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

SUBMITTAL TRANSMITAL

February 2, 2012
Submittal No: 13121-001
Request Expedited Review by 1/9/12

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: Equipment & Maintenance Prefabricated Metal Building by Chief Building

SPEC SECTION: 13121

PREVIOUS SUBMISSION DATES:

DEVIATIONS FROM SPEC: ___ YES _X_ NO

CONTRACTOR'S STAMP: This submittal has been reviewed by WCM and approved with respect to the means, methods, techniques, & safety precautions & programs incidental thereto. Weaver General Construction also warrants that this submittal complies with contracted documents and comprises on deviations thereto:

Contractor's Stamp:	Engineer's Stamp:
Date: 2/02/12 Reviewed by: John Jacob ( ) Reviewed Without Comments (X) Reviewed With Comments ENGINEER'S COMMENTS:_____	

Project: HDTWRF Project

Location: Fountain, CO

Supplier: Heath Steel

Date: 2/2/12

Submittal 13121-001 Equipment & Maintenance Metal Building by Chief Building.

Additional Submittal Review Comments:

1. **Other items covered in Section 013121 and NOT supplied by Heath Steel include roof, gutter and down spouts, roof trim and doors. Metal wall panels and insulation submittal will follow in a separate submittal.**
2. **Installation of metal building by others (Biggs Contracting).**
3. **The anchor bolt layout provided in the submittal is NOT reflective of as-built conditions. WCM is working with Heath Steel to provide them with the correct layout. This information will be submitted at a later date.**
4. **Sheet A1/A4 illustrates an anchor plate labeled 'T' in south east corner of the building. Heath's supplier has provided the reaction for this anchor and we request GMS review and confirm the location of this anchor will work including embedment depth for bolts. The CL of the anchor plate is located three-inches from inside face of 8-inch concrete wall. Anchor plate width is 4-inches.**
5. **Drawing A3/A4 Sheeting for roof panels – WCM to have roof supplier confirm their anchorage resistance meets Chief's requirement.**
6. **Drawing A3/A4 Sheeting for wall panels – Heath Steel will confirm in their wall panel submittal (07501-002) that the wall panels meet Chief's resistances listed.**
7. **Part 1.2.C.2. Submitting Chief Building as an equal.**
8. **Part 1.3.G. Building Permit – The attached drawings are being submitted to PPRBD on 2/3/12.**
9. **Part 2.2.E.2. Submitting girts as "C" in-lieu of "Z".**
10. **Part 2.2.F.2 Finish coating by others in the field.**

SPEC SECTION CHECK LIST

SECTION 13121

PREFABRICATED METAL BUILDING

PART 1 - GENERAL

1.1 DESCRIPTION — STRUCTURE ONLY

A. Scope — ERECTION BY OTHERS

1. Furnish and erect a prefabricated metal building complete with all accessories and components necessary for a weather-tight metal building complete in place as indicated on the Drawings and specified herein, including but not limited to
   a. Structural framing
   ~~b. Roofing~~ BY OTHERS
   c. Siding UNDER SECTION 07501
   d. ~~Exterior doors, door frames, hardware and accessories~~ BY OTHERS
   e. ~~Gutters and downspouts~~ BY OTHERS
   f. Accommodations for ventilation equipment and plumbing facilities
   g. Insulation UNDER SECTION 07200
   h. Fasteners
   i. Sealants ROOF SEALANTS BY OTHERS
   j. Connections to foundation structure
   k. Coatings
   l. All appurtenances, accessories and miscellaneous items of work, complete in place

B. Additional Requirements Specified Elsewhere

1. Section 01340: Shop Drawings, Product Data, and Samples
2. Section 01400: Quality Control
3. Section 01600: Materials and Equipment

C. Related Requirements Specified Elsewhere

1. Section 02372: Drilled Caissons
2. Section 03300: Cast-In-Place Concrete
3. Section 03600: Grout
4. Section 05500: Metal Fabrications
5. Section 05501: Anchor Bolts and Drilled-In Anchors
6. Section 06100: Carpentry
7. Section 07200: Insulation
8. Section 07501: Metal Roof and Wall Panels
9. Section 07600: Flashing and Sheet Metal
10. Section 07900: Joint Sealants
11. Division 8: Doors and Windows
12. Division 9: Finishes
13. Division 15: Mechanical
14. Division 16: Electrical

1.2 QUALITY ASSURANCE

A. Reference Standards: Conform to current conditions of the following specifications and standards relating to work of this section

1. American Institute of Steel Construction
   a. "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings" complete with commentary and supplements
2. American Iron and Steel Institute (AISI)
   a. "Specification for the Design of Cold-Formed Steel Structural Members"
   b. "Design of Light Gage Steel Diaphragms"
3. American Welding Society
   a. "Structural Welding Code"
4. Metal Building Manufacturer's Association (MBMA)
   a. "Recommended Design Practices Manual"
   b. "Recommended Code of Standard Practice"
5. Pikes Peak Regional Building Department, 2011 Edition

B. Design Criteria

1. Design criteria, rationally applied to structures and their components, shall conform to applicable sections of the publications referenced herein with regards to design requirements and allowable stresses
2. Structural mill sections and welded-up plate sections: Paragraph 1.2.A.1.a of this section
3. Cold-formed steel structural members: Paragraph 1.2.A.2.a of this section
4. Primary and secondary members and coverings: Paragraphs 1.2.A.4.a and 1.2.A.5 of this section using the following design criteria
   a. General: Conform to requirements of the Pikes Peak Regional Building Department
   b. Snow load: 30 psf
   c. Basic wind speed (3-second gust): 100 mph
   d. Seismic loads
      1) Importance factor: 1.25
      2) Site class: D
      3) Seismic design category: B
   e. Additional dead and live loads for HVAC equipment, electrical equipment and future office framing in magnitudes and at locations as indicated on the Drawings
   f. Accommodations for future expansion of building with the same or similar structural system

C. Design Basis — CHIEF BLDGS

1. Varco-Pruden, Memphis, Tennessee
2. Equivalent products of other manufacturers may be accepted subject to compliance with design, function, materials and performance of the specified items

a. Compliance shall be determined by the Engineer based upon review of proposed materials, fabrications, erection details and conformance with design and construction drawings and specifications
b. It will be the manufacturer's or supplier's responsibility to coordinate and furnish, for review by the General Contractor, Engineer and Owner, complete product data and specifications demonstrating complete conformance with the specified items

1.3 SUBMITTALS

A. In Accordance with Section 01340

B. Manufacturer's Literature and Drawings

C. Shop Drawings and Product Data

1. Submit complete fabrication, assembly, foundation and erection drawings
2. Submit detailed specifications and data describing materials, parts, devices and accessories
3. Submit data for verification of compliance with specifications and to illustrate construction and assembly of products
   a. Dimensions
   b. Materials
   c. Thickness or gages
   d. Fasteners
   e. Finishes
   ~~f. Heat transmission ("U" values)~~ UNDER SECTION 07200
4. Door rough opening and finish details

D. Foundation Design Data

IN SHOP DRAWINGS
" " "

1. Rigid frame and internal column reactions, horizontal and vertical for all applicable load cases
2. Anchor bolt setting drawings and details including size, location and projection required for all anchor bolts
3. Review anchor bolt patterns shown on the Construction Drawings and accommodate adaptation of frame base plate bolt pattern with proposed construction

E. Samples

WALL PANEL UNDER SECTION 07501

1. Manufacturer's complete line of available colors and patterns for wall panels, infill panels, fascia panels and accessories for color selection

F. Certifications

CERTIFICATION LETTER AND DESIGN CALCS INCLUDED

1. Design calculations or letter of design certification signed and sealed by a Professional Engineer licensed in the State of Colorado for the structural framing, covering panels and the foundation design criteria for the metal building system

2. Design calculations may be manual or computer generated at the discretion of the prefabricated metal building system manufacturer
   a. Design data, calculations and supporting data shall be acceptable to the Pikes Peak Regional Building Department

INCLUDED

G. Building Permit

SUBMITTAL TO BLDG DEPT BY OTHERS

1. Furnish and submit all required documents to the Pikes Peak Regional Building Department
2. Coordinate as necessary to obtain all required permits

1.4 DELIVERY, STORAGE AND HANDLING

A. Protect all equipment and materials for damage during handling, delivery and storage

BY ERECTOR

B. Equipment or material which is damaged during handling, delivery and storage or is damaged by the elements shall be restored to new conditions prior to installation or replaced

PART 2 - PRODUCTS

2.1 PERFORMANCE AND DESIGN REQUIREMENTS

A. Prefabricated Metal Building

1. Structural type: Clear span, rigid frame, peak roof with outset girts
2. Roof slope: 3 to 12 unless otherwise indicated on the Drawings
3. Size
   a. Building sizes vary; see Construction Drawings
   b. Bay sizes typically not to exceed 25' plus manufacturer's standard endwalls
   c. Eave height: Varies; see Construction Drawings
4. Rigid frame and columns; see Construction Drawings

2.2 MATERIALS, FABRICATION AND MANUFACTURE

A. Fabrication

1. Shop fabricate primary and secondary framing members complete with base, cap, splice and stiffener plates as applicable, factory welded into place
2. Factory punched bolt connection holes for field assembly of all components of various systems

B. Welding

1. In accordance with AWS "Structural Welding Code"
2. Furnish certifications of welder qualifications if requested by the Owner

C. Bolting

1. High strength bolts (ASTM A325) for field assembly of frame members
2. Anchor bolts in accordance with Section 05501-Anchor Bolts and Drilled-In Anchors as required and as indicated by the prefabricated metal building manufacturer's anchor bolt layout drawings
   a. Embedded anchor bolts are required for intermediate and endwall base plate anchorage; drilled-in and adhered anchors are not acceptable

ANCHOR BOLTS BY OTHERS

D. Primary Framing

1. Rigid Frames
   a. Columns, roof beams and internal columns where applicable complete for bolted field assembly
   b. Shop fabricated bases
   c. Provide interior or intermediate structural frame at designated endwall to accommodate future building extension
2. Endwall
   a. Corner columns, roof beams and endwall columns complete for bolted field assembly
   b. Shop fabricated bases
3. Columns and rafters may be either uniform depth or tapered
4. Hot rolled structural sections: ASTM A36
5. Built-up steel sections
   a. Plates and bars: ASTM A572, Grade 50
   b. Sheet and strip: ASTM A607, Grade 50
   c. Minimum yield stress: 50,000 psi

E. Secondary Structural Members

1. Purlins: Cold-formed "Z" shaped members
2. Girts: Cold-formed ~~"Z"~~ shaped sections - GIRTS ARE "C"
3. Eave struts: Cold-formed stiffened channel sections to provide adequate backup for both roof and wall panels at the building eaves
4. Base angle provided for attachment of wall covering to foundation wall, secured in place with contractor furnished expansion anchors - ANCHORAGE BY OTHERS (ERECTOR)
5. Bracing: Provide all diagonal bracing, flange braces, sag rods, bevel washers, etc., of sizes and shapes as required by design loading specified
6. Intermediate bracing: Provide all intermediate bracing between columns to support HVAC and electrical gear as indicated on the Construction Drawings

F. Structural Painting

1. Cleaning: Factory clean all structural steel components to remove all loose dirt, grease and mill scale and chemically treat with phosphoric type cleaner
2. Painting: Factory prime with rust inhibitive primer compatible with specified finish coating system per Section 09900 - COMPATIBILITY BY 09900 PAINT CONTRACTOR.
3. Abrasions caused by handling shall be touched up in the field using manufacturer furnished primer compatible to shop primer TOUCH-UP BY ERECTOR
4. ~~Finish coat all structural framing members prior to installation of roof and wall panels~~ BY OTHERS.

a. Factory or field finish coating acceptable
b. Coatings in accordance with Section 09900 BY OTHERS

G. Roof Panels

1. See Section 07501-Metal Roof and Wall Panels
2. Design Basis: Met-Tile, Inc. Met-Tile roofing system BY OTHERS

H. Wall Panels

1. See Section 07501-Metal Roof and Wall Panels
2. Design Basis
   a. Varco Pruden "Texture Clad" wall system
   b. Custom Panel Systems "Stucco Building Panel" system

I. Accessories

1. Trim and accessories: See Section 07501-Metal Roof and Wall Panels
2. Closures: See Section 08710-Finish Hardware
3. Gutters: See Section 07501-Metal Roof and Wall Panels
4. Downspouts: See Section 07501-Metal Roof and Wall Panels
5. Hollow metal doors and frames
   a. See Section 08100-Metal Doors and Frames
   b. See Construction Drawings for each specific building requirements
6. Hardware: Each door
   a. See Section 08710-Finish Hardware
   b. See Construction Drawings for each specific building requirements
7. Insulated overhead steel door: See Section 08301-Overhead Sectional Doors
8. Provide framing as required for blockouts and/or penetrations for installation of HVAC equipment by others
   a. Size and location of blockouts as indicated on the Drawings and/or as specified to accommodate equipment furnished and installed
9. Grout: See Section 03600-Grout

J. Wall and Roof Insulation

1. Material
   a. Noncombustible material
   b. Batt, blanket or ~~rigid~~ insulation may be used
   c. Faced with vapor barrier placed toward interior of the building
   d. Combination assembly including vapor barrier facing shall carry a U.L. Fire hazard Classification indicating a flame spread of 25 or less
   e. Extreme care shall be taken to ensure that a completely un-broken vapor barrier is in place throughout the building walls and roof
   f. Rigid insulation design basis: Insulated Panel Systems, Inc., Houston, Texas RIGID INSULATION NOT INCLUDED
2. Thickness as required to provide R-values of
   a. R-19 in walls
   b. R-30 in the roof

INSULATION SUB-MITTAL TO FOLLOW @ LATER DATE

SEE 07501 SUBMITTAL FOR WALL PANEL SEALANTS

K. Sealants

1. Refer to Section 07900 - Joint Sealants
2. Standard of quality of a reputable and established sealant manufacturer, approved by the manufacturer of the prefabricated metal building
3. Sealants shall have good cohesion as well as good adhesion to the protective coated metal and shall not be corrosive to any components on which it is applied
4. Adequate handling characteristics during normal ranges of construction/erection temperatures
5. Retain weather sealing properties under conditions for which it is applied
6. Material
   a. Extrudable sealant of the non-migratory, non-drying and non-skinning type
   b. Synthetic elastomer base material conforming to the National Association of Architectural Manufacturer's (NAAMM) Standard SS-la
   c. Except for "tack-free-time" conform to performance requirements of Fed. Spec. TTC-598-b, Type I
   d. Application
      1) Factory-applied or field-applied sealant in longitudinal ribs of panels
      2) Spot-sealing laps (where applicable) of roof panels
      3) Spot-sealing trapezoidal corrugated-nestable panels

PART 3 - EXECUTION

3.1 PREPARATION BY ERECTOR

A. Examine concrete foundation and anchor bolt layout for conditions or defects that will adversely affect execution, permanence or quality of the work

B. Do not begin erection of prefabricated metal building until unsatisfactory conditions are corrected

3.2 ERECTION BY OTHERS (ERECTOR)

A. Erection of prefabricated metal building shall be conducted by the manufacturer's authorized erection representative in strict accordance with

1. Manufacturer's shop and erection drawings and
2. Accepted trade practices as outlined in the MBMA "Code of Standard Practice"

B. Confirm furnishing and installation of embedded anchor bolts with foundation construction

1. If necessary, adapt frame base plates to conform to bolt material and pattern that exist in the foundation

C. Conform to erection tolerances set forth in the AISC Code except individual member shall be considered plumb, level and aligned if the error does not exceed 1:300

D. Erect all components and accessories of the system as specified to assure that the building shell is complete and weathertight

E. Remove all rubbish and debris resulting from erection work and leave installation ready for acceptance

F. Seal all wall and roof penetrations to assure a complete, weathertight installation

1. Keep exterior steel wall and roof panel penetrations to a minimum in number and size

END OF SECTION

Chief Electrocoated Structural Steel

Chief Building System structural steel members are electrocoated for positive protection against corrosion.

- Electrocoating has proven superior to spray-on primers in providing protection when exposed to weather during construction. It reaches places conventional spraying and dipping can't.
- This gray oxide primer maintains a satisfactory appearance without field painting. It also takes paint well, if another color is specified.
- We know of no other process in our industry that gives the same consistent, abrasion and corrosion resistant results as Chief Electrocoating.

CHIEF® BUILDINGS
a division of Chief Industries, Inc.

Grand Island, Nebraska
Rensselaer, Indiana

CHIEF® BUILDINGS

a division of Chief Industries, Inc.

Grand Island, Nebraska
Rensselaer, Indiana

P.O. Box 2078 • 3942 W. Old Highway 30
Grand Island, NE 68802-2078
(308) 389-7200
http://www.chiefbuildings.com

Chief Electrocoated Structural Steel

The Process

To fully understand the benefits of electrocoating, it is necessary to understand the mechanics of the process. We use gray oxide primer carefully balanced with resins, pigments and corrosion inhibiting agents. As processed, resins are water insoluble and must be converted chemically into salts that are easily dispersed in the water.

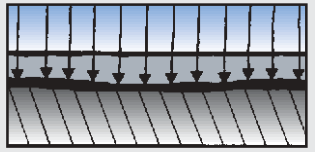
In electrocoating, our tanks are filled with this water dispersion of paint. The paint particles have a negative surface charge due to the salt formation. The structural members to be painted are connected to the positive side of a powerful DC power supply, giving them a positive charge. The tank itself is wired to the negative side of the power source. When the power supply is activated, the current flows from the negatively charged tank to the positively charged structural steel, causing the negatively charged paint particles to migrate to the steel and be plated to the surface.

The Results

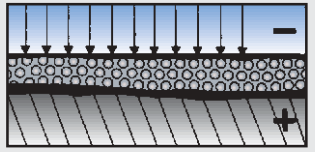
During this plating process, taking one to two minutes, electro-chemical reactions take place on the surface of the structural parts, changing the salts in the paint back to their original acid state. The voltages involved (200-300 VDC) act as a kind of electronic pressure to densify the resin, resulting in a paint film not only water insoluble, but virtually 100% solid.

After coating, the parts are baked in an oven, converting the paint films to an enamel composition that is hard, abrasive resistant and it's with this process, superior corrosion resistance is achieved.

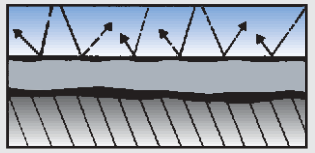
Chief Electrocoating penetrates virtually everywhere, leaving a uniform coating of corrosion-resistant enamel.



Electrical attraction causes negatively charged paint particles to be attracted to positively charged structural steel, forming a smooth even finish.



Oven baking fuses the paint into a hard, abrasion and corrosion resistant enamel film.



Cured Film Properties:

Color: Gray
Gloss: 45-55 @ 60°
Film Thickness: .8-1.1 Mils
MEK Rubs: 100+
Pencil Hardness: 2H
Mar Resistance: Excellent
Cross Hatch Adhesion: 100%
Reverse/Direct Impact: 80 Inch/Pounds
1/8 Conical Mandrel: Pass
18 Hr Di water Soak: Pass
4 Hr Hydrocarbon Soak: Pass
150 Hr Salt Spray: 3/4 Inch Creep
Humidity Resistance: 1,000+ Hours

Printed in U.S.A.

CB-03044-0803

CHIEF
CHIEF BUILDINGS

Wisconsin Technical Services Office
2863 Liberty Lane
Janesville, WI 53545
Phone: (608) 758-3718 Fax: (608) 758-3796

January 26, 2012

Re: Chief Order No. B3004219
Description: 51' x 68' 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
Balanced Snow Loading (P_f)	30 psf
Unbalanced Loading and Drifts (P_g)	30 psf
Exposure Factor (C_e)	1.0
Thermal Factor (C_t)	1.0
Importance Factor (I)	1.1
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	5,877 lbs.

Other Loads:
Two - 200 lb. Unit Heaters
Ten - 524 lb. Cable Tray Point Loads
Eight - 655 lb. Cable Tray Point Loads

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

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, Lincoln, NE, and Janesville, WI. Chief Fabrication facilities: Grand Island, NE and Rensselaer, IN.

Sincerely,

William C. Walsh, P.E.
Sr. Design Engineer
Chief Industries, Inc. - Buildings Division
WW/tl

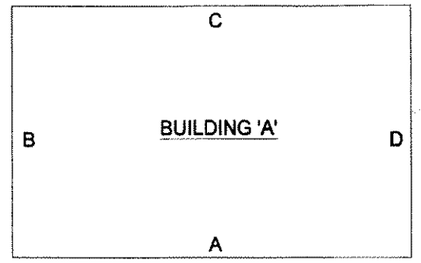
BUILDER: HEATH STEEL

CUSTOMER: WEAVER CONSTRUCTION MANAGEMENT

LOCATION: FOUNTAIN, CO

	WIDTH	LENGTH	SWA HEIGHT	FRONT ROOF PITCH	DOWNSPOUT DROPS-SWA	DOWNSPOUT DROPS-SWC
Bldg A :	51.00	68.00	19.33	3.000	0	0

TABLE OF CONTENTS



KEY PLAN

Roof Sheeting:

Type: Met-Tile (Not By Chief)

Gage:

Color:

Wall Sheeting:

Type: Stucco Wall Panels (Not By Chief)

Gage:

Color:

Framing:

Purlin Type: Zees

Girt Type: Zees

Ordered Options:

Base Condition: Base C no trim

Base Trim Color: N/a

Wall Mastic: No

UL Rating: None

Thermal Blocks: N/a

Sidewall Eave Trim Type:

Eave & Gable Trim Color: N/a

Downspout Type: None

Downspout Color: N/a

Elbows at Bottom of Drops: N/a

Corner Trim Color: N/a

Framed Opening Trim Color: N/a

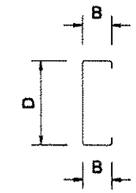
Light Transmitting Panels: 0

Girt Retainer Option for Purlins: N/a

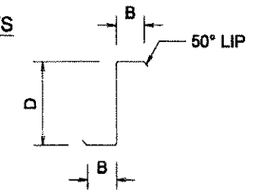
Framing Kits & Wall Openings
See Accessory Schedule on Anchor Rod Plan, Page A1.

Loading Information & Frame Column Reactions
See Load Notes and Reactions on Anchor Rod Detail Page, Page 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



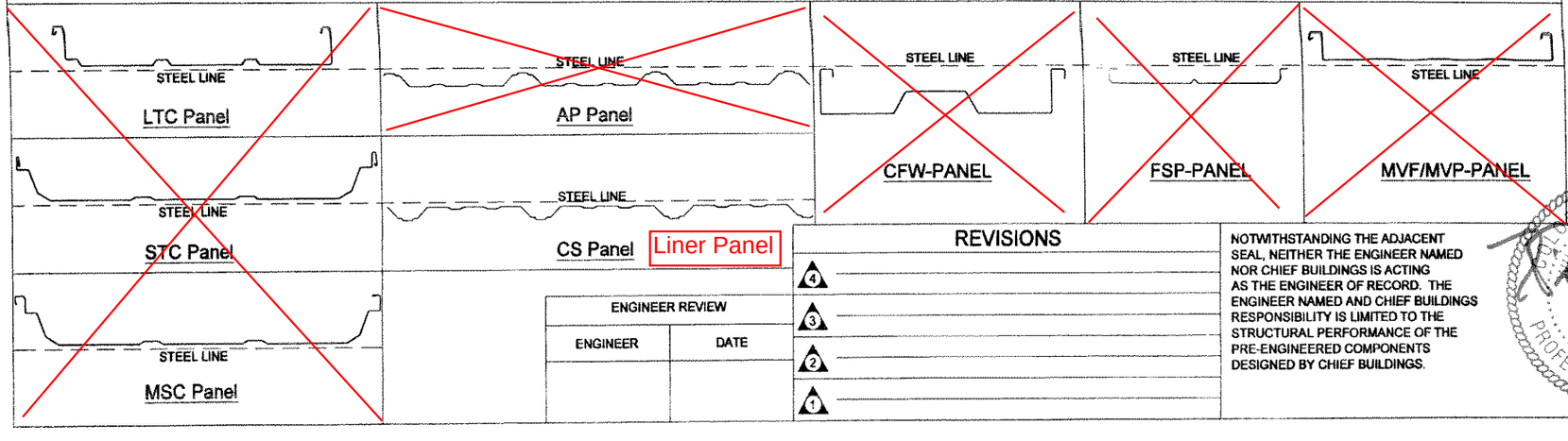
DESIGNATION	D	B
816	8.00	2.50
814	8.00	2.50
812	8.00	2.50
1014	10.00	2.75
1012	10.00	2.75

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



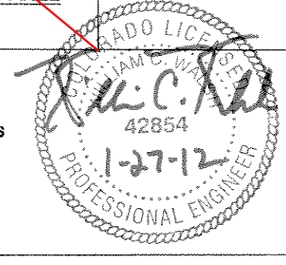
ENGINEER REVIEW

ENGINEER	DATE

REVISIONS

4 _____
3 _____
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.



PROGRESS DRAWINGS

COVER PAGE
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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
BLO		B3004219	C1

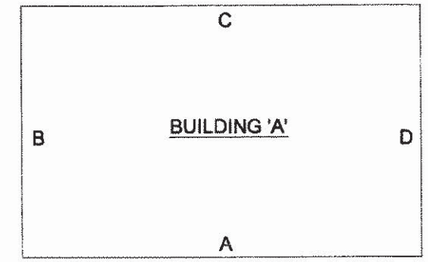
BUILDER: HEATH STEEL

CUSTOMER: WEAVER CONSTRUCTION MANAGEMENT

LOCATION: FOUNTAIN, CO

	WIDTH	LENGTH	SWA HEIGHT	FRONT ROOF PITCH	DOWNSPOUT DROPS-SWA	DOWNSPOUT DROPS-SWC
Bldg A :	51.00	68.00	19.33	3.000	0	0

TABLE OF CONTENTS



KEY PLAN

Roof Sheeting:

Type: Met-Tile (Not By Chief)

Gage:

Color:

Wall Sheeting:

Type: Stucco Wall Panels (Not By Chief)

Gage:

Color:

Framing:

Purlin Type: Zees

Girt Type: Zees

Ordered Options:

Base Condition: Base C no trim

Base Trim Color: N/a

Wall Mastic: No

UL Rating: None

Thermal Blocks: N/a

Sidewall Eave Trim Type:

Eave & Gable Trim Color: N/a

Downspout Type: None

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

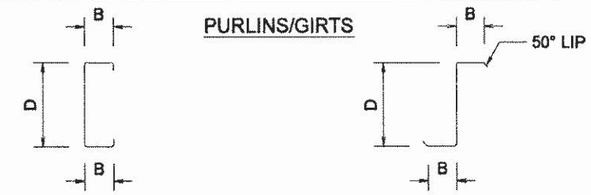
Framing Kits & Wall Openings
See Accessory Schedule on Anchor Rod Plan, Page A1.

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

Wall Liner Panel:

1 Type: CS
Gage: 29
Color: White Polyester
Finish: Kynar

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

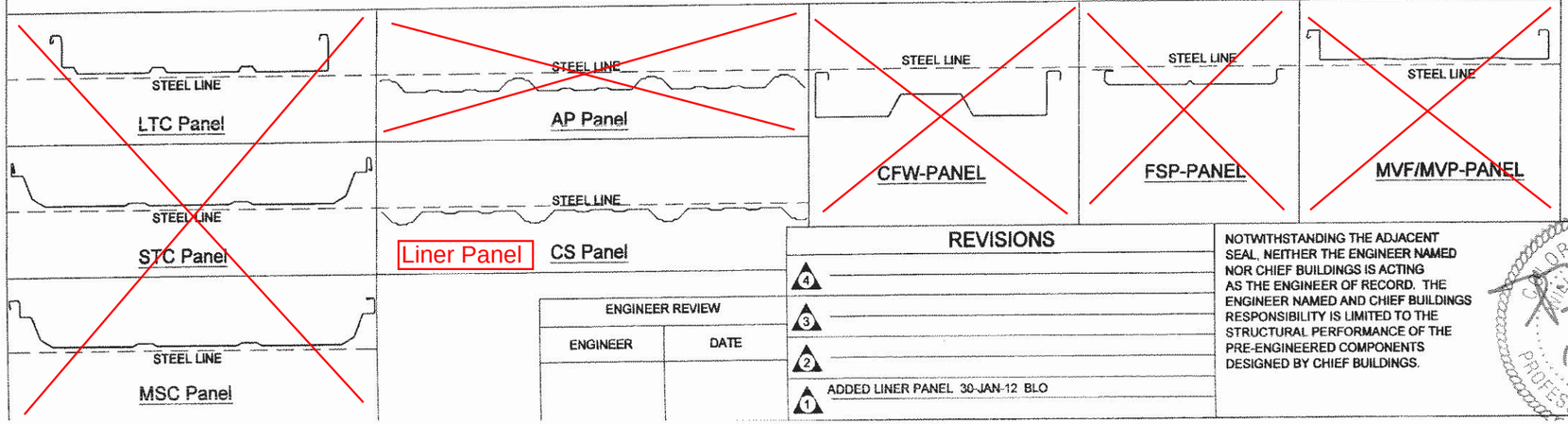
Drawing Designation:
a) Drawings stamped "PERMIT DRAWINGS" are drawings that are complete for the most part, however, since some details and part marks are missing, they are preliminary and are not to be used for construction and are not considered final drawings.
b) Drawings stamped "PROGRESS DRAWINGS" 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 _____

REVISED
DATE: JAN 3 0 2012

SHEETING TYPES



PROGRESS DRAWINGS

ENGINEER REVIEW

ENGINEER	DATE

REVISIONS

4
3
2
1 ADDED LINER PANEL 30-JAN-12 BLO

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.

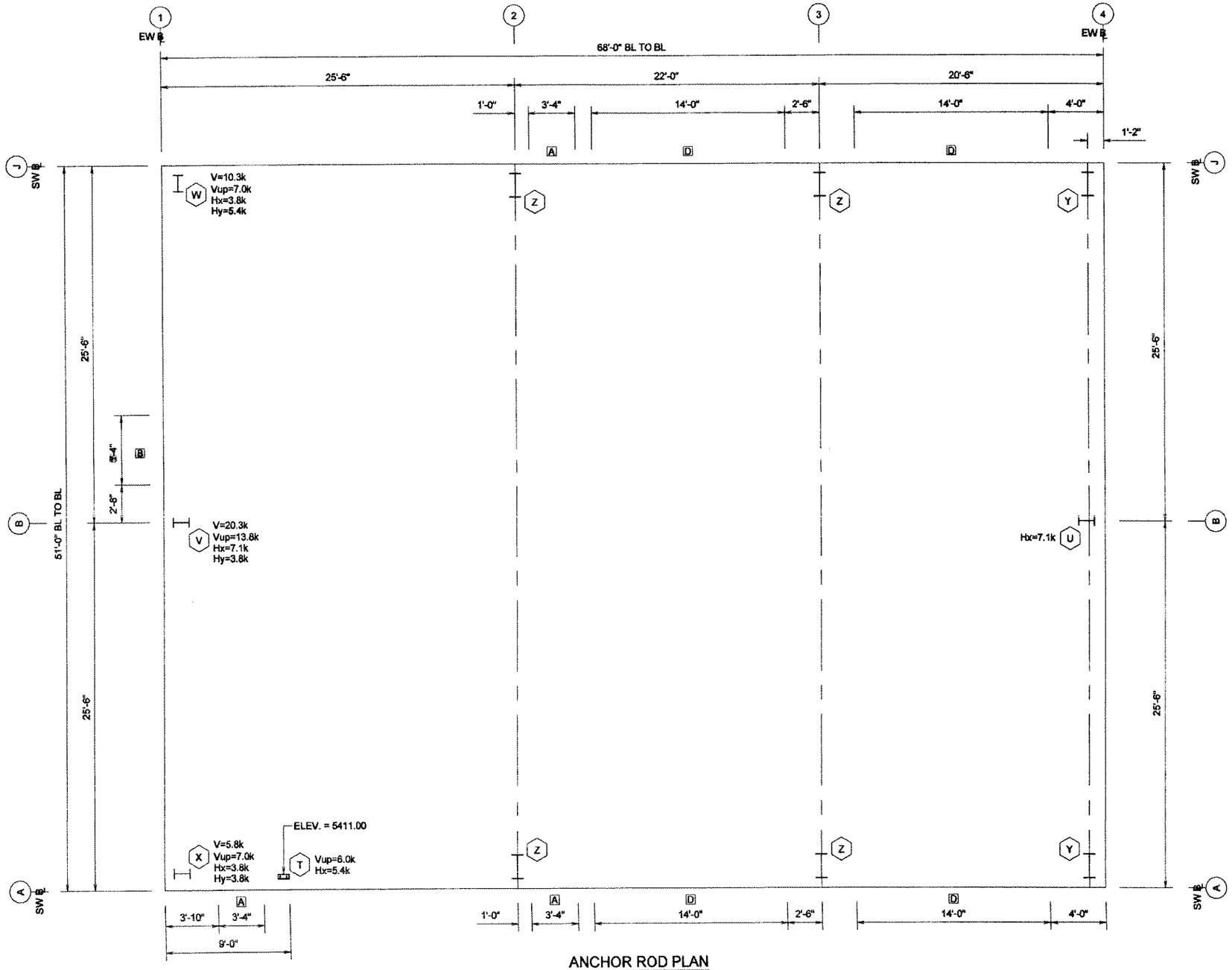
COLORADO LICENSED
WILLIAM C. NEWELL
42854
1-30-12
PROFESSIONAL ENGINEER

COVER PAGE
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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
BLO		B3004219	C1

ACCESSORY SCHEDULE		
MARK	QUAN	DESCRIPTION
A	3	3'-4" X 7'-4" WALKDOOR F.O.
B	1	5'-4" X 8'-4" WALKDOOR F.O.
C	1	1'-0" X 1'-0" LOUVER F.O.
D	4	14'-0" X 14'-0" HI-LIFT DOOR F.O.



