Weaver
CONSTRUCTION MANAGEMENT
3679 S Huron Street, Suite 404 Englewood, Colorado 80110
Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITAL

June 19, 2012
Submittal No: 13121-005

PROJECT: **Harold Thompson Regional WRF**
Birdsall Rd.
Fountain, CO 80817
Job No. 2908

ENGINEER: **GMS, Inc.**
611 No. Weber St., #300
Colorado Springs, CO 80903
719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan Sewage Disposal District**
901 S. Santa Fe Ave.
Fountain, CO 80817
719-382-5303 James Heckman

CONTRACTOR: **Heath Steel**
141 Racquette Dr
Fort Collins, CO 80522
970-490-8031 Randy Gates
rgates@heathsteel.com

SUBJECT: Operations Building: Complete Set of Anchor Rod Plans, Final Design Drawings (for Permit Use Only), Letters of Certification, Design Calculations, Frame Fabrications

SPEC SECTION: 13121

PREVIOUS SUBMISSION DATES:

DEVIATIONS FROM SPEC: ___ YES _X_ NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver Construction Management and, unless indicated otherwise, has been found to be in conformance with the intent of the contract documents.

Contractor's Stamp:	Engineer's Stamp:
Date: 6/19/12 Reviewed by: Tyler Ammerman ( ) Reviewed Without Comments (X) Reviewed With Comments	

ENGINEER'S COMMENTS:_____

Project: HDTWRF Project

Location: Fountain, CO

Supplier: Heath Steel

Date: 6/19/12

Submittal for: Operations Addition

Submittal Comments:

1) **WCMI recognizes that the preliminary drawings have the out to out dimension of the Ops building at 51'-0" and the supplier's drawings show 51'-1/2". This is to match the dimensions of the existing equipment and maintenance building.**

CHIEF
CHIEF INDUSTRIES, INC.
3942 Old West Highway 30
P.O. Box 2078
Grand Island, Nebraska 68802-2078
Phone 308/389-7200 - Fax 308/389-7221

June 7, 2012

Re: Chief Order No. B3004915
Description: 51'-0 ½" x 39' x 19'-4"
Builders Name: Heath Steel
Building Owners Name: Weaver Construction Management
Jobsite City, State: Fountain, CO

Gentlemen:

Please accept this letter as certification that the Chief components, produced for the above described project to be furnished to Heath Steel, for Weaver Construction Management, Fountain, CO, have been designed for the following criteria as specified by Purchaser in the order documents:

2006 MBMA Occupancy Category	Substantial Hazard
Roof Live Load	20 psf
(Tributary Area Reduction Not Allowed)	
Collateral Load	3 psf
Ground Snow Load (P_g)	30 psf
Exposure Factor (C_e)	1.0
Thermal Factor (C_t)	1.0
Importance Factor (I)	1.1
Flat Roof Snow Load (P_f)	23.10 psf
Minimum Roof Snow	30.0 psf
Building Enclosure	Enclosed
Wind Speed	100 mph (GCpi ± 0.18)
Exposure Category	C
Importance Factor (I)	1.15
Wind Pressure (q)	23.52 psf

Seismic	
Spectral Response Short Periods (S_s)	18.5%
Spectral Response 1 s Period (S_1)	5.9%
Seismic Importance Factor	1.25
Design Category	B
Site Class	D
Seismic Resisting System	
Longitudinal Direction	Steel System (R=3.0)
Lateral Direction	Steel System (R=3.0)
Seismic Response Coefficient (C_s)	0.082
Spectral Response Parameter Short Period (S_{DS})	0.197
Spectral Response Parameter 1 s Period (S_{D1})	0.094
Analysis Procedure	ELF
Base Shear	2112 lbs.
Other Loads:	
None	

and applied in accordance with the Pikes Peak Regional 2011 Building Code.

The design of Chief structural steel components is in accordance with the provisions of the 13th Edition of AISC and the NASPEC 2007 AISI Standard.

These Chief components as supplied, when properly erected as furnished, on an adequate foundation, will meet the loading requirements supplied to Chief by Purchaser in accordance with good engineering practices.

This certification does not cover field modifications nor does it cover materials furnished by someone other than Chief Industries, Inc.; nor the connection between Chief components and those manufactured or supplied by someone other than Chief Industries, Inc.

Chief design and detailing facilities: Grand Island, NE and Lincoln, NE. Chief Fabrication facilities: Grand Island, NE and Rensselaer, IN.

Sincerely,

Quentin L. Yada, P.E.
Sr. Project Engineer
Chief Industries, Inc. - Buildings Division
QY/tl

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. Box 2078
3942 W. Old Highway 30
Grand Island, NE 68802-2078
Phone (308) 389-7200 FAX (308) 389-7370

6/8/2012

Heath Steel
141 Racquette Drive
PO Drawer H
Fort Collins, CO 80522
Attn: Randy Gates

Re: B3004915 / Weaver Construction Management/Lower Fountain Metro Sewage

For Construction

Drawings or items included are as follows:

No. of Sets	Revision No.	Latest Revision Date	Description
3			Complete Sets of Anchor Rod Plans
3			Final Design Drawings - For Permit Use Only
2			Letters of Certification
2			Design Calculations
3			Frame Fabs

For questions concerning this mailing, contact:

Shawn Springer
P.O. Box 2078
3942 W. Old Highway 30
Grand Island, NE 68802-2078
Phone: (308) 385-4632
E-mail: shawn.springer@chiefind.com

Design Calculations For:

WEAVER CONST MANAGEMENT

Fountain, CO

Builder: Heath Steel

B3004915

Chief Buildings
A Division of Chief Industries, Inc.
(308)389-7466
P.O. Box 2078
Grand Island, NE 68802-2078

6.8.17

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS

CHIEF Chief Buildings	Design Calculations Heath Steel Fountain, CO	Job No. : B3004915 By : CDL Date : 6/5/2012 Page : 1/10

Building	:	*A*
Type	:	*RF*
Width	:	*51'-0 1/2"*
Length	:	*39'-0"*
Eave Height	:	*19'-4"*
Bays	:	*18'-6", 20'-6"*
Roof Slope	:	*3 : 12*

Design Criteria

(1) - A.I.S.C.
ASD Manual of Steel Construction 13th Edition.

(2) - A.I.S.I.
Cold Formed Steel
NASPEC 2007 Standard

(3) - *IBC 2009*
Occupancy Category - III

MBMA : *Substantial Hazard Occupancy*

Roof Live Load *20.00 psf*
(Tributary Area Reduction Not Allowed)

Collateral load *3.00 psf*

Roof Top Units : *N/A*

Ground Snow Load (P_g) *30.00 psf*
Exposure Factor (C_e) : *1.0*
Thermal Factor (C_t) : *1.0*
Importance Factor (I_s) : 1.10
Flat-Roof Snow Load (P_f) : *23.10 psf*
Minimum Roof Snow Load : *30.00 psf*

Mezzanine Loads : *N/A*

Cranes : *N/A*

Wind Speed *100.00 mph*
Exposure Category : *C*
Importance Factor (I_w) : 1.15
Wind Pressure (q) : *23.52 psf*
Building Enclosure : *Enclosed - (GCpi = ± 0.18)*

Additional Loads : *N/A*

Seismic Analysis Equivalent Lateral Force

Short response acceleration-(S_s) :	*0.185*	S_{DS} =	*0.197*
One second response acceleration-(S_1) :	*0.059*	S_{D1} =	*0.094*
Seismic design category :	*B*	Seismic site class :	*D*
Occupancy Category - III		Importance Factor (I_E) :	1.25
Seismic resisting systems :	1		

Structural Steel Systems

Response coefficient(s) :
R = 3.00 *Cs = 0.082*

Maximum Base Shear : *2112.0 lbs*

Roof Panels - Design Criteria & Loads

Seam-Loc *24* Gage - *50 ksi* *24 in* *Metal Sales Seam-Loc 24*
4.00 ft Panel Span
4 - Span Condition

Uniform Live Load = *20.00 psf*
Maximum Balanced or Unbalanced Snow Load = *38.17 psf*
Maximum Snow & Drifted Snow Load at the Endwalls = *38.17 psf*

Allowable Pressure = *1.000 x 93.0* = *93.00 psf* *O.K.*

4'-0" Spa. *Interior Zone Wind Suction* = *25.40 psf* Allowable = 49 psf
4'-0" Spa. *Edge Zone Wind Suction* = *44.22 psf* Allowable = 49 psf
2'-0" Spa. *Corner Zone Wind Suction* = *65.39 psf* Allowable = 70 psf

Allowable Suction = *1.000 x 70.0* = *70.00 psf* *O.K.*

(Applied Loads / Allowable Loads) < 1.03 Therefore Roof Panels are O.K.

Wall Panels - Design Criteria & Loads

Stucco *20* Gage - *50 ksi* *16"* *Stucco Wall Panel*
4.00 ft Panel Span
4 - Span Condition

Wind Pressure = *27.73 psf*
Interior Zone Wind Suction = *30.08 psf*
Corner Zone Wind Suction = *37.20 psf*

I - Check for Bending

(One-Third Stress Increase is NOT Allowed.)

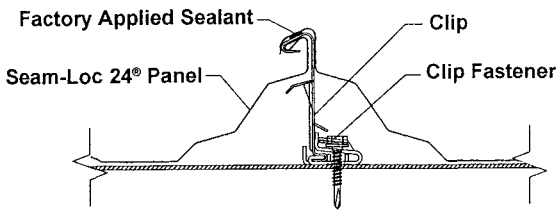
Allowable Pressure	= *1.000 x*	*73.300*	= *73.30 psf*	*O.K.*
Allowable Suction	= *1.000 x*	*73.300*	= *73.30 psf*	*O.K.*

(Applied Loads / Allowable Loads) < 1.03 Therefore Wall Panels are O.K.

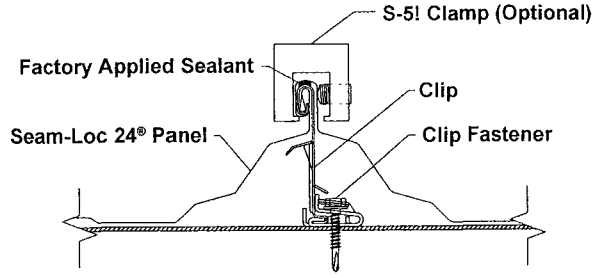
SEAM-LOC 24®

CONDENSED TECHNICAL REFERENCE

ATTACHMENT DETAILS

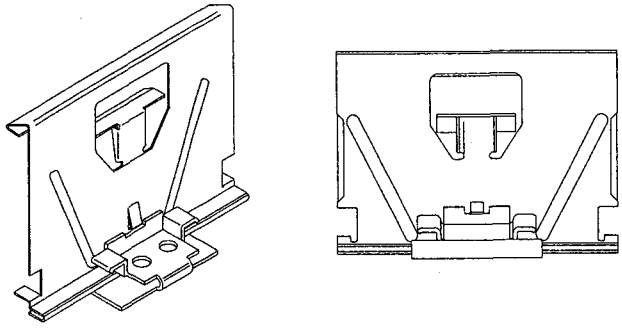


BEFORE SEAMING



AFTER SEAMING

PANEL CLIP



GENERAL INFORMATION

▶ Slope
The minimum recommended slope for the Seam-Loc 24® roof panel is 1/4:12.

▶ Substructure
Seam-Loc 24® is designed to be utilized over open structural framing or a solid substrate.

▶ Clips
Clip spacing is based upon the spacing of structural framing members and loading requirements.

▶ Coverage
Seam-Loc 24® panels are available in a 2 11/16" seam height with a 24" or 18" width coverage.

▶ Length
Minimum factory cut length is 5'-0". Maximum recommended panel length is 45'-0". Longer panels require additional consideration in packaging, shipping, and erection. Please consult Metal Sales for recommendations.

▶ Fasteners
The fastener selection guide should be consulted for choosing the proper fastener for specific applications. Quantity and type of fastener must meet necessary loading and code requirements.
NOTE: All panels are subject to surface distortion due to improperly applied fasteners. Overdriven fasteners will cause stress and induce oil canning across the face of the panel at or near the point of attachment.

▶ Availability
Finishes: Acrylic Coated Galvalume® and PVDF (Kynar 500).
Gauges: 24ga and 22ga

SECTION PROPERTIES

ALLOWABLE UNIFORM LIVE LOADS PSF (3 or More Equal Spans)

Ga.	Width (in.)	Yield KSI	Weight PSF	Top in Compression		Bottom in Compression		Inward (Gravity / Deflection) Load						Outward Uplift (Stress) Load					
				Ixx In^4/ft	Sxx In^3/ft	Ixx In^4/ft	Sxx In^3/ft	2'	3'	3.5'	4'	4.5'	5'	2'	3'	3.5'	4'	4.5'	5'
24	24"	50	1.09	0.2055	0.0952	0.0920	0.0653	342	161	120	93	74	60	70	59	54	49	43	38
24*	24"	50	1.09	0.2055	0.0952	0.0920	0.0653	342	161	120	93	74	60	131	105	92	79	66	54
24	18"	50	1.15	0.2480	0.1221	0.1220	0.0869	455	214	160	123	98	80	93	78	70	62	54	46
24*	18"	50	1.15	0.2480	0.1221	0.1220	0.0869	455	214	160	123	98	80	169	134	117	100	83	66
22	24"	50	1.43	0.2725	0.1263	0.1280	0.0882	458	217	161	125	99	81	74	64	59	54	49	44

1. Theoretical section properties have been calculated per AISI 2007 "Specification for the Design of Cold-formed Steel Structural Members." Ixx and Sxx are effective section properties for deflection and bending.
2. Allowable load is calculated in accordance with AISI 2007 specifications considering bending, shear, combined bending and shear, deflection, and ASTM E-1592 testing and fastener pullout from 16 ga. supports. Allowable load considers the worst case of 3 and 4 equal span conditions. Allowable load does not address web crippling. Panel weight is not considered.
3. Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
4. Allowable loads do not include a 1/3 stress increase in uplift.

* Loads determined using the S-5! Clamp at each panel clip.

metal sales manufacturing corporation

Kent, WA 800.431.3470
Temple, TX 800.543.4415
Longmont, CO 800.289.7663
Antioch, TN 800.251.8508
Woodland, CA 800.759.6019
Rogers, MN 800.3289316
Spokane, WA 800.572.6565

Jefferson, OH 800.321.5833
Rock Island, IL 800.747.1206
Sellersburg, IN 800.999.7777
Jacksonville, FL 800.394.4419
Orwigsburg, PA 800.544.2577
Independence, MO 800.747.0012
Fontana, CA 800.782.7953

Anchorage, AK 866.640.7663
Bay City, MI 888.777.7640
Detroit Lakes, MN 888.594.1394
Mocksville, NC 800.228.6119
Fort Smith, AR 877.452.3915

www.metalsales.us.com

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CUSTOM PANEL SYSTEMS
PRE-FINISHED STUCCO WALL PANEL
20 GA STEEL, 16" WIDE
(WITH M-1 STRUCTURAL SEALANT IN SIDE JOINTS)

NEGATIVE DESIGN LOADS

SPAN (FT)	ULTIMATE TEST LOAD (PSF)	DESIGN LOAD (PSF)
2	161.0	107.0
2.5	-	100.2
3	-	93.5
3.5	-	86.8
4	-	80.0
4.5	-	73.3
5	100.2	66.6

NOTES:

1) The above loads were derived from uplift tests done in accordance with ASTM E1592-95 (see Farabaugh Engineering and Testing , Inc. Test Report No. T201-01 for specific test data)

2) Design values are interpolated from tests performed at spans of 2'-0" and 5'-0" only.

3) Design Load contains a 2.0 factor of safety and a 33% increase due to wind per AISI 1996.

4) This material is subject to change without notice. Please contact Custom Panel for most current data.

5) Yield of steel min. 50 ksi.

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Project No. T201-01

TEST DATA FOR 16" CUSTOM WALL PANEL 20 GA W/SEALANT, 3 SPANS @ 5 '-0" oc							
	DEFLECTION DIAL READINGS (INCHES)						
LOAD (PSF)	DIAL 1	DIAL 2	DIAL 3	DIAL 4	DIAL 5	DIAL 6	REMARKS
1.9	0	0	0	0	0	0	PANEL WT.
12.3	0.166	0.079	0.1	0.122	0.081	0.134	
1.9	0.027	-0.027	0.001	-0.012	0.015	0.01	PANEL WT.
17.5	0.232	0.161	0.125	0.185	0.085	0.197	
1.9	0.055	-0.033	0.01	-0.007	0.037	0.018	PANEL WT.
22.7	0.307	0.272	0.239	0.274	0.093	0.263	
1.9	0.082	-0.005	0.033	0.024	0.052	0.045	PANEL WT.
27.9	0.398	0.382	0.304	0.364	0.115	0.352	
1.9	0.125	0.034	0.062	0.048	0.077	0.088	PANEL WT.
33.1	0.51	0.472	0.417	0.467	0.177	0.456	
1.9	0.153	0.044	0.094	0.086	0.104	0.141	PANEL WT.
43.5	0.681	0.649	0.579	0.661	0.222	0.58	
1.9	0.263	0.166	0.173	0.197	0.154	0.219	PANEL WT.
53.9	0.809	0.839	0.738	0.8	0.266	0.749	
1.9	0.288	0.286	0.277	0.317	0.236	0.349	PANEL WT.

ULTIMATE TEST LOAD = 100.2 PSF (FASTENER PULLOVER)

NOTE: SEE SKETCH 1 FOR LOCATION OF FASTENER PULLOVER.

CHIEF INDUSTRIES INC.
SEISMIC DESIGN REPORT - BDS V12.02

ENGINEER : CL

JOB NO. B3004915
BUILDING A
DATE 6-JUN-12
TIME 08:03:58

BUILDING DATA
BLDG CODE : IBC2009 EXP C
RF 51.04 X 39 X 19.33
ROOF PITCH: 3.00/12

SNOW LOAD : 30.00 PSF
LIVE LOAD : 20.00 PSF
WIND LOAD : 23.52 PSF
COLLATERAL LOAD : 3.00 PSF

SW A WEIGHT = 4.5 PSF EW B WEIGHT = 0.0 PSF
SW C WEIGHT = 4.5 PSF EW D WEIGHT = 4.5 PSF
SEISMIC CODE: ASCE 7-05
Ss= 18.5% S1= 5.9% R = 3.00 (SW A) R = 3.00 (SW C)
R = 3.00 (FRAMES) R = 3.00 (EW B) R = 3.00 (EW D)
Occupancy Category= III Seismic Design Category = B I = 1.25
Seismic Site Class= D Fa = 1.600 Fv= 2.400 SDS = 0.197 SD1 = 0.094
Tot Bldg Wt = 25687. Lbs. Longitudinal Cs= 0.082 Base Shear = 2112. Lbs.

**** LONGITUDINAL DIRECTION ****

TOTAL ROOF WEIGHT = 14187. LBS
ENDWALL B WEIGHT = 0. LBS
ENDWALL D WEIGHT = 2357. LBS
WT FOR ROOF DIAPHRAGM = 16544. LBS

DIAPHRAGM SHEAR=Vd=Cs*W = 1360. LBS
EQUIVILENT ASD DIAPHRAGM SHEAR LOAD = 952. LBS
WIND DIAPHRAGM SHEAR = 10226. LBS
W > 0.7*E THEREFORE WIND CONTROLS ROOF BRACING

WT FOR SW A BRACING = 9968. LBS
WT FOR SW C BRACING = 9968. LBS
SEISMIC TO SW A = Cs*W= 820. LBS
SEISMIC TO SW C = Cs*W= 820. LBS
WIND SHEAR SW (A) = 5113. LBS
WIND SHEAR SW (C) = 5113. LBS
W > 0.7*E THEREFORE WIND CONTROLS SW (A) BRACING
W > 0.7*E THEREFORE WIND CONTROLS SW (C) BRACING

**** LATERAL DIRECTION ****

TOTAL ROOF WEIGHT =	363.8 PLF
SIDEWALL A WEIGHT =	39.0 PLF
SIDEWALL C WEIGHT =	39.0 PLF
WT FOR INTERIOR FRAMES =	441.8 PLF
SEISMIC SHEAR TO FRAMES = Cs*W =	36.3 PLF
50 YEAR LATERAL WIND SHEAR =	177.4 PLF

W > 0.7*E THEREFORE WIND CONTROLS LATERAL LOAD ON FRAMES

P-DELTA CHECK: (See ASCE 7-05 Eq. 12.8-17)
LIMIT SEISMIC FRAME DEFLECTION TO .250*H*V/WT = H/69 (V = 25.4 PLF)
NOTE: Seismic deflection limit is for combinations with 0.7*E
USE H/60 FOR 10 YEAR WIND DEFLECTION

*** ENDWALL BRACING DESIGN ***

LATERAL WEIGHT EW B = 4086.3 LBS.
LATERAL WEIGHT EW D = 7163.5 LBS.

ORDINARY MOMENT FRAME DESIGN AT ENDWALL D

NUMERICAL COEFFICIENT, R = 3.000
FOR EW D: Cs = 0.082
SEISMIC SHEAR EW (D) = V = Cs*W = 589.0 LBS.
EQUIV. FORCE @ EW (D) = 0.7*V = 412.3 LBS.
WIND FORCE AT EW (D) = 2839.2 LBS.
WIND CONTROLS ENDWALL D OMF DESIGN

CHIEF BUILDINGS
a division of Chief Industries, Inc.
http://www.chiefbuildings.com

We Engineer Relationships.

Seismic Bracing B3004915 CDL 6-6-12

Existing SW A Sei Load = 1939 lb (Does not include EW D Wt.)
New SW A Sei Load = 820 lb.
total 2760 lb

2760 lb × 0.7 = 1932 lb < 5362 lb.

* Wind Controls Bracing *

MATERIAL SPECIFICATIONS

The following is a list of the different materials used in this building. included are ASTM Specifications and Nominal Strength.

	ASTM Designation	Nominal Strength
Plate and Bar	A1011-XX, SS A572-XX or A529-XX	Fy = 55 ksi
C&Z Sections	A1011-XX, SS	Fy = 55 ksi
Wind Bracing Cable	A475-XX Extra High Strength	(see cable charts)
Paneling		
CS, AP & LTC	A792-XX, SS	Fy = 80 ksi
MSC & STC	A792-XX, SS, Class 1	Fy = 50 ksi
Structural Bolts	A325-XX	Ft = 90 ksi

Revised 1/12/09

CABLE BRACING LOAD CAPACITIES

Strand Size	Breaking Strength	Working Strength	Eyebolt Size	Eyebolt Force
1/4"	6.65 k	3.33 k	1/2"	3.76 k
3/8"	15.40 k	7.70 k	5/8"	5.87 k
1/2"	26.90 k	13.45 k	7/8"	11.51 k

(1) Breaking Strength - Values from ASTM A475 for extra high strength strand.

(2) Working Strength - Calculated from the Breaking Strength 2.0 for a Safety Factor.

(3) Eyebolt Force - Based on ASTM A36 threaded fasteners.

revised 1/12/09

FRAME DESIGN AND OUTPUT SUMMARY

A. General

The frames are designed as a fully rigid jointed plane frames using a two-dimensional force analysis. All column bases are typically designed as pin supports. Interior columns (when applicable) may be either designed as pinned or fixed at the top connection to the rafter depending on the stiffness and other design requirements for the frame. Lean-to frames (when applicable) have one exterior column and a simply supported rafter beam that is supported at the high side by another frame. Column and rafter beam lateral support is provided by the girts or purlins. The inside flange lateral support is provided at the designated locations by flange braces connected between the member inside flange and the girt or purlin.

B. Analysis

The frame is analyzed using a stiffness matrix method with nonprismatic member stiffness properties. The joint deflections and member cross sectional forces for all loading cases are calculated and are used in the stress analysis. Bending, axial, and shear stress analysis are based on AISC Specifications. The bending and axial load combined stress ratio is normally held below 1.03.

C. Frame Stability

Frames are designed for the stability requirements of the 13th edition of AISC using either the Direct Analysis Method or a Design by First-Order Analysis using notional loads to account for Second-Order Effects.

D. Loads

Load combinations are based on the applicable building code and loading indicated on the building order.

The snow and live loads are applied on the horizontal projection. The wind load is applied on the frame in accordance with the applicable buildng code. Increased tributary loading is applied to the interior frame in two bay buildings with continuous purlins.

FRAME DESIGN AND OUTPUT SUMMARY

(Continued)

E. Moment End-Plate Connecion Design

Moment connections are designed in accordance with the AISC/MBMA Steel Design Guide 16 "Flush and Extended Multiple-Row Moment End-Plate Connections" published in 2002 using fully tensioned A325 bolts.

Shear transfer between the plates is based on a bearing type shear connections. Bolt shear is taken as average shear on each bolt used for resisting the shear force. All bolt stress values are in accordance with AISC 13th edition specifications for ASTM A325 bolts in tension, shear, and combined tension and shear.

F. Output

Output include the follow reports.

1. Frame Design Data
2. Loading Summary
3. Frame Reaction and Deflection Report
4. Design Summary Report
5. Flange Brace Locations Report
6. Weld Summary Report
7. Conection Report

Based on the size and type of frame the following reports may be included.

1. Dimensions and Properities Report
2. Forces, Moments and Stresses Report
3. Deflections and Rotations Report

The reports are self-explanatory with the exception of joints and sections. Joints are located at the base and top of exterior and interior columns (when applicable) and where the roof slope changes. Joint numbers start at the base of the left exterior column. Sections occur between joints, with a maximum of 8 sections allowed between joints. Web thickness and flange width and thickness are constant within a section.

CONFIGURATION (NON-SYMMETRIC FRAME)

BUILDING WIDTH	=	51.04 FT.
NUMBER OF SPANS	=	1
SPAN WIDTHS	=	51.04
DESIGN BAY SIZE	=	23.59 FT.
LEFT EAVE HEIGHT	=	17.33 FT.
RIGHT EAVE HEIGHT	=	17.33 FT.
LEFT RAFTER SLOPE (R/12)	=	3.00
RIGHT RAFTER SLOPE (R/12)	=	-3.00
GIRT OUTSET	=	8.00 IN.
PURLIN DEPTH	=	10.00 IN.

STEEL YIELD:
FLANGES 55. KSI
WEBS 55. KSI
LOADINGS ...

DEAD LOAD = 2.627 PSF (Dead Load of Rigid Frame is calculated internally)
COLLATERAL= 3.000 PSF
LIVE LOAD = 20.000 PSF
SNOW LOAD = 30.000 PSF
WIND LOAD = 23.523 PSF

LOAD CONDITIONS ...

