: 1,2,3,4

ROOF PLANE ------- RPC
R:\Jobs\Active\ENG\14-B-86612\ver01-mjdotta\Bldg-A\run01\AroofRPC_01.edf

Panel PBR26
Purlins ..... 55.0 ksi Yield Strength
Eave Struts ..... 55.0 ksi Yield Strength

PURLIN SPACING : 2@3.1489 3@5'0 1.2022

Bay #	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	23.333	8X2.5Z16	None	S 0.000	2.479 C
2	23.333	8X2.5Z16	None	C 2.479	2.479 C
3	23.333	8X2.5Z16	None	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: 4,3,2,1

RPC	Purlin Strut	@	22.500 (ft)	:	8X2.5Z16 Bays	3
RPC	Purlin Strut	@	22.500 (ft)	:	8X2.5Z16 Bays	2
RPC	Purlin Strut	@	22.500 (ft)	:	8X2.5Z16 Bays	1
SWC	Eave Strut	@	17.000 (ft)	:	8X3.5E14 Bays	3
SWC	Eave Strut	@	17.000 (ft)	:	8X3.5E14 Bays	2
SWC	Eave Strut	@	17.000 (ft)	:	8X3.5E14 Bays	1
SWA	Eave Strut	@	17.000 (ft)	:	8X3.5E14 Bays	1
SWA	Eave Strut	@	17.000 (ft)	:	8X3.5E14 Bays	2
SWA	Eave Strut	@	17.000 (ft)	:	8X3.5E14 Bays	3

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

BRACING ---- Roof: 1 bays Rod
Plane SWA : 1 bays Rod
Plane SWC : 1 bays Rod
Plane EWB : 1 bays Rod
Plane EWD : 1 bays Rod

SIDEWALL PLANE SWA -- (8.250" Inset columns)
R:\Jobs\Active\ENG\14-B-86612\ver01-mjdotta\Bldg-A\run01\AwallSWA_01.edf

Panel PBR26
Girts ..... 55.0 ksi Yield Strength

GIRTS SPACINGS : 7'4 6'0

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	7'4	23.333	8X2.5Z16	3 points	S 0.000	1.479 C
2	7'4	23.333	8X2.5Z16	None	C 1.479	1.479 C
3	7'4	23.333	8X2.5Z16	3 points	C 1.479	0.000 S
1	13'4	23.333	8X2.5Z16	3 points	S 0.000	1.479 C
2	13'4	23.333	8X2.5Z16	None	C 1.479	1.479 C
3	13'4	23.333	8X2.5Z16	3 points	C 1.479	0.000 S

Note : Maximum Distance To Extend Girt From Adjacent Bay is 36.00 inches.

SIDEWALL PLANE SWC -- (8.250" Inset columns)
R:\Jobs\Active\ENG\14-B-86612\ver01-mjdotta\Bldg-A\run01\AwallSWC_01.edf

Panel PBR26
Girts ..... 55.0 ksi Yield Strength

GIRTS SPACINGS : 7'4 6'0

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	7'4	23.333	8X2.5Z16	3 points	S 0.000	1.479 C
2	7'4	23.333	8X2.5Z16	None	C 1.479	1.479 C
3	7'4	23.333	8X2.5Z16	3 points	C 1.479	0.000 S
1	13'4	23.333	8X2.5Z16	3 points	S 0.000	1.479 C
2	13'4	23.333	8X2.5Z16	None	C 1.479	1.479 C
3	13'4	23.333	8X2.5Z16	3 points	C 1.479	0.000 S

Note : Maximum Distance To Extend Girt From Adjacent Bay is 36.00 inches.

Endwall Plane EWB Design ..... Bearing Frame (BF)
R:\Jobs\Active\ENG\14-B-86612\ver01-mjdotta\Bldg-A\run01\AwallEWB_01.edf

Panel PBR26

RAFTERS -----

Mem #	Description Member Size Identification	Length (ft)	Start (ft)	End (ft)
1	W8X10 50.0 ksi	21.606	0.000	21.606
	Connections... Left : Type-IV SEP 5.0" X 3/8" (2)-1/2" A325N Bolts			
	Right: Type-III SEP 5.0" X 3/8" (4)-1/2" A325N Bolts			
2	W8X10 50.0 ksi	21.606	21.606	43.213
	Connections... Left : Type-III SEP 5.0" X 3/8" (4)-1/2" A325N Bolts			
	Right: Type-IV SEP 5.0" X 3/8" (2)-1/2" A325N Bolts			

Flange Braces at following purlins (horizontal distance from eave) :
PLANE SWA: 6.298, 11.298, 16.298, 21.298 FB=M-TYPE
PLANE SWC: 6.298, 11.298, 16.298, 21.298 FB=M-TYPE

Girts ..... 55.0 ksi Yield Strength

Girts Spacings : 7'4 6'0

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten	
1	7'4	21.812	8X2.5Z14	3 points	S 0.000	0.000	S
2	7'4	21.812	8X2.5Z16	F.O.	S 0.000	0.000	S
1	13'4	21.812	8X2.5Z14	3 points	S 0.000	0.000	S
2	13'4	21.812	8X2.5Z16	F.O.	S 0.000	0.000	S

FRAMED OPENINGS:

Width	Height	Sill Ht	Jamb	Header/Sill	Bay Distance
14'0	14'0	N/A	8X2.5C13	8X2.5C16	2 4'3

COLUMNS ----- (0.000" Inset columns)

Col #	Dist. from left	Description Member Size Ident.	Base Elev (ft)	Base plate design information Thickness & rods
1-C	0.000'	W8X10 50.0 ksi	0.0000'	0.375" BP thk w/(4)-0.625" A36
1-B	22.500'	W8X10 50.0 ksi	0.0000'	0.375" BP thk w/(4)-0.625" A36
1-A	45.000'	W8X10 50.0 ksi	0.0000'	0.375" BP thk w/(4)-0.625" A36

ENDWALL COLUMN TO BRIDGE CHANNEL CONNECTIONS: *NOT REQUIRED

Star Building Systems, OKC, OK
Design Summary Program User: mjdotta Job Number: 86612A
Design Summary Report Version: 5.04.0 run01 Date: 05/29/15
Start Time: 11:31:08
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Endwall Plane EWD Design ..... Bearing Frame (BF)
R:\Jobs\Active\ENG\14-B-86612\ver01-mjdotta\Bldg-A\run01\AwallEWD_01.edf

Panel PBR26

RAFTERS -----

Mem #	Description Member Size Identification	Length (ft)	Start (ft)	End (ft)
1	W8X10 50.0 ksi	21.606	0.000	21.606
Connections...	Left : Type-IV SEP 5.0" X 3/8" (2)-1/2" A325N Bolts			
	Right: Type-III SEP 5.0" X 3/8" (4)-1/2" A325N Bolts			
2	W8X10 50.0 ksi	21.606	21.606	43.213
Connections...	Left : Type-III SEP 5.0" X 3/8" (4)-1/2" A325N Bolts			
	Right: Type-IV SEP 5.0" X 3/8" (2)-1/2" A325N Bolts			

Flange Braces at following purlins (horizontal distance from eave) :
PLANE SWA: 6.298, 11.298, 16.298, 21.298 FB=M-TYPE
PLANE SWC: 6.298, 11.298, 16.298, 21.298 FB=M-TYPE

Girts ..... 55.0 ksi Yield Strength

Girts Spacings : 7'4 6'0

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten	
1	7'4	21.812	8X2.5Z16	F.O.	S 0.000	0.000	S
2	7'4	21.812	8X2.5Z14	3 points	S 0.000	0.000	S
1	13'4	21.812	8X2.5Z16	F.O.	S 0.000	0.000	S
2	13'4	21.812	8X2.5Z14	3 points	S 0.000	0.000	S

FRAMED OPENINGS:

Width	Height	Sill Ht	Jamb	Header/Sill	Bay Distance
14'0	14'0	N/A	8X2.5C13	8X2.5C16	1 4'3

COLUMNS ----- (0.000" Inset columns)

Col #	Dist. from left	Description Member Size Ident.	Base Elev (ft)	Base plate design information Thickness & rods
4-A	0.000'	W8X10 50.0 ksi	0.0000'	0.375" BP thk w/(4)-0.625" A36
4-B	22.500'	W8X10 50.0 ksi	0.0000'	0.375" BP thk w/(4)-0.625" A36
4-C	45.000'	W8X10 50.0 ksi	0.0000'	0.375" BP thk w/(4)-0.625" A36

ENDWALL COLUMN TO BRIDGE CHANNEL CONNECTIONS: *NOT REQUIRED

FRAMES -----	Type	Span	Live	Wind	Eave	Trib	Grid Labels
	CS	45.000	20.00/115.00		17.00/	23.17	2-3

Note: Use square anchor rod layout.

Building: Bldg-A
CDS file name: 14-B-86612_Bldg-A_Eds2Xds.cds

Planes

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

Frames

Frame Line	Left Frame	Left File	Right Frame	Right File
2	A	\ver01-mjdotta\Bldg-A\Drftg\x01L	A	\ver01-mjdotta\Bldg-A\Drftg\x01L
3	A	\ver01-mjdotta\Bldg-A\Drftg\x01L	A	\ver01-mjdotta\Bldg-A\Drftg\x01L

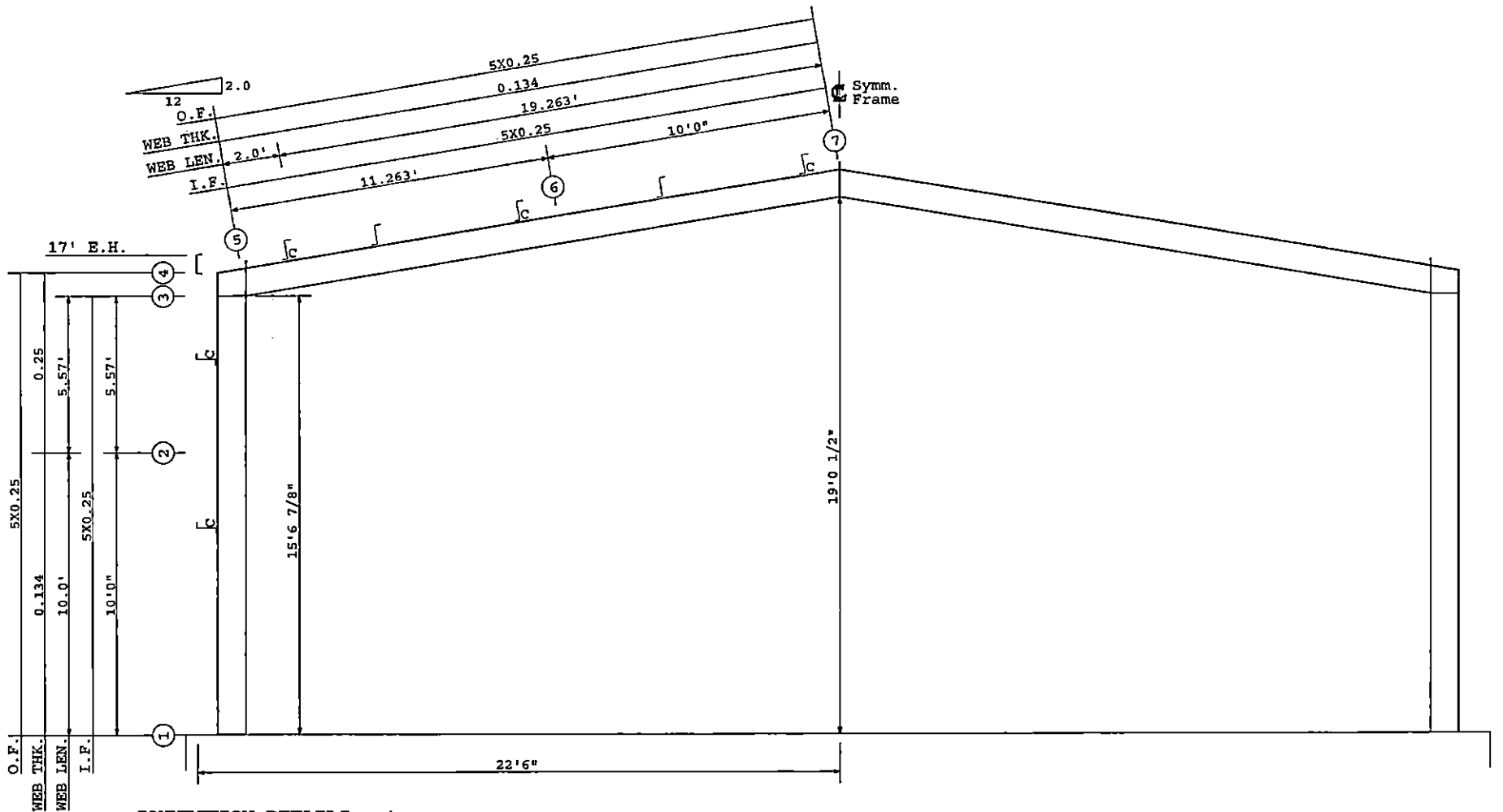
Portal Frames

Plane Name	Bay	Frame	File

Star Building Systems 8600 S. I-35, Oklahoma City, OK 73149	FRAME ID #1 cs 45./17./23.167 20./115./0.	USER NAME:mjdotta JOB NAME:86612A	DATE: 5/29/15 TIME:11:37:21 PAGE: 1 -1 FILE:frame_2_3.fra	

