DESIGN PACKAGE

BUILDER: **Paradigm Construction**
CUSTOMER: **Keystone Pacific Parkway**
JOB NUMBER: **15-B-22313**

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Original Design Completed thru Change Order # 0
Revision History

Rev #	Update Reactions?	Reason for Revision	Pages Revised	Date Revised	Eng.
0	NEW	Original Design	NA	**1/21/16**	SIG

Project Engineer: Suzanne Gutierrez- Atwater, CA
Checking Engineer: Ronald Bennett
Signing Engineer: Ronald Bennett

METALLIC BUILDING COMPANY
An NCI Company

ACCREDITED AC472

January 21, 2016

PARADIGM CONSTRUCTION INC
1400 J STREET
MODESTO, CA 95357

15-B-22313
KEYSTONE PACIFIC PARKWAY
PATERSON, CA
49'6" x 100'0" x 19'11-1/4"

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

Cordially,

Metallic Building Systems
Materials for Metal Buildings
An NCI Company

Ronald W. Bennett, P.E.
Chief Design Engineer

Job Number 15-B-22313
Builder ..... PARADIGM CONSTRUCTION INC
Jobsite Location ..... KEYSTONE PACIFIC PARKWAY,PATERSON,California

Building Code ..... 2013 CALIFORNIA
Building Risk Category ..... Normal (Risk Category II)
Roof Dead Load
Superimposed ..... 2.18 psf
Collateral ..... 2.00 psf
(0.00 psf Ceiling 2.00 psf Other)
Roof Live Load ..... 20.00 psf reduction allowed

Wind
Ultimate Wind Speed (Vult) ... 110.00 mph
Nominal Wind Speed (Vasd) .... 85 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 4.95' of corner) 25.90 psf pressure -34.53 psf suction
Other Areas 25.90 psf pressure -28.06 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 ..... D
Soil Site Class ..... E Soil
Ss ..... 1.895 g Sds ..... 1.137 g
S1 ..... 0.623 g Sd1 ..... 0.997 g
Analysis Procedure ..... Equivalent Lateral Force

Column Line	1-5	SWC & SWA
Basic Force Resisting System	C4	B3
Response Modification Coefficient (R)	3.50	3.25
Seismic Response Coefficient (Cs)	0.257	0.277
Design Base Shear in kips (V)	19.36	17.38

Basic Structural System (from ASCE 7-10 Table 12.2-1)
B3 - Ordinary Steel Concentrically Braced Frame
C4 - Ordinary Steel Moment Frame

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.

Bolted joints with A325 Type 1 bolts greater than 1/2" diameter are specified as pre-tensioned joints in accordance with the Specification for Structural Joints Using ASTM A325 or A490 Bolts, December 31, 2009. Pre-Tensioning 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 pre-tensioned joints (Specification for Structural Joints Section 9.2) using turn-of-nut method is suggested. The connections on this project are not slip critical.

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 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. Doors are to be closed when a maximum of 50% of design wind velocity is reached.

The materials by the manufacturer will be fabricated in a facility that has received certification of accreditation for the Manufacturers of Metal Building Systems (AC472) from International Accreditation Service (IAS). This certification is recognized under Section 1704 of the IBC for approved fabricators.

The framing at building A, gridline 1 is NOT designed to receive a future bay addition. Corresponding frame reactions are calculated based upon actual tributary area.

The framing at building A, gridline 5 is designed to receive a future addition with a maximum bay spacing of 25.0 feet between centerline of the existing endwall frame to the centerline of the future frame. Additional frame braces shall be installed at the expandable frame opposite the braces provided and shall match the existing braces in sizes and attachment.

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.

X-Bracing is to be installed to a taut condition with all slack removed. Do not tighten beyond this state.

Using standard 5x5 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 37 feet with the first downspout from both ends of the gutter run within 1 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 4 in/hr rainfall intensity.

The support members provided by the metal building manufacturer on bldg A have been designed to support the wall system by others and to deflect less than L/240 deflection under wind or seismic loading. The wall system shall be attached to the outside flange of the support members at a maximum spacing of 4 feet. The connection of the beam to the wall is not by MBM and must be able to account for frame deflection.

Job Number 15-B-22313
Builder ..... PARADIGM CONSTRUCTION INC
Jobsite Location ..... KEYSTONE PACIFIC PARKWAY, PATERSON, 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
Serviceability Wind L/	180	180	60
Total Gravity L/	120	120	60
Total Uplift L/	N/A	N/A	60

Frame Limits	Sidesway	Portal Frame Sidesway
Live H/	200	
Snow H/	200	
Serviceability Wind H/	200	
Seismic Drift H/	40	40
Crane H/	100	
Serviceability Wind H/	N/A	100
Total Gravity H/	200	
Service Seismic H/	200	40

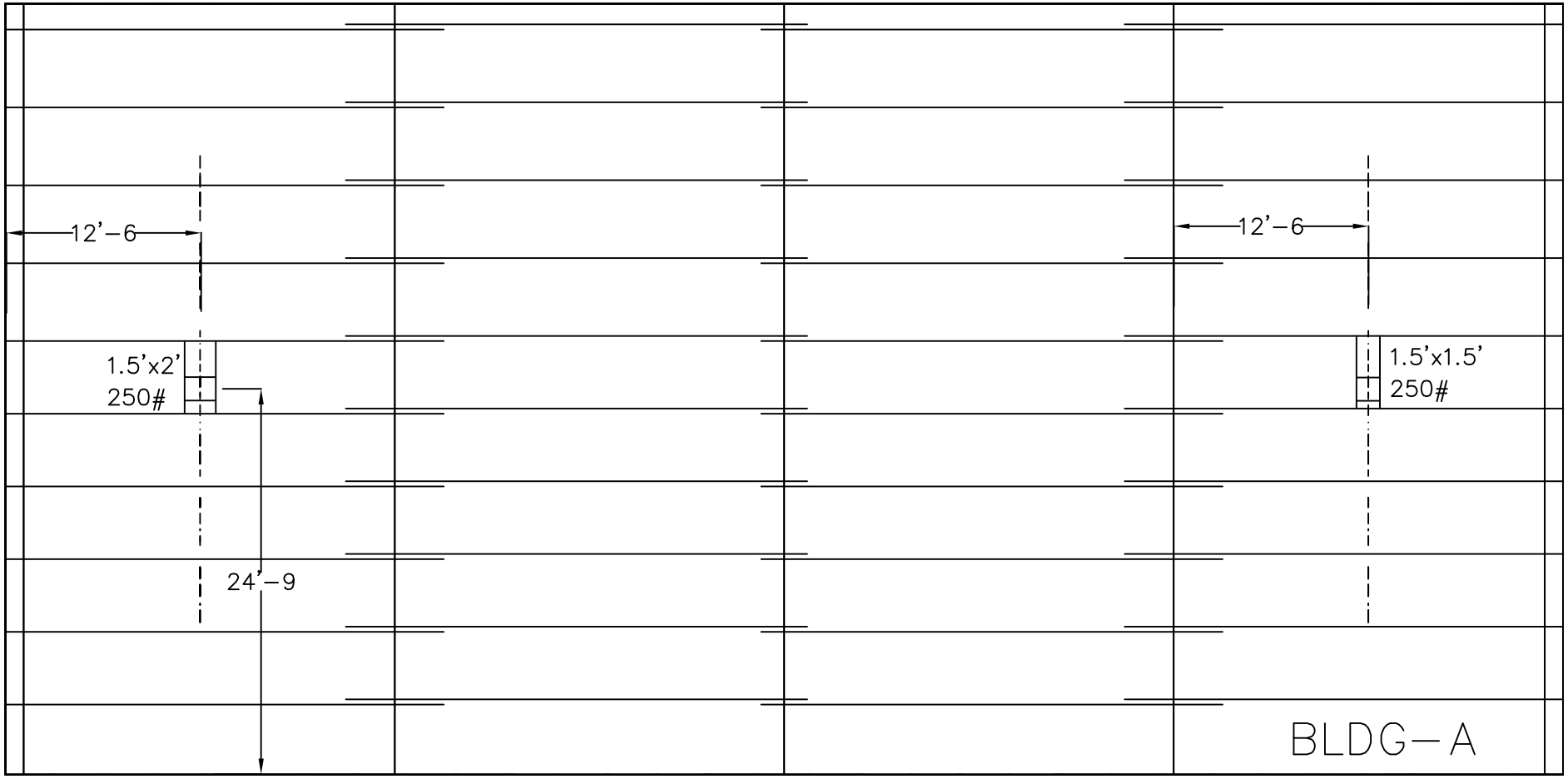
Wall Limits	Limit
Total Wind Panels L/	240
Total Wind Girts L/	240
Total Wind EW Columns L/	240

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

Roof Layout

JOB NO.
15-B-22313

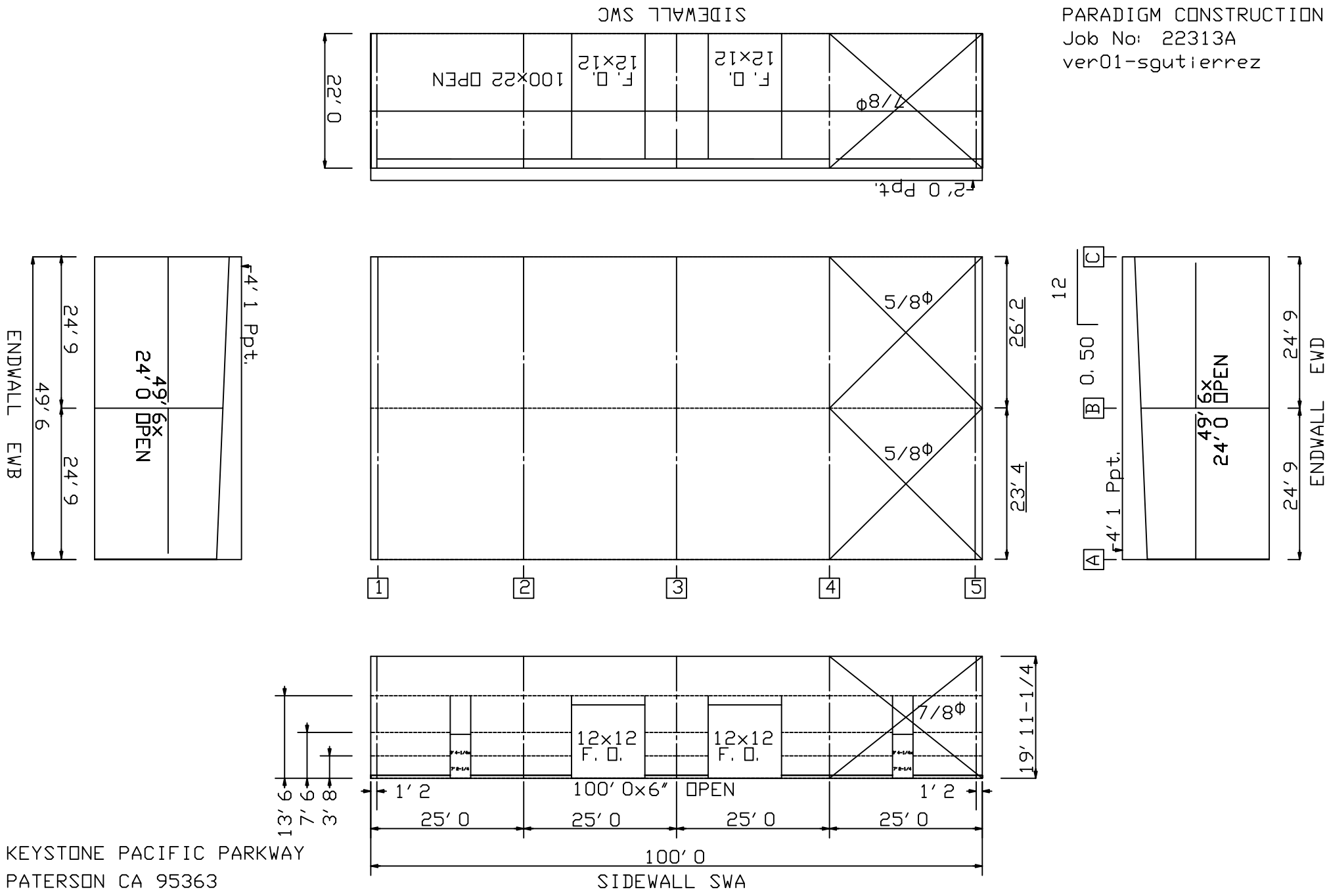
SWC (high side)



SWA (low side)

250# units are supported by purlins. If locatins are revised, the roof will need to be reanalyzed.
Do not cut or remove purlins. Use 8x2.5C16 brace between purlins at unit edges.

PARADIGM CONSTRUCTION
Job No: 22313A
ver01-sgutierrez



KEYSTONE PACIFIC PARKWAY
PATERSON CA 95363

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Metallic
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Design Summary Report Version: 5.08.1 run01 Date: 01/21/16
Start Time: 10:36:09
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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\15-B-22313\ver01-sgutierrez\Bldg-A\run01\AroofRPA_01.edf

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

PURLIN SPACING : 6@4'8 4@5'0 1.4998

Bay #	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten	R Lap Exten
1	25.000	8X2.5Z16	None	S 0.000	3.146 C
2	25.000	8X2.5Z16	None	C 3.146	1.479 C
3	25.000	8X2.5Z16	None	C 1.479	3.146 C
4	25.000	8X2.5Z16	None	C 3.146	0.000 S

Purlin Clip Use 2 A325 Bolts @ Level 2,3,4,5,6,7,8,9,10,11 @ Supports: 1
,2,3,4,5

Purlin Stiffened Clips @ Level 2,6,11 @ Supports: 1,2,3,4,5

RPA Purlin Strut @ 23.333 (ft) : 8X2.5Z12 Bays 3,4
RPA Purlin Strut @ 23.333 (ft) : 8X2.5Z14 Bays 2
RPA Purlin Strut @ 23.333 (ft) : 8X2.5Z13 Bays 1
RPA Purlin Strut @ 49.500 (ft) : 8X2.5Z13 Bays 4
RPA Purlin Strut @ 49.500 (ft) : 8X2.5Z16 Bays 1-3
SWA Eave Strut @ 19.938 (ft) : 8X3.5E13 Bays 4
SWA Eave Strut @ 19.938 (ft) : 8X3.5E14 Bays 1-3

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.
3) Highside eave strut is to be removed in bays with a parapet. The peak purlin is to be located 6.0" inside the steel line for the full building length for parapet by others.

Eave strut interior connection at SWA uses (4)-1/2" A325 bolts w/SC-18 plate.
Eave strut connection at end-frame uses (4)-1/2" A325 bolts.

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

SIDEWALL PLANE SWC -- (8.250" Inset columns)
R:\Jobs\Active\ENG\15-B-22313\ver01-sgutierrez\Bldg-A\run01\AwallSWC_01.edf
OPEN AREAS: open to studwall not by MBM

Size	Wall	Distance
100'0 x 24'0	SWC	0'0

FRAMED OPENINGS:

Width	Height	Sill Ht	Jamb	Header/Sill	Bay	Distance
12'0	12'0	N/A	C10X15.3	C10X15.3	2	7'10
12'0	12'0	N/A	C10X15.3	C10X15.3	3	5'2

SPANDREL BEAMS :

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	Connection
1	12'0	23.8333	W10X22	Unbraced	See detail A
2	12'0	25.0000	W10X22	Unbraced	See detail A
3	12'0	25.0000	W10X22	Unbraced	See detail A
4	12'0	23.8333	W10X22	Unbraced	See detail A
1	20'6	23.8333	W12X26	Unbraced	See detail A
2	20'6	25.0000	W12X26	Unbraced	See detail A
3	20'6	25.0000	W12X26	Unbraced	See detail A
4	20'6	23.8333	W12X26	Unbraced	See detail A

Note: 12’ elevation spandrels will stop at and connect to framed opening jambs. See detail B. Framed opening jambs extend and connect to 20’6 spandrels.

SIDEWALL PLANE SWA -- (8.250" Inset columns)
R:\Jobs\Active\ENG\15-B-22313\ver01-sgutierrez\Bldg-A\run01\AwallSWA_01.edf

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

GIRTS SPACINGS : 3'8 3'10 6'0

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	L Lap Exten		R Lap Exten	
1	3'8	25.000	8X2.5Z16	None	S	0.000	0.000	S
2	3'8	25.000	8X2.5Z16	None	S	0.000	0.000	S
3	3'8	25.000	8X2.5Z16	None	S	0.000	0.000	S
4	3'8	25.000	8X2.5Z16	None	S	0.000	0.000	S
1	7'6	25.000	8X2.5Z16	None	S	0.000	0.000	S
2	7'6	25.000	8X2.5Z16	None	S	0.000	0.000	S
3	7'6	25.000	8X2.5Z16	None	S	0.000	0.000	S
4	7'6	25.000	8X2.5Z16	None	S	0.000	0.000	S
1	13'6	25.000	8X2.5Z14	3 points	S	0.000	3.146	C
2	13'6	25.000	8X2.5Z14	None	C	3.146	1.479	C
3	13'6	25.000	8X2.5Z14	None	C	1.479	3.146	C
4	13'6	25.000	8X2.5Z14	3 points	C	3.146	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
3'4-1/4	7'2-1/4	N/A	8X2.5C16	8X2.5C16	1	12'11-7/8
12'0	12'0	N/A	8X2.5C16	8X2.5C16	2	7'10
12'0	12'0	N/A	8X2.5C16	8X2.5C16	3	5'2
3'4-1/4	7'2-1/4	N/A	8X2.5C16	8X2.5C16	4	10'3-7/8

OPEN AREAS:

Size	Wall	Distance
100'0 x 0'6	SWA	0'0

Endwall Plane EWD Design ..... Expandable Frame (SS)
R:\Jobs\Active\ENG\15-B-22313\ver01-sgutierrez\Bldg-A\run01\AwallEWD_01.edf
OPEN AREAS: open to studwall not by MBM

Size	Wall	Distance
49'6 x 24'0	EWD	0'0

SPANDREL BEAMS :

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	Connection
1	12’0	24.750	W10x22	N/A	See detail C
2	12’0	24.750	W10x22	N/A	See detail C
1	B.P	24.7715	10X3.5C12	N/A	See detail C
2	B.P	24.7715	10X3.5C12	N/A	See detail C

B.P.= Channel attached below purlins

COLUMNS ----- (8.250" Inset columns)

Col #	Dist. from left	Description Member Size	Ident.	Base Elev (ft)	Base plate design information Thickness & rods
5-B	24.750'	W10X22	50.0 ksi	0.0000'	0.375" BP thk w/(4)-0.625" A36

ENDWALL COLUMN TO BRIDGE CHANNEL CONNECTIONS:

COL. NO.	STRUT-TO-COLUMN CLIP ENDWALL PLANE 1
PLANE SWA:	
5-B	BETWEEN PURLINS, USING TYPE 3 CONN.,(4)-1/2" A325N CF Brdg Channel (0.3750") (4)-3/4" A325N W8X13 COLUMN EXTENSION w/ 18.000 " LAP LENGTH; BRIDGE CHANNEL (replaced with spandrel cee above)
PLANE SWC:	

Endwall Plane EWB Design ..... Non-Expandable Frame (SS)
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OPEN AREAS: open to studwall not by MBM

Size	Wall	Distance
49'6 x 24'0	EWB	0'0

SPANDREL BEAMS :

Bay #	Elev. (ft-in)	Length (ft)	Member Size Identification	Brace Locations	Connection
1	12’0	24.750	W10x22	N/A	See detail C
2	12’0	24.750	W10x22	N/A	See detail C
1	B.P	24.7715	10X2.5C12	N/A	See detail C
2	B.P	24.7715	10X2.5C12	N/A	See detail C

B.P.= Channel attached below purlins

COLUMNS ----- (8.250" Inset columns)

Col #	Dist. from left	Description Member Size	Ident.	Base Elev (ft)	Base plate design information Thickness & rods
1-B	24.750'	W10X22	50.0 ksi	0.0000'	0.375" BP thk w/(4)-0.625" A36

ENDWALL COLUMN TO BRIDGE CHANNEL CONNECTIONS:

COL. NO.	STRUT-TO-COLUMN CLIP ENDWALL PLANE 5
PLANE SWC:	
1-B	BETWEEN PURLINS, USING TYPE 3 CONN.,(4)-1/2" A325N CF Brdg Channel (0.3750") (4)-3/4" A325N W8X13 COLUMN EXTENSION w/ 16.000 " LAP LENGTH; BRIDGE CHANNEL (replaced with spandrel cee above)
PLANE SWA:	

Metallic Building Systems

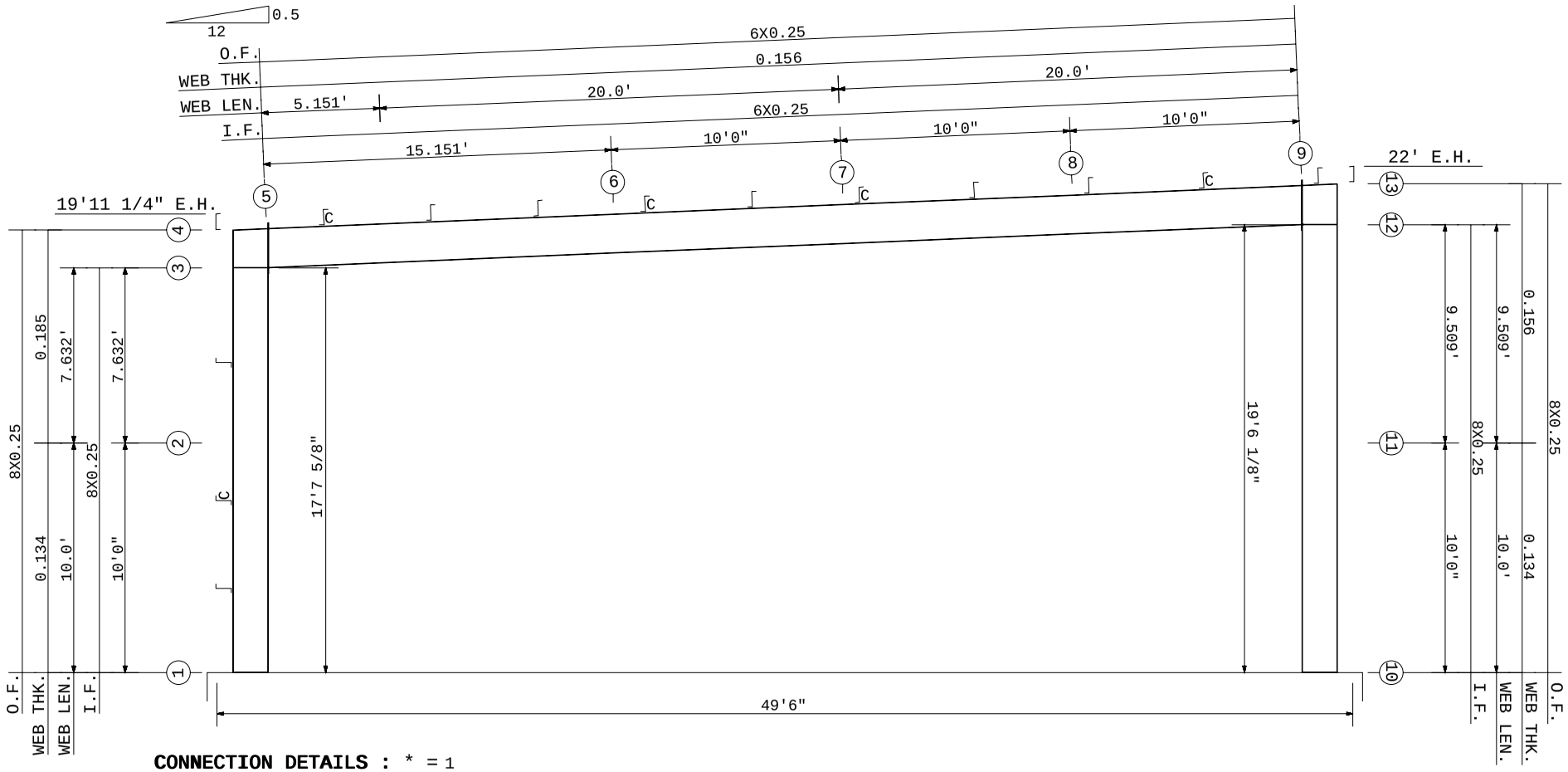
FRAME ID #11
ss 49.5/19.938/13.083 20./110./0.