ANCHOR ROD PLAN

FINISHED FLOOR ELEVATION = 5411.00
BASE OF ALL COLUMNS AT ELEVATION = 5412.00
BASE OF FRAME OPENING JAMBS AT ELEVATION = 5412.00

TO BE USED FOR CONSTRUCTION

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
32	0-½" Ø	1½"
40	0-¾" Ø	2"
2	1" Ø	2"

REVISIONS	
4	
3	
2	
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COLORADO LICENSED
1-27-12
42554
PROFESSIONAL ENGINEER

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'X19'-4" BAYS VARY 3:12

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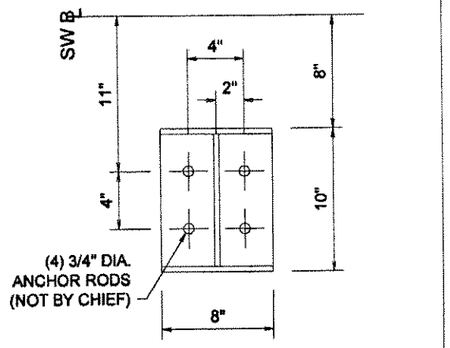
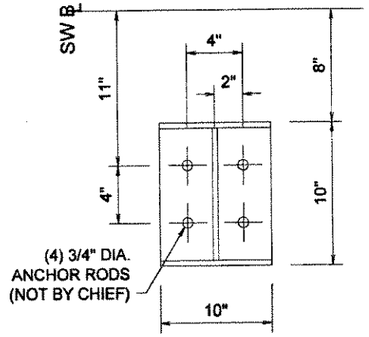
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	A1
BLO	JSA	B3004219	A4
26-JAN-12	27-JAN-12		



DETAIL Z



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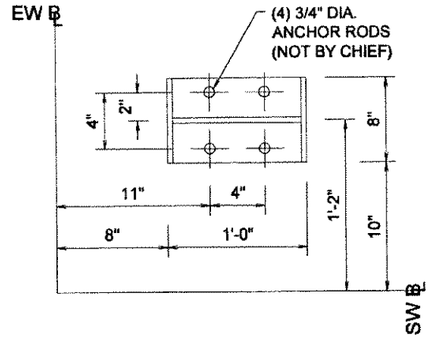
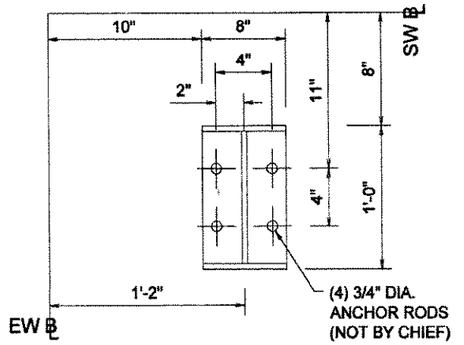


DETAIL X



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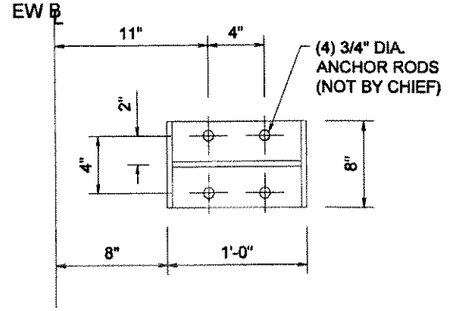
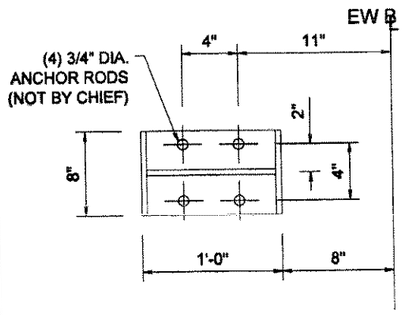


DETAIL V



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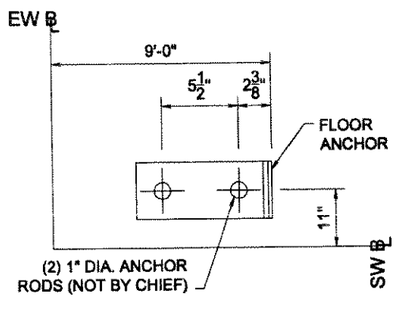
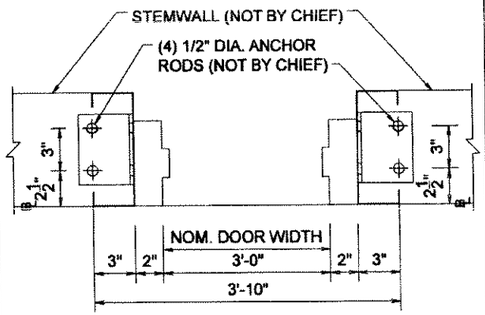
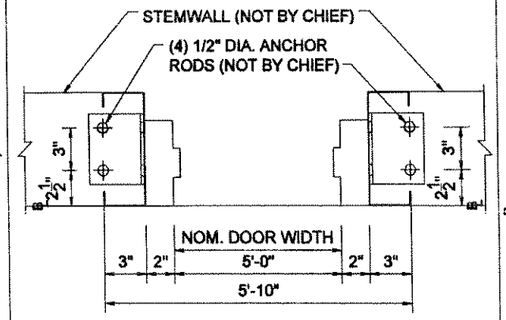


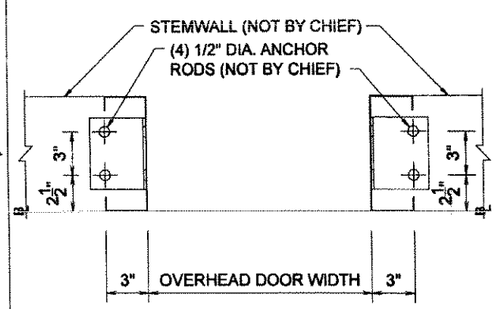
DETAIL T



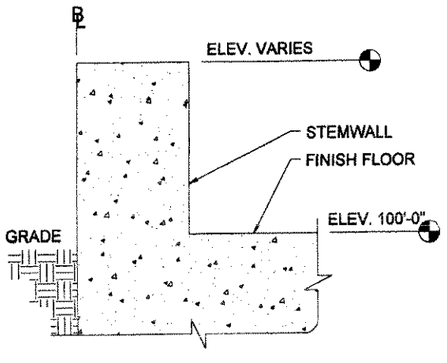
WALK DOOR ANCHOR ROD DETAIL



WALK DOOR ANCHOR ROD DETAIL



OVERHEAD DOOR
ANCHOR ROD DETAIL

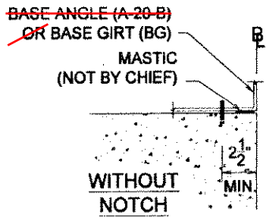


STEMWALL DETAIL

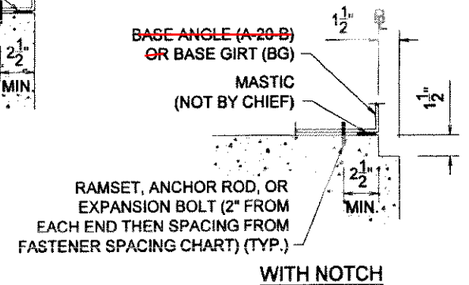
1. CHIEF BUILDINGS IS NOT RESPONSIBLE FOR CONCRETE AND/OR MASONRY DESIGN, DIMENSIONS & REINFORCING STEEL DETAILS. CHIEF BUILDINGS RECOMMENDS THE CONTRACTOR/BUILDER TO OBTAIN THE SERVICES OF A QUALIFIED DESIGN ENGINEER FOR DESIGNS & DRAWINGS OF MASONRY OR CONCRETE WALL, FLOORS, & FOUNDATIONS TO WITHSTAND 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.

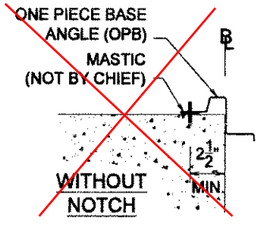
3. CONCRETE AND/OR MASONRY ELEV. INDICATED ARE PER THE AGREEMENT TO PURCHASE/CUSTOMER DRAWINGS RECEIVED FROM THE CONTRACTOR/BUILDER.



CONTRACTOR IS RESPONSIBLE FOR ANCHORING BASE MEMBER TO CONCRETE.



WITH NOTCH



BASE MEMBER DETAILS

TO BE USED FOR CONSTRUCTION

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

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 LICENSED
Kurt C. Rial
1-27-17
42894
PROFESSIONAL ENGINEER

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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
BLO	JSA	B3004219	A4
26-JAN-12	27-JAN-12		

Future Expansion
Expandable Full Frame Endwall

The frame at line 4 is an expandable full load frame. The frame has been designed for a future expansion of 21'-2" 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.

~~Roof Units~~ Cable Trays
(Suspended ~~RTU~~ w/ Auxiliary Beams)

The 6 auxiliary support beams, main frame and endwall framing from Line #1 to Line #2 are designed to adequately support the following suspended cable tray loads:

(8) - 655 # Suspended Roof Units
(10) - 524 # Suspended Roof Units

The locations of the suspended cable trays are as shown on the roof framing plan. Each suspended load shall be equally and concentrically supported by the auxiliary support beams. Note that the roof panel **must** attach to the 3 auxiliary support beams that are replacing the roof purlins. 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 the connections of the suspended cable tray units to the supporting beams and the local stresses caused by such connections nor the design of bracing suspended units for horizontal forces. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

Roof Units
(Suspended RTU at Line #3)

The frame at Line #3 is designed to adequately support the following suspended roof units:

(2) - 200 # Suspended Roof Units

The locations of the suspended roof units are as shown on the roof framing plan. Each unit shall be concentrically supported by the frame rafter at Line #3. 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 the connections of the suspended roof units to the supporting rafter and the local stresses caused by such connections nor the design of bracing suspended units for horizontal forces. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

Mezzanine
(Mezzanine Not By Chief)

Mezzanine loading information:

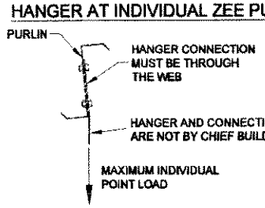
The building provided by Chief Buildings does not include structural support for the mezzanine, which is furnished by others.

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.

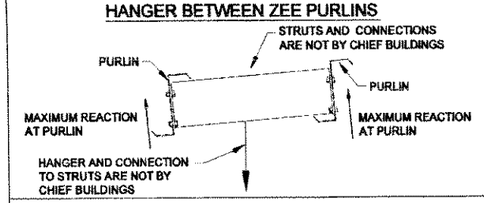
This structure has been designed for a collateral load of 3 psf. The total applied loads due to ceiling panels, ducts, sprinkler distribution lines, electrical equipment, conduit, fireproofing, other piping and mechanical loads, etc., cannot exceed this collateral load. In no case shall the total uniform 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 50 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
B3004219

Building Code	Pikes Peak Regional Building Code 2011 Edition
2006 MBMA Occupancy Category	Substantial Hazard Occupancy Building
Roof Live Load	20 psf (Tributary Area Reduction Not Allowed)
~~Collateral Load~~	~~3 psf~~
Balanced Snow Loading (Pf)	30 psf
Unbalanced Loading and Drifts (Pg)	30 psf
Exposure Factor (Ce)	1.0
Thermal Factor (Ct)	1.0
Importance Factor (I)	1.1
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	5,877 lbs.
Other Loads:	Two - 200 lb. Unit Heaters
	Ten - 524 lb. Cable Tray Point Loads
	Eight - 655 lb. Cable Tray Point Loads

Sheeting
(~~Standing Seam~~ Roof Panel Not by Chief Buildings)

The Met-Tile 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**~~ 20PSF
Roof Snow Load = 38.16 psf
Roof Panel Suction (Interior Zone) = 25.4 psf
Roof Panel Suction (Edge Zone) = 29.7 psf
Roof Panel Suction (Corner Zone) = 43.9 psf
(Edge/Corner Zone Width = 5.1 ft.)

Note: See Figure 6-11C of ASCE 7-05 for location of edge and corner zones.

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.

Sheeting
(Wall Panel Not by Chief Buildings)

The 16" wide 20 ga. Stucco Wall Panel with sealant provided by Custom Panel Systems 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: I_{xx} = 0.0368 in4/ft S_{xx} = 0.0447 in³/ft

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

TO BE USED FOR CONSTRUCTION

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.

REFERENCE NOTES

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

REVISIONS

4
3
2
1

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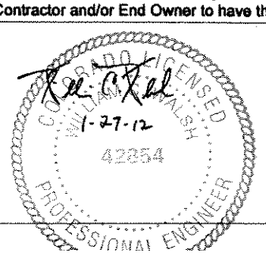

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'X19'-4" BAYS VARY 3:12

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

DRAWN	CHECK	ORDER NO.	A3 / A4
BLO	JSA	B3004219	
26-JAN-12	27-JAN-12		

Partition Wall

Transverse Partition Wall Not By Chief

The full height transverse partition wall not provided by Chief Buildings and its anchorage to the Chief Building must be designed and detailed to be compatible with the vertical and lateral deflections of the Chief Building and to withstand the loading prescribed by the applicable Building Code.

The deflections of the Chief Building at the full height partition wall at line 2 are as follows:

Snow/Live Load	1.2" downward
Wind Load	0.5" upward
Wind Load	0.7" lateral (parallel with partition)

Max. Vertical Down Deflection	1.7" downward
Max. Lateral Deflection	1.3" lateral (parallel with partition)

Wind load deflections are for 10-year recurrence level.

Chief Buildings neither assumes nor accepts any responsibility for the design of the transverse partition wall, its anchorage, and the local stresses that may occur on the structure provided by Chief Buildings due to the anchorage. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

Exterior Concrete Wall

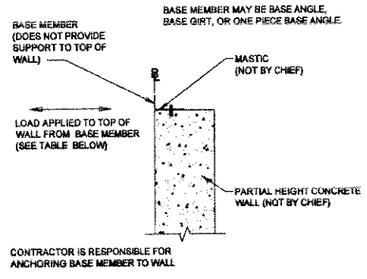
Partial Height, Exterior Concrete Wall, Base Member

The structure provided by Chief Buildings has been designed to have a 1' and 2' tall stem 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

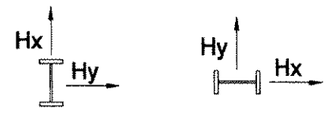
Attachments must be designed to safely transfer the forces shown from the base member into the top of the wall. The wall must be designed to resist loads applied to the wall area and the loads from the base member to the wall using load combinations and overstrength detailing requirements as required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

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.

ORIENTATION OF
HORIZONTAL REACTIONS:



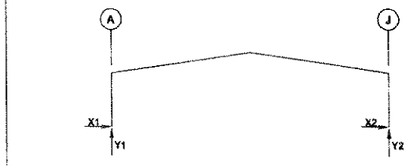
Hx IS PARALLEL TO THE COLUMN WEB AND
Hy IS PERPENDICULAR TO THE COLUMN WEB,
FOR ALL ENDWALL COLUMNS & SOLDIER COLUMNS
BY CHIEF BUILDINGS.

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 = 36 KSI (ASTM A53 GR. B, A500 GR. B)
SQUARE/RECTANGULAR TUBING: ASTM A500 (GR. B; GR. C)
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)

LOAD TYPE	X1	Y1	Z1	X2	Y2	Z2
DL - DEAD LOAD	1.1	3.3	-	-1.1	3.3	-
COL- COLLATERAL	2.4	3.5	-	-2.4	8.3	-
LL - LIVE LOAD	4.9	11.8	-	-4.9	11.8	-
SL - SNOW LOAD	7.3	17.7	-	-7.3	17.7	-
WLL- WIND FROM LEFT	-7.7	-12.4	-	-0.2	-8.4	-
WLR- WIND FROM RIGHT	0.1	-8.4	-	7.7	-12.4	-
WL2- WIND LT CASE 2	-7.6	-7.4	-	-0.3	-3.4	-
WR2- WIND RT CASE 2	0.2	-3.4	-	7.6	-7.4	-
WLE- WIND ON ENDWALL	-1.6	-13.7	-	2.1	-12.5	-
WE2- EW WIND CASE 2	-2.1	-12.5	-	1.6	-13.7	-
SL4- SNOW LOAD	4.6	7.6	-	-4.6	13.2	-
SL3- SNOW LOAD	4.6	13.2	-	-4.6	7.6	-
SEI- SEISMIC LOAD	-0.7	-0.5	-	-0.7	0.5	-
SB1- SEISMIC BRACING		-1.8	±2.3	-	-1.8	±2.3
SB2- SEISMIC BRACING	0.1	1.8	-	-0.1	1.8	-
BR1- WIND BRACING 1		-4.0	±5.4	-	-4.0	±5.4
BR2- WIND BRACING 2	0.2	4.0	-	-0.2	4.0	-
MAXIMUM POSITIVE	11.1	24.6	±5.4	7.0	30.1	±5.4
MAXIMUM NEGATIVE	-7.0	-15.8	±5.4	-10.5	-15.8	±5.4

B3004219A01 REACTIONS USED AT LINE(S): 2



LOAD TYPE	X1	Y1	X2	Y2
DL - DEAD LOAD	1.0	2.9	-1.0	2.9
COL- COLLATERAL	0.7	1.5	-0.7	1.5
LL - LIVE LOAD	4.4	10.3	-4.4	10.3
SL - SNOW LOAD	6.6	15.5	-6.6	15.5
WLL- WIND FROM LEFT	-6.8	-10.8	-0.1	-7.3
WLR- WIND FROM RIGHT	0.1	-7.3	6.8	-10.8
WL2- WIND LT CASE 2	-6.7	-6.4	-0.2	-3.0
WR2- WIND RT CASE 2	0.1	-3.0	6.7	-6.4
WLE- WIND ON ENDWALL	-1.4	-12.0	1.9	-11.0
WE2- EW WIND CASE 2	-1.9	-11.0	1.4	-12.0
SL4- SNOW LOAD	4.2	8.7	-4.2	11.5
SL3- SNOW LOAD	4.2	11.5	-4.2	8.7
SEI- SEISMIC LOAD	-0.4	-0.3	-0.4	0.3
MAXIMUM POSITIVE	8.5	20.1	6.2	20.1
MAXIMUM NEGATIVE	-6.2	-10.2	-8.5	-10.2

B3004219A02 REACTIONS USED AT LINE(S): 4

LOAD TYPE	X1	Y1	X2	Y2
DL - DEAD LOAD	1.0	2.9	-1.0	2.9
COL- COLLATERAL	0.7	1.8	-0.7	1.8
LL - LIVE LOAD	4.3	10.5	-4.3	10.5
SL - SNOW LOAD	6.4	15.8	-6.4	15.8
WLL- WIND FROM LEFT	-6.8	-11.0	0.2	-7.5
WLR- WIND FROM RIGHT	0.2	-7.5	6.8	-11.0
WL2- WIND LT CASE 2	-6.7	-6.6	-0.3	-3.0
WR2- WIND RT CASE 2	0.3	-3.0	6.7	-6.6
WLE- WIND ON ENDWALL	-1.3	-12.4	1.9	-11.2
WE2- EW WIND CASE 2	-1.9	-11.2	1.3	-12.4
SL4- SNOW LOAD	4.0	6.8	-4.0	11.7
SL3- SNOW LOAD	4.0	11.7	-4.0	6.8
SEI- SEISMIC LOAD	-0.5	-0.3	-0.5	0.3
MAXIMUM POSITIVE	8.2	20.6	6.2	20.6
MAXIMUM NEGATIVE	-6.2	-10.7	-8.2	-10.7

B3004219A03 REACTIONS USED AT LINE(S): 3

TO BE
USED FOR
CONSTRUCTION

REFERENCE NOTES

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

REVISIONS

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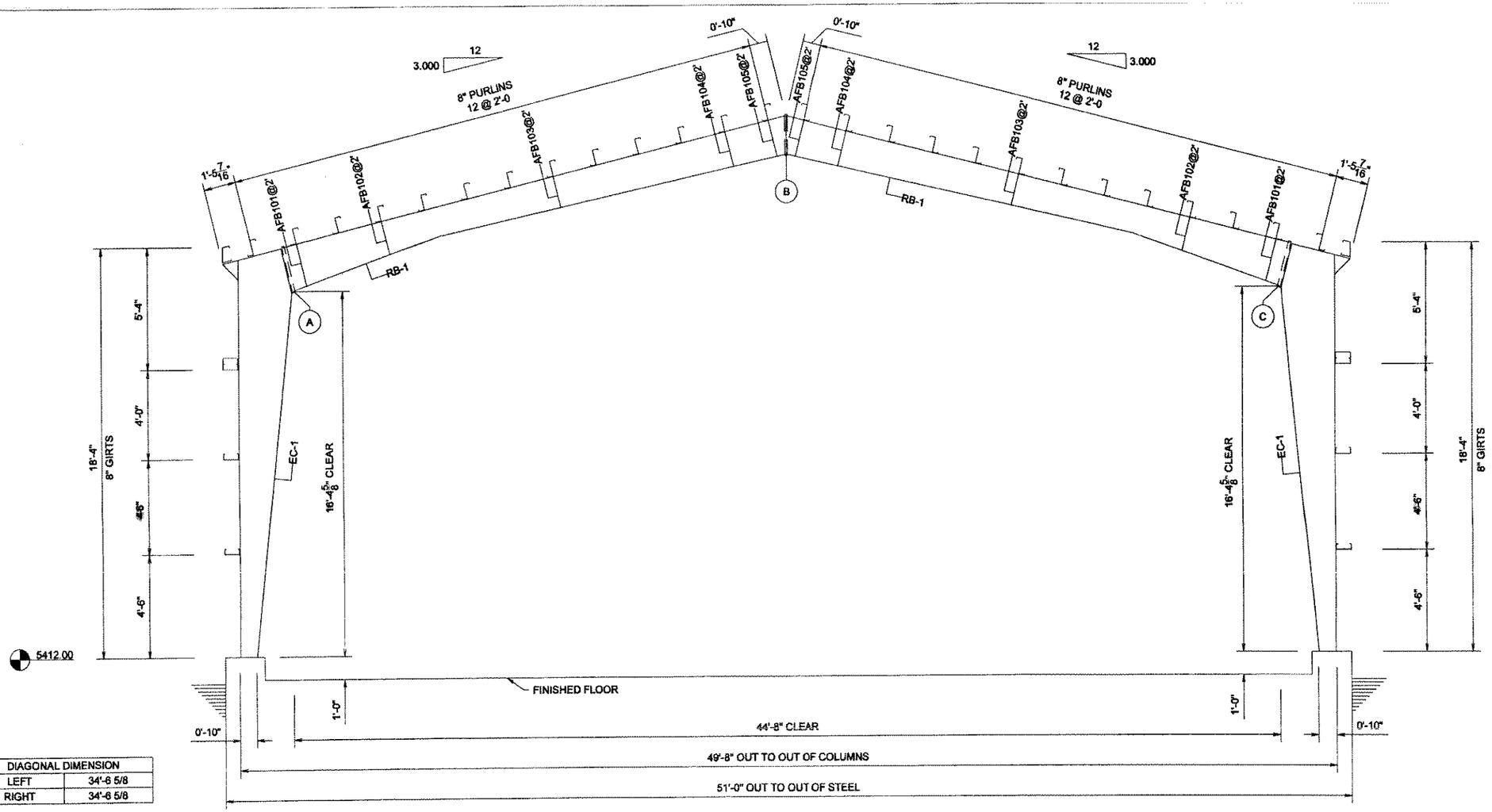
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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
BLO	JSA	B3004219	A4
26-JAN-12	27-JAN-12		



DIAGONAL DIMENSION	
LEFT	34'-6 5/8
RIGHT	34'-6 5/8

CROSS SECTION

COLUMN LINES: 2

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.

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

PROGRESS DRAWINGS

FRAME:B3004219A01 25-JAN-2012 17:39:16.18

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 LICENSED 42854 PROFESSIONAL ENGINEER

CROSS SECTION

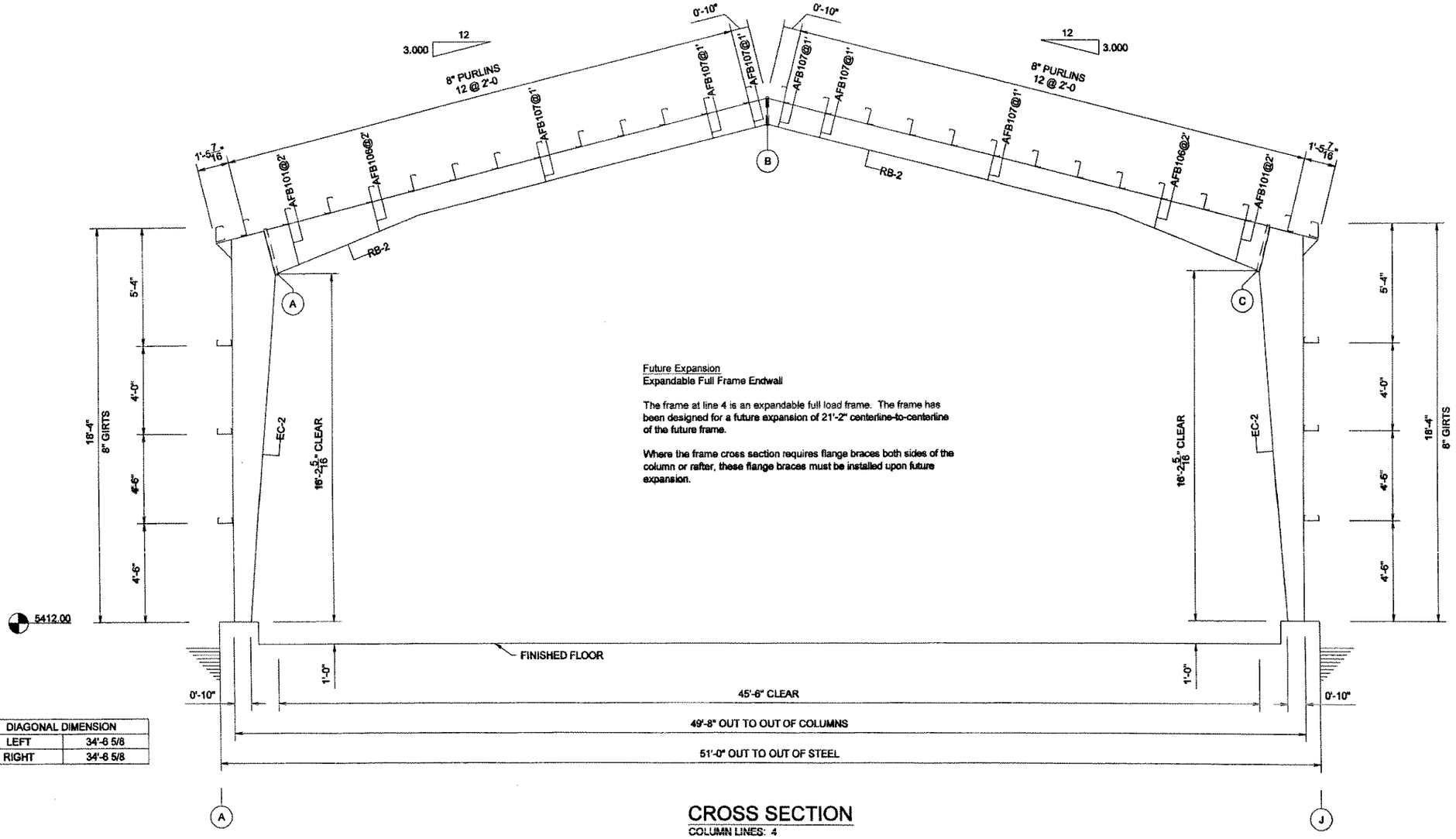
HEATH STEEL / WEAVER CONST. MANAGEMENT

FOUNTAIN, CO

RF 51'X68'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.	CS1 / CS3
BLO		B3004219	
26-JAN-12			



5412.00

Future Expansion
Expandable Full Frame Endwall

The frame at line 4 is an expandable full load frame. The frame has been designed for a future expansion of 21'-2" 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.

DIAGONAL DIMENSION	
LEFT	34'-6 5/8
RIGHT	34'-6 5/8

CROSS SECTION

COLUMN LINES: 4

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

PROGRESS DRAWINGS

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.

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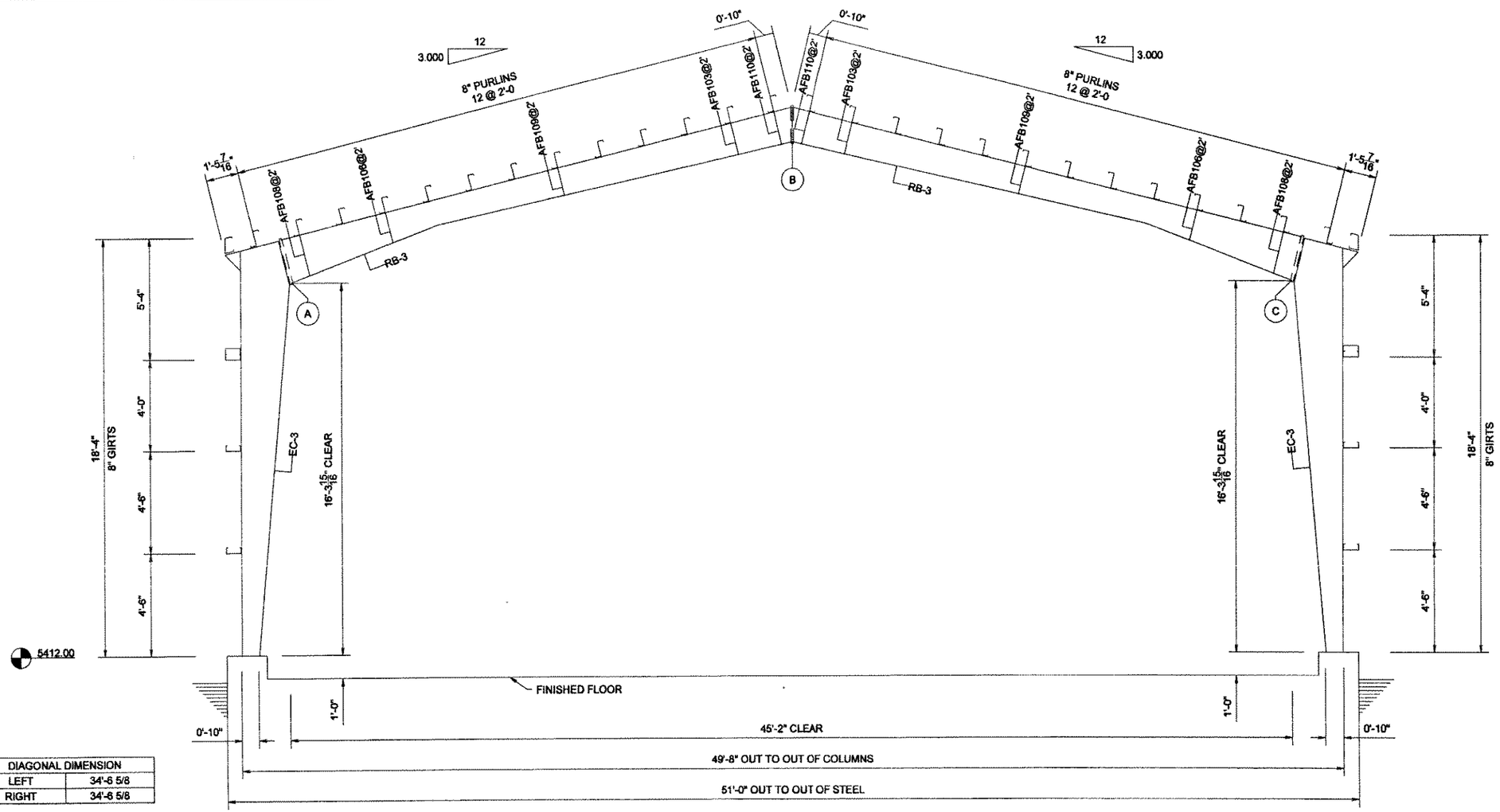
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED
42854
PROFESSIONAL ENGINEER

CROSS SECTION
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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.	CS2 / CS3
BLO		B3004219	
26-JAN-12			



DIAGONAL DIMENSION	
LEFT	34'-6 5/8
RIGHT	34'-6 5/8

CROSS SECTION

COLUMN LINES: 3

SPLICE BOLT TABLE			
SPLICE	NO	SIZE	DEPTH
A	10	5/8 X 2	2'-0
B	8	5/8 X 1 1/2	1'-6
C	10	5/8 X 2	2'-0

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.
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3. ALL ELEVATION DIMENSIONS ARE TAKEN FROM BOTTOM OF FRAME COLUMN BASE PLATE. REFER TO ANCHOR ROD DRAWING FOR BASE OF COLUMN ELEVATION.
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10. ALL WELDS HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBF AT MINUS 20 DEGREES F.