LOCATION: Gridlines 2 3
DETAIL FILE: 14-B-86612\ver01-mjdotta\Bldg-A\Drftg\x01L
BOLTS:A325 FULLY TIGHT WEIGHT: 1331 lbs
PURLINS(horz. from eave) :8"-Z 2@3'1 13/16",3@5'
GIRTS (vert. from floor): 8"-Z 7'4",6'(8.25")

(1) All sectional dimensions are in inches.
(2) All Flange lengths are measured along outer flange.



CONNECTION DETAILS : * = 2 3

Location	①*-C	②	③	④	⑤	⑥	⑦
Web Dep.	11.5	11.5	11.5	N/A	11.5	11.5	11.5
Type	BASE	SPLICE	HORZ STF	CAP (EXT)	2E/2E	SPLICE	2E/2E
Plate(DN)	6.0X0.375	N/A	2.25X0.25	5.0X0.25	8.0X0.75	N/A	6.0X0.375
Plate(UP)	N/A	N/A	N/A	N/A	6.0X0.75	N/A	6.0X0.375
Bolts	(4)-3/4	N/A	N/A	N/A	(8)-3/4	N/A	(8)-3/4

11
05/29/2015

REACTIONS

BUILDER: GENERAL STEEL CORPORATION
CUSTOMER: HOLGUIN ROOFING INC
JOB NUMBER: 14-B-86612

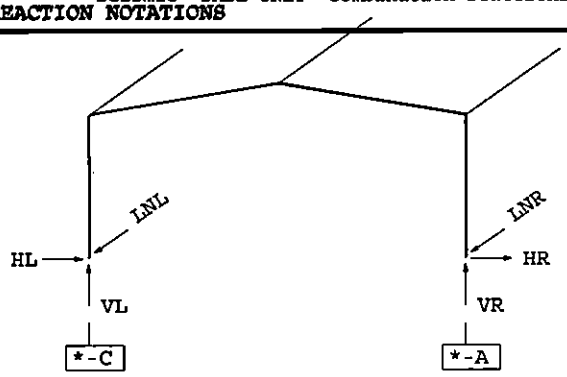
Notes

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
      (1) Gabled Buildings
         (a) Left and Right columns are determined as if viewing the left side of the building, as shown on the anchor rod drawing, from the outside of the building.
         (b) Interior columns are spaced from left side to right side.
      (2) Single Slope Buildings
         (a) Left column is the low side column.
         (b) Right column is the high side column.
         (c) Interior columns are spaced from low side to high side.
   c) Endwalls
      (1) Left and Right columns are determined as if viewing the wall from the outside.
      (2) Interior columns are spaced from left to right.
   d) Anchor rod size is determined by shear and tension at the bottom of the base plate. The length of the anchor rod and method of load transfer to the foundation are to be determined by the foundation engineer.
   e) Anchor rods are ASTM F1554 Gr. 36 material unless noted otherwise on the anchor rod layout drawing.
   f) X-Bracing
      (1) Rod Bracing reactions have been 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 and RBDWEQ) do not include the amplification factor, Ω_0.
      (3) For IBC and UBC based building codes, when x-bracing is present in the endwall, individual transverse seismic loads (EQ) do not include the amplification factor, Ω_0.
3) Reactions are provided as un-factored for each load group applied to the column. The foundation engineer will apply the appropriate load factors and combine the reactions in accordance with the building code and design specifications to determine bearing pressures and concrete design. The factors applied to load groups for the steel column design may be different than the factors used in the foundation design.
   a) For projects using ultimate design wind speeds such as 2012 IBC or 2010 Florida building code, the wind load reactions are at a ***strength*** value with a load factor of 1.0.

   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: 2 3
NOTES:(1) All reactions are in kips and kip-ft. TIME:11:37:21
(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: 2.000

REACTION NOTATIONS



LOAD GROUP REACTION TABLE * = 2 3

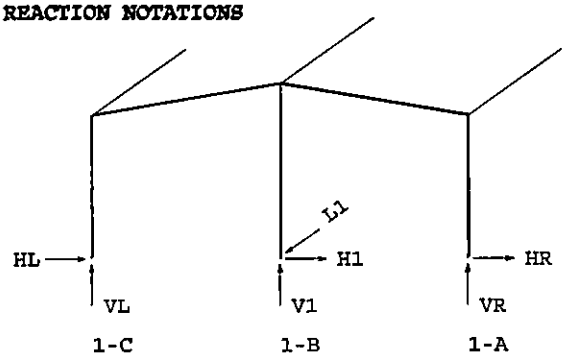
COLUMN	*-C			*-A		
LOAD GROUP	HL	VL	LNL	HR	VR	LNR
DL	0.5	1.7	0.0	-0.5	1.7	0.0
LL	2.0	6.3	0.0	-2.0	6.3	0.0
COLL	0.1	0.3	0.0	-0.1	0.3	0.0
EQ	-0.8	-0.6	0.0	-0.8	0.6	0.0
RBUPEQ	0.0	-2.0	-2.7	-0.0	-2.0	-2.7
WL1	-5.9	-11.7	0.0	-1.1	-7.2	0.0
WL2	-6.2	-7.0	0.0	-0.8	-2.5	0.0
WL3	1.1	-7.2	0.0	5.9	-11.7	0.0
WL4	0.8	-2.5	0.0	6.2	-7.0	0.0
LWL1	0.5	-10.1	0.0	0.2	-8.5	0.0
RBUPLW	0.0	-2.8	-3.9	-0.0	-2.8	-3.9
LWL2	-0.2	-8.5	0.0	-0.5	-10.1	0.0
LWL3	0.2	-5.4	0.0	0.5	-3.8	0.0
LWL4	-0.5	-3.8	0.0	-0.2	-5.4	0.0
RBDWLW	-0.0	2.8	0.0	0.0	2.8	0.0
RBDWEQ	-0.0	2.0	0.0	0.0	2.0	0.0

LOAD GROUP DESCRIPTION

DL : Roof Dead Load
LL : Roof Live Load
COLL : Roof Collateral Load
EQ : Lateral Seismic Load [parallel to plane of frame]
RBUPEQ : Upward Acting Rod Brace Load from Longit. Seismic
WL1 : Lateral Primary Wind Load
WL2 : Lateral Primary Wind Load
WL3 : Lateral Primary Wind Load
WL4 : Lateral Primary Wind Load
LWL1 : Longitudinal Primary Wind Load
RBUPLW : Upward Acting Rod Brace Load from Longitud. Wind
LWL2 : Longitudinal Primary Wind Load
LWL3 : Longitudinal Primary Wind Load
LWL4 : Longitudinal Primary Wind Load
RBDWLW : Downward Acting Rod Brace Load from Longit. Wind
RBDWEQ : Downward Acting Rod Brace Load from Long. Seismic

SUPPORT REACTIONS FOR EACH LOAD GROUP
NOTE: All reactions are in kips and kip-ft. TIME:11:40:26

REACTION NOTATIONS



LOAD GROUP REACTION TABLE

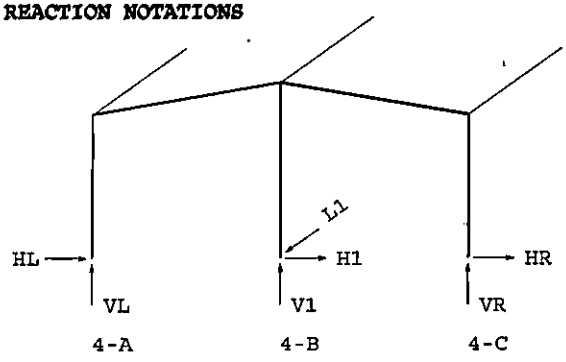
COLUMN	1-C			1-A			1-B		
LOAD GROUP	HL	VL	LL	HR	VR	LR	H1	V1	L1
D	0.0	0.6	0.	0.0	0.6	0.	0.	1.0	0.
C	0.0	0.1	0.	0.0	0.1	0.	0.	0.1	0.
L	0.1	2.6	0.	-0.1	2.6	0.	0.	4.7	0.0
W+	-0.1	-4.9	0.	0.1	-4.9	0.	0.	-7.4	4.6
W-	-0.1	-4.9	0.	0.1	-4.9	0.	0.	-7.4	-5.1
WR	-0.1	-3.2	0.	2.6	-4.9	0.	2.2	-9.0	0.0
WL	-2.3	-6.9	0.	-2.0	-4.9	0.	0.	-5.3	0.0
ER	0.	0.5	0.	0.	0.	0.	0.6	-0.5	0.
EL	-0.6	-0.6	0.	0.	0.	0.	0.	0.6	0.

LOAD GROUP DESCRIPTION

D	:	DEAD LOAD
C	:	COLLATERAL LOAD
L	:	LIVE LOAD
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
ER	:	EARTHQUAKE FORCE FROM RIGHT
EL	:	EARTHQUAKE FORCE FROM LEFT

SUPPORT REACTIONS FOR EACH LOAD GROUP
NOTE: All reactions are in kips and kip-ft. TIME:11:40:26

REACTION NOTATIONS



LOAD GROUP REACTION TABLE

COLUMN	4-A			4-C			4-B		
LOAD GROUP	HL	VL	LL	HR	VR	LR	H1	V1	L1
D	0.0	0.6	0.	0.0	0.6	0.	0.	1.0	0.
C	0.0	0.1	0.	0.0	0.1	0.	0.	0.1	0.
L	0.1	2.6	0.	-0.1	2.6	0.	0.	4.7	0.0
W+	-0.1	-4.9	0.	0.1	-4.9	0.	0.	-7.4	4.6
W-	-0.1	-4.9	0.	0.1	-4.9	0.	0.	-7.4	-5.1
WR	2.4	-4.9	0.	2.3	-6.9	0.	0.	-5.3	0.0
WL	-2.2	-4.9	0.	0.1	-3.2	0.	-2.2	-9.0	0.0
ER	0.	0.	0.	0.6	-0.6	0.	0.	0.6	0.
EL	0.	0.	0.	0.	0.5	0.	-0.6	-0.5	0.