1	= DEAD + LIVE LOAD	100.	DL	100.	LL	100.	COL		
2	= DL + SNOW LOAD	100.	DL	100.	SL	100.	COL		
3	= DL + SNOW LOAD	100.	DL	100.	SL	100.	COL		
4	= .6DL+WLL (NASI)	60.	DL	100.	WLL				
5	= .6DL+WLR (NASI)	60.	DL	100.	WLR				
6	= .6DL+WL2 (NASI)	60.	DL	100.	WL2				
7	= .6DL+WR2 (NASI)	60.	DL	100.	WR2				
8	= .6DL+WLE+BR1 (NASI)	60.	DL	100.	WLE	100.	BR1		
9	= .6DL+WE2+BR1 (NASI)	60.	DL	100.	WE2	100.	BR1		
10	= DL+.75(SL+WE2+BR2) (NASI)	100.	DL	100.	COL	75.	SL	75. WE2	75. BR2
11	= DL+WE2+BR2 (NASI)	100.	DL	100.	COL	100.	WE2	100. BR2	
12	= DL + COL + .75(LL + WLL) (NASI)	100.	DL	100.	COL	75.	LL	75. WLL	
13	= DL + COL + .75(LL + WLR) (NASI)	100.	DL	100.	COL	75.	LL	75. WLR	
14	= DL + COL + .75(SL + WLL) (NASI)	100.	DL	100.	COL	75.	SL	75. WLL	
15	= DL + COL + .75(SL + WLR) (NASI)	100.	DL	100.	COL	75.	SL	75. WLR	
16	= DL + UNBAL. SL #1	100.	DL	100.	COL	100.	SL4		
17	= DL + UNBAL. SL #2	100.	DL	100.	COL	100.	SL3		
18	= DL+SEISMIC LEFT*0.7	103.	DL	103.	COL	70.	SEI		
19	= DL+SEISMIC RIGHT*0.7	103.	DL	103.	COL	-70.	SEI		
20	= .6 DL+SEISMIC LEFT*0.7	57.	DL	70.	SEI				

LOAD CONDITIONS ... (CONTINUED)

```
21 = .6 DL+SEISMIC RIGHT*0.7
                              57. DL  -70. SEI
22 = .6 DL + SB1*0.7          57. DL   70. SB1
23 = DL + SB2*0.7            103. DL  103. COL  70. SB2

LOAD CONDITIONS FOR REACTIONS & DEFLECTIONS ...
24 = DL                      100. DL
25 = COL                     100. COL
26 = LL                      100. LL
27 = SL                      100. SL
28 = WLL                     100. WLL
29 = WLR                     100. WLR
30 = WL2                     100. WL2
31 = WR2                     100. WR2
32 = WLE                     100. WLE
33 = WE2                     100. WE2
34 = SL4                     100. SL4
35 = SL3                     100. SL3
36 = SEI                     100. SEI
37 = SB1                     100. SB1
38 = SB2                     100. SB2
39 = BR1                     100. BR1
40 = BR2                     100. BR2
41 = SECOND ORDER SEED       100. 000
```

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
1	2	BR1	GLOB	Z	CONC	0.000	5.113			
1	2	BR1	GLOB	Y	CONC	0.250	4.606			
2	1	BR2	GLOB	Y	CONC	0.000	-4.606			
5	4	BR1	GLOB	Z	CONC	0.000	5.113			
5	4	BR1	GLOB	Y	CONC	0.250	4.606			
4	5	BR2	GLOB	Y	CONC	0.000	-4.606			
1	2	SB1	GLOB	Z	CONC	0.000	0.820			
1	2	SB1	GLOB	Y	CONC	0.250	0.738			
2	1	SB2	GLOB	Y	CONC	0.000	-0.738			
5	4	SB1	GLOB	Z	CONC	0.000	0.820			
5	4	SB1	GLOB	Y	CONC	0.250	0.738			
4	5	SB2	GLOB	Y	CONC	0.000	-0.738			
2	1	SEI	GLOB	X	CONC	0.000	0.428			
4	5	SEI	GLOB	X	CONC	0.000	0.428			
2	3	WLE	MEMB	Y	UNIF	0.000	0.211	10.208	0.211	
4	3	WE2	MEMB	Y	UNIF	0.000	-0.211	10.208	-0.211	
2	3	SL3	GLOB	Y	UNIF	0.000	-0.529			
3	2	SL3	GLOB	Y	UNIF	0.000	-0.345	8.980	-0.345	
3	4	SL4	GLOB	Y	UNIF	0.000	-0.529			
3	4	SL4	GLOB	Y	UNIF	0.000	-0.345	8.980	-0.345	
2	3	SL4	GLOB	Y	UNIF	0.000	-0.159			
3	4	SL3	GLOB	Y	UNIF	0.000	-0.159			
(AUTO LOADS)										
1	2	DL	GLOB	Y	UNIF	0.000	-0.025			DLWT
1	2	WLL	GLOB	X	UNIF	0.000	0.149			WLLX
1	2	WLR	GLOB	X	UNIF	0.000	-0.273			WLRX
1	2	WL2	GLOB	X	UNIF	0.000	0.324			WL2X
1	2	WR2	GLOB	X	UNIF	0.000	-0.097			WR2X
1	2	WLE	GLOB	X	UNIF	0.000	-0.306			WLEX
1	2	WE2	GLOB	X	UNIF	0.000	-0.304			WE2X
2	3	LL	GLOB	Y	UNIF	0.000	-0.458			LIVE
2	3	LL	GLOB	Y	CONC	0.000	-0.776			LIVE
2	3	LL	GLOB	Z	MOMT	0.000	0.658			LIVE
2	3	SL	GLOB	Y	UNIF	0.000	-0.686			SNOW
2	3	SL3	GLOB	Y	CONC	0.000	-0.897			SNOW
2	3	SL3	GLOB	Z	MOMT	0.000	0.761			SNOW
2	3	SL4	GLOB	Y	CONC	0.000	-0.270			SNOW
2	3	SL4	GLOB	Z	MOMT	0.000	0.229			SNOW
2	3	SL	GLOB	Y	CONC	0.000	-1.164			SNOW
2	3	SL	GLOB	Z	MOMT	0.000	0.987			SNOW
2	3	DL	GLOB	Y	UNIF	0.000	-0.060			DEAD
2	3	DL	GLOB	Y	CONC	0.000	-0.102			DEAD
2	3	DL	GLOB	Z	MOMT	0.000	0.086			DEAD
2	3	DL	GLOB	Y	UNIF	0.000	-0.020			DLWT
2	3	COL	GLOB	Y	UNIF	0.000	-0.069			COLL
2	3	COL	GLOB	Y	CONC	0.000	-0.116			COLL
2	3	COL	GLOB	Z	MOMT	0.000	0.099			COLL
2	3	WLL	GLOB	X	UNIF	0.000	-0.125			WLLX
2	3	WLL	GLOB	Y	UNIF	0.000	0.501			WLLY
2	3	WLR	GLOB	X	UNIF	0.000	-0.090			WLRX
2	3	WLR	GLOB	Y	UNIF	0.000	0.358			WLRY
2	3	WL2	GLOB	X	UNIF	0.000	-0.073			WL2X

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
2	3	WL2	GLOB	Y	UNIF	0.000	0.293			WL2Y
2	3	WR2	GLOB	X	UNIF	0.000	-0.038			WR2X
2	3	WR2	GLOB	Y	UNIF	0.000	0.151			WR2Y
2	3	WLE	GLOB	X	UNIF	0.000	-0.125			WLEX
2	3	WLE	GLOB	Y	UNIF	0.000	0.501			WLEY
2	3	WE2	GLOB	X	UNIF	0.000	-0.125			WE2X
2	3	WE2	GLOB	Y	UNIF	0.000	0.501			WE2Y
3	4	LL	GLOB	Y	UNIF	0.000	-0.458			LIVE
4	3	LL	GLOB	Y	CONC	0.000	-0.776			LIVE
4	3	LL	GLOB	Z	MOMT	0.000	-0.658			LIVE
3	4	SL	GLOB	Y	UNIF	0.000	-0.686			SNOW
4	3	SL3	GLOB	Y	CONC	0.000	-0.270			SNOW
4	3	SL3	GLOB	Z	MOMT	0.000	-0.229			SNOW
4	3	SL4	GLOB	Y	CONC	0.000	-0.897			SNOW
4	3	SL4	GLOB	Z	MOMT	0.000	-0.761			SNOW
4	3	SL	GLOB	Y	CONC	0.000	-1.164			SNOW
4	3	SL	GLOB	Z	MOMT	0.000	-0.987			SNOW
3	4	DL	GLOB	Y	UNIF	0.000	-0.060			DEAD
4	3	DL	GLOB	Y	CONC	0.000	-0.102			DEAD
4	3	DL	GLOB	Z	MOMT	0.000	-0.086			DEAD
3	4	DL	GLOB	Y	UNIF	0.000	-0.020			DLWT
3	4	COL	GLOB	Y	UNIF	0.000	-0.069			COLL
4	3	COL	GLOB	Y	CONC	0.000	-0.116			COLL
4	3	COL	GLOB	Z	MOMT	0.000	-0.099			COLL
3	4	WLL	GLOB	X	UNIF	0.000	0.090			WLLX
3	4	WLL	GLOB	Y	UNIF	0.000	0.358			WLLY
3	4	WLR	GLOB	X	UNIF	0.000	0.125			WLRX
3	4	WLR	GLOB	Y	UNIF	0.000	0.501			WLRY
3	4	WL2	GLOB	X	UNIF	0.000	0.038			WL2X
3	4	WL2	GLOB	Y	UNIF	0.000	0.151			WL2Y
3	4	WR2	GLOB	X	UNIF	0.000	0.073			WR2X
3	4	WR2	GLOB	Y	UNIF	0.000	0.293			WR2Y
3	4	WLE	GLOB	X	UNIF	0.000	0.125			WLEX
3	4	WLE	GLOB	Y	UNIF	0.000	0.501			WLEY
3	4	WE2	GLOB	X	UNIF	0.000	0.125			WE2X
3	4	WE2	GLOB	Y	UNIF	0.000	0.501			WE2Y
5	4	DL	GLOB	Y	UNIF	0.000	-0.025			DLWT
5	4	WLL	GLOB	X	UNIF	0.000	0.273			WLLX
5	4	WLR	GLOB	X	UNIF	0.000	-0.149			WLRX
5	4	WL2	GLOB	X	UNIF	0.000	0.098			WL2X
5	4	WR2	GLOB	X	UNIF	0.000	-0.324			WR2X
5	4	WLE	GLOB	X	UNIF	0.000	0.306			WLEX
5	4	WE2	GLOB	X	UNIF	0.000	0.306			WE2X

* E = eccentricity for concentrated loads.
L = load length for uniform loads.

COEFFICIENTS FOR WLL (WIND FROM THE LEFT)
LEFT WALL COEFFICIENT = 0.2460
LEFT ROOF COEFFICIENT = -0.8700
RIGHT ROOF COEFFICIENT = -0.6230
RIGHT WALL COEFFICIENT = -0.4500

COEFFICIENTS FOR WLR (WIND FROM THE RIGHT)
LEFT WALL COEFFICIENT = -0.4500
LEFT ROOF COEFFICIENT = -0.6230
RIGHT ROOF COEFFICIENT = -0.8700
RIGHT WALL COEFFICIENT = 0.2460

COEFFICIENTS FOR WL2 (WIND FROM THE LEFT CASE 2)
LEFT WALL COEFFICIENT = 0.5340
LEFT ROOF COEFFICIENT = -0.5100
RIGHT ROOF COEFFICIENT = -0.2630
RIGHT WALL COEFFICIENT = -0.1620

COEFFICIENTS FOR WR2 (WIND FROM THE RIGHT CASE 2)
LEFT WALL COEFFICIENT = -0.1600
LEFT ROOF COEFFICIENT = -0.2630
RIGHT ROOF COEFFICIENT = -0.5100
RIGHT WALL COEFFICIENT = 0.5340

COEFFICIENTS FOR WLE (WIND ON THE ENDWALL)
LEFT WALL COEFFICIENT = -0.5040
LEFT ROOF COEFFICIENT = -0.8700
RIGHT ROOF COEFFICIENT = -0.8700
RIGHT WALL COEFFICIENT = -0.5040

COEFFICIENTS FOR WE2 (WIND ON THE ENDWALL CASE 2)
LEFT WALL COEFFICIENT = -0.5000
LEFT ROOF COEFFICIENT = -0.8700
RIGHT ROOF COEFFICIENT = -0.8700
RIGHT WALL COEFFICIENT = -0.5040

MEMBER NO. 1- 2 LENGTH 15.84 FT ANGLE OF MEMBER 87.84 DEG
SECTION NO. 1 LENGTH 15.06' OF= 8.00 X 0.2500 WEB=0.1563 IF= 8.00 X 0.3750

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
1*	0.00	2.00	10.00	6.46	124.5	21.8	29.0	4.39	2.03	2.204	2.275
100	0.04	2.94	10.78	6.59	146.6	23.9	31.6	4.72	2.01	2.191	2.266
101	0.11	4.82	12.34	6.83	196.7	28.1	36.9	5.37	1.98	2.165	2.249
102	0.18	6.70	13.91	7.08	255.1	32.4	42.3	6.01	1.94	2.142	2.233
103	0.25	8.58	15.47	7.32	322.1	36.9	47.8	6.63	1.91	2.119	2.218
104	0.32	10.46	17.03	7.56	397.9	41.5	53.4	7.25	1.88	2.098	2.204
105	0.39	12.35	18.59	7.81	482.8	46.3	59.1	7.86	1.85	2.078	2.190
106	0.46	14.23	20.16	8.05	577.3	51.2	64.9	8.47	1.82	2.059	2.177
107	0.53	16.11	21.72	8.30	681.5	56.3	70.9	9.06	1.79	2.040	2.164
108*	0.57	17.05	22.50	8.42	737.4	58.9	73.9	9.36	1.78	2.031	2.157

MEMBER NO. 2- 3 LENGTH 24.61 FT ANGLE OF MEMBER 14.92 DEG
SECTION NO. 1 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.3125
SECTION NO. 2 LENGTH 14.02' OF= 6.00 X 0.2500 WEB=0.1250 IF= 6.00 X 0.3125

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
111*	1.17	17.97	24.00	7.77	673.4	53.7	58.8	9.31	1.14	1.422	1.493
112	1.97	18.21	23.25	7.63	625.3	51.4	56.4	9.05	1.15	1.430	1.500
113	3.57	18.67	21.75	7.35	535.4	47.0	51.7	8.54	1.17	1.447	1.514
114	5.17	19.14	20.25	7.07	453.8	42.7	47.2	8.01	1.20	1.463	1.529
115	6.77	19.60	18.75	6.79	380.1	38.5	42.8	7.48	1.22	1.481	1.544
116	8.37	20.07	17.25	6.50	314.1	34.5	38.5	6.95	1.25	1.500	1.560
117	9.97	20.53	15.75	6.22	255.3	30.7	34.4	6.41	1.28	1.519	1.577
118*	10.78	20.77	15.00	6.08	228.6	28.8	32.3	6.13	1.29	1.529	1.585
118*	10.78	20.77	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
119	11.63	20.98	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
120	13.33	21.41	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
121	15.03	21.83	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
122	16.73	22.26	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
123	18.43	22.68	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
124	20.13	23.10	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
125	21.83	23.53	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
126	23.53	23.95	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
3*	24.38	24.17	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636

MEMBER NO. 3- 4 LENGTH 24.61 FT ANGLE OF MEMBER -14.92 DEG
SECTION NO. 1 LENGTH 14.02' OF= 6.00 X 0.2500 WEB=0.1250 IF= 6.00 X 0.3125
SECTION NO. 2 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.3125

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
3*	24.38	24.17	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
127	25.23	23.95	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
128	26.93	23.53	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
129	28.63	23.10	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
130	30.33	22.68	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
131	32.03	22.25	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
132	33.73	21.83	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
133	35.43	21.41	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
134	37.13	20.98	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
135*	37.98	20.77	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
135*	37.98	20.77	15.00	6.08	228.6	28.8	32.3	6.13	1.29	1.529	1.585
136	38.78	20.54	15.75	6.22	255.3	30.7	34.4	6.41	1.28	1.519	1.577
137	40.38	20.07	17.25	6.50	314.1	34.5	38.5	6.95	1.25	1.500	1.560
138	41.98	19.60	18.75	6.79	380.1	38.5	42.8	7.48	1.22	1.481	1.544
139	43.58	19.14	20.25	7.07	453.8	42.7	47.2	8.01	1.20	1.463	1.529
140	45.18	18.67	21.75	7.35	535.4	47.0	51.7	8.54	1.17	1.447	1.514
141	46.78	18.21	23.25	7.63	625.3	51.4	56.4	9.05	1.15	1.430	1.500
142*	47.59	17.97	24.00	7.77	673.4	53.7	58.8	9.31	1.14	1.422	1.493

MEMBER NO. 5- 4 LENGTH 15.84 FT ANGLE OF MEMBER 92.16 DEG
SECTION NO. 1 LENGTH 15.06' OF= 8.00 X 0.2500 WEB=0.1563 IF= 8.00 X 0.3750

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
5*	48.76	2.00	10.00	6.46	124.5	21.8	29.0	4.39	2.03	2.204	2.275
144	48.72	2.94	10.78	6.59	146.6	23.9	31.6	4.72	2.01	2.191	2.266
145	48.65	4.82	12.34	6.83	196.7	28.1	36.9	5.37	1.98	2.165	2.249
146	48.58	6.70	13.91	7.08	255.1	32.4	42.3	6.01	1.94	2.142	2.233
147	48.51	8.58	15.47	7.32	322.1	36.9	47.8	6.63	1.91	2.119	2.218
148	48.44	10.46	17.03	7.56	397.9	41.5	53.4	7.25	1.88	2.098	2.204
149	48.37	12.35	18.59	7.81	482.8	46.3	59.1	7.86	1.85	2.078	2.190
150	48.30	14.23	20.16	8.05	577.3	51.2	64.9	8.47	1.82	2.059	2.177
151	48.22	16.11	21.72	8.30	681.5	56.3	70.9	9.06	1.79	2.040	2.164
152*	48.19	17.05	22.50	8.42	737.4	58.9	73.9	9.36	1.78	2.031	2.157

LOAD COND 1 - DEAD + LIVE LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	16.4	7.1	0.0	0.0	0.000	0.000
2					0.002	-0.416
3					-1.547	-0.049
4					-0.001	0.318
5	16.3	-6.9	0.0	0.0	0.000	0.000

LOAD COND 2 - DL + SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	22.2	9.4	0.0	0.0	0.000	0.000
2					-0.003	-0.401
3					-2.130	0.089
4					0.004	0.580
5	22.5	-9.9	0.0	0.0	0.000	0.000

LOAD COND 3 - DL + SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	22.5	9.9	0.0	0.0	0.000	0.000
2					0.004	-0.580
3					-2.130	-0.089
4					-0.003	0.401
5	22.2	-9.4	0.0	0.0	0.000	0.000

LOAD COND 4 - .6DL+WLL (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-10.7	-6.6	0.0	0.0	0.000	0.000
2					-0.013	0.520
3					0.614	0.363
4					0.013	0.212
5	-7.5	0.8	0.0	0.0	0.000	0.000

LOAD COND 5 - .6DL+WLR (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-7.5	-0.8	0.0	0.0	0.000	0.000
2					0.013	-0.212
3					0.614	-0.363
4					-0.013	-0.520
5	-10.7	6.6	0.0	0.0	0.000	0.000

LOAD COND 6 - .6DL+WL2 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-5.6	-5.9	0.0	0.0	0.000	0.000
2					-0.014	0.452
3					0.334	0.363
4					0.012	0.280
5	-2.4	0.0	0.0	0.0	0.000	0.000

LOAD COND 7 - .6DL+WR2 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-2.4	-0.1	0.0	0.0	0.000	0.000
2					0.012	-0.278
3					0.334	-0.361
4					-0.013	-0.450
5	-5.6	5.9	0.0	0.0	0.000	0.000

LOAD COND 8 - .6DL+WLE+BR1 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-17.1	-2.2	5.1	0.0	0.000	0.000
2					0.009	-0.017
3					0.627	-0.168
4					-0.005	-0.323
5	-15.9	2.7	5.1	0.0	0.000	0.000

LOAD COND 9 - .6DL+WE2+BR1 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-15.9	-2.7	5.1	0.0	0.000	0.000
2					-0.005	0.327
3					0.628	0.172
4					0.009	0.021
5	-17.1	2.2	5.1	0.0	0.000	0.000

LOAD COND 10 - DL+.75(SL+WE2+BR2) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	11.7	5.2	0.0	0.0	0.000	0.000
2					-0.007	-0.120
3					-1.126	0.157
4					0.006	0.437
5	10.9	-5.8	0.0	0.0	0.000	0.000

LOAD COND 11 - DL+WE2+BR2 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-3.9	-1.4	0.0	0.0	0.000	0.000
2					-0.008	0.263
3					0.375	0.172
4					0.006	0.084
5	-5.1	0.8	0.0	0.0	0.000	0.000

LOAD COND 12 - DL + COL + .75(LL + WLL) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	4.2	0.3	0.0	0.0	0.000	0.000
2					-0.010	0.109
3					-0.703	0.285
4					0.011	0.465
5	6.6	-4.7	0.0	0.0	0.000	0.000

LOAD COND 13 - DL + COL + .75(LL + WLR) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	6.6	4.7	0.0	0.0	0.000	0.000
2					0.011	-0.465
3					-0.703	-0.285
4					-0.010	-0.109
5	4.2	-0.3	0.0	0.0	0.000	0.000

LOAD COND 14 - DL + COL + .75(SL + WLL) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	8.6	2.2	0.0	0.0	0.000	0.000
2					-0.010	0.020
3					-1.142	0.299
4					0.012	0.583
5	11.2	-6.8	0.0	0.0	0.000	0.000

LOAD COND 15 - DL + COL + .75(SL + WLR) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	11.2	6.8	0.0	0.0	0.000	0.000
2					0.012	-0.583
3					-1.142	-0.299
4					-0.010	-0.020
5	8.6	-2.2	0.0	0.0	0.000	0.000

LOAD COND 16 - DL + UNBAL. SL #1

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	12.2	6.9	0.0	0.0	0.000	0.000
2					0.026	-0.905
3					-1.547	-0.528
4					-0.022	-0.164
5	17.6	-6.6	0.0	0.0	0.000	0.000

LOAD COND 17 - DL + UNBAL. SL #2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	17.6	6.6	0.0	0.0	0.000	0.000
2					-0.022	0.164
3					-1.547	0.528
4					0.026	0.905
5	12.2	-6.9	0.0	0.0	0.000	0.000

LOAD COND 18 - DL+SEISMIC LEFT*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	4.2	1.4	0.0	0.0	0.000	0.000
2					-0.006	0.051
3					-0.390	0.148
4					0.006	0.247
5	4.6	-2.1	0.0	0.0	0.000	0.000

LOAD COND 19 - DL+SEISMIC RIGHT*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	4.6	2.1	0.0	0.0	0.000	0.000
2					0.006	-0.247
3					-0.390	-0.148
4					-0.006	-0.051
5	4.2	-1.4	0.0	0.0	0.000	0.000

LOAD COND 20 - .6 DL+SEISMIC LEFT*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	1.2	0.2	0.0	0.0	0.000	0.000
2					-0.005	0.112
3					-0.117	0.141
4					0.005	0.172
5	1.6	-0.8	0.0	0.0	0.000	0.000

LOAD COND 21 - .6 DL+SEISMIC RIGHT*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	1.6	0.8	0.0	0.0	0.000	0.000
2					0.005	-0.172
3					-0.117	-0.141
4					-0.005	-0.112
5	1.2	-0.2	0.0	0.0	0.000	0.000

LOAD COND 22 - .6 DL + SB1*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	0.9	0.5	0.6	0.0	0.000	0.000
2					0.000	-0.027
3					-0.117	0.003
4					0.000	0.033
5	0.9	-0.5	0.6	0.0	0.000	0.000

LOAD COND 23 - DL + SB2*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	4.9	1.8	0.0	0.0	0.000	0.000
2					0.000	-0.112
3					-0.390	-0.015
4					-0.001	0.082
5	4.9	-1.8	0.0	0.0	0.000	0.000

LOAD COND 24 - DL - DEAD LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	2.5	0.9	0.0	0.0	0.000	0.000
2					0.000	-0.052
3					-0.205	0.000
4					0.000	0.052
5	2.5	-0.9	0.0	0.0	0.000	0.000

LOAD COND 25 - COL- COLLATERAL

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	1.8	0.8	0.0	0.0	0.000	0.000
2					0.000	-0.045
3					-0.175	0.000
4					0.000	0.045
5	1.8	-0.8	0.0	0.0	0.000	0.000

LOAD COND 26 - LL - LIVE LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	12.0	5.3	0.0	0.0	0.000	0.000
2					0.001	-0.299
3					-1.167	0.000
4					0.001	0.299
5	12.0	-5.3	0.0	0.0	0.000	0.000

LOAD COND 27 - SL - SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	18.1	7.9	0.0	0.0	0.000	0.000
2					0.001	-0.449
3					-1.750	0.000
4					0.001	0.449
5	18.1	-7.9	0.0	0.0	0.000	0.000

LOAD COND 28 - WLL- WIND FROM LEFT

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-12.2	-7.1	0.0	0.0	0.000	0.000
2					-0.013	0.552
3					0.737	0.363
4					0.013	0.180
5	-9.0	1.3	0.0	0.0	0.000	0.000

LOAD COND 29 - WLR- WIND FROM RIGHT

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-9.0	-1.3	0.0	0.0	0.000	0.000
2					0.013	-0.180
3					0.737	-0.363
4					-0.013	-0.552
5	-12.2	7.1	0.0	0.0	0.000	0.000

LOAD COND 30 - WL2- WIND LT CASE 2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-7.1	-6.4	0.0	0.0	0.000	0.000
2					-0.013	0.484
3					0.457	0.363
4					0.012	0.248
5	-3.9	0.6	0.0	0.0	0.000	0.000

LOAD COND 31 - WR2- WIND RT CASE 2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-3.9	-0.6	0.0	0.0	0.000	0.000
2					0.012	-0.246
3					0.457	-0.361
4					-0.013	-0.482
5	-7.1	6.4	0.0	0.0	0.000	0.000

LOAD COND 32 - WLE- WIND ON ENDWALL

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-14.0	-2.7	0.0	0.0	0.000	0.000
2					0.009	0.014
3					0.750	-0.168
4					-0.005	-0.355
5	-12.8	3.3	0.0	0.0	0.000	0.000

LOAD COND 33 - WE2- EW WIND CASE 2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-12.8	-3.3	0.0	0.0	0.000	0.000
2					-0.005	0.358
3					0.751	0.172
4					0.009	-0.011
5	-14.0	2.7	0.0	0.0	0.000	0.000

LOAD COND 34 - SL4- SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	7.8	5.0	0.0	0.0	0.000	0.000
2					0.023	-0.801
3					-1.165	-0.496
4					-0.020	-0.202
5	13.4	-5.0	0.0	0.0	0.000	0.000

LOAD COND 35 - SL3- SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	13.4	5.0	0.0	0.0	0.000	0.000
2					-0.020	0.202
3					-1.165	0.496
4					0.023	0.801
5	7.8	-5.0	0.0	0.0	0.000	0.000

LOAD COND 36 - SEI- SEISMIC LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-0.3	-0.4	0.0	0.0	0.000	0.000
2					-0.007	0.198
3					0.000	0.196
4					0.007	0.198
5	0.3	-0.4	0.0	0.0	0.000	0.000

LOAD COND 37 - SB1- SEISMIC BRACING

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-0.7	0.0	0.8	0.0	0.000	0.000
2					0.000	0.000
3					0.000	0.000
4					0.000	0.000
5	-0.7	0.0	0.8	0.0	0.000	0.000

LOAD COND 38 - SB2- SEISMIC BRACING

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	0.7	0.0	0.0	0.0	0.000	0.000
2					-0.001	0.000
3					0.001	0.000
4					-0.001	0.000
5	0.7	0.0	0.0	0.0	0.000	0.000

LOAD COND 39 - BR1- WIND BRACING 1

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-4.6	0.0	5.1	0.0	0.000	0.000
2					0.000	0.000
3					0.000	0.000
4					0.000	0.000
5	-4.6	0.0	5.1	0.0	0.000	0.000

LOAD COND 40 - BR2- WIND BRACING 2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	4.6	0.1	0.0	0.0	0.000	0.000
2					-0.003	0.002
3					0.004	0.000
4					-0.003	-0.002
5	4.6	-0.1	0.0	0.0	0.000	0.000

MEMBER NO. 1- 2 LENGTH 15.84 FT MEMBER ANGLE 87.84 DEG WEIGHT 404. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	15.06	10.00	22.50	8.0 X 1/4	5/32	8.0 X 3/8	1.011	15.1	3

(CONTROLLING ACTIONS)

SECT NO	AXIAL FORCE (KIP)	MOMENT (KIP-FT)	-ALLOW STRESSES- FA (KSI)	FBO (KSI)	FBI (KSI)	--MAXIMUM STRESSES-- AXIAL (KSI)	FBO (KSI)	FBI (KSI)	-UNITY CHECK- - COMPONENTS - FA	FBO	FBI
1	22.46	-135.80	20.8	29.4	23.4	2.67	-27.68	22.05	0.06	0.94	0.95

MEMBER NO. 2- 3 LENGTH 24.61 FT MEMBER ANGLE 14.92 DEG WEIGHT 498. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	10.00	24.00	15.00	6.0 X 1/4	3/16	6.0 X 5/16	1.004	1.4	3
2	14.02	15.00	15.00	6.0 X 1/4	1/8	6.0 X 5/16	0.793	22.0	2

(CONTROLLING ACTIONS)

SECT NO	AXIAL FORCE (KIP)	MOMENT (KIP-FT)	-ALLOW STRESSES- FA (KSI)	FBO (KSI)	FBI (KSI)	--MAXIMUM STRESSES-- AXIAL (KSI)	FBO (KSI)	FBI (KSI)	-UNITY CHECK- - COMPONENTS - FA	FBO	FBI
1	14.72	-120.11	18.7	29.8	27.1	1.93	-28.04	25.55	0.05	0.94	0.95
2	9.86	46.34	20.0	28.8	25.1	1.90	20.94	-18.27	0.05	0.74	0.73

MEMBER NO. 3- 4 LENGTH 24.61 FT MEMBER ANGLE -14.92 DEG WEIGHT 498. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	14.02	15.00	15.00	6.0 X 1/4	1/8	6.0 X 5/16	0.793	2.6	3
2	10.00	15.00	24.00	6.0 X 1/4	3/16	6.0 X 5/16	0.928	24.0	2

(CONTROLLING ACTIONS)

SECT NO	AXIAL FORCE (KIP)	MOMENT (KIP-FT)	-ALLOW STRESSES- FA (KSI)	FBO (KSI)	FBI (KSI)	--MAXIMUM STRESSES-- AXIAL (KSI)	FBO (KSI)	FBI (KSI)	-UNITY CHECK- - COMPONENTS - FA	FBO	FBI
1	9.86	46.34	20.0	28.8	25.1	1.90	20.94	-18.27	0.05	0.74	0.73
2	14.91	-133.76	19.0	34.5	31.5	1.92	-29.91	27.30	0.05	0.87	0.88

MEMBER NO. 5- 4 LENGTH 15.84 FT MEMBER ANGLE 92.16 DEG WEIGHT 404. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	15.06	10.00	22.50	8.0 X 1/4	5/32	8.0 X 3/8	1.011	15.1	2

(CONTROLLING ACTIONS)

SECT NO	AXIAL FORCE (KIP)	MOMENT (KIP-FT)	-ALLOW STRESSES- FA (KSI)	FBO (KSI)	FBI (KSI)	--MAXIMUM STRESSES-- AXIAL (KSI)	FBO (KSI)	FBI (KSI)	-UNITY CHECK- - COMPONENTS - FA	FBO	FBI
1	22.46	-135.80	20.8	29.4	23.4	2.67	-27.68	22.05	0.06	0.94	0.95

TOTAL FRAME WEIGHT IS 1804. LBS.