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REVISIONS
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COLORADO LICENSED
CLAYTON C. WARD
42854
PROFESSIONAL ENGINEER

CROSS SECTION

HEATH STEEL / WEAVER CONST. MANAGEMENT

FOUNTAIN, CO

RF 51'X68'X19'-4" BAYS VARY 3:12

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

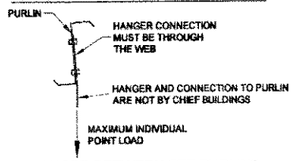
DRAWN	CHECK	ORDER NO.	CS3
BLO		B3004219	CS3
26-JAN-12			

Collateral Loads

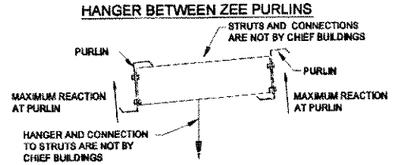
This structure has been designed for a collateral load of 3 psf. The total applied loads due to ceiling panels, ducts, sprinkler distribution lines, electrical equipment, conduit, fireproofing, other piping and mechanical loads, etc., cannot exceed this collateral load. In no case shall the total uniform 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 50 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 Units
(Suspended RTU w/ Auxiliary Beams)

The 6 auxiliary support beams, main frame and endwall framing from Line #1 to Line #2 are designed to adequately support the following suspended cable tray loads:

◆ (8) - 655 # Suspended Roof Units

● (10) - 524 # Suspended Roof Units

The locations of the suspended cable trays are as shown on the roof framing plan. Each suspended load shall be equally and concentrically supported by the auxiliary support beams. Note that the roof panel must attach to the 3 auxiliary support beams that are replacing the roof purlins. 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 the connections of the suspended cable tray units to the supporting beams and the local stresses caused by such connections nor the design of bracing suspended units for horizontal forces. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

Roof Units
(Suspended RTU's at Line #3)

The frame at Line #3 is designed to adequately support the following suspended roof units:

(2) - 200 # Suspended Roof Units

The locations of the suspended roof units are as shown on the roof framing plan. Each unit shall be concentrically supported by the frame rafter at Line #3. Chief Buildings is NOT responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

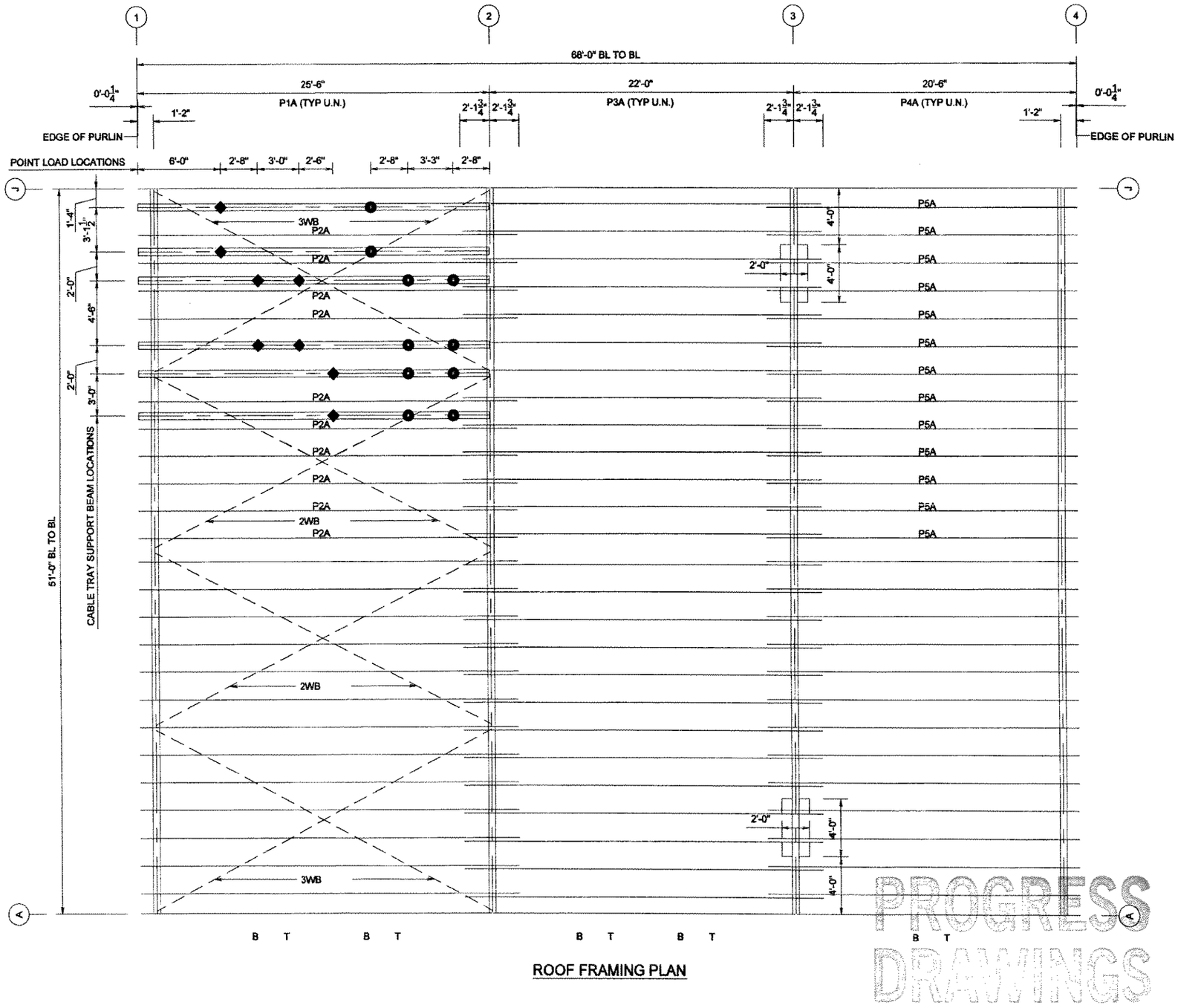
Chief Buildings neither assumes nor accepts any responsibility for the design of the connections of the suspended roof units to the supporting rafter and the local stresses caused by such connections nor the design of bracing suspended units for horizontal forces. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

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.

MATERIAL CALLOUTS:

2WB denotes 1/4" cable bracing
3WB denotes 3/8" cable bracing
All Eave Struts are 8" C-section, 12 gage mat'l.
All purlins are 8" Z-section, 16 gage mat'l.
Bracing Struts are 8", Z-section, 14 gage mat'l.
Cable Tray Support Beams are built-up sections, w/8" x 1/4" flanges and 7 1/2" x 1/8" webs.



ROOF FRAMING PLAN

REVISIONS

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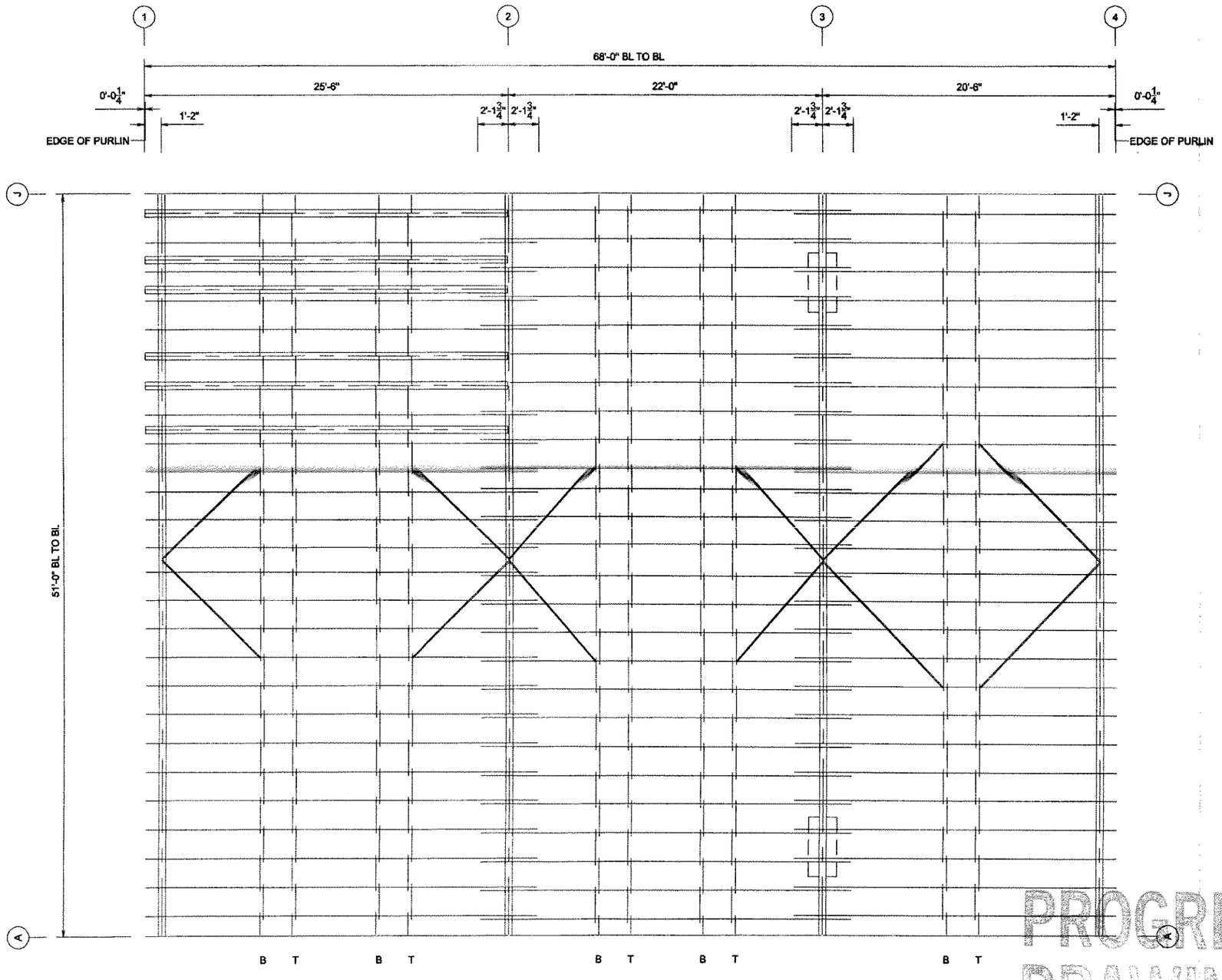
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED
42854
PROFESSIONAL ENGINEER

ROOF FRAMING DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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.	RF1
BLO		B3004219	RF2
26-JAN-12			



PURLIN BRACING PLAN

Sheeting
(Standing Seam Roof Panel Not by Chief Buildings)

The Met-Tile 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 applicable building code and listed below:

Roof Live Load = 20 psf
Roof Snow Load = 38.16 psf
Roof Panel Suction (interior Zone) = 25.4 psf
Roof Panel Suction (Edge Zone) = 29.7 psf
Roof Panel Suction (Corner Zone) = 43.9 psf
(Edge/Corner Zone Width = 5.1 ft.)

Note: See Figure 6-11C of ASCE 7-05 for location of edge and corner zones.

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.

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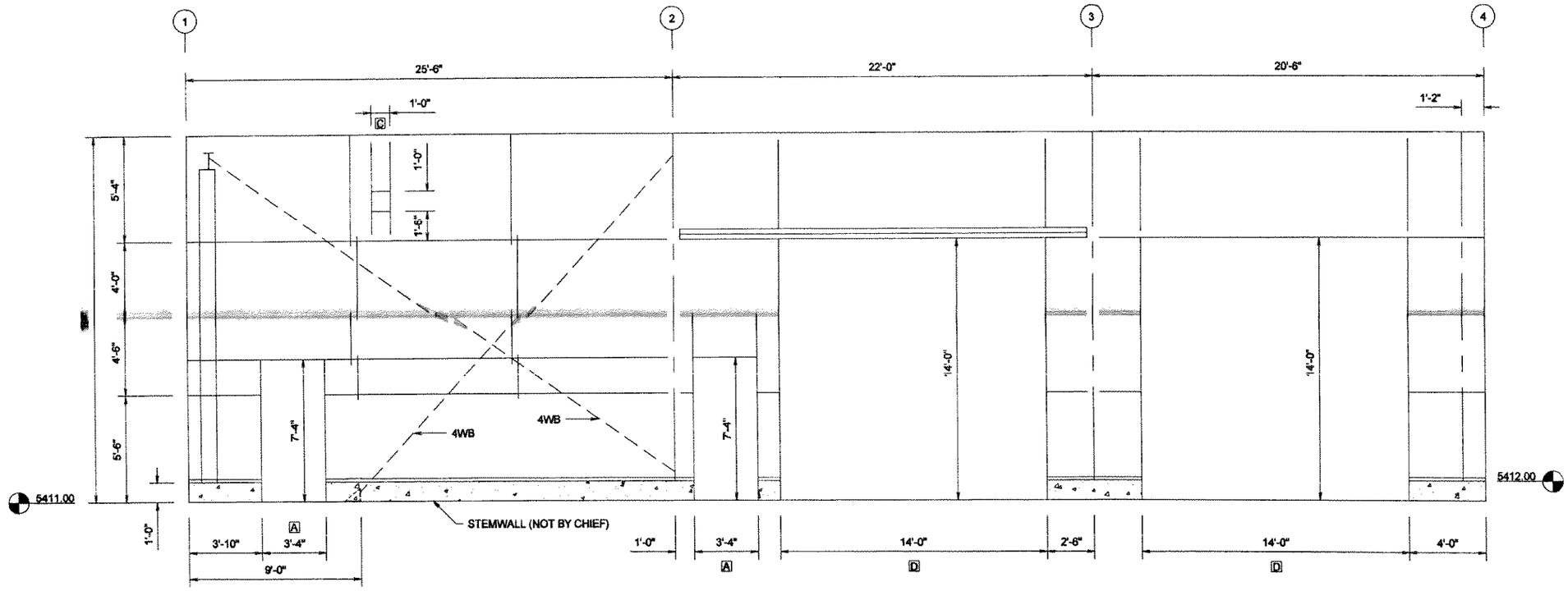
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED
WILLIAM C. WAGNER
42554
PROFESSIONAL ENGINEER

ROOF FRAMING DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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.	RF2
BLO		B3004219	RF2
26-JAN-12			



SIDEWALL FRAMING ELEVATION

COL. LINE A GIRT DEPTH: 8"

Sheeting
(Wall Panel Not by Chief Buildings)

The 16" wide 20 ga. Stucco Wall Panel with sealant provided by ***Custom Panel Systems*** 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.

MATERIAL CALLOUTS:

4WB denotes 1/2" cable bracing
All girt are 8" C-section, 12 gage mat'l. (unless otherwise noted)
Lip-Lip header is 8" C-section, 16 gage mat'l.
All jambs are 8" C-section, 14 gage mat'l.
All louver framing members are 8", 16 gage mat'l.

PROGRESS DRAWINGS

REVISIONS
4
3
2
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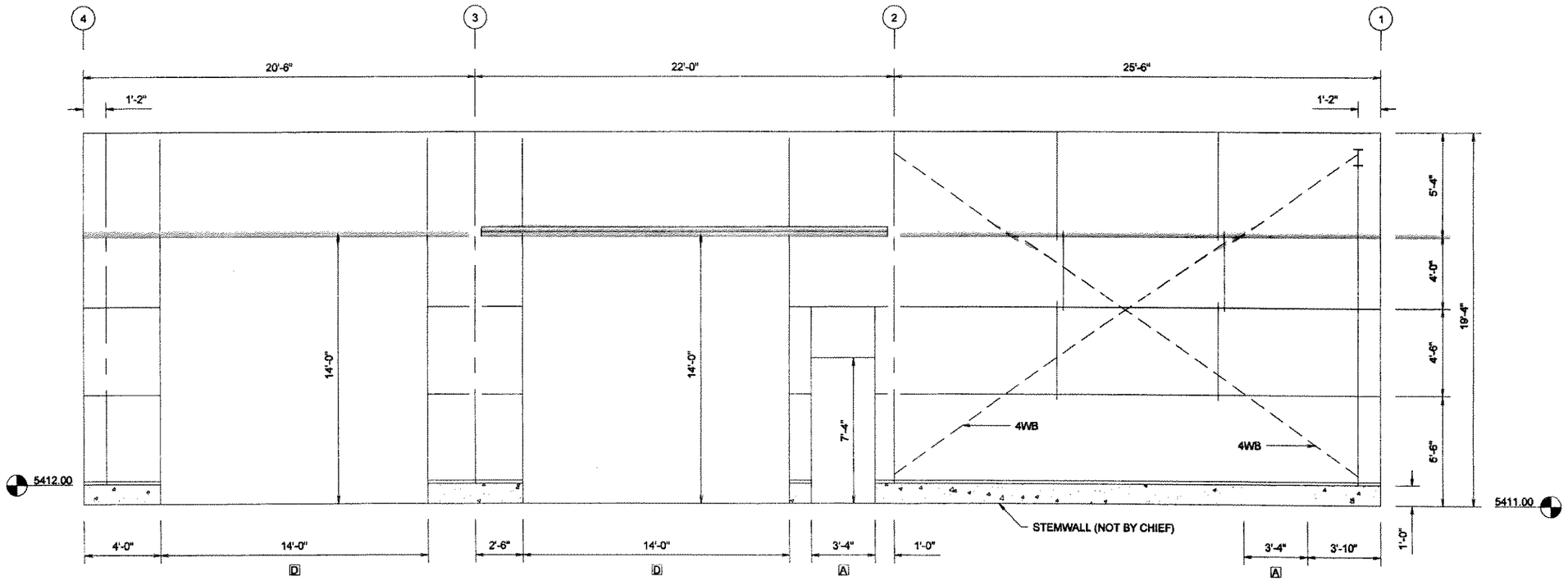
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED — TIMOTHY C. KELLY — 42854 — PROFESSIONAL ENGINEER

SIDEWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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
BLO		B3004219	S2
26-JAN-12			



SIDEWALL FRAMING ELEVATION

COL. LINE J GIRT DEPTH: 8"

MATERIAL CALLOUTS:

4WB denotes 1/2" cable bracing
All girt are 8" C-section, 12 gage mat'l. (unless otherwise noted)
Lip-Lip header is 8" C-section, 16 gage mat'l.
All jambs are 8" C-section, 14 gage mat'l.
All louver framing members are 8", 16 gage mat'l.

PROGRESS DRAWINGS

REVISIONS
4
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2
1

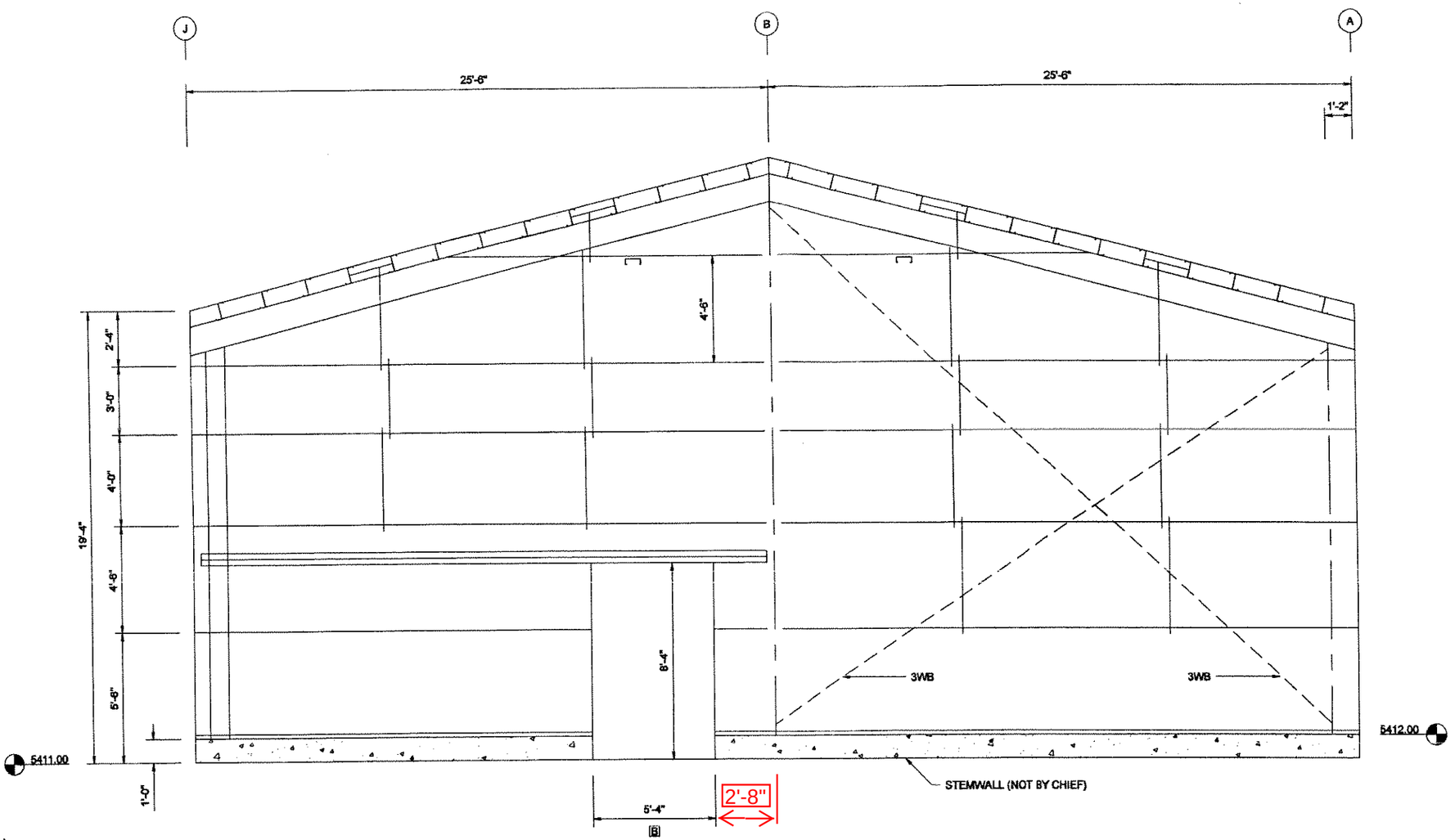
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED
42854
PROFESSIONAL ENGINEER

SIDEWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'X19'-4" BAYS VARY 3:12

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

DRAWN	CHECK	ORDER NO.	S2
BLO		B3004219	S2
26-JAN-12			



ENDWALL FRAMING ELEVATION
COL. LINE 1 GIRT DEPTH: 8"

Sheeting
(Wall Panel Not by Chief Buildings)

The 16" wide 20 ga. Stucco Wall Panel with sealant provided by ***Custom Panel Systems*** 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.

MATERIAL CALLOUTS:

3WB denotes 3/8" cable bracing
All girts are 8" C-section, 12 gage mat'l. (unless otherwise noted)
Lip-Lip header is 8" C-section, 16 gage mat'l.
All jambs are 8" C-section, 16 gage mat'l.
All endwall rafter beams are built-up sections, w/ 6" x 5/16" flanges, and 13 3/8" x 5/32" webs.
All corner posts and endwall posts are built-up sections, w/ 8" x 3/8" flanges, and 11 1/4" x 5/32" webs.

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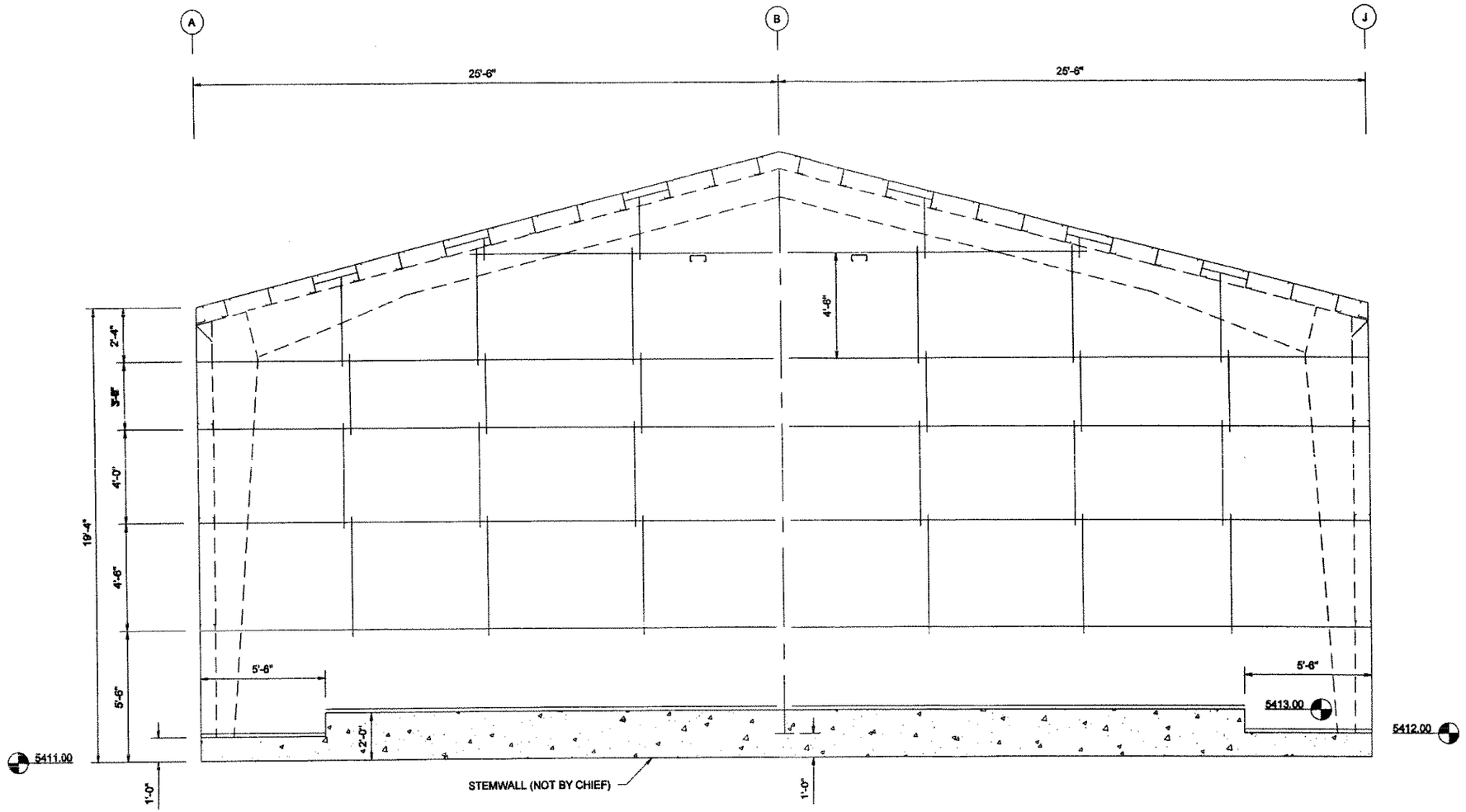
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED
42854
PROFESSIONAL ENGINEER

ENDWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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
BLO		B3004219	E2
26-JAN-12			



ENDWALL FRAMING ELEVATION

COL. LINE 4 GIRT DEPTH: 8"

MATERIAL CALLOUTS:

All girts are 8" C-section, 12 gage mat'l. (unless otherwise noted)
Endwall post is built-up section, w/ 8" x 3/8" flanges, and 11 1/4" x 5/32" webs.