LOAD GROUP DESCRIPTION

D : DEAD LOAD
C : COLLATERAL LOAD
L : LIVE LOAD
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
ER : EARTHQUAKE FORCE FROM RIGHT
EL : EARTHQUAKE FORCE FROM LEFT

**** MAIN BUILDING ROOF LONGITUDINAL BRACING DESIGN ****
ROOF STRUT LOADING AND FORCE TRANSMISSION

Main Code Requirements Per:
2013 CALIFORNIA
(Reference 2012 International Building Code)
Seismic-resistance System Per:
2010 ASCE 7

Longitudinal seismic loading case 1
(PLANE EWB endwall to opposite endwall is force direction)

Soil Profile Type	D
Seismic design category	E
Mapped spectral response accel. for short periods (Ss)	2.1637
Mapped spectral response accel. for 1 second periods (S1)	1.0298
Design , 5% damped , spectral response accel. at short periods (Sds)	1.442467
Design , 5% damped , spectral response accel. at period 1 sec. (Sd1)	1.0298
Longitudinal Building Period (T)	0.181
Seismic Reliability/Redundancy Factor	1.3
Seismic Importance Factor (I)	1
Building minimum longitudinal R value	3.25
Building minimum transverse R value	3.25
Roof dead load included in Seismic force "W" (psf)	4.248
Roof collateral load included in Seismic force "W" (psf)	0.500

Roof strut	Brace spans	External loading (W) applied to strut line	.7rhoV	Brc T Total	Brc T /bay	Brc Allow
PLANE RPC:						
1		4.313 TOTAL				
		0.287 @ FRAME LINE 1, 4				
		1.246 @ BAY 1, 2, 3			0.5000"	ROD
	22.500'	Transfered = 4.439	1.24	1.74	1.74	4.79
2		8.879 TOTAL				
		0.700 @ FRAME LINE 1, 4				
		2.493 @ BAY 1, 2, 3			0.5000"	ROD
	22.500'	Transfered = 4.439	1.24	1.74	1.74	4.79
3		4.313 TOTAL				
		0.287 @ FRAME LINE 1, 4				
		1.246 @ BAY 1, 2, 3				
PLANE RPA:						

- Using ASCE7-10 Eq(12.8-2) Sds/(R/I)W ; R=3.25
Roof bracing load E=rhoV; rho=1.30

**** MAIN BUILDING SIDEWALL LONGITUDINAL BRACING DESIGN ****
WALL STRUT LOADING AND FORCE TRANSMISSION

Wall strut	Brace elev	External loading applied to strut line
PLANE SWC:		
Line 1		
		4.439 Transfered from roof
Tier 1	17.00'	4.313 TOTAL
		0.287 @ FRAME LINE 1, 4
		1.246 @ BAY 1, 2, 3
		Transfered = 8.752 Weight (W)
		V = Using ASCE7-10 Eq(12.8-2) Sds/(R/I)W ; R=3.25
		V = (1.00)/((3.25)/(1.00))(8.75) = 2.69
		0.7*Omega*V = 0.7*2.00*2.693 = 3.77
		Brace T = 4.66
		Brace T / Bay = 4.66 / 1 bays = 4.66
		Rod Design = 0.5000" ROD
		Brace Allowable = 5.74

Wall strut	Brace elev	External loading applied to strut line
PLANE SWA:		
Line 3		
		4.439 Transfered from roof
Tier 1	17.00'	4.313 TOTAL
		0.287 @ FRAME LINE 1, 4
		1.246 @ BAY 1, 2, 3
		Transfered = 8.752 Weight (W)
		V = Using ASCE7-10 Eq(12.8-2) Sds/(R/I)W ; R=3.25
		V = (1.00)/((3.25)/(1.00))(8.75) = 2.69
		0.7*Omega*V = 0.7*2.00*2.693 = 3.77
		Brace T = 4.66
		Brace T / Bay = 4.66 / 1 bays = 4.66
		Rod Design = 0.5000" ROD
		Brace Allowable = 5.74

***** TRANSVERSE BRACING DESIGN *****
STABILITY BRACING AT MAIN BUILDING ENDWALL PLANE EWB

Loading Condition	Horizontal Force
1) Lateral Wind Load 1 from SWA to SWC	1.32
2) Lateral Wind Load 2 from SWA to SWC	1.32
3) Lateral Wind Load 1 from SWC to SWA	1.32
4) Lateral Wind Load 2 from SWC to SWA	1.32
5) Lateral Seismic from planes SWA to SWC	2.07 Weight (W)
6) Lateral Seismic from planes SWC to SWA	2.07 Weight (W)
	kips

Using Max size 0.5000" RODS in endwall module [1] from left to right
Width= 22.50 feet Left Height= 17.00 feet Right Height= 20.75 feet

Load Cond	Active Rod Vert. Rise (feet)	Design Length (feet)	Tensile Force Applied (kips)	Tensile Force Capacity (kips)
Tier 1				
1)	17.00	28.20	1.65	4.79
2)	17.00	28.20	1.65	4.79
3)	20.75	30.61	1.79	4.79
4)	20.75	30.61	1.79	4.79
5)	17.00	28.20	1.11	5.74
6)	20.75	30.61	1.21	5.74

Tier bracing size:0.5000" ROD

***** TRANSVERSE BRACING DESIGN *****
STABILITY BRACING AT MAIN BUILDING ENDWALL PLANE EWD

Loading Condition	Horizontal Force
1) Lateral Wind Load 1 from SWA to SWC	1.32
2) Lateral Wind Load 2 from SWA to SWC	1.32
3) Lateral Wind Load 1 from SWC to SWA	1.32
4) Lateral Wind Load 2 from SWC to SWA	1.32
5) Lateral Seismic from planes SWA to SWC	2.07
	Weight (W)
6) Lateral Seismic from planes SWC to SWA	2.07
	Weight (W)
	kips

Using Max size 0.5000" RODS in endwall module [2] from left to right
Width= 22.50 feet Left Height= 20.75 feet Right Height= 17.00 feet

Load Cond	Active Rod Vert. Rise (feet)	Design Length (feet)	Tensile Force Applied (kips)	Tensile Force Capacity (kips)
Tier 1				
1)	17.00	28.20	1.65	4.79
2)	17.00	28.20	1.65	4.79
3)	20.75	30.61	1.79	4.79
4)	20.75	30.61	1.79	4.79
5)	17.00	28.20	1.11	5.74
6)	20.75	30.61	1.21	5.74