COLUMN 1 - 2

GIRT AT	3.50	8.00	12.00
SIZE			
SIDES			
CONN.			
HOLE LOC			
FLG AREA			
DEPTH			

RAFTER 2 - 3

PURLIN AT	0.72	4.74	8.76	12.77	16.79	20.80	23.82
SIZE	A2		A2		A2		A2
SIDES	1		1		1		1
CONN.	1-1		1-1		1-1		1-1
HOLE LOC	2		2		2		2
FLG AREA	1.88		1.88		1.88		1.88
DEPTH	23.88		16.65		15.00		15.00

RAFTER 3 - 4

PURLIN AT	0.79	3.81	7.82	11.84	15.85	18.36	22.38
SIZE	A2		A2		A2		A2
SIDES	1		1		1		1
CONN.	1-1		1-1		1-1		1-1
HOLE LOC	2		2		2		2
FLG AREA	1.88		1.88		1.88		1.88
DEPTH	15.00		15.00		16.65		22.52

COLUMN 5 - 4

GIRT AT	3.50	8.00	12.00
SIZE			
SIDES			
CONN.			
HOLE LOC			
FLG AREA			
DEPTH			

HAUNCH CORNER FLANGE BRACE

LEFT COLUMN ..... NO

RIGHT COLUMN ..... NO

STANDARD ANGLE FLANGE BRACE SIZES:
A1 - 1.0 X 1.0 X 1/8"
A2 - 1.5 X 1.5 X 1/8"
A3 - 2.0 X 2.0 X 1/8"
A4 - 2.5 X 2.5 X 3/16"
A5 - 3.0 X 3.0 X 1/4"

				Q	=	V	X	A	X	Y	/ I
COLUMN	1- 2	SECTION 1	Q MAX	=	9011.	X	3.00	X	4.10	/	124.52
				=	890.4 LBS/IN AT ANALYSIS POINT 1						
WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY											
RAFTER	2- 3	SECTION 1	Q MAX	=	16042.	X	1.88	X	10.93	/	625.26
				=	525.7 LBS/IN AT ANALYSIS POINT 112						
WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY											
RAFTER	2- 3	SECTION 2	Q MAX	=	9164.	X	1.88	X	6.83	/	212.72
				=	551.9 LBS/IN AT ANALYSIS POINT 118						
WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY											
RAFTER	3- 4	SECTION 1	Q MAX	=	9164.	X	1.88	X	6.83	/	212.72
				=	551.9 LBS/IN AT ANALYSIS POINT 135						
WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY											
RAFTER	3- 4	SECTION 2	Q MAX	=	16042.	X	1.88	X	10.93	/	625.26
				=	525.7 LBS/IN AT ANALYSIS POINT 141						
WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY											
COLUMN	5- 4	SECTION 1	Q MAX	=	9011.	X	3.00	X	4.10	/	124.52
				=	890.4 LBS/IN AT ANALYSIS POINT 5						
WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY											

CONNECTION DESIGN DATA FOR MEMBER 2- 3 AT DEPTH 1: RF KNEE SPLICE (1)

SPLICE DEPTH: 24.0000 INCHES
WEB DEPTH: 23.4375 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	22.5000	24.0000
OS FLANGE WIDTH	8.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1563	0.1875
IS FLANGE WIDTH	8.0000	6.0000
IS FLANGE THICK	0.3750	0.3125

CONTROLLING ACTIONS

POS MOMENT	73.23	FT-KIPS
AXIAL LOAD	-7.10	KIPS
SHEAR	-9.09	KIPS
LOAD CONDITION	4	
NEG MOMENT	-133.76	FT-KIPS
AXIAL LOAD	14.91	KIPS
SHEAR	16.71	KIPS
LOAD CONDITION	3	
MAX SHEAR	16.71	KIPS
AXIAL LOAD	14.91	KIPS
MOMENT	-133.76	FT-KIPS
LOAD CONDITION	3	

LENGTH - 27.000"	DIAM. - 0.625"	TOP ROWS	3	EDGE DIST TOP	1.500"
WIDTH - 8.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	2.063"
THICK - 0.625"	PITCH - 2.750"	CON TYPE	1	TOP PROJECTION	2.750"

CORNER WEB - 0.156" THICK WITH 0.125" WELD ON 2 SIDES WELD SHEAR - 3.129 K/IN
*** NOTE STANDARD 0.125 S.A.W. IS NOT ADEQUATE (2.625 K/IN) ***
*** NOTE STANDARD 0.188 1 SIDE G.M.A.W. IS NOT ADEQUATE (2.784 K/IN) ***

CONNECTION DESIGN DATA FOR MEMBER 2- 3 AT DEPTH 9: RIDGE SPLICE (3)

SPLICE DEPTH: 15.0000 INCHES
WEB DEPTH: 14.4375 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	15.0000	15.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1250	0.1250
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.3125	0.3125

CONTROLLING ACTIONS

POS MOMENT	42.65	FT-KIPS
AXIAL LOAD	9.65	KIPS
SHEAR	-0.14	KIPS
LOAD CONDITION	2	
NEG MOMENT	-13.59	FT-KIPS
AXIAL LOAD	-7.29	KIPS
SHEAR	-0.15	KIPS
LOAD CONDITION	5	
MAX SHEAR	-3.70	KIPS
AXIAL LOAD	6.72	KIPS
MOMENT	33.02	FT-KIPS
LOAD CONDITION	17	

LENGTH - 21.188"	DIAM. - 0.625"	TOP ROWS	2	EDGE DIST TOP	1.500"
WIDTH - 6.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	1.500"
THICK - 0.375"	PITCH - 3.000"	CON TYPE	3	TOP PROJECTION	2.750"

CONNECTION DESIGN DATA FOR MEMBER 3- 4 AT DEPTH 1: RIDGE SPLICE (3)

SPLICE DEPTH: 15.0000 INCHES
WEB DEPTH: 14.4375 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	15.0000	15.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1250	0.1250
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.3125	0.3125

CONTROLLING ACTIONS

POS MOMENT	42.65	FT-KIPS
AXIAL LOAD	9.65	KIPS
SHEAR	-0.14	KIPS
LOAD CONDITION	2	
NEG MOMENT	-13.59	FT-KIPS
AXIAL LOAD	-7.29	KIPS
SHEAR	-0.15	KIPS
LOAD CONDITION	5	
MAX SHEAR	-3.70	KIPS
AXIAL LOAD	6.72	KIPS
MOMENT	33.02	FT-KIPS
LOAD CONDITION	17	

LENGTH - 21.188"	DIAM. - 0.625"	TOP ROWS	2	EDGE DIST TOP	1.500"
WIDTH - 6.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	1.500"
THICK - 0.375"	PITCH - 3.000"	CON TYPE	3	TOP PROJECTION	2.750"

CONNECTION DESIGN DATA FOR MEMBER 3- 4 AT DEPTH 9: RF KNEE SPLICE (1)

SPLICE DEPTH: 24.0000 INCHES
WEB DEPTH: 23.4375 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	24.0000	22.5000
OS FLANGE WIDTH	6.0000	8.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1875	0.1563
IS FLANGE WIDTH	6.0000	8.0000
IS FLANGE THICK	0.3125	0.3750

CONTROLLING ACTIONS

POS MOMENT	73.23	FT-KIPS
AXIAL LOAD	-7.10	KIPS
SHEAR	9.09	KIPS
LOAD CONDITION	5	
NEG MOMENT	-133.76	FT-KIPS
AXIAL LOAD	14.91	KIPS
SHEAR	-16.71	KIPS
LOAD CONDITION	2	
MAX SHEAR	-16.71	KIPS
AXIAL LOAD	14.91	KIPS
MOMENT	-133.76	FT-KIPS
LOAD CONDITION	2	

LENGTH - 27.000"	DIAM. - 0.625"	TOP ROWS	3	EDGE DIST TOP	1.500"
WIDTH - 8.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	2.063"
THICK - 0.625"	PITCH - 2.750"	CON TYPE	1	TOP PROJECTION	2.750"

CORNER WEB - 0.156" THICK WITH 0.125" WELD ON 2 SIDES WELD SHEAR - 3.129 K/IN
*** NOTE STANDARD 0.125 S.A.W. IS NOT ADEQUATE (2.625 K/IN) ***
*** NOTE STANDARD 0.188 1 SIDE G.M.A.W. IS NOT ADEQUATE (2.784 K/IN) ***

SUPPORT JOINT 1 -- EXTERIOR COLUMN

CRITICAL REACTIONS		LOAD CONDITION	
HORIZONTAL	9.87 KIPS	3	
DOWNWARD..	22.49 KIPS	3	
UPWARD....	-17.09 KIPS	8	5.55 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN		OUTSIDE FLANGE - 8.0 X 0.2500			
WEB THICKNESS- .156 IN		INSIDE FLANGE - 8.0 X 0.3750			
LENGTH - 10.000"	DIAM. - 0.750"	NO. BOLTS 4	OS PROJECTION 0.000"		
WIDTH - 8.000"	GAUGE - 4.000"	HOLE PAT. 2	WEB FILLET 0.188"		
THICK - 0.375"	PITCH - 4.000"	OS EDGE 3.000"	FLANGE FILLET 0.188"		

SUPPORT JOINT 5 -- EXTERIOR COLUMN

CRITICAL REACTIONS		LOAD CONDITION	
HORIZONTAL	9.87 KIPS	2	
DOWNWARD..	22.49 KIPS	2	
UPWARD....	-17.08 KIPS	9	5.55 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN		OUTSIDE FLANGE - 8.0 X 0.2500			
WEB THICKNESS- .156 IN		INSIDE FLANGE - 8.0 X 0.3750			
LENGTH - 10.000"	DIAM. - 0.750"	NO. BOLTS 4	OS PROJECTION 0.000"		
WIDTH - 8.000"	GAUGE - 4.000"	HOLE PAT. 2	WEB FILLET 0.188"		
THICK - 0.375"	PITCH - 4.000"	OS EDGE 3.000"	FLANGE FILLET 0.188"		

CONFIGURATION (NON-SYMMETRIC FRAME)

BUILDING WIDTH	=	51.04 FT.
NUMBER OF SPANS	=	1
SPAN WIDTHS	=	51.04
DESIGN BAY SIZE	=	21.75 FT.
LEFT EAVE HEIGHT	=	17.33 FT.
RIGHT EAVE HEIGHT	=	17.33 FT.
LEFT RAFTER SLOPE (R/12)	=	3.00
RIGHT RAFTER SLOPE (R/12)	=	-3.00
GIRT OUTSET	=	8.00 IN.
PURLIN DEPTH	=	10.00 IN.

STEEL YIELD:
FLANGES 55. KSI
WEBS 55. KSI
LOADINGS ...

DEAD LOAD = 2.627 PSF (Dead Load of Rigid Frame is calculated internally)
COLLATERAL= 3.000 PSF
LIVE LOAD = 20.000 PSF
SNOW LOAD = 30.000 PSF
WIND LOAD = 23.523 PSF

LOAD CONDITIONS ...

1	= DEAD + LIVE LOAD	100.	DL	100.	LL	100.	COL		
2	= DL + SNOW LOAD	100.	DL	100.	SL	100.	COL		
3	= DL + SNOW LOAD	100.	DL	100.	SL	100.	COL		
4	= .6DL+WLL (NASI)	60.	DL	100.	WLL				
5	= .6DL+WLR (NASI)	60.	DL	100.	WLR				
6	= .6DL+WL2 (NASI)	60.	DL	100.	WL2				
7	= .6DL+WR2 (NASI)	60.	DL	100.	WR2				
8	= .6DL+WLE+BR1 (NASI)	60.	DL	100.	WLE	100.	BR1		
9	= .6DL+WE2+BR1 (NASI)	60.	DL	100.	WE2	100.	BR1		
10	= DL+.75(SL+WE2+BR2) (NASI)	100.	DL	100.	COL	75.	SL	75. WE2	75. BR2
11	= DL+WE2+BR2 (NASI)	100.	DL	100.	COL	100.	WE2	100. BR2	
12	= DL + COL + .75(LL + WLL) (NASI)	100.	DL	100.	COL	75.	LL	75. WLL	
13	= DL + COL + .75(LL + WLR) (NASI)	100.	DL	100.	COL	75.	LL	75. WLR	
14	= DL + COL + .75(SL + WLL) (NASI)	100.	DL	100.	COL	75.	SL	75. WLL	
15	= DL + COL + .75(SL + WLR) (NASI)	100.	DL	100.	COL	75.	SL	75. WLR	
16	= DL + UNBAL. SL #1	100.	DL	100.	COL	100.	SL4		
17	= DL + UNBAL. SL #2	100.	DL	100.	COL	100.	SL3		
18	= DL+SEISMIC LEFT*0.7	103.	DL	103.	COL	70.	SEI		
19	= DL+SEISMIC RIGHT*0.7	103.	DL	103.	COL	-70.	SEI		
20	= .6 DL+SEISMIC LEFT*0.7	57.	DL	.70.	SEI				

LOAD CONDITIONS ... (CONTINUED)

```
21 = .6 DL+SEISMIC RIGHT*0.7
                              57. DL  -70. SEI
22 = .6 DL + SB1*0.7          57. DL   70. SB1
23 = DL + SB2*0.7            103. DL  103. COL  70. SB2

LOAD CONDITIONS FOR REACTIONS & DEFLECTIONS ...
24 = DL                      100. DL
25 = COL                     100. COL
26 = LL                      100. LL
27 = SL                      100. SL
28 = WLL                     100. WLL
29 = WLR                     100. WLR
30 = WL2                     100. WL2
31 = WR2                     100. WR2
32 = WLE                     100. WLE
33 = WE2                     100. WE2
34 = SL4                     100. SL4
35 = SL3                     100. SL3
36 = SEI                     100. SEI
37 = SB1                     100. SB1
38 = SB2                     100. SB2
39 = BR1                     100. BR1
40 = BR2                     100. BR2
41 = SECOND ORDER SEED       100. 000
```

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
1	2	BR1	GLOB	Z	CONC	0.000	5.113			
1	2	BR1	GLOB	Y	CONC	0.250	4.606			
2	1	BR2	GLOB	Y	CONC	0.000	-4.606			
5	4	BR1	GLOB	Z	CONC	0.000	5.113			
5	4	BR1	GLOB	Y	CONC	0.250	4.606			
4	5	BR2	GLOB	Y	CONC	0.000	-4.606			
1	2	SB1	GLOB	Z	CONC	0.000	0.820			
1	2	SB1	GLOB	Y	CONC	0.250	0.738			
2	1	SB2	GLOB	Y	CONC	0.000	-0.738			
5	4	SB1	GLOB	Z	CONC	0.000	0.820			
5	4	SB1	GLOB	Y	CONC	0.250	0.738			
4	5	SB2	GLOB	Y	CONC	0.000	-0.738			
2	1	SEI	GLOB	X	CONC	0.000	0.395			
4	5	SEI	GLOB	X	CONC	0.000	0.395			
2	3	WLE	MEMB	Y	UNIF	0.000	0.194	10.208	0.194	
4	3	WE2	MEMB	Y	UNIF	0.000	-0.194	10.208	-0.194	
2	3	SL3	GLOB	Y	UNIF	0.000	-0.487			
3	2	SL3	GLOB	Y	UNIF	0.000	-0.318	8.980	-0.318	
3	4	SL4	GLOB	Y	UNIF	0.000	-0.487			
3	4	SL4	GLOB	Y	UNIF	0.000	-0.318	8.980	-0.318	
2	3	SL4	GLOB	Y	UNIF	0.000	-0.146			
3	4	SL3	GLOB	Y	UNIF	0.000	-0.146			
(AUTO LOADS)										
1	2	DL	GLOB	Y	UNIF	0.000	-0.025			DLWT
1	2	WLL	GLOB	X	UNIF	0.000	0.172			WLLX
1	2	WLR	GLOB	X	UNIF	0.000	-0.313			WLRX
1	2	WL2	GLOB	X	UNIF	0.000	0.373			WL2X
1	2	WR2	GLOB	X	UNIF	0.000	-0.112			WR2X
1	2	WLE	GLOB	X	UNIF	0.000	-0.353			WLEX
1	2	WE2	GLOB	X	UNIF	0.000	-0.353			WE2X
2	3	LL	GLOB	Y	UNIF	0.000	-0.422			LIVE
2	3	LL	GLOB	Y	CONC	0.000	-0.716			LIVE
2	3	LL	GLOB	Z	MOMT	0.000	0.607			LIVE
2	3	SL	GLOB	Y	UNIF	0.000	-0.633			SNOW
2	3	SL3	GLOB	Y	CONC	0.000	-0.826			SNOW
2	3	SL3	GLOB	Z	MOMT	0.000	0.700			SNOW
2	3	SL4	GLOB	Y	CONC	0.000	-0.248			SNOW
2	3	SL4	GLOB	Z	MOMT	0.000	0.210			SNOW
2	3	SL	GLOB	Y	CONC	0.000	-1.074			SNOW
2	3	SL	GLOB	Z	MOMT	0.000	0.910			SNOW
2	3	DL	GLOB	Y	UNIF	0.000	-0.055			DEAD
2	3	DL	GLOB	Y	CONC	0.000	-0.094			DEAD
2	3	DL	GLOB	Z	MOMT	0.000	0.080			DEAD
2	3	DL	GLOB	Y	UNIF	0.000	-0.020			DLWT
2	3	COL	GLOB	Y	UNIF	0.000	-0.063			COLL
2	3	COL	GLOB	Y	CONC	0.000	-0.107			COLL
2	3	COL	GLOB	Z	MOMT	0.000	0.091			COLL
2	3	WLL	GLOB	X	UNIF	0.000	-0.115			WLLX
2	3	WLL	GLOB	Y	UNIF	0.000	0.462			WLLY
2	3	WLR	GLOB	X	UNIF	0.000	-0.083			WLRX
2	3	WLR	GLOB	Y	UNIF	0.000	0.331			WLRY
2	3	WL2	GLOB	X	UNIF	0.000	-0.068			WL2X

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
2	3	WL2	GLOB	Y	UNIF	0.000	0.271			WL2Y
2	3	WR2	GLOB	X	UNIF	0.000	-0.035			WR2X
2	3	WR2	GLOB	Y	UNIF	0.000	0.140			WR2Y
2	3	WLE	GLOB	X	UNIF	0.000	-0.115			WLEX
2	3	WLE	GLOB	Y	UNIF	0.000	0.462			WLEY
2	3	WE2	GLOB	X	UNIF	0.000	-0.115			WE2X
2	3	WE2	GLOB	Y	UNIF	0.000	0.462			WE2Y
3	4	LL	GLOB	Y	UNIF	0.000	-0.422			LIVE
4	3	LL	GLOB	Y	CONC	0.000	-0.716			LIVE
4	3	LL	GLOB	Z	MOMT	0.000	-0.607			LIVE
3	4	SL	GLOB	Y	UNIF	0.000	-0.633			SNOW
4	3	SL3	GLOB	Y	CONC	0.000	-0.248			SNOW
4	3	SL3	GLOB	Z	MOMT	0.000	-0.210			SNOW
4	3	SL4	GLOB	Y	CONC	0.000	-0.826			SNOW
4	3	SL4	GLOB	Z	MOMT	0.000	-0.700			SNOW
4	3	SL	GLOB	Y	CONC	0.000	-1.074			SNOW
4	3	SL	GLOB	Z	MOMT	0.000	-0.910			SNOW
3	4	DL	GLOB	Y	UNIF	0.000	-0.055			DEAD
4	3	DL	GLOB	Y	CONC	0.000	-0.094			DEAD
4	3	DL	GLOB	Z	MOMT	0.000	-0.080			DEAD
3	4	DL	GLOB	Y	UNIF	0.000	-0.020			DLWT
3	4	COL	GLOB	Y	UNIF	0.000	-0.063			COLL
4	3	COL	GLOB	Y	CONC	0.000	-0.107			COLL
4	3	COL	GLOB	Z	MOMT	0.000	-0.091			COLL
3	4	WLL	GLOB	X	UNIF	0.000	0.083			WLLX
3	4	WLL	GLOB	Y	UNIF	0.000	0.331			WLLY
3	4	WLR	GLOB	X	UNIF	0.000	0.115			WLRX
3	4	WLR	GLOB	Y	UNIF	0.000	0.462			WLRY
3	4	WL2	GLOB	X	UNIF	0.000	0.035			WL2X
3	4	WL2	GLOB	Y	UNIF	0.000	0.140			WL2Y
3	4	WR2	GLOB	X	UNIF	0.000	0.068			WR2X
3	4	WR2	GLOB	Y	UNIF	0.000	0.271			WR2Y
3	4	WLE	GLOB	X	UNIF	0.000	0.115			WLEX
3	4	WLE	GLOB	Y	UNIF	0.000	0.462			WLEY
3	4	WE2	GLOB	X	UNIF	0.000	0.115			WE2X
3	4	WE2	GLOB	Y	UNIF	0.000	0.462			WE2Y
5	4	DL	GLOB	Y	UNIF	0.000	-0.025			DLWT
5	4	WLL	GLOB	X	UNIF	0.000	0.315			WLLX
5	4	WLR	GLOB	X	UNIF	0.000	-0.172			WLRX
5	4	WL2	GLOB	X	UNIF	0.000	0.114			WL2X
5	4	WR2	GLOB	X	UNIF	0.000	-0.373			WR2X
5	4	WLE	GLOB	X	UNIF	0.000	0.353			WLEX
5	4	WE2	GLOB	X	UNIF	0.000	0.353			WE2X

* E = eccentricity for concentrated loads.
L = load length for uniform loads.

COEFFICIENTS FOR WLL (WIND FROM THE LEFT)
LEFT WALL COEFFICIENT = 0.3070
LEFT ROOF COEFFICIENT = -0.8700
RIGHT ROOF COEFFICIENT = -0.6230
RIGHT WALL COEFFICIENT = -0.5630

COEFFICIENTS FOR WLR (WIND FROM THE RIGHT)
LEFT WALL COEFFICIENT = -0.5600
LEFT ROOF COEFFICIENT = -0.6230
RIGHT ROOF COEFFICIENT = -0.8700
RIGHT WALL COEFFICIENT = 0.3070

COEFFICIENTS FOR WL2 (WIND FROM THE LEFT CASE 2)
LEFT WALL COEFFICIENT = 0.6670
LEFT ROOF COEFFICIENT = -0.5100
RIGHT ROOF COEFFICIENT = -0.2630
RIGHT WALL COEFFICIENT = -0.2030

COEFFICIENTS FOR WR2 (WIND FROM THE RIGHT CASE 2)
LEFT WALL COEFFICIENT = -0.2000
LEFT ROOF COEFFICIENT = -0.2630
RIGHT ROOF COEFFICIENT = -0.5100
RIGHT WALL COEFFICIENT = 0.6670

COEFFICIENTS FOR WLE (WIND ON THE ENDWALL)
LEFT WALL COEFFICIENT = -0.6300
LEFT ROOF COEFFICIENT = -0.8700
RIGHT ROOF COEFFICIENT = -0.8700
RIGHT WALL COEFFICIENT = -0.6300

COEFFICIENTS FOR WE2 (WIND ON THE ENDWALL CASE 2)
LEFT WALL COEFFICIENT = -0.6300
LEFT ROOF COEFFICIENT = -0.8700
RIGHT ROOF COEFFICIENT = -0.8700
RIGHT WALL COEFFICIENT = -0.6300

MEMBER NO. 1- 2 LENGTH 15.84 FT ANGLE OF MEMBER 87.84 DEG
SECTION NO. 1 LENGTH 15.06' OF= 8.00 X 0.2500 WEB=0.1563 IF= 8.00 X 0.3750

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
1*	0.00	2.00	10.00	6.46	124.5	21.8	29.0	4.39	2.03	2.204	2.275
100	0.04	2.94	10.78	6.59	146.6	23.9	31.6	4.72	2.01	2.191	2.266
101	0.11	4.82	12.34	6.83	196.7	28.1	36.9	5.37	1.98	2.165	2.249
102	0.18	6.70	13.91	7.08	255.1	32.4	42.3	6.01	1.94	2.142	2.233
103	0.25	8.58	15.47	7.32	322.1	36.9	47.8	6.63	1.91	2.119	2.218
104	0.32	10.46	17.03	7.56	397.9	41.5	53.4	7.25	1.88	2.098	2.204
105	0.39	12.35	18.59	7.81	482.8	46.3	59.1	7.86	1.85	2.078	2.190
106	0.46	14.23	20.16	8.05	577.3	51.2	64.9	8.47	1.82	2.059	2.177
107	0.53	16.11	21.72	8.30	681.5	56.3	70.9	9.06	1.79	2.040	2.164
108*	0.57	17.05	22.50	8.42	737.4	58.9	73.9	9.36	1.78	2.031	2.157

MEMBER NO. 2- 3 LENGTH 24.61 FT ANGLE OF MEMBER 14.92 DEG
SECTION NO. 1 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.3125
SECTION NO. 2 LENGTH 14.02' OF= 6.00 X 0.2500 WEB=0.1250 IF= 6.00 X 0.3125

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
111*	1.17	17.97	24.00	7.77	673.4	53.7	58.8	9.31	1.14	1.422	1.493
112	1.97	18.21	23.25	7.63	625.3	51.4	56.4	9.05	1.15	1.430	1.500
113	3.57	18.67	21.75	7.35	535.4	47.0	51.7	8.54	1.17	1.447	1.514
114	5.17	19.14	20.25	7.07	453.8	42.7	47.2	8.01	1.20	1.463	1.529
115	6.77	19.60	18.75	6.79	380.1	38.5	42.8	7.48	1.22	1.481	1.544
116	8.37	20.07	17.25	6.50	314.1	34.5	38.5	6.95	1.25	1.500	1.560
117	9.97	20.53	15.75	6.22	255.3	30.7	34.4	6.41	1.28	1.519	1.577
118*	10.78	20.77	15.00	6.08	228.6	28.8	32.3	6.13	1.29	1.529	1.585
118*	10.78	20.77	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
119	11.63	20.98	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
120	13.33	21.41	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
121	15.03	21.83	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
122	16.73	22.26	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
123	18.43	22.68	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
124	20.13	23.10	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
125	21.83	23.53	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
126	23.53	23.95	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
3*	24.38	24.17	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636

MEMBER NO. 3- 4 LENGTH 24.61 FT ANGLE OF MEMBER -14.92 DEG
SECTION NO. 1 LENGTH 14.02' OF= 6.00 X 0.2500 WEB=0.1250 IF= 6.00 X 0.3125
SECTION NO. 2 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.3125

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
3*	24.38	24.17	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
127	25.23	23.95	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
128	26.93	23.53	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
129	28.63	23.10	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
130	30.33	22.68	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
131	32.03	22.25	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
132	33.73	21.83	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
133	35.43	21.41	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
134	37.13	20.98	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
135*	37.98	20.77	15.00	5.18	212.7	26.6	30.4	6.41	1.40	1.591	1.636
135*	37.98	20.77	15.00	6.08	228.6	28.8	32.3	6.13	1.29	1.529	1.585
136	38.78	20.54	15.75	6.22	255.3	30.7	34.4	6.41	1.28	1.519	1.577
137	40.38	20.07	17.25	6.50	314.1	34.5	38.5	6.95	1.25	1.500	1.560
138	41.98	19.60	18.75	6.79	380.1	38.5	42.8	7.48	1.22	1.481	1.544
139	43.58	19.14	20.25	7.07	453.8	42.7	47.2	8.01	1.20	1.463	1.529
140	45.18	18.67	21.75	7.35	535.4	47.0	51.7	8.54	1.17	1.447	1.514
141	46.78	18.21	23.25	7.63	625.3	51.4	56.4	9.05	1.15	1.430	1.500
142*	47.59	17.97	24.00	7.77	673.4	53.7	58.8	9.31	1.14	1.422	1.493

MEMBER NO. 5- 4 LENGTH 15.84 FT ANGLE OF MEMBER 92.16 DEG
SECTION NO. 1 LENGTH 15.06' OF= 8.00 X 0.2500 WEB=0.1563 IF= 8.00 X 0.3750

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
5*	48.76	2.00	10.00	6.46	124.5	21.8	29.0	4.39	2.03	2.204	2.275
144	48.72	2.94	10.78	6.59	146.6	23.9	31.6	4.72	2.01	2.191	2.266
145	48.65	4.82	12.34	6.83	196.7	28.1	36.9	5.37	1.98	2.165	2.249
146	48.58	6.70	13.91	7.08	255.1	32.4	42.3	6.01	1.94	2.142	2.233
147	48.51	8.58	15.47	7.32	322.1	36.9	47.8	6.63	1.91	2.119	2.218
148	48.44	10.46	17.03	7.56	397.9	41.5	53.4	7.25	1.88	2.098	2.204
149	48.37	12.35	18.59	7.81	482.8	46.3	59.1	7.86	1.85	2.078	2.190
150	48.30	14.23	20.16	8.05	577.3	51.2	64.9	8.47	1.82	2.059	2.177
151	48.22	16.11	21.72	8.30	681.5	56.3	70.9	9.06	1.79	2.040	2.164
152*	48.19	17.05	22.50	8.42	737.4	58.9	73.9	9.36	1.78	2.031	2.157

LOAD COND 1 - DEAD + LIVE LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	15.2	6.6	0.0	0.0	0.000	0.000
2					0.002	-0.385
3					-1.430	-0.043
4					-0.001	0.298
5	15.1	-6.4	0.0	0.0	0.000	0.000