PROGRESS DRAWINGS

REVISIONS
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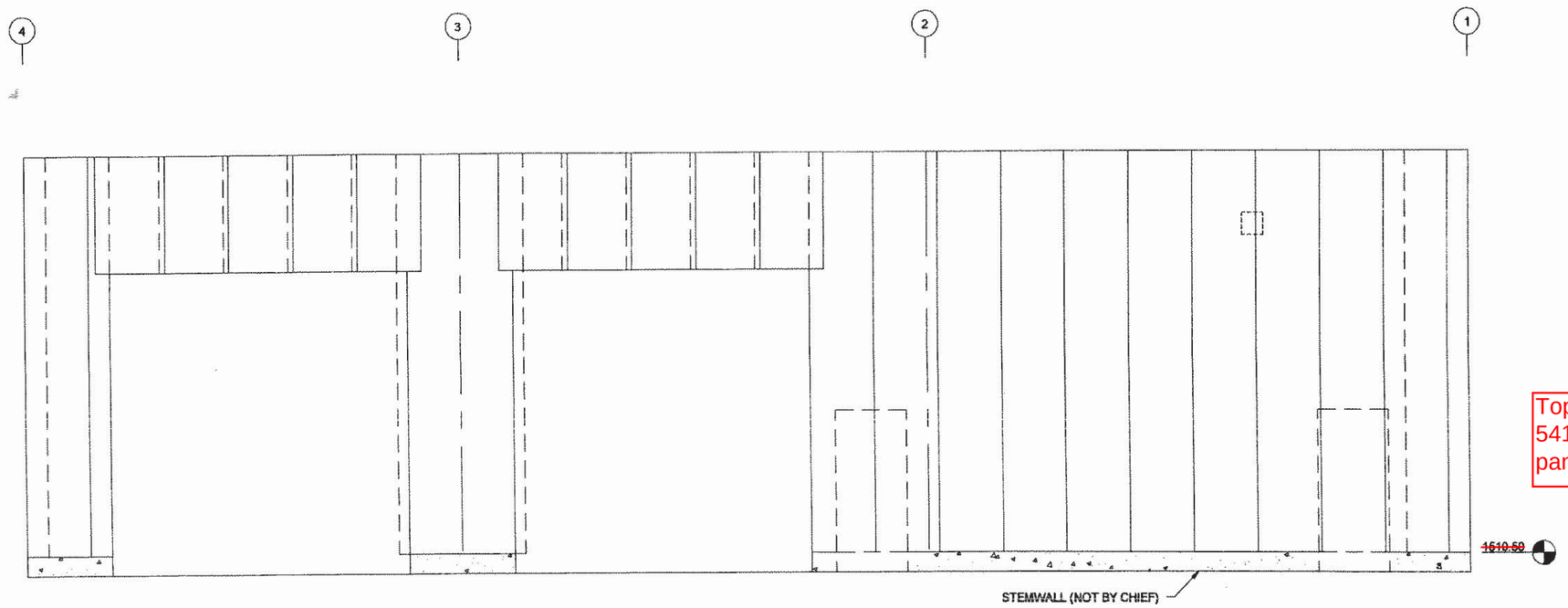
COLORADO LICENSED
42654
PROFESSIONAL ENGINEER

ENDWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'X19'-4" BAYS VARY 3:12

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

DRAWN	CHECK	ORDER NO.	E2
BLO		B3004219	E2
26-JAN-12			



Top of Conc. Wall @ 5412.00', bottom of wall panel @ 5411.88'

SIDEWALL LINER PANEL ELEVATION

COL. LINE A CS PANEL

MATERIAL CALLOUTS:

All Liner Panel is CS, 29 gage 80 ksi material
All trim is 26 gage, 33 ksi material

REFERENCE NOTES

1. FOR OPENING TRIMS, REFER TO GENERAL DETAILS.

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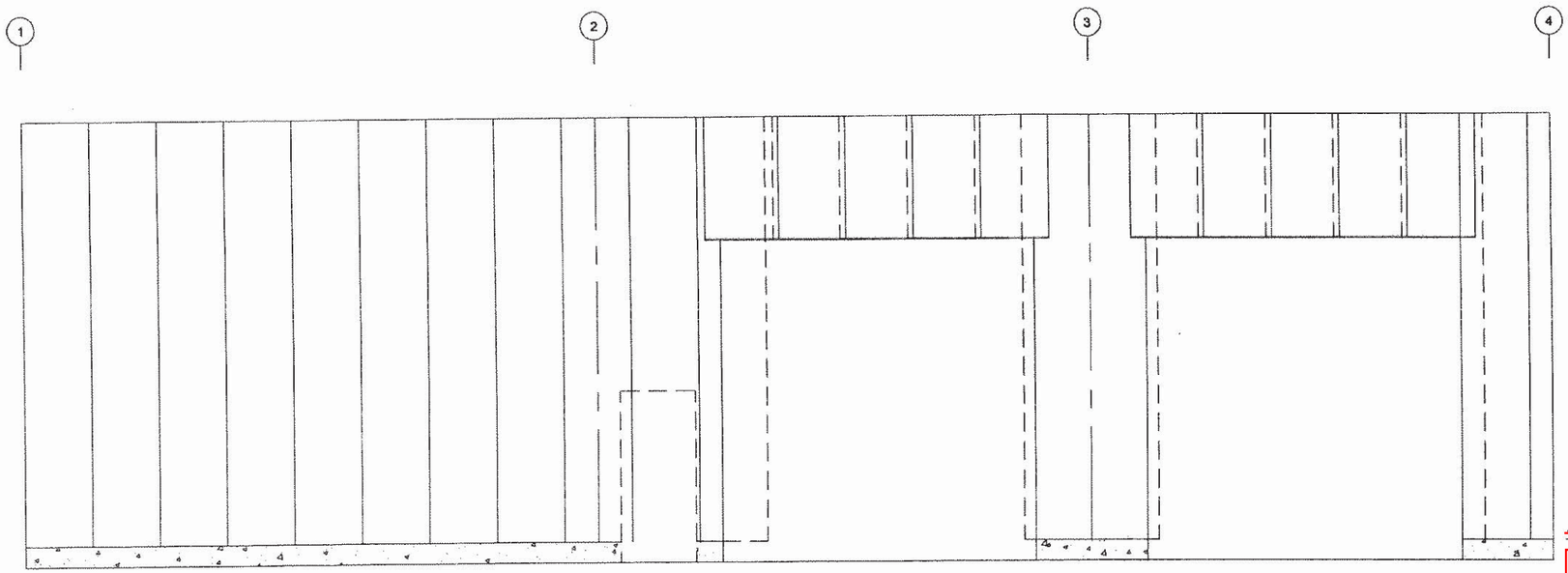
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED WILLIAM C. WALL PROFESSIONAL ENGINEER

LINER PANEL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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.	LP1
BLO		B3004219	LP4
30-JAN-12			



~~1510.50~~

Top of Conc. Wall @ 5412.00', bottom of wall panel @ 5411.88'

SIDEWALL LINER PANEL ELEVATION

COL. LINE J CS PANEL

MATERIAL CALLOUTS:

All Liner Panel is CS, 29 gage 80 ksi material
All trim is 26 gage, 33 ksi material

REFERENCE NOTES

1. FOR OPENING TRIMS, REFER TO GENERAL DETAILS.

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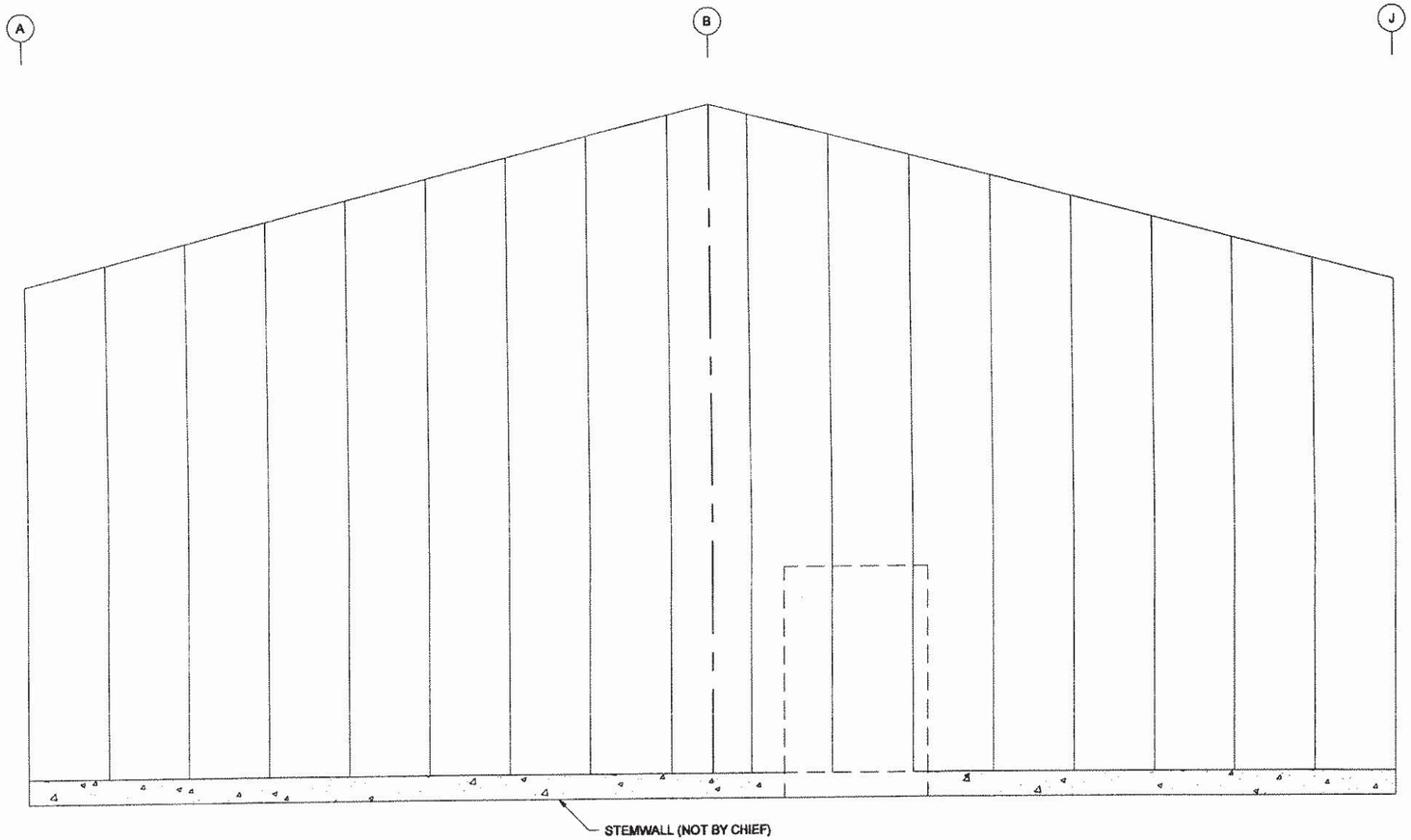
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED WILLIAM C. WALSH PROFESSIONAL ENGINEER

LINER PANEL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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.	
BLO		B3004219	LP2 / LP4
30-JAN-12			



5410.50

Top of Conc. Wall @ 5412.00', bottom of wall panel @ 5411.88'

ENDWALL LINER PANEL ELEVATION

COL. LINE 1 — CS PANEL

MATERIAL CALLOUTS:

All Liner Panel is CS, 29 gage 80 ksi material
All trim is 26 gage, 33 ksi material

REFERENCE NOTES

1. FOR OPENING TRIMS, REFER TO GENERAL DETAILS.

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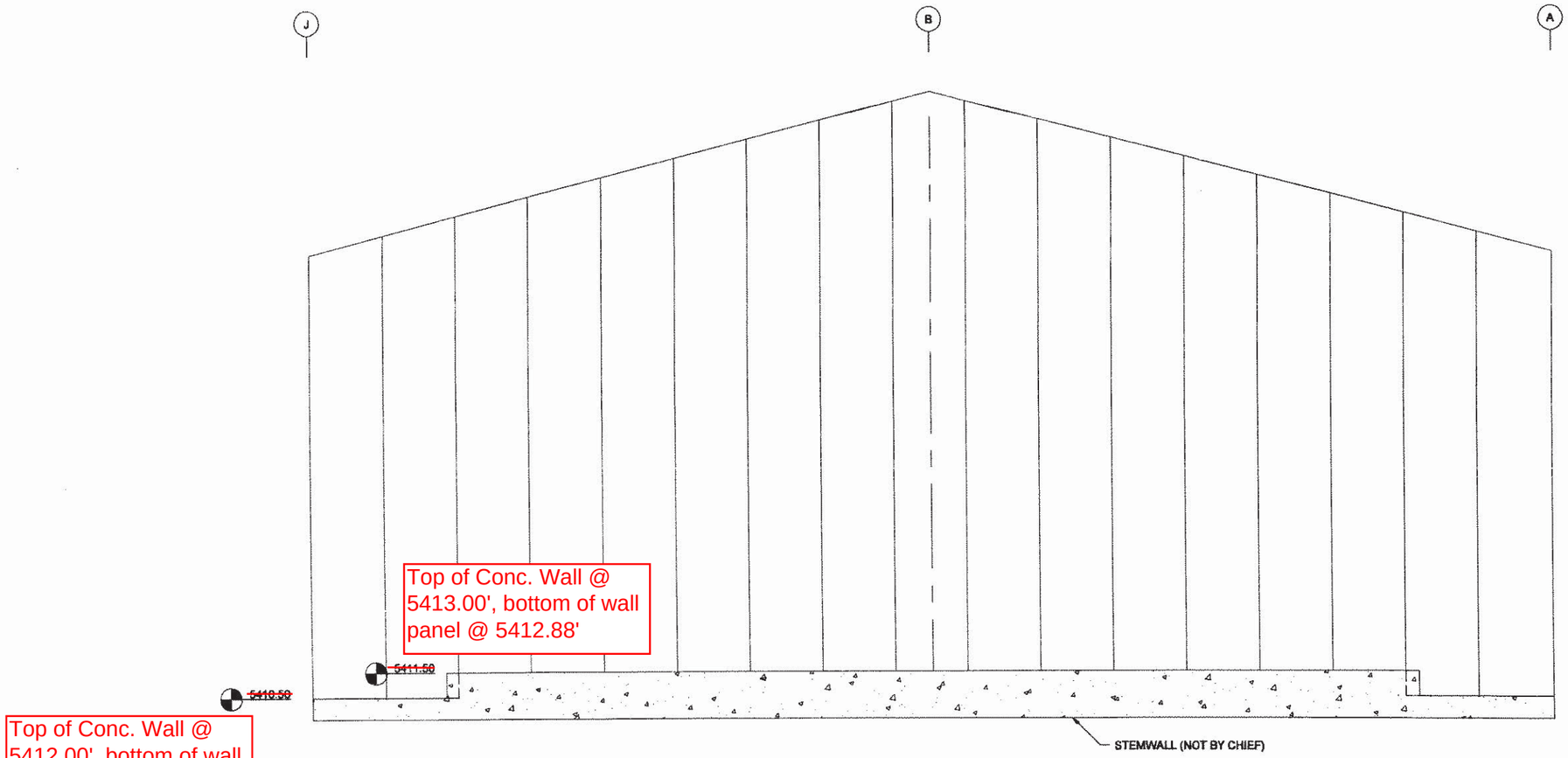
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED WILLIAM C. WEAVER 42954 PROFESSIONAL ENGINEER

LINER PANEL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'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.	LP3
BLO		B3004219	LP4
30-JAN-12			



ENDWALL LINER PANEL ELEVATION

COL. LINE 4 CS PANEL

MATERIAL CALLOUTS:

All Liner Panel is CS, 29 gage 80 ksi material
All trim is 26 gage, 33 ksi material

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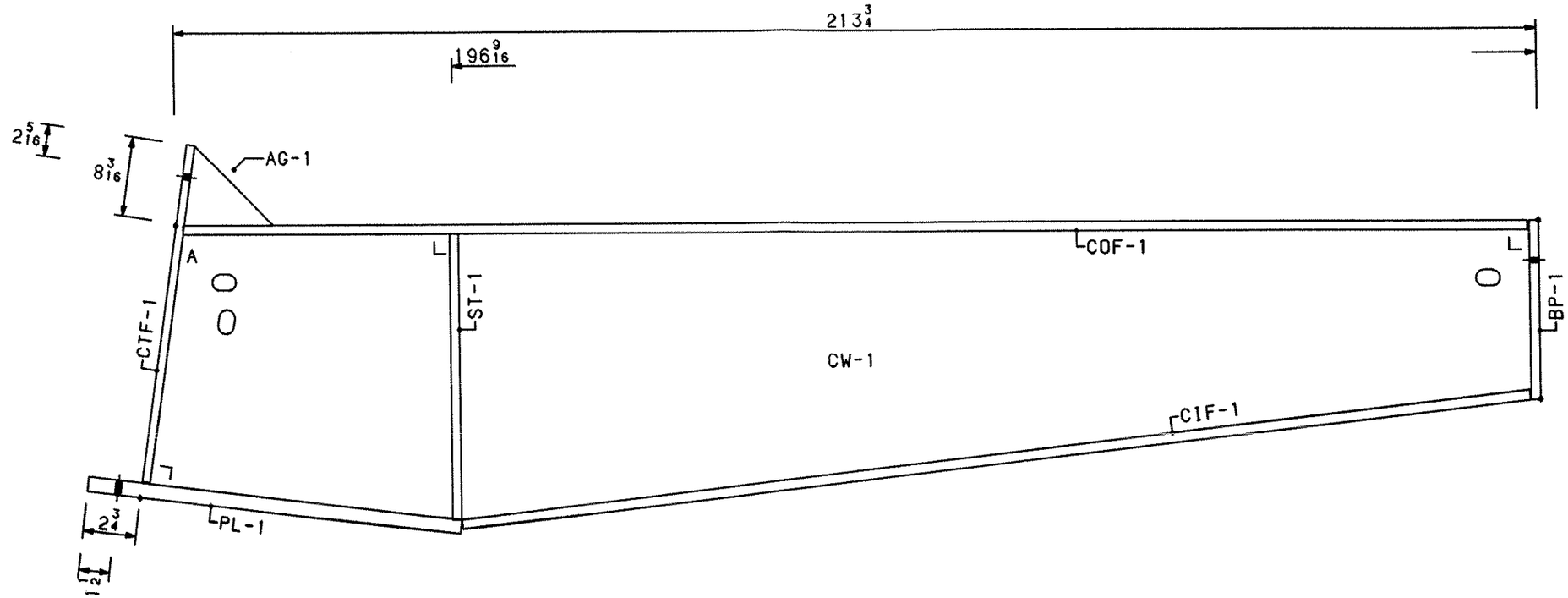
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COLORADO LICENSED — 42854 — PROFESSIONAL ENGINEER

LINER PANEL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNDTAIN, CO
RF 51'X68'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.	LP4
BLO		B3004219	LP4
30-JAN-12			



WS6A TDS
CLIP/WELD:
XC1A-H
TDS:
53.44
87.38
107.44
155.44
163.12
166.12
172.12
175.12

ROOF PITCH 3.00 :12
A 14.04

○ XWC-17 LOCATION
(6) REQUIRED

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	32.53	0.00		NONE
	PAT:	F6					
	TDS:	3.25					
AG-1	1	0.375	7.81	8.38	1.94		NONE
XC-1A	8						
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	22.13	24.88	
ST-1	2	0.312	3.75	28.94	0.00		TAIL
XWC-17	3						

B3004219A01

FLANGES & WEBS

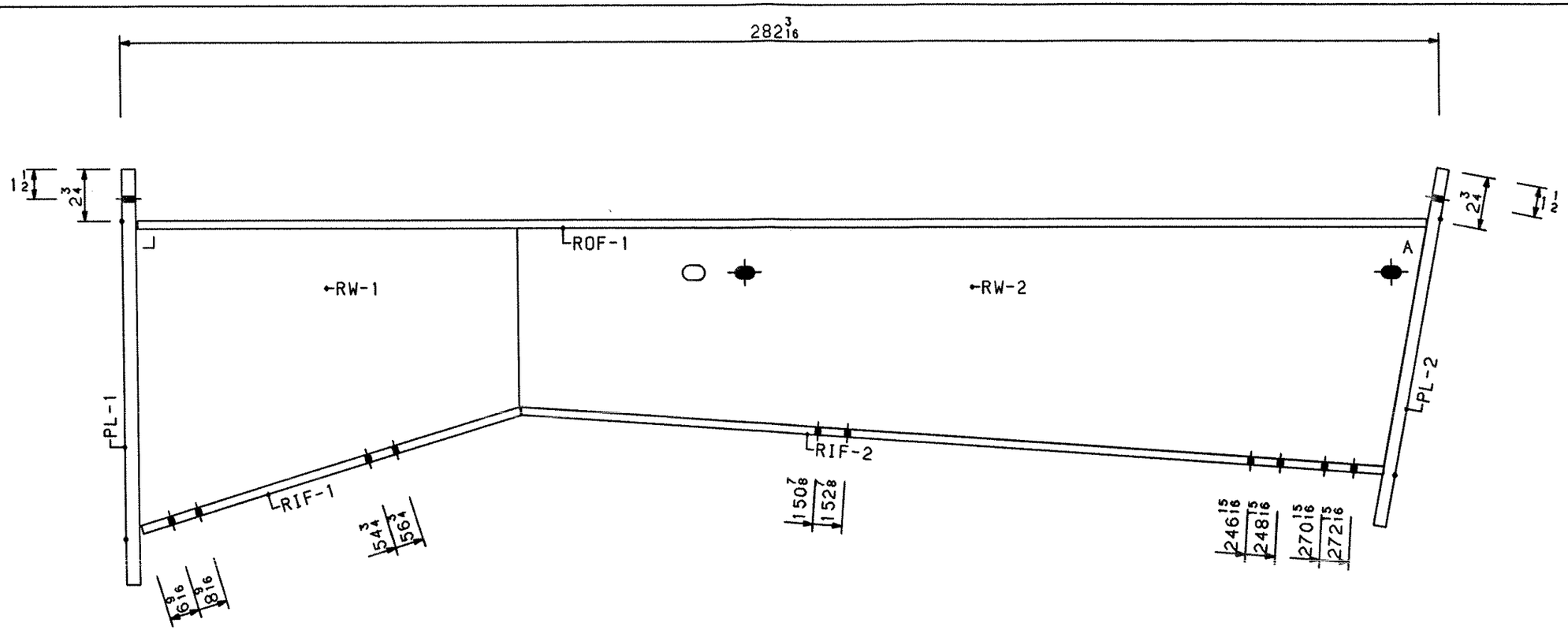
UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
COF-1	1	0.375	8.00	213.12	NONE		181.3
CIF-1	1	0.500	8.00	196.69	TAIL		223.1
CW-1	1	0.187	29.13	219.04	NONE		216.1

MARK NO.	ASS. QTY.
EC-1	2
UNIT WT. 724.	TOTAL WT.
UNIT FT. 18.	TOTAL FT.

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

HEATH STEEL WE

FAB			
		B3004219	1/6
26-JAN-12			



WS6E TDS CLIP/WELD: XC1A-S
TDS: 7.50, 31.50, 55.50, 79.50, 103.50, 151.50, 175.50, 199.50, 223.50, 247.50

WS6E TDS CLIP/WELD: XC1A-G
TDS: 127.50

WS6E TDS CLIP/WELD: XC1A-H
TDS: 271.50

ROOF PITCH 3.00 :12
A 14.04

○ XWC-17 LOCATION
(2) REQUIRED

B3004219A01

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	22.13	24.88	
PL-2	1	0.375	6.00	26.31	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.50	13.16	21.81	24.81	
XC-1A	12						
XRG5	2						
XWC-17	1						

FLANGES & WEBS

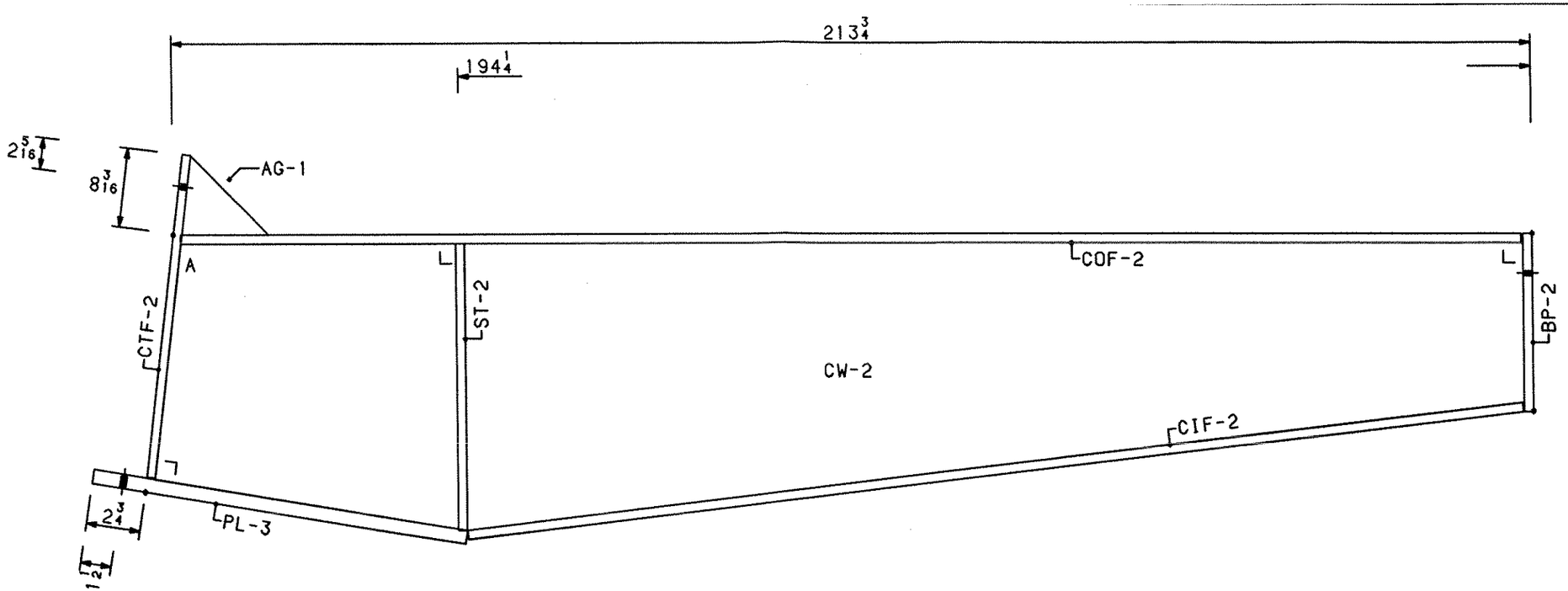
UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
ROF-1	1	0.250	6.00	281.00	NONE		119.5
RIF-1	1	0.375	6.00	84.31	LEAD		53.8
RIF-2	1	0.250	6.00	192.19	NONE		81.8
RW-1	1	0.187	23.37	84.017	NONE		82.3
RW-2	1	0.156	19.512	197.06	NONE		143.0

MARK NO.	ASS. QTY.
RB-1	2
UNIT WT. 562.	TOTAL WT.
UNIT FT. 24.	TOTAL FT.

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

HEATH STEEL WE

FAB			
		B3004219	2
26-JAN-12			



WS6A TDS
CLIP/WELD:
XC1A-H
TDS:
53.44
107.44
155.44

ROOF PITCH 3.00 :12
A 14.04

B3004219A02

MISC. PLATE

UNIT MARK	UNIT QUANTITY	THCKNESS	WIDTH	LENGTH	CUT	PLF	BEVEL
BP-2	1	0.375	10.00	10.00	0.00		NONE
	DIA:	0.9375	GAGE:	4.00			
	TDS:	3.00	7.00				
CTF-2	1	0.250	10.00	27.25	0.00		NONE
	PAT:	F6					
	TDS:	3.25					
AG-1	1	0.375	7.81	8.38	1.94		NONE
XC-1A	3						
PL-3	1	0.500	10.00	28.00	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.25	7.00	23.25	26.00	
ST-2	2	0.250	4.75	24.13	0.00		NONE

FLANGES & WEBS

UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
COF-2	1	0.375	10.00	213.12	NONE		226.7
CIF-2	1	0.375	10.00	194.00	TAIL		206.3
CW-2	1	0.187	24.29	217.76	NONE		187.3

MARK NO.	ASS. QTY.
EC-2	2
UNIT WT. 714.	TOTAL WT.
UNIT FT. 18.	TOTAL FT.

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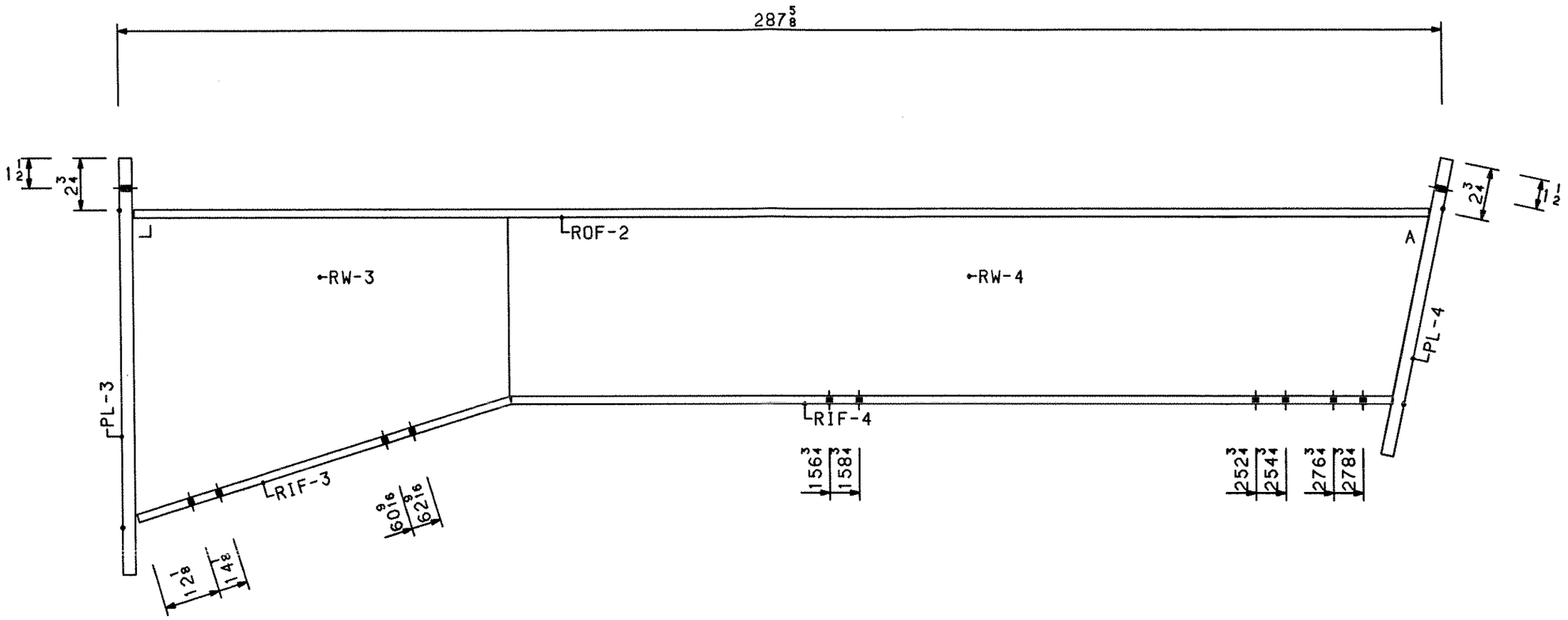
HEATH STEEL WE

FAB		B3004219	3
26-JAN-12			



WS6E TDS
CLIP/WELD:
XC1A-S
TDS:
13.06
37.06
61.06
85.06
109.06
157.06
181.06
205.06
229.06
253.06

WS6E TDS
CLIP/WELD:
XC1A-G
TDS:
133.06

WS6E TDS
CLIP/WELD:
XC1A-H
TDS:
277.06

ROOF PITCH 3.00 :12
A 14.04

MISC. PLATE

UNIT MARK	UNIT QUANTITY	THCKNESS	WIDTH	LENGTH	CUT	PLF	BEVEL
PL-3	1	0.500	10.00	28.00	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.25	7.00	23.25	26.00	
PL-4	1	0.375	6.00	20.19	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.50	15.69	18.69		
XC-1A	12						
XRG5	2						

B3004219A02

FLANGES & WEBS

UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
ROF-2	1	0.250	6.00	286.50	NONE		121.9
RIF-3	1	0.250	6.00	84.63	NONE		36.0
RIF-4	1	0.250	6.00	199.12	NONE		84.7
RW-3	1	0.187	24.50	84.00	NONE		80.5
RW-4	1	0.156	13.50	202.59	NONE		117.7

MARK NO.	ASS. QTY.
RB-2	2
UNIT WT. 515.	TOTAL WT.
UNIT FT. 24.	TOTAL FT.

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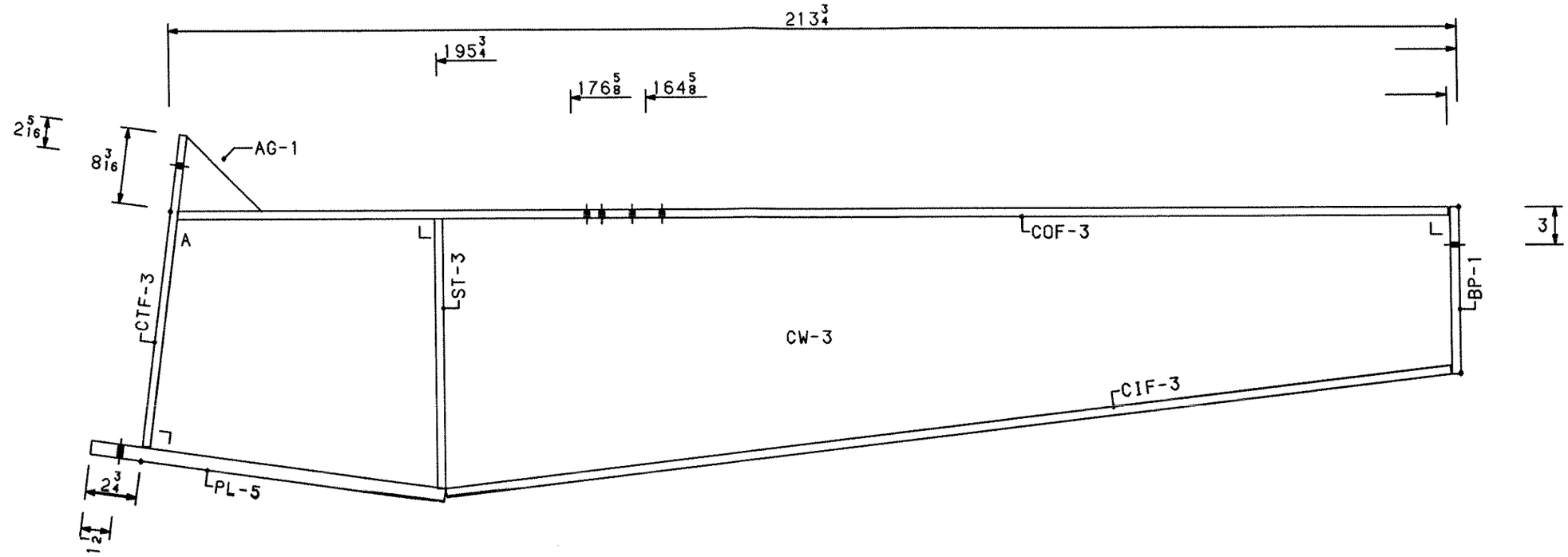
HEATH STEEL WE

FAB		B3004219	4
26-JAN-12			



WS6A TDS
CLIP/WELD:
XC1A-H
TDS:
53.44
107.44
155.44

ROOF PITCH 3.00 :12
A 14.04

B3004219A03

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-3	1	0.250	8.00	29.57	0.00		NONE
	PAT:	F6					
	TDS:	3.25					
AG-1	1	0.375	7.81	8.38	1.94		NONE
XC-1A	3						
PL-5	1	0.625	8.00	27.00	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.25	7.00	22.25	25.00	
ST-3	2	0.250	3.75	26.19	0.00		NONE

FLANGES & WEBS

UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
COF-3	1	0.312	8.00	213.12	NONE		151.1
CIF-3	1	0.375	8.00	195.69	TAIL		166.5
CW-3	1	0.187	26.31	219.32	NONE		200.0

MARK NO.	ASS. QTY.
EC-3	2
UNIT WT. 604.	TOTAL WT.
UNIT FT. 18.	TOTAL FT.