USER NAME:sgutierrez **JOB NAME:**22313A

DATE: 1/21/16 **TIME:**09:27:20 **PAGE:** 11-1
FILE:a_frames_1.fra

LOCATION: Gridlines 1
DETAIL FILE: tive\Eng\15-B-22313\ver01-sgutierrez\Bldg-A\Drftg\x11L
BOLTS:A325 FULLY TIGHT WEIGHT: 2083 lbs
Rafter Offset :8"-Z 6@4'8",4@5'(8.25")
Column Offsets : 3'8",3'10",6'(8.25")- LEFT COLUMN (8.25")- RIGHT COLUMN

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

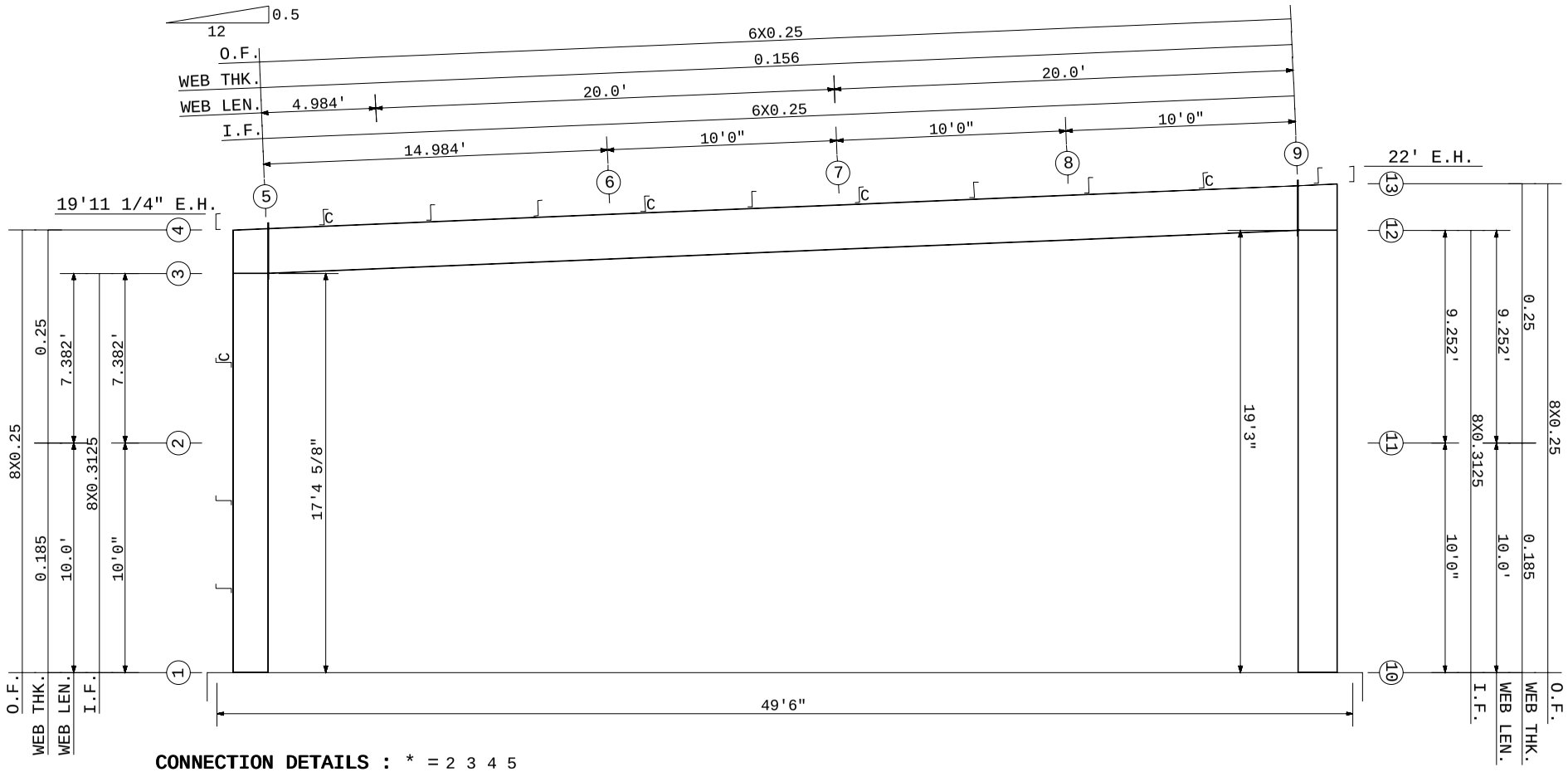


CONNECTION DETAILS : * = 1

Location	1*-A	2	3	4	5	6	7	8	9	10*-C	11	12	13
Web Dep.	18.0	18.0	18.0	N/A	20.0	20.0	20.0	20.0	20.0	18.0	18.0	18.0	N/A
Type	BASE	SPLICE	HORZ STF	CAP (EXT)	2E/2E	SPLICE	SPLICE	SPLICE	2E/2E	BASE	SPLICE	HORZ STF	CAP (EXT)
Plate(DN)	8.0X0.375	N/A	3.75X0.25	8.0X0.25	8.0X0.5	N/A	N/A	N/A	6.0X0.5	8.0X0.375	N/A	3.75X0.25	8.0X0.25
Plate(UP)	N/A	N/A	N/A	N/A	6.0X0.5	N/A	N/A	N/A	8.0X0.5	N/A	N/A	N/A	N/A
Bolts	(4)-3/4	N/A	N/A	N/A	(8)-3/4	N/A	N/A	N/A	(8)-3/4	(4)-3/4	N/A	N/A	N/A

LOCATION: Gridlines 2 3 4 5
DETAIL FILE: tive\Eng\15-B-22313\ver01-sgutierrez\Bldg-A\Drftg\x12L
BOLTS:A325 FULLY TIGHT WEIGHT: 2427 lbs
Rafter Offset :8"-Z 6@4'8",4@5'(8.25")
Column Offsets : 3'8",3'10",6'(8.25")- LEFT COLUMN (8.25")- RIGHT COLUMN

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

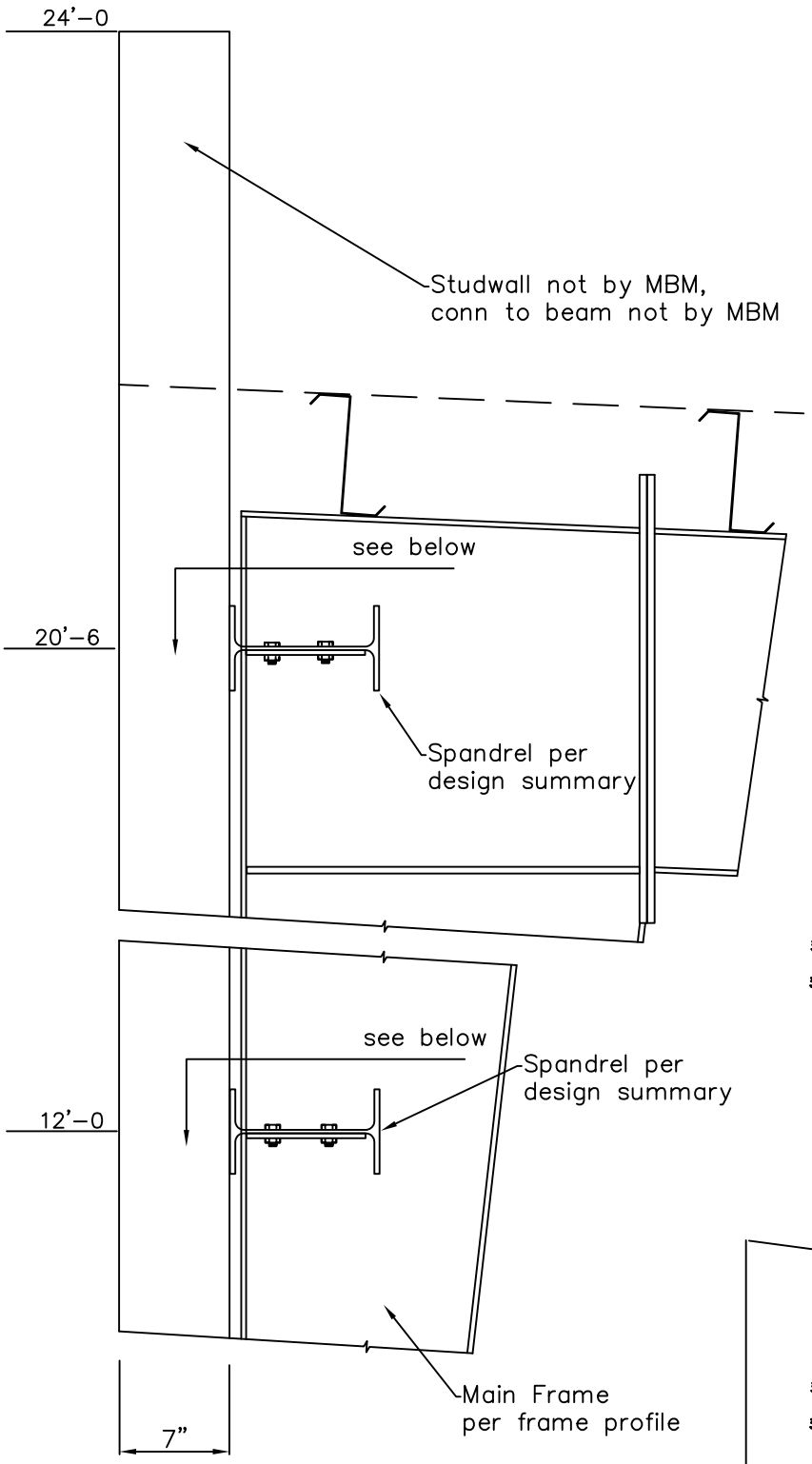


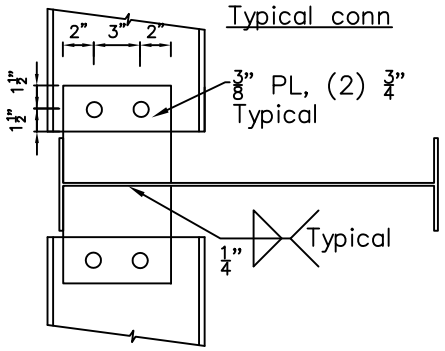
CONNECTION DETAILS : * = 2 3 4 5

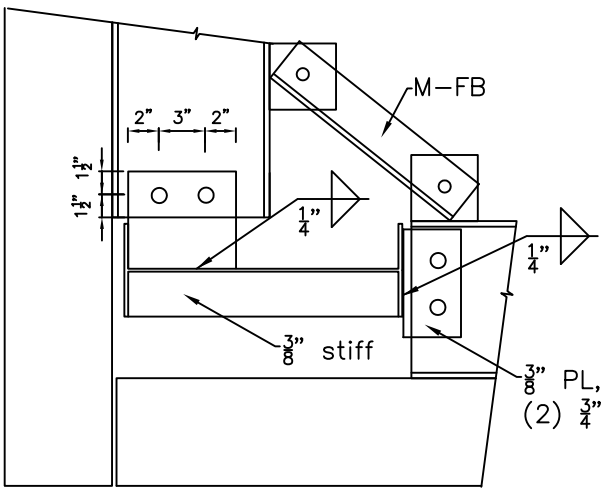
Location	(1)*-A	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)*-C	(11)	(12)	(13)
Web Dep.	18.0	18.0	18.0	N/A	23.0	23.0	23.0	23.0	23.0	20.0	20.0	20.0	N/A
Type	BASE	SPLICE	HORZ STF	CAP (EXT)	3E/3E	SPLICE	SPLICE	SPLICE	3E/3E	BASE	SPLICE	HORZ STF	CAP (EXT)
Plate(DN)	8.0X0.375	N/A	3.75X0.3125	8.0X0.25	8.0X0.5	N/A	N/A	N/A	6.0X0.5	8.0X0.375	N/A	3.75X0.25	8.0X0.25
Plate(UP)	N/A	N/A	N/A	N/A	6.0X0.5	N/A	N/A	N/A	8.0X0.5	N/A	N/A	N/A	N/A
Bolts	(4)-3/4	N/A	N/A	N/A	(12)-3/4	N/A	N/A	N/A	(12)-3/4	(4)-3/4	N/A	N/A	N/A

High Side Wall Support detail_A

JOB NO. 15-B-22313



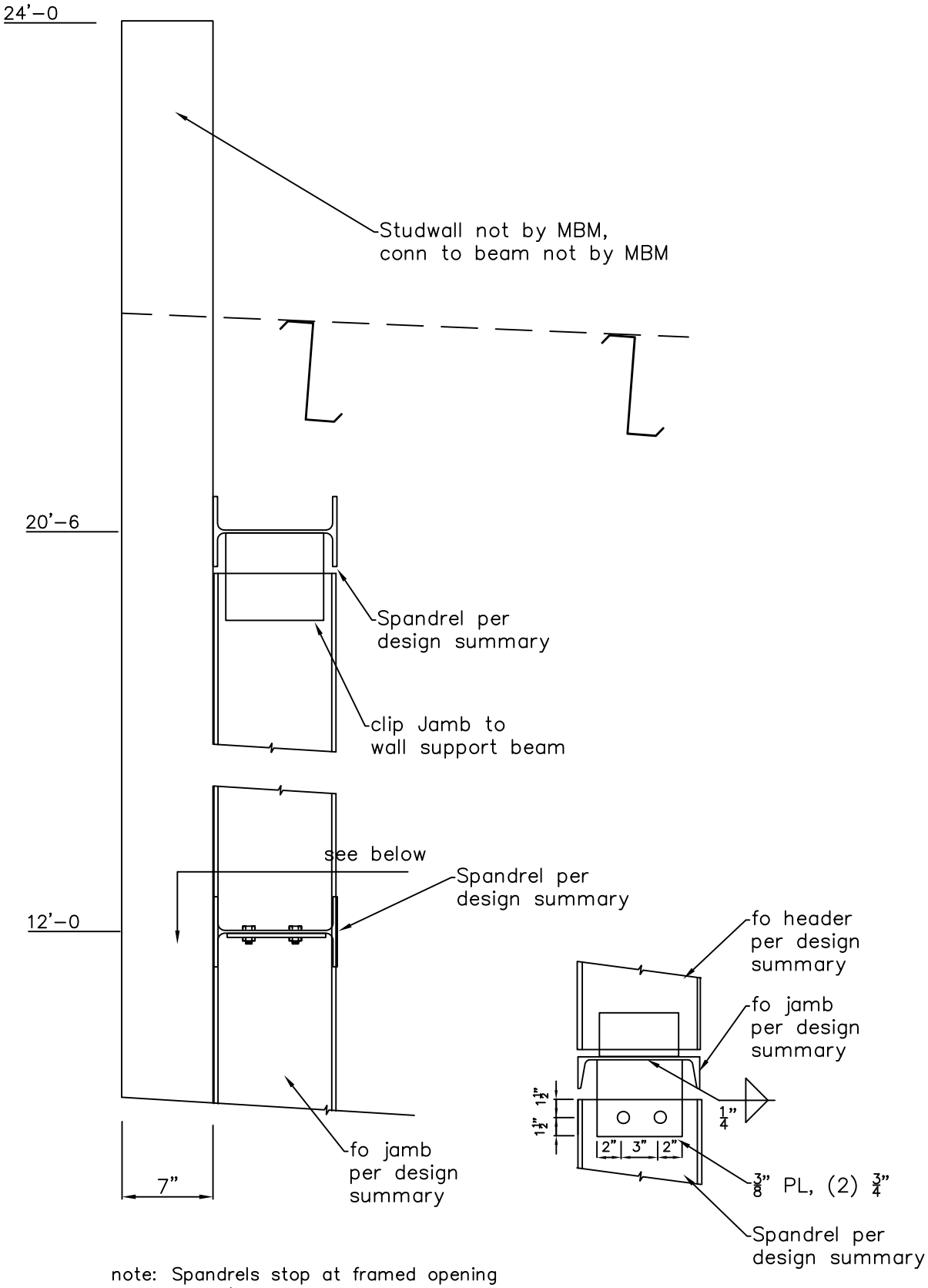




conn at FL 1,5 at 12'–0 elevation

Wall Support beam conn at Jambs detail B

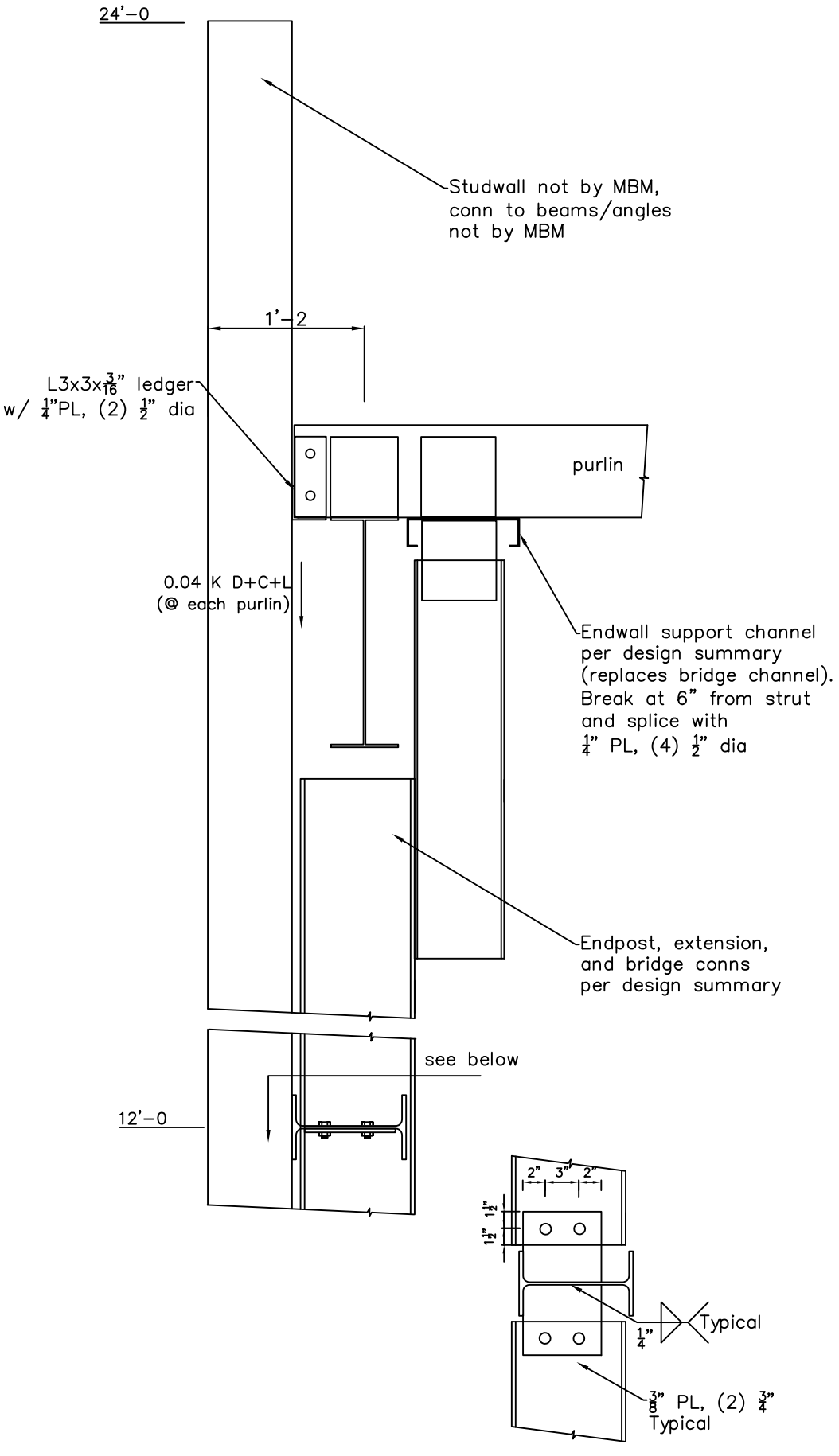
JOB NO.
15-B-22313



note: Spandrels stop at framed opening jambs at 12' elevation, header at same elevation. Jambs extend to 20'6 spandrel. Framed opening header is not designed to support vertical load from studwall not by MBM.

Endwall Support Beams
detail C

JOB NO.
15-B-22313



REACTIONS

BUILDER: **Paradigm Construction**
CUSTOMER: **Keystone Pacific Parkway**
JOB NUMBER: **15-B-22313**

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 A36 or A307 material unless noted otherwise on the anchor rod layout drawing (F1 sheet).
   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.
   Maximum reactions are <u>not</u> provided by the manufacturer to allow the foundation engineer to determine the correct values for his design procedures and allow for an economical foundation design.