LOAD COND 2 - DL + SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	20.6	8.7	0.0	0.0	0.000	0.000
2					-0.002	-0.380
3					-1.968	0.077
4					0.004	0.534
5	20.8	-9.1	0.0	0.0	0.000	0.000

LOAD COND 3 - DL + SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	20.8	9.1	0.0	0.0	0.000	0.000
2					0.004	-0.534
3					-1.968	-0.077
4					-0.002	0.380
5	20.6	-8.7	0.0	0.0	0.000	0.000

LOAD COND 4 - .6DL+WLL (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-10.1	-6.7	0.0	0.0	0.000	0.000
2					-0.017	0.625
3					0.556	0.481
4					0.017	0.346
5	-6.6	-0.2	0.0	0.0	0.000	0.000

LOAD COND 5 - .6DL+WLR (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-6.6	0.2	0.0	0.0	0.000	0.000
2					0.017	-0.343
3					0.557	-0.478
4					-0.017	-0.622
5	-10.1	6.7	0.0	0.0	0.000	0.000

LOAD COND 6 - .6DL+WL2 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-5.4	-6.4	0.0	0.0	0.000	0.000
2					-0.018	0.568
3					0.319	0.481
4					0.016	0.402
5	-1.9	-0.5	0.0	0.0	0.000	0.000

LOAD COND 7 - .6DL+WR2 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-1.9	0.5	0.0	0.0	0.000	0.000
2					0.016	-0.400
3					0.319	-0.478
4					-0.018	-0.565
5	-5.4	6.4	0.0	0.0	0.000	0.000

LOAD COND 8 - .6DL+WLE+BR1 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-16.1	-1.3	5.1	0.0	0.000	0.000
2					0.009	-0.027
3					0.539	-0.155
4					-0.004	-0.286
5	-14.9	1.8	5.1	0.0	0.000	0.000

LOAD COND 9 - .6DL+WE2+BR1 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-14.9	-1.8	5.1	0.0	0.000	0.000
2					-0.004	0.286
3					0.539	0.155
4					0.009	0.027
5	-16.1	1.3	5.1	0.0	0.000	0.000

LOAD COND 10 - DL+.75(SL+WE2+BR2) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	11.1	5.3	0.0	0.0	0.000	0.000
2					-0.006	-0.122
3					-1.070	0.143
4					0.006	0.410
5	10.4	-5.9	0.0	0.0	0.000	0.000

LOAD COND 11 - DL+WE2+BR2 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-3.1	-0.6	0.0	0.0	0.000	0.000
2					-0.007	0.227
3					0.305	0.155
4					0.005	0.086
5	-4.2	0.1	0.0	0.0	0.000	0.000

LOAD COND 12 - DL + COL + .75(LL + WLL) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	3.7	-0.2	0.0	0.0	0.000	0.000
2					-0.013	0.209
3					-0.659	0.373
4					0.014	0.544
5	6.4	-5.1	0.0	0.0	0.000	0.000

LOAD COND 13 - DL + COL + .75(LL + WLR) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	6.4	5.1	0.0	0.0	0.000	0.000
2					0.014	-0.542
3					-0.658	-0.371
4					-0.013	-0.207
5	3.7	0.2	0.0	0.0	0.000	0.000

LOAD COND 14 - DL + COL + .75(SL + WLL) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	7.9	1.6	0.0	0.0	0.000	0.000
2					-0.014	0.126
3					-1.063	0.386
4					0.015	0.653
5	10.6	-7.0	0.0	0.0	0.000	0.000

LOAD COND 15 - DL + COL + .75(SL + WLR) (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	10.6	6.9	0.0	0.0	0.000	0.000
2					0.015	-0.651
3					-1.063	-0.384
4					-0.014	-0.124
5	7.9	-1.6	0.0	0.0	0.000	0.000

LOAD COND 16 - DL + UNBAL. SL #1

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	11.3	6.4	0.0	0.0	0.000	0.000
2					0.024	-0.836
3					-1.428	-0.487
4					-0.020	-0.148
5	16.3	-6.1	0.0	0.0	0.000	0.000

LOAD COND 17 - DL + UNBAL. SL #2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	16.3	6.1	0.0	0.0	0.000	0.000
2					-0.020	0.148
3					-1.428	0.487
4					0.024	0.836
5	11.3	-6.4	0.0	0.0	0.000	0.000

LOAD COND 18 - DL+SEISMIC LEFT*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	3.9	1.4	0.0	0.0	0.000	0.000
2					-0.005	0.047
3					-0.364	0.137
4					0.005	0.230
5	4.3	-2.0	0.0	0.0	0.000	0.000

LOAD COND 19 - DL+SEISMIC RIGHT*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	4.3	2.0	0.0	0.0	0.000	0.000
2					0.005	-0.230
3					-0.364	-0.137
4					-0.005	-0.047
5	3.9	-1.4	0.0	0.0	0.000	0.000

LOAD COND 20 - .6 DL+SEISMIC LEFT*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	1.2	0.2	0.0	0.0	0.000	0.000
2					-0.005	0.103
3					-0.110	0.130
4					0.005	0.159
5	1.5	-0.8	0.0	0.0	0.000	0.000

LOAD COND 21 - .6 DL+SEISMIC RIGHT*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	1.5	0.8	0.0	0.0	0.000	0.000
2					0.005	-0.159
3					-0.110	-0.130
4					-0.005	-0.103
5	1.2	-0.2	0.0	0.0	0.000	0.000

LOAD COND 22 - .6 DL + SB1*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	0.8	0.5	0.6	0.0	0.000	0.000
2					0.000	-0.026
3					-0.110	0.003
4					0.000	0.031
5	0.8	-0.5	0.6	0.0	0.000	0.000

LOAD COND 23 - DL + SB2*0.7

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	4.7	1.7	0.0	0.0	0.000	0.000
2					0.000	-0.105
3					-0.363	-0.014
4					-0.001	0.077
5	4.6	-1.6	0.0	0.0	0.000	0.000

LOAD COND 24 - DL - DEAD LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	2.4	0.9	0.0	0.0	0.000	0.000
2					0.000	-0.049
3					-0.193	0.000
4					0.000	0.049
5	2.4	-0.9	0.0	0.0	0.000	0.000

LOAD COND 25 - COL- COLLATERAL

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	1.7	0.7	0.0	0.0	0.000	0.000
2					0.000	-0.041
3					-0.161	0.000
4					0.000	0.041
5	1.7	-0.7	0.0	0.0	0.000	0.000

LOAD COND 26 - LL - LIVE LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	11.1	4.9	0.0	0.0	0.000	0.000
2					0.000	-0.276
3					-1.076	0.000
4					0.000	0.276
5	11.1	-4.9	0.0	0.0	0.000	0.000

LOAD COND 27 - SL - SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	16.7	7.3	0.0	0.0	0.000	0.000
2					0.001	-0.414
3					-1.614	0.000
4					0.001	0.414
5	16.7	-7.3	0.0	0.0	0.000	0.000

LOAD COND 28 - WLL- WIND FROM LEFT

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-11.5	-7.2	0.0	0.0	0.000	0.000
2					-0.017	0.654
3					0.672	0.481
4					0.017	0.316
5	-8.0	0.3	0.0	0.0	0.000	0.000

LOAD COND 29 - WLR- WIND FROM RIGHT

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-8.0	-0.3	0.0	0.0	0.000	0.000
2					0.017	-0.313
3					0.672	-0.478
4					-0.017	-0.652
5	-11.5	7.2	0.0	0.0	0.000	0.000

LOAD COND 30 - WL2- WIND LT CASE 2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-6.8	-6.9	0.0	0.0	0.000	0.000
2					-0.018	0.597
3					0.435	0.481
4					0.016	0.373
5	-3.3	0.0	0.0	0.0	0.000	0.000

LOAD COND 31 - WR2- WIND RT CASE 2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-3.3	0.0	0.0	0.0	0.000	0.000
2					0.016	-0.370
3					0.435	-0.478
4					-0.018	-0.595
5	-6.8	6.9	0.0	0.0	0.000	0.000

LOAD COND 32 - WLE- WIND ON ENDWALL

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-12.9	-1.9	0.0	0.0	0.000	0.000
2					0.009	0.003
3					0.655	-0.155
4					-0.004	-0.316
5	-11.8	2.4	0.0	0.0	0.000	0.000

LOAD COND 33 - WE2- EW WIND CASE 2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-11.8	-2.4	0.0	0.0	0.000	0.000
2					-0.004	0.316
3					0.655	0.155
4					0.009	-0.003
5	-12.9	1.9	0.0	0.0	0.000	0.000

LOAD COND 34 - SL4- SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	7.2	4.6	0.0	0.0	0.000	0.000
2					0.021	-0.738
3					-1.072	-0.457
4					-0.018	-0.186
5	12.3	-4.6	0.0	0.0	0.000	0.000

LOAD COND 35 - SL3- SNOW LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	12.3	4.6	0.0	0.0	0.000	0.000
2					-0.018	0.186
3					-1.072	0.457
4					0.021	0.738
5	7.2	-4.6	0.0	0.0	0.000	0.000

LOAD COND 36 - SEI- SEISMIC LOAD

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-0.3	-0.4	0.0	0.0	0.000	0.000
2					-0.007	0.183
3					0.000	0.181
4					0.007	0.183
5	0.3	-0.4	0.0	0.0	0.000	0.000

LOAD COND 37 - SB1- SEISMIC BRACING

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-0.7	0.0	0.8	0.0	0.000	0.000
2					0.000	0.000
3					0.000	0.000
4					0.000	0.000
5	-0.7	0.0	0.8	0.0	0.000	0.000

LOAD COND 38 - SB2- SEISMIC BRACING

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	0.7	0.0	0.0	0.0	0.000	0.000
2					-0.001	0.000
3					0.001	0.000
4					-0.001	0.000
5	0.7	0.0	0.0	0.0	0.000	0.000

LOAD COND 39 - BR1- WIND BRACING 1

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-4.6	0.0	5.1	0.0	0.000	0.000
2					0.000	0.000
3					0.000	0.000
4					0.000	0.000
5	-4.6	0.0	5.1	0.0	0.000	0.000

LOAD COND 40 - BR2- WIND BRACING 2

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	4.6	0.1	0.0	0.0	0.000	0.000
2					-0.003	0.002
3					0.004	0.000
4					-0.003	-0.002
5	4.6	-0.1	0.0	0.0	0.000	0.000

MEMBER NO. 1- 2 LENGTH 15.84 FT MEMBER ANGLE 87.84 DEG WEIGHT 404. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	15.06	10.00	22.50	8.0 X 1/4	5/32	8.0 X 3/8	0.932	15.1	3

(CONTROLLING ACTIONS)

SECT NO	AXIAL FORCE (KIP)	MOMENT (KIP-FT)	-ALLOW STRESSES- FA (KSI)	FBO (KSI)	FBI (KSI)	--MAXIMUM STRESSES-- AXIAL (KSI)	FBO (KSI)	FBI (KSI)	-UNITY CHECK- - COMPONENTS - FA	FBO	FBI
1	20.74	-125.26	20.8	29.4	23.4	2.46	-25.53	20.34	0.06	0.87	0.87

MEMBER NO. 2- 3 LENGTH 24.61 FT MEMBER ANGLE 14.92 DEG WEIGHT 498. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	10.00	24.00	15.00	6.0 X 1/4	3/16	6.0 X 5/16	0.925	1.4	3
2	14.02	15.00	15.00	6.0 X 1/4	1/8	6.0 X 5/16	0.731	22.0	2

(CONTROLLING ACTIONS)

SECT NO	AXIAL FORCE (KIP)	MOMENT (KIP-FT)	-ALLOW STRESSES- FA (KSI)	FBO (KSI)	FBI (KSI)	--MAXIMUM STRESSES-- AXIAL (KSI)	FBO (KSI)	FBI (KSI)	-UNITY CHECK- - COMPONENTS - FA	FBO	FBI
1	13.60	-110.76	18.7	29.8	27.1	1.78	-25.86	23.56	0.05	0.87	0.88
2	9.11	42.79	20.0	28.8	25.1	1.76	19.34	-16.87	0.04	0.69	0.67

MEMBER NO. 3- 4 LENGTH 24.61 FT MEMBER ANGLE -14.92 DEG WEIGHT 498. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	14.02	15.00	15.00	6.0 X 1/4	1/8	6.0 X 5/16	0.731	2.6	3
2	10.00	15.00	24.00	6.0 X 1/4	3/16	6.0 X 5/16	0.855	24.0	2

(CONTROLLING ACTIONS)

SECT NO	AXIAL FORCE (KIP)	MOMENT (KIP-FT)	-ALLOW STRESSES- FA (KSI)	FBO (KSI)	FBI (KSI)	--MAXIMUM STRESSES-- AXIAL (KSI)	FBO (KSI)	FBI (KSI)	-UNITY CHECK- - COMPONENTS - FA	FBO	FBI
1	9.11	42.79	20.0	28.8	25.1	1.76	19.34	-16.87	0.04	0.69	0.67
2	13.78	-123.37	19.0	34.5	31.5	1.77	-27.59	25.18	0.05	0.80	0.81

MEMBER NO. 5- 4 LENGTH 15.84 FT MEMBER ANGLE 92.16 DEG WEIGHT 404. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	15.06	10.00	22.50	8.0 X 1/4	5/32	8.0 X 3/8	0.932	15.1	2

(CONTROLLING ACTIONS)

SECT NO	AXIAL FORCE (KIP)	MOMENT (KIP-FT)	-ALLOW STRESSES- FA (KSI)	FBO (KSI)	FBI (KSI)	--MAXIMUM STRESSES-- AXIAL (KSI)	FBO (KSI)	FBI (KSI)	-UNITY CHECK- - COMPONENTS - FA	FBO	FBI
1	20.74	-125.26	20.8	29.4	23.4	2.46	-25.53	20.34	0.06	0.87	0.87

TOTAL FRAME WEIGHT IS 1804. LBS.

COLUMN 1 - 2

GIRT AT	3.50	8.00	12.00
SIZE			
SIDES			
CONN.			
HOLE LOC			
FLG AREA			
DEPTH			

RAFTER 2 - 3

PURLIN AT	0.72	4.74	8.76	12.77	16.79	20.80	23.82
SIZE	A2		A2		A2		A2
SIDES	1		1		1		1
CONN.	1-1		1-1		1-1		1-1
HOLE LOC	2		2		2		2
FLG AREA	1.88		1.88		1.88		1.88
DEPTH	23.88		16.65		15.00		15.00

RAFTER 3 - 4

PURLIN AT	0.79	3.81	7.82	11.84	15.85	18.36	22.38
SIZE	A2		A2		A2		A2
SIDES	1		1		1		1
CONN.	1-1		1-1		1-1		1-1
HOLE LOC	2		2		2		2
FLG AREA	1.88		1.88		1.88		1.88
DEPTH	15.00		15.00		16.65		22.52

COLUMN 5 - 4

GIRT AT	3.50	8.00	12.00
SIZE			
SIDES			
CONN.			
HOLE LOC			
FLG AREA			
DEPTH			

HAUNCH CORNER FLANGE BRACE

LEFT COLUMN ..... NO

RIGHT COLUMN ..... NO

STANDARD ANGLE FLANGE BRACE SIZES:
A1 - 1.0 X 1.0 X 1/8"
A2 - 1.5 X 1.5 X 1/8"
A3 - 2.0 X 2.0 X 1/8"
A4 - 2.5 X 2.5 X 3/16"
A5 - 3.0 X 3.0 X 1/4"

	Q = V X A X Y / I
COLUMN 1- 2 SECTION 1 Q MAX =	8311. X 3.00 X 4.10 / 124.52
=	821.3 LBS/IN AT ANALYSIS POINT 1
WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY	
RAFTER 2- 3 SECTION 1 Q MAX =	14814. X 1.88 X 10.93 / 625.26
=	485.5 LBS/IN AT ANALYSIS POINT 112
WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY	
RAFTER 2- 3 SECTION 2 Q MAX =	8458. X 1.88 X 6.83 / 212.72
=	509.4 LBS/IN AT ANALYSIS POINT 118
WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY	
RAFTER 3- 4 SECTION 1 Q MAX =	8458. X 1.88 X 6.83 / 212.72
=	509.4 LBS/IN AT ANALYSIS POINT 135
WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY	
RAFTER 3- 4 SECTION 2 Q MAX =	14814. X 1.88 X 10.93 / 625.26
=	485.5 LBS/IN AT ANALYSIS POINT 141
WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY	
COLUMN 5- 4 SECTION 1 Q MAX =	8311. X 3.00 X 4.10 / 124.52
=	821.3 LBS/IN AT ANALYSIS POINT 5
WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY	

CONNECTION DESIGN DATA FOR MEMBER 2- 3 AT DEPTH 1: RF KNEE SPLICE (1)

SPLICE DEPTH: 24.0000 INCHES
WEB DEPTH: 23.4375 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	22.5000	24.0000
OS FLANGE WIDTH	8.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1563	0.1875
IS FLANGE WIDTH	8.0000	6.0000
IS FLANGE THICK	0.3750	0.3125

CONTROLLING ACTIONS

POS MOMENT	72.92	FT-KIPS
AXIAL LOAD	-6.70	KIPS
SHEAR	-8.58	KIPS
LOAD CONDITION	4	
NEG MOMENT	-123.37	FT-KIPS
AXIAL LOAD	13.78	KIPS
SHEAR	15.43	KIPS
LOAD CONDITION	3	
MAX SHEAR	15.43	KIPS
AXIAL LOAD	13.78	KIPS
MOMENT	-123.37	FT-KIPS
LOAD CONDITION	3	

LENGTH - 27.000"	DIAM. - 0.625"	TOP ROWS	3	EDGE DIST TOP	1.500"
WIDTH - 8.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	2.063"
THICK - 0.625"	PITCH - 2.750"	CON TYPE	1	TOP PROJECTION	2.750"

CORNER WEB - 0.156" THICK WITH 0.125" WELD ON 2 SIDES WELD SHEAR - 2.886 K/IN
*** NOTE STANDARD 0.125 S.A.W. IS NOT ADEQUATE (2.625 K/IN) ***
*** NOTE STANDARD 0.188 1 SIDE G.M.A.W. IS NOT ADEQUATE (2.784 K/IN) ***

CONNECTION DESIGN DATA FOR MEMBER 2- 3 AT DEPTH 9: RIDGE SPLICE (3)

SPLICE DEPTH: 15.0000 INCHES
WEB DEPTH: 14.4375 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	15.0000	15.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1250	0.1250
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.3125	0.3125

CONTROLLING ACTIONS

POS MOMENT	39.40	FT-KIPS
AXIAL LOAD	8.92	KIPS
SHEAR	-0.12	KIPS
LOAD CONDITION	2	
NEG MOMENT	-12.17	FT-KIPS
AXIAL LOAD	-6.80	KIPS
SHEAR	-0.11	KIPS
LOAD CONDITION	4	
MAX SHEAR	-3.41	KIPS
AXIAL LOAD	6.21	KIPS
MOMENT	30.47	FT-KIPS
LOAD CONDITION	17	

LENGTH - 21.188"	DIAM. - 0.625"	TOP ROWS	2	EDGE DIST TOP	1.500"
WIDTH - 6.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	1.500"
THICK - 0.375"	PITCH - 3.000"	CON TYPE	3	TOP PROJECTION	2.750"

CONNECTION DESIGN DATA FOR MEMBER 3- 4 AT DEPTH 1: RIDGE SPLICE (3)

SPLICE DEPTH: 15.0000 INCHES
WEB DEPTH: 14.4375 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	15.0000	15.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1250	0.1250
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.3125	0.3125

CONTROLLING ACTIONS

POS MOMENT	39.40	FT-KIPS
AXIAL LOAD	8.92	KIPS
SHEAR	-0.12	KIPS
LOAD CONDITION	2	
NEG MOMENT	-12.17	FT-KIPS
AXIAL LOAD	-6.80	KIPS
SHEAR	-0.11	KIPS
LOAD CONDITION	4	
MAX SHEAR	-3.41	KIPS
AXIAL LOAD	6.21	KIPS
MOMENT	30.47	FT-KIPS
LOAD CONDITION	17	

LENGTH - 21.188"	DIAM. - 0.625"	TOP ROWS	2	EDGE DIST TOP	1.500"
WIDTH - 6.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	1.500"
THICK - 0.375"	PITCH - 3.000"	CON TYPE	3	TOP PROJECTION	2.750"

CONNECTION DESIGN DATA FOR MEMBER 3- 4 AT DEPTH 9: RF KNEE SPLICE (1)

SPLICE DEPTH: 24.0000 INCHES
WEB DEPTH: 23.4375 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	24.0000	22.5000
OS FLANGE WIDTH	6.0000	8.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1875	0.1563
IS FLANGE WIDTH	6.0000	8.0000
IS FLANGE THICK	0.3125	0.3750

CONTROLLING ACTIONS

POS MOMENT	72.83	FT-KIPS
AXIAL LOAD	-6.69	KIPS
SHEAR	8.58	KIPS
LOAD CONDITION	5	
NEG MOMENT	-123.37	FT-KIPS
AXIAL LOAD	13.78	KIPS
SHEAR	-15.43	KIPS
LOAD CONDITION	2	
MAX SHEAR	-15.43	KIPS
AXIAL LOAD	13.78	KIPS
MOMENT	-123.37	FT-KIPS
LOAD CONDITION	2	

LENGTH - 27.000"	DIAM. - 0.625"	TOP ROWS	3	EDGE DIST TOP	1.500"
WIDTH - 8.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	2.063"
THICK - 0.625"	PITCH - 2.750"	CON TYPE	1	TOP PROJECTION	2.750"

CORNER WEB - 0.156" THICK WITH 0.125" WELD ON 2 SIDES WELD SHEAR - 2.886 K/IN
*** NOTE STANDARD 0.125 S.A.W. IS NOT ADEQUATE (2.625 K/IN) ***
*** NOTE STANDARD 0.188 1 SIDE G.M.A.W. IS NOT ADEQUATE (2.784 K/IN) ***

SUPPORT JOINT 1 -- EXTERIOR COLUMN

CRITICAL REACTIONS		LOAD CONDITION	
HORIZONTAL	9.10 KIPS	3	
DOWNWARD..	20.80 KIPS	3	
UPWARD....	-16.07 KIPS	8	5.28 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN		OUTSIDE FLANGE - 8.0 X 0.2500			
WEB THICKNESS- .156 IN		INSIDE FLANGE - 8.0 X 0.3750			
LENGTH - 10.000"	DIAM. - 0.750"	NO. BOLTS 4	OS PROJECTION 0.000"		
WIDTH - 8.000"	GAUGE - 4.000"	HOLE PAT. 2	WEB FILLET 0.188"		
THICK - 0.375"	PITCH - 4.000"	OS EDGE 3.000"	FLANGE FILLET 0.188"		

SUPPORT JOINT 5 -- EXTERIOR COLUMN

CRITICAL REACTIONS		LOAD CONDITION	
HORIZONTAL	9.10 KIPS	2	
DOWNWARD..	20.80 KIPS	2	
UPWARD....	-16.07 KIPS	9	5.28 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN		OUTSIDE FLANGE - 8.0 X 0.2500			
WEB THICKNESS- .156 IN		INSIDE FLANGE - 8.0 X 0.3750			
LENGTH - 10.000"	DIAM. - 0.750"	NO. BOLTS 4	OS PROJECTION 0.000"		
WIDTH - 8.000"	GAUGE - 4.000"	HOLE PAT. 2	WEB FILLET 0.188"		
THICK - 0.375"	PITCH - 4.000"	OS EDGE 3.000"	FLANGE FILLET 0.188"		

ENDWALL DESIGN
INPUT ECHO

****
DESIGN DATA
****
DESIGN BASE ON THE NASPEC 2007 AISI STANDARD AND 13TH EDITION OF AISC-ASD

DEAD LOAD	2.63 PSF	
COLLATERAL LOAD	3.00 PSF	
LIVE LOAD	20.00 PSF	
SNOW LOAD	30.00 PSF	
WIND LOAD	23.52 PSF	
COLUMN WIND COEFFICIENT	0.9800	
MAXIMUM UNITY CHECK RATIO	1.0300	
MAXIMUM RAFTER DEFLECTION RATIO	L/240.	
MAXIMUM COLUMN DEFLECTION RATIO	L/120.	(FOR 10 YEAR WIND MAP)
MAXIMUM COLUMN DEFLECTION	3.00 IN.	(FOR 10 YEAR WIND MAP)
MAXIMUM COLUMN DEPTH	18.00 IN.	
MINIMUM COLUMN DEPTH	8.00 IN.	
MINIMUM RAFTER DEPTH	8.00 IN.	
UNSUPPORTED COLUMN LENGTH	25.00 FT.	
UNSUPPORTED COLUMN LENGTH BENDING	3.21 FT.	
CONSTANT PURLIN SPACING	4.00 FT.	
YEILD OF B.U.P. MEMBERS	55.00 KSI	
OPTIMIZATION	N	

RUN ASCE 7-05 PARTIAL LOADING
LOAD COMBINATIONS: D + (Lr or S)
0.6D + W
D + 0.75(Lr or S) + 0.75W
NO ALLOWABLE STRESS INCREASE FOR WIND
****
CORNER POST DESIGN DATA
****

SIDEWALL GIRT DEPTH	8"
ENDWALL GIRT DEPTH	8"
SIDEWALL GIRT TYPE	OUTSET
LEFT AND RIGHT CORNER COLUMNS THE SAME	N
SUM OF ALL ENDWALL OPENING WIDTHS	0.00 FT.
NUMBER OF OPENING IN FIRST ENDWALL SPACE	1
HEIGHT OF OPENING IN FIRST ENDWALL SPACE	19.33 FT.
DISTANCE FROM SIDEWALL BL TO ENDWALL OPENING.	0.00 FT.
NUMBER OF OPENING IN SIDEWALL END BAY	0
HEIGHT OF OPENING IN SIDEWALL END BAY	0.00 FT.
DISTANCE FROM ENDWALL BL TO SIDEWALL OPENING.	0.00 FT.
NUMBER OF OPENING IN LAST ENDWALL SPACE	1
HEIGHT OF OPENING IN LAST ENDWALL SPACE	19.33 FT.
DISTANCE FROM SIDEWALL BL TO ENDWALL OPENING.	0.00 FT.
NUMBER OF OPENING IN SIDEWALL END BAY	0
HEIGHT OF OPENING IN SIDEWALL END BAY	0.00 FT.

DISTANCE FROM ENDWALL BL TO SIDEWALL OPENING.: 0.00 FT.