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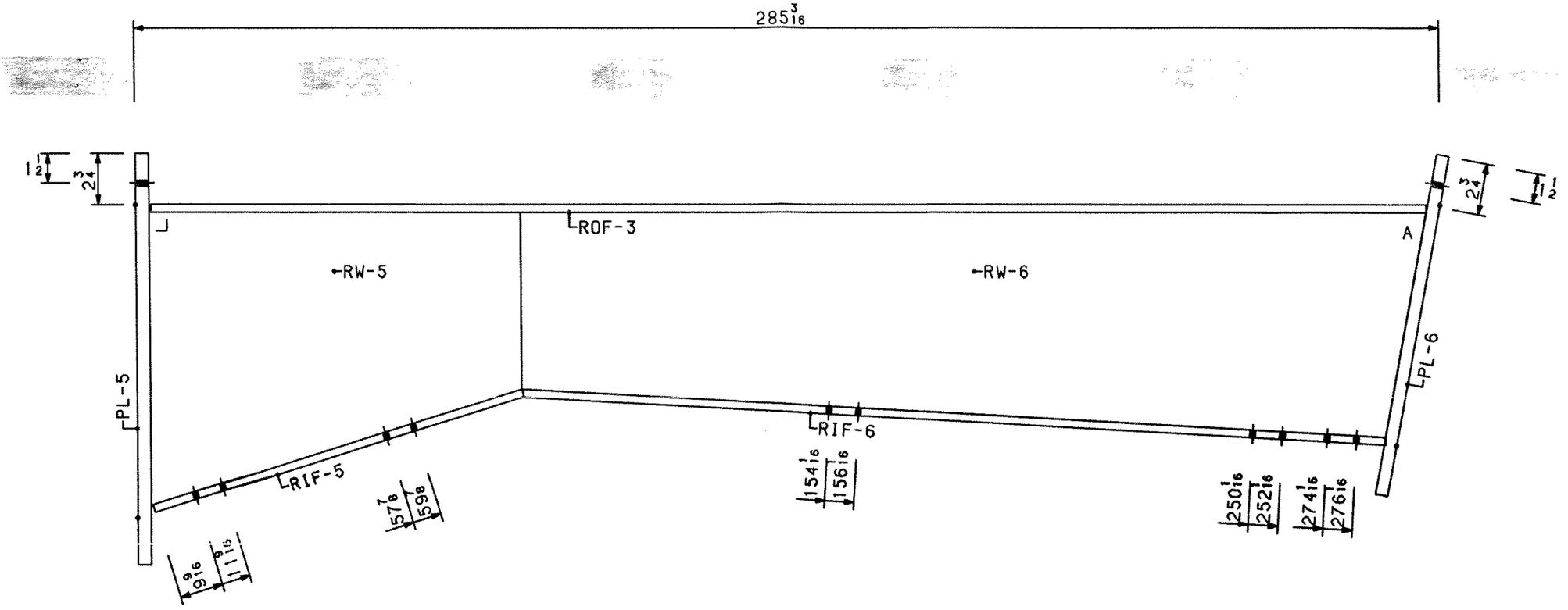
HEATH STEEL WE

FAB			
		B3004219	5
26-JAN-12			



WS6E TDS
CLIP/WELD:
XC1A-S
TDS:
10.50
34.50
58.50
82.50
106.50
154.50
178.50
202.50
226.50
250.50

WS6E TDS
CLIP/WELD:
XC1A-G
TDS:
130.50

WS6E TDS
CLIP/WELD:
XC1A-H
TDS:
274.50

ROOF PITCH 3.00 :12
A 14.04

MISC. PLATE

UNIT MARK	UNIT QUANTITY	THCKNESS	WIDTH	LENGTH	CUT	PLF	BEVEL
PL-5	1	0.625	8.00	27.00	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.25	7.00	22.25	25.00	
PL-6	1	0.375	6.00	24.25	0.00		NONE
	DIA:	0.6875	GAGE:	3.50			
	TDS:	1.50	4.50	19.75	22.75		
XC-1A	12						
XRG5	2						

B3004219A03

FLANGES & WEBS

UNIT MARK	UNIT QUANTITY	THICK	WIDTH	LENGTH	BEVEL	PLF	WEIGHT
ROF-3	1	0.250	6.00	283.94	NONE		120.8
RIF-5	1	0.250	6.00	84.50	NONE		35.9
RIF-6	1	0.250	6.00	195.62	NONE		83.2
RW-5	1	0.187	23.50	84.00	NONE		78.4
RW-6	1	0.156	17.50	200.03	NONE		128.3

MARK NO.	ASS. QTY.
RB-3	2
UNIT WT. 527.	TOTAL WT.
UNIT FT. 24.	TOTAL FT.

CHIEF
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GRAND ISLAND, NE 68802-2078

HEATH STEEL WE

FAB

B3004219 6/6

26-JAN-12

Design Calculations For:

Weaver Construction M

Fountain, CO

Builder: Heath Steel

B3004219

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

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. : B3004219 By : WCW Date : 1/25/2012 Page : 1/17

Building	:	*A*
Type	:	*RF*
Width	:	*51'-0"*
Length	:	*68'-0"*
Eave Height	:	*19'-4"*
Bays	:	*25'-6",22'-0",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) - Pikes Peak Regional Building Code 2011 Edition
Occupancy Category - III

MBMA : *Substantial Hazard Occupancy*

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

Collateral load *3.00 psf*

Unbalanced Loading & Drifts (Pg) : 30 psf
Exposure Factor (C_e) : *1.0*
Thermal Factor (C_t) : *1.0*
Importance Factor (I_s) : 1.10
Balanced Snow Loading (Pf) : 30 psf

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)*

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

Maximum Base Shear : *4994.0 lbs*

Roof Top Units : *N/A*

Mezzanine Loads : *N/A*

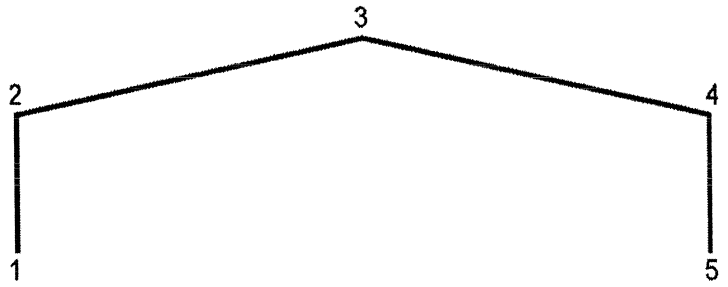
Cranes : *N/A*

Additional Loads :
Two - 200 lb. Undrhng heaters
Ten - 524 lb. Cable Tray Pt. Loads
Eight - 655 lb. Cable Tray Pt. Loads

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

CHIEF Chief Buildings	Design Calculations Frames Notations	Job No.: B3004219 By : WCW Date : 1/23/2012 Page : 2

Frame Joint Notation Used in the Computer Calculation:



Building : "A"
Frame at Lines: 2,3,4

CHIEF

Snow Loads

IBC 2006 & IBC 2009 (ASCE 7-05)

Gable / Hip Roof - Balanced & Unbalanced Snow Loading

Job No.: B3004219
By : WCW
Date : 1/23/2012 Page : 3 /

Building : A
Snow Load Case : I SW - C - is the Leeward Side

Roof width = 51.00 ft
Roof length = 68.00 ft
Single slope roof (Y or N) : N
Leeward side roof slope = 3.000 : 12 ⟹ 14.036 Deg
Front roof edge to ridge distance = 25.50 ft
Rear roof edge to ridge distance = 25.50 ft
Leeward side width - W = 25.50 ft

Roof Live Load - L_r = 20.00 psf
Ground Snow Load - P_g = 30.00 psf
Specified Uniform Roof Snow = 30.00 psf
Importance Factor - I_s = 1.10
Exposure Factor - C_e = 1.00
Thermal Factor - C_t = 1.00
Slope Factor - C_s = 1.00
Unobstructed & Slippery Surface (Y or N): Y
Ventilated Roof (Y or N) : N
Insulation R value (F.h.ft^2/Btu) = < 20

Leeward side balanced snow load

if $P_g \le 20.0$ psf	Minimum $p_f = p_g \times I$
if $P_g > 20.0$ psf	Minimum $p_f = 20. \times I$

Leeward side - roof slope θ = 14.036 Deg
W / 50 = 0.51
(70/W + 0.5) = 3.25
* The larger of (1/2 : 12) 2.386 deg. or (70/W + 0.5) = 3.245 < = Roof Slope

Therefore, the roof is NOT classified as low-slope and :
- Minimum roof snow load does NOT apply
- The unbalanced snow load must be considered

Specified uniform roof snow = 30.00 psf
Minimum roof snow p_f = N/A

p_f = $0.7\, C_e C_t I_s P_g$ = 23.10 psf
p_s = $C_s P_f$ = 23.10 psf

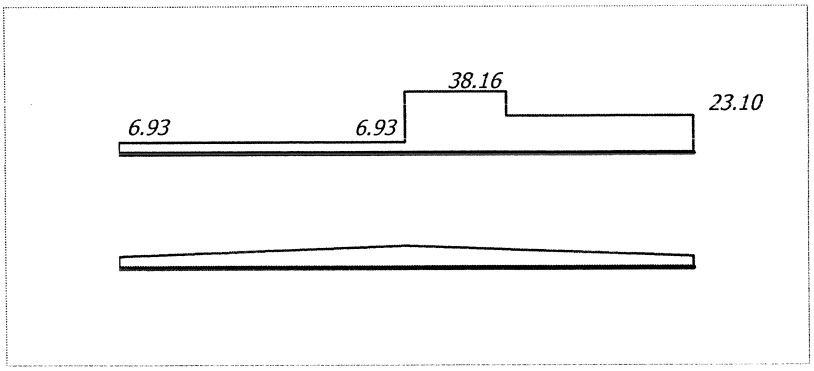
Roof balanced snow load (p_s) = 23.10
** Rain-on-snow surcharge load = 0.00
Special (local code) rain-on-snow surcharge load = 0.00
} = 23.10 psf

** Since ground snow >20 psf, rain-on-snow surcharge load need NOT be considered

Use Uniform Roof Snow Load = 30.00 psf

Leeward side unbalanced snow load

S = 12/3.000 = 4.000
Windward width (W) = (l_u) = 25.50 ft
γ = 0.13 p_g + 14 = 17.90 pcf
Leeward balanced load - p_s = 23.10 psf
$h_d = 0.43\sqrt[3]{l_u}\sqrt[4]{p_g + 10} - 1.5$ = 1.68 ft



Windward uniform load = 0.3 p_s = 6.93 psf
Leeward Surcharge load = $h_d \gamma / \sqrt{S}$ = 15.06 psf
Leeward total surcharge & balanced snow = 23.10 + 15.06 = 38.16 psf
Leeward surcharge length from Ridge $\frac{8}{3} h_d \sqrt{S}$ = 8.98 ft

ENGINEER : BW

BUILDING DATA
BLDG CODE : IBC2009 EXP C
RF 51 X 68 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
ADDITIONAL SEISMIC WT : 3.10 PSF
ADDITIONAL DEAD LOAD : 0.50 PSF

Calculated DL's.

SW A WEIGHT = 4.5 PSF EW B WEIGHT = 9.5 PSF
SW C WEIGHT = 4.5 PSF EW D WEIGHT = 9.5 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 = 71483. Lbs. Longitudinal Cs= 0.082 Base Shear = 5877. Lbs.

**** LONGITUDINAL DIRECTION ****

TOTAL ROOF WEIGHT = 38797. LBS
ENDWALL B WEIGHT = 5213. LBS
ENDWALL D WEIGHT = 5213. LBS
WT FOR ROOF DIAPHRAGM = 49224. LBS

DIAPHRAGM SHEAR=Vd=Cs*W = 4047. LBS
EQUIVILENT ASD DIAPHRAGM SHEAR LOAD = 2833. LBS
WIND DIAPHRAGM SHEAR = 10714. LBS
W > 0.7*E THEREFORE WIND CONTROLS ROOF BRACING

WT FOR SW A BRACING = 27570. LBS
WT FOR SW C BRACING = 27570. LBS
SEISMIC TO SW A = Cs*W= 2267. LBS
SEISMIC TO SW C = Cs*W= 2267. LBS
WIND SHEAR SW (A) = 5357. LBS
WIND SHEAR SW (C) = 5357. 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 =	570.5 PLF
SIDEWALL A WEIGHT =	41.3 PLF
SIDEWALL C WEIGHT =	41.3 PLF
WT FOR INTERIOR FRAMES =	653.0 PLF
SEISMIC SHEAR TO FRAMES = Cs*W =	53.7 PLF
50 YEAR LATERAL WIND SHEAR =	187.6 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 = 37.6 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 = 13920.7 LBS.
LATERAL WEIGHT EW D = 12288.1 LBS.

X-BRACING DESIGN AT ENDWALL B

NUMERICAL COEFFICIENT, R =3.000
FOR EW B: Cs = 0.082
SEISMIC SHEAR EW (B) = V = Cs*W = 1144.6 LBS.
EQUIV. FORCE @ EW (B) = 0.7*V = 801.2 LBS.
WIND FORCE AT EW (B) = 3462.4 LBS.
WIND CONTROLS ENDWALL B BRACING
EQUIV. FORCE PER X = 3462.4 LBS.
BRACING IN SPACE 1
REACTIONS: H= 3.5 K V= 3.4 K
USE 0.375 DIAMETER CABLE

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 = 1010.4 LBS.
EQUIV. FORCE @ EW (D) = 0.7*V = 707.2 LBS.
WIND FORCE AT EW (D) = 2993.4 LBS.
WIND CONTROLS ENDWALL D OMF DESIGN

Outside flange	Inside Flange	Depth	Web thickness	
8.0 x 0.375	8.0 x 0.375	12.00	0.156	13th ed. AISC-ASD

Area	Ix	Iy	Sxo	Sxi	Sy	rx	ry	rTo	rTi
7.76	221.32	32.00	36.89	36.89	8.00	5.34	2.03	2.25	2.25

FLANGE HOLES (in)		Fu	Cw	J	Zx
O.S. Dia.	I.S. Dia.	KSI	in^6	in^4	in^3
0.5625	0.5625	70.0	1081.246	0.2872	39.82

Lx	Ly	Lbo	Lbi	Kx	Ky	Cb	Cmx	Cmy	Fy	E
18.00	18.00	18.00	18.00	1.00	1.00	1.00	1.00	1.00	55.0	29000.

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
.6DL + WLL	1.0	13.5	0.0	No	0.975	0.955

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
0.13	4.39	4.39	0.00	13.15	22.56	22.56	44.05

Pr / Pc = 0.010
Mrx / Mcx = 0.195
Mry / Mcy = 0.000

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.005 + 0.195 + 0.000 = 0.200

Shear = 3.5 Kips -- Shear Stress = 1.87 ksi -- Allow Shear Stress = 15.17 ksi

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
.6DL + WLE	1.0	0.0	27.0	No	0.975	0.955

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
0.13	0.00	0.00	40.50	13.15	22.56	22.56	44.05

Pr / Pc = 0.010
Mrx / Mcx = 0.000
Mry / Mcy = 0.927

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.005 + 0.000 + 0.927 = 0.932

Shear = 3.5 Kips -- Shear Stress = 1.87 ksi -- Allow Shear Stress = 15.17 ksi

Outside flange	Inside Flange	Depth	Web thickness	
8.0 x 0.375	8.0 x 0.375	12.00	0.156	13th ed. AISC-ASD

Area	Ix	Iy	Sxo	Sxi	Sy	rx	ry	rTo	rTi
7.76	221.32	32.00	36.89	36.89	8.00	5.34	2.03	2.25	2.25

FLANGE HOLES (in)		Fu	Cw	J	Zx
O.S. Dia.	I.S. Dia.	KSI	in^6	in^4	in^3
0.5625	0.5625	70.0	1081.246	0.2872	39.82

Lx	Ly	Lbo	Lbi	Kx	Ky	Cb	Cmx	Cmy	Fy	E
18.00	18.00	18.00	18.00	1.00	1.00	1.00	1.00	1.00	55.0	29000.

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
DL + WLL	4.0	10.5	0.0	No	0.975	0.955

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
0.52	3.42	3.42	0.00	13.15	22.56	22.56	44.05

Pr / Pc = 0.039
Mrx / Mcx = 0.152
Mry / Mcy = 0.000

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.020 + 0.152 + 0.000 = 0.172

Shear = 3.5 Kips -- Shear Stress = 1.87 ksi -- Allow Shear Stress = 15.17 ksi

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
DL + WLE	4.0	0.0	20.4	No	0.975	0.955

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
0.52	0.00	0.00	30.60	13.15	22.56	22.56	44.05

Pr / Pc = 0.039
Mrx / Mcx = 0.000
Mry / Mcy = 0.718

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.020 + 0.000 + 0.718 = 0.738

Shear = 3.5 Kips -- Shear Stress = 1.87 ksi -- Allow Shear Stress = 15.17 ksi

Outside flange	Inside Flange	Depth	Web thickness	
8.0 x 0.375	8.0 x 0.375	12.00	0.156	13th ed. AISC-ASD

Area	Ix	Iy	Sxo	Sxi	Sy	rx	ry	rTo	rTi
7.76	221.32	32.00	36.89	36.89	8.00	5.34	2.03	2.25	2.25

FLANGE HOLES (in)		Fu	Cw	J	Zx
O.S. Dia.	I.S. Dia.	KSI	in^6	in^4	in^3
0.5625	0.5625	70.0	1081.246	0.2872	39.82

Lx	Ly	Lbo	Lbi	Kx	Ky	Cb	Cmx	Cmy	Fy	E
18.00	18.00	18.00	18.00	1.00	1.00	1.00	1.00	1.00	55.0	29000.

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
.6DL + WLL	3.3	13.5	0.0	No	0.975	0.955

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
0.43	4.39	4.39	0.00	13.15	22.56	22.56	44.05

Pr / Pc = 0.032
Mrx / Mcx = 0.195
Mry / Mcy = 0.000

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.016 + 0.195 + 0.000 = 0.212

Shear = 3.5 Kips -- Shear Stress = 1.87 ksi -- Allow Shear Stress = 15.17 ksi

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
.6DL + WLE	3.3	0.0	27.0	No	0.975	0.955

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
0.43	0.00	0.00	40.50	13.15	22.56	22.56	44.05

Pr / Pc = 0.032
Mrx / Mcx = 0.000
Mry / Mcy = 0.945

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.016 + 0.000 + 0.945 = 0.961

Shear = 3.5 Kips -- Shear Stress = 1.87 ksi -- Allow Shear Stress = 15.17 ksi

Outside flange	Inside Flange	Depth	Web thickness	
8.0 x 0.375	8.0 x 0.375	12.00	0.156	13th ed. AISC-ASD

Area	Ix	Iy	Sxo	Sxi	Sy	rx	ry	rTo	rTi
7.76	221.32	32.00	36.89	36.89	8.00	5.34	2.03	2.25	2.25

FLANGE HOLES (in)		Fu	Cw	J	Zx
O.S. Dia.	I.S. Dia.	KSI	in^6	in^4	in^3
0.5625	0.5625	70.0	1081.246	0.2872	39.82

Lx	Ly	Lbo	Lbi	Kx	Ky	Cb	Cmx	Cmy	Fy	E
18.00	18.00	18.00	18.00	1.00	1.00	1.00	1.00	1.00	55.0	29000.

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
DL + WLL	8.3	10.5	0.0	No	0.975	0.955

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
1.07	3.42	3.42	0.00	13.15	22.56	22.56	44.05

Pr / Pc = 0.081
Mrx / Mcx = 0.153
Mry / Mcy = 0.000

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.041 + 0.153 + 0.000 = 0.194

Shear = 3.5 Kips -- Shear Stress = 1.87 ksi -- Allow Shear Stress = 15.17 ksi

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
DL + WLE	8.3	0.0	20.4	No	0.975	0.955

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
1.07	0.00	0.00	30.60	13.15	22.56	22.56	44.05

Pr / Pc = 0.081
Mrx / Mcx = 0.000
Mry / Mcy = 0.745

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.041 + 0.000 + 0.745 = 0.786

Shear = 3.5 Kips -- Shear Stress = 1.87 ksi -- Allow Shear Stress = 15.17 ksi

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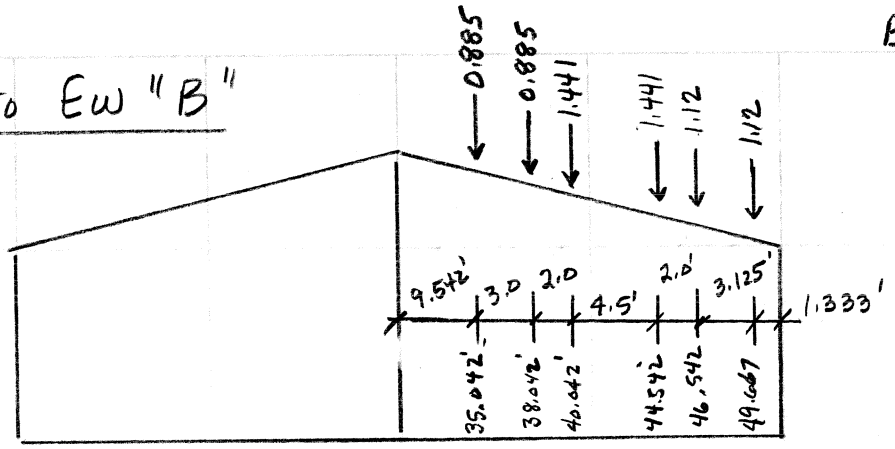
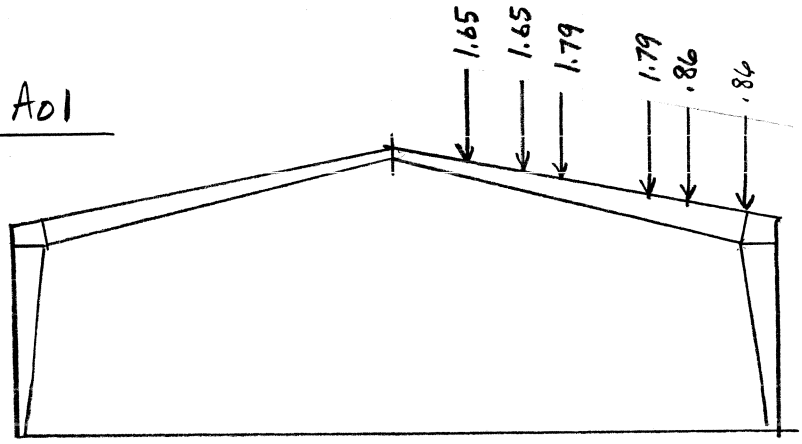
B3004219

Xtra Loads to Ew "B"



Xtra Loads to A01



B300421 9

CHECK CP @ 1/A

$P = 6^k$ $W_y = 331$ $W_x = 331$ $l_x = 18'$

W12/80F/WA

.6D + W

$P = 0.6^k$
$M_x = 13.5^{k-1}$

$P = 0.6^k$
$M_y = 27^{k-1}$

D + 0.75 (LL or SL) + .75WL

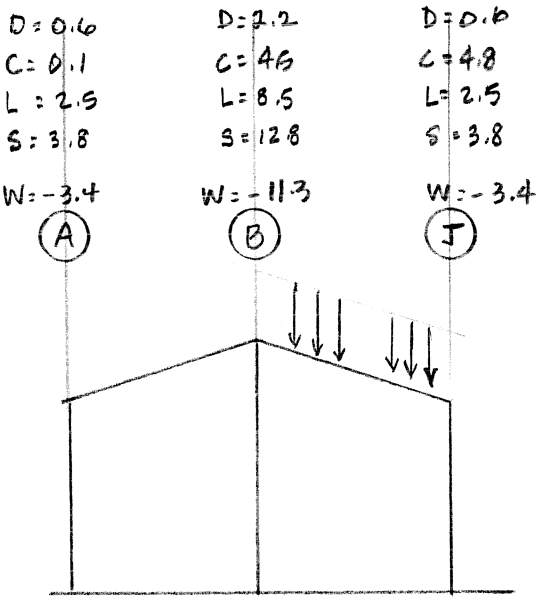
$P = 4.0^k$
$M_x = (.75(13.5) = 10.2^{k-1}$

$P = 4$
$M_y = (.75(13.5 \times 2)) = 20.4^{k-1}$

D+(LL or SL)

$P = 6^k$

- Unsupported



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CHECK CP@ I/J

W12/80F/WA

.6D + W

P = 3.3^K
Mx = 13.5^K-I

P = 3.3^K
My = 27^K-I

D + .75 (LL or SL) + .75WL

P = 8.3^K
Mx = 10.2^K-I

P = 8.3^K
My = 20.4^K-I

D + (LL or SL)

P = 10.2^K

- Un Supported

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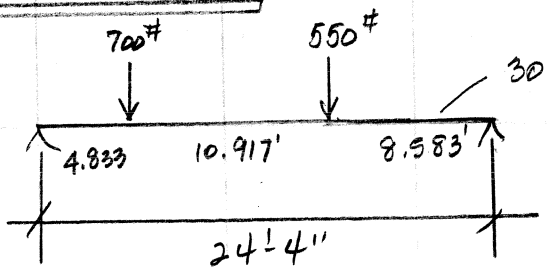
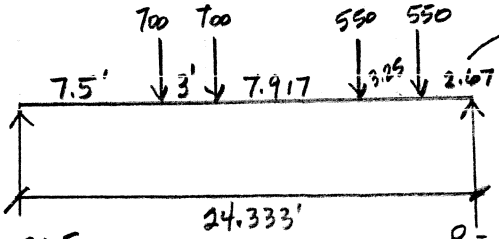
Roof Beams



R = .365
= .561
= .194
1.12K

R = .365
= .139
= .356
.86K

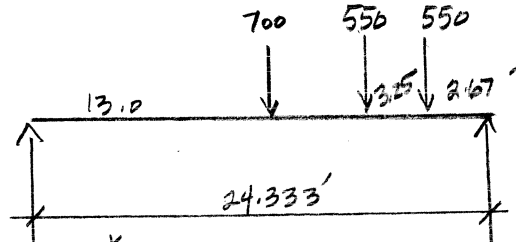
Rxtns Added to Rafters



R = .365
= .484
= .398
= .060
= .134
1.441K

R = .365
= .216
= .302
= .490
= .416
1.789K

Rxtns Added to Rafters



R = .365K
= .326
= .06
= .134
0.885K

R = .365K
= .374
= .490
= .416
1.645K

Rxtns Added to Rafters

B3004219

B3004219A02,SEC

Check A02 SW COL for M_y (D+SL+WLE) @ Midspan ht = 8.5'

$P = 20^k (10.87'/20.25') = 10.74^k$

$M = 8.4^k (8.5') (10.87'/20.25') = 38.4^{k-1}$

$M_y = .331 (17^2/8) \times 2 = 24^{k-1}$

$V_x = 8.4^k (10.87'/20.25') = 4.51^k$

$l_x = l_y = l_b = 17'$

$K_K = 1.5$

$C_b = 1.75$

W 17.5 / 10 F / WB Req'd.

Outside flange	Inside Flange	Depth	Web thickness	
10.0 x 0.375	10.0 x 0.375	17.50	0.188	13th ed. AISC-ASD

Area	Ix	Iy	Sxo	Sxi	Sy	rx	ry	rTo	rTi
10.64	623.39	62.51	71.24	71.24	12.50	7.65	2.42	2.74	2.74

FLANGE HOLES (in)		Fu	Cw	J	Zx
O.S. Dia.	I.S. Dia.	KSI	in^6	in^4	in^3
0.5625	0.5625	70.0	4582.275	0.3801	77.37

Lx	Ly	Lbo	Lbi	Kx	Ky	Cb	Cmx	Cmy	Fy	E
17.00	17.00	17.00	17.00	1.50	1.00	1.75	1.00	1.00	55.0	29000.

LOAD DESCRIPTION	AXIAL LOAD	MAJOR AXIS MOMENT	MINOR AXIS MOMENT	ALLOWABLE STRESS INCREASE	QS	QA
DL + SL + WLE	10.8	38.4	24.0	No	0.835	0.883

Actual Stresses				Allowable Stresses			
fa	fbx	fbt	fby	Fa	Fbx	Fbt	Fby
1.01	6.47	6.47	23.04	15.95	28.57	28.57	34.83

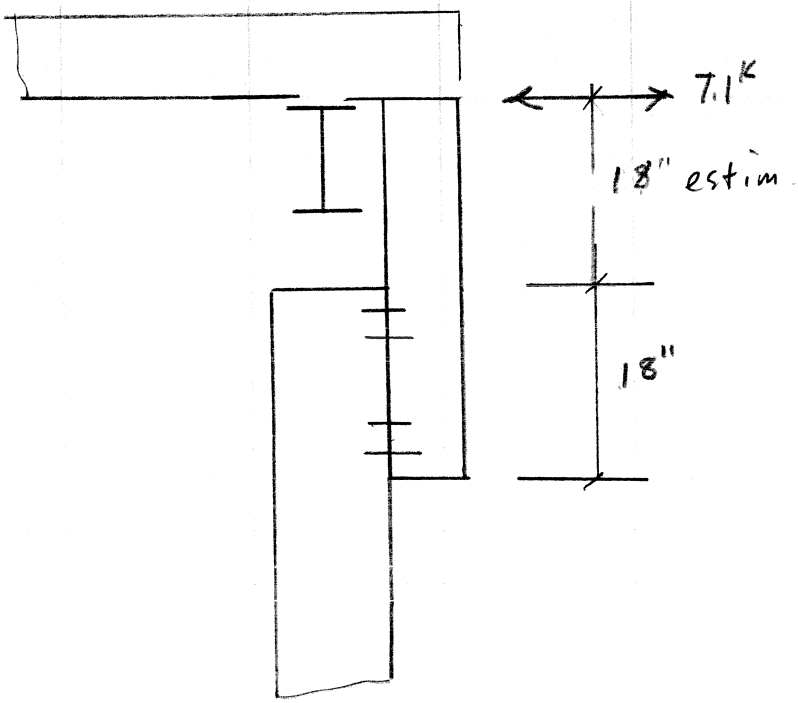
Pr / Pc = 0.064
Mrx / Mcx = 0.228
Mry / Mcy = 0.689

COMBINED STRESS CHECK BY AISC (H1-1b) : 0.032 + 0.228 + 0.689 = 0.949

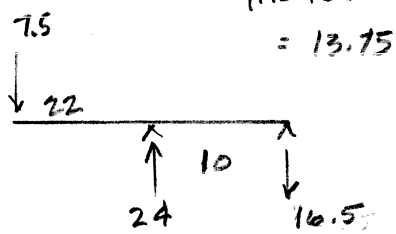
Shear = 4.5 Kips -- Shear Stress = 1.37 ksi -- Allow Shear Stress = 9.86 ksi

EP Connection

B3004219



Worst Case

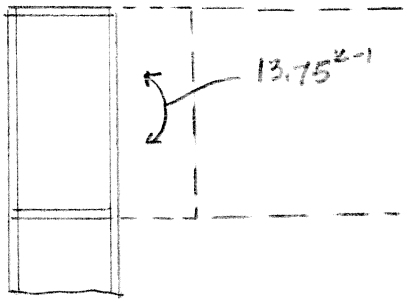


M = 165^{K-ft}
= 13.75^{K-ft}

$\frac{24}{4 \text{ bolts}} = 6^K/\text{bolt}$

$\Rightarrow .152 \text{ in}^2$ (½" min)

Try 5/8" A bolts Tall = 39.6 (.3063)
= 12.1^K > 6^K
o.k.



check K-bolt B3004219IC

$\frac{2.63 \overset{K_Y}{(15 \times 12)}}{50\text{ksi}\,(8'' \times 17'')} = .07'' << 3/16$ web

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 = 51.00 FT.
NUMBER OF SPANS = 1
SPAN WIDTHS = 51.00
DESIGN BAY SIZE = 23.17 FT.
LEFT EAVE HEIGHT = 18.33 FT.
RIGHT EAVE HEIGHT = 18.33 FT.
LEFT RAFTER SLOPE (R/12) = 3.00
RIGHT RAFTER SLOPE (R/12) = -3.00
GIRT OUTSET = 8.00 IN.
PURLIN DEPTH = 8.00 IN.
STEEL YIELD:
FLANGES 55. KSI
WEBS 55. KSI
LOADINGS ...