Tier bracing size:0.5000" ROD

```
VERSION V5.04
BRAND STAR
DESCRIPTION cs  45./17./23.167   20./115./0.
FRAME_ID 1
#  FRAME LEFT SIDE IS BLDG. PLANE SWC
#  AND FRAME RIGHT SIDE IS BLDG. PLANE SWA
PRINT echo code loads base connection deflection profile seismic detail  \
 flg_brace summary stiffeners pro_grplds
OPTIMIZATION none *PLANT atw *JOB 86612A
ANALYZE none *DATASET members brace combinations wind_array connection base
BUILDING LABEL A
LOCATION frame lines 2
LATERAL GRID LABEL 2 3
LONGITUDINAL GRID LABEL C A
NUMBER FRAMES 2  *PRICE complete
TYPE cs t cs 60. 60.
WIDTH 45. 22.5
LENGTH  70.
EAVE 17. *ROOF SLOPE 2.
GIRT DEPTH 8. 8.25  *PURLIN DEPTH 8. 8.25
GIRT THICKNESS 0.059  *PURLIN THICKNESS 0.059
GIRT FLANGE 2.5  *PURLIN FLANGE 2.5
PURLIN STIFFNESS 26.861 10.678 6.976 4.362
CODE LABEL 2013 CALIFORNIA
BUILDING CODE IB12 U=Normal
DEAD LOAD 2.253  *COLLATERAL LOAD 0.5
LIVE LOAD 20. reduce
SNOW R=0. T=1. S=N WEL=22.5 WER=22.5 WML=22.5 WMR=22.5
WIND CODE AS10
SEISMIC CODE AS10
SEISMIC LOAD  S1=102.98 SS=216.37 TL=16. %CR=NORM %SR=NORM RHOL=1.3 R=3.5  \
 LOF=2. TOF=2.5 RL=3.25 Cd=3. Ct=0.028
SOIL PROFILE D
SECOND ORDER FOA
ROOF TRIBUTARY  TR= 23.167
WALL TRIBUTARY  TR= 23.167 S=0. E=17.
DESIGN ASD10
LATERAL BRACE LENGTH  23.33
STIFFNESS CHECK SNOW ONLY
BOLT TIGHTENING  Fully
DEFLECTION ROOF L=180. S=180. W=180. G=120.
DEFLECTION WALL L=60. S=60. W=60. E=40. C=100. G=60. TW=60. TE=50.
SYMKNEE CONNECTION
SPLICE GUSSETS NA
BRACING SIDES LC=1 RA=1 RC=1
BRACE ATTACHMENT FLANGE
FLANGE BRACE ATTACHMENT LC=0 RA=0 RC=0
GIRT SPACING 7.3333 6.
GIRT BRACE  C C
PURLIN SPACING 2@3.1489 3@5.
PURLIN BRACE  C N C N C
LEFT COLUMN
  BASE W=6. T=0.375 L=12. N=2 D=0.75
     11.5      0.      10.       5.       0.25     0.134    5.       0.25
      0.      11.5      0.       5.       0.25     0.25     5.       0.25
LEFT RAFTER
```

```
  CONNECTION  O=2E I=2E W=8. 6. T=0.75 D=0.75
     11.5       0.        0.        5.        0.25      0.134     5.        0.25
      0.       11.5      10.        5.        0.25      0.134     5.        0.25
  CONNECTION  O=2E I=2E W=6. T=0.375 D=0.75
SYMMETRICAL ALL
WIND LOAD   WL1      25.081  0.2600 -0.8700 -0.5800 -0.5100   22.500 Left
WIND LOAD   WL2      25.081  0.6200 -0.5100 -0.2200 -0.1500   22.500 Left
WIND LOAD   LWL1     25.081 -0.6300 -0.8700 -0.5500 -0.6300   22.500
WIND LOAD   LWL2     25.081 -0.6300 -0.5500 -0.8700 -0.6300   22.500
WIND LOAD   LWL3     25.081 -0.2700 -0.5100 -0.1900 -0.2700   22.500
WIND LOAD   LWL4     25.081 -0.2700 -0.1900 -0.5100 -0.2700   22.500
WIND LOAD   WL3      25.081 -0.5100 -0.5800 -0.8700  0.2600   22.500 Right
WIND LOAD   WL4      25.081 -0.1500 -0.2200 -0.5100  0.6200   22.500 Right
LOAD COMBINATIONS
   1)1. DL  1. LL  1. COLL    *DEFL  60. 120. *PDELTA L
   2)1. DL  1. LL  1. COLL    *DEFL  60. 120. *PDELTA R
   3)1.20195 DL  0.91 EQ    *DEFL  50. 120. *PDELTA L
   4)1.20195 DL  0.91 EQ    *DEFL  50. 120. *PDELTA R
   5)1.20195 DL  -0.91 EQ    *DEFL  50. 120. *PDELTA L
   6)1.20195 DL  -0.91 EQ    *DEFL  50. 120. *PDELTA R
   7)1.20195 DL  1.20195 COLL  0.91 EQ    *DEFL  50. 120. *PDELTA L
   8)1.20195 DL  1.20195 COLL  0.91 EQ    *DEFL  50. 120. *PDELTA R
   9)1.20195 DL  1.20195 COLL  -0.91 EQ    *DEFL  50. 120. *PDELTA L
  10)1.20195 DL  1.20195 COLL  -0.91 EQ    *DEFL  50. 120. *PDELTA R
  11)0.39805 DL  0.91 RBUPEQ    *DEFL  60. 120. *PDELTA L
  12)0.39805 DL  0.91 RBUPEQ    *DEFL  60. 120. *PDELTA R
  13)0.39805 DL  0.91 EQ    *DEFL  50. 120. *PDELTA L
  14)0.39805 DL  0.91 EQ    *DEFL  50. 120. *PDELTA R
  15)0.39805 DL  -0.91 EQ    *DEFL  50. 120. *PDELTA L
  16)0.39805 DL  -0.91 EQ    *DEFL  50. 120. *PDELTA R
  17)0.61151 DL  2. RBUPEQ *TYPE R *APP C *PDELTA L
  18)0.61151 DL  2. RBUPEQ *TYPE R *APP C *PDELTA R
  19)0.61151 DL  2.5 EQ *TYPE R *APP C *PDELTA L
  20)0.61151 DL  2.5 EQ *TYPE R *APP C *PDELTA R
  21)0.61151 DL  -2.5 EQ *TYPE R *APP C *PDELTA L
  22)0.61151 DL  -2.5 EQ *TYPE R *APP C *PDELTA R
  23)1.48849 DL  1.48849 COLL  2.5 EQ *TYPE R *APP C *PDELTA L
  24)1.48849 DL  1.48849 COLL  2.5 EQ *TYPE R *APP C *PDELTA R
  25)1.48849 DL  1.48849 COLL  -2.5 EQ *TYPE R *APP C *PDELTA L
  26)1.48849 DL  1.48849 COLL  -2.5 EQ *TYPE R *APP C *PDELTA R
  27)0.61151 DL  2.5 EQ *TYPE R *APP B *PDELTA L
  28)0.61151 DL  2.5 EQ *TYPE R *APP B *PDELTA R
  29)0.61151 DL  -2.5 EQ *TYPE R *APP B *PDELTA L
  30)0.61151 DL  -2.5 EQ *TYPE R *APP B *PDELTA R
  31)1.48849 DL  1.48849 COLL  2.5 EQ *TYPE R *APP B *PDELTA L
  32)1.48849 DL  1.48849 COLL  2.5 EQ *TYPE R *APP B *PDELTA R
  33)1.48849 DL  1.48849 COLL  -2.5 EQ *TYPE R *APP B *PDELTA L
  34)1.48849 DL  1.48849 COLL  -2.5 EQ *TYPE R *APP B *PDELTA R
  35)0.61151 DL  3.5 EQ *TYPE R *APP K *PDELTA L
  36)0.61151 DL  3.5 EQ *TYPE R *APP K *PDELTA R
  37)0.61151 DL  -3.5 EQ *TYPE R *APP K *PDELTA L
  38)0.61151 DL  -3.5 EQ *TYPE R *APP K *PDELTA R
  39)1.48849 DL  1.48849 COLL  3.5 EQ *TYPE R *APP K *PDELTA L
  40)1.48849 DL  1.48849 COLL  3.5 EQ *TYPE R *APP K *PDELTA R
  41)1.48849 DL  1.48849 COLL  -3.5 EQ *TYPE R *APP K *PDELTA L
  42)1.48849 DL  1.48849 COLL  -3.5 EQ *TYPE R *APP K *PDELTA R
  43)1. DL  0.6 WL1    *DEFL  60. 120. *PDELTA L
  44)1. DL  0.6 WL1    *DEFL  60. 120. *PDELTA R
  45)1. DL  0.6 WL2    *DEFL  60. 120. *PDELTA L
  46)1. DL  0.6 WL2    *DEFL  60. 120. *PDELTA R
  47)1. DL  0.6 WL3    *DEFL  60. 120. *PDELTA L
  48)1. DL  0.6 WL3    *DEFL  60. 120. *PDELTA R
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 49)1. DL  0.6 WL4     *DEFL  60. 120. *PDELTA L
 50)1. DL  0.6 WL4     *DEFL  60. 120. *PDELTA R
 51)0.6 DL  0.6 WL1     *DEFL  60. 120. *PDELTA L
 52)0.6 DL  0.6 WL1     *DEFL  60. 120. *PDELTA R
 53)0.6 DL  0.6 WL2     *DEFL  60. 120. *PDELTA L
 54)0.6 DL  0.6 WL2     *DEFL  60. 120. *PDELTA R
 55)0.6 DL  0.6 LWL1  0.6 RBUPLW     *DEFL  60. 120. *PDELTA L
 56)0.6 DL  0.6 LWL1  0.6 RBUPLW     *DEFL  60. 120. *PDELTA R
 57)0.6 DL  0.6 LWL2  0.6 RBUPLW     *DEFL  60. 120. *PDELTA L
 58)0.6 DL  0.6 LWL2  0.6 RBUPLW     *DEFL  60. 120. *PDELTA R
 59)0.6 DL  0.6 LWL3  0.6 RBUPLW     *DEFL  60. 120. *PDELTA L
 60)0.6 DL  0.6 LWL3  0.6 RBUPLW     *DEFL  60. 120. *PDELTA R
 61)0.6 DL  0.6 LWL4  0.6 RBUPLW     *DEFL  60. 120. *PDELTA L
 62)0.6 DL  0.6 LWL4  0.6 RBUPLW     *DEFL  60. 120. *PDELTA R
 63)0.6 DL  0.6 WL3     *DEFL  60. 120. *PDELTA L
 64)0.6 DL  0.6 WL3     *DEFL  60. 120. *PDELTA R
 65)0.6 DL  0.6 WL4     *DEFL  60. 120. *PDELTA L
 66)0.6 DL  0.6 WL4     *DEFL  60. 120. *PDELTA R
 67)1. DL  1. COLL  0.6 WL1     *DEFL  60. 120. *PDELTA L
 68)1. DL  1. COLL  0.6 WL1     *DEFL  60. 120. *PDELTA R
 69)1. DL  1. COLL  0.6 WL2     *DEFL  60. 120. *PDELTA L
 70)1. DL  1. COLL  0.6 WL2     *DEFL  60. 120. *PDELTA R
 71)1. DL  1. COLL  0.6 WL3     *DEFL  60. 120. *PDELTA L
 72)1. DL  1. COLL  0.6 WL3     *DEFL  60. 120. *PDELTA R
 73)1. DL  1. COLL  0.6 WL4     *DEFL  60. 120. *PDELTA L
 74)1. DL  1. COLL  0.6 WL4     *DEFL  60. 120. *PDELTA R
 75)1. DL  0.75 LL  1. COLL  0.45 WL1     *DEFL  60. 120. *PDELTA L
 76)1. DL  0.75 LL  1. COLL  0.45 WL1     *DEFL  60. 120. *PDELTA R
 77)1. DL  0.75 LL  1. COLL  0.45 WL2     *DEFL  60. 120. *PDELTA L
 78)1. DL  0.75 LL  1. COLL  0.45 WL2     *DEFL  60. 120. *PDELTA R
 79)1. DL  0.75 LL  1. COLL  0.45 LWL1  0.45 RBUPLW     *DEFL  60. 120.  \
*PDELTA L
 80)1. DL  0.75 LL  1. COLL  0.45 LWL1  0.45 RBUPLW     *DEFL  60. 120.  \
*PDELTA R
 81)1. DL  0.75 LL  1. COLL  0.45 LWL2  0.45 RBUPLW     *DEFL  60. 120.  \
*PDELTA L
 82)1. DL  0.75 LL  1. COLL  0.45 LWL2  0.45 RBUPLW     *DEFL  60. 120.  \
*PDELTA R
 83)1. DL  0.75 LL  1. COLL  0.45 LWL3  0.45 RBUPLW     *DEFL  60. 120.  \
*PDELTA L
 84)1. DL  0.75 LL  1. COLL  0.45 LWL3  0.45 RBUPLW     *DEFL  60. 120.  \
*PDELTA R
 85)1. DL  0.75 LL  1. COLL  0.45 LWL4  0.45 RBUPLW     *DEFL  60. 120.  \
*PDELTA L
 86)1. DL  0.75 LL  1. COLL  0.45 LWL4  0.45 RBUPLW     *DEFL  60. 120.  \
*PDELTA R
 87)1. DL  0.75 LL  1. COLL  0.45 WL3     *DEFL  60. 120. *PDELTA L
 88)1. DL  0.75 LL  1. COLL  0.45 WL3     *DEFL  60. 120. *PDELTA R
 89)1. DL  0.75 LL  1. COLL  0.45 WL4     *DEFL  60. 120. *PDELTA L
 90)1. DL  0.75 LL  1. COLL  0.45 WL4     *DEFL  60. 120. *PDELTA R
 91)1. DL  1. COLL  0.6 LWL1  0.6 RBDWLW     *DEFL  60. 120. *PDELTA L
 92)1. DL  1. COLL  0.6 LWL1  0.6 RBDWLW     *DEFL  60. 120. *PDELTA R
 93)1. DL  1. COLL  0.6 LWL2  0.6 RBDWLW     *DEFL  60. 120. *PDELTA L
 94)1. DL  1. COLL  0.6 LWL2  0.6 RBDWLW     *DEFL  60. 120. *PDELTA R
 95)1. DL  1. COLL  0.6 LWL3  0.6 RBDWLW     *DEFL  60. 120. *PDELTA L
 96)1. DL  1. COLL  0.6 LWL3  0.6 RBDWLW     *DEFL  60. 120. *PDELTA R
 97)1. DL  1. COLL  0.6 LWL4  0.6 RBDWLW     *DEFL  60. 120. *PDELTA L
 98)1. DL  1. COLL  0.6 LWL4  0.6 RBDWLW     *DEFL  60. 120. *PDELTA R
 99)1. DL  0.75 LL  1. COLL  0.45 LWL1  0.45 RBDWLW     *DEFL  60. 120.  \
*PDELTA L
100)1. DL  0.75 LL  1. COLL  0.45 LWL1  0.45 RBDWLW     *DEFL  60. 120.  \
*PDELTA R
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 101)1. DL  0.75 LL  1. COLL  0.45 LWL2  0.45 RBDWLW    *DEFL  60. 120.  \
*PDELTA L
 102)1. DL  0.75 LL  1. COLL  0.45 LWL2  0.45 RBDWLW    *DEFL  60. 120.  \
*PDELTA R
 103)1. DL  0.75 LL  1. COLL  0.45 LWL3  0.45 RBDWLW    *DEFL  60. 120.  \
*PDELTA L
 104)1. DL  0.75 LL  1. COLL  0.45 LWL3  0.45 RBDWLW    *DEFL  60. 120.  \
*PDELTA R
 105)1. DL  0.75 LL  1. COLL  0.45 LWL4  0.45 RBDWLW    *DEFL  60. 120.  \
*PDELTA L
 106)1. DL  0.75 LL  1. COLL  0.45 LWL4  0.45 RBDWLW    *DEFL  60. 120.  \
*PDELTA R
 107)1.20195 DL  1.20195 COLL  0.91 RBDWEQ    *DEFL  60. 120. *PDELTA L
 108)1.20195 DL  1.20195 COLL  0.91 RBDWEQ    *DEFL  60. 120. *PDELTA R
 109)1.48849 DL  1.48849 COLL  2. RBDWEQ *TYPE R *APP C *PDELTA L
 110)1.48849 DL  1.48849 COLL  2. RBDWEQ *TYPE R *APP C *PDELTA R
 111)1. LL     *DEFL  60. 180. *TYPE D
 112)0.6 WL1     *DEFL  60. 180. *TYPE D
 113)0.6 WL2     *DEFL  60. 180. *TYPE D
 114)0.6 LWL1     *DEFL  60. 180. *TYPE D
 115)0.6 LWL2     *DEFL  60. 180. *TYPE D
 116)0.6 LWL3     *DEFL  60. 180. *TYPE D
 117)0.6 LWL4     *DEFL  60. 180. *TYPE D
 118)0.6 WL3     *DEFL  60. 180. *TYPE D
 119)0.6 WL4     *DEFL  60. 180. *TYPE D
 120)1.48849 DL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 121)1.48849 DL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 122)0.61151 DL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 123)0.61151 DL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 124)1.48849 DL  1.48849 COLL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 125)1.48849 DL  1.48849 COLL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
LOADS
  RC   EQDW    GLOB  M  C     17.000000    0.590000    0.000000    \
      # PANEL/GIRT  SELF-WEIGHT FOR E
  LC   EQDW    GLOB  M  C     17.000000    0.590000    0.000000    \
      # PANEL/GIRT  SELF-WEIGHT FOR E
  LC   RBUPLW  GLOB  Y  C      0.010000    2.813000    0.916700    \
      # WIND BRACE FORCE
  LC   RBUPLW  GLOB  L  C      0.010000    3.861000    0.000000    \
      # WIND BRACE FORCE
  LC   RBDWLW  GLOB  Y  C     17.000000   -2.813000    0.916700    \
      # WIND BRACE FORCE
  RC   RBDWLW  GLOB  Y  C     17.000000   -2.813000   -0.916700    \
      # WIND BRACE FORCE
  RC   RBUPLW  GLOB  Y  C      0.010000    2.813000   -0.916700    \
      # WIND BRACE FORCE
  RC   RBUPLW  GLOB  L  C      0.010000    3.861000    0.000000    \
      # WIND BRACE FORCE
  LC   RBUPEQ  GLOB  Y  C      0.010000    1.962000    0.916700    \
      # SEISMIC BRACE FORCE
  LC   RBUPEQ  GLOB  L  C      0.010000    2.693000    0.000000    \
      # SEISMIC BRACE FORCE
  LC   RBDWEQ  GLOB  Y  C     17.000000   -1.962000    0.916700    \
      # SEISMIC BRACE FORCE
  RC   RBDWEQ  GLOB  Y  C     17.000000   -1.962000   -0.916700    \
      # SEISMIC BRACE FORCE
  RC   RBUPEQ  GLOB  Y  C      0.010000    1.962000   -0.916700    \
      # SEISMIC BRACE FORCE
  RC   RBUPEQ  GLOB  L  C      0.010000    2.693000    0.000000    \
      # SEISMIC BRACE FORCE
END
```