ENDWALL DESIGN DATA

LOADS:

DEAD LOAD =	2.63	PSF
COLL LOAD =	3.00	PSF
LIVE LOAD =	20.00	PSF
SNOW LOAD =	30.00	PSF
WIND LOAD =	23.52	PSF

ENDWALL GEOMETRY:

ENDWALL TYPE	:	FULL FRAME
LEFT EAVE HEIGHT	:	17.33 FEET
RIGHT EAVE HEIGHT	:	17.33 FEET
BUILDING WIDTH	:	51.04 FEET
DISTANCE TO RIDGE	:	25.52 FEET
LEFT ROOF SLOPE	:	3.00/12.
RIGHT ROOF SLOPE	:	3.00/12.
SIDEWALL BAY SPACE	:	19.24 FEET
PURLIN EXTENSION	:	1.26 FEET

2 ENDWALL SPACES (FT): 25.52 25.52

SINGLE CEE SECTION COLUMNS

SIZE	DEPTH	FLANGE WIDTH	Thk	CORNER RAD	AREA	Ix	Sxe	rx	Iy	ry
816	8.00	3.00	.060	.250	0.896	8.83	1.82	3.14	1.08	1.10
814	8.00	3.00	.075	.250	1.122	10.99	2.40	3.13	1.35	1.10
812	8.00	3.00	.099	.250	1.483	14.41	3.47	3.12	1.79	1.10
1014	10.00	3.50	.075	.250	1.347	20.43	3.32	3.89	2.11	1.25
1012	10.00	3.50	.099	.250	1.780	26.85	4.77	3.88	2.80	1.25

BACK-BACK CEE SECTION COLUMNS

SIZE	DEPTH	FLANGE WIDTH	Thk	CORNER RAD	AREA	Ix	Sxe	rx	Iy	ry
816	8.00	6.00	.060	.250	1.792	17.66	3.64	3.14	3.53	1.40
814	8.00	6.00	.075	.250	2.244	21.98	4.80	3.13	4.47	1.41
812	8.00	6.00	.099	.250	2.966	28.82	6.93	3.12	6.03	1.42
1014	10.00	7.00	.075	.250	2.694	40.86	6.64	3.89	6.71	1.58
1012	10.00	7.00	.099	.250	3.560	53.70	9.53	3.88	9.03	1.59

LIP-LIP CEE SECTION COLUMNS

SIZE	DEPTH	FLANGE WIDTH	Thk	CORNER RAD	AREA	Ix	Sxe	rx	Iy	ry
816	8.00	6.00	.060	.250	1.792	17.66	3.64	3.14	10.24	2.39
814	8.00	6.00	.075	.250	2.244	21.98	4.80	3.13	12.70	2.38
812	8.00	6.00	.099	.250	2.966	28.82	6.93	3.12	16.56	2.36
1014	10.00	7.00	.075	.250	2.694	40.86	6.64	3.89	21.55	2.83
1012	10.00	7.00	.099	.250	3.560	53.70	9.53	3.88	28.14	2.81

****
*** (4) ANCHOR BOLTS REQUIRED FOR EW POSTS OVER 300# ***
****

ENDWALL POST SIZES

POST NUMBER	POST SIZE	POST DESCRIPTION DEPTH	FLANGE	WEB THK	POST LENGTH (FT)	LY OS FLG (FT)	LY IS FLG (FT)
2	W 13/80F	13	8 x 3/8	5/32	23.13	23.13	3.21

LOAD CONDITION : .6D + W

POST NUM	POST SIZE	HORZ REACT (KIP)	AXIAL LOAD (KIP)	DESIGN MOMENT (K-FT)	ACTUAL FA (KSI)	ALLOW FA (KSI)	ACTUAL FBX (KSI)	ALLOW FBX (KSI)	COMB STRESS RATIO
2	W 13/80F	6.80	0.00	39.34	0.00	7.89	11.66	32.82	0.355

CORNER POST DESIGN SUMMARY

LEFT CORNER POST : C 816

RIGHT CORNER POST : C 816

********* INPUT ECHO ********

CALCULATIONS BASED ON THE NASPEC 2007 AISI STANDARD SECTION TYPE IS C
BRIEF REPORT
DO NOT INCREASE DEPTHS

WIND LOAD = 23.52256 PSF
SUCTION = 1.084620
PRESSURE = 0.9846194

UNITY = 1.030000
ALLOW = 1.000000
DEFLC = L/ 120.0000 (10 YEAR MAP DEFLECTION)
BEARING= 4.000000 5.000000 5.000000

END ZONE= 5.104167 SUCT= 1.193239 PRES= 0.9846194

PANEL TYPE=TFP
INSET/OUTSET/BYPASS GIRTS=O

BAY NO.	1	2
BAY LENGTH	18.50	19.24
SPACING	6.50	4.38
SIZES	812	814
T SAG ANG	0	0
B SAG ANG	1	1
NUM GIRTS	3	3

SIMPLE SPAN LAPS

EXTENSIONS
LEFT EXTENSION (FT) = 0.0000000E+00 RIGHT EXTENSION (FT) = 1.260417
EXTENSION SUCTION COEF. = 1.193239
EXTENSION PRESSURE COEF. = 0.9846194
FY = 55.00000 KSI
Welded clips N

SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	THICKNESS	LIP LENGTH	LIP ANGLE	CORNER RADIUS	h
C1012	1.780	6.05	10.00	3.50	0.099	0.94	90.	0.250	9.30
C1014	1.347	4.58	10.00	3.50	0.075	0.87	90.	0.250	9.35
C 812	1.483	5.04	8.00	3.00	0.099	0.94	90.	0.250	7.30
C 814	1.122	3.81	8.00	3.00	0.075	0.87	90.	0.250	7.35
C 816	0.896	3.05	8.00	3.00	0.060	0.83	90.	0.250	7.38
C 516	0.641	2.18	5.00	2.25	0.060	0.95	90.	0.250	4.38

SIZE	Ix	Ix (def)	Sf	Sxe	Sxe (holes)	Iy	Iyc	rx	ry	Va
C1012	26.85	26.51	5.37	4.77	3.93	2.80	1.40	3.88	1.25	9.28
C1014	20.43	19.24	4.09	3.32	2.67	2.11	1.05	3.89	1.25	4.02
C 812	14.41	14.41	3.60	3.47	2.96	1.79	0.89	3.12	1.10	10.82
C 814	10.99	10.86	2.75	2.40	2.04	1.35	0.68	3.13	1.10	5.11
C 816	8.83	8.35	2.21	1.82	1.50	1.08	0.54	3.14	1.10	2.61
C 516	2.48	2.42	0.99	0.95	0.95	0.49	0.25	1.97	0.88	3.97

SECTIONS ARE CHECKED FOR THE FOLLOWING CONDITIONS:

A. SHEAR + BENDING
   1. S+B 1 - SHEAR + BENDING AT THE LEFT SUPPORT
   2. S+B 2 - SHEAR + BENDING AT THE LEFT LAP CUT-OFF
   3. S+B 3 - SHEAR + BENDING AT THE RIGHT LAP CUT-OFF
   4. S+B 4 - SHEAR + BENDING AT THE RIGHT SUPPORT

B. BENDING
   1. BND 1 - BENDING AT THE LEFT SUPPORT
   2. BND 2 - BENDING AT THE LEFT LAP CUT-OFF
   3. BND 3 - BENDING AT THE MAXIMUM INTERIOR MOMENT
   4. BND 4 - BENDING AT THE RIGHT LAP CUT-OFF
   5. BND 5 - BENDING AT THE RIGHT SUPPORT

C. SHEAR
   1. SHR 1 - SHEAR AT THE LEFT SUPPORT
   2. SHR 2 - SHEAR AT THE LEFT LAP CUT-OFF
   3. SHR 3 - SHEAR AT THE RIGHT LAP CUT-OFF
   4. SHR 4 - SHEAR AT THE RIGHT SUPPORT

D. BEARING
   1. BRG L - BEARING AT THE LEFT SUPPORT
   2. BRG R - BEARING AT THE RIGHT SUPPORT

E. DEFLECTION - DEF - MAXIMUM DEFLECTION IN THE SPAN.

WIND LOAD (SUCTION)
WIND LOAD = 23.52 PSF X 1.08 (SUCTION) / AT 5.1' END ZONES THE COEF = 1.19

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	10 YR DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY	
1	18.50	-0.16583	812	-0.784	-7.20	9.18	-1.61	0.912	BND 2
2	19.24	-0.11166	814	-0.804	-5.16	9.61	-2.62	0.972	BND 2
EXT	1.26	-0.12284	814	0.000			-1.27		

THE MAXIMUM UNITY CHECK IS 0.972 IN BAY 2

WIND LOAD (PRESSURE)
WIND LOAD = 23.52 PSF X 0.98 (PRESSURE) / AT 5.1' END ZONES THE COEF = 0.98

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	10 YR DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY	
1	18.50	0.15055	812	0.700	6.44	9.25	1.39	0.677	BND 2
2	19.24	0.10137	814	0.724	4.65	9.58	2.36	0.707	BND 2
EXT	1.26	0.10137	814	0.000			1.11		

THE MAXIMUM UNITY CHECK IS 0.707 IN BAY 2

G I R T D E S I G N S U M M A R Y

LOAD CONDITIONS

WIND LOAD (SUCTION)
WIND LOAD (PRESSURE)

LOADS

WIND LOAD = 23.52 PSF

BAY NO.	1	2
BAY SPACES	18.5	19.2
GIRT SIZE	812	814
GIRT SPACE	6.50	4.38
SAG ANGLES	1	1

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.972 IN BAY 2

TOTAL WEIGHT = 171.48 LBS

********* INPUT ECHO ********

CALCULATIONS BASED ON THE NASPEC 2007 AISI STANDARD SECTION TYPE IS C
BRIEF REPORT
DO NOT INCREASE DEPTHS

WIND LOAD = 23.52256 PSF
SUCTION = 1.084620
PRESSURE = 0.9846194

UNITY = 1.030000
ALLOW = 1.000000
DEFLC = L/ 120.0000 (10 YEAR MAP DEFLECTION)
BEARING= 4.000000 5.000000 5.000000

END ZONE= 5.104167 SUCT= 1.193239 PRES= 0.9846194

PANEL TYPE=TFP
INSET/OUTSET/BYPASS GIRTS=O

BAY NO.	1	2
BAY LENGTH	18.50	19.24
SPACING	6.50	6.00
SIZES	812	812
T SAG ANG	0	0
B SAG ANG	1	1
NUM GIRTS	3	3

SIMPLE SPAN LAPS

EXTENSIONS
LEFT EXTENSION (FT) = 0.0000000E+00 RIGHT EXTENSION (FT) = 1.260417
EXTENSION SUCTION COEF. = 1.193239
EXTENSION PRESSURE COEF. = 0.9846194
FY = 55.00000 KSI
Welded clips N

SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	THICKNESS	LIP LENGTH	LIP ANGLE	CORNER RADIUS	h
C1012	1.780	6.05	10.00	3.50	0.099	0.94	90.	0.250	9.30
C1014	1.347	4.58	10.00	3.50	0.075	0.87	90.	0.250	9.35
C 812	1.483	5.04	8.00	3.00	0.099	0.94	90.	0.250	7.30
C 814	1.122	3.81	8.00	3.00	0.075	0.87	90.	0.250	7.35
C 816	0.896	3.05	8.00	3.00	0.060	0.83	90.	0.250	7.38
C 516	0.641	2.18	5.00	2.25	0.060	0.95	90.	0.250	4.38

SIZE	Ix	Ix (def)	Sf	Sxe	Sxe (holes)	Iy	Iyc	rx	ry	Va
C1012	26.85	26.51	5.37	4.77	3.93	2.80	1.40	3.88	1.25	9.28
C1014	20.43	19.24	4.09	3.32	2.67	2.11	1.05	3.89	1.25	4.02
C 812	14.41	14.41	3.60	3.47	2.96	1.79	0.89	3.12	1.10	10.82
C 814	10.99	10.86	2.75	2.40	2.04	1.35	0.68	3.13	1.10	5.11
C 816	8.83	8.35	2.21	1.82	1.50	1.08	0.54	3.14	1.10	2.61
C 516	2.48	2.42	0.99	0.95	0.95	0.49	0.25	1.97	0.88	3.97

SECTIONS ARE CHECKED FOR THE FOLLOWING CONDITIONS:

A. SHEAR + BENDING
   1. S+B 1 - SHEAR + BENDING AT THE LEFT SUPPORT
   2. S+B 2 - SHEAR + BENDING AT THE LEFT LAP CUT-OFF
   3. S+B 3 - SHEAR + BENDING AT THE RIGHT LAP CUT-OFF
   4. S+B 4 - SHEAR + BENDING AT THE RIGHT SUPPORT

B. BENDING
   1. BND 1 - BENDING AT THE LEFT SUPPORT
   2. BND 2 - BENDING AT THE LEFT LAP CUT-OFF
   3. BND 3 - BENDING AT THE MAXIMUM INTERIOR MOMENT
   4. BND 4 - BENDING AT THE RIGHT LAP CUT-OFF
   5. BND 5 - BENDING AT THE RIGHT SUPPORT

C. SHEAR
   1. SHR 1 - SHEAR AT THE LEFT SUPPORT
   2. SHR 2 - SHEAR AT THE LEFT LAP CUT-OFF
   3. SHR 3 - SHEAR AT THE RIGHT LAP CUT-OFF
   4. SHR 4 - SHEAR AT THE RIGHT SUPPORT

D. BEARING
   1. BRG L - BEARING AT THE LEFT SUPPORT
   2. BRG R - BEARING AT THE RIGHT SUPPORT

E. DEFLECTION - DEF - MAXIMUM DEFLECTION IN THE SPAN.

WIND LOAD (SUCTION)
WIND LOAD = 23.52 PSF X 1.08 (SUCTION) / AT 5.1' END ZONES THE COEF = 1.19

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	10 YR DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY	
1	18.50	-0.16583	812	-0.784	-7.20	9.18	-1.61	0.912	BND 2
2	19.24	-0.15308	812	-0.831	-7.07	9.61	-3.02	0.825	BND 2
EXT	1.26	-0.16841	812	0.000			-1.74		

THE MAXIMUM UNITY CHECK IS 0.912 IN BAY 1

WIND LOAD (PRESSURE)
WIND LOAD = 23.52 PSF X 0.98 (PRESSURE) / AT 5.1' END ZONES THE COEF = 0.98

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	10 YR DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY	
1	18.50	0.15055	812	0.700	6.44	9.25	1.39	0.677	BND 2
2	19.24	0.13896	812	0.748	6.37	9.58	2.72	0.670	BND 2
EXT	1.26	0.13896	812	0.000			1.52		

THE MAXIMUM UNITY CHECK IS 0.677 IN BAY 1

G I R T D E S I G N S U M M A R Y

LOAD CONDITIONS

WIND LOAD (SUCTION)
WIND LOAD (PRESSURE)

LOADS

WIND LOAD = 23.52 PSF

BAY NO.	1	2
BAY SPACES	18.5	19.2
GIRT SIZE	812	812
GIRT SPACE	6.50	6.00
SAG ANGLES	1	1

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.912 IN BAY 1

TOTAL WEIGHT = 196.65 LBS

********* INPUT ECHO ********

CALCULATIONS BASED ON THE NASPEC 2007 AISI STANDARD SECTION TYPE IS C
BRIEF REPORT
DO NOT INCREASE DEPTHS

WIND LOAD = 23.52256 PSF
SUCTION = 1.043344
PRESSURE = 0.9433444

UNITY = 1.030000
ALLOW = 1.000000
DEFLC = L/ 120.0000 (10 YEAR MAP DEFLECTION)
BEARING= 4.000000 5.000000 5.000000

END ZONE= 5.104167 SUCT= 1.110689 PRES= 0.9433444

PANEL TYPE=TFP
INSET/OUTSET/BYPASS GIRTS=O

BAY NO.	1	2
BAY LENGTH	25.52	25.52
SPACING	4.25	4.25
SIZES	812	812
T SAG ANG	0	0
B SAG ANG	3	3
NUM GIRTS	5	5

SIMPLE SPAN LAPS

FY = 55.00000 KSI
Welded clips N

SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	THICKNESS	LIP LENGTH	LIP ANGLE	CORNER RADIUS	h
C1012	1.780	6.05	10.00	3.50	0.099	0.94	90.	0.250	9.30
C1014	1.347	4.58	10.00	3.50	0.075	0.87	90.	0.250	9.35
C 812	1.483	5.04	8.00	3.00	0.099	0.94	90.	0.250	7.30
C 814	1.122	3.81	8.00	3.00	0.075	0.87	90.	0.250	7.35
C 816	0.896	3.05	8.00	3.00	0.060	0.83	90.	0.250	7.38
C 516	0.641	2.18	5.00	2.25	0.060	0.95	90.	0.250	4.38

SIZE	Ix	Ix (def)	Sf	Sxe	Sxe (holes)	Iy	Iyc	rx	ry	Va
C1012	26.85	26.51	5.37	4.77	3.93	2.80	1.40	3.88	1.25	9.28
C1014	20.43	19.24	4.09	3.32	2.67	2.11	1.05	3.89	1.25	4.02
C 812	14.41	14.41	3.60	3.47	2.96	1.79	0.89	3.12	1.10	10.82
C 814	10.99	10.86	2.75	2.40	2.04	1.35	0.68	3.13	1.10	5.11
C 816	8.83	8.35	2.21	1.82	1.50	1.08	0.54	3.14	1.10	2.61
C 516	2.48	2.42	0.99	0.95	0.95	0.49	0.25	1.97	0.88	3.97

SECTIONS ARE CHECKED FOR THE FOLLOWING CONDITIONS:

A. SHEAR + BENDING
   1. S+B 1 - SHEAR + BENDING AT THE LEFT SUPPORT
   2. S+B 2 - SHEAR + BENDING AT THE LEFT LAP CUT-OFF
   3. S+B 3 - SHEAR + BENDING AT THE RIGHT LAP CUT-OFF
   4. S+B 4 - SHEAR + BENDING AT THE RIGHT SUPPORT

B. BENDING
   1. BND 1 - BENDING AT THE LEFT SUPPORT
   2. BND 2 - BENDING AT THE LEFT LAP CUT-OFF
   3. BND 3 - BENDING AT THE MAXIMUM INTERIOR MOMENT
   4. BND 4 - BENDING AT THE RIGHT LAP CUT-OFF
   5. BND 5 - BENDING AT THE RIGHT SUPPORT

C. SHEAR
   1. SHR 1 - SHEAR AT THE LEFT SUPPORT
   2. SHR 2 - SHEAR AT THE LEFT LAP CUT-OFF
   3. SHR 3 - SHEAR AT THE RIGHT LAP CUT-OFF
   4. SHR 4 - SHEAR AT THE RIGHT SUPPORT

D. BEARING
   1. BRG L - BEARING AT THE LEFT SUPPORT
   2. BRG R - BEARING AT THE RIGHT SUPPORT

E. DEFLECTION - DEF - MAXIMUM DEFLECTION IN THE SPAN.

WIND LOAD (SUCTION)
WIND LOAD = 23.52 PSF X 1.04 (SUCTION) / AT 5.1' END ZONES THE COEF = 1.11

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	10 YR DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY
1	25.52	-0.10430	812	-1.767	-8.54	12.73	-1.36	0.945 BND 3
2	25.52	-0.10430	812	-1.767	-8.54	12.79	-2.67	0.945 BND 3
					RIGHT REACTION =		-1.36	

THE MAXIMUM UNITY CHECK IS 0.945 IN BAY 2

WIND LOAD (PRESSURE)
WIND LOAD = 23.52 PSF X 0.94 (PRESSURE) / AT 5.1' END ZONES THE COEF = 0.94

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	10 YR DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY
1	25.52	0.09431	812	1.588	7.68	12.76	1.20	0.807 BND 3
2	25.52	0.09431	812	1.588	7.68	12.76	2.41	0.807 BND 3
					RIGHT REACTION =		1.20	

THE MAXIMUM UNITY CHECK IS 0.807 IN BAY 2

G I R T D E S I G N S U M M A R Y

LOAD CONDITIONS

WIND LOAD (SUCTION)
WIND LOAD (PRESSURE)

LOADS

WIND LOAD = 23.52 PSF

BAY NO.	1	2
BAY SPACES	25.5	25.5
GIRT SIZE	812	812
GIRT SPACE	4.25	4.25
SAG ANGLES	3	3

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.945 IN BAY 2

TOTAL WEIGHT = 257.36 LBS

********* INPUT ECHO ********

CALCULATIONS BASED ON THE NASPEC 2007 AISI STANDARD SECTION TYPE IS Z
BRIEF REPORT
DO NOT INCREASE DEPTHS

DEAD LOAD =	1.500000	PSF
COLLATERAL=	3.000000	PSF
LIVE LOAD =	20.00000	PSF
SNOW LOAD =	23.10000	PSF
MIN. SNOW =	30.00000	PSF
UNB. SNOW =	38.17020	PSF
WIND LOAD =	23.52256	PSF X 1.380000

UNITY = 1.030000
ALLOW = 1.000000
DEFLC = L/ 240.0000 (LIVE OR SNOW LOAD DEFLECTION)
DEFLC = L/ 240.0000 (10 YEAR MAP DEFLECTION)
BEARING= 4.000000 5.000000 5.000000

END ZONE= 5.104167 SUCT= 2.180000

PANEL TYPE=SSR
ASCE 7-05 PARTIAL SNOW LOADING (ISKIP=6)

BAY NO.	1	2
BAY LENGTH	18.50	19.24
SPACING	4.00	4.00
SIZES	1014	1014
T SAG ANG	1	1
B SAG ANG	1	1
NUM PURLIN		14
LAP LEFT	0.00	1.00
LAP RIGHT	1.00	0.00

EXTENSIONS
LEFT EXTENSION (FT) = 0.0000000E+00 RIGHT EXTENSION (FT) = 1.260417
LEFT EXT. DL (PSF) = 1.500000 RIGHT EXT. DL (PSF) = 1.500000
EXTENSION SUCTION COEF. = 1.380000
FY = 55.00000 KSI
Welded clips Y

SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	THICKNESS	LIP LENGTH	LIP ANGLE	CORNER RADIUS	h
Z1012	1.662	5.65	10.00	2.75	0.099	0.96	50.	0.250	9.30
Z1014	1.261	4.29	10.00	2.75	0.075	0.91	50.	0.250	9.35
Z 812	1.419	4.82	8.00	2.50	0.099	0.96	50.	0.250	7.30
Z 814	1.073	3.65	8.00	2.50	0.075	0.91	50.	0.250	7.35
Z 816	0.858	2.92	8.00	2.50	0.060	0.87	50.	0.250	7.38
Z 516	0.640	2.18	5.00	2.25	0.060	0.81	50.	0.250	4.38

SIZE	Ix	Ix (def)	Sf	Sxe	Sxe (holes)	Iy	Iyc	rx	ry	Va
Z1012	24.18	24.18	4.84	4.74	3.74	2.89	1.44	3.81	1.32	9.28
Z1014	18.39	18.39	3.68	3.27	2.68	2.15	1.07	3.82	1.30	4.02
Z 812	13.50	13.50	3.38	3.38	3.03	2.30	1.15	3.08	1.27	10.82
Z 814	10.28	10.28	2.57	2.42	2.09	1.71	0.86	3.10	1.26	5.11
Z 816	8.25	8.25	2.06	1.83	1.54	1.35	0.68	3.10	1.26	2.61
Z 516	2.56	2.40	1.03	0.92	0.92	1.00	0.50	2.00	1.25	3.97

SECTIONS ARE CHECKED FOR THE FOLLOWING CONDITIONS:

A. SHEAR + BENDING
   1. S+B 1 - SHEAR + BENDING AT THE LEFT SUPPORT
   2. S+B 2 - SHEAR + BENDING AT THE LEFT LAP CUT-OFF
   3. S+B 3 - SHEAR + BENDING AT THE RIGHT LAP CUT-OFF
   4. S+B 4 - SHEAR + BENDING AT THE RIGHT SUPPORT

B. BENDING
   1. BND 1 - BENDING AT THE LEFT SUPPORT
   2. BND 2 - BENDING AT THE LEFT LAP CUT-OFF
   3. BND 3 - BENDING AT THE MAXIMUM INTERIOR MOMENT
   4. BND 4 - BENDING AT THE RIGHT LAP CUT-OFF
   5. BND 5 - BENDING AT THE RIGHT SUPPORT

C. SHEAR
   1. SHR 1 - SHEAR AT THE LEFT SUPPORT
   2. SHR 2 - SHEAR AT THE LEFT LAP CUT-OFF
   3. SHR 3 - SHEAR AT THE RIGHT LAP CUT-OFF
   4. SHR 4 - SHEAR AT THE RIGHT SUPPORT

D. BEARING
   1. BRG L - BEARING AT THE LEFT SUPPORT
   2. BRG R - BEARING AT THE RIGHT SUPPORT

E. DEFLECTION - DEF - MAXIMUM DEFLECTION IN THE SPAN.

DEAD LOAD + UNBALANCED SNOW LOAD
UNB. SNOW = 38.17 PSF
DEAD LOAD = 4.50 PSF (INCLUDING COLLATERAL LOAD)

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	UNIT DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY
1	18.50	0.17497	1014	0.265	3.90	6.68	1.17	0.904 BND 4
2	19.24	0.17497	1014	0.340	4.38	12.06	4.18	0.898 BND 2
EXT	1.26	0.16297	1014	0.000			1.46	

THE MAXIMUM UNITY CHECK IS 0.904 IN BAY 1

0.6 DEAD LOAD + WIND LOAD (SUCTION)
WIND LOAD = 23.52 PSF X 1.38 (SUCTION) / AT 5.1' END ZONES THE COEF = 2.18
DEAD LOAD = 1.50 PSF

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	10 YR DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY
1	18.50	-0.12367	1014	-0.199	-3.27	6.08	-1.14	0.637 BND 4
2	19.24	-0.12367	1014	-0.225	-3.27	12.42	-3.07	0.637 BND 2
EXT	1.26	-0.19894	1014	0.000			-1.38	

THE MAXIMUM UNITY CHECK IS 0.637 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 4.50 PSF (INCLUDING COLLATERAL LOAD)
ASCE 7 PARTIAL LOADING - SL = 23.10 PSF OR 11.55 PSF ON EACH SPAN AS REQUIRED

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	UNIT DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY
1	18.50	0.06849	1014	-0.044	1.14	5.76	0.39	0.510 BND 4
2	19.24	0.11469	1014	0.280	3.28	11.59	2.20	0.549 BND 3
EXT	1.26	0.10269	1014	0.000			1.01	

THE MAXIMUM UNITY CHECK IS 0.549 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 4.50 PSF (INCLUDING COLLATERAL LOAD)
ASCE 7 PARTIAL LOADING - SL = 23.10 PSF OR 11.55 PSF ON EACH SPAN AS REQUIRED

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	UNIT DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY
1	18.50	0.11469	1014	0.159	2.55	6.67	0.77	0.594 BND 4
2	19.24	0.11469	1014	0.208	2.90	12.08	2.74	0.590 BND 2
EXT	1.26	0.05649	1014	0.000			0.89	

THE MAXIMUM UNITY CHECK IS 0.594 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 4.50 PSF (INCLUDING COLLATERAL LOAD)
ASCE 7 PARTIAL LOADING - SL = 23.10 PSF OR 11.55 PSF ON EACH SPAN AS REQUIRED

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	UNIT DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY
1	18.50	0.11469	1014	0.235	2.99	7.22	0.83	0.480 BND 3
2	19.24	0.06849	1014	0.044	1.35	12.85	2.17	0.492 BND 2
EXT	1.26	0.05649	1014	0.000			0.51	

THE MAXIMUM UNITY CHECK IS 0.492 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 4.50 PSF (INCLUDING COLLATERAL LOAD)
ASCE 7 PARTIAL LOADING - SL = 23.10 PSF OR 11.55 PSF ON EACH SPAN AS REQUIRED

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	UNIT DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY
1	18.50	0.06849	1014	0.081	1.53	6.68	0.46	0.353 BND 4
2	19.24	0.06849	1014	0.101	1.70	12.03	1.63	0.350 BND 2
EXT	1.26	0.10269	1014	0.000			0.62	

THE MAXIMUM UNITY CHECK IS 0.353 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 4.50 PSF (INCLUDING COLLATERAL LOAD)
ASCE 7 PARTIAL LOADING - SL = 23.10 PSF OR 11.55 PSF ON EACH SPAN AS REQUIRED

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	UNIT DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY	
1	18.50	0.11469	1014	0.235	2.99	7.22	0.83	0.480	BND 3
2	19.24	0.06849	1014	0.044	1.35	12.85	2.17	0.492	BND 2
EXT	1.26	0.05649	1014	0.000			0.51		

THE MAXIMUM UNITY CHECK IS 0.492 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 4.50 PSF (INCLUDING COLLATERAL LOAD)
ASCE 7 PARTIAL LOADING - SL = 23.10 PSF OR 11.55 PSF ON EACH SPAN AS REQUIRED

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	UNIT DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY	
1	18.50	0.11469	1014	0.159	2.55	6.67	0.77	0.594	BND 4
2	19.24	0.11469	1014	0.208	2.90	12.08	2.74	0.590	BND 2
EXT	1.26	0.05649	1014	0.000			0.89		

THE MAXIMUM UNITY CHECK IS 0.594 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 4.50 PSF (INCLUDING COLLATERAL LOAD)
ASCE 7 PARTIAL LOADING - SL = 23.10 PSF OR 11.55 PSF ON EACH SPAN AS REQUIRED

BAY NO.	BAY LENGTH (FT)	UNIFORM LOAD (KLF)	SECT. SIZE	UNIT DEFLECT (IN)	MOMENT (KFT)	MOMT LOC FROM LT. (FT)	LEFT END REACTION (KIPS)	MAXIMUM UNITY	
1	18.50	0.06849	1014	-0.044	1.14	5.76	0.39	0.510	BND 4
2	19.24	0.11469	1014	0.280	3.28	11.59	2.20	0.549	BND 3
EXT	1.26	0.10269	1014	0.000			1.01		

THE MAXIMUM UNITY CHECK IS 0.549 IN BAY 2

P U R L I N D E S I G N S U M M A R Y

LOAD CONDITIONS

DEAD LOAD + UNBALANCED SNOW LOAD
0.6 DEAD LOAD + WIND LOAD (SUCTION)
DEAD LOAD + PARTIAL SNOW LOAD

LOADS

DEAD LOAD	= 1.50 PSF
COLLATERAL LOAD	= 3.00 PSF
LIVE LOAD	= 20.00 PSF
MINIMUM ROOF SNOW	= 30.00 PSF
UNBALANCED SNOW	= 38.17 PSF
ROOF SNOW (Pf)	= 23.10 PSF
WIND LOAD	= 23.52 PSF

BAY NO.	1	2
BAY SPACES	18.5	19.2
PURLIN SIZE	1014	1014
PUR SPACE	4.00	4.00
TOP ANGLES	1	1
BOT ANGLES	1	1

LAP LENGTHS 1.00

THE MAXIMUM UNITY CHECK IS 0.904 IN BAY 1

TOTAL WEIGHT = 175.78 LBS

P U R L I N R E S T R A I N T F O R C E S

Np = 7 ROOF SLOPE = 3.0/12 DIST TO PEAK= 25.5' AVG LOAD= 38.2 PSF

BAY NO.	1	2
BAY SPACES	18.5	19.2
PURLIN SIZE	1014	1014
TOP ANGLES	1	1
SAG FORCES	-1.7	-1.7

POSITIVE FORCES ARE TO RESIST UPHILL ROLL

INPUT ECHO:

DESIGN BASED ON THE NASPEC 2007 AISI STANDARD
USE CABLE BRACING IF POSSIBLE
ROOF PANEL TYPE = SSR
LOAD COMBINATIONS: D + (Lr or S)
.6D + W
D + .75(Lr or S) + .75W
NO ALLOWABLE STRESS INCREASE FOR WIND.