DEAD LOAD = 3.587 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	5.357			
1	2	BR1	GLOB	Y	CONC	0.250	4.036			
2	1	BR2	GLOB	Y	CONC	0.000	-4.036			
5	4	BR1	GLOB	Z	CONC	0.000	5.357			
5	4	BR1	GLOB	Y	CONC	0.250	4.036			
4	5	BR2	GLOB	Y	CONC	0.000	-4.036			
1	2	SB1	GLOB	Z	CONC	0.000	2.300			
1	2	SB1	GLOB	Y	CONC	0.250	1.750			
2	1	SB2	GLOB	Y	CONC	0.000	-1.750			
5	4	SB1	GLOB	Z	CONC	0.000	2.300			
5	4	SB1	GLOB	Y	CONC	0.250	1.750			
4	5	SB2	GLOB	Y	CONC	0.000	-1.750			
2	1	SEI	GLOB	X	CONC	0.000	0.721			
4	5	SEI	GLOB	X	CONC	0.000	0.721			
2	3	WLE	MEMB	Y	UNIF	0.000	0.207	10.200	0.207	
4	3	WE2	MEMB	Y	UNIF	0.000	-0.207	10.200	-0.207	
2	3	SL3	GLOB	Y	UNIF	0.000	-0.519			
3	2	SL3	GLOB	Y	UNIF	0.000	-0.339	8.976	-0.339	
3	4	SL4	GLOB	Y	UNIF	0.000	-0.519			
3	4	SL4	GLOB	Y	UNIF	0.000	-0.339	8.976	-0.339	
2	3	SL4	GLOB	Y	UNIF	0.000	-0.156			
3	4	SL3	GLOB	Y	UNIF	0.000	-0.156			
3	4	COL	GLOB	Y	CONC	9.500	-1.700			
3	4	COL	GLOB	Y	CONC	12.500	-1.700			
3	4	COL	GLOB	Y	CONC	14.500	-1.900			
3	4	COL	GLOB	Y	CONC	19.000	-1.900			
3	4	COL	GLOB	Y	CONC	21.000	-1.000			
3	4	COL	GLOB	Y	CONC	24.170	-1.000			

(AUTO LOADS)

1	2	DL	GLOB	Y	UNIF	0.000	-0.036			DLWT
1	2	WLL	GLOB	X	UNIF	0.000	0.180			WLLX
1	2	WLR	GLOB	X	UNIF	0.000	-0.328			WLRX
1	2	WL2	GLOB	X	UNIF	0.000	0.391			WL2X
1	2	WR2	GLOB	X	UNIF	0.000	-0.117			WR2X
1	2	WLE	GLOB	X	UNIF	0.000	-0.369			WLEX
1	2	WE2	GLOB	X	UNIF	0.000	-0.369			WE2X
2	3	LL	GLOB	Y	UNIF	0.000	-0.450			LIVE
2	3	LL	GLOB	Y	CONC	0.000	-0.920			LIVE
2	3	LL	GLOB	Z	MOMT	0.000	0.941			LIVE

2	3	SL	GLOB	Y	UNIF	0.000	-0.674	SNOW
2	3	SL3	GLOB	Y	CONC	0.000	-1.062	SNOW
2	3	SL3	GLOB	Z	MOMT	0.000	1.086	SNOW
2	3	SL4	GLOB	Y	CONC	0.000	-0.319	SNOW
2	3	SL4	GLOB	Z	MOMT	0.000	0.326	SNOW
2	3	SL	GLOB	Y	CONC	0.000	-1.379	SNOW
2	3	SL	GLOB	Z	MOMT	0.000	1.411	SNOW
2	3	DL	GLOB	Y	UNIF	0.000	-0.081	DEAD
2	3	DL	GLOB	Y	CONC	0.000	-0.165	DEAD
2	3	DL	GLOB	Z	MOMT	0.000	0.169	DEAD
2	3	DL	GLOB	Y	UNIF	0.000	-0.021	DLWT
2	3	COL	GLOB	Y	UNIF	0.000	-0.067	COLL
2	3	COL	GLOB	Y	CONC	0.000	-0.138	COLL

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
2	3	COL	GLOB	Z	MOMT	0.000	0.141			COLL
2	3	WLL	GLOB	X	UNIF	0.000	-0.125			WLLX
2	3	WLL	GLOB	Y	UNIF	0.000	0.499			WLLY
2	3	WLR	GLOB	X	UNIF	0.000	-0.089			WLRX
2	3	WLR	GLOB	Y	UNIF	0.000	0.357			WLRY
2	3	WL2	GLOB	X	UNIF	0.000	-0.073			WL2X
2	3	WL2	GLOB	Y	UNIF	0.000	0.292			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	0.499			WLEY
2	3	WE2	GLOB	X	UNIF	0.000	-0.125			WE2X
2	3	WE2	GLOB	Y	UNIF	0.000	0.499			WE2Y
3	4	LL	GLOB	Y	UNIF	0.000	-0.450			LIVE
4	3	LL	GLOB	Y	CONC	0.000	-0.920			LIVE
4	3	LL	GLOB	Z	MOMT	0.000	-0.941			LIVE
3	4	SL	GLOB	Y	UNIF	0.000	-0.674			SNOW
4	3	SL3	GLOB	Y	CONC	0.000	-0.319			SNOW
4	3	SL3	GLOB	Z	MOMT	0.000	-0.326			SNOW
4	3	SL4	GLOB	Y	CONC	0.000	-1.062			SNOW
4	3	SL4	GLOB	Z	MOMT	0.000	-1.086			SNOW
4	3	SL	GLOB	Y	CONC	0.000	-1.379			SNOW
4	3	SL	GLOB	Z	MOMT	0.000	-1.411			SNOW
3	4	DL	GLOB	Y	UNIF	0.000	-0.081			DEAD
4	3	DL	GLOB	Y	CONC	0.000	-0.165			DEAD

4	3	DL	GLOB	Z	MOMT	0.000	-0.169		DEAD
3	4	DL	GLOB	Y	UNIF	0.000	-0.021		DLWT
3	4	COL	GLOB	Y	UNIF	0.000	-0.067		COLL
4	3	COL	GLOB	Y	CONC	0.000	-0.138		COLL
4	3	COL	GLOB	Z	MOMT	0.000	-0.141		COLL
3	4	WLL	GLOB	X	UNIF	0.000	0.089		WLLX
3	4	WLL	GLOB	Y	UNIF	0.000	0.357		WLLY
3	4	WLR	GLOB	X	UNIF	0.000	0.125		WLRX
3	4	WLR	GLOB	Y	UNIF	0.000	0.499		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	0.292		WR2Y
3	4	WLE	GLOB	X	UNIF	0.000	0.125		WLEX
3	4	WLE	GLOB	Y	UNIF	0.000	0.499		WLEY
3	4	WE2	GLOB	X	UNIF	0.000	0.125		WE2X
3	4	WE2	GLOB	Y	UNIF	0.000	0.499		WE2Y
5	4	DL	GLOB	Y	UNIF	0.000	-0.036		DLWT
5	4	WLL	GLOB	X	UNIF	0.000	0.330		WLLX
5	4	WLR	GLOB	X	UNIF	0.000	-0.180		WLRX
5	4	WL2	GLOB	X	UNIF	0.000	0.119		WL2X
5	4	WR2	GLOB	X	UNIF	0.000	-0.391		WR2X
5	4	WLE	GLOB	X	UNIF	0.000	0.369		WLEX
5	4	WE2	GLOB	X	UNIF	0.000	0.369		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 17.06 FT ANGLE OF MEMBER 86.90 DEG
SECTION NO. 1 LENGTH 16.40' OF= 8.00 X 0.3750 WEB=0.1875 IF= 8.00 X 0.5000

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	1.00	10.00	8.71	169.4	30.7	37.8	4.41	2.07	2.254	2.297
100	0.05	1.91	11.11	8.92	213.1	34.8	42.7	4.89	2.05	2.236	2.284
101	0.15	3.73	13.33	9.34	317.0	43.3	52.7	5.83	2.00	2.204	2.259
102	0.25	5.55	15.56	9.75	443.8	52.1	63.0	6.75	1.96	2.175	2.237
103	0.34	7.37	17.78	10.17	594.6	61.3	73.6	7.65	1.92	2.148	2.217
104	0.44	9.19	20.00	10.59	770.3	70.8	84.5	8.53	1.88	2.123	2.198
105	0.54	11.01	22.22	11.00	972.1	80.6	95.6	9.40	1.84	2.100	2.180
106	0.64	12.83	24.44	11.42	1201.0	90.8	107.1	10.26	1.81	2.078	2.162
107	0.74	14.65	26.67	11.84	1457.9	101.3	118.8	11.10	1.78	2.056	2.146
108	0.84	16.47	28.89	12.25	1744.1	112.1	130.9	11.93	1.75	2.036	2.129
109*	0.89	17.38	30.00	12.46	1898.4	117.6	137.0	12.34	1.73	2.026	2.121

MEMBER NO. 2- 3 LENGTH 24.24 FT ANGLE OF MEMBER 14.64 DEG
SECTION NO. 1 LENGTH 7.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.3750
SECTION NO. 2 LENGTH 6.31' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 3 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
112*	1.82	18.26	24.00	8.13	716.2	54.9	65.4	9.38	1.18	1.415	1.537
113	2.66	18.52	23.00	7.95	648.8	51.8	61.9	9.04	1.19	1.425	1.546
114	4.33	19.04	21.00	7.57	525.7	45.8	55.2	8.33	1.22	1.447	1.563
115	6.00	19.55	19.00	7.20	417.8	40.1	48.7	7.62	1.25	1.471	1.581
116	7.67	20.07	17.00	6.82	324.1	34.6	42.5	6.89	1.28	1.496	1.600
117*	8.52	20.33	16.00	6.63	282.5	31.9	39.5	6.53	1.30	1.509	1.610
117*	8.52	20.33	16.00	5.42	234.6	29.3	29.3	6.58	1.29	1.555	1.555
118	9.28	20.52	16.19	5.45	241.0	29.8	29.8	6.65	1.29	1.553	1.553
119	10.82	20.90	16.58	5.51	254.2	30.7	30.7	6.79	1.28	1.548	1.548
120	12.35	21.27	16.97	5.57	267.8	31.6	31.6	6.93	1.27	1.544	1.544
121	13.88	21.65	17.35	5.63	281.8	32.5	32.5	7.07	1.26	1.540	1.540
122*	14.65	21.84	17.55	5.66	288.9	32.9	32.9	7.14	1.26	1.537	1.537
122*	14.65	21.84	17.55	5.66	288.9	32.9	32.9	7.14	1.26	1.537	1.537
123	15.46	22.03	17.75	5.70	296.6	33.4	33.4	7.22	1.26	1.535	1.535
124	17.08	22.42	18.16	5.76	312.3	34.4	34.4	7.36	1.25	1.531	1.531
125	18.70	22.81	18.57	5.82	328.5	35.4	35.4	7.51	1.24	1.526	1.526
126	20.32	23.19	18.98	5.89	345.2	36.4	36.4	7.66	1.24	1.522	1.522
127	21.94	23.58	19.39	5.95	362.4	37.4	37.4	7.80	1.23	1.518	1.518
128	23.56	23.97	19.80	6.01	380.1	38.4	38.4	7.95	1.22	1.513	1.513
3*	24.37	24.16	20.00	6.05	389.1	38.9	38.9	8.02	1.22	1.511	1.511

MEMBER NO. 3- 4 LENGTH 24.24 FT ANGLE OF MEMBER -14.64 DEG
SECTION NO. 1 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 2 LENGTH 6.31' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 3 LENGTH 7.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 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)
3*	24.37	24.16	20.00	6.05	389.1	38.9	38.9	8.02	1.22	1.511	1.511
129	25.18	23.97	19.80	6.01	380.1	38.4	38.4	7.95	1.22	1.513	1.513
130	26.81	23.58	19.39	5.95	362.4	37.4	37.4	7.80	1.23	1.518	1.518
131	28.43	23.19	18.98	5.89	345.2	36.4	36.4	7.66	1.24	1.522	1.522
132	30.05	22.80	18.57	5.82	328.5	35.4	35.4	7.51	1.24	1.526	1.526
133	31.67	22.42	18.16	5.76	312.3	34.4	34.4	7.36	1.25	1.531	1.531
134	33.29	22.03	17.75	5.70	296.6	33.4	33.4	7.22	1.26	1.535	1.535
135*	34.10	21.84	17.55	5.66	288.9	32.9	32.9	7.14	1.26	1.537	1.537
135*	34.10	21.84	17.55	5.66	288.9	32.9	32.9	7.14	1.26	1.537	1.537
136	34.87	21.65	17.35	5.63	281.8	32.5	32.5	7.07	1.26	1.540	1.540
137	36.40	21.27	16.97	5.57	267.8	31.6	31.6	6.93	1.27	1.544	1.544
138	37.93	20.90	16.58	5.51	254.2	30.7	30.7	6.79	1.28	1.548	1.548
139	39.47	20.52	16.19	5.45	241.0	29.8	29.8	6.65	1.29	1.553	1.553
140*	40.23	20.33	16.00	5.42	234.6	29.3	29.3	6.58	1.29	1.555	1.555
140*	40.23	20.33	16.00	6.63	282.5	31.9	39.5	6.53	1.30	1.509	1.610
141	41.07	20.07	17.00	6.82	324.1	34.6	42.5	6.89	1.28	1.496	1.600
142	42.74	19.56	19.00	7.20	417.8	40.1	48.7	7.62	1.25	1.471	1.581
143	44.41	19.04	21.00	7.57	525.7	45.8	55.2	8.33	1.22	1.447	1.563
144	46.08	18.52	23.00	7.95	648.8	51.8	61.9	9.04	1.19	1.425	1.546
145*	46.93	18.26	24.00	8.13	716.2	54.9	65.4	9.38	1.18	1.415	1.537

MEMBER NO. 5- 4 LENGTH 17.06 FT ANGLE OF MEMBER 93.10 DEG
SECTION NO. 1 LENGTH 16.40' OF= 8.00 X 0.3750 WEB=0.1875 IF= 8.00 X 0.5000

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*	48.75	1.00	10.00	8.71	169.4	30.7	37.8	4.41	2.07	2.254	2.297
147	48.70	1.91	11.11	8.92	213.1	34.8	42.7	4.89	2.05	2.236	2.284
148	48.60	3.73	13.33	9.34	317.0	43.3	52.7	5.83	2.00	2.204	2.259
149	48.50	5.55	15.56	9.75	443.8	52.1	63.0	6.75	1.96	2.175	2.237
150	48.40	7.37	17.78	10.17	594.6	61.3	73.6	7.65	1.92	2.148	2.217
151	48.31	9.19	20.00	10.59	770.3	70.8	84.5	8.53	1.88	2.123	2.198
152	48.21	11.01	22.22	11.00	972.1	80.6	95.6	9.40	1.84	2.100	2.180
153	48.11	12.83	24.44	11.42	1201.0	90.8	107.1	10.26	1.81	2.078	2.162
154	48.01	14.65	26.67	11.84	1457.9	101.3	118.8	11.10	1.78	2.056	2.146
155	47.91	16.47	28.89	12.25	1744.1	112.1	130.9	11.93	1.75	2.036	2.129
156*	47.86	17.38	30.00	12.46	1898.4	117.6	137.0	12.34	1.73	2.026	2.121

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	18.7	8.6	0.0	0.0	0.000	0.000
2					0.033	-0.770
3					-1.195	-0.491
4					-0.030	-0.226
5	24.2	-8.2	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	24.6	11.1	0.0	0.0	0.000	0.000
2					0.035	-0.860
3					-1.563	-0.506
4					-0.030	-0.166
5	30.1	-10.5	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	24.6	11.1	0.0	0.0	0.000	0.000
2					0.035	-0.860
3					-1.563	-0.506
4					-0.030	-0.166
5	30.1	-10.5	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	-10.4	-7.0	0.0	0.0	0.000	0.000
2					-0.025	0.551
3					0.365	0.457
4					0.023	0.376
5	-6.4	-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	-6.4	0.8	0.0	0.0	0.000	0.000
2					0.023	-0.373
3					0.365	-0.455
4					-0.024	-0.548
5	-10.4	7.0	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	-6.9	0.0	0.0	0.000	0.000
2					-0.025	0.514
3					0.199	0.457
4					0.023	0.413
5	-1.4	-0.9	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	-1.4	0.9	0.0	0.0	0.000	0.000
2					0.023	-0.410
3					0.199	-0.455
4					-0.025	-0.511
5	-5.4	6.9	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	-15.8	-0.9	5.4	0.0	0.000	0.000
2					0.010	-0.074
3					0.355	-0.152
4					-0.007	-0.233
5	-14.6	1.5	5.4	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	-14.6	-1.5	5.4	0.0	0.000	0.000
2					-0.007	0.233
3					0.355	0.152
4					0.010	0.074
5	-15.8	0.9	5.4	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	13.7	7.6	0.0	0.0	0.000	0.000
2					0.024	-0.595
3					-0.942	-0.366
4					-0.022	-0.148
5	18.5	-7.8	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	-1.8	1.6	0.0	0.0	0.000	0.000
2					0.017	-0.317
3					-0.004	-0.305
4					-0.020	-0.302
5	2.9	-2.1	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	6.3	1.3	0.0	0.0	0.000	0.000
2					0.008	-0.241
3					-0.664	-0.080
4					-0.007	0.078
5	15.2	-7.4	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	9.4	7.4	0.0	0.0	0.000	0.000
2					0.049	-0.995
3					-0.663	-0.825
4					-0.048	-0.678
5	12.0	-1.3	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	10.7	3.1	0.0	0.0	0.000	0.000
2					0.008	-0.289
3					-0.938	-0.067
4					-0.006	0.152
5	19.6	-9.2	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	13.9	9.3	0.0	0.0	0.000	0.000
2					0.051	-1.068
3					-0.938	-0.835
4					-0.048	-0.627
5	16.4	-3.0	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	14.6	8.4	0.0	0.0	0.000	0.000
2					0.062	-1.222
3					-1.199	-0.933
4					-0.056	-0.673
5	25.5	-7.8	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	20.0	8.2	0.0	0.0	0.000	0.000
2					0.006	-0.334
3					-1.198	-0.059
4					-0.001	0.215
5	20.1	-8.0	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	6.6	3.2	0.0	0.0	0.000	0.000
2					0.018	-0.398
3					-0.474	-0.281
4					-0.019	-0.173
5	13.2	-4.1	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	7.3	4.2	0.0	0.0	0.000	0.000
2					0.040	-0.807
3					-0.475	-0.685
4					-0.041	-0.583
5	12.5	-3.0	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	1.5	0.1	0.0	0.0	0.000	0.000
2					-0.011	0.185
3					-0.095	0.206
4					0.011	0.232
5	2.2	-1.2	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	2.2	1.2	0.0	0.0	0.000	0.000
2					0.011	-0.232
3					-0.095	-0.206
4					-0.011	-0.185
5	1.5	-0.1	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	0.6	0.6	1.6	0.0	0.000	0.000
2					0.000	-0.022
3					-0.095	0.002
4					0.000	0.025
5	0.6	-0.6	1.6	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	8.2	3.8	0.0	0.0	0.000	0.000
2					0.028	-0.599
3					-0.473	-0.481
4					-0.031	-0.377
5	14.0	-3.6	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	3.3	1.1	0.0	0.0	0.000	0.000
2					0.000	-0.041
3					-0.166	0.000
4					0.000	0.041
5	3.3	-1.1	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	3.5	2.4	0.0	0.0	0.000	0.000
2					0.026	-0.534
3					-0.296	-0.455
4					-0.027	-0.389
5	9.3	-2.4	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	11.8	4.9	0.0	0.0	0.000	0.000
2					0.002	-0.182
3					-0.732	0.000
4					0.002	0.182
5	11.8	-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	17.7	7.3	0.0	0.0	0.000	0.000
2					0.003	-0.272
3					-1.098	0.000
4					0.003	0.272
5	17.7	-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	-12.4	-7.7	0.0	0.0	0.000	0.000
2					-0.025	0.575
3					0.464	0.457
4					0.023	0.351
5	-8.4	-0.2	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	-8.4	0.1	0.0	0.0	0.000	0.000
2					0.023	-0.348
3					0.465	-0.455
4					-0.025	-0.573
5	-12.4	7.7	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	-7.4	-7.6	0.0	0.0	0.000	0.000
2					-0.025	0.538
3					0.299	0.457
4					0.023	0.388
5	-3.4	-0.3	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	-3.4	0.2	0.0	0.0	0.000	0.000
2					0.023	-0.386
3					0.299	-0.455
4					-0.025	-0.536
5	-7.4	7.6	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	-13.7	-1.6	0.0	0.0	0.000	0.000
2					0.010	-0.049
3					0.454	-0.152
4					-0.008	-0.258
5	-12.5	2.1	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	-12.5	-2.1	0.0	0.0	0.000	0.000
2					-0.008	0.258
3					0.454	0.152
4					0.010	0.049
5	-13.7	1.6	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	7.6	4.6	0.0	0.0	0.000	0.000
2					0.029	-0.635
3					-0.736	-0.445
4					-0.023	-0.268
5	13.2	-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	13.2	4.6	0.0	0.0	0.000	0.000
2					-0.023	0.268
3					-0.736	0.445
4					0.029	0.635
5	7.6	-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	-0.5	-0.7	0.0	0.0	0.000	0.000
2					-0.015	0.293
3					0.000	0.289
4					0.015	0.293
5	0.5	-0.7	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	-1.8	0.0	2.3	0.0	0.000	0.000
2					0.000	0.000
3					0.000	0.000
4					0.000	0.000
5	-1.8	0.0	2.3	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	1.8	0.1	0.0	0.0	0.000	0.000
2					-0.001	0.001
3					0.002	0.000
4					-0.001	-0.001
5	1.7	-0.1	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	-4.0	0.0	5.4	0.0	0.000	0.000
2					0.000	0.000
3					0.000	0.000
4					0.000	0.000
5	-4.0	0.0	5.4	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	4.0	0.2	0.0	0.0	0.000	0.000
2					-0.002	0.002
3					0.004	0.000
4					-0.002	-0.002
5	4.0	-0.2	0.0	0.0	0.000	0.000

MEMBER NO. 1- 2 LENGTH 17.06 FT MEMBER ANGLE 86.90 DEG WEIGHT 619. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	16.40	10.00	30.00	8.0 X 3/8	3/16	8.0 X 1/2	0.800	16.4	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	24.61	-160.05	11.3	23.0	19.7	1.97	-16.33	14.02	0.09	0.71	0.71

MEMBER NO. 2- 3 LENGTH 24.24 FT MEMBER ANGLE 14.64 DEG WEIGHT 520. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	7.00	24.00	16.00	6.0 X 1/4	3/16	6.0 X 3/8	0.989	0.9	2
2	6.31	16.00	17.55	6.0 X 1/4	5/32	6.0 X 1/4	0.896	7.9	16
3	10.00	17.55	20.00	6.0 X 1/4	5/32	6.0 X 1/4	0.607	23.4	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	16.64	-150.96	20.2	35.6	29.9	2.05	-32.99	27.71	0.05	0.93	0.94
2	10.42	-57.69	19.8	28.4	28.4	1.92	-23.61	23.61	0.05	0.83	0.85
3	11.06	50.28	18.0	28.7	28.7	1.84	15.71	-15.71	0.05	0.56	0.55

MEMBER NO. 3- 4 LENGTH 24.24 FT MEMBER ANGLE -14.64 DEG WEIGHT 520. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	10.00	20.00	17.55	6.0 X 1/4	5/32	6.0 X 1/4	0.818	7.5	16
2	6.31	17.55	16.00	6.0 X 1/4	5/32	6.0 X 1/4	0.791	10.0	16
3	7.00	16.00	24.00	6.0 X 1/4	3/16	6.0 X 3/8	0.880	23.3	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	8.41	64.98	18.8	29.5	29.5	1.46	22.67	-22.67	0.04	0.78	0.77
2	9.35	60.18	19.1	29.8	29.8	1.65	21.93	-21.93	0.04	0.75	0.74
3	17.95	-132.66	20.2	35.6	29.9	2.21	-28.99	24.35	0.05	0.82	0.83

MEMBER NO. 5- 4 LENGTH 17.06 FT MEMBER ANGLE 93.10 DEG WEIGHT 619. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	16.40	10.00	30.00	8.0 X 3/8	3/16	8.0 X 1/2	0.779	15.5	2

(CONTROLLING ACTIONS)

	AXIAL		-ALLOW STRESSES-			--MAXIMUM STRESSES--			-UNITY CHECK- - COMPONENTS -		
SECT NO	FORCE (KIP)	MOMENT (KIP-FT)	FA (KSI)	FBO (KSI)	FBI (KSI)	AXIAL (KSI)	FBO (KSI)	FBI (KSI)	FA	FBO	FBI
1	30.03	-138.20	11.5	23.3	20.0	2.45	-14.80	12.67	0.21	0.63	0.57

TOTAL FRAME WEIGHT IS 2277. LBS.

COLUMN 1 - 2 UNBRACED

RAFTER 2 - 3

PURLIN AT	-0.66	1.34	3.35	5.36	7.36	9.37	11.37	13.38	15.38	17.39
SIZE		A2		A2				A2		
SIDES		1		1				1		
CONN.		1-1		1-1				1-1		
HOLE LOC		2		2				2		
FLG AREA		2.25		2.25				1.50		
DEPTH		23.52		18.94				17.34		

PURLIN AT	19.39	21.40	23.40
SIZE		A2	A2
SIDES		1	1
CONN.		1-1	1-1
HOLE LOC		2	2
FLG AREA		1.50	1.50
DEPTH		19.30	19.80

RAFTER 3 - 4

PURLIN AT	0.84	2.84	4.85	6.85	8.86	10.86	12.87	14.87	16.88	18.88
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	1.50	1.50				1.50				2.25
DEPTH	19.80	19.30				17.34				18.94

PURLIN AT	20.89	22.89	
SIZE		A2	
SIDES		1	
CONN.		1-1	
HOLE LOC		2	
FLG AREA		2.25	
DEPTH		23.52	

COLUMN 5 - 4 UNBRACED

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  =     9743. X  4.00 X  4.24 /   169.45

                                    =  974.9 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  =    11777. X  2.25 X  6.97 /   282.48