Building Grid Label Legend

Building	: A
Frame Number	: 1
No. of Frames	: 2
Left Column	: Column @ * - C
Right Column	: Column @ * - A

*Frames located @ 2 3

Building :A
Frame Number :1 Location: frame lines 2
No. of Frames: 2

2013 CALIFORNIA
Main Code Requirements Per :
International Building Code
2012 Edition

Supporting Design Manual(s):
2010 AISC Specification for Structural Steel Buildings,Allowable Strength Design
2005 AISC Seismic Provisions for Structural Steel Buildings

Frame Data

Eave height Left & Right (feet)	17.000
Horizontal width from left to right steel line (feet)	45.000
Horizontal distance to ridge from left side (feet)	22.500
Roof Slope Left & Right (rise:12)	2.000
Column Slope Left & Right (lat:12)	0.000
Purlin depth left & right side (inches)	8.000
Frame Rafter Inset left & right side (inches)	8.250
Girt depth left & right side (inches)	8.000
Frame Column Inset left & right side (inches)	8.250
Tributary Width left & right side (feet)	23.167
.....from Height 0.00 to Height	17.00
Tributary Width roof (feet)	23.167
Tension Flange Bolt Hole Reduction	Yes
Tension Field Action at Knee	Yes
Second order analysis method	C2.2b

Frame Design Loads

Dead Load to Frame Rafter (psf)	2.253
Frame Rafter Dead Weight (psf)	0.591
Total Roof Dead Weight (psf)	2.844
Collateral Load to Frame Rafter (psf)	0.500
Roof Live Load Entered (psf) W/ Live Load Reduction Requested	20.000
Design Roof Live Load Used (psf)	12.000
Roof Snow Load Entered (psf)	0.000
Snow Exposure Factor [Ce]	1.000
Snow Importance Factor [I] -- Standard Use Category	1.000
Snow Thermal Factor Entered [Ct] -- User Entered	1.000
Snow Thermal Factor Used [Ct]Heated Building	1.000
Slippery & Unobstructed Roof Surface	No
Roof Snow Load [Pf = I*Pg] (psf)	0.000
Snow Slope Factor [Cs]	1.000
Sloped Roof Snow Load Used [Ps = Cs*Pf] (psf)	0.000

UNBALANCED SNOW LOADING(s)

No Unbalanced Roof Snow Loadings.

2013 CALIFORNIA
Main Windforce-resisting system Per :
ASCE 7 Standard
2010 Edition

Eave height Left & Right (feet)	17.000
Wind Elevation on left column (feet)	17.000
Wind Elevation on right column (feet)	17.000
Total frame width (feet)	45.000
Total building length (feet)	70.000

Number of primary wind loadings 8

2013 CALIFORNIA
Main Windforce-resisting system Per :
ASCE 7 Standard
2010 Edition

*** PRIMARY WIND COEFFICIENTS FOR MAIN FRAME ***

Wind Load WL1	Wind from left direction			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	0.260	-0.870(50.0%)	-0.580(50.0%)	-0.510

Wind Load WL2	Wind from left direction			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	0.620	-0.510(50.0%)	-0.220(50.0%)	-0.150

Wind Load LWL1	Longitudinal wind			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.630	-0.870(50.0%)	-0.550(50.0%)	-0.630

Wind Load LWL2	Longitudinal wind			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.630	-0.550(50.0%)	-0.870(50.0%)	-0.630

Wind Load LWL3	Longitudinal wind			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.270	-0.510(50.0%)	-0.190(50.0%)	-0.270

Wind Load LWL4	Longitudinal wind			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.270	-0.190(50.0%)	-0.510(50.0%)	-0.270

Wind Load WL3	Wind from right direction			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.510	-0.580(50.0%)	-0.870(50.0%)	0.260

Wind Load WL4	Wind from right direction			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.150	-0.220(50.0%)	-0.510(50.0%)	0.620

Notes :

1. Wind coefficients applied to the roof may be located as a percentage of the total frame width (xx.x%). If not shown the coefficients are applied fully to their respective rafter.

Load Combination :

1)	DL +LL +COLL (SOA-L)	N A P
2)	DL +LL +COLL (SOA-R)	N A P
3)	1.2019DL +0.91EQ (SOA-L)	N A P
4)	1.2019DL +0.91EQ (SOA-R)	N A P
5)	1.2019DL -0.91EQ (SOA-L)	N A P
6)	1.2019DL -0.91EQ (SOA-R)	N A P
7)	1.2019DL +1.2019COLL +0.91EQ (SOA-L)	N A P
8)	1.2019DL +1.2019COLL +0.91EQ (SOA-R)	N A P
9)	1.2019DL +1.2019COLL -0.91EQ (SOA-L)	N A P
10)	1.2019DL +1.2019COLL -0.91EQ (SOA-R)	N A P
11)	0.3981DL +0.91RBUPEQ (SOA-L)	N A P
12)	0.3981DL +0.91RBUPEQ (SOA-R)	N A P
13)	0.3981DL +0.91EQ (SOA-L)	N A P
14)	0.3981DL +0.91EQ (SOA-R)	N A P
15)	0.3981DL -0.91EQ (SOA-L)	N A P
16)	0.3981DL -0.91EQ (SOA-R)	N A P
17)	0.6115DL +2.RBUPEQ (SOA-L)	N C R P
18)	0.6115DL +2.RBUPEQ (SOA-R)	N C R P
19)	0.6115DL +2.5EQ (SOA-L)	N C R P
20)	0.6115DL +2.5EQ (SOA-R)	N C R P
21)	0.6115DL -2.5EQ (SOA-L)	N C R P
22)	0.6115DL -2.5EQ (SOA-R)	N C R P
23)	1.4885DL +1.4885COLL +2.5EQ (SOA-L)	N C R P
24)	1.4885DL +1.4885COLL +2.5EQ (SOA-R)	N C R P
25)	1.4885DL +1.4885COLL -2.5EQ (SOA-L)	N C R P
26)	1.4885DL +1.4885COLL -2.5EQ (SOA-R)	N C R P
27)	0.6115DL +2.5EQ (SOA-L)	N B R P
28)	0.6115DL +2.5EQ (SOA-R)	N B R P
29)	0.6115DL -2.5EQ (SOA-L)	N B R P
30)	0.6115DL -2.5EQ (SOA-R)	N B R P
31)	1.4885DL +1.4885COLL +2.5EQ (SOA-L)	N B R P
32)	1.4885DL +1.4885COLL +2.5EQ (SOA-R)	N B R P
33)	1.4885DL +1.4885COLL -2.5EQ (SOA-L)	N B R P
34)	1.4885DL +1.4885COLL -2.5EQ (SOA-R)	N B R P
35)	0.6115DL +3.5EQ (SOA-L)	N K R P
36)	0.6115DL +3.5EQ (SOA-R)	N K R P
37)	0.6115DL -3.5EQ (SOA-L)	N K R P
38)	0.6115DL -3.5EQ (SOA-R)	N K R P
39)	1.4885DL +1.4885COLL +3.5EQ (SOA-L)	N K R P
40)	1.4885DL +1.4885COLL +3.5EQ (SOA-R)	N K R P
41)	1.4885DL +1.4885COLL -3.5EQ (SOA-L)	N K R P
42)	1.4885DL +1.4885COLL -3.5EQ (SOA-R)	N K R P
43)	DL +0.6WL1 (SOA-L)	N A P
44)	DL +0.6WL1 (SOA-R)	N A P
45)	DL +0.6WL2 (SOA-L)	N A P
46)	DL +0.6WL2 (SOA-R)	N A P
47)	DL +0.6WL3 (SOA-L)	N A P
48)	DL +0.6WL3 (SOA-R)	N A P
49)	DL +0.6WL4 (SOA-L)	N A P
50)	DL +0.6WL4 (SOA-R)	N A P

Load Combination :