NUMBER ROOF TRUSS PANEL POINTS =	3	BUILDING WIDTH =	51.04
NUMBER WALL TRUSS PANEL POINTS =	2	EAVE HEIGHT =	17.33
NUMBER OF BAYS IN THE BUILDING =	2	ROOF SLOPE =	3.00

LOADS:

DEAD LOAD =	1.50 PSF	EAVE PURLIN SPACE =	1.31 FT
COLL LOAD =	3.00 PSF	PANEL OVER HANG AT EAVE =	0.50 FT
LIVE LOAD =	20.00 PSF		
SNOW LOAD =	23.10 PSF		
WIND LOAD =	23.52 PSF		

BRACING PRESSURE COEFFICIENT =	0.6640
BRACING SUCTION COEFFICIENT =	0.1660
PURLIN UPLIFT COEFFICIENT =	1.3800
UPLIFT COEFFICIENT ON PURLIN STRUTS =	0.8700

END ZONE WIDTH = 5.10 FEET
END ZONE PURLIN UPLIFT COEFFICIENT = 2.1800
UPLIFT COEFFICIENT ON PURLIN EXTENSIONS = 1.3800
LEFT EXTENSION LENGTH = 0.00 FEET
RIGHT EXTENSION LENGTH = 1.26 FEET
LEFT EXTENSION DEAD LOAD = 1.50 PSF
RIGHT EXTENSION DEAD LOAD = 1.50 PSF

NOMINAL PURLIN LOAD WIDTH = 4.00 FEET
RIDGE PURLIN LOAD WIDTH = 3.00 FEET
PURLIN YIELD =55.00 KSI

STRUT SPACES: 13.94 12.37

BAY SPACES :	18.50	19.24
PUR SIZES :	Z1014	Z1014
LAPS :	1.00	
	1.00	
SAG ANGLES :	11	11

BRACED BAY NUMBER(S) : 2

BRACE 1 BAYS HORIZONTAL REACTION IN BRACED BAYS= 5.11 KIPS

STRUT NUMBERS -	1	2	3
PRES. LOADS (KIP)-	0.97	2.06	1.06
SUCT. LOADS (KIP)-	0.24	0.51	0.26
TRUSS LOADS (KIP)-	5.11	3.89	1.32
STRUT LOADS (KIP)-	4.87	3.38	1.06
STRUT SPACE (FT) -	17.33	13.94	11.62

BAY NO. 2	CABLE	CABLE	CABLE
DIAMETER (IN) -	0.500	0.375	0.250
MIN WEB THICKNESS-	.1250	.1563	.1250
MIN WITH WEB WASHER	.1250	.1250	.1250

NOTE : THE MIN WEB THICKNESS IS THE MINIMUM FRAME WEB THICKNESS
WHICH DOES NOT NEED TO HAVE A WEB REINFORCING PLATE SUPPLIED.

STRUT NUMBER 1 IS THE EAVE STRUT.
STRUT NUMBERS 2- 3 ARE PURLIN STRUTS.

PURLIN STRUT LOAD CONDITIONS:
1) DEAD + UNIFORM SNOW
2) .6 DEAD + WIND
3) DL + SKIP LOAD
4) DL + .75SL + .75WL + .75AXIAL
5) .6DL + WL + AXIAL

FOR STRUT ROW NUMBER 2

STRUT SIZES:	Z1014	Z1014	
NBOLTS	:2	2	2
AXIAL LOAD :	2.74	4.51	
UNITY CHECK:	0.583	0.722	
FOR LC NUM :	2	5	
TOP ANGLES :	1	1	
BOT ANGLES :	1	1	

FOR STRUT ROW NUMBER 3

STRUT SIZES:	Z1014	Z1014	
NBOLTS	:2	2	2
AXIAL LOAD :	1.41	1.41	
UNITY CHECK:	0.434	0.440	
FOR LC NUM :	2	2	
TOP ANGLES :	1	1	
BOT ANGLES :	1	1	

NUMBER OF BOLTS:

FOR PURLIN STRUTS AT ENDWALLS	=	2
FOR PURLIN STRUTS AT FRAMES	=	2
FOR PURLINS AT ENDWALLS	=	2
FOR PURLINS AT FRAMES	=	2

EAVE STRUT DESIGN

LENGTH (FT)	BAY NO.	STRUT SIZE	GOVERNING LOAD COND	AXIAL LOAD (KIPS)	BENDING (K-FT)	COMBINED STRESS RATIO
18.50	1	ES1012	DL+LL	0.00	1.55	0.104
18.50	1	ES1012	.6DL+WL	4.87	0.00	0.101
19.24	2	ES1012	DL+LL	0.00	1.68	0.112
19.24	2	ES1012	.6DL+WL	4.87	0.00	0.101

DL = DEAD LOAD LL = LIVE LOAD WL = WIND LOAD
USE (2) 5/8" BOLTS WITH WASHERS AT BOTH ENDS OF EACH EAVE STRUT

INPUT ECHO:

DESIGN BASED ON THE NASPEC 2007 AISI STANDARD
USE CABLE BRACING IF POSSIBLE
ROOF PANEL TYPE = SSR
LOAD COMBINATIONS: D + (Lr or S)
.6D + W
D + .75(Lr or S) + .75W
NO ALLOWABLE STRESS INCREASE FOR WIND.

NUMBER ROOF TRUSS PANEL POINTS =	3	BUILDING WIDTH =	51.04
NUMBER WALL TRUSS PANEL POINTS =	2	EAVE HEIGHT =	17.33
NUMBER OF BAYS IN THE BUILDING =	2	ROOF SLOPE =	3.00

LOADS:

DEAD LOAD =	1.50 PSF	EAVE PURLIN SPACE =	1.31 FT
COLL LOAD =	3.00 PSF	PANEL OVER HANG AT EAVE =	0.50 FT
LIVE LOAD =	20.00 PSF		
SNOW LOAD =	23.10 PSF		
WIND LOAD =	23.52 PSF		

BRACING PRESSURE COEFFICIENT =	0.6640
BRACING SUCTION COEFFICIENT =	0.1660
PURLIN UPLIFT COEFFICIENT =	1.3800
UPLIFT COEFFICIENT ON PURLIN STRUTS =	0.8700

END ZONE WIDTH = 5.10 FEET

END ZONE PURLIN UPLIFT COEFFICIENT =	2.1800
UPLIFT COEFFICIENT ON PURLIN EXTENSIONS =	1.3800

LEFT EXTENSION LENGTH = 0.00 FEET
RIGHT EXTENSION LENGTH = 1.26 FEET
LEFT EXTENSION DEAD LOAD = 1.50 PSF
RIGHT EXTENSION DEAD LOAD = 1.50 PSF

NOMINAL PURLIN LOAD WIDTH = 4.00 FEET
RIDGE PURLIN LOAD WIDTH = 3.00 FEET
PURLIN YIELD =55.00 KSI

STRUT SPACES: 13.94 12.37

BAY SPACES :	18.50	19.24
PUR SIZES :	Z1014	Z1014
LAPS :	1.00	
	1.00	
SAG ANGLES :	11	11

BRACED BAY NUMBER(S) : 2

BRACE 1 BAYS HORIZONTAL REACTION IN BRACED BAYS= 5.11 KIPS

STRUT NUMBERS -	1	2	3
PRES. LOADS (KIP)-	0.97	2.06	1.06
SUCT. LOADS (KIP)-	0.24	0.51	0.26
TRUSS LOADS (KIP)-	5.11	3.89	1.32
STRUT LOADS (KIP)-	4.87	3.38	1.06
STRUT SPACE (FT) -	17.33	13.94	11.62

BAY NO. 2	CABLE	CABLE	CABLE
DIAMETER (IN) -	0.500	0.375	0.250
MIN WEB THICKNESS-	.1250	.1563	.1250
MIN WITH WEB WASHER	.1250	.1250	.1250

NOTE : THE MIN WEB THICKNESS IS THE MINIMUM FRAME WEB THICKNESS
WHICH DOES NOT NEED TO HAVE A WEB REINFORCING PLATE SUPPLIED.

STRUT NUMBER 1 IS THE EAVE STRUT.
STRUT NUMBERS 2- 3 ARE PURLIN STRUTS.

PURLIN STRUT LOAD CONDITIONS:
1) DEAD + UNIFORM SNOW
2) .6 DEAD + WIND
3) DL + SKIP LOAD
4) DL + .75SL + .75WL + .75AXIAL
5) .6DL + WL + AXIAL

FOR STRUT ROW NUMBER 2

STRUT SIZES:	Z1014	Z1014	
NBOLTS	:2	2	2
AXIAL LOAD :	2.74	4.51	
UNITY CHECK:	0.583	0.722	
FOR LC NUM :	2	5	
TOP ANGLES :	1	1	
BOT ANGLES :	1	1	

FOR STRUT ROW NUMBER 3

STRUT SIZES:	Z1014	Z1014	
NBOLTS	:2	2	2
AXIAL LOAD :	1.41	1.41	
UNITY CHECK:	0.434	0.440	
FOR LC NUM :	2	2	
TOP ANGLES :	1	1	
BOT ANGLES :	1	1	

NUMBER OF BOLTS:

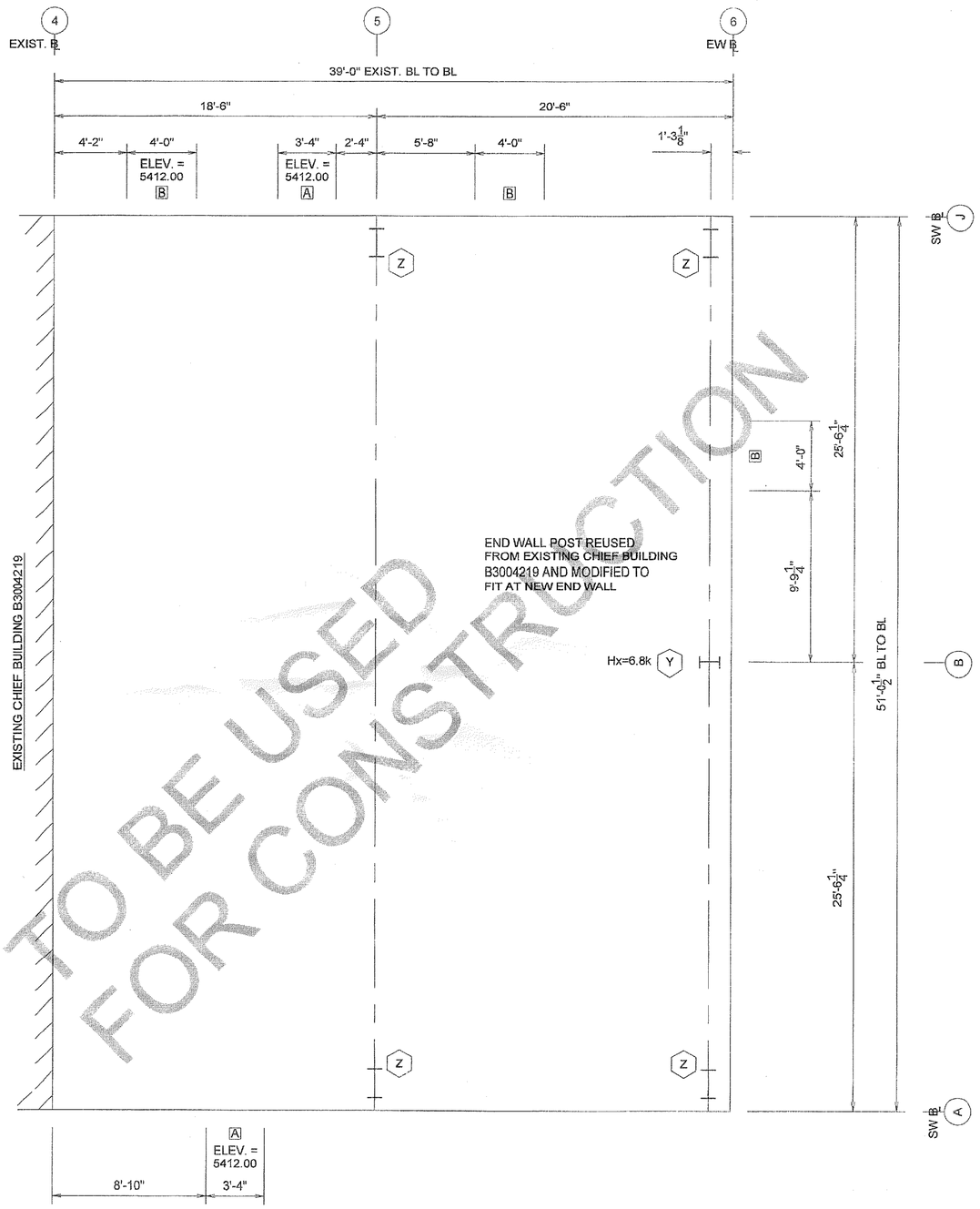
FOR PURLIN STRUTS AT ENDWALLS =	2
FOR PURLIN STRUTS AT FRAMES =	2
FOR PURLINS AT ENDWALLS =	2
FOR PURLINS AT FRAMES =	2

EAVE STRUT DESIGN

LENGTH (FT)	BAY NO.	STRUT SIZE	GOVERNING LOAD COND	AXIAL LOAD (KIPS)	BENDING (K-FT)	COMBINED STRESS RATIO
18.50	1	ES1012	DL+LL	0.00	1.55	0.104
18.50	1	ES1012	.6DL+WL	4.87	0.00	0.101
19.24	2	ES1012	DL+LL	0.00	1.68	0.112
19.24	2	ES1012	.6DL+WL	4.87	0.00	0.101

DL = DEAD LOAD LL = LIVE LOAD WL = WIND LOAD
USE (2) 5/8" BOLTS WITH WASHERS AT BOTH ENDS OF EACH EAVE STRUT

ACCESSORY SCHEDULE		
MARK	QUAN	DESCRIPTION
A	2	3'-4" X 7'-4" WALK DOOR F.O.
B	3	4'-0" X 3'-0" WINDOW F.O.



ANCHOR ROD PLAN

FINISHED FLOOR ELEVATION = 5411.00
BASE OF ALL COLUMNS AT ELEVATION = 5413.00
BASE OF FRAME OPENING JAMBS AT ELEVATION = 5413.00 UNLESS NOTED

REFERENCE NOTES:

1. ALL ANCHOR RODS INCLUDING NUTS AND WASHERS FOR SAME ARE NOT FURNISHED BY CHIEF BUILDINGS.
2. ANCHOR ROD MATERIAL SHALL CONFORM TO ASTM F1554 HAVING A YIELD OF 36 KSI OR GREATER.
3. ROD PROJECTIONS ARE RECOMMENDED MINIMUMS BASED ON THE BASE PLATE BEARING DIRECTLY ON THE CONCRETE PIER. IF THE BASE PLATE IS TO BEAR ON GROUT, THE ROD PROJECTION MUST BE INCREASED ACCORDINGLY.
4. CONCRETE SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.
5. ALL DRAWINGS ARE NOT TO SCALE.

ANCHOR RODS (BY OTHERS)		
QUAN	SIZE	PROJ
20	0-½" Ø	1½"
20	0-¾" Ø	2"

REVISIONS	
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NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

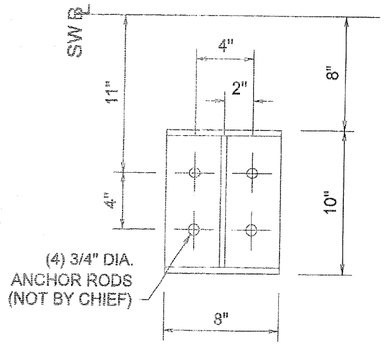
COLORADO REGISTERED QUENTIN L. [illegible] 28534 PROFESSIONAL ENGINEER

6-12

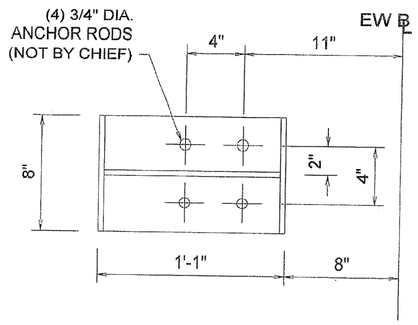
ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

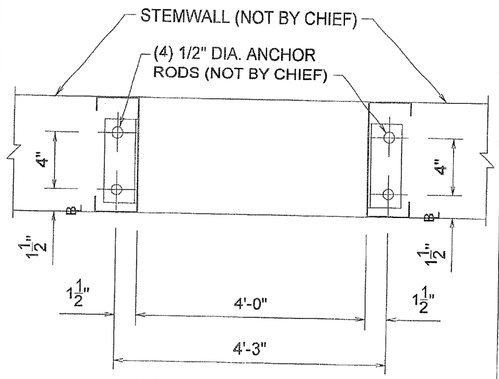
DRAWN	CHECK	ORDER NO.	A1
RFH	RS	B3004915	A4
06-08-12	06-08-12		



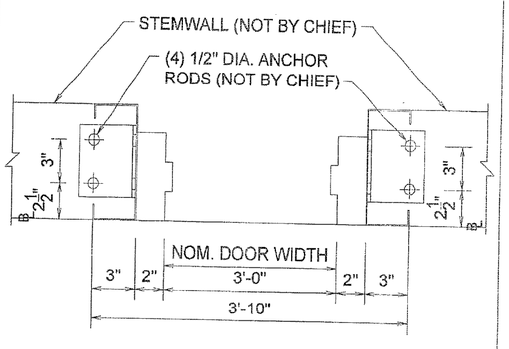
DETAIL Z



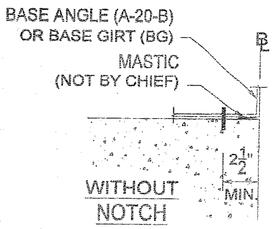
DETAIL Y



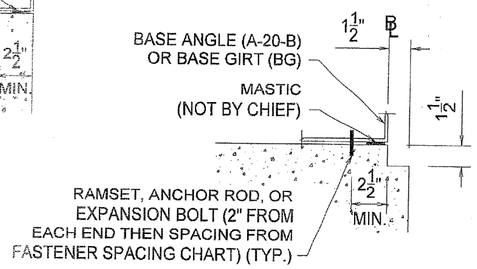
WINDOW ANCHOR ROD DETAIL



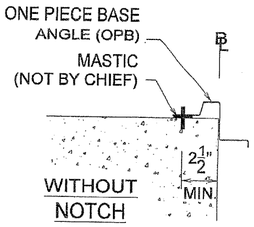
WALK DOOR ANCHOR ROD DETAIL



CONTRACTOR IS RESPONSIBLE FOR ANCHORING BASE MEMBER TO CONCRETE.



WITH NOTCH

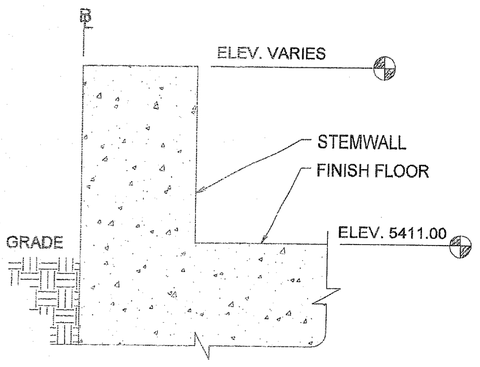


BASE MEMBER DETAILS

BASE ANCHORAGE SPACING FOR STANDARD BASE ANGLE, BASE GIRT OR ONE PIECE BASE WITH CS OR AP WALLS		
FASTENER TYPE & DIAMETER	MINIMUM EMBEDMENT	MAXIMUM SPACING
1/4" WEDGE ANCHOR ①	1 1/4"	3'-0"
1/4" SCREW TYPE ANCHOR ②	1 1/2"	3'-0"
3/8" CAST-IN ANCHOR	4" WITH HOOK OR HEAD	3'-0"
1/4" HAMMER-IN ③	1 3/8"	2'-0"
0.14" POWDER ACTUATED ④	1 1/4"	1'-6"

① HILTI KWIK BOLT®, RAMSET TRUBOLT®, POWERS POWERSTUD®, OR EQUAL
② CFS TAPCON®, HILTI KWIK-CON II®, POWERS WEDGE-BOLT®, OR EQUAL
③ POWERS ZAMAC HAMMER SCREW®, HILTI METAL HIT ANCHOR®, OR EQUAL
④ POWERS BALLISTIC POINT PIN, RAMSET 1500/1600 SERIES, HILTI UNIVERSAL NAIL OR EQUAL

FASTENER SPACING CHART



STEMWALL DETAIL

NOTE: MASONRY WALL IS NOT DETAILED.

THE FLOOR ELEVATION IS 5411.00

THE TOP OF MASONRY ELEVATION IS VARIES

UNLESS OTHERWISE NOTED, THE BASE OF MAIN FRAME COLUMNS AND ALL OTHER FRAMING IS ASSUMED TO BE TOP OF STEMWALL ELEVATION.

CONTRACTOR NOTE:

CONCRETE LEDGE FOR MASONRY IS NOT SHOWN. CONTRACTOR IS TO DETERMINE CONCRETE LEDGE DIMENSIONS AT AREAS WITH MASONRY AND ALL OUT TO OUT OF CONCRETE DIMENSIONS.

1. CHIEF BUILDINGS IS NOT RESPONSIBLE FOR CONCRETE AND/OR MASONRY DESIGN, DIMENSIONS & REINFORCING STEEL DETAILS. CHIEF BUILDINGS RECOMMENDS THE CONTRACTOR/BUILDER TO OBTAIN THE SERVICES OF A QUALIFIED DESIGN ENGINEER FOR DESIGNS & DRAWINGS OF MASONRY OR CONCRETE WALL, FLOORS, & FOUNDATIONS TO WITHSTAND THE COLUMN REACTIONS INDICATED ON THE A.B. PLAN. CONCRETE OR MASONRY WALLS SHALL ALSO BE DESIGNED TO WITHSTAND WIND/SEISMIC LOAD ON THE WALL & BASE OF BLDG. WALL PANEL.

2. WHEN ENDWALL POST & CORNER POST REACTIONS ARE NOT INDICATED, THE CONTRACTOR/BUILDER &/OR CONCRETE DESIGN ENGINEER SHALL DETERMINE THE REACTIONS FROM THE SPECIFIED LIVE LOADS, WIND/SEISMIC LOAD, AND ANY APPLICABLE AUXILIARY LOADS.

3. CONCRETE AND/OR MASONRY ELEV. INDICATED ARE PER THE AGREEMENT TO PURCHASE/CUSTOMER DRAWINGS RECEIVED FROM THE CONTRACTOR/BUILDER.

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

REVISIONS

4
3
2
1

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO REGISTERED QUENTIN E. [illegible] 28824 PROFESSIONAL ENGINEER

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

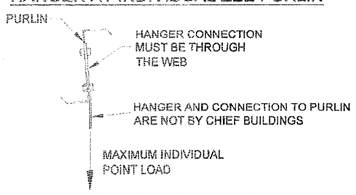
CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	A2
RFH	RS	B3004915	A4
06-08-12	06-08-12		

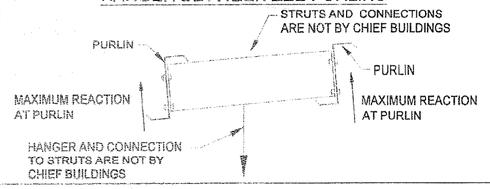
This structure has been designed for a collateral load of 3 psf. The total applied loads due to ceiling panels, ducts, sprinkler distribution lines, electrical equipment, conduit, fireproofing, other piping and mechanical loads, etc., cannot exceed this collateral load. In no case shall the total uniform collateral load on an individual roof member exceed the product of 3 psf times the spacing of the supporting member. Nor shall any individual point load or summation of point loads on any one roof member exceed the product of 3 psf times the member spacing times half the member length. In addition, no individual point load on a purlin can exceed 87 lbs. All loads suspended from purlins shall have the load introduced through the web and not the flange of the purlin. Hangers cannot be supported from the edge of flanges or through holes in the flanges of the purlins. Design of hangers and their attachments are not by Chief Buildings. Chief Buildings is NOT responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

Chief Buildings neither assumes nor accepts any responsibility for the design of hangers, bracing of suspended members, transverse support members, nor connections to roof purlins. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

HANGER AT INDIVIDUAL ZEE PURLIN



HANGER BETWEEN ZEE PURLINS



Building Design Criteria
B3004915

Building Code	Pikes Peak Regional Building Code 2011
2006 MBMA Occupancy Category	Substantial Hazard
Roof Live Load	20 psf
	(Tributary Area Reduction Not Allowed)
Collateral Load	3 psf
Ground Snow Load (Pg)	30 psf
Exposure Factor (Ce)	1.0
Thermal Factor (Ct)	1.0
Importance Factor (I)	1.1
Flat Roof Snow Load (Pf)	23.10 psf
Minimum Roof Snow Load	30.00 psf
Building Enclosure	Enclosed
Wind Speed	100 mph (GCpi ± 0.18)
Exposure Category	C
Importance Factor (I)	1.15
Wind Pressure (q)	23.52 psf
Seismic	
Spectral Response Short Periods (Ss)	18.5%
Spectral Response 1 s Period (S1)	5.9%
Seismic Importance Factor	1.25
Design Category	B
Site Class	D
Seismic Resisting System	
Longitudinal Direction	Steel System (R=3.0)
Lateral Direction	Steel System (R=3.0)
Seismic Response Coefficient (Cs)	0.082
Spectral Response Parameter Short Period (SDS)	0.197
Spectral Response Parameter 1 s Period (SD1)	0.094
Analysis Procedure	ELF
Base Shear	2112 lbs.
Other Loads:	None

Mezzanine loading information:

The building provided by Chief Buildings does not include structural support for the mezzanine, which is furnished by others.

Chief Buildings neither assumes nor accepts any responsibility for the design of the mezzanine. The mezzanine must be designed to resist all vertical and lateral loads without relying on the building provided by Chief Buildings for any support. It is the responsibility of the Buyer/Contractor and/or End Owner to have the mezzanine design performed by a registered design professional.

The frame at line 6 is an expandable full load frame. The frame has been designed for a future expansion of 23'-0" centerline-to-centerline of the future frame.

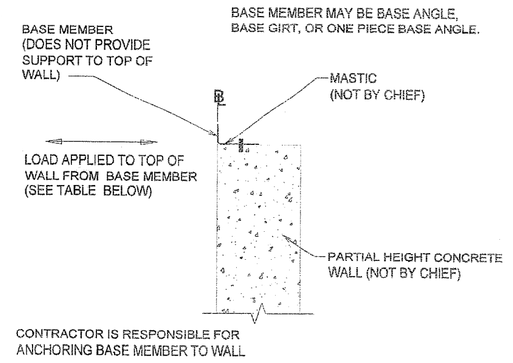
Where the frame cross section requires flange braces both sides of the column or rafter, these flange braces must be installed upon future expansion.

The structure provided by Chief Buildings has been designed to have a partial height wall constructed of concrete, which is not by Chief Buildings. The base member at the top of the wall has NOT been designed to provide lateral support to the top of the wall. Chief Buildings neither assumes nor accepts any responsibility for design of this partial height concrete wall nor attachment or interface of this wall with the structure provided by Chief Buildings.

It is the responsibility of the Buyer/Contractor and/or End Owner to retain the services of a registered design professional who is responsible for the design of:

1.) The concrete wall and required reinforcing for code prescribed vertical and lateral loads (including the load imposed through the base member from the wall panel above) and sufficient ductility to allow for differential movement of the concrete wall and the structure provided by Chief Buildings.
2.) Attachment of the base member provided by Chief Buildings to the concrete wall.
3.) Detailing at base of the wall and at isolation joints at perpendicular walls to allow for differential movement of the concrete wall and the structure provided by Chief Buildings.

Lateral deflection and drift limits for the structure provided by Chief Buildings have been held to the limits ordered in the Agreement to Purchase. It is the responsibility of the registered design professional to insure design of the partial height concrete wall is compatible with these serviceability limits.



PARTIAL HEIGHT CONCRETE WALL DETAIL
BASE MEMBER ON TOP

Load Source	Load Applied to Top of Wall (in or out)
Wind Load (50-year recurrence)	100 plf

Attachments must be designed to safely transfer the forces shown from the base member into the top of the wall. The wall must be designed to resist loads applied to the wall area and the loads from the base member to the wall using load combinations and overstrength detailing requirements as required by the applicable building code.

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

REVISIONS

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NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO REGISTERED QUENTIN L. YADON 28534 PROFESSIONAL ENGINEER 6/8/12

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078 GRAND ISLAND, NE 68802-2078

DRAWN	CHECK	ORDER NO.	A3
RFH	RS	B3004915	A4
06-08-12	06-08-12		

The 16" wide 20 ga Stucco Wall Panels with sealant, not provided by Chief Buildings, must provide structural support to all secondary framing. These panels must have a positive attachment to Chief Buildings' secondary framing capable of resisting roll forces, sag loads, lateral buckling, etc. in accordance with AISI specifications.

The wall panels not provided by Chief Buildings and their anchorage to the secondary framing must be capable of resisting all loads required by the specified building code and listed below.

Wall Panel Pressure (Interior Zone) = 27.8 psf
Wall Panel Suction (Interior Zone) = 30.1 psf
Wall Panel Suction (Corner Zone) = 37.2 psf
(Corner Zone Width =5.1 ft.)

The wall panels must meet the minimum properties and connections given below, which will be considered adequate to provide support to the secondary framing.

Minimum Wall Panel Properties: Ixx = 0.0368 in4/ft
Sxx = 0.0447 in3/ft

Minimum Connection Requirements:
(1) #12 structural fastener to secondary at 1'-4" o.c.