                                    =  653.9 LBS/IN AT ANALYSIS POINT 117

   WELD SIZE FOR THE SECTION =0.1875 INCH,    WELD ONE SIDE ONLY

RAFTER  2- 3    SECTION 2   Q MAX  =    12644. X  1.50 X  7.88 /   234.55

                                    =  636.8 LBS/IN AT ANALYSIS POINT 117

   WELD SIZE FOR THE SECTION =0.1250 INCH,    WELD ONE SIDE ONLY

RAFTER  2- 3    SECTION 3   Q MAX  =     7542. X  1.50 X  8.65 /   288.95

                                    =  338.6 LBS/IN AT ANALYSIS POINT 122

   WELD SIZE FOR THE SECTION =0.1250 INCH,    WELD ONE SIDE ONLY

RAFTER  3- 4    SECTION 1   Q MAX  =     7157. X  1.50 X  9.88 /   389.11

                                    =  272.4 LBS/IN AT ANALYSIS POINT   3

   WELD SIZE FOR THE SECTION =0.1250 INCH,    WELD ONE SIDE ONLY

RAFTER  3- 4    SECTION 2   Q MAX  =    14124. X  1.50 X  7.88 /   234.55

                                    =  711.3 LBS/IN AT ANALYSIS POINT 140

   WELD SIZE FOR THE SECTION =0.1250 INCH,    WELD ONE SIDE ONLY
```

RAFTER 3- 4 SECTION 3 Q MAX = 20941. X 2.25 X 10.29 / 648.79

= 747.3 LBS/IN AT ANALYSIS POINT 144

WELD SIZE FOR THE SECTION =0.1875 INCH, WELD ONE SIDE ONLY

COLUMN 5- 4 SECTION 1 Q MAX = 8907. X 4.00 X 4.24 / 169.45

= 891.2 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: 23.3750 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	30.0000	24.0000
OS FLANGE WIDTH	8.0000	6.0000
OS FLANGE THICK	0.3750	0.2500
WEB THICKNESS	0.1875	0.1875
IS FLANGE WIDTH	8.0000	6.0000
IS FLANGE THICK	0.5000	0.3750

CONTROLLING ACTIONS

POS MOMENT 74.65 FT-KIPS
AXIAL LOAD -6.97 KIPS
SHEAR -8.81 KIPS
LOAD CONDITION 4

NEG MOMENT -150.96 FT-KIPS
AXIAL LOAD 16.64 KIPS
SHEAR 17.42 KIPS
LOAD CONDITION 2

MAX SHEAR 17.42 KIPS
AXIAL LOAD 16.64 KIPS
MOMENT -150.96 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 2.125"
THICK - 0.625" PITCH - 2.750" CON TYPE 1 TOP PROJECTION 2.750"

CORNER WEB - 0.188" THICK WITH 0.188" WELD ON 1 SIDE WELD SHEAR - 2.648 K/IN

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

SPLICE DEPTH: 20.0000 INCHES
WEB DEPTH: 19.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	20.0000	20.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1563	0.1563
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.2500	0.2500

CONTROLLING ACTIONS

POS MOMENT 50.01 FT-KIPS
AXIAL LOAD 10.73 KIPS
SHEAR 2.00 KIPS
LOAD CONDITION 2

NEG MOMENT -14.09 FT-KIPS
AXIAL LOAD -6.96 KIPS
SHEAR -0.35 KIPS
LOAD CONDITION 4

MAX SHEAR -1.66 KIPS

AXIAL LOAD 8.13 KIPS

MOMENT 39.53 FT-KIPS

LOAD CONDITION 17

LENGTH - 26.313"	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: 20.0000 INCHES
WEB DEPTH: 19.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	20.0000	20.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1563	0.1563
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.2500	0.2500

CONTROLLING ACTIONS

POS MOMENT 50.01 FT-KIPS
AXIAL LOAD 10.73 KIPS
SHEAR 2.00 KIPS
LOAD CONDITION 2

NEG MOMENT -14.09 FT-KIPS
AXIAL LOAD -6.96 KIPS
SHEAR -0.35 KIPS
LOAD CONDITION 4

MAX SHEAR -1.66 KIPS
AXIAL LOAD 8.13 KIPS
MOMENT 39.53 FT-KIPS
LOAD CONDITION 17

LENGTH - 26.313" 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: 23.3750 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	24.0000	30.0000
OS FLANGE WIDTH	6.0000	8.0000
OS FLANGE THICK	0.2500	0.3750
WEB THICKNESS	0.1875	0.1875
IS FLANGE WIDTH	6.0000	8.0000
IS FLANGE THICK	0.3750	0.5000

CONTROLLING ACTIONS

POS MOMENT 74.56 FT-KIPS
AXIAL LOAD -6.96 KIPS
SHEAR 8.81 KIPS
LOAD CONDITION 5

NEG MOMENT -132.66 FT-KIPS
AXIAL LOAD 17.95 KIPS
SHEAR -21.65 KIPS
LOAD CONDITION 2

MAX SHEAR -21.65 KIPS

AXIAL LOAD 17.95 KIPS

MOMENT -132.66 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	2.125"
THICK - 0.625"	PITCH - 2.750"	CON TYPE	1	TOP PROJECTION	2.750"

CORNER WEB - 0.188" THICK WITH 0.188" WELD ON 1 SIDE WELD SHEAR - 2.327 K/IN

SUPPORT JOINT 1 -- EXTERIOR COLUMN

CRITICAL REACTIONS		LOAD CONDITION	
HORIZONTAL	11.09 KIPS	2	
DOWNWARD..	24.64 KIPS	2	
UPWARD....	-15.77 KIPS	8	5.44 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN		OUTSIDE FLANGE - 8.0 X 0.3750	
WEB THICKNESS- .188 IN		INSIDE FLANGE - 8.0 X 0.5000	
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	10.55 KIPS	2	
DOWNWARD..	30.06 KIPS	2	
UPWARD....	-15.77 KIPS	9	5.44 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN		OUTSIDE FLANGE - 8.0 X 0.3750	
WEB THICKNESS- .188 IN		INSIDE FLANGE - 8.0 X 0.5000	
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 = 51.00 FT.
NUMBER OF SPANS = 1
SPAN WIDTHS = 51.00
DESIGN BAY SIZE = 20.25 FT.
LEFT EAVE HEIGHT = 18.33 FT.
RIGHT EAVE HEIGHT = 18.33 FT.
LEFT RAFTER SLOPE (R/12) = 3.00
RIGHT RAFTER SLOPE (R/12) = -3.00
GIRT OUTSET = 8.00 IN.
PURLIN DEPTH = 8.00 IN.
STEEL YIELD:
FLANGES 55. KSI
WEBS 55. KSI
LOADINGS ...

DEAD LOAD = 3.587 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 (NASI) 60. DL 100. WLE
9 = .6DL+WE2 (NASI) 60. DL 100. WE2
10 = DL+.75(SL+WE2) (NASI)
100. DL 100. COL 75. SL 75. WE2

11 = DL+WE2 (NASI) 100. DL 100. COL 100. WE2
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

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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

LOAD CONDITIONS FOR REACTIONS & DEFLECTIONS ...

22	=	DL	100. DL
23	=	COL	100. COL
24	=	LL	100. LL
25	=	SL	100. SL
26	=	WLL	100. WLL
27	=	WLR	100. WLR
28	=	WL2	100. WL2
29	=	WR2	100. WR2
30	=	WLE	100. WLE
31	=	WE2	100. WE2
32	=	SL4	100. SL4
33	=	SL3	100. SL3
34	=	SEI	100. SEI
35	=	SECOND ORDER SEED	100. 000

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
2	1	SEI	GLOB	X	CONC	0.000	0.435			
4	5	SEI	GLOB	X	CONC	0.000	0.435			
2	3	WLE	MEMB	Y	UNIF	0.000	0.181	10.200	0.181	
4	3	WE2	MEMB	Y	UNIF	0.000	-0.181	10.200	-0.181	
2	3	SL3	GLOB	Y	UNIF	0.000	-0.454			
3	2	SL3	GLOB	Y	UNIF	0.000	-0.296	8.976	-0.296	
3	4	SL4	GLOB	Y	UNIF	0.000	-0.454			
3	4	SL4	GLOB	Y	UNIF	0.000	-0.296	8.976	-0.296	
2	3	SL4	GLOB	Y	UNIF	0.000	-0.136			
3	4	SL3	GLOB	Y	UNIF	0.000	-0.136			
(AUTO LOADS)										
1	2	DL	GLOB	Y	UNIF	0.000	-0.036			DLWT
1	2	WLL	GLOB	X	UNIF	0.000	0.158			WLLX
1	2	WLR	GLOB	X	UNIF	0.000	-0.287			WLRX
1	2	WL2	GLOB	X	UNIF	0.000	0.342			WL2X
1	2	WR2	GLOB	X	UNIF	0.000	-0.103			WR2X
1	2	WLE	GLOB	X	UNIF	0.000	-0.323			WLEX
1	2	WE2	GLOB	X	UNIF	0.000	-0.323			WE2X
2	3	LL	GLOB	Y	UNIF	0.000	-0.393			LIVE
2	3	LL	GLOB	Y	CONC	0.000	-0.658			LIVE
2	3	LL	GLOB	Z	MOMT	0.000	0.551			LIVE
2	3	SL	GLOB	Y	UNIF	0.000	-0.589			SNOW
2	3	SL3	GLOB	Y	CONC	0.000	-0.760			SNOW
2	3	SL3	GLOB	Z	MOMT	0.000	0.637			SNOW
2	3	SL4	GLOB	Y	CONC	0.000	-0.228			SNOW
2	3	SL4	GLOB	Z	MOMT	0.000	0.191			SNOW
2	3	SL	GLOB	Y	CONC	0.000	-0.987			SNOW
2	3	SL	GLOB	Z	MOMT	0.000	0.827			SNOW
2	3	DL	GLOB	Y	UNIF	0.000	-0.070			DEAD
2	3	DL	GLOB	Y	CONC	0.000	-0.118			DEAD

2	3	DL	GLOB	Z	MOMT	0.000	0.099	DEAD
2	3	DL	GLOB	Y	UNIF	0.000	-0.019	DLWT
2	3	COL	GLOB	Y	UNIF	0.000	-0.059	COLL
2	3	COL	GLOB	Y	CONC	0.000	-0.099	COLL
2	3	COL	GLOB	Z	MOMT	0.000	0.083	COLL
2	3	WLL	GLOB	X	UNIF	0.000	-0.107	WLLX
2	3	WLL	GLOB	Y	UNIF	0.000	0.429	WLLY
2	3	WLR	GLOB	X	UNIF	0.000	-0.077	WLRX
2	3	WLR	GLOB	Y	UNIF	0.000	0.307	WLRY
2	3	WL2	GLOB	X	UNIF	0.000	-0.063	WL2X
2	3	WL2	GLOB	Y	UNIF	0.000	0.252	WL2Y
2	3	WR2	GLOB	X	UNIF	0.000	-0.032	WR2X
2	3	WR2	GLOB	Y	UNIF	0.000	0.130	WR2Y
2	3	WLE	GLOB	X	UNIF	0.000	-0.107	WLEX
2	3	WLE	GLOB	Y	UNIF	0.000	0.429	WLEY
2	3	WE2	GLOB	X	UNIF	0.000	-0.107	WE2X
2	3	WE2	GLOB	Y	UNIF	0.000	0.429	WE2Y
3	4	LL	GLOB	Y	UNIF	0.000	-0.393	LIVE
4	3	LL	GLOB	Y	CONC	0.000	-0.658	LIVE
4	3	LL	GLOB	Z	MOMT	0.000	-0.551	LIVE
3	4	SL	GLOB	Y	UNIF	0.000	-0.589	SNOW
4	3	SL3	GLOB	Y	CONC	0.000	-0.228	SNOW

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
4	3	SL3	GLOB	Z	MOMT	0.000	-0.191			SNOW
4	3	SL4	GLOB	Y	CONC	0.000	-0.760			SNOW
4	3	SL4	GLOB	Z	MOMT	0.000	-0.637			SNOW
4	3	SL	GLOB	Y	CONC	0.000	-0.987			SNOW
4	3	SL	GLOB	Z	MOMT	0.000	-0.827			SNOW
3	4	DL	GLOB	Y	UNIF	0.000	-0.070			DEAD
4	3	DL	GLOB	Y	CONC	0.000	-0.118			DEAD
4	3	DL	GLOB	Z	MOMT	0.000	-0.099			DEAD
3	4	DL	GLOB	Y	UNIF	0.000	-0.019			DLWT
3	4	COL	GLOB	Y	UNIF	0.000	-0.059			COLL
4	3	COL	GLOB	Y	CONC	0.000	-0.099			COLL
4	3	COL	GLOB	Z	MOMT	0.000	-0.083			COLL
3	4	WLL	GLOB	X	UNIF	0.000	0.077			WLLX
3	4	WLL	GLOB	Y	UNIF	0.000	0.307			WLLY
3	4	WLR	GLOB	X	UNIF	0.000	0.107			WLRX
3	4	WLR	GLOB	Y	UNIF	0.000	0.429			WLRY
3	4	WL2	GLOB	X	UNIF	0.000	0.032			WL2X
3	4	WL2	GLOB	Y	UNIF	0.000	0.130			WL2Y
3	4	WR2	GLOB	X	UNIF	0.000	0.063			WR2X
3	4	WR2	GLOB	Y	UNIF	0.000	0.252			WR2Y
3	4	WLE	GLOB	X	UNIF	0.000	0.107			WLEX
3	4	WLE	GLOB	Y	UNIF	0.000	0.429			WLEY
3	4	WE2	GLOB	X	UNIF	0.000	0.107			WE2X
3	4	WE2	GLOB	Y	UNIF	0.000	0.429			WE2Y
5	4	DL	GLOB	Y	UNIF	0.000	-0.036			DLWT

5	4	WLL	GLOB	X	UNIF	0.000	0.289		WLLX
5	4	WLR	GLOB	X	UNIF	0.000	-0.158		WLRX
5	4	WL2	GLOB	X	UNIF	0.000	0.104		WL2X
5	4	WR2	GLOB	X	UNIF	0.000	-0.342		WR2X
5	4	WLE	GLOB	X	UNIF	0.000	0.323		WLEX
5	4	WE2	GLOB	X	UNIF	0.000	0.323		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 17.02 FT ANGLE OF MEMBER 87.79 DEG
SECTION NO. 1 LENGTH 16.20' OF=10.00 X 0.3750 WEB=0.1875 IF=10.00 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	1.00	10.00	9.23	186.2	37.2	37.2	4.49	2.60	2.843	2.843
100	0.03	1.90	10.83	9.39	221.2	40.8	40.8	4.85	2.58	2.830	2.830
101	0.10	3.70	12.50	9.70	301.1	48.2	48.2	5.57	2.54	2.805	2.805
102	0.17	5.50	14.17	10.02	394.5	55.7	55.7	6.28	2.50	2.782	2.782
103	0.24	7.29	15.83	10.33	501.8	63.4	63.4	6.97	2.46	2.761	2.761
104	0.31	9.09	17.50	10.64	623.4	71.2	71.2	7.65	2.42	2.741	2.741
105	0.38	10.89	19.17	10.95	759.8	79.3	79.3	8.33	2.39	2.722	2.722
106	0.45	12.69	20.83	11.27	911.4	87.5	87.5	8.99	2.36	2.703	2.703
107	0.52	14.49	22.50	11.58	1078.7	95.9	95.9	9.65	2.32	2.685	2.685
108	0.59	16.29	24.17	11.89	1262.0	104.4	104.4	10.30	2.29	2.668	2.668
109*	0.63	17.19	25.00	12.05	1359.9	108.8	108.8	10.62	2.28	2.660	2.660

MEMBER NO. 2- 3 LENGTH 24.61 FT ANGLE OF MEMBER 15.10 DEG
SECTION NO. 1 LENGTH 7.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.2500
SECTION NO. 2 LENGTH 6.83' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 3 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
112*	1.41	18.20	25.00	7.59	689.2	55.1	55.1	9.53	1.09	1.421	1.421
113	2.25	18.46	23.63	7.34	603.0	51.1	51.1	9.07	1.11	1.435	1.435
114	3.91	19.00	20.88	6.82	451.2	43.2	43.2	8.13	1.15	1.465	1.465
115	5.58	19.53	18.13	6.30	325.2	35.9	35.9	7.18	1.20	1.497	1.497
116	7.25	20.07	15.38	5.79	223.0	29.0	29.0	6.21	1.25	1.532	1.532
117*	8.09	20.34	14.00	5.53	180.3	25.8	25.8	5.71	1.28	1.550	1.550
117*	8.09	20.34	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
118	8.92	20.55	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
119	10.58	20.96	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
120	12.23	21.37	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
121	13.89	21.79	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
122*	14.72	22.00	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
122*	14.72	22.00	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
123	15.53	22.20	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
124	17.14	22.60	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
125	18.76	23.01	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
126	20.38	23.41	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
127	22.00	23.81	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
128	23.61	24.22	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
3*	24.42	24.42	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578

MEMBER NO. 3- 4 LENGTH 24.61 FT ANGLE OF MEMBER -15.10 DEG
SECTION NO. 1 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 2 LENGTH 6.83' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 3 LENGTH 7.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.2500

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*	24.42	24.42	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
129	25.23	24.22	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
130	26.84	23.81	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
131	28.46	23.41	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
132	30.08	23.00	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
133	31.69	22.60	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
134	33.31	22.20	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
135*	34.12	21.99	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
135*	34.12	21.99	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
136	34.95	21.79	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
137	36.60	21.37	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
138	38.26	20.96	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
139	39.92	20.54	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
140*	40.74	20.34	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
140*	40.74	20.34	14.00	5.53	180.3	25.8	25.8	5.71	1.28	1.550	1.550
141	41.58	20.07	15.38	5.79	223.0	29.0	29.0	6.21	1.25	1.532	1.532
142	43.24	19.54	18.13	6.30	325.2	35.9	35.9	7.18	1.20	1.497	1.497
143	44.91	19.00	20.88	6.82	451.2	43.2	43.2	8.13	1.15	1.465	1.465
144	46.58	18.47	23.63	7.34	603.0	51.1	51.1	9.07	1.11	1.435	1.435
145*	47.42	18.20	25.00	7.59	689.2	55.1	55.1	9.53	1.09	1.421	1.421

MEMBER NO. 5- 4 LENGTH 17.02 FT ANGLE OF MEMBER 92.21 DEG
SECTION NO. 1 LENGTH 16.20' OF=10.00 X 0.3750 WEB=0.1875 IF=10.00 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*	48.83	1.00	10.00	9.23	186.2	37.2	37.2	4.49	2.60	2.843	2.843
147	48.80	1.90	10.83	9.39	221.2	40.8	40.8	4.85	2.58	2.830	2.830
148	48.73	3.70	12.50	9.70	301.1	48.2	48.2	5.57	2.54	2.805	2.805
149	48.66	5.50	14.17	10.02	394.5	55.7	55.7	6.28	2.50	2.782	2.782
150	48.59	7.29	15.83	10.33	501.8	63.4	63.4	6.97	2.46	2.761	2.761
151	48.52	9.09	17.50	10.64	623.4	71.2	71.2	7.65	2.42	2.741	2.741
152	48.45	10.89	19.17	10.95	759.8	79.3	79.3	8.33	2.39	2.722	2.722
153	48.38	12.69	20.83	11.27	911.4	87.5	87.5	8.99	2.36	2.703	2.703
154	48.31	14.49	22.50	11.58	1078.7	95.9	95.9	9.65	2.32	2.685	2.685
155	48.24	16.29	24.17	11.89	1262.0	104.4	104.4	10.30	2.29	2.668	2.668
156*	48.21	17.19	25.00	12.05	1359.9	108.8	108.8	10.62	2.28	2.660	2.660

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	14.9	6.2	0.0	0.0	0.000	0.000
2					0.006	-0.369
3					-1.321	-0.052
4					0.001	0.263
5	14.7	-6.0	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	19.9	8.1	0.0	0.0	0.000	0.000
2					0.001	-0.339
3					-1.801	0.078
4					0.008	0.497
5	20.1	-8.5	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	20.1	8.5	0.0	0.0	0.000	0.000
2					0.008	-0.497
3					-1.801	-0.078
4					0.001	0.339
5	19.9	-8.1	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	-9.0	-6.2	0.0	0.0	0.000	0.000
2					-0.022	0.672
3					0.458	0.551
4					0.020	0.441
5	-5.6	-0.7	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	-5.6	0.7	0.0	0.0	0.000	0.000
2					0.020	-0.437
3					0.459	-0.548
4					-0.021	-0.669
5	-9.0	6.2	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	-4.7	-6.1	0.0	0.0	0.000	0.000
2					-0.022	0.623
3					0.252	0.551
4					0.019	0.490
5	-1.2	-0.8	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	-1.2	0.8	0.0	0.0	0.000	0.000
2					0.019	-0.487
3					0.253	-0.548
4					-0.022	-0.620
5	-4.7	6.1	0.0	0.0	0.000	0.000

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

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-10.2	-0.8	0.0	0.0	0.000	0.000
2					0.008	-0.090
3					0.433	-0.192
4					-0.007	-0.298
5	-9.2	1.3	0.0	0.0	0.000	0.000

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

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-9.2	-1.3	0.0	0.0	0.000	0.000
2					-0.007	0.298
3					0.433	0.192
4					0.008	0.090
5	-10.2	0.8	0.0	0.0	0.000	0.000

LOAD COND 10 - DL+.75(SL+WE2) (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	5.2	0.0	0.0	0.000	0.000
2					-0.003	-0.091
3					-1.018	0.167
4					0.011	0.428
5	7.2	-5.6	0.0	0.0	0.000	0.000

LOAD COND 11 - DL+WE2 (NASI)

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-6.5	-0.2	0.0	0.0	0.000	0.000
2					-0.006	0.238
3					0.202	0.192
4					0.009	0.150
5	-7.5	-0.3	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	4.1	-0.1	0.0	0.0	0.000	0.000
2					-0.015	0.271
3					-0.641	0.430
4					0.019	0.599
5	6.8	-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	6.8	5.1	0.0	0.0	0.000	0.000
2					0.018	-0.596
3					-0.641	-0.428
4					-0.015	-0.268
5	4.1	0.1	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	1.5	0.0	0.0	0.000	0.000
2					-0.015	0.199
3					-1.002	0.444
4					0.020	0.698
5	10.7	-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	10.7	6.8	0.0	0.0	0.000	0.000
2					0.020	-0.696
3					-1.001	-0.442
4					-0.014	-0.197
5	7.9	-1.5	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	6.0	0.0	0.0	0.000	0.000
2					0.033	-0.961
3					-1.336	-0.631
4					-0.024	-0.315
5	15.9	-5.7	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	15.9	5.7	0.0	0.0	0.000	0.000
2					-0.024	0.315
3					-1.336	0.631
4					0.033	0.961
5	11.3	-6.0	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	4.4	1.4	0.0	0.0	0.000	0.000
2					-0.006	0.094
3					-0.372	0.186
4					0.008	0.282
5	4.9	-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	4.9	2.1	0.0	0.0	0.000	0.000
2					0.008	-0.282
3					-0.372	-0.186
4					-0.006	-0.094
5	4.4	-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	1.5	0.3	0.0	0.0	0.000	0.000
2					-0.007	0.148
3					-0.125	0.178
4					0.007	0.212
5	1.9	-0.9	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	1.9	0.9	0.0	0.0	0.000	0.000
2					0.007	-0.212
3					-0.125	-0.178
4					-0.007	-0.148
5	1.5	-0.3	0.0	0.0	0.000	0.000

LOAD COND 22 - 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	2.9	1.0	0.0	0.0	0.000	0.000
2					0.000	-0.057
3					-0.218	0.000
4					0.000	0.057
5	2.9	-1.0	0.0	0.0	0.000	0.000

LOAD COND 23 - COL- COLLATERAL

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	1.5	0.7	0.0	0.0	0.000	0.000
2					0.000	-0.037
3					-0.144	0.000
4					0.000	0.037
5	1.5	-0.7	0.0	0.0	0.000	0.000

LOAD COND 24 - 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	10.3	4.4	0.0	0.0	0.000	0.000
2					0.003	-0.249
3					-0.959	0.000
4					0.003	0.249
5	10.3	-4.4	0.0	0.0	0.000	0.000

LOAD COND 25 - 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	15.5	6.6	0.0	0.0	0.000	0.000
2					0.004	-0.374
3					-1.439	0.000
4					0.004	0.374
5	15.5	-6.6	0.0	0.0	0.000	0.000

LOAD COND 26 - 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	-10.8	-6.8	0.0	0.0	0.000	0.000
2					-0.022	0.706
3					0.589	0.551
4					0.019	0.407
5	-7.3	-0.1	0.0	0.0	0.000	0.000

LOAD COND 27 - 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	-7.3	0.1	0.0	0.0	0.000	0.000
2					0.019	-0.404
3					0.589	-0.548
4					-0.022	-0.703
5	-10.8	6.8	0.0	0.0	0.000	0.000

LOAD COND 28 - 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	-6.4	-6.7	0.0	0.0	0.000	0.000
2					-0.022	0.657
3					0.383	0.551
4					0.019	0.456
5	-3.0	-0.2	0.0	0.0	0.000	0.000

LOAD COND 29 - 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	-3.0	0.1	0.0	0.0	0.000	0.000
2					0.019	-0.453
3					0.384	-0.548
4					-0.022	-0.654
5	-6.4	6.7	0.0	0.0	0.000	0.000

LOAD COND 30 - 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	-12.0	-1.4	0.0	0.0	0.000	0.000
2					0.008	-0.056
3					0.564	-0.192
4					-0.007	-0.332
5	-11.0	1.9	0.0	0.0	0.000	0.000

LOAD COND 31 - 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	-11.0	-1.9	0.0	0.0	0.000	0.000
2					-0.007	0.332
3					0.564	0.192
4					0.008	0.056
5	-12.0	1.4	0.0	0.0	0.000	0.000

LOAD COND 32 - 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	6.7	4.2	0.0	0.0	0.000	0.000
2					0.029	-0.860
3					-0.972	-0.600
4					-0.021	-0.353
5	11.5	-4.2	0.0	0.0	0.000	0.000

LOAD COND 33 - 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	11.5	4.2	0.0	0.0	0.000	0.000
2					-0.021	0.353
3					-0.972	0.600
4					0.029	0.860
5	6.7	-4.2	0.0	0.0	0.000	0.000

LOAD COND 34 - 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					-0.009	0.250
3					0.000	0.248
4					0.009	0.250
5	0.3	-0.4	0.0	0.0	0.000	0.000

MEMBER NO. 1- 2 LENGTH 17.02 FT MEMBER ANGLE 87.79 DEG WEIGHT 620. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	16.20	10.00	25.00	10.0 X 3/8	3/16	10.0 X 3/8	0.599	16.2	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	19.81	-124.46	14.1	25.5	25.5	1.64	-13.73	13.73	0.06	0.54	0.54

MEMBER NO. 2- 3 LENGTH 24.61 FT MEMBER ANGLE 15.10 DEG WEIGHT 469. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	7.00	25.00	14.00	6.0 X 1/4	3/16	6.0 X 1/4	0.990	0.8	3
2	6.83	14.00	14.00	6.0 X 1/4	5/32	6.0 X 1/4	0.738	7.8	16
3	10.00	14.00	14.00	6.0 X 1/4	5/32	6.0 X 1/4	0.621	18.8	17

(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	13.31	-119.74	16.2	28.1	28.1	1.75	-26.06	26.06	0.05	0.93	0.94
2	7.60	-41.33	20.5	29.1	29.1	1.49	-19.97	19.97	0.04	0.69	0.70
3	6.16	37.82	20.5	31.4	31.4	1.20	18.27	-18.27	0.03	0.59	0.58

MEMBER NO. 3- 4 LENGTH 24.61 FT MEMBER ANGLE -15.10 DEG WEIGHT 469. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	10.00	14.00	14.00	6.0 X 1/4	5/32	6.0 X 1/4	0.621	5.8	16
2	6.83	14.00	14.00	6.0 X 1/4	5/32	6.0 X 1/4	0.738	16.8	17
3	7.00	14.00	25.00	6.0 X 1/4	3/16	6.0 X 1/4	0.990	23.8	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	6.16	37.81	20.5	31.4	31.4	1.20	18.27	-18.27	0.03	0.59	0.58
2	7.60	-41.33	20.5	29.1	29.1	1.49	-19.97	19.97	0.04	0.69	0.70
3	13.31	-119.75	16.2	28.1	28.1	1.75	-26.06	26.06	0.05	0.93	0.94

MEMBER NO. 5- 4 LENGTH 17.02 FT MEMBER ANGLE 92.21 DEG WEIGHT 620. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	16.20	10.00	25.00	10.0 X 3/8	3/16	10.0 X 3/8	0.599	16.2	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	19.81	-124.46	14.1	25.5	25.5	1.64	-13.73	13.73	0.06	0.54	0.54

TOTAL FRAME WEIGHT IS 2179. LBS.

COLUMN 1 - 2 UNBRACED

RAFTER 2 - 3

PURLIN AT	-0.34	1.67	3.68	5.69	7.70	9.70	11.71	13.72	15.73	17.74
SIZE		A2		A2				A2		
SIDES		1		1				1		
CONN.		1-1		1-1				1-1		
HOLE LOC		2		2				1		
FLG AREA		1.50		1.50				1.50		
DEPTH		23.61		17.29				14.00		

PURLIN AT	19.75	21.76	23.77
SIZE		A2	A2
SIDES		1	1
CONN.		1-1	1-1
HOLE LOC		1	1
FLG AREA		1.50	1.50
DEPTH		14.00	14.00

RAFTER 3 - 4

PURLIN AT	0.84	2.85	4.86	6.87	8.88	10.89	12.90	14.91	16.92	18.92
SIZE	A2	A2				A2				A2
SIDES	1	1				1				1
CONN.	1-1	1-1				1-1				1-1
HOLE LOC	1	1				1				2
FLG AREA	1.50	1.50				1.50				1.50
DEPTH	14.00	14.00				14.00				17.29

PURLIN AT	20.93	22.94
SIZE		A2
SIDES		1
CONN.		1-1
HOLE LOC		2
FLG AREA		1.50
DEPTH		23.61

COLUMN 5 - 4 UNBRACED

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 = 7672. X 3.75 X 4.81 / 186.16

= 743.8 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 = 9391. X 1.50 X 6.88 / 180.26

= 537.3 LBS/IN AT ANALYSIS POINT 117

WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY

RAFTER 2- 3 SECTION 2 Q MAX = 10137. X 1.50 X 6.88 / 173.85

= 601.3 LBS/IN AT ANALYSIS POINT 117

WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY

RAFTER 2- 3 SECTION 3 Q MAX = 5249. X 1.50 X 6.88 / 173.85

= 311.4 LBS/IN AT ANALYSIS POINT 122

WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY

RAFTER 3- 4 SECTION 1 Q MAX = 5249. X 1.50 X 6.88 / 173.85

= 311.4 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 = 10137. X 1.50 X 6.88 / 173.85

= 601.3 LBS/IN AT ANALYSIS POINT 140

WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY

RAFTER 3- 4 SECTION 3 Q MAX = 9391. X 1.50 X 6.88 / 180.26

= 537.3 LBS/IN AT ANALYSIS POINT 140

WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY

COLUMN 5- 4 SECTION 1 Q MAX = 7672. X 3.75 X 4.81 / 186.16

= 743.8 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: 25.0000 INCHES
WEB DEPTH: 24.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	25.0000	25.0000
OS FLANGE WIDTH	10.0000	6.0000
OS FLANGE THICK	0.3750	0.2500
WEB THICKNESS	0.1875	0.1875
IS FLANGE WIDTH	10.0000	6.0000
IS FLANGE THICK	0.3750	0.2500

CONTROLLING ACTIONS

POS MOMENT 69.51 FT-KIPS
AXIAL LOAD -6.21 KIPS
SHEAR -7.67 KIPS
LOAD CONDITION 4

NEG MOMENT -119.74 FT-KIPS
AXIAL LOAD 13.31 KIPS
SHEAR 14.31 KIPS
LOAD CONDITION 3

MAX SHEAR 14.31 KIPS
AXIAL LOAD 13.31 KIPS
MOMENT -119.74 FT-KIPS
LOAD CONDITION 3

LENGTH - 28.000" DIAM. - 0.625" TOP ROWS 3 EDGE DIST TOP 1.500"
WIDTH - 10.000" GAUGE - 3.500" BOT ROWS 2 EDGE DIST BOT 2.000"
THICK - 0.500" PITCH - 2.750" CON TYPE 1 TOP PROJECTION 2.750"

CORNER WEB - 0.188" THICK WITH 0.188" WELD ON 1 SIDE WELD SHEAR - 2.420 K/IN

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

SPLICE DEPTH: 14.0000 INCHES
WEB DEPTH: 13.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	14.0000	14.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1563	0.1563
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.2500	0.2500

CONTROLLING ACTIONS

POS MOMENT 33.26 FT-KIPS
AXIAL LOAD 8.30 KIPS
SHEAR -0.11 KIPS
LOAD CONDITION 2

NEG MOMENT -8.87 FT-KIPS
AXIAL LOAD -6.13 KIPS
SHEAR -0.24 KIPS
LOAD CONDITION 4

MAX SHEAR -3.20 KIPS

AXIAL LOAD 5.83 KIPS

MOMENT 26.36 FT-KIPS

LOAD CONDITION 17

LENGTH - 20.188"	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: 14.0000 INCHES
WEB DEPTH: 13.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	14.0000	14.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1563	0.1563
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.2500	0.2500

CONTROLLING ACTIONS

POS MOMENT 33.26 FT-KIPS
AXIAL LOAD 8.30 KIPS
SHEAR -0.11 KIPS
LOAD CONDITION 2

NEG MOMENT -8.87 FT-KIPS
AXIAL LOAD -6.13 KIPS
SHEAR -0.24 KIPS
LOAD CONDITION 4

MAX SHEAR -3.20 KIPS
AXIAL LOAD 5.83 KIPS
MOMENT 26.36 FT-KIPS
LOAD CONDITION 17

LENGTH - 20.188" 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: 25.0000 INCHES
WEB DEPTH: 24.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	25.0000	25.0000
OS FLANGE WIDTH	6.0000	10.0000
OS FLANGE THICK	0.2500	0.3750
WEB THICKNESS	0.1875	0.1875
IS FLANGE WIDTH	6.0000	10.0000
IS FLANGE THICK	0.2500	0.3750

CONTROLLING ACTIONS

POS MOMENT 69.43 FT-KIPS
AXIAL LOAD -6.20 KIPS
SHEAR 7.66 KIPS
LOAD CONDITION 5

NEG MOMENT -119.75 FT-KIPS
AXIAL LOAD 13.31 KIPS
SHEAR -14.31 KIPS
LOAD CONDITION 2

MAX SHEAR -14.31 KIPS

AXIAL LOAD 13.31 KIPS

MOMENT -119.75 FT-KIPS

LOAD CONDITION 2

LENGTH - 28.000"	DIAM. - 0.625"	TOP ROWS	3	EDGE DIST TOP	1.500"
WIDTH - 10.000"	GAUGE - 3.500"	BOT ROWS	2	EDGE DIST BOT	2.000"
THICK - 0.500"	PITCH - 2.750"	CON TYPE	1	TOP PROJECTION	2.750"

CORNER WEB - 0.188" THICK WITH 0.188" WELD ON 1 SIDE WELD SHEAR - 2.420 K/IN

SUPPORT JOINT 1 -- EXTERIOR COLUMN

CRITICAL REACTIONS		LOAD CONDITION	
HORIZONTAL	8.45 KIPS	3	
DOWNWARD..	20.09 KIPS	3	
UPWARD....	-10.20 KIPS	8	0.80 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN	OUTSIDE FLANGE - 10.0 X 0.3750		
WEB THICKNESS- .188 IN	INSIDE FLANGE - 10.0 X 0.3750		
LENGTH - 10.000"	DIAM. - 0.750"	NO. BOLTS 4	OS PROJECTION 0.000"
WIDTH - 10.000"	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	8.45 KIPS	2	
DOWNWARD..	20.09 KIPS	2	
UPWARD....	-10.20 KIPS	9	0.80 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN	OUTSIDE FLANGE - 10.0 X 0.3750		
WEB THICKNESS- .188 IN	INSIDE FLANGE - 10.0 X 0.3750		
LENGTH - 10.000"	DIAM. - 0.750"	NO. BOLTS 4	OS PROJECTION 0.000"
WIDTH - 10.000"	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	=	51.00 FT.
NUMBER OF SPANS	=	1
SPAN WIDTHS	=	51.00
DESIGN BAY SIZE	=	20.67 FT.
LEFT EAVE HEIGHT	=	18.33 FT.
RIGHT EAVE HEIGHT	=	18.33 FT.
LEFT RAFTER SLOPE (R/12)	=	3.00
RIGHT RAFTER SLOPE (R/12)	=	-3.00
GIRT OUTSET	=	8.00 IN.
PURLIN DEPTH	=	8.00 IN.

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

DEAD LOAD = 3.587 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 (NASI)	60. DL	100. WLE			
9 = .6DL+WE2 (NASI)	60. DL	100. WE2			
10 = DL+.75(SL+WE2) (NASI)	100. DL	100. COL	75. SL	75. WE2	
11 = DL+WE2 (NASI)	100. DL	100. COL	100. WE2		
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		

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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
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LOAD CONDITIONS ... (CONTINUED)

21 = .6 DL+SEISMIC RIGHT*0.7
57. DL -70. SEI

LOAD CONDITIONS FOR REACTIONS & DEFLECTIONS ...

22 =	DL	100. DL
23 =	COL	100. COL
24 =	LL	100. LL
25 =	SL	100. SL
26 =	WLL	100. WLL
27 =	WLR	100. WLR
28 =	WL2	100. WL2
29 =	WR2	100. WR2
30 =	WLE	100. WLE
31 =	WE2	100. WE2
32 =	SL4	100. SL4
33 =	SL3	100. SL3
34 =	SEI	100. SEI
35 =	SECOND ORDER SEED	100. 000

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
2	1	SEI	GLOB	X	CONC	0.000	0.471			
4	5	SEI	GLOB	X	CONC	0.000	0.471			
2	3	WLE	MEMB	Y	UNIF	0.000	0.207	10.200	0.207	
4	3	WE2	MEMB	Y	UNIF	0.000	-0.207	10.200	-0.207	
2	3	SL3	GLOB	Y	UNIF	0.000	-0.463			
3	2	SL3	GLOB	Y	UNIF	0.000	-0.303	8.976	-0.303	
3	4	SL4	GLOB	Y	UNIF	0.000	-0.463			
3	4	SL4	GLOB	Y	UNIF	0.000	-0.303	8.976	-0.303	
2	3	SL4	GLOB	Y	UNIF	0.000	-0.140			
3	4	SL3	GLOB	Y	UNIF	0.000	-0.140			
3	2	COL	GLOB	Y	CONC	19.500	-0.200			
3	4	COL	GLOB	Y	CONC	19.500	-0.200			
(AUTO LOADS)										
1	2	DL	GLOB	Y	UNIF	0.000	-0.030			DLWT
1	2	WLL	GLOB	X	UNIF	0.000	0.160			WLLX
1	2	WLR	GLOB	X	UNIF	0.000	-0.292			WLRX
1	2	WL2	GLOB	X	UNIF	0.000	0.348			WL2X
1	2	WR2	GLOB	X	UNIF	0.000	-0.104			WR2X
1	2	WLE	GLOB	X	UNIF	0.000	-0.328			WLEX
1	2	WE2	GLOB	X	UNIF	0.000	-0.328			WE2X
2	3	LL	GLOB	Y	UNIF	0.000	-0.401			LIVE
2	3	LL	GLOB	Y	CONC	0.000	-0.751			LIVE
2	3	LL	GLOB	Z	MOMT	0.000	0.702			LIVE
2	3	SL	GLOB	Y	UNIF	0.000	-0.601			SNOW
2	3	SL3	GLOB	Y	CONC	0.000	-0.867			SNOW
2	3	SL3	GLOB	Z	MOMT	0.000	0.811			SNOW
2	3	SL4	GLOB	Y	CONC	0.000	-0.262			SNOW
2	3	SL4	GLOB	Z	MOMT	0.000	0.245			SNOW
2	3	SL	GLOB	Y	CONC	0.000	-1.126			SNOW
2	3	SL	GLOB	Z	MOMT	0.000	1.054			SNOW
2	3	DL	GLOB	Y	UNIF	0.000	-0.072			DEAD

2	3	DL	GLOB	Y	CONC	0.000	-0.135	DEAD
2	3	DL	GLOB	Z	MOMT	0.000	0.126	DEAD
2	3	DL	GLOB	Y	UNIF	0.000	-0.020	DLWT
2	3	COL	GLOB	Y	UNIF	0.000	-0.060	COLL
2	3	COL	GLOB	Y	CONC	0.000	-0.113	COLL
2	3	COL	GLOB	Z	MOMT	0.000	0.105	COLL
2	3	WLL	GLOB	X	UNIF	0.000	-0.110	WLLX
2	3	WLL	GLOB	Y	UNIF	0.000	0.442	WLLY
2	3	WLR	GLOB	X	UNIF	0.000	-0.079	WLRX
2	3	WLR	GLOB	Y	UNIF	0.000	0.316	WLRY
2	3	WL2	GLOB	X	UNIF	0.000	-0.065	WL2X
2	3	WL2	GLOB	Y	UNIF	0.000	0.259	WL2Y
2	3	WR2	GLOB	X	UNIF	0.000	-0.033	WR2X
2	3	WR2	GLOB	Y	UNIF	0.000	0.134	WR2Y
2	3	WLE	GLOB	X	UNIF	0.000	-0.110	WLEX
2	3	WLE	GLOB	Y	UNIF	0.000	0.442	WLEY
2	3	WE2	GLOB	X	UNIF	0.000	-0.110	WE2X
2	3	WE2	GLOB	Y	UNIF	0.000	0.442	WE2Y
3	4	LL	GLOB	Y	UNIF	0.000	-0.401	LIVE
4	3	LL	GLOB	Y	CONC	0.000	-0.751	LIVE
4	3	LL	GLOB	Z	MOMT	0.000	-0.702	LIVE

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD	
3	4	SL	GLOB	Y	UNIF	0.000	-0.601			SNOW
4	3	SL3	GLOB	Y	CONC	0.000	-0.262			SNOW
4	3	SL3	GLOB	Z	MOMT	0.000	-0.245			SNOW
4	3	SL4	GLOB	Y	CONC	0.000	-0.867			SNOW
4	3	SL4	GLOB	Z	MOMT	0.000	-0.811			SNOW
4	3	SL	GLOB	Y	CONC	0.000	-1.126			SNOW
4	3	SL	GLOB	Z	MOMT	0.000	-1.054			SNOW
3	4	DL	GLOB	Y	UNIF	0.000	-0.072			DEAD
4	3	DL	GLOB	Y	CONC	0.000	-0.135			DEAD
4	3	DL	GLOB	Z	MOMT	0.000	-0.126			DEAD
3	4	DL	GLOB	Y	UNIF	0.000	-0.020			DLWT
3	4	COL	GLOB	Y	UNIF	0.000	-0.060			COLL
4	3	COL	GLOB	Y	CONC	0.000	-0.113			COLL
4	3	COL	GLOB	Z	MOMT	0.000	-0.105			COLL
3	4	WLL	GLOB	X	UNIF	0.000	0.079			WLLX
3	4	WLL	GLOB	Y	UNIF	0.000	0.316			WLLY
3	4	WLR	GLOB	X	UNIF	0.000	0.110			WLRX
3	4	WLR	GLOB	Y	UNIF	0.000	0.442			WLRY
3	4	WL2	GLOB	X	UNIF	0.000	0.033			WL2X
3	4	WL2	GLOB	Y	UNIF	0.000	0.134			WL2Y
3	4	WR2	GLOB	X	UNIF	0.000	0.065			WR2X
3	4	WR2	GLOB	Y	UNIF	0.000	0.259			WR2Y
3	4	WLE	GLOB	X	UNIF	0.000	0.110			WLEX
3	4	WLE	GLOB	Y	UNIF	0.000	0.442			WLEY
3	4	WE2	GLOB	X	UNIF	0.000	0.110			WE2X

3	4	WE2	GLOB	Y	UNIF	0.000	0.442		WE2Y
5	4	DL	GLOB	Y	UNIF	0.000	-0.030		DLWT
5	4	WLL	GLOB	X	UNIF	0.000	0.293		WLLX
5	4	WLR	GLOB	X	UNIF	0.000	-0.160		WLRX
5	4	WL2	GLOB	X	UNIF	0.000	0.106		WL2X
5	4	WR2	GLOB	X	UNIF	0.000	-0.348		WR2X
5	4	WLE	GLOB	X	UNIF	0.000	0.328		WLEX
5	4	WE2	GLOB	X	UNIF	0.000	0.328		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 17.10 FT ANGLE OF MEMBER 87.43 DEG
SECTION NO. 1 LENGTH 16.33' OF= 8.00 X 0.3125 WEB=0.1875 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	1.00	10.00	7.25	140.1	26.4	29.9	4.40	2.01	2.224	2.258
100	0.04	1.91	10.94	7.42	170.5	29.3	33.2	4.79	1.99	2.209	2.245
101	0.12	3.72	12.83	7.78	241.3	35.5	40.0	5.57	1.94	2.180	2.220
102	0.20	5.53	14.72	8.13	326.0	41.9	47.0	6.33	1.90	2.153	2.198
103	0.29	7.34	16.61	8.49	425.1	48.5	54.2	7.08	1.86	2.128	2.177
104	0.37	9.16	18.50	8.84	539.4	55.4	61.6	7.81	1.82	2.105	2.157
105	0.45	10.97	20.39	9.19	669.4	62.5	69.2	8.53	1.79	2.082	2.138
106	0.53	12.78	22.28	9.55	815.7	69.8	77.1	9.24	1.75	2.061	2.119
107	0.61	14.59	24.17	9.90	979.2	77.3	85.1	9.94	1.72	2.040	2.101
108	0.69	16.41	26.06	10.26	1160.2	85.1	93.4	10.64	1.69	2.020	2.084
109*	0.73	17.31	27.00	10.43	1257.6	89.1	97.6	10.98	1.68	2.011	2.076

MEMBER NO. 2- 3 LENGTH 24.41 FT ANGLE OF MEMBER 14.62 DEG
SECTION NO. 1 LENGTH 7.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.2500
SECTION NO. 2 LENGTH 6.59' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 3 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500

ANAL POINT	X (FT)	Y (FT)	DEPTH (IN)	AREA (IN2)	IX (IN4)	SOX (IN3)	SIX (IN3)	RX (IN)	RY (IN)	RTO (IN)	RTI (IN)
112*	1.56	18.28	24.00	7.41	625.8	52.2	52.2	9.19	1.10	1.432	1.432
113	2.40	18.55	22.75	7.17	551.8	48.5	48.5	8.77	1.12	1.445	1.445
114	4.07	19.07	20.25	6.70	420.4	41.5	41.5	7.92	1.16	1.472	1.472
115	5.74	19.59	17.75	6.23	309.9	34.9	34.9	7.05	1.20	1.502	1.502
116	7.41	20.12	15.25	5.77	218.9	28.7	28.7	6.16	1.25	1.533	1.533
117*	8.25	20.39	14.00	5.53	180.3	25.8	25.8	5.71	1.28	1.550	1.550
117*	8.25	20.39	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
118	9.06	20.58	14.20	5.14	179.4	25.3	25.3	5.91	1.32	1.576	1.576
119	10.66	20.96	14.60	5.20	190.8	26.1	26.1	6.06	1.32	1.571	1.571
120	12.26	21.34	14.99	5.26	202.7	27.0	27.0	6.20	1.31	1.567	1.567
121	13.86	21.73	15.39	5.33	214.9	27.9	27.9	6.35	1.30	1.562	1.562
122*	14.67	21.92	15.59	5.36	221.2	28.4	28.4	6.43	1.30	1.560	1.560
122*	14.67	21.92	15.59	5.36	221.2	28.4	28.4	6.43	1.30	1.560	1.560
123	15.48	22.11	15.79	5.39	227.7	28.8	28.8	6.50	1.29	1.557	1.557
124	17.10	22.50	16.19	5.45	240.9	29.8	29.8	6.65	1.29	1.553	1.553
125	18.72	22.89	16.59	5.51	254.6	30.7	30.7	6.80	1.28	1.548	1.548
126	20.34	23.28	17.00	5.58	268.8	31.6	31.6	6.94	1.27	1.544	1.544
127	21.96	23.67	17.40	5.64	283.4	32.6	32.6	7.09	1.26	1.539	1.539
128	23.58	24.05	17.80	5.70	298.4	33.5	33.5	7.23	1.26	1.535	1.535
3*	24.39	24.25	18.00	5.73	306.1	34.0	34.0	7.31	1.25	1.533	1.533

MEMBER NO. 3- 4 LENGTH 24.41 FT ANGLE OF MEMBER -14.62 DEG
SECTION NO. 1 LENGTH 10.00' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 2 LENGTH 6.59' OF= 6.00 X 0.2500 WEB=0.1563 IF= 6.00 X 0.2500
SECTION NO. 3 LENGTH 7.00' OF= 6.00 X 0.2500 WEB=0.1875 IF= 6.00 X 0.2500

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*	24.39	24.25	18.00	5.73	306.1	34.0	34.0	7.31	1.25	1.533	1.533
129	25.20	24.05	17.80	5.70	298.4	33.5	33.5	7.23	1.26	1.535	1.535
130	26.82	23.67	17.40	5.64	283.4	32.6	32.6	7.09	1.26	1.539	1.539
131	28.44	23.28	17.00	5.58	268.8	31.6	31.6	6.94	1.27	1.544	1.544
132	30.06	22.89	16.59	5.51	254.6	30.7	30.7	6.80	1.28	1.548	1.548
133	31.68	22.50	16.19	5.45	240.9	29.8	29.8	6.65	1.29	1.553	1.553
134	33.31	22.11	15.79	5.39	227.7	28.8	28.8	6.50	1.29	1.557	1.557
135*	34.12	21.92	15.59	5.36	221.2	28.4	28.4	6.43	1.30	1.560	1.560
135*	34.12	21.92	15.59	5.36	221.2	28.4	28.4	6.43	1.30	1.560	1.560
136	34.92	21.73	15.39	5.33	214.9	27.9	27.9	6.35	1.30	1.562	1.562
137	36.52	21.34	14.99	5.26	202.7	27.0	27.0	6.20	1.31	1.567	1.567
138	38.12	20.96	14.60	5.20	190.8	26.1	26.1	6.06	1.32	1.571	1.571
139	39.73	20.58	14.20	5.14	179.4	25.3	25.3	5.91	1.32	1.576	1.576
140*	40.53	20.39	14.00	5.11	173.8	24.8	24.8	5.83	1.33	1.578	1.578
140*	40.53	20.39	14.00	5.53	180.3	25.8	25.8	5.71	1.28	1.550	1.550
141	41.36	20.12	15.25	5.77	218.9	28.7	28.7	6.16	1.25	1.533	1.533
142	43.03	19.60	17.75	6.23	309.9	34.9	34.9	7.05	1.20	1.502	1.502
143	44.70	19.07	20.25	6.70	420.4	41.5	41.5	7.92	1.16	1.472	1.472
144	46.37	18.55	22.75	7.17	551.8	48.5	48.5	8.77	1.12	1.445	1.445
145*	47.22	18.28	24.00	7.41	625.8	52.2	52.2	9.19	1.10	1.432	1.432

MEMBER NO. 5- 4 LENGTH 17.10 FT ANGLE OF MEMBER 92.57 DEG
SECTION NO. 1 LENGTH 16.33' OF= 8.00 X 0.3125 WEB=0.1875 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*	48.78	1.00	10.00	7.25	140.1	26.4	29.9	4.40	2.01	2.224	2.258
147	48.74	1.91	10.94	7.42	170.5	29.3	33.2	4.79	1.99	2.209	2.245
148	48.66	3.72	12.83	7.78	241.3	35.5	40.0	5.57	1.94	2.180	2.220
149	48.58	5.53	14.72	8.13	326.0	41.9	47.0	6.33	1.90	2.153	2.198
150	48.50	7.34	16.61	8.49	425.1	48.5	54.2	7.08	1.86	2.128	2.177
151	48.41	9.16	18.50	8.84	539.4	55.4	61.6	7.81	1.82	2.105	2.157
152	48.33	10.97	20.39	9.19	669.4	62.5	69.2	8.53	1.79	2.082	2.138
153	48.25	12.78	22.28	9.55	815.7	69.8	77.1	9.24	1.75	2.061	2.119
154	48.17	14.59	24.17	9.90	979.2	77.3	85.1	9.94	1.72	2.040	2.101
155	48.09	16.41	26.06	10.26	1160.2	85.1	93.4	10.64	1.69	2.020	2.084
156*	48.05	17.31	27.00	10.43	1257.6	89.1	97.6	10.98	1.68	2.011	2.076

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	15.3	6.1	0.0	0.0	0.000	0.000
2					0.004	-0.338
3					-1.234	-0.052
4					-0.001	0.232
5	15.1	-5.9	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	20.4	8.0	0.0	0.0	0.000	0.000
2					-0.001	-0.305
3					-1.680	0.070
4					0.006	0.447
5	20.6	-8.2	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	20.6	8.2	0.0	0.0	0.000	0.000
2					0.006	-0.447
3					-1.680	-0.070
4					-0.001	0.305
5	20.4	-8.0	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	-9.3	-6.2	0.0	0.0	0.000	0.000
2					-0.025	0.684
3					0.440	0.571
4					0.024	0.470
5	-5.7	-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	-5.7	0.8	0.0	0.0	0.000	0.000
2					0.024	-0.467
3					0.440	-0.568
4					-0.025	-0.681
5	-9.3	6.2	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	-4.8	-6.1	0.0	0.0	0.000	0.000
2					-0.026	0.638
3					0.240	0.571
4					0.024	0.516
5	-1.3	-0.9	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	-1.3	0.9	0.0	0.0	0.000	0.000
2					0.024	-0.513
3					0.241	-0.568
4					-0.026	-0.635
5	-4.8	6.1	0.0	0.0	0.000	0.000

LOAD COND 8 - .6DL+WLE (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	-0.7	0.0	0.0	0.000	0.000
2					0.011	-0.111
3					0.427	-0.207
4					-0.008	-0.308
5	-9.5	1.3	0.0	0.0	0.000	0.000

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

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	-9.5	-1.3	0.0	0.0	0.000	0.000
2					-0.008	0.308
3					0.427	0.207
4					0.011	0.111
5	-10.7	0.7	0.0	0.0	0.000	0.000

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

JOINT NUMBER	VERT REACT (KIP)	X REACT (KIP)	Z REACT (KIP)	MOMENT REACTION (KIP-FT)	VERT DEFL (IN)	HORIZ DEFL (IN)
1	8.1	5.0	0.0	0.0	0.000	0.000
2					-0.006	-0.052
3					-0.934	0.177
4					0.011	0.409
5	7.3	-5.5	0.0	0.0	0.000	0.000

LOAD COND 11 - DL+WE2 (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					-0.008	0.253
3					0.208	0.207
4					0.011	0.165
5	-7.7	-0.3	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	4.3	-0.2	0.0	0.0	0.000	0.000
2					-0.019	0.305
3					-0.590	0.446
4					0.021	0.596
5	7.0	-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	7.0	5.1	0.0	0.0	0.000	0.000
2					0.021	-0.594
3					-0.590	-0.443
4					-0.019	-0.303
5	4.3	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	8.2	1.3	0.0	0.0	0.000	0.000
2					-0.020	0.241
3					-0.926	0.458
4					0.022	0.686
5	11.0	-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	11.0	6.7	0.0	0.0	0.000	0.000
2					0.022	-0.683
3					-0.926	-0.456
4					-0.019	-0.238
5	8.2	-1.3	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	11.6	5.9	0.0	0.0	0.000	0.000
2					0.033	-0.865
3					-1.240	-0.569
4					-0.027	-0.287
5	16.3	-5.6	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	16.3	5.6	0.0	0.0	0.000	0.000
2					-0.027	0.287
3					-1.240	0.569
4					0.033	0.865
5	11.6	-5.9	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	4.5	1.4	0.0	0.0	0.000	0.000
2					-0.009	0.113
3					-0.350	0.196
4					0.009	0.284
5	5.1	-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	5.1	2.1	0.0	0.0	0.000	0.000
2					0.009	-0.284
3					-0.350	-0.196
4					-0.009	-0.113
5	4.5	-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	1.4	0.2	0.0	0.0	0.000	0.000
2					-0.008	0.161
3					-0.116	0.188
4					0.008	0.219
5	1.9	-0.9	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	1.9	0.9	0.0	0.0	0.000	0.000
2					0.008	-0.219
3					-0.116	-0.188
4					-0.008	-0.161
5	1.4	-0.2	0.0	0.0	0.000	0.000

LOAD COND 22 - 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	2.9	1.0	0.0	0.0	0.000	0.000
2					0.000	-0.051
3					-0.204	0.000
4					0.000	0.051
5	2.9	-1.0	0.0	0.0	0.000	0.000

LOAD COND 23 - 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	0.7	0.0	0.0	0.000	0.000
2					0.000	-0.034
3					-0.137	0.000
4					0.000	0.034
5	1.8	-0.7	0.0	0.0	0.000	0.000

LOAD COND 24 - 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	10.5	4.3	0.0	0.0	0.000	0.000
2					0.001	-0.224
3					-0.893	0.000
4					0.001	0.224
5	10.5	-4.3	0.0	0.0	0.000	0.000

LOAD COND 25 - 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	15.8	6.4	0.0	0.0	0.000	0.000
2					0.002	-0.335
3					-1.340	0.000
4					0.002	0.335
5	15.8	-6.4	0.0	0.0	0.000	0.000

LOAD COND 26 - 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	-11.0	-6.8	0.0	0.0	0.000	0.000
2					-0.025	0.715
3					0.562	0.571
4					0.024	0.439
5	-7.5	-0.2	0.0	0.0	0.000	0.000

LOAD COND 27 - 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	-7.5	0.2	0.0	0.0	0.000	0.000
2					0.024	-0.436
3					0.562	-0.568
4					-0.025	-0.712
5	-11.0	6.8	0.0	0.0	0.000	0.000

LOAD COND 28 - 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	-6.6	-6.7	0.0	0.0	0.000	0.000
2					-0.026	0.669
3					0.362	0.571
4					0.024	0.485
5	-3.0	-0.3	0.0	0.0	0.000	0.000

LOAD COND 29 - 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	-3.0	0.3	0.0	0.0	0.000	0.000
2					0.024	-0.482
3					0.363	-0.568
4					-0.026	-0.666
5	-6.6	6.7	0.0	0.0	0.000	0.000

LOAD COND 30 - 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	-12.4	-1.3	0.0	0.0	0.000	0.000
2					0.011	-0.080
3					0.549	-0.207
4					-0.008	-0.339
5	-11.2	1.9	0.0	0.0	0.000	0.000

LOAD COND 31 - 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	-11.2	-1.9	0.0	0.0	0.000	0.000
2					-0.008	0.339
3					0.549	0.207
4					0.011	0.080
5	-12.4	1.3	0.0	0.0	0.000	0.000

LOAD COND 32 - 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	6.8	4.0	0.0	0.0	0.000	0.000
2					0.029	-0.770
3					-0.898	-0.537
4					-0.024	-0.319
5	11.7	-4.0	0.0	0.0	0.000	0.000

LOAD COND 33 - 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	11.7	4.0	0.0	0.0	0.000	0.000
2					-0.024	0.319
3					-0.898	0.537
4					0.029	0.770
5	6.8	-4.0	0.0	0.0	0.000	0.000

LOAD COND 34 - 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	-0.5	0.0	0.0	0.000	0.000
2					-0.012	0.264
3					0.000	0.262
4					0.012	0.264
5	0.3	-0.5	0.0	0.0	0.000	0.000

MEMBER NO. 1- 2 LENGTH 17.10 FT MEMBER ANGLE 87.43 DEG WEIGHT 519. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	16.33	10.00	27.00	8.0 X 5/16	3/16	8.0 X 3/8	0.861	16.3	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	20.43	-119.50	10.6	21.0	19.2	1.96	-16.10	14.69	0.09	0.77	0.77

MEMBER NO. 2- 3 LENGTH 24.41 FT MEMBER ANGLE 14.62 DEG WEIGHT 481. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	7.00	24.00	14.00	6.0 X 1/4	3/16	6.0 X 1/4	0.975	0.8	3
2	6.59	14.00	15.59	6.0 X 1/4	5/32	6.0 X 1/4	0.629	7.8	16
3	10.00	15.59	18.00	6.0 X 1/4	5/32	6.0 X 1/4	0.630	20.2	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	13.14	-113.42	16.7	28.6	28.6	1.77	-26.10	26.10	0.05	0.91	0.92
2	7.43	-35.06	20.6	29.1	29.1	1.45	-16.94	16.94	0.04	0.58	0.59
3	8.58	46.00	19.3	30.0	30.0	1.54	17.45	-17.45	0.04	0.59	0.58

MEMBER NO. 3- 4 LENGTH 24.41 FT MEMBER ANGLE -14.62 DEG WEIGHT 481. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	10.00	18.00	15.59	6.0 X 1/4	5/32	6.0 X 1/4	0.630	4.2	3
2	6.59	15.59	14.00	6.0 X 1/4	5/32	6.0 X 1/4	0.629	16.6	17
3	7.00	14.00	24.00	6.0 X 1/4	3/16	6.0 X 1/4	0.975	23.6	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	8.58	46.00	19.3	30.0	30.0	1.54	17.45	-17.45	0.04	0.59	0.58
2	7.43	-35.06	20.6	29.1	29.1	1.45	-16.94	16.94	0.04	0.58	0.59
3	13.14	-113.42	16.7	28.6	28.6	1.77	-26.10	26.10	0.05	0.91	0.92

MEMBER NO. 5- 4 LENGTH 17.10 FT MEMBER ANGLE 92.57 DEG WEIGHT 519. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	16.33	10.00	27.00	8.0 X 5/16	3/16	8.0 X 3/8	0.861	16.3	2

(CONTROLLING ACTIONS)

	AXIAL		-ALLOW STRESSES-			--MAXIMUM STRESSES--			-UNITY CHECK-		
SECT NO	FORCE (KIP)	MOMENT (KIP-FT)	FA (KSI)	FBO (KSI)	FBI (KSI)	AXIAL (KSI)	FBO (KSI)	FBI (KSI)	- COMPONENTS - FA	FBO	FBI
1	20.43	-119.50	10.6	21.0	19.2	1.96	-16.10	14.69	0.09	0.77	0.77

TOTAL FRAME WEIGHT IS 1999. LBS.

COLUMN 1 - 2 UNBRACED

RAFTER 2 - 3

PURLIN AT	-0.49	1.52	3.53	5.53	7.54	9.54	11.55	13.55	15.56	17.56
SIZE		A2		A2				A2		
SIDES		1		1				1		
CONN.		1-1		1-1				1-1		
HOLE LOC		2		2				2		
FLG AREA		1.50		1.50				1.50		
DEPTH		23.00		17.27				15.38		

PURLIN AT	19.57	21.57	23.58
SIZE		A2	A2
SIDES		1	1
CONN.		1-1	1-1
HOLE LOC		2	2
FLG AREA		1.50	1.50
DEPTH		17.32	17.80

RAFTER 3 - 4

PURLIN AT	0.84	2.84	4.85	6.85	8.86	10.86	12.87	14.87	16.88	18.88
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	1.50	1.50				1.50				1.50
DEPTH	17.80	17.32				15.38				17.27

PURLIN AT	20.89	22.89
SIZE		A2
SIDES		1
CONN.		1-1
HOLE LOC		2
FLG AREA		1.50
DEPTH		23.00

COLUMN 5 - 4 UNBRACED

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  =     7307. X  3.00 X  4.50 /   140.10

                                    =  703.9 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  =     9590. X  1.50 X  6.88 /   180.26

                                    =  548.7 LBS/IN AT ANALYSIS POINT 117

   WELD SIZE FOR THE SECTION =0.1250 INCH,    WELD ONE SIDE ONLY

RAFTER  2- 3    SECTION 2   Q MAX  =    10366. X  1.50 X  6.88 /   173.85

                                    =  614.9 LBS/IN AT ANALYSIS POINT 117

   WELD SIZE FOR THE SECTION =0.1250 INCH,    WELD ONE SIDE ONLY

RAFTER  2- 3    SECTION 3   Q MAX  =     5537. X  1.50 X  7.67 /   221.22

                                    =  287.9 LBS/IN AT ANALYSIS POINT 122

   WELD SIZE FOR THE SECTION =0.1250 INCH,    WELD ONE SIDE ONLY

RAFTER  3- 4    SECTION 1   Q MAX  =     5537. X  1.50 X  7.67 /   221.22

                                    =  287.9 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  =    10366. X  1.50 X  6.88 /   173.85

                                    =  614.9 LBS/IN AT ANALYSIS POINT 140

   WELD SIZE FOR THE SECTION =0.1250 INCH,    WELD ONE SIDE ONLY
```