51)	0.6DL +0.6WL1 (SOA-L)	N A P
52)	0.6DL +0.6WL1 (SOA-R)	N A P
53)	0.6DL +0.6WL2 (SOA-L)	N A P
54)	0.6DL +0.6WL2 (SOA-R)	N A P
55)	0.6DL +0.6LWL1 +0.6RBUPLW (SOA-L)	N A P
56)	0.6DL +0.6LWL1 +0.6RBUPLW (SOA-R)	N A P
57)	0.6DL +0.6LWL2 +0.6RBUPLW (SOA-L)	N A P
58)	0.6DL +0.6LWL2 +0.6RBUPLW (SOA-R)	N A P
59)	0.6DL +0.6LWL3 +0.6RBUPLW (SOA-L)	N A P
60)	0.6DL +0.6LWL3 +0.6RBUPLW (SOA-R)	N A P
61)	0.6DL +0.6LWL4 +0.6RBUPLW (SOA-L)	N A P
62)	0.6DL +0.6LWL4 +0.6RBUPLW (SOA-R)	N A P
63)	0.6DL +0.6WL3 (SOA-L)	N A P
64)	0.6DL +0.6WL3 (SOA-R)	N A P
65)	0.6DL +0.6WL4 (SOA-L)	N A P
66)	0.6DL +0.6WL4 (SOA-R)	N A P
67)	DL +COLL +0.6WL1 (SOA-L)	N A P
68)	DL +COLL +0.6WL1 (SOA-R)	N A P
69)	DL +COLL +0.6WL2 (SOA-L)	N A P
70)	DL +COLL +0.6WL2 (SOA-R)	N A P
71)	DL +COLL +0.6WL3 (SOA-L)	N A P
72)	DL +COLL +0.6WL3 (SOA-R)	N A P
73)	DL +COLL +0.6WL4 (SOA-L)	N A P
74)	DL +COLL +0.6WL4 (SOA-R)	N A P
75)	DL +0.75LL +COLL +0.45WL1 (SOA-L)	N A P
76)	DL +0.75LL +COLL +0.45WL1 (SOA-R)	N A P
77)	DL +0.75LL +COLL +0.45WL2 (SOA-L)	N A P
78)	DL +0.75LL +COLL +0.45WL2 (SOA-R)	N A P
79)	DL +0.75LL +COLL +0.45LWL1 +0.45RBUPLW (SOA-L)	N A P
80)	DL +0.75LL +COLL +0.45LWL1 +0.45RBUPLW (SOA-R)	N A P
81)	DL +0.75LL +COLL +0.45LWL2 +0.45RBUPLW (SOA-L)	N A P
82)	DL +0.75LL +COLL +0.45LWL2 +0.45RBUPLW (SOA-R)	N A P
83)	DL +0.75LL +COLL +0.45LWL3 +0.45RBUPLW (SOA-L)	N A P
84)	DL +0.75LL +COLL +0.45LWL3 +0.45RBUPLW (SOA-R)	N A P
85)	DL +0.75LL +COLL +0.45LWL4 +0.45RBUPLW (SOA-L)	N A P
86)	DL +0.75LL +COLL +0.45LWL4 +0.45RBUPLW (SOA-R)	N A P
87)	DL +0.75LL +COLL +0.45WL3 (SOA-L)	N A P
88)	DL +0.75LL +COLL +0.45WL3 (SOA-R)	N A P
89)	DL +0.75LL +COLL +0.45WL4 (SOA-L)	N A P
90)	DL +0.75LL +COLL +0.45WL4 (SOA-R)	N A P
91)	DL +COLL +0.6LWL1 +0.6RBDWLW (SOA-L)	N A P
92)	DL +COLL +0.6LWL1 +0.6RBDWLW (SOA-R)	N A P
93)	DL +COLL +0.6LWL2 +0.6RBDWLW (SOA-L)	N A P
94)	DL +COLL +0.6LWL2 +0.6RBDWLW (SOA-R)	N A P
95)	DL +COLL +0.6LWL3 +0.6RBDWLW (SOA-L)	N A P
96)	DL +COLL +0.6LWL3 +0.6RBDWLW (SOA-R)	N A P
97)	DL +COLL +0.6LWL4 +0.6RBDWLW (SOA-L)	N A P
98)	DL +COLL +0.6LWL4 +0.6RBDWLW (SOA-R)	N A P
99)	DL +0.75LL +COLL +0.45LWL1 +0.45RBDWLW (SOA-L)	N A P
100)	DL +0.75LL +COLL +0.45LWL1 +0.45RBDWLW (SOA-R)	N A P

Load Combination :

101)	DL +0.75LL +COLL +0.45LWL2 +0.45RBDWLW (SOA-L)	N A P
102)	DL +0.75LL +COLL +0.45LWL2 +0.45RBDWLW (SOA-R)	N A P
103)	DL +0.75LL +COLL +0.45LWL3 +0.45RBDWLW (SOA-L)	N A P
104)	DL +0.75LL +COLL +0.45LWL3 +0.45RBDWLW (SOA-R)	N A P
105)	DL +0.75LL +COLL +0.45LWL4 +0.45RBDWLW (SOA-L)	N A P
106)	DL +0.75LL +COLL +0.45LWL4 +0.45RBDWLW (SOA-R)	N A P
107)	1.2019DL +1.2019COLL +0.91RBDWEQ (SOA-L)	N A P
108)	1.2019DL +1.2019COLL +0.91RBDWEQ (SOA-R)	N A P
109)	1.4885DL +1.4885COLL +2.RBDWEQ (SOA-L)	N C R P
110)	1.4885DL +1.4885COLL +2.RBDWEQ (SOA-R)	N C R P
111)	LL	D
112)	0.6WL1	D
113)	0.6WL2	D
114)	0.6LWL1	D
115)	0.6LWL2	D
116)	0.6LWL3	D
117)	0.6LWL4	D
118)	0.6WL3	D
119)	0.6WL4	D
120)	1.4885DL +EQ	D E
121)	1.4885DL -EQ	D E
122)	0.6115DL +EQ	D E
123)	0.6115DL -EQ	D E
124)	1.4885DL +1.4885COLL +EQ	D E
125)	1.4885DL +1.4885COLL -EQ	D E

Where :

DL = Roof Dead Load
LL = Roof Live Load
COLL = Roof Collateral Load
EQ = Lateral Seismic Load [parallel to plane of frame]
RBUPEQ= Upward Acting Rod Brace Load from Longit. Seismic
WL1 = Lateral Primary Wind Load
WL2 = Lateral Primary Wind Load
WL3 = Lateral Primary Wind Load
WL4 = Lateral Primary Wind Load
LWL1 = Longitudinal Primary Wind Load
RBUPLW= Upward Acting Rod Brace Load from Longitud. Wind
LWL2 = Longitudinal Primary Wind Load
LWL3 = Longitudinal Primary Wind Load
LWL4 = Longitudinal Primary Wind Load
RBDWLW= Downward Acting Rod Brace Load from Longit. Wind
RBDWEQ= Downward Acting Rod Brace Load from Long. Seismic

Combination Descriptions :

N= No 1/3 Increase in Allowable for Combination
B= Base Only Combination
K= Knee Connection Only Combination
A= Allowable Strengh Design Combination - ASD10
C= Column Only Combination for Seismic
D= Deflection Only Combination
P= Second Order Analysis Combination - SOA
R= Load and Resistance Factor Design Combination - LRFD
E= Cd is applied and Ie is omitted from frame drift calculations

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* USER INPUT LOADS

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
1	RC	EQDW	GLOB	M	C	17.000	0.5900	0.0000	0.000
2	LC	EQDW	GLOB	M	C	17.000	0.5900	0.0000	0.000
3	LC	RBUPLW	GLOB	Y	C	0.010	2.8130	0.0000	0.917
4	LC	RBUPLW	GLOB	L	C	0.010	3.8610	0.0000	0.000
5	LC	RBDWLW	GLOB	Y	C	17.000	-2.8130	0.0000	0.917
6	RC	RBDWLW	GLOB	Y	C	17.000	-2.8130	0.0000	-0.917
7	RC	RBUPLW	GLOB	Y	C	0.010	2.8130	0.0000	-0.917
8	RC	RBUPLW	GLOB	L	C	0.010	3.8610	0.0000	0.000
9	LC	RBUPEQ	GLOB	Y	C	0.010	1.9620	0.0000	0.917
10	LC	RBUPEQ	GLOB	L	C	0.010	2.6930	0.0000	0.000
11	LC	RBDWEQ	GLOB	Y	C	17.000	-1.9620	0.0000	0.917
12	RC	RBDWEQ	GLOB	Y	C	17.000	-1.9620	0.0000	-0.917
13	RC	RBUPEQ	GLOB	Y	C	0.010	1.9620	0.0000	-0.917
14	RC	RBUPEQ	GLOB	L	C	0.010	2.6930	0.0000	0.000

* GENERAL LOAD CARDS GENERATED -

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
1	RC	EQDW	GLOB	M	C	17.000	0.5900	N/A	0.000
2	LC	EQDW	GLOB	M	C	17.000	0.5900	N/A	0.000
3	LC	RBUPLW	GLOB	Y	C	0.010	2.8130	N/A	0.917
4	LC	RBUPLW	GLOB	L	C	0.010	3.8610	N/A	0.000
5	LC	RBDWLW	GLOB	Y	C	17.000	-2.8130	N/A	0.917
6	RC	RBDWLW	GLOB	Y	C	17.000	-2.8130	N/A	-0.917
7	RC	RBUPLW	GLOB	Y	C	0.010	2.8130	N/A	-0.917
8	RC	RBUPLW	GLOB	L	C	0.010	3.8610	N/A	0.000
9	LC	RBUPEQ	GLOB	Y	C	0.010	1.9620	N/A	0.917
10	LC	RBUPEQ	GLOB	L	C	0.010	2.6930	N/A	0.000
11	LC	RBDWEQ	GLOB	Y	C	17.000	-1.9620	N/A	0.917
12	RC	RBDWEQ	GLOB	Y	C	17.000	-1.9620	N/A	-0.917
13	RC	RBUPEQ	GLOB	Y	C	0.010	1.9620	N/A	-0.917
14	RC	RBUPEQ	GLOB	L	C	0.010	2.6930	N/A	0.000
15	LR	DL	XREF	Y	U	0.000	-0.0522	N/A	0.000
16	RR	DL	XREF	Y	U	0.000	-0.0522	N/A	0.000
17	LC	SW	GLOB	Y	U	0.000	-0.0155	N/A	0.000
18	LR	SW	GLOB	Y	U	0.000	-0.0137	N/A	0.000
19	RC	SW	GLOB	Y	U	0.000	-0.0155	N/A	0.000
20	RR	SW	GLOB	Y	U	0.000	-0.0137	N/A	0.000
21	LR	LL	XREF	Y	U	0.000	-0.2780	N/A	0.000
22	RR	LL	XREF	Y	U	0.000	-0.2780	N/A	0.000
23	LR	COLL	XREF	Y	U	0.000	-0.0116	N/A	0.000
24	RR	COLL	XREF	Y	U	0.000	-0.0116	N/A	0.000
25	LR	SNOW	XREF	Y	U	0.000	0.0000	N/A	0.000
26	RR	SNOW	XREF	Y	U	0.000	0.0000	N/A	0.000
27	LC	WL1	MEMB	Y	U	0.000	-0.1511	N/A	0.000
28	RC	WL1	MEMB	Y	U	0.000	0.2963	N/A	0.000
29	LR	WL1	MEMB	Y	U	0.000	0.5055	N/A	0.000
30	RR	WL1	MEMB	Y	U	0.000	0.3370	N/A	0.000
31	LC	WL2	MEMB	Y	U	0.000	-0.3603	N/A	0.000
32	RC	WL2	MEMB	Y	U	0.000	0.0872	N/A	0.000
33	LR	WL2	MEMB	Y	U	0.000	0.2963	N/A	0.000
34	RR	WL2	MEMB	Y	U	0.000	0.1278	N/A	0.000
35	LC	LWL1	MEMB	Y	U	0.000	0.3661	N/A	0.000
36	RC	LWL1	MEMB	Y	U	0.000	0.3661	N/A	0.000
37	LR	LWL1	MEMB	Y	U	0.000	0.5055	N/A	0.000
38	RR	LWL1	MEMB	Y	U	0.000	0.3196	N/A	0.000
39	LC	LWL2	MEMB	Y	U	0.000	0.3661	N/A	0.000
40	RC	LWL2	MEMB	Y	U	0.000	0.3661	N/A	0.000
41	LR	LWL2	MEMB	Y	U	0.000	0.3196	N/A	0.000
42	RR	LWL2	MEMB	Y	U	0.000	0.5055	N/A	0.000
43	LC	LWL3	MEMB	Y	U	0.000	0.1569	N/A	0.000
44	RC	LWL3	MEMB	Y	U	0.000	0.1569	N/A	0.000
45	LR	LWL3	MEMB	Y	U	0.000	0.2963	N/A	0.000
46	RR	LWL3	MEMB	Y	U	0.000	0.1104	N/A	0.000
47	LC	LWL4	MEMB	Y	U	0.000	0.1569	N/A	0.000
48	RC	LWL4	MEMB	Y	U	0.000	0.1569	N/A	0.000
49	LR	LWL4	MEMB	Y	U	0.000	0.1104	N/A	0.000
50	RR	LWL4	MEMB	Y	U	0.000	0.2963	N/A	0.000