SUPPORT REACTIONS FOR EACH LOAD GROUP
***LOCATION: Gridlines:** 1
NOTE: All reactions are in kips and kip-ft. **TIME:**09:27:20

REACTION NOTATIONS

LOAD GROUP REACTION TABLE * = 1

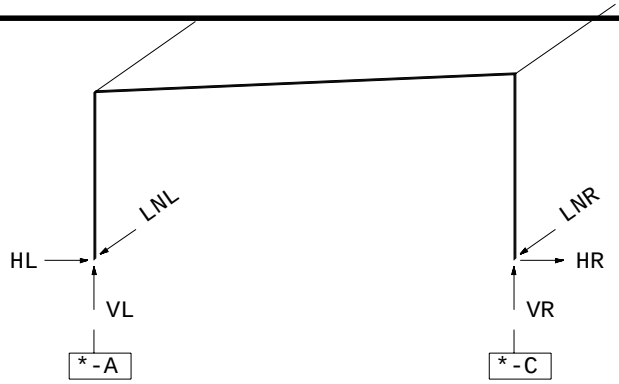
COLUMN	*-A			*-C		
LOAD GROUP	HL	VL	LNL	HR	VR	LNR
DL	0.4	1.6	0.0	-0.4	1.7	0.0
LL	1.1	3.9	0.0	-1.1	3.9	0.0
COLL	0.2	0.7	0.0	-0.2	0.7	0.0
EQ	-1.4	-1.1	0.0	-1.2	1.1	0.0
WL1	-5.6	-10.4	0.0	-1.5	-4.7	0.0
WL2	-5.9	-7.6	0.0	-1.3	-2.0	0.0
LWL1	-0.6	-8.9	0.0	0.1	-6.2	0.0
LWL2	-0.6	-6.6	0.0	0.1	-8.4	0.0
LWL3	-0.8	-6.1	0.0	0.3	-3.4	0.0
LWL4	-0.8	-3.9	0.0	0.4	-5.7	0.0
WL3	2.6	-4.0	0.0	6.1	-11.0	0.0
WL4	2.4	-1.3	0.0	6.3	-8.3	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]
WL1 : Lateral Primary Wind Load
WL2 : Lateral Primary Wind Load
LWL1 : Longitudinal Primary Wind Load
LWL2 : Longitudinal Primary Wind Load
LWL3 : Longitudinal Primary Wind Load
LWL4 : Longitudinal Primary Wind Load
WL3 : Lateral Primary Wind Load
WL4 : Lateral Primary Wind Load

SUPPORT REACTIONS FOR EACH LOAD GROUP
***LOCATION: Gridlines:** 2 3 4 5
NOTES:(1) All reactions are in kips and kip-ft. **TIME:**09:34:43
(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 4 5

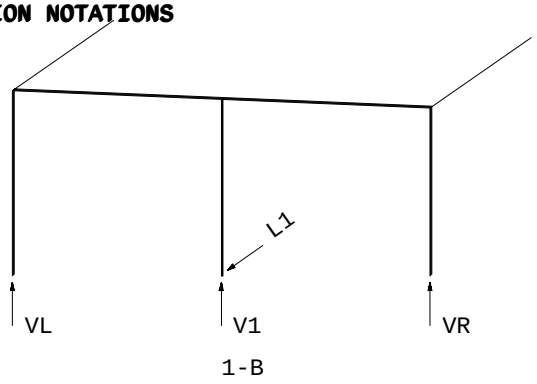
COLUMN	*-A			*-C		
LOAD GROUP	HL	VL	LNL	HR	VR	LNR
DL	0.6	2.4	0.0	-0.6	2.5	0.0
LL	2.2	7.4	0.0	-2.2	7.4	0.0
COLL	0.4	1.3	0.0	-0.4	1.3	0.0
EQ	-2.3	-1.8	0.0	-2.0	1.8	0.0
RBUPEQ	0.3	-7.0	-8.8	-0.3	-7.6	-8.6
WL1	-7.3	-14.1	0.0	-2.3	-6.7	0.0
WL2	-7.7	-8.8	0.0	-1.9	-1.5	0.0
WL3	3.8	-5.7	0.0	8.1	-15.1	0.0
WL4	3.4	-0.4	0.0	8.5	-9.8	0.0
LWL1	-0.2	-12.2	0.0	-0.9	-8.6	0.0
RBUPLW	0.3	-9.0	-11.3	-0.3	-8.5	-9.7
LWL2	-0.2	-9.7	0.0	-0.9	-11.2	0.0
LWL3	-0.6	-6.9	0.0	-0.5	-3.4	0.0
LWL4	-0.6	-4.4	0.0	-0.5	-5.9	0.0
RBDWEQ	-0.2	7.0	0.0	0.2	7.6	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
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:** 10:36:08

REACTION NOTATIONS



1-B

LOAD GROUP REACTION TABLE

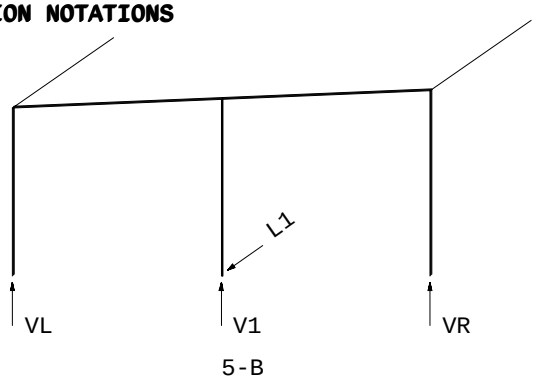
COLUMN	LEFT COLUMN			RIGHT COLUMN			1-B		
LOAD GROUP	HL	VL	LL	HR	VR	LR	H1	V1	L1
D	0.	0.	0.	0.	0.	0.	0.	0.4	0.
W+	0.	0.	0.	0.	0.	0.	0.	0.	4.9
W-	0.	0.	0.	0.	0.	0.	0.	0.	-5.4
E+	0.	0.	0.	0.	0.	0.	0.	0.	2.0
E-	0.	0.	0.	0.	0.	0.	0.	0.	-2.0

LOAD GROUP DESCRIPTION

D : DEAD LOAD
W+ : WIND LOAD AS AN INWARD ACTING PRESSURE
W- : WIND LOAD AS AN OUTWARD ACTING SUCTION
E+ : EARTHQUAKE FORCE ACTING INWARD
E- : EARTHQUAKE FORCE ACTING OUTWARD

SUPPORT REACTIONS FOR EACH LOAD GROUP
NOTE: All reactions are in kips and kip-ft. **TIME:**10:36:08

REACTION NOTATIONS



5-B

LOAD GROUP REACTION TABLE

COLUMN	LEFT COLUMN			RIGHT COLUMN			5-B		
LOAD GROUP	HL	VL	LL	HR	VR	LR	H1	V1	L1
D	0.	0.	0.	0.	0.	0.	0.	0.4	0.
W+	0.	0.	0.	0.	0.	0.	0.	0.	4.9
W-	0.	0.	0.	0.	0.	0.	0.	0.	-5.4
E+	0.	0.	0.	0.	0.	0.	0.	0.	2.0
E-	0.	0.	0.	0.	0.	0.	0.	0.	-2.0

LOAD GROUP DESCRIPTION

D : DEAD LOAD
W+ : WIND LOAD AS AN INWARD ACTING PRESSURE
W- : WIND LOAD AS AN OUTWARD ACTING SUCTION
E+ : EARTHQUAKE FORCE ACTING INWARD
E- : EARTHQUAKE FORCE ACTING OUTWARD

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

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

Longitudinal wind loading case 1
(Endwall EWD is windward endwall)
110 mph Main framing wind load and coefficients
Fully Enclosed Building, Normal Building Category, EXPOSURE C

90% of endwall surfaces in interior zone
10% of endwall surfaces in end zone within 4.95 feet of wall corners

Velocity pressure coefficient (Kh)..... 0.910911
Directionality Factor (Kd)..... 0.85
Basic Pressure (Qh)..... 23.98393

Topographic factor - Kzt at mean roof height = 1.0000
Windward wall..... [GCpf-GCpi]= 0.6010 P= 14.414 psf
Leeward wall..... [GCpf-GCpi]= -0.1240 P= -2.974 psf

Roof strut	Brace spans	External loading applied to strut line	.6*W	Brc T Total	Brc T /bay	Brc Allow
PLANE RPA:						
1		6.063 TOTAL				
		4.129 @ FRAME LINE 1				
		1.934 @ FRAME LINE 5			0.6250"	ROD
	24.750'	Transfered =	3.142	4.53	4.53	7.48
2		10.474 TOTAL				
		7.318 @ FRAME LINE 1				
		3.157 @ FRAME LINE 5			0.6250"	ROD
	24.750'	Transfered =	3.142	4.53	4.53	7.48
3		4.465 TOTAL				
		3.221 @ FRAME LINE 1				
		1.244 @ FRAME LINE 5				
PLANE :						

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

Wall strut	Brace elev	External loading applied to strut line
PLANE SWA:		
Line 1		
		5.237 Transfered from roof
Tier 1	19.94'	6.063 TOTAL
		4.129 @ FRAME LINE 1
		1.934 @ FRAME LINE 5
		Transfered = 11.300
		0.6*W = 0.6 * 11.300 = 6.78
		Load / Bay = 6.78 / 1 bays = 6.78
		Brace T / Bay = 8.84
		Rod Design = 0.8750" ROD
		Brace Allowable = 14.66

Wall strut	Brace elev	External loading applied to strut line
PLANE SWC:		
Line 3		
		5.237 Transfered from roof
Tier 1	22.00'	4.465 TOTAL
		3.221 @ FRAME LINE 1
		1.244 @ FRAME LINE 5
		Transfered = 9.702
		0.6*W = 0.6 * 9.702 = 5.82
		Load / Bay = 5.82 / 1 bays = 5.82
		Brace T / Bay = 7.92
		Rod Design = 0.8750" ROD
		Brace Allowable = 14.66

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

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

Longitudinal wind loading case 2
(Endwall EWB is windward endwall)
110 mph Main framing wind load and coefficients
Fully Enclosed Building, Normal Building Category, EXPOSURE C

90% of endwall surfaces in interior zone
10% of endwall surfaces in end zone within 4.95 feet of wall corners

Velocity pressure coefficient (Kh)..... 0.910911
Directionality Factor (Kd)..... 0.85
Basic Pressure (Qh)..... 23.98393

Topographic factor - Kzt at mean roof height = 1.0000
Windward wall..... [GCpf-GCpi]= 0.6010 P= 14.414 psf
Leeward wall..... [GCpf-GCpi]= -0.1240 P= -2.974 psf

Roof strut	Brace spans	External loading applied to strut line	.6*W	Brc T Total	Brc T /bay	Brc Allow
PLANE RPA:						
1		6.063 TOTAL				
		1.934 @ FRAME LINE 1				
		4.129 @ FRAME LINE 5			0.6250"	ROD
	24.750'	Transfered =	3.142	4.53	4.53	7.48
2		10.474 TOTAL				
		3.157 @ FRAME LINE 1				
		7.318 @ FRAME LINE 5			0.6250"	ROD
	24.750'	Transfered =	3.142	4.53	4.53	7.48
3		4.465 TOTAL				
		1.244 @ FRAME LINE 1				
		3.221 @ FRAME LINE 5				
PLANE :						

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

Wall strut	Brace elev	External loading applied to strut line
PLANE SWA:		
Line 1		
		5.237 Transfered from roof
Tier 1	19.94'	6.063 TOTAL
		1.934 @ FRAME LINE 1
		4.129 @ FRAME LINE 5
		Transfered = 11.300
		0.6*W = 0.6 * 11.300 = 6.78
		Load / Bay = 6.78 / 1 bays = 6.78
		Brace T / Bay = 8.84
		Rod Design = 0.8750" ROD
		Brace Allowable = 14.66

Wall strut	Brace elev	External loading applied to strut line
PLANE SWC:		
Line 3		
		5.237 Transfered from roof
Tier 1	22.00'	4.465 TOTAL
		1.244 @ FRAME LINE 1
		3.221 @ FRAME LINE 5
		Transfered = 9.702
		0.6*W = 0.6 * 9.702 = 5.82
		Load / Bay = 5.82 / 1 bays = 5.82
		Brace T / Bay = 7.92
		Rod Design = 0.8750" ROD
		Brace Allowable = 14.66

**** 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 EWD endwall to opposite endwall is force direction)

Soil Profile Type	E
Seismic design category	D
Mapped spectral response accel. for short periods (Ss)	1.895
Mapped spectral response accel. for 1 second periods (S1)	0.623
Design , 5% damped , spectral response accel. at short periods (Sds)	1.137
Design , 5% damped , spectral response accel. at period 1 sec. (Sd1)	0.9968
Longitudinal Building Period (T)	0.195
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)	2.000

Roof strut	Brace spans	External loading (W) applied to strut line	.7rhoV	Brc T Total	Brc T /bay	Brc Allow
PLANE RPA:						
1		16.051 TOTAL				
		4.160 @ FRAME LINE 1, 5				
		1.933 @ BAY 1, 2, 3, 4			0.6250" ROD	
	24.750'	Transfered = 15.888	4.00	5.77	5.77	7.48
2		31.776 TOTAL				
		7.906 @ FRAME LINE 1, 5				
		4.116 @ BAY 1, 4				
		3.866 @ BAY 2, 3			0.6250" ROD	
	24.750'	Transfered = 15.888	4.00	5.77	5.77	7.48
3		15.265 TOTAL				
		3.766 @ FRAME LINE 1, 5				
		1.933 @ BAY 1, 2, 3, 4				
PLANE :						

- 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 SWA:		
Line 1		
		15.888 Transfered from roof
Tier 1	19.94'	16.051 TOTAL
		4.160 @ FRAME LINE 1, 5
		1.933 @ BAY 1, 2, 3, 4
		Transfered = 31.939 Weight (W)
		V = Using ASCE7-10 Eq(12.8-2) Sds/(R/I)W ; R=3.25
		V = (0.90)/((3.25)/(1.00))(31.94) = 8.84
		0.7*Omega*V = 0.7*2.00*8.845 = 12.38
		Brace T = 16.14
		Brace T / Bay = 16.14 / 1 bays = 16.14
		Rod Design = 0.8750" ROD
		Brace Allowable = 17.59

Wall strut	Brace elev	External loading applied to strut line
PLANE SWC:		
Line 3		
		15.888 Transfered from roof
Tier 1	22.00'	15.265 TOTAL
		3.766 @ FRAME LINE 1, 5
		1.933 @ BAY 1, 2, 3, 4
		Transfered = 31.152 Weight (W)
		V = Using ASCE7-10 Eq(12.8-2) Sds/(R/I)W ; R=3.25
		V = (0.90)/((3.25)/(1.00))(31.15) = 8.63
		0.7*Omega*V = 0.7*2.00*8.627 = 12.08
		Brace T = 16.44
		Brace T / Bay = 16.44 / 1 bays = 16.44
		Rod Design = 0.8750" ROD
		Brace Allowable = 17.59

**** 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 2
(PLANE EWB endwall to opposite endwall is force direction)

Soil Profile Type	E
Seismic design category	D
Mapped spectral response accel. for short periods (Ss)	1.895
Mapped spectral response accel. for 1 second periods (S1)	0.623
Design , 5% damped , spectral response accel. at short periods (Sds)	1.137
Design , 5% damped , spectral response accel. at period 1 sec. (Sd1)	0.9968
Longitudinal Building Period (T)	0.195
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)	2.000

Roof strut	Brace spans	External loading (W) applied to strut line	.7rhoV	Brc T Total	Brc T /bay	Brc Allow
PLANE RPA:						
1		16.051 TOTAL				
		4.160 @ FRAME LINE 1, 5				
		1.933 @ BAY 1, 2, 3, 4			0.6250" ROD	
	24.750'	Transfered = 15.888	4.00	5.77	5.77	7.48
2		31.776 TOTAL				
		7.906 @ FRAME LINE 1, 5				
		4.116 @ BAY 1, 4				
		3.866 @ BAY 2, 3			0.6250" ROD	
	24.750'	Transfered = 15.888	4.00	5.77	5.77	7.48
3		15.265 TOTAL				
		3.766 @ FRAME LINE 1, 5				
		1.933 @ BAY 1, 2, 3, 4				
PLANE :						

- 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 SWA:		
Line 1		
		15.888 Transfered from roof
Tier 1	19.94'	16.051 TOTAL
		4.160 @ FRAME LINE 1, 5
		1.933 @ BAY 1, 2, 3, 4
		Transfered = 31.939 Weight (W)
		V = Using ASCE7-10 Eq(12.8-2) Sds/(R/I)W ; R=3.25
		V = (0.90)/((3.25)/(1.00))(31.94) = 8.84
		0.7*Omega*V = 0.7*2.00*8.845 = 12.38
		Brace T = 16.14
		Brace T / Bay = 16.14 / 1 bays = 16.14
		Rod Design = 0.8750" ROD
		Brace Allowable = 17.59

Wall strut	Brace elev	External loading applied to strut line
PLANE SWC:		
Line 3		
		15.888 Transfered from roof
Tier 1	22.00'	15.265 TOTAL
		3.766 @ FRAME LINE 1, 5
		1.933 @ BAY 1, 2, 3, 4
		Transfered = 31.152 Weight (W)
		V = Using ASCE7-10 Eq(12.8-2) Sds/(R/I)W ; R=3.25
		V = (0.90)/((3.25)/(1.00))(31.15) = 8.63
		0.7*Omega*V = 0.7*2.00*8.627 = 12.08
		Brace T = 16.44
		Brace T / Bay = 16.44 / 1 bays = 16.44
		Rod Design = 0.8750" ROD
		Brace Allowable = 17.59

**** MAIN BUILDING ROOF LONGITUDINAL BRACING DESIGN ****
ROOF STRUT LINE DESIGN

BLDG-A ROOF BRACING PURLIN STRUT NO. 2
ANALYSIS OF PURLIN LINE 6 ON ROOF PLANE RPA

LOAD COMBINATIONS : 1) 0.60D + 0.60W3-1 2) 0.60D + 0.60W3-2
3) 0.60D + 0.60W4-1 4) 0.60D + 0.60W4-2
5) D + C + 0.45W3-1 6) D + C + 0.45W3-2
7) D + C + 0.45W4-1 8) D + C + 0.45W4-2
9) 1.16D + 1.16C + 0.91E3-1 10) 1.16D + 1.16C + 0.91E4-1

WHERE : D = DEAD LOAD
C = COLLATERAL LOAD
L = LIVE LOAD
W3-1= WIND CASE 1, POSITIVE INTERNAL PRESSURE
W3-2= WIND CASE 1, NEGATIVE INTERNAL PRESSURE
W4-1= WIND CASE 2, POSITIVE INTERNAL PRESSURE
W4-2= WIND CASE 2, NEGATIVE INTERNAL PRESSURE
E3-1= SEISMIC LOAD CASE 1
E4-1= SEISMIC LOAD CASE 2

Span No.	Length (feet)	Member, avg spacing & Ext. Lengths (feet)			Bearing StifReq	Controlling Conditions Combination & Check Ratio
LE	1.167	8X2.5Z13	4.667		3	0.014 shear+bending
						3 L/ 120 deflection
1	23.833	8X2.5Z13	4.667	0 3.1458	3	0.873 axial+bending
						3 L/ 468 deflection
2	25.000	8X2.5Z14	4.667	3.1458 1.4791	3	0.813 axial+bending
						1 L/1394 deflection
3	25.000	8X2.5Z12	4.667	1.4791 3.1458	3	0.488 axial+bending
						3 L/2319 deflection
4	23.833	8X2.5Z12	4.667	3.145	1	0.684 axial+bending
						1 L/ 582 deflection
RE	1.167	8X2.5Z12	4.667		1	0.009 shear+bending
						1 L/ 150 deflection

Total line design weight is 499.1 lbs.

**** MAIN BUILDING ROOF LONGITUDINAL BRACING DESIGN ****
ROOF STRUT LINE DESIGN

BLDG-A ROOF BRACING PURLIN STRUT NO. 3
ANALYSIS OF PURLIN LINE 11 ON ROOF PLANE RPA

LOAD COMBINATIONS : 1) 0.60D + 0.60W3-1 2) 0.60D + 0.60W3-2
3) 0.60D + 0.60W4-1 4) 0.60D + 0.60W4-2
5) D + C + 0.45W3-1 6) D + C + 0.45W3-2
7) D + C + 0.45W4-1 8) D + C + 0.45W4-2
9) 1.16D + 1.16C + 1.40E3-1 10) 1.16D + 1.16C + 1.40E4-1

WHERE : D = DEAD LOAD
C = COLLATERAL LOAD
L = LIVE LOAD
W3-1= WIND CASE 1, POSITIVE INTERNAL PRESSURE
W3-2= WIND CASE 1, NEGATIVE INTERNAL PRESSURE
W4-1= WIND CASE 2, POSITIVE INTERNAL PRESSURE
W4-2= WIND CASE 2, NEGATIVE INTERNAL PRESSURE
E3-1= SEISMIC LOAD CASE 1
E4-1= SEISMIC LOAD CASE 2

Span No.	Length (feet)	Member, avg spacing & Ext. Lengths (feet)			Bearing StifReq	Controlling Conditions Combination & Check Ratio
LE	1.167	8X2.5Z16	4.000		3	0.034 shear+bending
						3 L/ 98 deflection
1	23.833	8X2.5Z16	4.000	0 3.1458	3	0.859 axial+bending
						3 L/ 382 deflection
2	25.000	8X2.5Z16	4.000	3.1458 1.4791	3	0.589 axial+bending
						1 L/1503 deflection
3	25.000	8X2.5Z16	4.000	1.4791 3.1458	10	0.599 axial+bending
						3 L/1319 deflection
4	23.833	8X2.5Z13	4.000	3.145	10	1.029 axial+bending
						1 L/ 544 deflection
RE	1.167	8X2.5Z13	4.000		1	0.012 shear+bending
						1 L/ 140 deflection

Total line design weight is 357.7 lbs.

**** MAIN BUILDING ROOF LONGITUDINAL BRACING DESIGN ****
EAVE STRUT LINE DESIGN

BLDG-A ROOF BRACING EAVE STRUT NO. 1
ANALYSIS OF EAVE STRUT LINE ON WALL PLANE SWA

LOAD COMBINATIONS : 1) 0.60WS3 2) 0.60WS4
3) 1.40ES3 4) 1.40ES4

WHERE : WS3 = WIND LOAD FROM PLANE EWD
WS4 = WIND LOAD FROM PLANE EWB
ES3 = SEISMIC LOAD FROM PLANE EWD
ES4 = SEISMIC LOAD FROM PLANE EWB

Span No.	Length (feet)	Member, avg spacing & Ext. Lengths (feet)	Bearing StifReq	Controlling Conditions Combination & Check Ratio
1	23.833	8X3.5E14	2	0.186 axial
				2 0.506 connection
2	25.000	8X3.5E14	4	0.194 axial
				3 0.529 connection
3	25.000	8X3.5E14	4	0.241 axial
				3 0.657 connection
4	23.833	8X3.5E13	4	0.544 axial
				1 0.944 connection

**** MAIN BUILDING LONGITUDINAL BRACING DESIGN ****
LONGITUDINAL BRACING DESIGN SUMMARY

Roof Bracing:

Strut	Brace Spans	Bay 4 25.000 feet	Bay 3 25.000 feet	Bay 2 25.000 feet	Bay 1 25.000 feet
PLANE RPA:					
1		8X3.5E13	8X3.5E14	8X3.5E14	8X3.5E14
	24.750'	0.6250" ROD			
2		8X2.5Z12	8X2.5Z12	8X2.5Z14	8X2.5Z13
	24.750'	0.6250" ROD			
3		8X2.5Z13	8X2.5Z16	8X2.5Z16	8X2.5Z16
PLANE :					

	Brace	Bay 1	Bay 2	Bay 3	Bay 4

Sidewall Bracing:

Strut	Brace Spans	Bay 4 25.000 feet	Bay 3 25.000 feet	Bay 2 25.000 feet	Bay 1 25.000 feet
PLANE SWA:					
1		8X3.5E13	8X3.5E14	8X3.5E14	8X3.5E14
	19.938'	0.8750" ROD			