Chief Buildings neither assumes nor accepts any responsibility for the design of the wall panels and their anchorage nor coordination of compatibility between products provided by Chief Buildings and the wall panels not provided by Chief Buildings. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

The 24 ga Metal Sales Seam-Loc roof panels are not provided by Chief Buildings. Chief Buildings will supply secondary framing in the roof capable of resisting roll forces, sag loads and lateral buckling.

The roof panels not provided by Chief Buildings and their anchorage to the secondary framing must be capable of resisting all loads required by the specified building code and listed below.

Roof Live Load = 20 psf
Roof Snow Load = 38.17 psf
Roof Panel Suction (Interior Zone) = 25.40 psf
Roof Panel Suction (Edge Zone) = 44.22 psf
Roof Panel Suction (Corner Zone) = 65.39 psf
(Edge/Corner Zone Width = 5.1 ft.)

Chief Buildings neither assumes nor accepts any responsibility for the design of the roof panels and their anchorage nor coordination of compatibility between products provided by Chief Buildings and the roof panels not provided by Chief Buildings. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

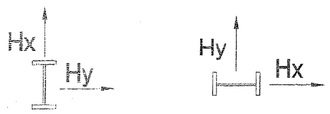
LOAD TYPE	X1	Y1	Z1	X2	Y2	Z2
DL - DEAD LOAD	0.9	2.5	-	-0.9	2.5	-
COL- COLLATERAL	0.8	1.8	-	-0.8	1.8	-
LL - LIVE LOAD	5.3	12.0	-	-5.3	12.0	-
SL - SNOW LOAD	7.9	18.1	-	-7.9	18.1	-
WLL- WIND FROM LEFT	-7.1	-12.2	-	1.3	-9.0	-
WLR- WIND FROM RIGHT	-1.3	-9.0	-	7.1	-12.2	-
WL2- WIND LT CASE 2	-6.4	-7.1	-	0.6	-3.9	-
WR2- WIND RT CASE 2	-0.6	-3.9	-	6.4	-7.1	-
WLE- WIND ON ENDWALL	-2.7	-14.0	-	3.3	-12.9	-
WE2- EW WIND CASE 2	-3.3	-12.8	-	2.7	-14.0	-
SL4- SNOW LOAD	5.0	7.8	-	-5.0	13.4	-
SL3- SNOW LOAD	5.0	13.4	-	-5.0	7.8	-
SEI- SEISMIC LOAD	-0.4	-0.3	-	-0.4	0.3	-
SB1- SEISMIC BRACING	-	-0.7	±0.8	-	-0.7	±0.8
SB2- SEISMIC BRACING	-	0.7	-	-	0.7	-
BR1- WIND BRACING 1	-	-4.6	±5.1	-	-4.6	±5.1
BR2- WIND BRACING 2	0.1	4.6	-	-0.1	4.6	-
MAXIMUM POSITIVE	9.9	22.5	±5.1	6.6	22.5	±5.1
MAXIMUM NEGATIVE	-6.6	-17.1	±5.1	-9.9	-17.1	±5.1

B3004915A01 REACTIONS USED AT LINE(S): 5

LOAD TYPE	X1	Y1	Z1	X2	Y2	Z2
DL - DEAD LOAD	0.9	2.4	-	-0.9	2.4	-
COL- COLLATERAL	0.7	1.7	-	-0.7	1.7	-
LL - LIVE LOAD	4.9	11.1	-	-4.9	11.1	-
SL - SNOW LOAD	7.3	16.7	-	-7.3	16.7	-
WLL- WIND FROM LEFT	-7.2	-11.5	-	0.3	-8.0	-
WLR- WIND FROM RIGHT	-0.3	-8.0	-	7.2	-11.5	-
WL2- WIND LT CASE 2	-6.9	-6.8	-	-	-3.3	-
WR2- WIND RT CASE 2	-	-3.3	-	6.9	-6.8	-
WLE- WIND ON ENDWALL	-1.9	-12.9	-	2.4	-11.8	-
WE2- EW WIND CASE 2	-2.4	-11.8	-	1.9	-12.9	-
SL4- SNOW LOAD	4.6	7.2	-	-4.6	12.3	-
SL3- SNOW LOAD	4.6	12.3	-	-4.6	7.2	-
SEI- SEISMIC LOAD	-0.4	-0.3	-	-0.4	0.3	-
SB1- SEISMIC BRACING	-	-0.7	±0.8	-	-0.7	±0.8
SB2- SEISMIC BRACING	-	0.7	-	-	0.7	-
BR1- WIND BRACING 1	-	-4.6	±5.1	-	-4.6	±5.1
BR2- WIND BRACING 2	0.1	4.6	-	-0.1	4.6	-
MAXIMUM POSITIVE	9.1	20.8	±5.1	6.7	20.8	±5.1
MAXIMUM NEGATIVE	-6.7	-16.1	±5.1	-9.1	-16.1	±5.1

B3004915A02 REACTIONS USED AT LINE(S): 6

ORIENTATION OF
HORIZONTAL REACTIONS:



Hx IS PARALLEL TO THE COLUMN WEB AND
Hy IS PERPENDICULAR TO THE COLUMN WEB,
FOR ALL ENDWALL COLUMNS & SOLDIER COLUMNS
BY CHIEF BUILDINGS.

1. COLUMN FOOTINGS AND PIERS MUST BE DESIGNED TO WITHSTAND HORIZONTAL AND VERTICAL REACTIONS AS SHOWN ON THE ANCHOR ROD PLAN. CHIEF BUILDINGS IS NOT RESPONSIBLE FOR DESIGN OF CONCRETE FOUNDATION. CHIEF BUILDINGS RECOMMENDS THAT THE SERVICES OF A QUALIFIED ENGINEER IS OBTAINED BY THE CONTRACTOR / BUILDER TO DESIGN THE FOUNDATIONS FOR THE INDICATED REACTIONS.

2. REACTIONS ARE GIVEN IN KIPS. (1 KIP = 1000 LBS.) MOMENTS, IF ANY, ARE GIVEN IN KIP-FT.

3. ANCHOR ROD DESIGN IS BASED ON SHEAR, TENSION, AND COMBINED TENSION AND SHEAR. CHIEF BUILDINGS IS NOT RESPONSIBLE FOR ANCHOR ROD SIZE RECOMMENDATIONS WHEN ANCHOR ROD CONFIGURATION PLACES THE RODS IN A BENDING MODE. WHEN THE COLUMN BASE PLATE BEARS ON GROUT, THE CONTRACTOR / BUILDER OR FOUNDATION ENGINEER SHALL INVESTIGATE BENDING IN THE ANCHOR RODS AND PROVIDE A SHEAR KEY FOR THE COLUMN BASE TO THE PIER WHEN THE ANCHOR RODS ARE NOT ADEQUATE IN BENDING ABOUT THE PIER.

STEEL MATERIAL PROPERTIES AND SPECIFICATIONS:

WELDED WF BEAMS/PLATE ¼" THICK: (ASTM A529, A572) (GR. 55)
WELDED WF BEAMS/PLATE > 1/8" & < ¼" THICK:
ASTM (A1011-SS, A1011-HSLAS, A572) (GR 55)
LIGHT GAGE (16, 14, 12 GA. BLACK): ASTM (A1011-SS, A1011-HLAS) (GR. 55)
ROUND ROD: (ASTM A36)
ROUND PIPE (BLACK): FY = 35 KSI (ASTM A53 GR. B, A500 GR. B)
SQUARE/RECTANGULAR TUBING: ASTM A500 (GR. B)
HOT ROLLED WF BEAMS: ASTM A36; ASTM (A572, A992) (Gr. 50)
HOT ROLLED CHANNEL: ASTM A36; ASTM A572 (GR. 50)
BRACING CABLE: EXTRA HIGH STRENGTH (ASTM A475)
CS & LTC ROOF PANEL (26 & 24 GA. GALVALUME): ASTM A792 (GR. 80)
MSC & STC ROOF PANEL (24 & 22 GA. GALVALUME): ASTM A 792 (GR. 50)
CS & AP WALL PANEL (26 & 24 GA. GALVALUME): ASTM 792 (GR. 80)
MVP/MVP ROOF PANEL (24 & 22 GA. GALVALUME): ASTM A 792 (GR. 50)
CFW WALL PANEL (24 GA. GALVALUME): ASTM A 792 (GR. 50)

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

REVISIONS

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NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO REGISTERED QUENTIN L. VAN 28534 PROFESSIONAL ENGINEER
6-8-12

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	A4
RFH	RS	B3004915	A4
06-08-12	06-08-12		

BUILDER: HEATH STEEL

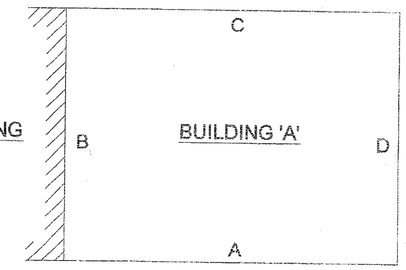
CUSTOMER: WEAVER CONSTRUCTION MANA

LOCATION: FOUNTAIN, CO

	WIDTH	LENGTH	SWA HEIGHT	FRONT ROOF PITCH	DOWNSPOUT DROPS-SWA	DOWNSPOUT DROPS-SWC
Bldg A :	51.04	39.00	19.33	3.000	0	0

TABLE OF CONTENTS

EXISTING
CHIEF BUILDING
B3004219



KEY PLAN

Roof Sheeting:

Type: Metal Sales Seam-Loc 24 (Not By Chief)

Gage: N/a

Color: N/a

Wall Sheeting:

Type: Stucco Wall Panels (Not By Chief)

Gage: N/a

Color: N/a

Finish : N/a

Framing:

Purlin Type: Zees

Girt Type: Cees

Ordered Options:

Base Condition: Base Cee, No Trim

Base Trim Color: N/a

Wall Mastic: No

UL Rating: None

Thermal Blocks: N/a

Sidewall Eave Trim Type: N/a

Eave & Gable Trim Color: N/a

Downspout Type: N/a

Downspout Color: N/a

Elbows at Bottom of Drops: N/a

Corner Trim Color: N/a

Framed Opening Trim Color: N/a

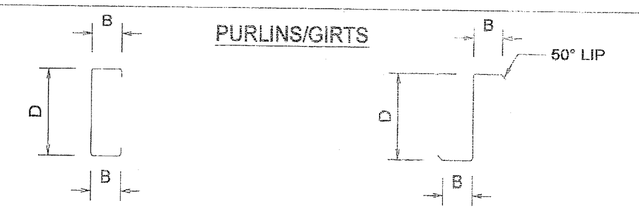
Light Transmitting Panels: 0

Girt Retainer Option for Purlins: N/a

Framing Kits & Wall Openings
See Accessory Schedule on Anchor Rod Plan, Page A1.

Loading Information & Frame Column Reactions
See Load Notes and Reactions on Anchor Rod Detail Page, Pages A3-A4.

PURLINS/GIRTS



DESIGNATION	D	B
816	8.00	3.00
814	8.00	3.00
812	8.00	3.00
1014	10.00	3.50
1012	10.00	3.50

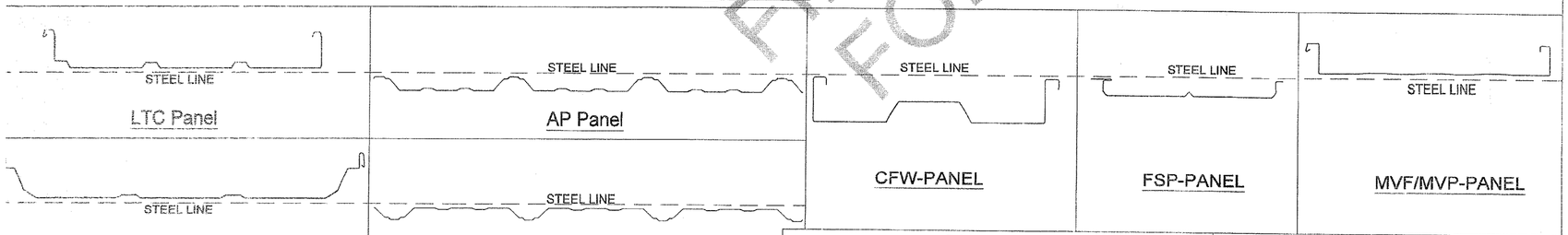
DESIGNATION	D	B
816	8.00	2.50
814	8.00	2.50
812	8.00	2.50
1014	10.00	2.75
1012	10.00	2.75

Drawing Designation:
a) Drawings stamped "PERMIT DRAWINGS" are drawings that are complete for the most part, however, since some details and part marks are missing, they are preliminary and are not to be used for construction and are not considered final drawings.
b) Drawings stamped "PROGRESS DRAWINGS" are drawings that are complete for the most part, however, since some details and part marks are missing, they are preliminary and are not to be used for construction and are not considered final drawings.
c) Drawings stamped "DOCUMENTS FOR APPROVAL" are preliminary drawings, used for approval with no part markings and are not to be used for construction.

GENERAL DETAIL MANUAL V _____

ROOF PANEL MANUAL V _____

SHEETING TYPES



ENGINEER REVIEW	
ENGINEER	DATE

REVISIONS

4 _____
3 _____
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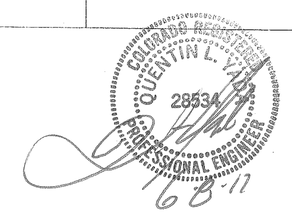
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.



COVER PAGE

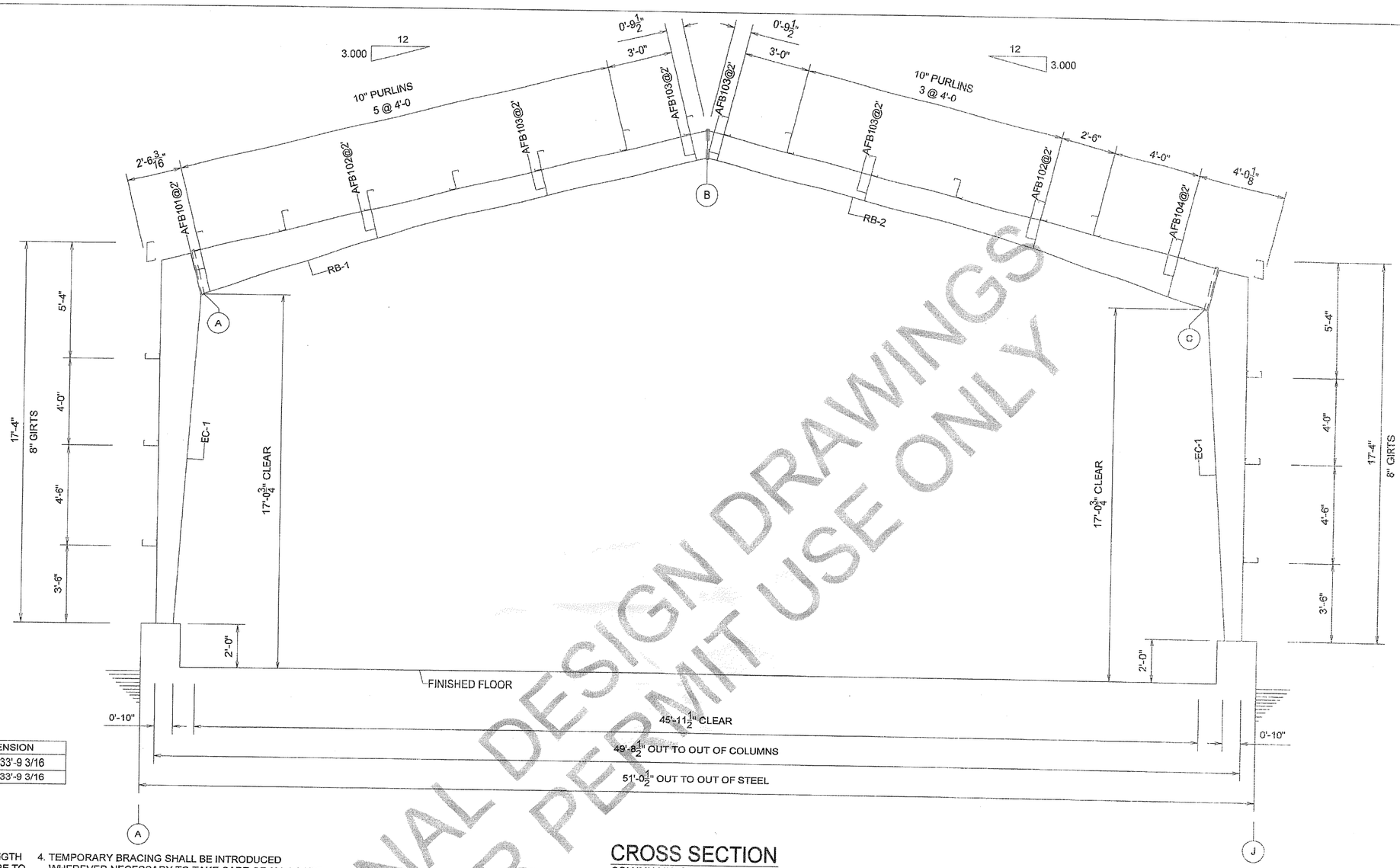
HEATH STEEL / WEAVER CONST. MANAGEMENT

FOUNTAIN, CO

RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	C1
RFH		B3004915	C1



DIAGONAL DIMENSION	
LEFT	33'-9 3/16
RIGHT	33'-9 3/16

REFERENCE NOTES

1. BOLTING RECOMMENDATIONS---ALL HIGH STRENGTH BOLTS ARE A-325 WITH HEAVY HEX NUTS AND ARE TO BE INSTALLED USING THE SNUG TIGHT METHOD SPECIFIED IN THE 'SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS', PUBLISHED BY RCSC, DATED JUNE 30,2004. SNUG TIGHT CONDITION IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRON WORKER USING AN ORDINARY SPUD WRENCH TO BRING THE PLIES INTO FIRM CONTACT.

2. BOLT SPECIFICATIONS -- ALL BOLTS SPECIFIED THROUGHOUT THESE DRAWINGS WILL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A325 BOLT SPECIFICATIONS SUBSTITUTION OF MILD STEEL BOLTS WILL NOT BE ALLOWED AND ANY FIELD SUBSTITUTION WILL VOID THE DESIGN WARRANTY.

   NUT SPECIFICATIONS -- NUTS SPECIFIED THROUGHOUT THESE DRAWINGS WILL BE HIGH STRENGTH NUTS CONFORMING TO ASTM A194 GRADE 2 OR 2H, OR ASTM A563 GRADE C, D, OR DH NUT SPECIFICATIONS. SUBSTITUTION OF MILD STEEL NUTS WILL NOT BE ALLOWED, AND ANY FIELD SUBSTITUTION WILL VOID THE DESIGN WARRANTY.

3. ALL ELEVATION DIMENSIONS ARE TAKEN FROM BOTTOM OF FRAME COLUMN BASE PLATE. REFER TO ANCHOR ROD DRAWING FOR BASE OF COLUMN ELEVATION.

4. TEMPORARY BRACING SHALL BE INTRODUCED WHEREVER NECESSARY TO TAKE CARE OF ALL LOADS IMPOSED UPON THE STRUCTURE DURING THE ERECTION PROCESS.

5. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE MARKED.

6. ALL DRAWINGS ARE NOT TO SCALE.

7. NOTE : * REFER TO GENERAL DETAILS AND SECTIONS FOR ROOF SHEET OVERHANG AND SPLICE LAP DIMENSIONS.

8. FLANGE BRACES ARE REQUIRED ONLY ON ONE SIDE OF FRAME, EXCEPT THOSE FLANGE BRACES THAT ARE PRECEDED WITH A (2)FB OR (2)FF ARE REQUIRED ON BOTH SIDES OF THE FRAME.

9. EAVE HEIGHT DIMENSION IS NOT ALWAYS TO THE TOP OF THE EAVE STRUT. DUE TO THERMAL BLOCK SITUATIONS, EAVE HEIGHT DIMENSION AND TOP GIRT SPACE DIMENSION MAY BE TO THE INTERSECTION OF THE TOP OF THE PURLINS. REFER TO THE EAVE DETAILS FOR MORE INFORMATION.

10. ALL WELDS HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBF AT MINUS 20 DEGREES F.

CROSS SECTION

COLUMN LINES: 5 & 6

SPLICE BOLT TABLE			
SPLICE	NO	SIZE	DEPTH
A	10	5/8 X 2	2'-0
B	8	5/8 X 1 1/2	1'-3
C	10	5/8 X 2	2'-0

FRAME:B3004915A01 6-JUN-2012 09:00:59.34

REVISIONS
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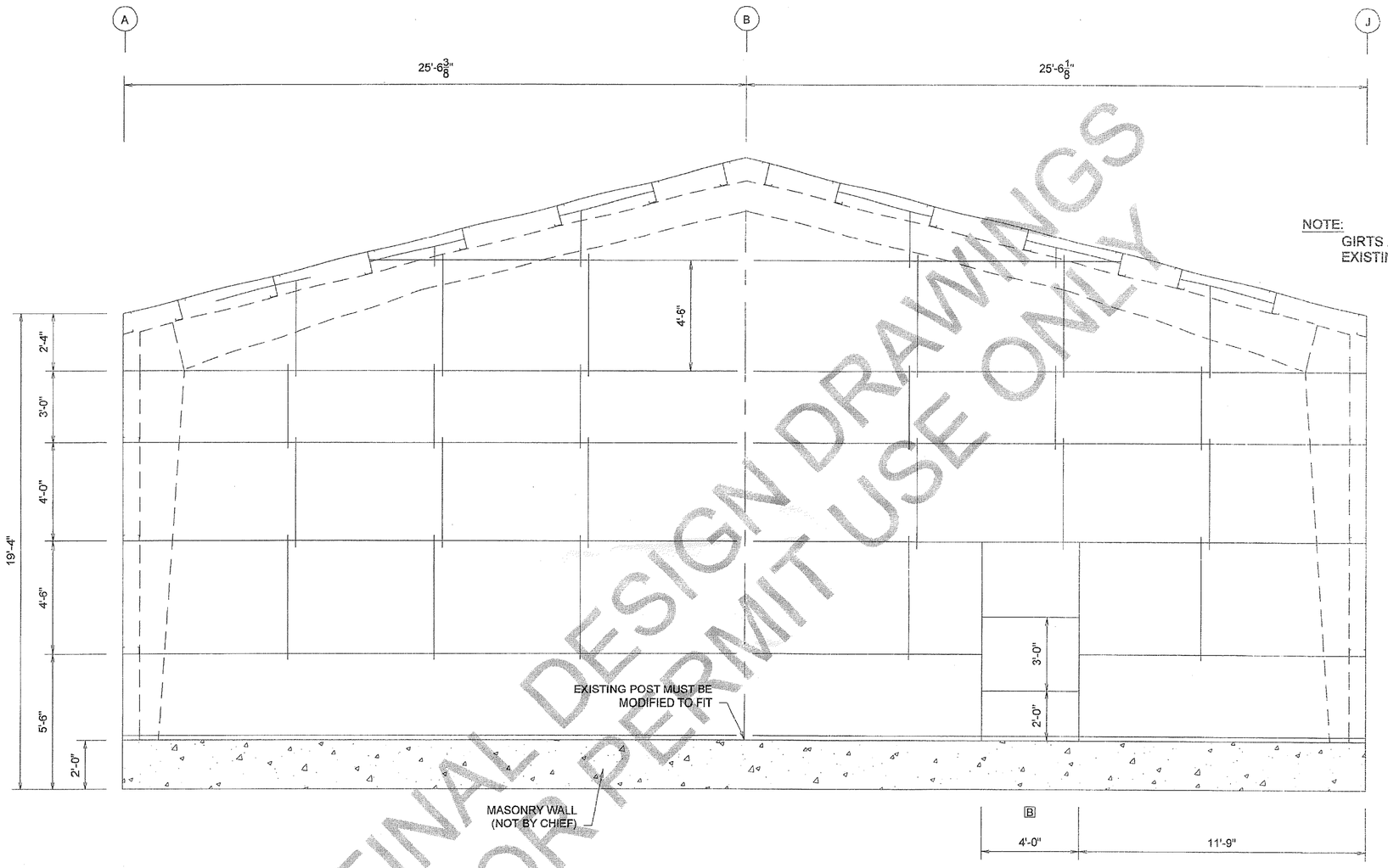
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO REGISTERED QUENTIN L. [illegible] 28831 PROFESSIONAL ENGINEER

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

CROSS SECTION DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

DRAWN	CHECK	ORDER NO.	CS1
RFH		B3004915	CS1



NOTE:
GIRTS AND END WALL POST REUSED FROM EXISTING CHIEF BUILDING B3004219.

ENDWALL FRAMING ELEVATION

COL. LINE 6 GIRT DEPTH: 8"

MATERIAL CALLOUTS:

All girts are 8" C-Section, 12 gage mat'l.
Window framing is 8" C-section, 16 gage mat'l.
End wall post is built-up section w/8" X 3/8" flanges and 111/4" X 5/32" webs

REVISIONS
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COLORADO REGISTERED QUENTIN L. YODER 28534 PROFESSIONAL ENGINEER

ENDWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNDATION, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS a division of Chief Industries, Inc. P.O. BOX 2078 GRAND ISLAND, NE 68802-2078

DRAWN	CHECK	ORDER NO.	E1
RFH		B3004915	E2

WELDING RECOMMENDATIONS

In Accordance with the provisions of the AISC'S "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", the following welding procedures are recommended:

(a) The electrodes used shall be:

1) SMAW: Class E70XX Low Hydrogen electrodes in accordance with AWS A5.1-91 or A5.5-96. The recommended SMAW electrode is E7018 or E7018-A1 Low Hydrogen with direct current, electrode positive.

2) GMAW: Class ER70S-2,4,6 or ER80S-D2 electrodes in accordance with AWS A5.18-93 or A5.28-96. The recommended GMAW electrode is ER70S-6 or ER80S-D2 with direct current, electrode positive. Recommended shielding gas shall be a minimum of 50% Argon and 50% CO2 up to a maximum of 75% Argon and 25% CO2. Under windy conditions (greater than 5 MPH), GMAW welding shall be done inside a wind cover.

3) FCAW: Class E71T-8 or11 or E71T8-A1 or K6 electrodes in accordance with AWS A5.20-95 or A5.29-80R. The recommended direct current, electrode negative FCAW electrode is E71T-11 @ ≤ ⅛" thick steel and E71T-8 @ > ⅛" thick steel. These FCAW electrodes do not use a shielding gas.

(b) Preheat temperature shall be as shown in the following table:

Minimum Preheat and Interpass Temp *(1)

Thickness of thickest part @ point of welding	Preheat Temp.
To ¾" incl.	None *(2)
¾" thru 1-1/2"	50 degrees F.
over 1-1/2" thru 2-1/2"	150 degrees F.
over 2-1/2"	225 degrees F.

*(1) Welding shall not be done when the base metal temperature or the ambient temperature in the immediate vicinity of the weld joint is lower than 0 degrees F.
*(2) When the base metal temperature is below 32 degrees F., preheat all base metal within 3" of the weld joint to at least 70 degrees F. and maintain this minimum temperature during the welding.

(c) All welding to be done by a certified welder in accordance with AISC & AWS specifications.