51	LC	WL3	MEMB	Y	U	0.000	0.2963	N/A	0.000
52	RC	WL3	MEMB	Y	U	0.000	-0.1511	N/A	0.000
53	LR	WL3	MEMB	Y	U	0.000	0.3370	N/A	0.000
54	RR	WL3	MEMB	Y	U	0.000	0.5055	N/A	0.000
55	LC	WL4	MEMB	Y	U	0.000	0.0872	N/A	0.000
56	RC	WL4	MEMB	Y	U	0.000	-0.3603	N/A	0.000
57	LR	WL4	MEMB	Y	U	0.000	0.1278	N/A	0.000
58	RR	WL4	MEMB	Y	U	0.000	0.2963	N/A	0.000

2013 CALIFORNIA
Main Seismic Force Resisting System Per :
ASCE 7 Standard
2010 Edition

Standard Risk Category Building for Seismic Loadings

Seismic Loads Required for Building	Yes
Response Acceleration Coeff., for Short Periods [Ss] (%g)	216.3700
Response Acceleration Coeff., for 1 sec. Periods [S1] (%g)	102.9800
Long-period Transition Period Time [TL] (seconds)	16.0000
Seismic Performance Category	E
Soil Profile Type	D
Seismic Site Coefficient [Fa]	1.0000
Seismic Site Coefficient [Fv]	1.5000
Maximum Spectral Response Accel., for Short Periods [Sms] (g)	2.1637
Maximum Spectral Response Accel., for 1 sec. Periods [Sm1] (g)	1.5447
Design Spectral Response Accel., for Short Periods [Sds] (g)	1.4425
Design Spectral Response Accel., for 1 sec. Periods [Sd1] (g)	1.0298
Seismic Response Modification Factor [R]	3.5000
Seismic Importance Factor [I]	1.0000
Storage/Equipment Areas and/or Service Rooms Exist	No
Seismic Story Height [hn] (feet)	18.8750
Seismic Fundamental Period [T] Used (seconds)	0.2937
Longitudinal Seismic Overstrength Factor [OMEGA]	2.0000
Seismic Overstrength Factor [OMEGAo]	2.5000
Longitudinal Seismic Redundancy/Reliability Factor [L-rho]	1.3000
Seismic Redundancy/Reliability Factor [rho]	1.3000
Snow in Seismic Force Calculations [Used] (%)	0.00
Snow in Seismic Force Calculations [Min. Required] (%)	0.00
Snow in Seismic Load Combinations [Used] (%)	0.00
Snow in Seismic Load Combinations [Min. Required] (%)	0.00
Mezz. Live load in Seismic Force Calculations [Used] (%)	0.00
Mezz. Live load in Seismic Force Calculations [Min. Required] (%)	0.00
Mezz. Live load in Seismic Load Combinations [Used] (%)	100.00
Mezz. Live load in Seismic Load Combinations [Min. Required] (%)	100.00
Building Height Limit (feet)	65.0000
Seismic Story Drift Limit Factor	0.0250
Seismic Story Drift Limit (in)	5.1000
Seismic Deflection Amplification Factor [Cd]	3.0000
Seismic Response Coefficient [Cs] Used	0.2857
Seismic Story Drift [Cd*Drift/Importance Factor] (in)	4.167
Theta [Px*Ie*Delta/Vx/hx/Cd]	0.008
Theta Max [.5/BETA/Cd] where BETA=1.0	0.167

Roof Dead Load	=	3.779
Wall Weight	=	0.000
Collateral Load	=	0.521
Snow Load	=	0.000
Rafter Crane Weight	=	0.000
Total Roof Weight	=	4.300 kips
User Mass Load (1)	=	1.180
Total User Mass	=	1.180 kips

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Total Roof Weight    =     4.300
Total User Mass      =     1.180
Mezzanine Weight     =     0.000
Col. Crane Weight    =     0.000
-------------------------------------
TOTAL Bldg Weight    =     5.480 kips
      X                    X
Seismic Coeff.       =    0.2857
-------------------------------------
BASE SHEAR           =    1.5657 kips

Seismic Load for Roof at col # 1  =    0.6201 kips
Seismic Load for Roof at col # 2  =    0.6201 kips
-------------------------------------------------
SEISMIC LOAD for Roof in TOTAL    =    1.2401 kips

Seismic Ld for Mass # 1 @ col # 1 =    0.1628 kips
Seismic Ld for Mass # 1 @ col # 2 =    0.1628 kips
-------------------------------------------------
SEISMIC LOAD for Mass  in TOTAL   =    0.3256 kips
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* SEISMIC GENERAL LOAD CARDS GENERATED

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
59	LC	EQ	YREF	X	C	15.994	0.6201	N/A	0.000
60	LC	EQ	YREF	X	C	17.000	0.1628	N/A	0.000
61	RC	EQ	YREF	X	C	15.994	0.6201	N/A	0.000
62	RC	EQ	YREF	X	C	17.000	0.1628	N/A	0.000

Left Column Analysis Length = 15.99 ft Kx = 1.00 Weight = 247. lbs
Effective Ix = 113.9 in4

Part No.	Length (ft)	Web Height at Start(in)	Web Height at End(in)	Outer Flange (in)	Web Thick	Inner Flange (in)	Taper Angle	Fy (ksi)
1	10.00	11.500	11.500	5.00x 0.2500	0.1340	5.00x 0.2500	0.00	55.0
2	5.57	11.500	11.500	5.00x 0.2500	0.2500	5.00x 0.2500	0.00	55.0

Point No.	Actual Forces Axial (kip)	Moment (k-ft)	Shear (kip)	Allowable Stresses Fa (ksi)	Fbo (ksi)	Fbi (ksi)	Fv (ksi)	Unity Checks Shear	Axial+Bend Oflg	Axial+Bend Iflg	Comb Max	Load Comb
110	-8.1	-26.7	-2.7	20.6	36.6	34.5	10.7	0.16	0.57	0.60	0.60	1
205	-8.1	-36.3	-2.7	26.7	31.4	36.7	19.8	0.05	0.74	0.64	0.74	1

Left Rafter Analysis Length = 21.61 ft Kx = 1.00 Weight = 297. lbs
Effective Ix = 103.3 in4

Part No.	Length (ft)	Web Height at Start(in)	Web Height at End(in)	Outer Flange (in)	Web Thick	Inner Flange (in)	Taper Angle	Fy (ksi)
3	11.26	11.500	11.500	5.00x 0.2500	0.1340	5.00x 0.2500	0.00	55.0
4	10.00	11.500	11.500	5.00x 0.2500	0.1340	5.00x 0.2500	0.00	55.0

Point No.	Actual Forces Axial (kip)	Moment (k-ft)	Shear (kip)	Allowable Stresses Fa (ksi)	Fbo (ksi)	Fbi (ksi)	Fv (ksi)	Unity Checks Shear	Axial+Bend Oflg	Axial+Bend Iflg	Comb Max	Load Comb
301	-3.8	-39.4	6.9	22.4	36.6	34.5	10.7	0.40	0.78	0.83	0.83	1
409	-2.6	29.8	0.0	12.8	34.5	31.4	10.7	0.00	0.63	0.69	0.69	2

Right Column Analysis Length = 15.99 ft Kx = 1.00 Weight = 247. lbs
Effective Ix = 113.9 in4

Part No.	Length (ft)	Web Height at Start(in)	Web Height at End(in)	Outer Flange (in)	Web Thick	Inner Flange (in)	Taper Angle	Fy (ksi)
5	10.00	11.500	11.500	5.00x 0.2500	0.1340	5.00x 0.2500	0.00	55.0
6	5.57	11.500	11.500	5.00x 0.2500	0.2500	5.00x 0.2500	0.00	55.0

Point No.	Actual Forces Axial (kip)	Moment (k-ft)	Shear (kip)	Allowable Stresses Fa (ksi)	Fbo (ksi)	Fbi (ksi)	Fv (ksi)	Unity Checks Shear	Axial+Bend Oflg	Axial+Bend Iflg	Comb Max	Load Comb
510	-8.1	-26.7	-2.7	20.6	36.6	34.5	10.7	0.16	0.57	0.60	0.60	2
605	-8.1	-36.3	-2.7	26.7	31.4	36.7	19.8	0.05	0.74	0.64	0.74	2

Right Rafter Analysis Length = 21.61 ft Kx = 1.00 Weight = 297. lbs
Effective Ix = 103.3 in4

Part No.	Length (ft)	Web Height at Start(in)	Web Height at End(in)	Outer Flange (in)	Web Thick	Inner Flange (in)	Taper Angle	Fy (ksi)
7	11.26	11.500	11.500	5.00x 0.2500	0.1340	5.00x 0.2500	0.00	55.0
8	10.00	11.500	11.500	5.00x 0.2500	0.1340	5.00x 0.2500	0.00	55.0

Point No.	---Actual Forces---- Axial (kip)	Moment (k-ft)	Shear (kip)	--Allowable Stresses-- Fa (ksi)	Fbo (ksi)	Fbi (ksi)	Fv (ksi)	-------Unity Checks-------- Shear	Axial+Bend Oflg	Iflg	Comb Max	Load Comb
701	-3.8	-39.4	6.9	22.4	36.6	34.5	10.7	0.40	0.78	0.83	0.83	2
809	-2.6	29.8	0.0	12.8	34.5	31.4	10.7	0.00	0.63	0.69	0.69	1

TOTAL MEMBER WEIGHT = 1089. lbs

BOTH EXTERIOR COLUMNS ANCHOR RODS AND BASE PLATE DESIGN

Anchor Rod & Base Plate Design Sizes >>

Use (4)- 0.750 in. Dia. A36 Anchor Rods
Rod Gage : 4.000 in. Rod Spacing (in.): 3.0000, 1 @ 4.0000, 5.0000
Plate Size : 6.0000x 12.0000x 0.3750 in. (WidthxDepthxThickness)

Controlling Reactions for Anchor Rod Design >>

Loading Type	Shear (kips)	Tension (kips)	Allowable (kips)	Load No.	Check Ratio
Rod Tension	0.000	6.716	38.436	55	0.17
Rod Shear	3.411	0.000	23.061	53	0.15

Standard Base Plate Welding >> (Using E70 Electrodes)

Fillet Weld Location	Weld Size (in.)	Weld Length (in.)	Weld Capacity (kips)	Design Force (kips)	Load No.	Weld Check Ratio
Inner Flg	0.25000	5.000	18.562	2.138	55	0.12
Outer Flg	0.25000	5.000	18.562	2.757	55	0.15
Web Plate	0.18750	11.500	32.019	3.982	51	0.12

Vertical Knee Connection @ Left Rafter and Right Rafter Depth 1

BOLTS A325 H.S. - Fully Tightened
(O.S.) 2 rows Extended - 3/4 in. Dia. - Standard (2 bolts per row)
(I.S.) 2 rows Extended - 3/4 in. Dia. - Standard (2 bolts per row)