Strut	Brace Spans	Bay 1 25.000 feet	Bay 2 25.000 feet	Bay 3 25.000 feet	Bay 4 25.000 feet
PLANE SWC:					
3		8X2.5Z13	8X2.5Z16	8X2.5Z16	8X2.5Z16
	22.000'	0.8750" ROD			

```
VERSION V5.08
BRAND METALLIC
DESCRIPTION ss  49.5/19.938/13.083   20./110./0.
FRAME_ID 11
#  FRAME LEFT SIDE IS BLDG. PLANE SWA
#  AND FRAME RIGHT SIDE IS BLDG. PLANE SWC
PRINT echo code loads base connection deflection profile seismic detail  \
 flg_brace summary stiffeners pro_grplds
OPTIMIZATION none *PLANT atw *JOB 22313A
ANALYZE all *DATASET members brace combinations wind_array connection base
BUILDING LABEL A
LOCATION frame lines 1
LATERAL GRID LABEL 1
LONGITUDINAL GRID LABEL A C
NUMBER FRAMES 1  *PRICE complete
TYPE LEFT ss p cs 60. 60.
TYPE RIGHT ss p cs 60. 60.
WIDTH 49.5 49.5
LENGTH  100.
EAVE LEFT 19.9375 *ROOF SLOPE LEFT 0.5
EAVE RIGHT 22.
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 5.695 9.042 1.873 4.012
CODE LABEL 2013 CALIFORNIA
BUILDING CODE IB12 U=Normal
DEAD LOAD 2.253  *COLLATERAL LOAD 2.
LIVE LOAD 20. reduce
SNOW R=0. T=1. S=N WML=49.5
WIND CODE AS10
SEISMIC CODE AS10
SEISMIC LOAD  S1=62.3 SS=189.5 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 E
SECOND ORDER FOA
ROOF TRIBUTARY  TR= 13.083
WALL TRIBUTARY LEFT  TR= 13.083 S=0. E=19.9375
WALL TRIBUTARY RIGHT  TR= 13.083 S=0. E=22.
DESIGN ASD10
LATERAL BRACE LENGTH  23.83
STIFFNESS CHECK SNOW ONLY
BOLT TIGHTENING  Fully
DEFLECTION ROOF L=180. S=180. W=180. G=120.
DEFLECTION WALL L=200. S=200. W=200. E=40. C=100. G=200. TE=200.
PARAPETR TYP=B HT=24. CONN_HT=21.3125 CONN_TYP=P TRIB=11.917 DL=22.  \
 WL1=-24.6755 -1. WL2=-24.6755 -1. LWL1=-17.2728 -0.7 LWL2=-17.2728 -0.7  \
 LWL3=-17.2728 -0.7 LWL4=-17.2728 -0.7 MWL1=-8. -1. MWL2=8. 1. WL3=37.0132 1.5  \
 WL4=37.0132 1.5 WL1D=-10.5717 -1. WL2D=-10.5717 -1. LWL1D=-7.4002 -0.7  \
 LWL2D=-7.4002 -0.7 LWL3D=-7.4002 -0.7 LWL4D=-7.4002 -0.7 WL3D=15.8576 1.5  \
 WL4D=15.8576 1.5 CONN_HT=21.3125
PARAPETR TYP=B HT=24. CONN_HT=21.3125 CONN_TYP=P TRIB=1.167 DL=22.  \
 WL1=-24.6755 -1. WL2=-24.6755 -1. LWL1=-17.2728 -0.7 LWL2=-17.2728 -0.7  \
 LWL3=-17.2728 -0.7 LWL4=-17.2728 -0.7 MWL1=-8. -1. MWL2=8. 1. WL3=37.0132 1.5  \
 WL4=37.0132 1.5 WL1D=-10.5717 -1. WL2D=-10.5717 -1. LWL1D=-7.4002 -0.7  \
 LWL2D=-7.4002 -0.7 LWL3D=-7.4002 -0.7 LWL4D=-7.4002 -0.7 WL3D=15.8576 1.5  \
```

```
 WL4D=15.8576 1.5 CONN_HT=21.3125
SYMKNEE CONNECTION
SPLICE GUSSETS NA
BRACING SIDES LC=3 RA=3 RC=3
BRACE ATTACHMENT FLANGE
FLANGE BRACE ATTACHMENT LC=0 RA=0 RC=0
GIRT SPACING LEFT 3.6667 3.8333 6.
GIRT SPACING RIGHT
GIRT BRACE LEFT  N C1 N
GIRT BRACE RIGHT
PURLIN SPACING 6@4.6667 4@5.
PURLIN BRACE  C N N C N C N N C N
LEFT COLUMN
  BASE W=8. T=0.375 L=18.5 N=2 D=0.75
     18.       0.      10.       8.       0.25     0.134    8.       0.25
      0.      18.       0.       8.       0.25     0.185    8.       0.25
LEFT RAFTER
  CONNECTION  O=2E I=2E W=8. 6. T=0.5 D=0.75
     20.       0.       0.       6.       0.25     0.156    6.       0.25
      0.       0.      10.       6.       0.25     0.156    6.       0.25
      0.       0.      10.       6.       0.25     0.156    6.       0.25
      0.      20.      10.       6.       0.25     0.156    6.       0.25
  CONNECTION  O=2E I=2E W=6. 8. T=0.5 D=0.75
RIGHT COLUMN
  BASE W=8. T=0.375 L=18.5 N=2 D=0.75
     18.       0.      10.       8.       0.25     0.134    8.       0.25
      0.      18.       0.       8.       0.25     0.156    8.       0.25
WIND LOAD   WL1     23.731  0.4300 -1.2500 -0.7100 -0.6100   24.750 Left
WIND LOAD   WL2     23.731  0.7900 -0.8900 -0.3500 -0.2500   24.750 Left
WIND LOAD   LWL1    23.731 -0.6600 -1.2500 -0.7100 -0.6600   24.750
WIND LOAD   LWL2    23.731 -0.6600 -0.7100 -1.2500 -0.6600   24.750
WIND LOAD   LWL3    23.731 -0.3000 -0.8900 -0.3500 -0.3000   24.750
WIND LOAD   LWL4    23.731 -0.3000 -0.3500 -0.8900 -0.3000   24.750
WIND LOAD   MWL1    16.000  0.5000  0.5000  0.5000 -0.5000    0.000
WIND LOAD   MWL2    16.000 -0.5000 -0.5000 -0.5000  0.5000    0.000
WIND LOAD   WL3     23.731 -0.6100 -0.7100 -1.2500  0.4300   24.750 Right
WIND LOAD   WL4     23.731 -0.2500 -0.3500 -0.8900  0.7900   24.750 Right
WIND LOAD   WL1D    10.572  0.4300 -1.2500 -0.7100 -0.6100   24.750 Left
WIND LOAD   WL2D    10.572  0.7900 -0.8900 -0.3500 -0.2500   24.750 Left
WIND LOAD   LWL1D   10.572 -0.6600 -1.2500 -0.7100 -0.6600   24.750
WIND LOAD   LWL2D   10.572 -0.6600 -0.7100 -1.2500 -0.6600   24.750
WIND LOAD   LWL3D   10.572 -0.3000 -0.8900 -0.3500 -0.3000   24.750
WIND LOAD   LWL4D   10.572 -0.3000 -0.3500 -0.8900 -0.3000   24.750
WIND LOAD   WL3D    10.572 -0.6100 -0.7100 -1.2500  0.4300   24.750 Right
WIND LOAD   WL4D    10.572 -0.2500 -0.3500 -0.8900  0.7900   24.750 Right
LOAD COMBINATIONS
   1)1. DL  1. LL  1. COLL    *DEFL 200. 120. *PDELTA L
   2)1. DL  1. LL  1. COLL    *DEFL 200. 120. *PDELTA R
   3)1.15918 DL  0.91 EQ    *DEFL 200. 120. *PDELTA L
   4)1.15918 DL  0.91 EQ    *DEFL 200. 120. *PDELTA R
   5)1.15918 DL  -0.91 EQ    *DEFL 200. 120. *PDELTA L
   6)1.15918 DL  -0.91 EQ    *DEFL 200. 120. *PDELTA R
   7)1.15918 DL  1.15918 COLL  0.91 EQ    *DEFL 200. 120. *PDELTA L
   8)1.15918 DL  1.15918 COLL  0.91 EQ    *DEFL 200. 120. *PDELTA R
   9)1.15918 DL  1.15918 COLL  -0.91 EQ    *DEFL 200. 120. *PDELTA L
  10)1.15918 DL  1.15918 COLL  -0.91 EQ    *DEFL 200. 120. *PDELTA R
  11)0.44082 DL  0.91 EQ    *DEFL 200. 120. *PDELTA L
  12)0.44082 DL  0.91 EQ    *DEFL 200. 120. *PDELTA R
  13)0.44082 DL  -0.91 EQ    *DEFL 200. 120. *PDELTA L
  14)0.44082 DL  -0.91 EQ    *DEFL 200. 120. *PDELTA R
  15)0.6726 DL  2.5 EQ *TYPE R *APP C *PDELTA L
  16)0.6726 DL  2.5 EQ *TYPE R *APP C *PDELTA R
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17)0.6726 DL  -2.5 EQ *TYPE R *APP C *PDELTA L
18)0.6726 DL  -2.5 EQ *TYPE R *APP C *PDELTA R
19)1.4274 DL  1.4274 COLL  2.5 EQ *TYPE R *APP C *PDELTA L
20)1.4274 DL  1.4274 COLL  2.5 EQ *TYPE R *APP C *PDELTA R
21)1.4274 DL  1.4274 COLL  -2.5 EQ *TYPE R *APP C *PDELTA L
22)1.4274 DL  1.4274 COLL  -2.5 EQ *TYPE R *APP C *PDELTA R
23)0.6726 DL  2.5 EQ *TYPE R *APP B *PDELTA L
24)0.6726 DL  2.5 EQ *TYPE R *APP B *PDELTA R
25)0.6726 DL  -2.5 EQ *TYPE R *APP B *PDELTA L
26)0.6726 DL  -2.5 EQ *TYPE R *APP B *PDELTA R
27)1.4274 DL  1.4274 COLL  2.5 EQ *TYPE R *APP B *PDELTA L
28)1.4274 DL  1.4274 COLL  2.5 EQ *TYPE R *APP B *PDELTA R
29)1.4274 DL  1.4274 COLL  -2.5 EQ *TYPE R *APP B *PDELTA L
30)1.4274 DL  1.4274 COLL  -2.5 EQ *TYPE R *APP B *PDELTA R
31)0.6726 DL  3.5 EQ *TYPE R *APP K *PDELTA L
32)0.6726 DL  3.5 EQ *TYPE R *APP K *PDELTA R
33)0.6726 DL  -3.5 EQ *TYPE R *APP K *PDELTA L
34)0.6726 DL  -3.5 EQ *TYPE R *APP K *PDELTA R
35)1.4274 DL  1.4274 COLL  3.5 EQ *TYPE R *APP K *PDELTA L
36)1.4274 DL  1.4274 COLL  3.5 EQ *TYPE R *APP K *PDELTA R
37)1.4274 DL  1.4274 COLL  -3.5 EQ *TYPE R *APP K *PDELTA L
38)1.4274 DL  1.4274 COLL  -3.5 EQ *TYPE R *APP K *PDELTA R
39)1. DL  0.6 WL1 *PDELTA L
40)1. DL  0.6 WL1 *PDELTA R
41)1. DL  0.6 WL2 *PDELTA L
42)1. DL  0.6 WL2 *PDELTA R
43)1. DL  0.6 LWL1 *PDELTA L
44)1. DL  0.6 LWL1 *PDELTA R
45)1. DL  0.6 LWL2 *PDELTA L
46)1. DL  0.6 LWL2 *PDELTA R
47)1. DL  0.6 LWL3 *PDELTA L
48)1. DL  0.6 LWL3 *PDELTA R
49)1. DL  0.6 LWL4 *PDELTA L
50)1. DL  0.6 LWL4 *PDELTA R
51)1. DL  0.6 WL3 *PDELTA L
52)1. DL  0.6 WL3 *PDELTA R
53)1. DL  0.6 WL4 *PDELTA L
54)1. DL  0.6 WL4 *PDELTA R
55)0.6 DL  0.6 WL1 *PDELTA L
56)0.6 DL  0.6 WL1 *PDELTA R
57)0.6 DL  0.6 WL2 *PDELTA L
58)0.6 DL  0.6 WL2 *PDELTA R
59)0.6 DL  0.6 LWL1 *PDELTA L
60)0.6 DL  0.6 LWL1 *PDELTA R
61)0.6 DL  0.6 LWL2 *PDELTA L
62)0.6 DL  0.6 LWL2 *PDELTA R
63)0.6 DL  0.6 LWL3 *PDELTA L
64)0.6 DL  0.6 LWL3 *PDELTA R
65)0.6 DL  0.6 LWL4 *PDELTA L
66)0.6 DL  0.6 LWL4 *PDELTA R
67)0.6 DL  0.6 WL3 *PDELTA L
68)0.6 DL  0.6 WL3 *PDELTA R
69)0.6 DL  0.6 WL4 *PDELTA L
70)0.6 DL  0.6 WL4 *PDELTA R
71)0.6 MWL1  *TYPE M
72)0.6 MWL2  *TYPE M
73)1. DL  1. COLL  0.6 WL1 *PDELTA L
74)1. DL  1. COLL  0.6 WL1 *PDELTA R
75)1. DL  1. COLL  0.6 WL2 *PDELTA L
76)1. DL  1. COLL  0.6 WL2 *PDELTA R
77)1. DL  1. COLL  0.6 LWL1 *PDELTA L
78)1. DL  1. COLL  0.6 LWL1 *PDELTA R
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  79)1. DL  1. COLL  0.6 LWL2 *PDELTA L
  80)1. DL  1. COLL  0.6 LWL2 *PDELTA R
  81)1. DL  1. COLL  0.6 LWL3 *PDELTA L
  82)1. DL  1. COLL  0.6 LWL3 *PDELTA R
  83)1. DL  1. COLL  0.6 LWL4 *PDELTA L
  84)1. DL  1. COLL  0.6 LWL4 *PDELTA R
  85)1. DL  1. COLL  0.6 WL3 *PDELTA L
  86)1. DL  1. COLL  0.6 WL3 *PDELTA R
  87)1. DL  1. COLL  0.6 WL4 *PDELTA L
  88)1. DL  1. COLL  0.6 WL4 *PDELTA R
  89)1. DL  0.75 LL  1. COLL  0.45 WL1 *PDELTA L
  90)1. DL  0.75 LL  1. COLL  0.45 WL1 *PDELTA R
  91)1. DL  0.75 LL  1. COLL  0.45 WL2 *PDELTA L
  92)1. DL  0.75 LL  1. COLL  0.45 WL2 *PDELTA R
  93)1. DL  0.75 LL  1. COLL  0.45 LWL1 *PDELTA L
  94)1. DL  0.75 LL  1. COLL  0.45 LWL1 *PDELTA R
  95)1. DL  0.75 LL  1. COLL  0.45 LWL2 *PDELTA L
  96)1. DL  0.75 LL  1. COLL  0.45 LWL2 *PDELTA R
  97)1. DL  0.75 LL  1. COLL  0.45 LWL3 *PDELTA L
  98)1. DL  0.75 LL  1. COLL  0.45 LWL3 *PDELTA R
  99)1. DL  0.75 LL  1. COLL  0.45 LWL4 *PDELTA L
 100)1. DL  0.75 LL  1. COLL  0.45 LWL4 *PDELTA R
 101)1. DL  0.75 LL  1. COLL  0.45 WL3 *PDELTA L
 102)1. DL  0.75 LL  1. COLL  0.45 WL3 *PDELTA R
 103)1. DL  0.75 LL  1. COLL  0.45 WL4 *PDELTA L
 104)1. DL  0.75 LL  1. COLL  0.45 WL4 *PDELTA R
 105)1. LL     *DEFL 200. 180. *TYPE D
 106)1. WL1D     *DEFL 200. 180. *TYPE D
 107)1. WL2D     *DEFL 200. 180. *TYPE D
 108)1. LWL1D     *DEFL 200. 180. *TYPE D
 109)1. LWL2D     *DEFL 200. 180. *TYPE D
 110)1. LWL3D     *DEFL 200. 180. *TYPE D
 111)1. LWL4D     *DEFL 200. 180. *TYPE D
 112)1. WL3D     *DEFL 200. 180. *TYPE D
 113)1. WL4D     *DEFL 200. 180. *TYPE D
 114)1.4274 DL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 115)1.4274 DL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 116)0.6726 DL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 117)0.6726 DL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 118)1.4274 DL  1.4274 COLL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 119)1.4274 DL  1.4274 COLL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
LOADS
  LR   COLL    XREF  Y  C     24.750000   -0.131100    0.000000 NA # HOOD
  RC   EQDW    GLOB  M  C     22.000000    3.170000    0.000000    \
      # WALL WEIGHT FOR EQ
  LC   EQDW    GLOB  M  C      0.500000    0.380000    0.000000    \
      # PANEL/GIRT  SELF-WEIGHT FOR E
  LC   EQDW    GLOB  M  C     19.937500    0.380000    0.000000    \
      # PANEL/GIRT  SELF-WEIGHT FOR E
END
```

Building Grid Label Legend

Building : A
Frame Number : 11
No. of Frames : 1
Left Column : Column @ * - A
Right Column : Column @ * - C

*Frames located @ 1

Building :A
Frame Number :11 Location: frame lines 1
No. of Frames: 1

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 (feet)	19.938
Eave height Right (feet)	22.000
Horizontal width from left to right steel line (feet)	49.500
Horizontal distance to ridge from left side (feet)	49.500
Roof Slope Left (rise:12)	0.500
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 side (feet)	13.083
....from Height 0.00 to Height	19.94
Tributary Width right side (feet)	13.083
....from Height 0.00 to Height	22.00
Tributary Width roof (feet)	13.083
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)	1.517
Total Roof Dead Weight (psf)	3.770
Collateral Load to Frame Rafter (psf)	2.000
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 (feet)	19.938
Eave height Right (feet)	22.000
Wind Elevation on left column (feet)	19.938
Wind Elevation on right column (feet)	22.000
Total frame width (feet)	49.500
Total building length (feet)	100.000

Number of primary wind loadings 18

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)	0.430	-1.250(50.0%)	-0.710(50.0%)	-0.610

Wind Load WL2	Wind from left direction			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	0.790	-0.890(50.0%)	-0.350(50.0%)	-0.250

Wind Load LWL1	Longitudinal wind			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.660	-1.250(50.0%)	-0.710(50.0%)	-0.660

Wind Load LWL2	Longitudinal wind			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.660	-0.710(50.0%)	-1.250(50.0%)	-0.660

Wind Load LWL3	Longitudinal wind			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.300	-0.890(50.0%)	-0.350(50.0%)	-0.300

Wind Load LWL4	Longitudinal wind			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.300	-0.350(50.0%)	-0.890(50.0%)	-0.300

Wind Load MWL1	Min. Wind from left dir.			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	0.500	0.500	0.500	-0.500

Wind Load MWL2	Min. Wind from right dir.			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.500	-0.500	-0.500	0.500

Wind Load WL3	Wind from right direction			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.610	-0.710(50.0%)	-1.250(50.0%)	0.430

Wind Load WL4	Wind from right direction			
**********	Left Wall	Left Rafter	Right Rafter	Right Wall
Primary Coeff. (Cp)	-0.250	-0.350(50.0%)	-0.890(50.0%)	0.790

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)	1.1592DL +0.91EQ (SOA-L)	N A P
4)	1.1592DL +0.91EQ (SOA-R)	N A P
5)	1.1592DL -0.91EQ (SOA-L)	N A P
6)	1.1592DL -0.91EQ (SOA-R)	N A P
7)	1.1592DL +1.1592COLL +0.91EQ (SOA-L)	N A P
8)	1.1592DL +1.1592COLL +0.91EQ (SOA-R)	N A P
9)	1.1592DL +1.1592COLL -0.91EQ (SOA-L)	N A P
10)	1.1592DL +1.1592COLL -0.91EQ (SOA-R)	N A P
11)	0.4408DL +0.91EQ (SOA-L)	N A P
12)	0.4408DL +0.91EQ (SOA-R)	N A P
13)	0.4408DL -0.91EQ (SOA-L)	N A P
14)	0.4408DL -0.91EQ (SOA-R)	N A P
15)	0.6726DL +2.5EQ (SOA-L)	N C R P
16)	0.6726DL +2.5EQ (SOA-R)	N C R P
17)	0.6726DL -2.5EQ (SOA-L)	N C R P
18)	0.6726DL -2.5EQ (SOA-R)	N C R P
19)	1.4274DL +1.4274COLL +2.5EQ (SOA-L)	N C R P
20)	1.4274DL +1.4274COLL +2.5EQ (SOA-R)	N C R P
21)	1.4274DL +1.4274COLL -2.5EQ (SOA-L)	N C R P
22)	1.4274DL +1.4274COLL -2.5EQ (SOA-R)	N C R P
23)	0.6726DL +2.5EQ (SOA-L)	N B R P
24)	0.6726DL +2.5EQ (SOA-R)	N B R P
25)	0.6726DL -2.5EQ (SOA-L)	N B R P
26)	0.6726DL -2.5EQ (SOA-R)	N B R P
27)	1.4274DL +1.4274COLL +2.5EQ (SOA-L)	N B R P
28)	1.4274DL +1.4274COLL +2.5EQ (SOA-R)	N B R P
29)	1.4274DL +1.4274COLL -2.5EQ (SOA-L)	N B R P
30)	1.4274DL +1.4274COLL -2.5EQ (SOA-R)	N B R P
31)	0.6726DL +3.5EQ (SOA-L)	N K R P
32)	0.6726DL +3.5EQ (SOA-R)	N K R P
33)	0.6726DL -3.5EQ (SOA-L)	N K R P
34)	0.6726DL -3.5EQ (SOA-R)	N K R P
35)	1.4274DL +1.4274COLL +3.5EQ (SOA-L)	N K R P
36)	1.4274DL +1.4274COLL +3.5EQ (SOA-R)	N K R P
37)	1.4274DL +1.4274COLL -3.5EQ (SOA-L)	N K R P
38)	1.4274DL +1.4274COLL -3.5EQ (SOA-R)	N K R P
39)	DL +0.6WL1 (SOA-L)	N A P
40)	DL +0.6WL1 (SOA-R)	N A P
41)	DL +0.6WL2 (SOA-L)	N A P
42)	DL +0.6WL2 (SOA-R)	N A P
43)	DL +0.6LWL1 (SOA-L)	N A P
44)	DL +0.6LWL1 (SOA-R)	N A P
45)	DL +0.6LWL2 (SOA-L)	N A P
46)	DL +0.6LWL2 (SOA-R)	N A P
47)	DL +0.6LWL3 (SOA-L)	N A P
48)	DL +0.6LWL3 (SOA-R)	N A P
49)	DL +0.6LWL4 (SOA-L)	N A P
50)	DL +0.6LWL4 (SOA-R)	N A P

Load Combination :

51)	DL +0.6WL3 (SOA-L)	N A P
52)	DL +0.6WL3 (SOA-R)	N A P
53)	DL +0.6WL4 (SOA-L)	N A P
54)	DL +0.6WL4 (SOA-R)	N A P
55)	0.6DL +0.6WL1 (SOA-L)	N A P
56)	0.6DL +0.6WL1 (SOA-R)	N A P
57)	0.6DL +0.6WL2 (SOA-L)	N A P
58)	0.6DL +0.6WL2 (SOA-R)	N A P
59)	0.6DL +0.6LWL1 (SOA-L)	N A P
60)	0.6DL +0.6LWL1 (SOA-R)	N A P
61)	0.6DL +0.6LWL2 (SOA-L)	N A P
62)	0.6DL +0.6LWL2 (SOA-R)	N A P
63)	0.6DL +0.6LWL3 (SOA-L)	N A P
64)	0.6DL +0.6LWL3 (SOA-R)	N A P
65)	0.6DL +0.6LWL4 (SOA-L)	N A P
66)	0.6DL +0.6LWL4 (SOA-R)	N A P
67)	0.6DL +0.6WL3 (SOA-L)	N A P
68)	0.6DL +0.6WL3 (SOA-R)	N A P
69)	0.6DL +0.6WL4 (SOA-L)	N A P
70)	0.6DL +0.6WL4 (SOA-R)	N A P
71)	0.6MWL1	N M
72)	0.6MWL2	N M
73)	DL +COLL +0.6WL1 (SOA-L)	N A P
74)	DL +COLL +0.6WL1 (SOA-R)	N A P
75)	DL +COLL +0.6WL2 (SOA-L)	N A P
76)	DL +COLL +0.6WL2 (SOA-R)	N A P
77)	DL +COLL +0.6LWL1 (SOA-L)	N A P
78)	DL +COLL +0.6LWL1 (SOA-R)	N A P
79)	DL +COLL +0.6LWL2 (SOA-L)	N A P
80)	DL +COLL +0.6LWL2 (SOA-R)	N A P
81)	DL +COLL +0.6LWL3 (SOA-L)	N A P
82)	DL +COLL +0.6LWL3 (SOA-R)	N A P
83)	DL +COLL +0.6LWL4 (SOA-L)	N A P
84)	DL +COLL +0.6LWL4 (SOA-R)	N A P
85)	DL +COLL +0.6WL3 (SOA-L)	N A P
86)	DL +COLL +0.6WL3 (SOA-R)	N A P
87)	DL +COLL +0.6WL4 (SOA-L)	N A P
88)	DL +COLL +0.6WL4 (SOA-R)	N A P
89)	DL +0.75LL +COLL +0.45WL1 (SOA-L)	N A P
90)	DL +0.75LL +COLL +0.45WL1 (SOA-R)	N A P
91)	DL +0.75LL +COLL +0.45WL2 (SOA-L)	N A P
92)	DL +0.75LL +COLL +0.45WL2 (SOA-R)	N A P
93)	DL +0.75LL +COLL +0.45LWL1 (SOA-L)	N A P
94)	DL +0.75LL +COLL +0.45LWL1 (SOA-R)	N A P
95)	DL +0.75LL +COLL +0.45LWL2 (SOA-L)	N A P
96)	DL +0.75LL +COLL +0.45LWL2 (SOA-R)	N A P
97)	DL +0.75LL +COLL +0.45LWL3 (SOA-L)	N A P
98)	DL +0.75LL +COLL +0.45LWL3 (SOA-R)	N A P
99)	DL +0.75LL +COLL +0.45LWL4 (SOA-L)	N A P
100)	DL +0.75LL +COLL +0.45LWL4 (SOA-R)	N A P

Load Combination :

101)	DL +0.75LL +COLL +0.45WL3 (SOA-L)	N	A	P
102)	DL +0.75LL +COLL +0.45WL3 (SOA-R)	N	A	P
103)	DL +0.75LL +COLL +0.45WL4 (SOA-L)	N	A	P
104)	DL +0.75LL +COLL +0.45WL4 (SOA-R)	N	A	P
105)	LL	D		
106)	WL1D	D		
107)	WL2D	D		
108)	LWL1D	D		
109)	LWL2D	D		
110)	LWL3D	D		
111)	LWL4D	D		
112)	WL3D	D		
113)	WL4D	D		
114)	1.4274DL +EQ	D	E	
115)	1.4274DL -EQ	D	E	
116)	0.6726DL +EQ	D	E	
117)	0.6726DL -EQ	D	E	
118)	1.4274DL +1.4274COLL +EQ	D	E	
119)	1.4274DL +1.4274COLL -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]
WL1 = Lateral Primary Wind Load
WL2 = Lateral Primary Wind Load
LWL1 = Longitudinal Primary Wind Load
LWL2 = Longitudinal Primary Wind Load
LWL3 = Longitudinal Primary Wind Load
LWL4 = Longitudinal Primary Wind Load
WL3 = Lateral Primary Wind Load
WL4 = Lateral Primary Wind Load
MWL1 = Minimum Wind Load
MWL2 = Minimum Wind Load
WL1D = Lateral Primary Wind Load at Service Level
WL2D = Lateral Primary Wind Load at Service Level
LWL1D = Longitudinal Primary Wind Load at Service Level
LWL2D = Longitudinal Primary Wind Load at Service Level
LWL3D = Longitudinal Primary Wind Load at Service Level
LWL4D = Longitudinal Primary Wind Load at Service Level
WL3D = Lateral Primary Wind Load at Service Level
WL4D = Lateral Primary Wind Load at Service Level