REVISIONS
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2
1

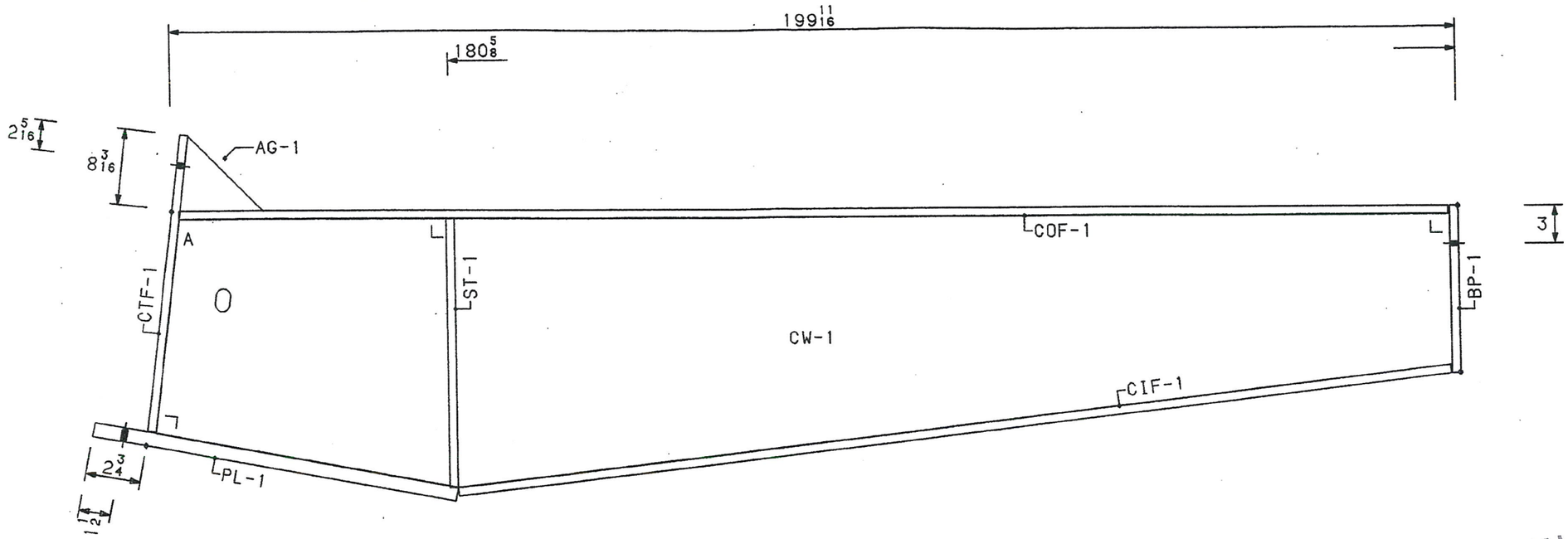
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO REGISTERED QUENTIN L. VAUGHT 28534 PROFESSIONAL ENGINEER

ENDWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	E2
RFH		B3004915	E2



WS6A TDS
CLIP/WELD:
XC1A-H
TDS:
41.44
95.44
143.44

MISC. PLATE							
UNIT MARK	UNIT QUANTITY	THCKNESS	WIDTH	LENGTH	CUT	PLF	BEVEL
BP-1	1	0.375	8.00	10.00	0.00		NONE
	DIA:	0.9375	GAGE:	4.00			
	TDS:	3.00	7.00				
CTF-1	1	0.250	8.00	24.93	0.00		NONE
	PAT:	F6					
	TDS:	3.25					
AG-1	1	0.375	7.81	8.38	1.94		NONE
XC-1A	3						
PL-1	1	0.625	8.00	27.00	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.25	7.00	22.19	24.94	
ST-1	2	0.250	3.75	21.69	0.00		NONE
XWC-17	1						

ROOF PITCH 3.00 :12
A 14.04

XWC-17 LOCATION
(4) REQUIRED

B3004915A01

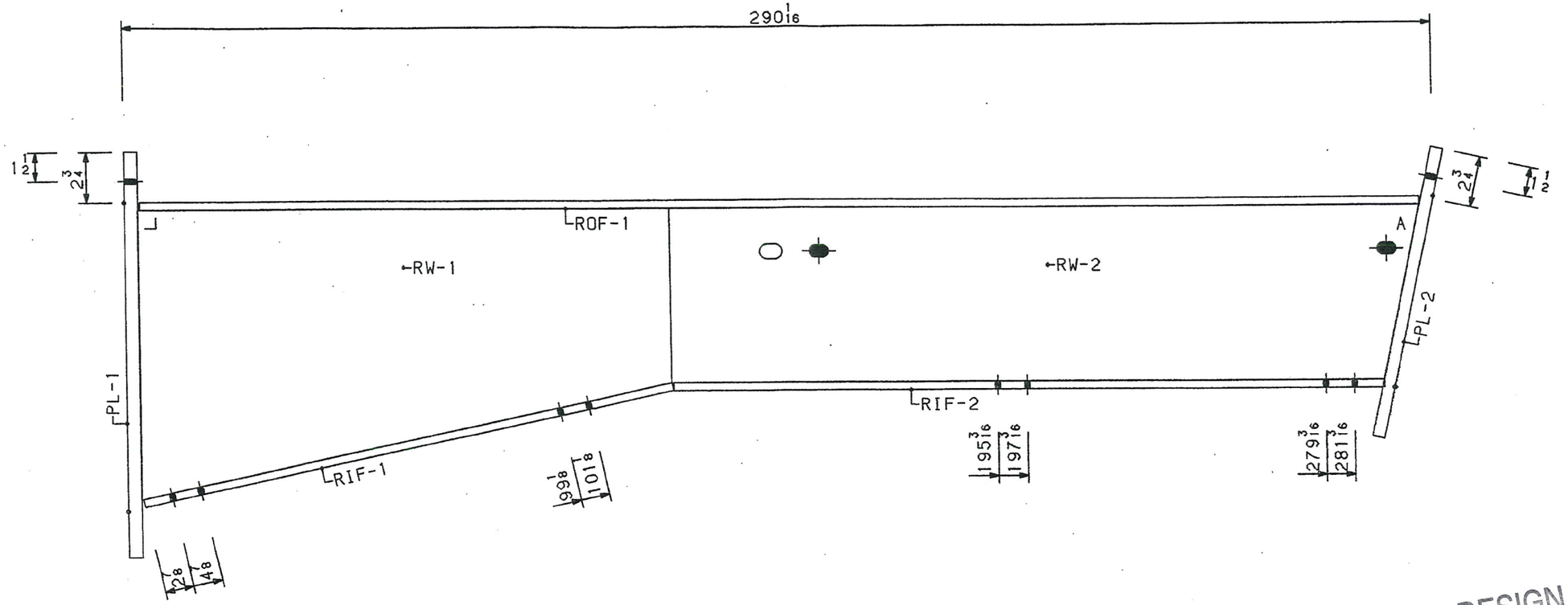
FLANGES & WEBS							
UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
COF-1	1	0.250	8.00	199.06	NONE		112.9
CIF-1	1	0.375	8.00	180.25	TAIL		153.4
CW-1	1	0.156	21.88	203.13	NONE		135.0

MARK NO.	ASS. QTY.
EC-1	4
UNIT WT.	TOTAL WT.
482.	
UNIT FT.	TOTAL FT.
17.	

CHIEF
CHIEF INDUSTRIES, INC.
P.O. BOX 2078
GRAND ISLAND, NE 68802-2078

HEATH STEEL

FAB			
		B3004915	F1/F3
8-JUN-12			



WS6E TDS
CLIP/WELD:
XC1A-S
TDS:
3.88
51.88
99.88
195.87
243.87

WS6E TDS
CLIP/WELD:
XC1A-G
TDS:
147.87

WS6E TDS
CLIP/WELD:
XC1A-H
TDS:
279.87

FINAL DESIGN DRAWINGS
FOR PERMIT USE ONLY

COLORADO REGISTERED PROFESSIONAL ENGINEER
QUENTIN L. YADA
28534
6-8-15

ROOF PITCH 3.00 :12
A 14.04

⬭ XWC-17 LOCATION
(2) REQUIRED

B3004915A01

MISC. PLATE

UNIT MARK	UNIT QUANTITY	THCKNESS	WIDTH	LENGTH	CUT	PLF	BEVEL
PL-1	1	0.625	8.00	27.00	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.25	7.00	22.19	24.94	
PL-2	1	0.375	6.00	21.19	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.50	16.69	19.69		
XC-1A	7						
XRG5	2						
XWC-17	1						

FLANGES & WEBS

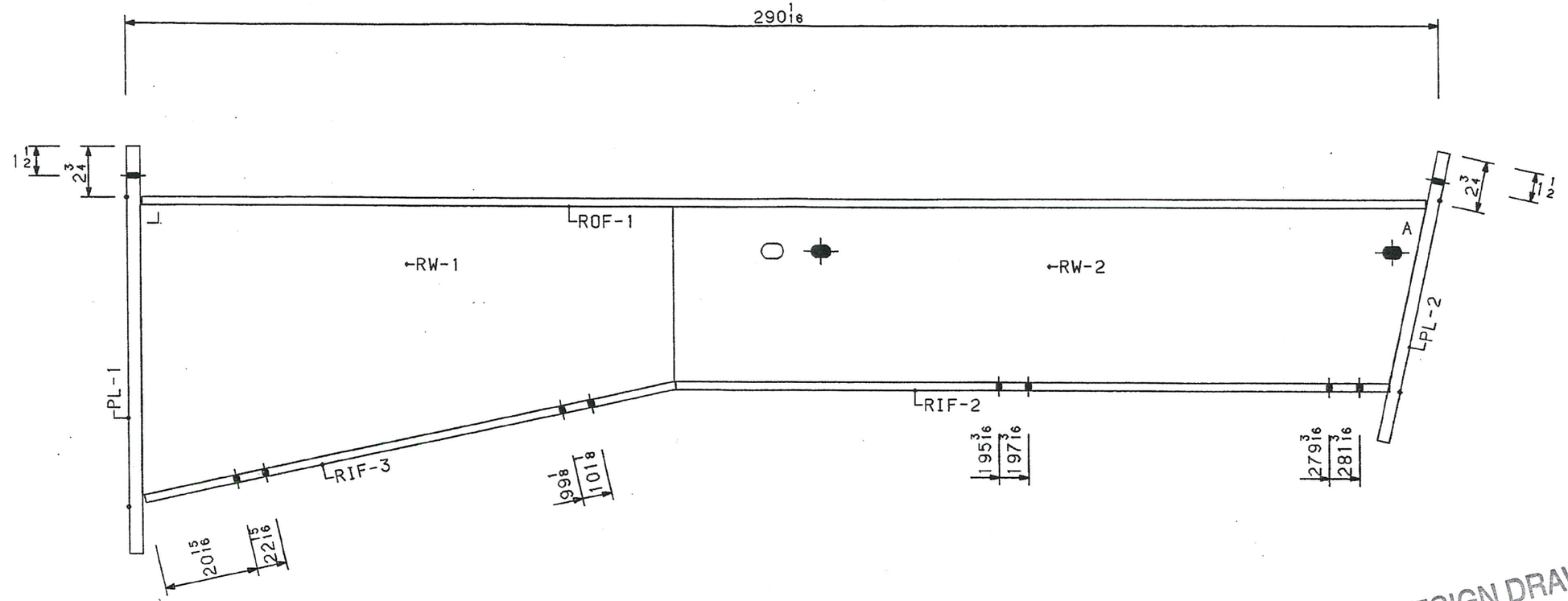
UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
ROF-1	1	0.250	6.00	288.87	NONE		122.9
RIF-1	1	0.312	6.00	120.25	BOTH		63.9
RIF-2	1	0.312	6.00	165.25	TAIL		87.9
RW-1	1	0.187	23.44	120.00	None		114.6
RW-2	1	0.125	14.44	168.92	None		81.3

MARK NO.	ASS. QTY.
RB-1	2
UNIT WT.	TOTAL WT.
538.	
UNIT FT.	TOTAL FT.
24.	

CHIEF
CHIEF INDUSTRIES, INC.
P.O. BOX 2078
GRAND ISLAND, NE 68802-2078

HEATH STEEL

FAB		B3004915	F2
8-JUN-12			



WS6E TDS
CLIP/WELD:
XC1A-H
TDS:
279.87

WS6E TDS
CLIP/WELD:
XC1A-S
TDS:
21.88
69.88
99.88
195.87
243.87

WS6E TDS
CLIP/WELD:
XC1A-G
TDS:
147.87

FINAL DESIGN DRAWINGS
FOR PERMIT USE ONLY

COLORADO REGISTERED
QUENTIN L. YADA
28534
PROFESSIONAL ENGINEER
6.8.12

MISC. PLATE

UNIT MARK	UNIT QUANTITY	THCKNESS	WIDTH	LENGTH	CUT	PLF	BEVEL
PL-1	1	0.625	8.00	27.00	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.25	7.00	22.19	24.94	
PL-2	1	0.375	6.00	21.19	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.50	16.69	19.69		
XC-1A	7						
XRG5	2						
XWC-17	1						

ROOF PITCH 3.00 :12
A 14.04

⬭ XWC-17 LOCATION
(2) REQUIRED

B3004915A01

FLANGES & WEBS

UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
ROF-1	1	0.250	6.00	288.87	NONE		122.9
RIF-2	1	0.312	6.00	165.25	TAIL		87.9
RIF-3	1	0.312	6.00	120.25	BOTH		63.9
RW-1	1	0.187	23.44	120.00	None		114.6
RW-2	1	0.125	14.44	168.92	None		81.3

MARK NO.	ASS. QTY.
RB-2	2
UNIT WT. 538.	TOTAL WT.
UNIT FT. 24.	TOTAL FT.

CHIEF
CHIEF INDUSTRIES, INC.
P.O. BOX 2078
GRAND ISLAND, NE 68802-2078

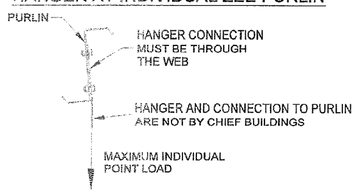
HEATH STEEL

FAB		B3004915	F3
8-JUN-12			

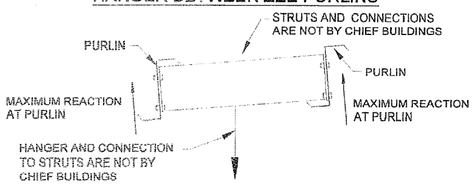
This structure has been designed for a collateral load of 3 psf. The total applied loads due to ceiling panels, ducts, sprinkler distribution lines, electrical equipment, conduit, fireproofing, other piping and mechanical loads, etc., cannot exceed this collateral load. In no case shall the total uniform collateral load on an individual roof member exceed the product of 3 psf times the spacing of the supporting member. Nor shall any individual point load or summation of point loads on any one roof member exceed the product of 3 psf times the member spacing times half the member length. In addition, no individual point load on a purlin can exceed 87 lbs. All loads suspended from purlins shall have the load introduced through the web and not the flange of the purlin. Hangers cannot be supported from the edge of flanges or through holes in the flanges of the purlins. Design of hangers and their attachments are not by Chief Buildings. Chief Buildings is NOT responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

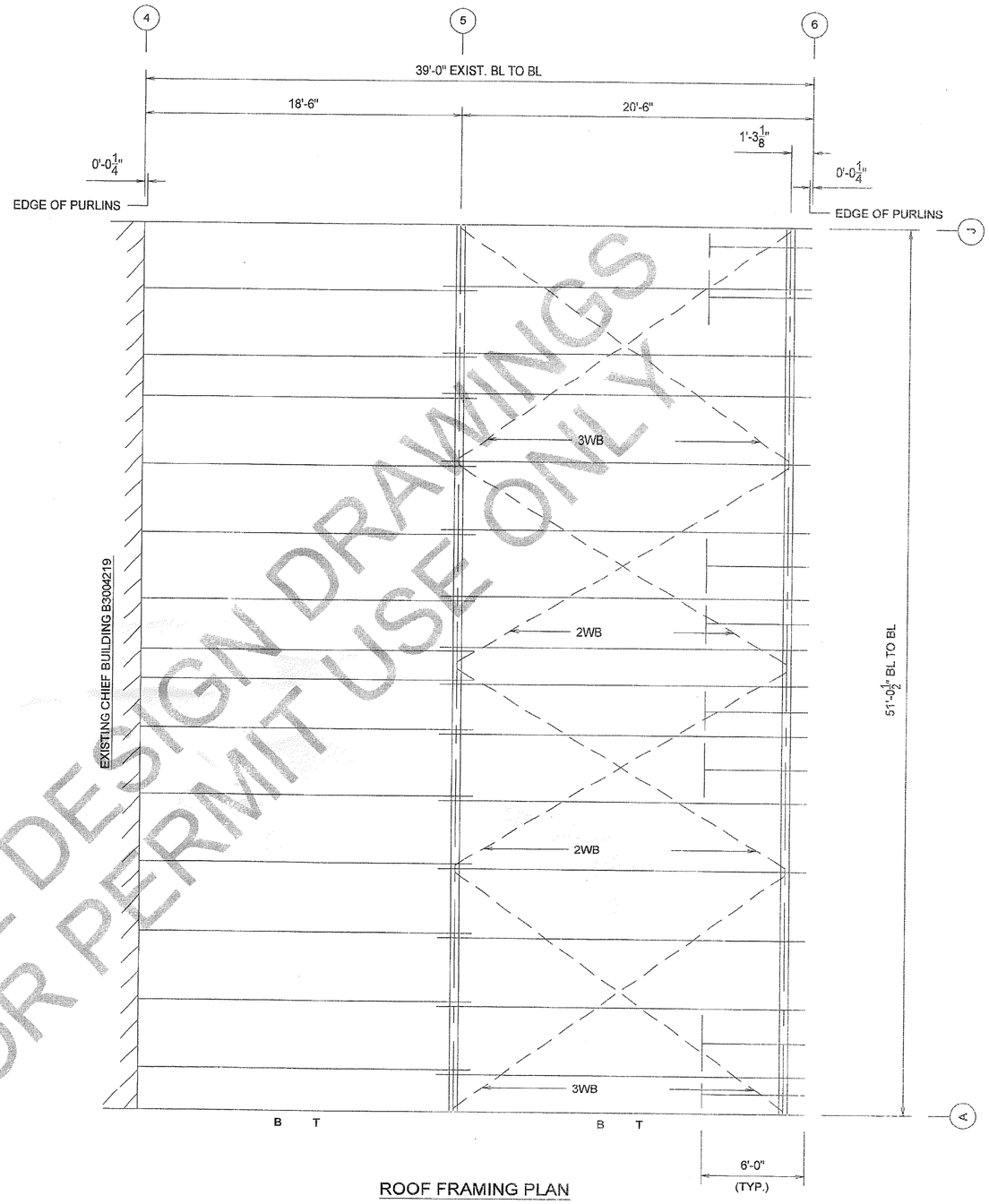
Chief Buildings neither assumes nor accepts any responsibility for the design of hangers, bracing of suspended members, transverse support members, nor connections to roof purlins. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

HANGER AT INDIVIDUAL ZEE PURLIN



HANGER BETWEEN ZEE PURLINS





ROOF FRAMING PLAN

MATERIAL CALLOUTS:

2WB denotes 1/4" cable bracing
3WB denotes 3/8" cable bracing
All eave struts are 10" C-section, 12 gage mat'l.
All purlins are 10" Z-section, 14 gage mat'l.
Blocking is 10" C-section, 14 gage mat'l.

REFERENCE NOTES

1. ALL PURLINS ATTACH TO FRAMING USING "STD" ATTACHMENT UNLESS NOTED. REFER TO GD MANUAL SECTION 4 FOR BOLT LOCATIONS.
2. "T" = TOP SAG ANGLE.
   "B" = BOTTOM SAG ANGLE.

REVISIONS
4
3
2
1

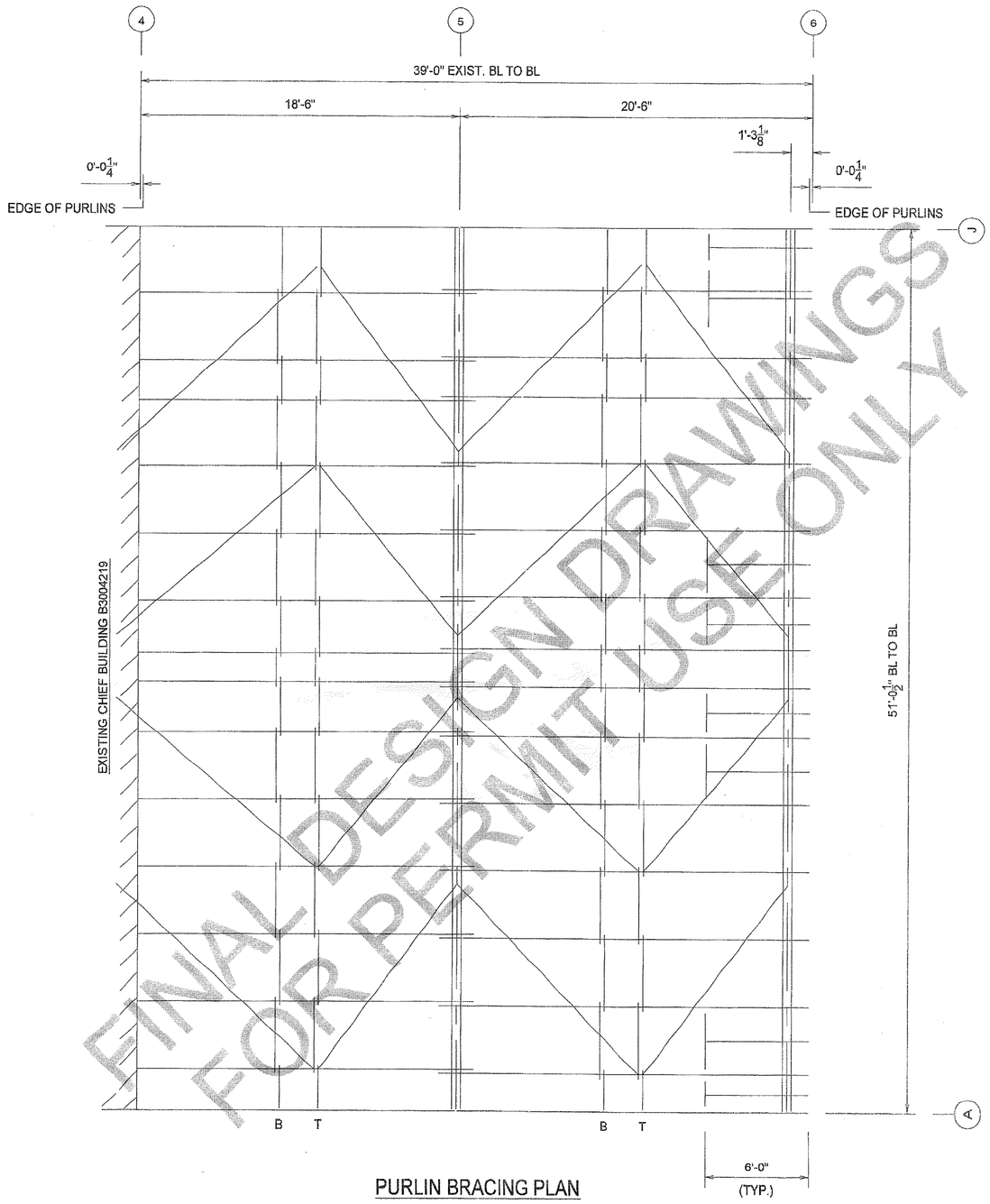
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO REGISTERED QUENTIN L. [illegible] 28534 PROFESSIONAL ENGINEER

ROOF FRAMING DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	
RFH		B3004915	RF1 / RF2



PURLIN BRACING PLAN

MATERIAL CALLOUTS:

Sag angles are 1.50" X .50" X .125" angle

REFERENCE NOTES

1. ALL PURLINS ATTACH TO FRAMING USING "STD" ATTACHMENT UNLESS NOTED. REFER TO GD MANUAL SECTION 4 FOR BOLT LOCATIONS.
2. "T" = TOP SAG ANGLE.
   "B" = BOTTOM SAG ANGLE.

REVISIONS
4
3
2
1

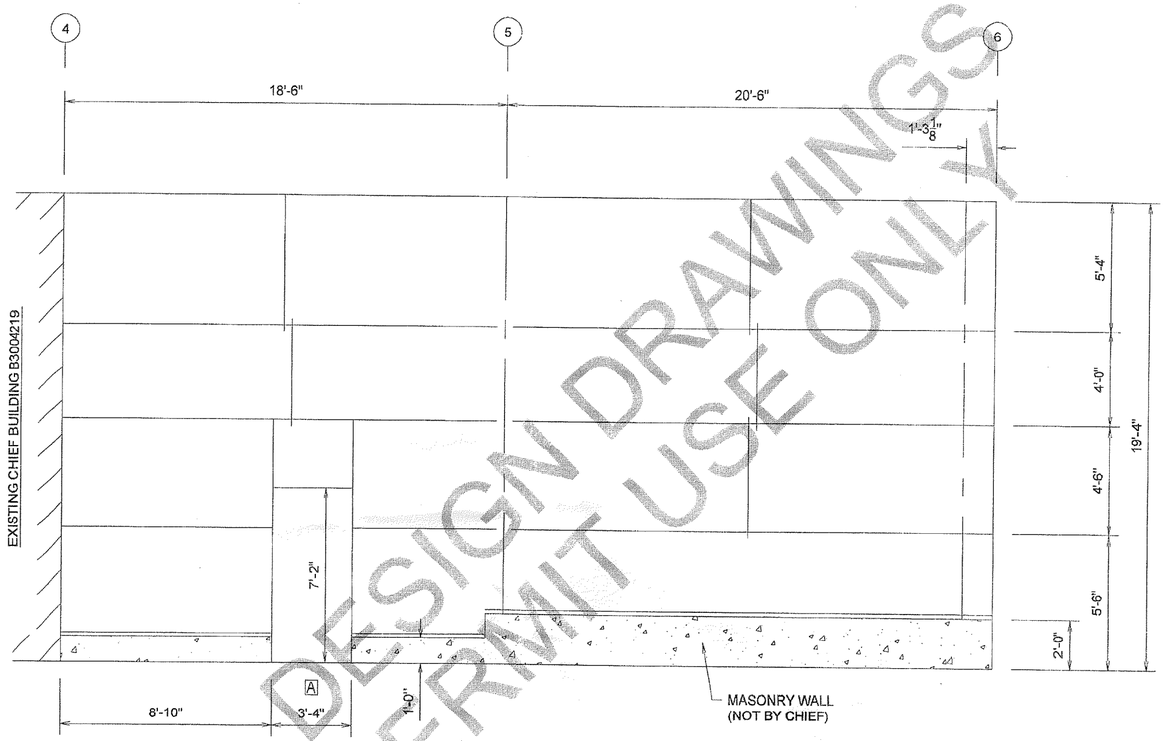
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO REGISTERED QUENTIN L. [illegible] 28534 PROFESSIONAL ENGINEER 6.8.12

ROOF FRAMING DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2075
GRAND ISLAND, NE
68802-2075

DRAWN	CHECK	ORDER NO.	RF2
RFH		B3004915	RF2



SIDEWALL FRAMING ELEVATION

COL. LINE A GIRT DEPTH: 8"

MATERIAL CALLOUTS:

Girts in bay 1 are 8" C-Section, 12 gage mat'l.
Girts in bay 2 are 8" C-Section, 14 gage mat'l.
Walk door framing is 8" C-section, 16 gage mat'l.

REVISIONS
4
3
2
1

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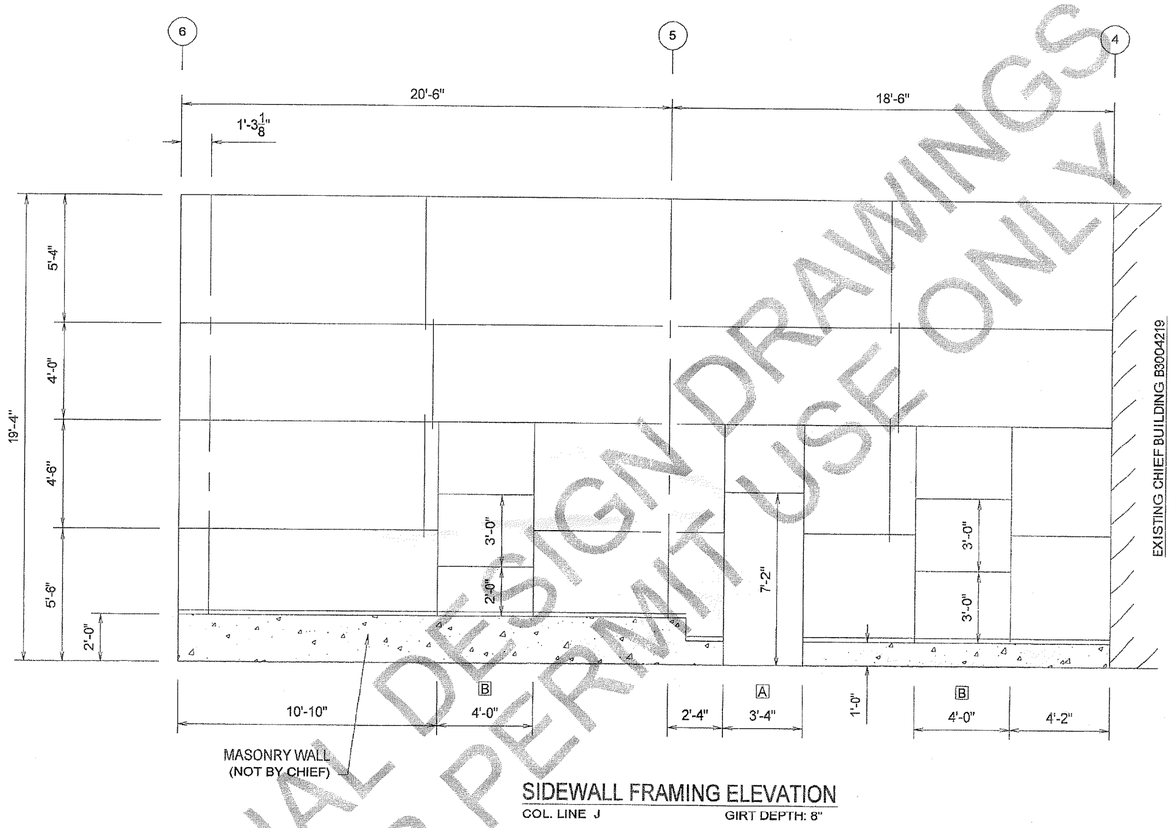
COLORADO REGISTERED QUENTIN L. VADA 28534 PROFESSIONAL ENGINEER 6.8.12

SIDEWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNDTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	S1
RFH		B3004915	S2



SIDEWALL FRAMING ELEVATION

COL. LINE J — GIRT DEPTH: 8"

MATERIAL CALLOUTS:

All girts are 8" C-Section, 12 gage mat'l.
Walk door framing is 8" C-section, 16 gage mat'l.
Window framing is 8" C-section, 16 gage mat'l.

REVISIONS
4
3
2
1

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COLORADO REGISTERED QUENTIN L. [illegible] 28534 PROFESSIONAL ENGINEER

SIDEWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2"X39'X19'-4" BAYS VARY 3:12

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DRAWN	CHECK	ORDER NO.	S2
RFH		B3004915	S2