Left Side of Conn Data:		Right Side of Conn Data:	
Plate:	8.00 x 0.7500 in.	Plate:	6.00 x 0.7500 in.
Fy(Min)	50.0 ksi	Fy(Min)	50.0 ksi
Fu	65.0 ksi	Fu	65.0 ksi
Flanges:		Flanges:	
O.S. -	5.00 x 0.2500 in.	O.S. -	5.00 x 0.2500 in.
I.S. -	4.75 x 0.2500 in.	I.S. -	5.00 x 0.2500 in.
Web Depth	- 11.659 in.	Web Depth	- 11.659 in.
Web Thickness	0.250 in.	Web Thickness	0.134 in.
Gage	- 3.000 in.	Gage	- 3.000 in.
Center of Bolt to Flange:		Center of Bolt to Flange:	
Pf top (out)	- 2.188 in.	Pf top (out)	- 1.938 in.
BFCD top (out)	- 1.750 in.	BFCD top (out)	- 1.750 in.
Rise top (out)	- 0.276 in.	Rise top (out)	- 0.276 in.
XTO top (out)	- 2.062 in.	XTO top (out)	- 2.062 in.
Pf top (ins)	- 2.059 in.	Pf top (ins)	- 2.309 in.
BFCD top (ins)	- 1.750 in.	BFCD top (ins)	- 1.750 in.
Rise top (ins)	- 0.276 in.	Rise top (ins)	- 0.276 in.
XTI top (ins)	- 2.184 in.	XTI top (ins)	- 2.184 in.
Pf bot (out)	- 1.753 in.	Pf bot (out)	- 1.875 in.
BFCD bot (out)	- 1.750 in.	BFCD bot (out)	- 1.750 in.
Rise bot (out)	- 0.000 in.	Rise bot (out)	- 0.276 in.
XBO bot (out)	- 1.750 in.	XBO bot (out)	- 1.750 in.
Pf bot (ins)	- 2.497 in.	Pf bot (ins)	- 2.372 in.
BFCD bot (ins)	- 1.750 in.	BFCD bot (ins)	- 1.750 in.
Rise bot (ins)	- 0.000 in.	Rise bot (ins)	- 0.276 in.
XBI bot (ins)	- 2.497 in.	XBI bot (ins)	- 2.497 in.
Bolt Spacing	- 3.000 in.	Bolt Spacing	- 3.000 in.
Controlling Mode : Thick Plate		Controlling Mode : Thick Plate	
Angle top - 80.5 degrees		Angle top - 99.5 degrees	
Angle bot - 90.0 degrees		Angle bot - 80.5 degrees	

	Left Side Frame			Right Side Frame		
Controlling Load Combinations:	Moments (k-ft)	Axial (kips)	Shear (kips)	Moments (k-ft)	Axial (kips)	Shear (kips)
41) 1.4885DL +1.4885COLL -3.5	-59.04	-0.68	4.63	33.55	-0.68	0.18
51) 0.6DL +0.6WL1 (SOA-L)	38.01	1.80	-5.70	6.52	2.15	-3.17

Connection Design Summary:
Bolt Unity Check (O.S.) = 0.5034 Plate Unity Check (O.S.) = 0.3726
Bolt Unity Check (I.S.) = 0.5086 Plate Unity Check (I.S.) = 0.3692

Peak Connection @ Left Rafter and Right Rafter Depth 3

BOLTS A325 H.S. - Fully Tightened
(O.S.) 2 rows Extended - 3/4 in. Dia. - Standard (2 bolts per row)
(I.S.) 2 rows Extended - 3/4 in. Dia. - Standard (2 bolts per row)

Left Side of Conn Data:		Right Side of Conn Data:	
Plate:	6.00 x 0.3750 in.	Plate:	6.00 x 0.3750 in.
Fy(Min)	55.0 ksi	Fy(Min)	55.0 ksi
Fu	70.0 ksi	Fu	70.0 ksi
Flanges:		Flanges:	
O.S. -	5.00 x 0.2500 in.	O.S. -	5.00 x 0.2500 in.
I.S. -	5.00 x 0.2500 in.	I.S. -	5.00 x 0.2500 in.
Web Depth	- 11.659 in.	Web Depth	- 11.659 in.
Web Thickness	0.134 in.	Web Thickness	0.134 in.
Gage	- 3.000 in.	Gage	- 3.000 in.
Center of Bolt to Flange:		Center of Bolt to Flange:	
Pf top (out)	- 1.812 in.	Pf top (out)	- 1.812 in.
BFCD top (out)	- 1.750 in.	BFCD top (out)	- 1.750 in.
Rise top (out)	- 0.214 in.	Rise top (out)	- 0.214 in.
XTO top (out)	- 1.750 in.	XTO top (out)	- 1.750 in.
Pf top (ins)	- 1.934 in.	Pf top (ins)	- 1.934 in.
BFCD top (ins)	- 1.750 in.	BFCD top (ins)	- 1.750 in.
Rise top (ins)	- 0.214 in.	Rise top (ins)	- 0.214 in.
XTI top (ins)	- 1.997 in.	XTI top (ins)	- 1.997 in.
Pf bot (out)	- 1.938 in.	Pf bot (out)	- 1.938 in.
BFCD bot (out)	- 1.750 in.	BFCD bot (out)	- 1.750 in.
Rise bot (out)	- 0.214 in.	Rise bot (out)	- 0.214 in.
XBO bot (out)	- 2.000 in.	XBO bot (out)	- 2.000 in.
Pf bot (ins)	- 1.809 in.	Pf bot (ins)	- 1.809 in.
BFCD bot (ins)	- 1.750 in.	BFCD bot (ins)	- 1.750 in.
Rise bot (ins)	- 0.214 in.	Rise bot (ins)	- 0.214 in.
XBI bot (ins)	- 1.747 in.	XBI bot (ins)	- 1.747 in.
Bolt Spacing	- 3.000 in.	Bolt Spacing	- 3.000 in.
Angle top - 80.5 degrees		Angle top - 80.5 degrees	
Angle bot - 99.5 degrees		Angle bot - 99.5 degrees	

	Left Side Frame			Right Side Frame		
Controlling Load Combinations:	Moments (k-ft)	Axial (kips)	Shear (kips)	Moments (k-ft)	Axial (kips)	Shear (kips)
51) 0.6DL +0.6WL1 (SOA-L)	-15.52	2.85	-0.22	-15.52	2.85	0.22
1) DL +LL +COLL (SOA-L)	29.50	-2.61	0.04	29.50	-2.61	-0.04

Connection Design Summary:
Bolt Unity Check (O.S.) = 0.5608 Plate Unity Check (O.S.) = 0.5608
Bolt Unity Check (I.S.) = 0.9355 Plate Unity Check (I.S.) = 0.9355

Required Connection Plate Welding >> (Using E70 Electrodes)

Weld Location	Welded Joint Type	Weld Size (in.)	Weld Length (in.)	Weld Capacity (kips)	Design Force (kips)	Load No.	Weld Check Ratio
Left Side of Conn							
Inner Flg	Fillet-BS	0.1875	10.0000	41.7635	28.9186	1	0.6924

Outer Flg	Fillet-BS	0.1875	10.0000	41.7635	16.5132	51	0.3954
Web Plate	Fillet-BS	0.1875	23.3173	64.9207	1.8134	57	0.0279
Right Side of Conn							
Inner Flg	Fillet-BS	0.1875	10.0000	41.7635	28.9186	1	0.6924
Outer Flg	Fillet-BS	0.1875	10.0000	41.7635	16.5132	51	0.3954
Web Plate	Fillet-BS	0.1875	23.3173	64.9207	1.8134	57	0.0279

NS - Near side weld, FS - Far side weld, BS - Both sides weld.

Left and Right Knee Design

Knee Web Thickness	:	Use 0.2500 in. Thick Web
Bearing Stiffener Type	:	Horizontal
Bearing Stiffener at Knee	:	2.2500 X 0.2500 in.
Column Cap Plate	:	5.0000 X 0.2500 in.

Knee Panel Weld Sizes

Required (Due to Weld Shear) Min. Fillet Welds, around the Knee Web Panel are:

Column Cap Plate:	0.2500 in.	x	11.659 in.	GMAW on NEAR Side	(STD. WELD)
Column Cap Plate:	0.2500 in.	x	3.000 in.	GMAW on FAR Side	(STD. WELD)
Horizontal Stiffener:	0.2500 in.	x	11.500 in.	GMAW on NEAR Side	(STD. WELD)
Horizontal Stiffener:	0.2500 in.	x	3.000 in.	GMAW on FAR Side	(STD. WELD)
Column Outer Flange:	0.1875 in.	x	9.742 in.	SAW on NEAR Side	(STD. WELD)
Column Outer Flange:	0.1875 in.	x	9.742 in.	GMAW on FAR Side	(STD. WELD)
Column Connection Pl.:	0.1875 in.	x	11.659 in.	GMAW on BOTH Sides	(STD. WELD)

Knee Stiffener to Connection Plate Weld

0.1875 in. x 2.250 in. GMAW Fillet Weld on BOTH Sides of Stiff. (STD. WELD)

(STD. WELD)- Company Standard Weld was Designed and Checked as OK.

GIRT SPACES - VERTICAL MEASUREMENTS

LEFT COLUMN		RIGHT COLUMN	
1 @ 7'4	@ FLOOR	1 @ 7'4	@ FLOOR
1 @ 6'0		1 @ 6'0	
1 @ 3'8	@ EAVE	1 @ 3'8	@ EAVE

PURLIN SPACES - HORIZONTAL MEASUREMENTS

LEFT RAFTER		RIGHT RAFTER	
2 @ 3'1-13/16"	@ EAVE	2 @ 3'1-13/16"	@ EAVE
3 @ 5'0		3 @ 5'0	
1 @ 1'2-7/16"	@ PEAK	1 @ 1'2-7/16"	@ PEAK

MEMBER DISTANCE TO BRACE POINTS (Feet)
- LEFT RAFTER : Measured along T.F. from left steel line
- RIGHT RAFTER : Measured along T.F. from right steel line
- EXT. COLUMNS : Measured along T.F. from base

MEMBER					
LFT COLUMN	7.33 (C)	13.33 (C)			
LFT RAFTER	3.19 (C)	6.38 (N)	11.45 (C)	16.52 (N)	21.59 (C)
RGT COLUMN	7.33 (C)	13.33 (C)			
RGT RAFTER	3.19 (C)	6.38 (N)	11.45 (C)	16.52 (N)	21.59 (C)

"N" Indicates that No flange braces are located at the brace point
"C" Indicates that One 2"x2"x14 ga flange brace is located at the brace point

COLUMN TOP DEFLECTIONS for LOAD COMBS. (Positive = X: Right Y:Upward) (Inches)

	Ext. Left Col X-Def	Ext. Left Col Y-Def	Ext Right Col X-Def	Ext Right Col Y-Def
Pos. Max	4.025	0.008	4.439	0.008
Load Comb	122	112	124	118
Defl.	H/ 47		H/ 43	
Neg. Max	-4.439	-0.012	-4.025	-0.012
Load Comb	125	1	123	1
Defl.	H/ 43		H/ 47	

MAX RAFTER DEFLECTIONS for SPAN #1. (Positive = Y:Upw ard)

	Max. Downward Deflection Y-Def.	Max. Downward Deflection X-Dist. from Left S.L.	Max. Upward Deflection Y-Def.	Max. Upward Deflection X-Dist. from Left S.L.
Max. Def	-2.552 in.	22.50 ft.	1.261 in.	24.79 ft.
Load Comb	1		112	
Defl.	L/203		L/411	

PEAK DEFLECTIONS (Positive = Y:Upward)

	Y-Def
Pos. Max	1.246 in.
Load Comb	112
Defl.	L/416
Neg. Max	-2.552 in.
Load Comb	2
Defl.	L/203

Note: The reported horizontal deflections for the load combinations shown below have been amplified by the value of Cd (deflection amplification factor).

LC#	Cd Used
120	3.0
121	3.0
122	3.0
123	3.0
124	3.0
125	3.0

Vertical Clearance at the Left Knee is 15.5878 feet
Vertical Clearance at the Right Knee is 15.5878 feet