Combination Descriptions :

N= No 1/3 Increase in Allowable for Combination
B= Base Only Combination
K= Knee Connection Only Combination
A= Allowable Strength 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
M= Minimum Wind Load Combination. Checked for Allowable Strength not for Deflection

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* USER INPUT LOADS

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
1	LR	COLL	XREF	Y	C	24.750	-0.1311	0.0000	0.000
2	RC	EQDW	GLOB	M	C	22.000	3.1700	0.0000	0.000
3	LC	EQDW	GLOB	M	C	0.500	0.3800	0.0000	0.000
4	LC	EQDW	GLOB	M	C	19.938	0.3800	0.0000	0.000

* PARAPET LOADS GENERATED

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DIST.	INTENSITY	ECCEN.	DESCRIPTION
5	RC	WL1	GLOB	X	C	21.31	0.840	0.00	PARAPET LOAD
6	RC	WL2	GLOB	X	C	21.31	0.840	0.00	PARAPET LOAD
7	RC	LWL1	GLOB	X	C	21.31	0.588	0.00	PARAPET LOAD
8	RC	LWL2	GLOB	X	C	21.31	0.588	0.00	PARAPET LOAD
9	RC	LWL3	GLOB	X	C	21.31	0.588	0.00	PARAPET LOAD
10	RC	LWL4	GLOB	X	C	21.31	0.588	0.00	PARAPET LOAD
11	RC	MWL1	GLOB	X	C	21.31	0.272	0.00	PARAPET LOAD
12	RC	MWL2	GLOB	X	C	21.31	-0.272	0.00	PARAPET LOAD
13	RC	WL3	GLOB	X	C	21.31	-1.260	0.00	PARAPET LOAD
14	RC	WL4	GLOB	X	C	21.31	-1.260	0.00	PARAPET LOAD
15	RC	WL1D	GLOB	X	C	21.31	0.360	0.00	PARAPET LOAD
16	RC	WL2D	GLOB	X	C	21.31	0.360	0.00	PARAPET LOAD
17	RC	LWL1D	GLOB	X	C	21.31	0.252	0.00	PARAPET LOAD
18	RC	LWL2D	GLOB	X	C	21.31	0.252	0.00	PARAPET LOAD
19	RC	LWL3D	GLOB	X	C	21.31	0.252	0.00	PARAPET LOAD
20	RC	LWL4D	GLOB	X	C	21.31	0.252	0.00	PARAPET LOAD
21	RC	WL3D	GLOB	X	C	21.31	-0.540	0.00	PARAPET LOAD
22	RC	WL4D	GLOB	X	C	21.31	-0.540	0.00	PARAPET LOAD
23	RC	WL1	GLOB	X	C	21.31	0.082	0.00	PARAPET LOAD
24	RC	WL2	GLOB	X	C	21.31	0.082	0.00	PARAPET LOAD
25	RC	LWL1	GLOB	X	C	21.31	0.058	0.00	PARAPET LOAD
26	RC	LWL2	GLOB	X	C	21.31	0.058	0.00	PARAPET LOAD
27	RC	LWL3	GLOB	X	C	21.31	0.058	0.00	PARAPET LOAD
28	RC	LWL4	GLOB	X	C	21.31	0.058	0.00	PARAPET LOAD
29	RC	MWL1	GLOB	X	C	21.31	0.027	0.00	PARAPET LOAD
30	RC	MWL2	GLOB	X	C	21.31	-0.027	0.00	PARAPET LOAD
31	RC	WL3	GLOB	X	C	21.31	-0.123	0.00	PARAPET LOAD
32	RC	WL4	GLOB	X	C	21.31	-0.123	0.00	PARAPET LOAD
33	RC	WL1D	GLOB	X	C	21.31	0.035	0.00	PARAPET LOAD
34	RC	WL2D	GLOB	X	C	21.31	0.035	0.00	PARAPET LOAD
35	RC	LWL1D	GLOB	X	C	21.31	0.025	0.00	PARAPET LOAD
36	RC	LWL2D	GLOB	X	C	21.31	0.025	0.00	PARAPET LOAD
37	RC	LWL3D	GLOB	X	C	21.31	0.025	0.00	PARAPET LOAD
38	RC	LWL4D	GLOB	X	C	21.31	0.025	0.00	PARAPET LOAD
39	RC	WL3D	GLOB	X	C	21.31	-0.053	0.00	PARAPET LOAD
40	RC	WL4D	GLOB	X	C	21.31	-0.053	0.00	PARAPET LOAD
41	RC	EQDW	GLOB	M	C	21.31	0.749	0.00	PARAPET LOAD
42	RC	EQDW	GLOB	M	C	21.31	0.073	0.00	PARAPET LOAD

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* GENERAL LOAD CARDS GENERATED -

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
1	LR	COLL	XREF	Y	C	24.750	-0.1311	N/A	0.000
2	RC	EQDW	GLOB	M	C	22.000	3.1700	N/A	0.000
3	LC	EQDW	GLOB	M	C	0.500	0.3800	N/A	0.000
4	LC	EQDW	GLOB	M	C	19.938	0.3800	N/A	0.000
5	RC	WL1	GLOB	X	C	21.312	0.8401	N/A	0.000
6	RC	WL2	GLOB	X	C	21.312	0.8401	N/A	0.000
7	RC	LWL1	GLOB	X	C	21.312	0.5881	N/A	0.000
8	RC	LWL2	GLOB	X	C	21.312	0.5881	N/A	0.000
9	RC	LWL3	GLOB	X	C	21.312	0.5881	N/A	0.000
10	RC	LWL4	GLOB	X	C	21.312	0.5881	N/A	0.000
11	RC	MWL1	GLOB	X	C	21.312	0.2724	N/A	0.000
12	RC	MWL2	GLOB	X	C	21.312	-0.2724	N/A	0.000
13	RC	WL3	GLOB	X	C	21.312	-1.2602	N/A	0.000
14	RC	WL4	GLOB	X	C	21.312	-1.2602	N/A	0.000
15	RC	WL1D	GLOB	X	C	21.312	0.3599	N/A	0.000
16	RC	WL2D	GLOB	X	C	21.312	0.3599	N/A	0.000
17	RC	LWL1D	GLOB	X	C	21.312	0.2519	N/A	0.000
18	RC	LWL2D	GLOB	X	C	21.312	0.2519	N/A	0.000
19	RC	LWL3D	GLOB	X	C	21.312	0.2519	N/A	0.000
20	RC	LWL4D	GLOB	X	C	21.312	0.2519	N/A	0.000
21	RC	WL3D	GLOB	X	C	21.312	-0.5399	N/A	0.000
22	RC	WL4D	GLOB	X	C	21.312	-0.5399	N/A	0.000
23	RC	WL1	GLOB	X	C	21.312	0.0823	N/A	0.000
24	RC	WL2	GLOB	X	C	21.312	0.0823	N/A	0.000
25	RC	LWL1	GLOB	X	C	21.312	0.0576	N/A	0.000
26	RC	LWL2	GLOB	X	C	21.312	0.0576	N/A	0.000
27	RC	LWL3	GLOB	X	C	21.312	0.0576	N/A	0.000
28	RC	LWL4	GLOB	X	C	21.312	0.0576	N/A	0.000
29	RC	MWL1	GLOB	X	C	21.312	0.0267	N/A	0.000
30	RC	MWL2	GLOB	X	C	21.312	-0.0267	N/A	0.000
31	RC	WL3	GLOB	X	C	21.312	-0.1234	N/A	0.000
32	RC	WL4	GLOB	X	C	21.312	-0.1234	N/A	0.000
33	RC	WL1D	GLOB	X	C	21.312	0.0352	N/A	0.000
34	RC	WL2D	GLOB	X	C	21.312	0.0352	N/A	0.000
35	RC	LWL1D	GLOB	X	C	21.312	0.0247	N/A	0.000
36	RC	LWL2D	GLOB	X	C	21.312	0.0247	N/A	0.000
37	RC	LWL3D	GLOB	X	C	21.312	0.0247	N/A	0.000
38	RC	LWL4D	GLOB	X	C	21.312	0.0247	N/A	0.000
39	RC	WL3D	GLOB	X	C	21.312	-0.0529	N/A	0.000
40	RC	WL4D	GLOB	X	C	21.312	-0.0529	N/A	0.000
41	RC	EQDW	GLOB	M	C	21.312	0.7490	N/A	0.000
42	RC	EQDW	GLOB	M	C	21.312	0.0733	N/A	0.000
43	LR	DL	XREF	Y	U	0.000	-0.0295	N/A	0.000
44	LC	SW	GLOB	Y	U	0.000	-0.0233	N/A	0.000
45	LR	SW	GLOB	Y	U	0.000	-0.0208	N/A	0.000
46	RC	SW	GLOB	Y	U	0.000	-0.0225	N/A	0.000
47	LR	LL	XREF	Y	U	0.000	-0.1570	N/A	0.000
48	LR	COLL	XREF	Y	U	0.000	-0.0262	N/A	0.000
49	LR	SNOW	XREF	Y	U	0.000	0.0000	N/A	0.000
50	LC	WL1	MEMB	Y	U	0.000	-0.1335	N/A	0.000

51	RC	WL1	MEMB	Y	U	0.000	0.1894	N/A	0.000
52	LR	WL1	MEMB	Y	U	0.000	0.3881	N/A	0.000
53	LR	WL1	MEMB	Y	U	24.771	-0.1677	N/A	24.771
54	LC	WL2	MEMB	Y	U	0.000	-0.2453	N/A	0.000
55	RC	WL2	MEMB	Y	U	0.000	0.0776	N/A	0.000
56	LR	WL2	MEMB	Y	U	0.000	0.2763	N/A	0.000
57	LR	WL2	MEMB	Y	U	24.771	-0.1677	N/A	24.771
58	LC	LWL1	MEMB	Y	U	0.000	0.2049	N/A	0.000
59	RC	LWL1	MEMB	Y	U	0.000	0.2049	N/A	0.000
60	LR	LWL1	MEMB	Y	U	0.000	0.3881	N/A	0.000
61	LR	LWL1	MEMB	Y	U	24.771	-0.1677	N/A	24.771
62	LC	LWL2	MEMB	Y	U	0.000	0.2049	N/A	0.000
63	RC	LWL2	MEMB	Y	U	0.000	0.2049	N/A	0.000
64	LR	LWL2	MEMB	Y	U	0.000	0.2204	N/A	0.000
65	LR	LWL2	MEMB	Y	U	24.771	0.1677	N/A	24.771
66	LC	LWL3	MEMB	Y	U	0.000	0.0931	N/A	0.000
67	RC	LWL3	MEMB	Y	U	0.000	0.0931	N/A	0.000
68	LR	LWL3	MEMB	Y	U	0.000	0.2763	N/A	0.000
69	LR	LWL3	MEMB	Y	U	24.771	-0.1677	N/A	24.771
70	LC	LWL4	MEMB	Y	U	0.000	0.0931	N/A	0.000
71	RC	LWL4	MEMB	Y	U	0.000	0.0931	N/A	0.000
72	LR	LWL4	MEMB	Y	U	0.000	0.1087	N/A	0.000
73	LR	LWL4	MEMB	Y	U	24.771	0.1677	N/A	24.771
74	LC	MWL1	MEMB	Y	U	0.000	-0.1047	N/A	0.000
75	RC	MWL1	MEMB	Y	U	0.000	0.1047	N/A	0.000
76	LR	MWL1	GLOB	X	U	0.000	0.0044	N/A	0.000
77	LC	MWL2	MEMB	Y	U	0.000	0.1047	N/A	0.000
78	RC	MWL2	MEMB	Y	U	0.000	-0.1047	N/A	0.000
79	LR	MWL2	GLOB	X	U	0.000	-0.0044	N/A	0.000
80	LC	WL3	MEMB	Y	U	0.000	0.1894	N/A	0.000
81	RC	WL3	MEMB	Y	U	0.000	-0.1335	N/A	0.000
82	LR	WL3	MEMB	Y	U	0.000	0.2204	N/A	0.000
83	LR	WL3	MEMB	Y	U	24.771	0.1677	N/A	24.771
84	LC	WL4	MEMB	Y	U	0.000	0.0776	N/A	0.000
85	RC	WL4	MEMB	Y	U	0.000	-0.2453	N/A	0.000
86	LR	WL4	MEMB	Y	U	0.000	0.1087	N/A	0.000
87	LR	WL4	MEMB	Y	U	24.771	0.1677	N/A	24.771
88	LC	WL1D	MEMB	Y	U	0.000	-0.0595	N/A	0.000
89	RC	WL1D	MEMB	Y	U	0.000	0.0844	N/A	0.000
90	LR	WL1D	MEMB	Y	U	0.000	0.1729	N/A	0.000
91	LR	WL1D	MEMB	Y	U	24.771	-0.0747	N/A	24.771
92	LC	WL2D	MEMB	Y	U	0.000	-0.1093	N/A	0.000
93	RC	WL2D	MEMB	Y	U	0.000	0.0346	N/A	0.000
94	LR	WL2D	MEMB	Y	U	0.000	0.1231	N/A	0.000
95	LR	WL2D	MEMB	Y	U	24.771	-0.0747	N/A	24.771
96	LC	LWL1D	MEMB	Y	U	0.000	0.0913	N/A	0.000
97	RC	LWL1D	MEMB	Y	U	0.000	0.0913	N/A	0.000
98	LR	LWL1D	MEMB	Y	U	0.000	0.1729	N/A	0.000
99	LR	LWL1D	MEMB	Y	U	24.771	-0.0747	N/A	24.771
100	LC	LWL2D	MEMB	Y	U	0.000	0.0913	N/A	0.000

101	RC	LWL2D	MEMB	Y	U	0.000	0.0913	N/A	0.000
102	LR	LWL2D	MEMB	Y	U	0.000	0.0982	N/A	0.000
103	LR	LWL2D	MEMB	Y	U	24.771	0.0747	N/A	24.771
104	LC	LWL3D	MEMB	Y	U	0.000	0.0415	N/A	0.000
105	RC	LWL3D	MEMB	Y	U	0.000	0.0415	N/A	0.000
106	LR	LWL3D	MEMB	Y	U	0.000	0.1231	N/A	0.000
107	LR	LWL3D	MEMB	Y	U	24.771	-0.0747	N/A	24.771
108	LC	LWL4D	MEMB	Y	U	0.000	0.0415	N/A	0.000
109	RC	LWL4D	MEMB	Y	U	0.000	0.0415	N/A	0.000
110	LR	LWL4D	MEMB	Y	U	0.000	0.0484	N/A	0.000
111	LR	LWL4D	MEMB	Y	U	24.771	0.0747	N/A	24.771
112	LC	WL3D	MEMB	Y	U	0.000	0.0844	N/A	0.000
113	RC	WL3D	MEMB	Y	U	0.000	-0.0595	N/A	0.000
114	LR	WL3D	MEMB	Y	U	0.000	0.0982	N/A	0.000
115	LR	WL3D	MEMB	Y	U	24.771	0.0747	N/A	24.771
116	LC	WL4D	MEMB	Y	U	0.000	0.0346	N/A	0.000
117	RC	WL4D	MEMB	Y	U	0.000	-0.1093	N/A	0.000
118	LR	WL4D	MEMB	Y	U	0.000	0.0484	N/A	0.000
119	LR	WL4D	MEMB	Y	U	24.771	0.0747	N/A	24.771

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)	189.5000
Response Acceleration Coeff., for 1 sec. Periods [S1] (%g)	62.3000
Long-period Transition Period Time [TL] (seconds)	16.0000
Seismic Performance Category	D
Soil Profile Type	E
Seismic Site Coefficient [Fa]	0.9000
Seismic Site Coefficient [Fv]	2.4000
Maximum Spectral Response Accel., for Short Periods [Sms] (g)	1.7055
Maximum Spectral Response Accel., for 1 sec. Periods [Sm1] (g)	1.4952
Design Spectral Response Accel., for Short Periods [Sds] (g)	1.1370
Design Spectral Response Accel., for 1 sec. Periods [Sd1] (g)	0.9968
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)	20.9688
Seismic Fundamental Period [T] Used (seconds)	0.3195
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)	6.6000
Seismic Deflection Amplification Factor [Cd]	3.0000
Seismic Response Coefficient [Cs] Used	0.2571
Seismic Story Drift [Cd*Drift/Importance Factor] (in)	2.923
Theta [Px*Ie*Delta/Vx/hx/Cd]	0.003
Theta Max [.5/BETA/Cd] where BETA=1.0	0.167

Roof Dead Load	=	3.650
Wall Weight	=	0.000
Collateral Load	=	1.426
Snow Load	=	0.000
Rafter Crane Weight	=	0.000
Total Roof Weight	=	5.076 kips

User Mass Load (1)	=	3.992
User Mass Load (2)	=	0.380
User Mass Load (3)	=	0.380
Total User Mass	=	4.752 kips

```
 Total Roof Weight   =    5.076
 Total User Mass     =    4.752
 Mezzanine Weight    =    0.000
 Col. Crane Weight   =    0.000
-------------------------------------
 TOTAL Bldg Weight   =    9.829 kips
       X                  X
 Seismic Coeff.      =   0.2571
-------------------------------------
 BASE SHEAR          =   2.5274 kips

 Seismic Load for Roof at col # 1  =   0.6375 kips
 Seismic Load for Roof at col # 2  =   0.6458 kips
-------------------------------------------------
 SEISMIC LOAD for Roof in TOTAL    =   1.2833 kips

 Seismic Ld for Mass # 1 @ col # 1 =   0.0000 kips
 Seismic Ld for Mass # 1 @ col # 2 =   1.1430 kips
-------------------------------------------------
 SEISMIC LOAD for Mass  in TOTAL   =   1.1430 kips

 Seismic Ld for Mass # 2 @ col # 1 =   0.0025 kips
 Seismic Ld for Mass # 2 @ col # 2 =   0.0000 kips
-------------------------------------------------
 SEISMIC LOAD for Mass  in TOTAL   =   0.0025 kips

 Seismic Ld for Mass # 3 @ col # 1 =   0.0986 kips
 Seismic Ld for Mass # 3 @ col # 2 =   0.0000 kips
-------------------------------------------------
 SEISMIC LOAD for Mass  in TOTAL   =   0.0986 kips
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* SEISMIC GENERAL LOAD CARDS GENERATED

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
120	LC	EQ	YREF	X	C	18.455	0.6375	N/A	0.000
121	LC	EQ	YREF	X	C	0.500	0.0025	N/A	0.000
122	LC	EQ	YREF	X	C	19.938	0.0986	N/A	0.000
123	RC	EQ	YREF	X	C	20.396	0.6458	N/A	0.000
124	RC	EQ	YREF	X	C	22.000	1.1430	N/A	0.000

Left Column Analysis Length = 18.46 ft Kx = 1.00 Weight = 429. lbs
Effective Ix = 418.9 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	18.000	18.000	8.00x 0.2500	0.1340	8.00x 0.2500	0.00	55.0
2	7.63	18.000	18.000	8.00x 0.2500	0.1850	8.00x 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
112	5.4	27.6	2.4	32.9	21.3	36.2	4.4	0.22	0.37	0.23	0.37	55
208	5.5	43.3	1.8	32.9	24.1	37.1	8.3	0.06	0.48	0.32	0.48	55

Left Rafter Analysis Length = 46.62 ft Kx = 1.00 Weight = 971. lbs
Effective Ix = 411.6 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	15.15	20.000	20.000	6.00x 0.2500	0.1560	6.00x 0.2500	0.00	55.0
4	10.00	20.000	20.000	6.00x 0.2500	0.1560	6.00x 0.2500	0.00	55.0
5	10.00	20.000	20.000	6.00x 0.2500	0.1560	6.00x 0.2500	0.00	55.0
6	10.00	20.000	20.000	6.00x 0.2500	0.1560	6.00x 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
314	0.6	-24.7	0.1	32.9	37.7	15.2	4.8	0.00	0.20	0.49	0.49	67
401	0.6	-24.6	0.1	32.9	37.7	15.2	4.8	0.01	0.20	0.49	0.49	67
503	1.8	-19.2	0.2	32.9	37.7	14.8	4.8	0.01	0.16	0.39	0.39	55
609	0.6	50.4	5.4	32.9	28.3	33.2	4.8	0.36	0.53	0.45	0.53	67

Right Column Analysis Length = 20.40 ft Kx = 1.00 Weight = 459. lbs
Effective Ix = 407.6 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	10.00	18.000	18.000	8.00x 0.2500	0.1340	8.00x 0.2500	0.00	55.0
8	9.51	18.000	18.000	8.00x 0.2500	0.1560	8.00x 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
707	4.1	28.4	2.1	32.9	16.8	36.2	4.4	0.19	0.48	0.23	0.48	69
807	5.9	51.9	1.9	32.9	19.8	36.6	5.9	0.11	0.72	0.40	0.72	67

TOTAL MEMBER WEIGHT = 1859. lbs

LEFT EXTERIOR COLUMN 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, 11.5000
Plate Size : 8.0000x 18.5000x 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	5.224	38.436	55	0.14
Rod Shear	3.293	0.000	23.061	57	0.14

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	8.000	29.698	1.630	55	0.05
Outer Flg	0.25000	8.000	29.698	1.630	55	0.05
Web Plate	0.18750	18.000	50.116	3.724	55	0.07

RIGHT EXTERIOR COLUMN 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, 11.5000
Plate Size : 8.0000x 18.5000x 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	5.616	38.436	67	0.15
Rod Shear	3.572	0.000	23.061	69	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	8.000	29.698	1.752	67	0.06
Outer Flg	0.25000	8.000	29.698	1.752	67	0.06
Web Plate	0.18750	18.000	50.116	4.039	67	0.08

Vertical Knee Connection @ Left 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 0.5000 in.	Plate:	6.00 x 0.5000 in.
Fy(Min)	50.0 ksi	Fy(Min)	50.0 ksi
Fu	65.0 ksi	Fu	65.0 ksi
Flanges:		Flanges:	
O.S. -	8.00 x 0.2500 in.	O.S. -	6.00 x 0.2500 in.
I.S. -	7.68 x 0.2500 in.	I.S. -	6.00 x 0.2500 in.
Web Depth	- 20.017 in.	Web Depth	- 20.017 in.
Web Thickness	0.185 in.	Web Thickness	0.156 in.
Gage	- 3.000 in.	Gage	- 3.000 in.
Center of Bolt to Flange:		Center of Bolt to Flange:	
Pf top (out)	- 1.833 in.	Pf top (out)	- 1.792 in.
BFCD top (out)	- 1.750 in.	BFCD top (out)	- 1.750 in.
Rise top (out)	- 0.059 in.	Rise top (out)	- 0.059 in.
XTO top (out)	- 1.812 in.	XTO top (out)	- 1.812 in.
Pf top (ins)	- 1.916 in.	Pf top (ins)	- 1.958 in.
BFCD top (ins)	- 1.750 in.	BFCD top (ins)	- 1.750 in.
Rise top (ins)	- 0.059 in.	Rise top (ins)	- 0.059 in.
XTI top (ins)	- 1.937 in.	XTI top (ins)	- 1.937 in.
Pf bot (out)	- 1.750 in.	Pf bot (out)	- 1.771 in.
BFCD bot (out)	- 1.750 in.	BFCD bot (out)	- 1.750 in.
Rise bot (out)	- 0.000 in.	Rise bot (out)	- 0.059 in.
XBO bot (out)	- 1.750 in.	XBO bot (out)	- 1.750 in.
Pf bot (ins)	- 2.000 in.	Pf bot (ins)	- 1.979 in.
BFCD bot (ins)	- 1.750 in.	BFCD bot (ins)	- 1.750 in.
Rise bot (ins)	- 0.000 in.	Rise bot (ins)	- 0.059 in.
XBI bot (ins)	- 2.000 in.	XBI bot (ins)	- 2.000 in.
Bolt Spacing	- 3.000 in.	Bolt Spacing	- 3.000 in.
Controlling Mode : Thick Plate		Controlling Mode : Thick Plate	
Angle top - 87.6 degrees		Angle top - 92.4 degrees	
Angle bot - 90.0 degrees		Angle bot - 87.6 degrees	

Controlling Load Combinations:	Left Side Conn Moments (k-ft)	Axial (kips)	Shear (kips)	Right Side Conn Moments (k-ft)	Axial (kips)	Shear (kips)
37) 1.4274DL +1.4274COLL -3.5	-102.53	-2.91	6.45	-102.53	-2.91	6.45
32) 0.6726DL +3.5EQ (SOA-R)	83.93	2.10	-3.09	83.93	2.10	-3.09

Connection Design Summary:
Bolt Unity Check (O.S.) = 0.7644 Plate Unity Check (O.S.) = 0.7644
Bolt Unity Check (I.S.) = 0.6538 Plate Unity Check (I.S.) = 0.6538

Vertical Knee Connection @ Left Rafter Depth 5

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 0.5000 in.	Plate:	8.00 x 0.5000 in.
Fy(Min)	50.0 ksi	Fy(Min)	50.0 ksi
Fu	65.0 ksi	Fu	65.0 ksi
Flanges:		Flanges:	
O.S. -	6.00 x 0.2500 in.	O.S. -	8.00 x 0.2500 in.
I.S. -	6.00 x 0.2500 in.	I.S. -	7.66 x 0.2500 in.
Web Depth	- 20.017 in.	Web Depth	- 20.017 in.
Web Thickness	0.156 in.	Web Thickness	0.156 in.
Gage	- 3.000 in.	Gage	- 3.000 in.
Center of Bolt to Flange:		Center of Bolt to Flange:	
Pf top (out)	- 1.833 in.	Pf top (out)	- 1.792 in.
BFCD top (out)	- 1.750 in.	BFCD top (out)	- 1.750 in.
Rise top (out)	- 0.059 in.	Rise top (out)	- 0.059 in.
XTO top (out)	- 1.812 in.	XTO top (out)	- 1.812 in.
Pf top (ins)	- 1.916 in.	Pf top (ins)	- 1.958 in.
BFCD top (ins)	- 1.750 in.	BFCD top (ins)	- 1.750 in.
Rise top (ins)	- 0.059 in.	Rise top (ins)	- 0.059 in.
XTI top (ins)	- 1.937 in.	XTI top (ins)	- 1.937 in.
Pf bot (out)	- 1.792 in.	Pf bot (out)	- 1.813 in.
BFCD bot (out)	- 1.750 in.	BFCD bot (out)	- 1.750 in.
Rise bot (out)	- 0.059 in.	Rise bot (out)	- 0.000 in.
XBO bot (out)	- 1.812 in.	XBO bot (out)	- 1.812 in.
Pf bot (ins)	- 1.958 in.	Pf bot (ins)	- 1.937 in.
BFCD bot (ins)	- 1.750 in.	BFCD bot (ins)	- 1.750 in.
Rise bot (ins)	- 0.059 in.	Rise bot (ins)	- 0.000 in.
XBI bot (ins)	- 1.937 in.	XBI bot (ins)	- 1.937 in.
Bolt Spacing	- 3.000 in.	Bolt Spacing	- 3.000 in.
Controlling Mode : Thin Plate		Controlling Mode : Thin Plate	
Angle top - 87.6 degrees		Angle top - 92.4 degrees	
Angle bot - 92.4 degrees		Angle bot - 90.0 degrees	

	Left Side Conn			Right Side Conn		
Controlling Load Combinations:	Moments (k-ft)	Axial (kips)	Shear (kips)	Moments (k-ft)	Axial (kips)	Shear (kips)
36) 1.4274DL +1.4274COLL +3.5	-97.34	1.56	-6.45	-97.34	1.56	-6.45
67) 0.6DL +0.6WL3 (SOA-L)	50.39	0.83	5.42	50.39	0.83	5.42

Connection Design Summary:
Bolt Unity Check (O.S.) = 0.7564 Plate Unity Check (O.S.) = 0.7564
Bolt Unity Check (I.S.) = 0.5856 Plate Unity Check (I.S.) = 0.5856

Left Knee Design
==========

Knee Web Thickness	:	Use 0.1850 in. Thick Web
Bearing Stiffener Type	:	Horizontal
Bearing Stiffener at Knee	:	3.7500 X 0.2500 in.
Column Cap Plate	:	8.0000 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:	0.1875 in.	x	18.016 in.	GMAW on NEAR Side	(STD. WELD)
Column Cap Plate:	0.1875 in.	x	3.000 in.	GMAW on FAR Side	(STD. WELD)
Horizontal Stiffener:	0.1875 in.	x	18.000 in.	GMAW on NEAR Side	(STD. WELD)
Horizontal Stiffener:	0.1875 in.	x	3.000 in.	GMAW on FAR Side	(STD. WELD)
Column Outer Flange:	0.1875 in.	x	19.267 in.	SAW on NEAR Side	(STD. WELD)
Column Outer Flange:	0.1875 in.	x	19.267 in.	GMAW on FAR Side	(STD. WELD)
Column Connection Pl.:	0.1875 in.	x	20.017 in.	GMAW on BOTH Sides	(STD. WELD)

Knee Stiffener to Connection Plate Weld
==========

0.1875 in. x 3.750 in. GMAW Fillet Weld on BOTH Sides of Stiff. (STD. WELD)

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

Right Knee Design
==========

Knee Web Thickness	:	Use 0.1560 in. Thick Web
Bearing Stiffener Type	:	Horizontal
Bearing Stiffener at Knee	:	3.7500 X 0.2500 in.
Column Cap Plate	:	8.0000 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:	0.1875 in.	x	18.016 in.	GMAW on NEAR Side	(STD. WELD)
Column Cap Plate:	0.1875 in.	x	3.000 in.	GMAW on FAR Side	(STD. WELD)
Horizontal Stiffener:	0.1875 in.	x	18.000 in.	GMAW on NEAR Side	(STD. WELD)
Horizontal Stiffener:	0.1875 in.	x	3.000 in.	GMAW on FAR Side	(STD. WELD)
Column Outer Flange:	0.1875 in.	x	20.767 in.	SAW on NEAR Side	(STD. WELD)
Column Outer Flange:	0.1875 in.	x	20.767 in.	GMAW on FAR Side	(STD. WELD)
Column Connection Pl.:	0.1875 in.	x	20.017 in.	GMAW on BOTH Sides	(STD. WELD)

Knee Stiffener to Connection Plate Weld
==========

0.1875 in. x 3.750 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 @ 3'8	@ FLOOR	1 @ 22'0	@ FLOOR
1 @ 3'10			
1 @ 6'0			
1 @ 6'5-1/4"	@ EAVE		

PURLIN SPACES - HORIZONTAL MEASUREMENTS

LEFT RAFTER		RIGHT RAFTER
6 @ 4'8	@ EAVE	
4 @ 5'0		
1 @ 1'6	@ 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

LFT COLUMN	3.67 (N)	7.50 (C)	13.50 (N)							
LFT RAFTER	4.67 (C)	9.34 (N)	14.01 (N)	18.68 (C)	23.35 (N)	28.02 (C)	33.03 (N)	38.03 (N)	43.04 (C)	48.04 (N)

"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	3.026	0.005	3.027	0.006
Load Comb	118	106	118	112
Defl.	H/ 73		H/ 80	
Neg. Max	-2.870	-0.007	-2.879	-0.008
Load Comb	117	1	117	1
Defl.	H/ 77		H/ 85	

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	-0.799 in.	24.73 ft.	0.509 in.	20.12 ft.
Load Comb	1		112	
Defl.	L/700		L/999	

PEAK DEFLECTIONS (Positive = Y:Upward)

	Y-Def
Pos. Max	0.006 in.
Load Comb	112
Defl.	L/999
Neg. Max	-0.008 in.
Load Comb	2
Defl.	L/999

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
114	3.0
115	3.0
116	3.0
117	3.0
118	3.0
119	3.0

Vertical Clearance at the Left Knee is 17.6351 feet
Vertical Clearance at the Right Knee is 19.5066 feet

```
VERSION V5.08
BRAND METALLIC
DESCRIPTION ss  49.5/19.938/24.417   20./110./0.
FRAME_ID 12
#  FRAME LEFT SIDE IS BLDG. PLANE SWA
#  AND FRAME RIGHT SIDE IS BLDG. PLANE SWC
PRINT echo code loads base connection deflection profile seismic detail  \
 flg_brace summary stiffeners pro_grplds
OPTIMIZATION none *PLANT atw *JOB 22313A
ANALYZE all *DATASET members brace combinations wind_array connection base
BUILDING LABEL A
LOCATION frame lines 2-5
LATERAL GRID LABEL 2 3 4 5
LONGITUDINAL GRID LABEL A C
NUMBER FRAMES 4  *PRICE complete
TYPE LEFT ss p cs 60. 60.
TYPE RIGHT ss p cs 60. 60.
WIDTH 49.5 49.5
LENGTH  100.
EAVE LEFT 19.9375 *ROOF SLOPE LEFT 0.5
EAVE RIGHT 22.
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 73.959 12.189 8.221 4.022
CODE LABEL 2013 CALIFORNIA
BUILDING CODE IB12 U=Normal
DEAD LOAD 2.253  *COLLATERAL LOAD 2.
LIVE LOAD 20. reduce
SNOW R=0. T=1. S=N WML=49.5
WIND CODE AS10
SEISMIC CODE AS10
SEISMIC LOAD  S1=62.3 SS=189.5 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 E
SECOND ORDER FOA
ROOF TRIBUTARY  TR= 25.
WALL TRIBUTARY LEFT  TR= 25. S=0. E=19.9375
WALL TRIBUTARY RIGHT  TR= 25. S=0. E=22.
DESIGN ASD10
LATERAL BRACE LENGTH  25.00
STIFFNESS CHECK SNOW ONLY
BOLT TIGHTENING  Fully
DEFLECTION ROOF L=180. S=180. W=180. G=120.
DEFLECTION WALL L=200. S=200. W=200. E=40. C=100. G=200. TE=200.
PARAPETR TYP=B HT=24. CONN_HT=21.3125 CONN_TYP=P TRIB=11.917 DL=22.  \
 WL1=-24.6755 -1. WL2=-24.6755 -1. LWL1=-17.2728 -0.7 LWL2=-17.2728 -0.7  \
 LWL3=-17.2728 -0.7 LWL4=-17.2728 -0.7 MWL1=-8. -1. MWL2=8. 1. WL3=37.0132 1.5  \
 WL4=37.0132 1.5 WL1D=-10.5717 -1. WL2D=-10.5717 -1. LWL1D=-7.4002 -0.7  \
 LWL2D=-7.4002 -0.7 LWL3D=-7.4002 -0.7 LWL4D=-7.4002 -0.7 WL3D=15.8576 1.5  \
 WL4D=15.8576 1.5 CONN_HT=21.3125
PARAPETR TYP=B HT=24. CONN_HT=21.3125 CONN_TYP=P TRIB=12.5 DL=22.  \
 WL1=-24.6755 -1. WL2=-24.6755 -1. LWL1=-17.2728 -0.7 LWL2=-17.2728 -0.7  \
 LWL3=-17.2728 -0.7 LWL4=-17.2728 -0.7 MWL1=-8. -1. MWL2=8. 1. WL3=37.0132 1.5  \
 WL4=37.0132 1.5 WL1D=-10.5717 -1. WL2D=-10.5717 -1. LWL1D=-7.4002 -0.7  \
 LWL2D=-7.4002 -0.7 LWL3D=-7.4002 -0.7 LWL4D=-7.4002 -0.7 WL3D=15.8576 1.5  \
```

```
 WL4D=15.8576 1.5 CONN_HT=21.3125
SYMKNEE CONNECTION
SPLICE GUSSETS NA
BRACING SIDES LC=1 RA=1 RC=3
BRACE ATTACHMENT FLANGE
FLANGE BRACE ATTACHMENT LC=0 RA=0 RC=0
GIRT SPACING LEFT 3.6667 3.8333 6.
GIRT SPACING RIGHT
GIRT BRACE LEFT  N N C
GIRT BRACE RIGHT
PURLIN SPACING 6@4.6667 4@5.
PURLIN BRACE  C N N C N C N N C N
LEFT COLUMN
  BASE W=8. T=0.375 L=18.75 N=2 D=0.75
     18.       0.      10.       8.       0.25     0.185    8.       0.3125
      0.      18.       0.       8.       0.25     0.25     8.       0.3125
LEFT RAFTER
  CONNECTION  O=3E I=3E W=8. 6. T=0.5 D=0.75
     23.       0.       0.       6.       0.25     0.156    6.       0.25
      0.       0.      10.       6.       0.25     0.156    6.       0.25
      0.       0.      10.       6.       0.25     0.156    6.       0.25
      0.      23.      10.       6.       0.25     0.156    6.       0.25
  CONNECTION  O=3E I=3E W=6. 8. T=0.5 D=0.75
RIGHT COLUMN
  BASE W=8. T=0.375 L=20.75 N=2 D=0.75
     20.       0.      10.       8.       0.25     0.185    8.       0.3125
      0.      20.       0.       8.       0.25     0.25     8.       0.3125
WIND LOAD   WL1     23.731  0.2200 -0.8700 -0.5500 -0.4700   24.750 Left
WIND LOAD   WL2     23.731  0.5800 -0.5100 -0.1900 -0.1100   24.750 Left
WIND LOAD   LWL1    23.731 -0.6300 -0.8700 -0.5500 -0.6300   24.750
WIND LOAD   LWL2    23.731 -0.6300 -0.5500 -0.8700 -0.6300   24.750
WIND LOAD   LWL3    23.731 -0.2700 -0.5100 -0.1900 -0.2700   24.750
WIND LOAD   LWL4    23.731 -0.2700 -0.1900 -0.5100 -0.2700   24.750
WIND LOAD   MWL1    16.000  0.5000  0.5000  0.5000 -0.5000    0.000
WIND LOAD   MWL2    16.000 -0.5000 -0.5000 -0.5000  0.5000    0.000
WIND LOAD   WL3     23.731 -0.4700 -0.5500 -0.8700  0.2200   24.750 Right
WIND LOAD   WL4     23.731 -0.1100 -0.1900 -0.5100  0.5800   24.750 Right
WIND LOAD   WL1D    10.572  0.2200 -0.8700 -0.5500 -0.4700   24.750 Left
WIND LOAD   WL2D    10.572  0.5800 -0.5100 -0.1900 -0.1100   24.750 Left
WIND LOAD   LWL1D   10.572 -0.6300 -0.8700 -0.5500 -0.6300   24.750
WIND LOAD   LWL2D   10.572 -0.6300 -0.5500 -0.8700 -0.6300   24.750
WIND LOAD   LWL3D   10.572 -0.2700 -0.5100 -0.1900 -0.2700   24.750
WIND LOAD   LWL4D   10.572 -0.2700 -0.1900 -0.5100 -0.2700   24.750
WIND LOAD   WL3D    10.572 -0.4700 -0.5500 -0.8700  0.2200   24.750 Right
WIND LOAD   WL4D    10.572 -0.1100 -0.1900 -0.5100  0.5800   24.750 Right
LOAD COMBINATIONS
   1)1. DL  1. LL  1. COLL    *DEFL 200. 120. *PDELTA L
   2)1. DL  1. LL  1. COLL    *DEFL 200. 120. *PDELTA R
   3)1.15918 DL  0.91 EQ    *DEFL 200. 120. *PDELTA L
   4)1.15918 DL  0.91 EQ    *DEFL 200. 120. *PDELTA R
   5)1.15918 DL  -0.91 EQ    *DEFL 200. 120. *PDELTA L
   6)1.15918 DL  -0.91 EQ    *DEFL 200. 120. *PDELTA R
   7)1.15918 DL  1.15918 COLL  0.91 EQ    *DEFL 200. 120. *PDELTA L
   8)1.15918 DL  1.15918 COLL  0.91 EQ    *DEFL 200. 120. *PDELTA R
   9)1.15918 DL  1.15918 COLL  -0.91 EQ    *DEFL 200. 120. *PDELTA L
  10)1.15918 DL  1.15918 COLL  -0.91 EQ    *DEFL 200. 120. *PDELTA R
  11)0.44082 DL  0.91 RBUPEQ    *DEFL 200. 120. *PDELTA L
  12)0.44082 DL  0.91 RBUPEQ    *DEFL 200. 120. *PDELTA R
  13)0.44082 DL  0.91 EQ    *DEFL 200. 120. *PDELTA L
  14)0.44082 DL  0.91 EQ    *DEFL 200. 120. *PDELTA R
  15)0.44082 DL  -0.91 EQ    *DEFL 200. 120. *PDELTA L
  16)0.44082 DL  -0.91 EQ    *DEFL 200. 120. *PDELTA R
```

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17)0.6726 DL  2. RBUPEQ *TYPE R *APP C *PDELTA L
18)0.6726 DL  2. RBUPEQ *TYPE R *APP C *PDELTA R
19)0.6726 DL  2.5 EQ *TYPE R *APP C *PDELTA L
20)0.6726 DL  2.5 EQ *TYPE R *APP C *PDELTA R
21)0.6726 DL  -2.5 EQ *TYPE R *APP C *PDELTA L
22)0.6726 DL  -2.5 EQ *TYPE R *APP C *PDELTA R
23)1.4274 DL  1.4274 COLL  2.5 EQ *TYPE R *APP C *PDELTA L
24)1.4274 DL  1.4274 COLL  2.5 EQ *TYPE R *APP C *PDELTA R
25)1.4274 DL  1.4274 COLL  -2.5 EQ *TYPE R *APP C *PDELTA L
26)1.4274 DL  1.4274 COLL  -2.5 EQ *TYPE R *APP C *PDELTA R
27)0.6726 DL  2.5 EQ *TYPE R *APP B *PDELTA L
28)0.6726 DL  2.5 EQ *TYPE R *APP B *PDELTA R
29)0.6726 DL  -2.5 EQ *TYPE R *APP B *PDELTA L
30)0.6726 DL  -2.5 EQ *TYPE R *APP B *PDELTA R
31)1.4274 DL  1.4274 COLL  2.5 EQ *TYPE R *APP B *PDELTA L
32)1.4274 DL  1.4274 COLL  2.5 EQ *TYPE R *APP B *PDELTA R
33)1.4274 DL  1.4274 COLL  -2.5 EQ *TYPE R *APP B *PDELTA L
34)1.4274 DL  1.4274 COLL  -2.5 EQ *TYPE R *APP B *PDELTA R
35)0.6726 DL  3.5 EQ *TYPE R *APP K *PDELTA L
36)0.6726 DL  3.5 EQ *TYPE R *APP K *PDELTA R
37)0.6726 DL  -3.5 EQ *TYPE R *APP K *PDELTA L
38)0.6726 DL  -3.5 EQ *TYPE R *APP K *PDELTA R
39)1.4274 DL  1.4274 COLL  3.5 EQ *TYPE R *APP K *PDELTA L
40)1.4274 DL  1.4274 COLL  3.5 EQ *TYPE R *APP K *PDELTA R
41)1.4274 DL  1.4274 COLL  -3.5 EQ *TYPE R *APP K *PDELTA L
42)1.4274 DL  1.4274 COLL  -3.5 EQ *TYPE R *APP K *PDELTA R
43)1. DL  0.6 WL1 *PDELTA L
44)1. DL  0.6 WL1 *PDELTA R
45)1. DL  0.6 WL2 *PDELTA L
46)1. DL  0.6 WL2 *PDELTA R
47)1. DL  0.6 WL3 *PDELTA L
48)1. DL  0.6 WL3 *PDELTA R
49)1. DL  0.6 WL4 *PDELTA L
50)1. DL  0.6 WL4 *PDELTA R
51)0.6 DL  0.6 WL1 *PDELTA L
52)0.6 DL  0.6 WL1 *PDELTA R
53)0.6 DL  0.6 WL2 *PDELTA L
54)0.6 DL  0.6 WL2 *PDELTA R
55)0.6 DL  0.6 LWL1  0.6 RBUPLW *PDELTA L
56)0.6 DL  0.6 LWL1  0.6 RBUPLW *PDELTA R
57)0.6 DL  0.6 LWL2  0.6 RBUPLW *PDELTA L
58)0.6 DL  0.6 LWL2  0.6 RBUPLW *PDELTA R
59)0.6 DL  0.6 LWL3  0.6 RBUPLW *PDELTA L
60)0.6 DL  0.6 LWL3  0.6 RBUPLW *PDELTA R
61)0.6 DL  0.6 LWL4  0.6 RBUPLW *PDELTA L
62)0.6 DL  0.6 LWL4  0.6 RBUPLW *PDELTA R
63)0.6 DL  0.6 WL3 *PDELTA L
64)0.6 DL  0.6 WL3 *PDELTA R
65)0.6 DL  0.6 WL4 *PDELTA L
66)0.6 DL  0.6 WL4 *PDELTA R
67)0.6 MWL1  *TYPE M
68)0.6 MWL2  *TYPE M
69)1. DL  1. COLL  0.6 WL1 *PDELTA L
70)1. DL  1. COLL  0.6 WL1 *PDELTA R
71)1. DL  1. COLL  0.6 WL2 *PDELTA L
72)1. DL  1. COLL  0.6 WL2 *PDELTA R
73)1. DL  1. COLL  0.6 WL3 *PDELTA L
74)1. DL  1. COLL  0.6 WL3 *PDELTA R
75)1. DL  1. COLL  0.6 WL4 *PDELTA L
76)1. DL  1. COLL  0.6 WL4 *PDELTA R
77)1. DL  0.75 LL  1. COLL  0.45 WL1 *PDELTA L
78)1. DL  0.75 LL  1. COLL  0.45 WL1 *PDELTA R
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  79)1. DL  0.75 LL  1. COLL  0.45 WL2 *PDELTA L
  80)1. DL  0.75 LL  1. COLL  0.45 WL2 *PDELTA R
  81)1. DL  0.75 LL  1. COLL  0.45 LWL1  0.45 RBUPLW *PDELTA L
  82)1. DL  0.75 LL  1. COLL  0.45 LWL1  0.45 RBUPLW *PDELTA R
  83)1. DL  0.75 LL  1. COLL  0.45 LWL2  0.45 RBUPLW *PDELTA L
  84)1. DL  0.75 LL  1. COLL  0.45 LWL2  0.45 RBUPLW *PDELTA R
  85)1. DL  0.75 LL  1. COLL  0.45 LWL3  0.45 RBUPLW *PDELTA L
  86)1. DL  0.75 LL  1. COLL  0.45 LWL3  0.45 RBUPLW *PDELTA R
  87)1. DL  0.75 LL  1. COLL  0.45 LWL4  0.45 RBUPLW *PDELTA L
  88)1. DL  0.75 LL  1. COLL  0.45 LWL4  0.45 RBUPLW *PDELTA R
  89)1. DL  0.75 LL  1. COLL  0.45 WL3 *PDELTA L
  90)1. DL  0.75 LL  1. COLL  0.45 WL3 *PDELTA R
  91)1. DL  0.75 LL  1. COLL  0.45 WL4 *PDELTA L
  92)1. DL  0.75 LL  1. COLL  0.45 WL4 *PDELTA R
  93)1. DL  1. COLL  0.6 LWL1  0.6 RBDWLW *PDELTA L
  94)1. DL  1. COLL  0.6 LWL1  0.6 RBDWLW *PDELTA R
  95)1. DL  1. COLL  0.6 LWL2  0.6 RBDWLW *PDELTA L
  96)1. DL  1. COLL  0.6 LWL2  0.6 RBDWLW *PDELTA R
  97)1. DL  1. COLL  0.6 LWL3  0.6 RBDWLW *PDELTA L
  98)1. DL  1. COLL  0.6 LWL3  0.6 RBDWLW *PDELTA R
  99)1. DL  1. COLL  0.6 LWL4  0.6 RBDWLW *PDELTA L
 100)1. DL  1. COLL  0.6 LWL4  0.6 RBDWLW *PDELTA R
 101)1. DL  0.75 LL  1. COLL  0.45 LWL1  0.45 RBDWLW *PDELTA L
 102)1. DL  0.75 LL  1. COLL  0.45 LWL1  0.45 RBDWLW *PDELTA R
 103)1. DL  0.75 LL  1. COLL  0.45 LWL2  0.45 RBDWLW *PDELTA L
 104)1. DL  0.75 LL  1. COLL  0.45 LWL2  0.45 RBDWLW *PDELTA R
 105)1. DL  0.75 LL  1. COLL  0.45 LWL3  0.45 RBDWLW *PDELTA L
 106)1. DL  0.75 LL  1. COLL  0.45 LWL3  0.45 RBDWLW *PDELTA R
 107)1. DL  0.75 LL  1. COLL  0.45 LWL4  0.45 RBDWLW *PDELTA L
 108)1. DL  0.75 LL  1. COLL  0.45 LWL4  0.45 RBDWLW *PDELTA R
 109)1.15918 DL  1.15918 COLL  0.91 RBDWEQ *PDELTA L
 110)1.15918 DL  1.15918 COLL  0.91 RBDWEQ *PDELTA R
 111)1.4274 DL  1.4274 COLL  2. RBDWEQ *TYPE R *APP C *PDELTA L
 112)1.4274 DL  1.4274 COLL  2. RBDWEQ *TYPE R *APP C *PDELTA R
 113)1. LL     *DEFL 200. 180. *TYPE D
 114)1. WL1D     *DEFL 200. 180. *TYPE D
 115)1. WL2D     *DEFL 200. 180. *TYPE D
 116)1. LWL1D     *DEFL 200. 180. *TYPE D
 117)1. LWL2D     *DEFL 200. 180. *TYPE D
 118)1. LWL3D     *DEFL 200. 180. *TYPE D
 119)1. LWL4D     *DEFL 200. 180. *TYPE D
 120)1. WL3D     *DEFL 200. 180. *TYPE D
 121)1. WL4D     *DEFL 200. 180. *TYPE D
 122)1.4274 DL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 123)1.4274 DL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 124)0.6726 DL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 125)0.6726 DL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 126)1.4274 DL  1.4274 COLL  1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
 127)1.4274 DL  1.4274 COLL  -1. EQ    *DEFL  40.   0. *TYPE D *EQCD 3.0
LOADS
  LR   COLL    XREF  Y  C     24.750000   -0.118900    0.000000 NA # HOOD
  RC   EQDW    GLOB  M  C     22.000000    5.910000    0.000000    \
      # WALL WEIGHT FOR EQ
  LC   EQDW    GLOB  M  C      0.500000    0.710000    0.000000    \
      # PANEL/GIRT  SELF-WEIGHT FOR E
  LC   EQDW    GLOB  M  C     19.937500    0.710000    0.000000    \
      # PANEL/GIRT  SELF-WEIGHT FOR E
  LC   RBDWLW  GLOB  Y  C     19.938000   -9.012000    0.916700    \
      # WIND BRACE FORCE
  LC   RBUPLW  GLOB  Y  C      0.010000    9.012000    0.916700    \
      # WIND BRACE FORCE
  LC   RBUPLW  GLOB  L  C      0.010000   11.300000    0.000000    \
```

```
     # WIND BRACE FORCE
  RC   RBUPLW  GLOB  Y  C      0.010000    8.538000   -0.916700    \
     # WIND BRACE FORCE
  RC   RBUPLW  GLOB  L  C      0.010000    9.702000    0.000000    \
     # WIND BRACE FORCE
  RC   RBDWLW  GLOB  Y  C     22.000000   -8.538000   -0.916700    \
     # WIND BRACE FORCE
  LC   RBDWEQ  GLOB  Y  C     19.938000   -7.054000    0.916700    \
     # SEISMIC BRACE FORCE
  LC   RBUPEQ  GLOB  Y  C      0.010000    7.054000    0.916700    \
     # SEISMIC BRACE FORCE
  LC   RBUPEQ  GLOB  L  C      0.010000    8.845000    0.000000    \
     # SEISMIC BRACE FORCE
  RC   RBUPEQ  GLOB  Y  C      0.010000    7.592000   -0.916700    \
     # SEISMIC BRACE FORCE
  RC   RBUPEQ  GLOB  L  C      0.010000    8.627000    0.000000    \
     # SEISMIC BRACE FORCE
  RC   RBDWEQ  GLOB  Y  C     22.000000   -7.592000   -0.916700    \
     # SEISMIC BRACE FORCE
END
```

Building Grid Label Legend

Building : A
Frame Number : 12
No. of Frames : 4
Left Column : Column @ * - A
Right Column : Column @ * - C

*Frames located @ 2 3 4 5

Building :A
Frame Number :12 Location: frame lines 2-5
No. of Frames: 4

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 (feet)	19.938
Eave height Right (feet)	22.000
Horizontal width from left to right steel line (feet)	49.500
Horizontal distance to ridge from left side (feet)	49.500
Roof Slope Left (rise:12)	0.500
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 side (feet)	25.000
....from Height 0.00 to Height	19.94
Tributary Width right side (feet)	25.000
....from Height 0.00 to Height	22.00
Tributary Width roof (feet)	25.000
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)	0.851
Total Roof Dead Weight (psf)	3.104
Collateral Load to Frame Rafter (psf)	2.000
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 (feet)	19.938
Eave height Right (feet)	22.000
Wind Elevation on left column (feet)	19.938
Wind Elevation on right column (feet)	22.000
Total frame width (feet)	49.500
Total building length (feet)	100.000

Number of primary wind loadings 18

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)	0.220	-0.870(50.0%)	-0.550(50.0%)	-0.470	
Wind Load WL2	Wind from left direction				
**********	Left Wall	Left Rafter	Right Rafter	Right Wall	
Primary Coeff. (Cp)	0.580	-0.510(50.0%)	-0.190(50.0%)	-0.110	
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 MWL1	Min. Wind from left dir.				
**********	Left Wall	Left Rafter	Right Rafter	Right Wall	
Primary Coeff. (Cp)	0.500	0.500	0.500	-0.500	
Wind Load MWL2	Min. Wind from right dir.				
**********	Left Wall	Left Rafter	Right Rafter	Right Wall	
Primary Coeff. (Cp)	-0.500	-0.500	-0.500	0.500	
Wind Load WL3	Wind from right direction				
**********	Left Wall	Left Rafter	Right Rafter	Right Wall	
Primary Coeff. (Cp)	-0.470	-0.550(50.0%)	-0.870(50.0%)	0.220	
Wind Load WL4	Wind from right direction				
**********	Left Wall	Left Rafter	Right Rafter	Right Wall	
Primary Coeff. (Cp)	-0.110	-0.190(50.0%)	-0.510(50.0%)	0.580	

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 :

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1)	DL +LL +COLL (SOA-L)	N A P
2)	DL +LL +COLL (SOA-R)	N A P
3)	1.1592DL +0.91EQ (SOA-L)	N A P
4)	1.1592DL +0.91EQ (SOA-R)	N A P
5)	1.1592DL -0.91EQ (SOA-L)	N A P
6)	1.1592DL -0.91EQ (SOA-R)	N A P
7)	1.1592DL +1.1592COLL +0.91EQ (SOA-L)	N A P
8)	1.1592DL +1.1592COLL +0.91EQ (SOA-R)	N A P
9)	1.1592DL +1.1592COLL -0.91EQ (SOA-L)	N A P
10)	1.1592DL +1.1592COLL -0.91EQ (SOA-R)	N A P
11)	0.4408DL +0.91RBUPEQ (SOA-L)	N A P
12)	0.4408DL +0.91RBUPEQ (SOA-R)	N A P
13)	0.4408DL +0.91EQ (SOA-L)	N A P
14)	0.4408DL +0.91EQ (SOA-R)	N A P
15)	0.4408DL -0.91EQ (SOA-L)	N A P
16)	0.4408DL -0.91EQ (SOA-R)	N A P
17)	0.6726DL +2.RBUPEQ (SOA-L)	N C R P
18)	0.6726DL +2.RBUPEQ (SOA-R)	N C R P
19)	0.6726DL +2.5EQ (SOA-L)	N C R P
20)	0.6726DL +2.5EQ (SOA-R)	N C R P
21)	0.6726DL -2.5EQ (SOA-L)	N C R P
22)	0.6726DL -2.5EQ (SOA-R)	N C R P
23)	1.4274DL +1.4274COLL +2.5EQ (SOA-L)	N C R P
24)	1.4274DL +1.4274COLL +2.5EQ (SOA-R)	N C R P
25)	1.4274DL +1.4274COLL -2.5EQ (SOA-L)	N C R P
26)	1.4274DL +1.4274COLL -2.5EQ (SOA-R)	N C R P
27)	0.6726DL +2.5EQ (SOA-L)	N B R P
28)	0.6726DL +2.5EQ (SOA-R)	N B R P
29)	0.6726DL -2.5EQ (SOA-L)	N B R P
30)	0.6726DL -2.5EQ (SOA-R)	N B R P
31)	1.4274DL +1.4274COLL +2.5EQ (SOA-L)	N B R P
32)	1.4274DL +1.4274COLL +2.5EQ (SOA-R)	N B R P
33)	1.4274DL +1.4274COLL -2.5EQ (SOA-L)	N B R P
34)	1.4274DL +1.4274COLL -2.5EQ (SOA-R)	N B R P
35)	0.6726DL +3.5EQ (SOA-L)	N K R P
36)	0.6726DL +3.5EQ (SOA-R)	N K R P
37)	0.6726DL -3.5EQ (SOA-L)	N K R P
38)	0.6726DL -3.5EQ (SOA-R)	N K R P
39)	1.4274DL +1.4274COLL +3.5EQ (SOA-L)	N K R P
40)	1.4274DL +1.4274COLL +3.5EQ (SOA-R)	N K R P
41)	1.4274DL +1.4274COLL -3.5EQ (SOA-L)	N K R P
42)	1.4274DL +1.4274COLL -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)	0.6MWL1	N M
68)	0.6MWL2	N M
69)	DL +COLL +0.6WL1 (SOA-L)	N A P
70)	DL +COLL +0.6WL1 (SOA-R)	N A P
71)	DL +COLL +0.6WL2 (SOA-L)	N A P
72)	DL +COLL +0.6WL2 (SOA-R)	N A P
73)	DL +COLL +0.6WL3 (SOA-L)	N A P
74)	DL +COLL +0.6WL3 (SOA-R)	N A P
75)	DL +COLL +0.6WL4 (SOA-L)	N A P
76)	DL +COLL +0.6WL4 (SOA-R)	N A P
77)	DL +0.75LL +COLL +0.45WL1 (SOA-L)	N A P
78)	DL +0.75LL +COLL +0.45WL1 (SOA-R)	N A P
79)	DL +0.75LL +COLL +0.45WL2 (SOA-L)	N A P
80)	DL +0.75LL +COLL +0.45WL2 (SOA-R)	N A P
81)	DL +0.75LL +COLL +0.45LWL1 +0.45RBUPLW (SOA-L)	N A P
82)	DL +0.75LL +COLL +0.45LWL1 +0.45RBUPLW (SOA-R)	N A P
83)	DL +0.75LL +COLL +0.45LWL2 +0.45RBUPLW (SOA-L)	N A P
84)	DL +0.75LL +COLL +0.45LWL2 +0.45RBUPLW (SOA-R)	N A P
85)	DL +0.75LL +COLL +0.45LWL3 +0.45RBUPLW (SOA-L)	N A P
86)	DL +0.75LL +COLL +0.45LWL3 +0.45RBUPLW (SOA-R)	N A P
87)	DL +0.75LL +COLL +0.45LWL4 +0.45RBUPLW (SOA-L)	N A P
88)	DL +0.75LL +COLL +0.45LWL4 +0.45RBUPLW (SOA-R)	N A P
89)	DL +0.75LL +COLL +0.45WL3 (SOA-L)	N A P
90)	DL +0.75LL +COLL +0.45WL3 (SOA-R)	N A P
91)	DL +0.75LL +COLL +0.45WL4 (SOA-L)	N A P
92)	DL +0.75LL +COLL +0.45WL4 (SOA-R)	N A P
93)	DL +COLL +0.6LWL1 +0.6RBDWLW (SOA-L)	N A P
94)	DL +COLL +0.6LWL1 +0.6RBDWLW (SOA-R)	N A P
95)	DL +COLL +0.6LWL2 +0.6RBDWLW (SOA-L)	N A P
96)	DL +COLL +0.6LWL2 +0.6RBDWLW (SOA-R)	N A P
97)	DL +COLL +0.6LWL3 +0.6RBDWLW (SOA-L)	N A P
98)	DL +COLL +0.6LWL3 +0.6RBDWLW (SOA-R)	N A P
99)	DL +COLL +0.6LWL4 +0.6RBDWLW (SOA-L)	N A P
100)	DL +COLL +0.6LWL4 +0.6RBDWLW (SOA-R)	N A P

Load Combination :

101)	DL +0.75LL +COLL +0.45LWL1 +0.45RBDWLW (SOA-L)	N A P
102)	DL +0.75LL +COLL +0.45LWL1 +0.45RBDWLW (SOA-R)	N A P
103)	DL +0.75LL +COLL +0.45LWL2 +0.45RBDWLW (SOA-L)	N A P
104)	DL +0.75LL +COLL +0.45LWL2 +0.45RBDWLW (SOA-R)	N A P
105)	DL +0.75LL +COLL +0.45LWL3 +0.45RBDWLW (SOA-L)	N A P
106)	DL +0.75LL +COLL +0.45LWL3 +0.45RBDWLW (SOA-R)	N A P
107)	DL +0.75LL +COLL +0.45LWL4 +0.45RBDWLW (SOA-L)	N A P
108)	DL +0.75LL +COLL +0.45LWL4 +0.45RBDWLW (SOA-R)	N A P
109)	1.1592DL +1.1592COLL +0.91RBDWEQ (SOA-L)	N A P
110)	1.1592DL +1.1592COLL +0.91RBDWEQ (SOA-R)	N A P
111)	1.4274DL +1.4274COLL +2.RBDWEQ (SOA-L)	N C R P
112)	1.4274DL +1.4274COLL +2.RBDWEQ (SOA-R)	N C R P
113)	LL	D
114)	WL1D	D
115)	WL2D	D
116)	LWL1D	D
117)	LWL2D	D
118)	LWL3D	D
119)	LWL4D	D
120)	WL3D	D
121)	WL4D	D
122)	1.4274DL +EQ	D E
123)	1.4274DL -EQ	D E
124)	0.6726DL +EQ	D E
125)	0.6726DL -EQ	D E
126)	1.4274DL +1.4274COLL +EQ	D E
127)	1.4274DL +1.4274COLL -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
MWL1 = Minimum Wind Load
MWL2 = Minimum Wind Load
RBDWLW= Downward Acting Rod Brace Load from Longit. Wind a
RBDWEQ= Downward Acting Rod Brace Load from Long. Seismic
WL1D = Lateral Primary Wind Load at Service Level
WL2D = Lateral Primary Wind Load at Service Level
LWL1D = Longitudinal Primary Wind Load at Service Level
LWL2D = Longitudinal Primary Wind Load at Service Level
LWL3D = Longitudinal Primary Wind Load at Service Level
LWL4D = Longitudinal Primary Wind Load at Service Level
WL3D = Lateral Primary Wind Load at Service Level
WL4D = Lateral Primary Wind Load at Service Level

Combination Descriptions :

N= No 1/3 Increase in Allowable for Combination
B= Base Only Combination
K= Knee Connection Only Combination
A= Allowable Strength 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
M= Minimum Wind Load Combination. Checked for Allowable Strength not for Deflection

* USER INPUT LOADS

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
1	LR	COLL	XREF	Y	C	24.750	-0.1189	0.0000	0.000
2	RC	EQDW	GLOB	M	C	22.000	5.9100	0.0000	0.000
3	LC	EQDW	GLOB	M	C	0.500	0.7100	0.0000	0.000
4	LC	EQDW	GLOB	M	C	19.938	0.7100	0.0000	0.000
5	LC	RBDWLW	GLOB	Y	C	19.938	-9.0120	0.0000	0.917
6	LC	RBUPLW	GLOB	Y	C	0.010	9.0120	0.0000	0.917
7	LC	RBUPLW	GLOB	L	C	0.010	11.3000	0.0000	0.000
8	RC	RBUPLW	GLOB	Y	C	0.010	8.5380	0.0000	-0.917
9	RC	RBUPLW	GLOB	L	C	0.010	9.7020	0.0000	0.000
10	RC	RBDWLW	GLOB	Y	C	22.000	-8.5380	0.0000	-0.917
11	LC	RBDWEQ	GLOB	Y	C	19.938	-7.0540	0.0000	0.917
12	LC	RBUPEQ	GLOB	Y	C	0.010	7.0540	0.0000	0.917
13	LC	RBUPEQ	GLOB	L	C	0.010	8.8450	0.0000	0.000
14	RC	RBUPEQ	GLOB	Y	C	0.010	7.5920	0.0000	-0.917
15	RC	RBUPEQ	GLOB	L	C	0.010	8.6270	0.0000	0.000
16	RC	RBDWEQ	GLOB	Y	C	22.000	-7.5920	0.0000	-0.917

* PARAPET LOADS GENERATED

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DIST.	INTENSITY	ECCEN.	DESCRIPTION
17	RC	WL1	GLOB	X	C	21.31	0.840	0.00	PARAPET LOAD
18	RC	WL2	GLOB	X	C	21.31	0.840	0.00	PARAPET LOAD
19	RC	LWL1	GLOB	X	C	21.31	0.588	0.00	PARAPET LOAD
20	RC	LWL2	GLOB	X	C	21.31	0.588	0.00	PARAPET LOAD
21	RC	LWL3	GLOB	X	C	21.31	0.588	0.00	PARAPET LOAD
22	RC	LWL4	GLOB	X	C	21.31	0.588	0.00	PARAPET LOAD
23	RC	MWL1	GLOB	X	C	21.31	0.272	0.00	PARAPET LOAD
24	RC	MWL2	GLOB	X	C	21.31	-0.272	0.00	PARAPET LOAD
25	RC	WL3	GLOB	X	C	21.31	-1.260	0.00	PARAPET LOAD
26	RC	WL4	GLOB	X	C	21.31	-1.260	0.00	PARAPET LOAD
27	RC	WL1D	GLOB	X	C	21.31	0.360	0.00	PARAPET LOAD
28	RC	WL2D	GLOB	X	C	21.31	0.360	0.00	PARAPET LOAD
29	RC	LWL1D	GLOB	X	C	21.31	0.252	0.00	PARAPET LOAD
30	RC	LWL2D	GLOB	X	C	21.31	0.252	0.00	PARAPET LOAD
31	RC	LWL3D	GLOB	X	C	21.31	0.252	0.00	PARAPET LOAD
32	RC	LWL4D	GLOB	X	C	21.31	0.252	0.00	PARAPET LOAD
33	RC	WL3D	GLOB	X	C	21.31	-0.540	0.00	PARAPET LOAD
34	RC	WL4D	GLOB	X	C	21.31	-0.540	0.00	PARAPET LOAD
35	RC	WL1	GLOB	X	C	21.31	0.881	0.00	PARAPET LOAD
36	RC	WL2	GLOB	X	C	21.31	0.881	0.00	PARAPET LOAD
37	RC	LWL1	GLOB	X	C	21.31	0.617	0.00	PARAPET LOAD
38	RC	LWL2	GLOB	X	C	21.31	0.617	0.00	PARAPET LOAD
39	RC	LWL3	GLOB	X	C	21.31	0.617	0.00	PARAPET LOAD
40	RC	LWL4	GLOB	X	C	21.31	0.617	0.00	PARAPET LOAD
41	RC	MWL1	GLOB	X	C	21.31	0.286	0.00	PARAPET LOAD
42	RC	MWL2	GLOB	X	C	21.31	-0.286	0.00	PARAPET LOAD
43	RC	WL3	GLOB	X	C	21.31	-1.322	0.00	PARAPET LOAD
44	RC	WL4	GLOB	X	C	21.31	-1.322	0.00	PARAPET LOAD
45	RC	WL1D	GLOB	X	C	21.31	0.378	0.00	PARAPET LOAD
46	RC	WL2D	GLOB	X	C	21.31	0.378	0.00	PARAPET LOAD
47	RC	LWL1D	GLOB	X	C	21.31	0.264	0.00	PARAPET LOAD

48	RC	LWL2D	GLOB	X	C	21.31	0.264	0.00	PARAPET LOAD
49	RC	LWL3D	GLOB	X	C	21.31	0.264	0.00	PARAPET LOAD
50	RC	LWL4D	GLOB	X	C	21.31	0.264	0.00	PARAPET LOAD
51	RC	WL3D	GLOB	X	C	21.31	-0.566	0.00	PARAPET LOAD
52	RC	WL4D	GLOB	X	C	21.31	-0.566	0.00	PARAPET LOAD
53	RC	EQDW	GLOB	M	C	21.31	0.749	0.00	PARAPET LOAD
54	RC	EQDW	GLOB	M	C	21.31	0.786	0.00	PARAPET LOAD

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* GENERAL LOAD CARDS GENERATED -

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
1	LR	COLL	XREF	Y	C	24.750	-0.1189	N/A	0.000
2	RC	EQDW	GLOB	M	C	22.000	5.9100	N/A	0.000
3	LC	EQDW	GLOB	M	C	0.500	0.7100	N/A	0.000
4	LC	EQDW	GLOB	M	C	19.938	0.7100	N/A	0.000
5	LC	RBDWLW	GLOB	Y	C	19.938	-9.0120	N/A	0.917
6	LC	RBUPLW	GLOB	Y	C	0.010	9.0120	N/A	0.917
7	LC	RBUPLW	GLOB	L	C	0.010	11.3000	N/A	0.000
8	RC	RBUPLW	GLOB	Y	C	0.010	8.5380	N/A	-0.917
9	RC	RBUPLW	GLOB	L	C	0.010	9.7020	N/A	0.000
10	RC	RBDWLW	GLOB	Y	C	22.000	-8.5380	N/A	-0.917
11	LC	RBDWEQ	GLOB	Y	C	19.938	-7.0540	N/A	0.917
12	LC	RBUPEQ	GLOB	Y	C	0.010	7.0540	N/A	0.917
13	LC	RBUPEQ	GLOB	L	C	0.010	8.8450	N/A	0.000
14	RC	RBUPEQ	GLOB	Y	C	0.010	7.5920	N/A	-0.917
15	RC	RBUPEQ	GLOB	L	C	0.010	8.6270	N/A	0.000
16	RC	RBDWEQ	GLOB	Y	C	22.000	-7.5920	N/A	-0.917
17	RC	WL1	GLOB	X	C	21.312	0.8401	N/A	0.000
18	RC	WL2	GLOB	X	C	21.312	0.8401	N/A	0.000
19	RC	LWL1	GLOB	X	C	21.312	0.5881	N/A	0.000
20	RC	LWL2	GLOB	X	C	21.312	0.5881	N/A	0.000
21	RC	LWL3	GLOB	X	C	21.312	0.5881	N/A	0.000
22	RC	LWL4	GLOB	X	C	21.312	0.5881	N/A	0.000
23	RC	MWL1	GLOB	X	C	21.312	0.2724	N/A	0.000
24	RC	MWL2	GLOB	X	C	21.312	-0.2724	N/A	0.000
25	RC	WL3	GLOB	X	C	21.312	-1.2602	N/A	0.000
26	RC	WL4	GLOB	X	C	21.312	-1.2602	N/A	0.000
27	RC	WL1D	GLOB	X	C	21.312	0.3599	N/A	0.000
28	RC	WL2D	GLOB	X	C	21.312	0.3599	N/A	0.000
29	RC	LWL1D	GLOB	X	C	21.312	0.2519	N/A	0.000
30	RC	LWL2D	GLOB	X	C	21.312	0.2519	N/A	0.000
31	RC	LWL3D	GLOB	X	C	21.312	0.2519	N/A	0.000
32	RC	LWL4D	GLOB	X	C	21.312	0.2519	N/A	0.000
33	RC	WL3D	GLOB	X	C	21.312	-0.5399	N/A	0.000
34	RC	WL4D	GLOB	X	C	21.312	-0.5399	N/A	0.000
35	RC	WL1	GLOB	X	C	21.312	0.8812	N/A	0.000
36	RC	WL2	GLOB	X	C	21.312	0.8812	N/A	0.000
37	RC	LWL1	GLOB	X	C	21.312	0.6168	N/A	0.000
38	RC	LWL2	GLOB	X	C	21.312	0.6168	N/A	0.000
39	RC	LWL3	GLOB	X	C	21.312	0.6168	N/A	0.000
40	RC	LWL4	GLOB	X	C	21.312	0.6168	N/A	0.000
41	RC	MWL1	GLOB	X	C	21.312	0.2857	N/A	0.000
42	RC	MWL2	GLOB	X	C	21.312	-0.2857	N/A	0.000
43	RC	WL3	GLOB	X	C	21.312	-1.3218	N/A	0.000
44	RC	WL4	GLOB	X	C	21.312	-1.3218	N/A	0.000
45	RC	WL1D	GLOB	X	C	21.312	0.3775	N/A	0.000
46	RC	WL2D	GLOB	X	C	21.312	0.3775	N/A	0.000
47	RC	LWL1D	GLOB	X	C	21.312	0.2643	N/A	0.000
48	RC	LWL2D	GLOB	X	C	21.312	0.2643	N/A	0.000
49	RC	LWL3D	GLOB	X	C	21.312	0.2643	N/A	0.000
50	RC	LWL4D	GLOB	X	C	21.312	0.2643	N/A	0.000

51	RC	WL3D	GLOB	X	C	21.312	-0.5663	N/A	0.000
52	RC	WL4D	GLOB	X	C	21.312	-0.5663	N/A	0.000
53	RC	EQDW	GLOB	M	C	21.312	0.7490	N/A	0.000
54	RC	EQDW	GLOB	M	C	21.312	0.7857	N/A	0.000
55	LR	DL	XREF	Y	U	0.000	-0.0563	N/A	0.000
56	LC	SW	GLOB	Y	U	0.000	-0.0285	N/A	0.000
57	LR	SW	GLOB	Y	U	0.000	-0.0224	N/A	0.000
58	RC	SW	GLOB	Y	U	0.000	-0.0301	N/A	0.000
59	LR	LL	XREF	Y	U	0.000	-0.3000	N/A	0.000
60	LR	COLL	XREF	Y	U	0.000	-0.0500	N/A	0.000
61	LR	SNOW	XREF	Y	U	0.000	0.0000	N/A	0.000
62	LC	WL1	MEMB	Y	U	0.000	-0.1305	N/A	0.000
63	RC	WL1	MEMB	Y	U	0.000	0.2788	N/A	0.000
64	LR	WL1	MEMB	Y	U	0.000	0.5161	N/A	0.000
65	LR	WL1	MEMB	Y	U	24.771	-0.1898	N/A	24.771
66	LC	WL2	MEMB	Y	U	0.000	-0.3441	N/A	0.000
67	RC	WL2	MEMB	Y	U	0.000	0.0653	N/A	0.000
68	LR	WL2	MEMB	Y	U	0.000	0.3026	N/A	0.000
69	LR	WL2	MEMB	Y	U	24.771	-0.1898	N/A	24.771
70	LC	LWL1	MEMB	Y	U	0.000	0.3738	N/A	0.000
71	RC	LWL1	MEMB	Y	U	0.000	0.3738	N/A	0.000
72	LR	LWL1	MEMB	Y	U	0.000	0.5161	N/A	0.000
73	LR	LWL1	MEMB	Y	U	24.771	-0.1898	N/A	24.771
74	LC	LWL2	MEMB	Y	U	0.000	0.3738	N/A	0.000
75	RC	LWL2	MEMB	Y	U	0.000	0.3738	N/A	0.000
76	LR	LWL2	MEMB	Y	U	0.000	0.3263	N/A	0.000
77	LR	LWL2	MEMB	Y	U	24.771	0.1898	N/A	24.771
78	LC	LWL3	MEMB	Y	U	0.000	0.1602	N/A	0.000
79	RC	LWL3	MEMB	Y	U	0.000	0.1602	N/A	0.000
80	LR	LWL3	MEMB	Y	U	0.000	0.3026	N/A	0.000
81	LR	LWL3	MEMB	Y	U	24.771	-0.1898	N/A	24.771
82	LC	LWL4	MEMB	Y	U	0.000	0.1602	N/A	0.000
83	RC	LWL4	MEMB	Y	U	0.000	0.1602	N/A	0.000
84	LR	LWL4	MEMB	Y	U	0.000	0.1127	N/A	0.000
85	LR	LWL4	MEMB	Y	U	24.771	0.1898	N/A	24.771
86	LC	MWL1	MEMB	Y	U	0.000	-0.2000	N/A	0.000
87	RC	MWL1	MEMB	Y	U	0.000	0.2000	N/A	0.000
88	LR	MWL1	GLOB	X	U	0.000	0.0083	N/A	0.000
89	LC	MWL2	MEMB	Y	U	0.000	0.2000	N/A	0.000
90	RC	MWL2	MEMB	Y	U	0.000	-0.2000	N/A	0.000
91	LR	MWL2	GLOB	X	U	0.000	-0.0083	N/A	0.000
92	LC	WL3	MEMB	Y	U	0.000	0.2788	N/A	0.000
93	RC	WL3	MEMB	Y	U	0.000	-0.1305	N/A	0.000
94	LR	WL3	MEMB	Y	U	0.000	0.3263	N/A	0.000
95	LR	WL3	MEMB	Y	U	24.771	0.1898	N/A	24.771
96	LC	WL4	MEMB	Y	U	0.000	0.0653	N/A	0.000
97	RC	WL4	MEMB	Y	U	0.000	-0.3441	N/A	0.000
98	LR	WL4	MEMB	Y	U	0.000	0.1127	N/A	0.000
99	LR	WL4	MEMB	Y	U	24.771	0.1898	N/A	24.771
100	LC	WL1D	MEMB	Y	U	0.000	-0.0581	N/A	0.000

101	RC	WL1D	MEMB	Y	U	0.000	0.1242	N/A	0.000
102	LR	WL1D	MEMB	Y	U	0.000	0.2299	N/A	0.000
103	LR	WL1D	MEMB	Y	U	24.771	-0.0846	N/A	24.771
104	LC	WL2D	MEMB	Y	U	0.000	-0.1533	N/A	0.000
105	RC	WL2D	MEMB	Y	U	0.000	0.0291	N/A	0.000
106	LR	WL2D	MEMB	Y	U	0.000	0.1348	N/A	0.000
107	LR	WL2D	MEMB	Y	U	24.771	-0.0846	N/A	24.771
108	LC	LWL1D	MEMB	Y	U	0.000	0.1665	N/A	0.000
109	RC	LWL1D	MEMB	Y	U	0.000	0.1665	N/A	0.000
110	LR	LWL1D	MEMB	Y	U	0.000	0.2299	N/A	0.000
111	LR	LWL1D	MEMB	Y	U	24.771	-0.0846	N/A	24.771
112	LC	LWL2D	MEMB	Y	U	0.000	0.1665	N/A	0.000
113	RC	LWL2D	MEMB	Y	U	0.000	0.1665	N/A	0.000
114	LR	LWL2D	MEMB	Y	U	0.000	0.1454	N/A	0.000
115	LR	LWL2D	MEMB	Y	U	24.771	0.0846	N/A	24.771
116	LC	LWL3D	MEMB	Y	U	0.000	0.0714	N/A	0.000
117	RC	LWL3D	MEMB	Y	U	0.000	0.0714	N/A	0.000
118	LR	LWL3D	MEMB	Y	U	0.000	0.1348	N/A	0.000
119	LR	LWL3D	MEMB	Y	U	24.771	-0.0846	N/A	24.771
120	LC	LWL4D	MEMB	Y	U	0.000	0.0714	N/A	0.000
121	RC	LWL4D	MEMB	Y	U	0.000	0.0714	N/A	0.000
122	LR	LWL4D	MEMB	Y	U	0.000	0.0502	N/A	0.000
123	LR	LWL4D	MEMB	Y	U	24.771	0.0846	N/A	24.771
124	LC	WL3D	MEMB	Y	U	0.000	0.1242	N/A	0.000
125	RC	WL3D	MEMB	Y	U	0.000	-0.0581	N/A	0.000
126	LR	WL3D	MEMB	Y	U	0.000	0.1454	N/A	0.000
127	LR	WL3D	MEMB	Y	U	24.771	0.0846	N/A	24.771
128	LC	WL4D	MEMB	Y	U	0.000	0.0291	N/A	0.000
129	RC	WL4D	MEMB	Y	U	0.000	-0.1533	N/A	0.000
130	LR	WL4D	MEMB	Y	U	0.000	0.0502	N/A	0.000
131	LR	WL4D	MEMB	Y	U	24.771	0.0846	N/A	24.771

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)	189.5000
Response Acceleration Coeff., for 1 sec. Periods [S1] (%g)	62.3000
Long-period Transition Period Time [TL] (seconds)	16.0000
Seismic Performance Category	D
Soil Profile Type	E
Seismic Site Coefficient [Fa]	0.9000
Seismic Site Coefficient [Fv]	2.4000
Maximum Spectral Response Accel., for Short Periods [Sms] (g)	1.7055
Maximum Spectral Response Accel., for 1 sec. Periods [Sm1] (g)	1.4952
Design Spectral Response Accel., for Short Periods [Sds] (g)	1.1370
Design Spectral Response Accel., for 1 sec. Periods [Sd1] (g)	0.9968
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)	20.9688
Seismic Fundamental Period [T] Used (seconds)	0.3195
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)	6.6000
Seismic Deflection Amplification Factor [Cd]	3.0000
Seismic Response Coefficient [Cs] Used	0.2571
Seismic Story Drift [Cd*Drift/Importance Factor] (in)	3.665
Theta [Px*Ie*Delta/Vx/hx/Cd]	0.004
Theta Max [.5/BETA/Cd] where BETA=1.0	0.167

Roof Dead Load	=	5.458
Wall Weight	=	0.000
Collateral Load	=	2.594
Snow Load	=	0.000
Rafter Crane Weight	=	0.000
Total Roof Weight	=	8.052 kips
User Mass Load (1)	=	7.445
User Mass Load (2)	=	0.710
User Mass Load (3)	=	0.710

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 Total User Mass     =    8.865 kips

 Total Roof Weight   =    8.052
 Total User Mass     =    8.865
 Mezzanine Weight    =    0.000
 Col. Crane Weight   =    0.000
-------------------------------------
 TOTAL Bldg Weight   =   16.917 kips
       X                  X
 Seismic Coeff.      =   0.2571
-------------------------------------
 BASE SHEAR          =   4.3501 kips

 Seismic Load for Roof at col # 1  =   0.9992 kips
 Seismic Load for Roof at col # 2  =   1.0266 kips
-------------------------------------------------
 SEISMIC LOAD for Roof in TOTAL    =   2.0258 kips

 Seismic Ld for Mass # 1 @ col # 1 =   0.0000 kips
 Seismic Ld for Mass # 1 @ col # 2 =   2.1351 kips
-------------------------------------------------
 SEISMIC LOAD for Mass  in TOTAL   =   2.1351 kips

 Seismic Ld for Mass # 2 @ col # 1 =   0.0046 kips
 Seismic Ld for Mass # 2 @ col # 2 =   0.0000 kips
-------------------------------------------------
 SEISMIC LOAD for Mass  in TOTAL   =   0.0046 kips

 Seismic Ld for Mass # 3 @ col # 1 =   0.1845 kips
 Seismic Ld for Mass # 3 @ col # 2 =   0.0000 kips
-------------------------------------------------
 SEISMIC LOAD for Mass  in TOTAL   =   0.1845 kips
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* SEISMIC GENERAL LOAD CARDS GENERATED

LOAD NO.	MEM	NAME	SYS	DIR	TYP	DISTANCE	INTENSITY START	INTENSITY END	LENGTH
132	LC	EQ	YREF	X	C	18.332	0.9992	N/A	0.000
133	LC	EQ	YREF	X	C	0.500	0.0046	N/A	0.000
134	LC	EQ	YREF	X	C	19.938	0.1845	N/A	0.000
135	RC	EQ	YREF	X	C	20.266	1.0266	N/A	0.000
136	RC	EQ	YREF	X	C	22.000	2.1351	N/A	0.000

Left Column Analysis Length = 18.33 ft Kx = 1.00 Weight = 522. lbs
Effective Ix = 489.7 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	18.000	18.000	8.00x 0.2500	0.1850	8.00x 0.3125	0.00	55.0
2	7.38	18.000	18.000	8.00x 0.2500	0.2500	8.00x 0.3125	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
112	7.2	36.3	3.2	32.9	24.0	34.6	8.3	0.11	0.40	0.25	0.40	51
208	7.3	58.1	2.7	32.9	26.4	35.8	15.2	0.04	0.53	0.36	0.53	51

Left Rafter Analysis Length = 46.45 ft Kx = 1.00 Weight = 1041. lbs
Effective Ix = 563.6 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	14.98	23.000	23.000	6.00x 0.2500	0.1560	6.00x 0.2500	0.00	55.0
4	10.00	23.000	23.000	6.00x 0.2500	0.1560	6.00x 0.2500	0.00	55.0
5	10.00	23.000	23.000	6.00x 0.2500	0.1560	6.00x 0.2500	0.00	55.0
6	10.00	23.000	23.000	6.00x 0.2500	0.1560	6.00x 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	-3.5	-51.8	9.6	15.0	32.9	27.5	3.6	0.72	0.42	0.49	0.72	1
401	0.9	-33.0	0.3	32.9	32.9	13.5	3.6	0.02	0.25	0.61	0.61	63
505	2.8	-27.6	-0.0	32.9	32.9	12.9	3.6	0.00	0.22	0.54	0.54	51
612	-2.7	-56.9	-9.8	15.0	32.9	27.5	3.6	0.74	0.45	0.53	0.74	2

Right Column Analysis Length = 20.27 ft Kx = 1.00 Weight = 611. lbs
Effective Ix = 621.3 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	10.00	20.000	20.000	8.00x 0.2500	0.1850	8.00x 0.3125	0.00	55.0
8	9.25	20.000	20.000	8.00x 0.2500	0.2500	8.00x 0.3125	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
707	4.6	37.4	2.7	32.9	15.5	34.9	6.7	0.11	0.55	0.22	0.55	65
807	7.9	72.6	3.0	32.9	17.1	36.1	12.3	0.05	0.89	0.39	0.89	63

TOTAL MEMBER WEIGHT = 2174. lbs

LEFT EXTERIOR COLUMN 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, 11.7500
Plate Size : 8.0000x 18.7500x 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	11.265	38.436	55	0.29
Rod Shear	8.064	0.000	23.061	11	0.35

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	0.31250	8.000	37.123	3.718	55	0.10
Outer Flg	0.25000	8.000	29.698	7.064	12	0.24
Web Plate	0.18750	18.000	50.116	5.003	51	0.10

RIGHT EXTERIOR COLUMN 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, 13.7500
Plate Size : 8.0000x 20.7500x 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	10.310	38.436	57	0.27
Rod Shear	7.866	0.000	23.061	12	0.34

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	0.31250	8.000	37.123	3.226	57	0.09
Outer Flg	0.25000	8.000	29.698	7.014	11	0.24
Web Plate	0.18750	20.000	55.685	5.663	63	0.10

Vertical Knee Connection @ Left Rafter Depth 1

BOLTS A325 H.S. - Fully Tightened
(O.S.) 3 rows Extended - 3/4 in. Dia. - Standard (2 bolts per row)
(I.S.) 3 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 0.5000 in.	Plate:	6.00 x 0.5000 in.
Fy(Min)	50.0 ksi	Fy(Min)	50.0 ksi
Fu	65.0 ksi	Fu	65.0 ksi
Flanges:		Flanges:	
O.S. -	8.00 x 0.2500 in.	O.S. -	6.00 x 0.2500 in.
I.S. -	7.75 x 0.3125 in.	I.S. -	6.00 x 0.2500 in.
Web Depth	- 23.020 in.	Web Depth	- 23.020 in.
Web Thickness	0.250 in.	Web Thickness	0.156 in.
Gage	- 3.000 in.	Gage	- 3.000 in.
Center of Bolt to Flange:		Center of Bolt to Flange:	
Pf top (out)	- 1.833 in.	Pf top (out)	- 1.792 in.
BFCD top (out)	- 1.750 in.	BFCD top (out)	- 1.750 in.
Rise top (out)	- 0.059 in.	Rise top (out)	- 0.059 in.
XTO top (out)	- 1.812 in.	XTO top (out)	- 1.812 in.
Pf top (ins)	- 1.916 in.	Pf top (ins)	- 1.958 in.
BFCD top (ins)	- 1.750 in.	BFCD top (ins)	- 1.750 in.
Rise top (ins)	- 0.059 in.	Rise top (ins)	- 0.059 in.
XTI top (ins)	- 1.937 in.	XTI top (ins)	- 1.937 in.
Pf bot (out)	- 1.750 in.	Pf bot (out)	- 1.833 in.
BFCD bot (out)	- 1.750 in.	BFCD bot (out)	- 1.750 in.
Rise bot (out)	- 0.000 in.	Rise bot (out)	- 0.059 in.
XBO bot (out)	- 1.750 in.	XBO bot (out)	- 1.750 in.
Pf bot (ins)	- 1.938 in.	Pf bot (ins)	- 1.917 in.
BFCD bot (ins)	- 1.750 in.	BFCD bot (ins)	- 1.750 in.
Rise bot (ins)	- 0.000 in.	Rise bot (ins)	- 0.059 in.
XBI bot (ins)	- 1.938 in.	XBI bot (ins)	- 1.938 in.
Bolt Spacing	- 3.000 in.	Bolt Spacing	- 3.000 in.
Controlling Mode : Thick Plate		Controlling Mode : Thick Plate	
Angle top - 87.6 degrees		Angle top - 92.4 degrees	
Angle bot - 90.0 degrees		Angle bot - 87.6 degrees	

Controlling Load Combinations:	Left Side Conn Moments (k-ft)	Axial (kips)	Shear (kips)	Right Side Conn Moments (k-ft)	Axial (kips)	Shear (kips)
41) 1.4274DL +1.4274COLL -3.5	-171.78	-4.93	10.97	-171.78	-4.93	10.97
36) 0.6726DL +3.5EQ (SOA-R)	141.09	3.77	-5.48	141.09	3.77	-5.48

Connection Design Summary:
Bolt Unity Check (O.S.) = 0.9096 Plate Unity Check (O.S.) = 0.9096
Bolt Unity Check (I.S.) = 0.7906 Plate Unity Check (I.S.) = 0.7906

Vertical Knee Connection @ Left Rafter Depth 5

BOLTS A325 H.S. - Fully Tightened
(O.S.) 3 rows Extended - 3/4 in. Dia. - Standard (2 bolts per row)
(I.S.) 3 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 0.5000 in.	Plate:	8.00 x 0.5000 in.
Fy(Min)	50.0 ksi	Fy(Min)	50.0 ksi
Fu	65.0 ksi	Fu	65.0 ksi
Flanges:		Flanges:	
O.S. -	6.00 x 0.2500 in.	O.S. -	8.00 x 0.2500 in.
I.S. -	6.00 x 0.2500 in.	I.S. -	7.75 x 0.2500 in.
Web Depth	- 23.020 in.	Web Depth	- 23.020 in.
Web Thickness	0.156 in.	Web Thickness	0.250 in.
Gage	- 3.000 in.	Gage	- 3.000 in.
Center of Bolt to Flange:		Center of Bolt to Flange:	
Pf top (out)	- 1.833 in.	Pf top (out)	- 1.792 in.
BFCD top (out)	- 1.750 in.	BFCD top (out)	- 1.750 in.
Rise top (out)	- 0.059 in.	Rise top (out)	- 0.059 in.
XTO top (out)	- 1.812 in.	XTO top (out)	- 1.812 in.
Pf top (ins)	- 1.916 in.	Pf top (ins)	- 1.958 in.
BFCD top (ins)	- 1.750 in.	BFCD top (ins)	- 1.750 in.
Rise top (ins)	- 0.059 in.	Rise top (ins)	- 0.059 in.
XTI top (ins)	- 1.937 in.	XTI top (ins)	- 1.937 in.
Pf bot (out)	- 1.792 in.	Pf bot (out)	- 1.813 in.
BFCD bot (out)	- 1.750 in.	BFCD bot (out)	- 1.750 in.
Rise bot (out)	- 0.059 in.	Rise bot (out)	- 0.000 in.
XBO bot (out)	- 1.812 in.	XBO bot (out)	- 1.812 in.
Pf bot (ins)	- 1.958 in.	Pf bot (ins)	- 1.937 in.
BFCD bot (ins)	- 1.750 in.	BFCD bot (ins)	- 1.750 in.
Rise bot (ins)	- 0.059 in.	Rise bot (ins)	- 0.000 in.
XBI bot (ins)	- 1.937 in.	XBI bot (ins)	- 1.937 in.
Bolt Spacing	- 3.000 in.	Bolt Spacing	- 3.000 in.
Controlling Mode : Thick Plate		Controlling Mode : Thick Plate	
Angle top - 87.6 degrees		Angle top - 92.4 degrees	
Angle bot - 92.4 degrees		Angle bot - 90.0 degrees	

	Left Side Conn			Right Side Conn		
Controlling Load Combinations:	Moments (k-ft)	Axial (kips)	Shear (kips)	Moments (k-ft)	Axial (kips)	Shear (kips)
40) 1.4274DL +1.4274COLL +3.5	-170.41	2.89	-10.96	-170.41	2.89	-10.96
37) 0.6726DL -3.5EQ (SOA-L)	137.89	-4.05	5.48	137.89	-4.05	5.48

Connection Design Summary:
Bolt Unity Check (O.S.) = 0.9461 Plate Unity Check (O.S.) = 0.9461
Bolt Unity Check (I.S.) = 0.7297 Plate Unity Check (I.S.) = 0.7297

Left Knee Design
==========

Knee Web Thickness	:	Use 0.2500 in. Thick Web
Bearing Stiffener Type	:	Horizontal
Bearing Stiffener at Knee	:	3.7500 X 0.3125 in.
Column Cap Plate	:	8.0000 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	18.016 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	18.000 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	22.270 in.	SAW on NEAR Side	(STD. WELD)
Column Outer Flange:	0.1875 in.	x	22.270 in.	GMAW on FAR Side	(STD. WELD)
Column Connection Pl.:	0.1875 in.	x	23.020 in.	GMAW on BOTH Sides	(STD. WELD)

Knee Stiffener to Connection Plate Weld
==========

0.2500 in. x 3.750 in. GMAW Fillet Weld on BOTH Sides of Stiff. (STD. WELD)

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

Right Knee Design
==========

Knee Web Thickness	:	Use 0.2500 in. Thick Web
Bearing Stiffener Type	:	Horizontal
Bearing Stiffener at Knee	:	3.7500 X 0.2500 in.
Column Cap Plate	:	8.0000 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	20.017 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	20.000 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	23.853 in.	SAW on NEAR Side	(STD. WELD)
Column Outer Flange:	0.1875 in.	x	23.853 in.	GMAW on FAR Side	(STD. WELD)
Column Connection Pl.:	0.1875 in.	x	23.020 in.	GMAW on BOTH Sides	(STD. WELD)

Knee Stiffener to Connection Plate Weld
==========

0.1875 in. x 3.750 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 @ 3'8	@ FLOOR	1 @ 22'0	@ FLOOR
1 @ 3'10			
1 @ 6'0			
1 @ 6'5-1/4"	@ EAVE		

PURLIN SPACES - HORIZONTAL MEASUREMENTS

LEFT RAFTER		RIGHT RAFTER
6 @ 4'8	@ EAVE	
4 @ 5'0		
1 @ 1'6	@ 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

LFT COLUMN	3.67 (N)	7.50 (N)	13.50 (C)							
LFT RAFTER	4.67 (C)	9.34 (N)	14.01 (N)	18.68 (C)	23.35 (N)	28.02 (C)	33.03 (N)	38.03 (N)	43.04 (C)	48.04 (N)

"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	3.688	0.006	3.691	0.007
Load Comb	126	114	126	120
Defl.	H/ 59		H/ 65	
Neg. Max	-3.640	-0.010	-3.654	-0.010
Load Comb	125	1	125	1
Defl.	H/ 60		H/ 66	

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	-1.049 in.	24.69 ft.	0.479 in.	20.12 ft.
Load Comb	1		120	
Defl.	L/531		L/999	

PEAK DEFLECTIONS (Positive = Y:Upward)

	Y-Def
Pos. Max	0.007 in.
Load Comb	120
Defl.	L/999
Neg. Max	-0.010 in.
Load Comb	2
Defl.	L/999

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
122	3.0
123	3.0
124	3.0
125	3.0
126	3.0
127	3.0

Vertical Clearance at the Left Knee is 17.3849 feet
Vertical Clearance at the Right Knee is 19.2494 feet