RAFTER 3- 4 SECTION 3 Q MAX = 9590. X 1.50 X 6.88 / 180.26

= 548.7 LBS/IN AT ANALYSIS POINT 140

WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY

COLUMN 5- 4 SECTION 1 Q MAX = 7307. X 3.00 X 4.50 / 140.10

= 703.9 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: 23.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	27.0000	24.0000
OS FLANGE WIDTH	8.0000	6.0000
OS FLANGE THICK	0.3125	0.2500
WEB THICKNESS	0.1875	0.1875
IS FLANGE WIDTH	8.0000	6.0000
IS FLANGE THICK	0.3750	0.2500

CONTROLLING ACTIONS

POS MOMENT 67.95 FT-KIPS
AXIAL LOAD -6.18 KIPS
SHEAR -7.89 KIPS
LOAD CONDITION 4

NEG MOMENT -113.42 FT-KIPS
AXIAL LOAD 13.14 KIPS
SHEAR 14.81 KIPS
LOAD CONDITION 3

MAX SHEAR 14.81 KIPS
AXIAL LOAD 13.14 KIPS
MOMENT -113.42 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 2.000"
THICK - 0.625" PITCH - 2.750" CON TYPE 1 TOP PROJECTION 2.750"

CORNER WEB - 0.188" THICK WITH 0.188" WELD ON 1 SIDE WELD SHEAR - 2.211 K/IN

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

SPLICE DEPTH: 18.0000 INCHES
WEB DEPTH: 17.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	18.0000	18.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1563	0.1563
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.2500	0.2500

CONTROLLING ACTIONS

POS MOMENT 44.14 FT-KIPS
AXIAL LOAD 8.10 KIPS
SHEAR -0.02 KIPS
LOAD CONDITION 2

NEG MOMENT -13.10 FT-KIPS
AXIAL LOAD -6.14 KIPS
SHEAR -0.31 KIPS
LOAD CONDITION 4

MAX SHEAR -3.19 KIPS

AXIAL LOAD 5.74 KIPS

MOMENT 34.53 FT-KIPS

LOAD CONDITION 17

LENGTH - 24.250"	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: 18.0000 INCHES
WEB DEPTH: 17.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	18.0000	18.0000
OS FLANGE WIDTH	6.0000	6.0000
OS FLANGE THICK	0.2500	0.2500
WEB THICKNESS	0.1563	0.1563
IS FLANGE WIDTH	6.0000	6.0000
IS FLANGE THICK	0.2500	0.2500

CONTROLLING ACTIONS

POS MOMENT 44.14 FT-KIPS
AXIAL LOAD 8.10 KIPS
SHEAR -0.02 KIPS
LOAD CONDITION 2

NEG MOMENT -13.10 FT-KIPS
AXIAL LOAD -6.14 KIPS
SHEAR -0.31 KIPS
LOAD CONDITION 4

MAX SHEAR -3.19 KIPS
AXIAL LOAD 5.74 KIPS
MOMENT 34.53 FT-KIPS
LOAD CONDITION 17

LENGTH - 24.250" 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: 23.5000 INCHES

SPLICE DATA	LEFT	RIGHT
SECTION DEPTH	24.0000	27.0000
OS FLANGE WIDTH	6.0000	8.0000
OS FLANGE THICK	0.2500	0.3125
WEB THICKNESS	0.1875	0.1875
IS FLANGE WIDTH	6.0000	8.0000
IS FLANGE THICK	0.2500	0.3750

CONTROLLING ACTIONS

POS MOMENT 67.86 FT-KIPS
AXIAL LOAD -6.18 KIPS
SHEAR 7.88 KIPS
LOAD CONDITION 5

NEG MOMENT -113.42 FT-KIPS
AXIAL LOAD 13.14 KIPS
SHEAR -14.81 KIPS
LOAD CONDITION 2

MAX SHEAR -14.81 KIPS

AXIAL LOAD 13.14 KIPS

MOMENT -113.42 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	2.000"
THICK - 0.625"	PITCH - 2.750"	CON TYPE	1	TOP PROJECTION	2.750"

CORNER WEB - 0.188" THICK WITH 0.188" WELD ON 1 SIDE WELD SHEAR - 2.211 K/IN

SUPPORT JOINT 1 -- EXTERIOR COLUMN

CRITICAL REACTIONS		LOAD CONDITION	
HORIZONTAL	8.24 KIPS	3	
DOWNWARD..	20.58 KIPS	3	
UPWARD....	-10.65 KIPS	8	0.75 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN	OUTSIDE FLANGE - 8.0 X 0.3125		
WEB THICKNESS- .188 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	8.24 KIPS	2	
DOWNWARD..	20.58 KIPS	2	
UPWARD....	-10.65 KIPS	9	0.75 KIPS ASSOCIATED SHEAR

COLUMN BASE DETAILS

COLUMN DEPTH - 10.0 IN	OUTSIDE FLANGE - 8.0 X 0.3125		
WEB THICKNESS- .188 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"

*** D E T A I L I N P U T E C H O ***

```
JOINT    1    0.00     0.00   110
JOINT    2   24.33     0.00    10
MEMBERS
MEMB     1  2 000000  8.000  0.000  0.000  0.000  8.000  1 B  0.000  1.000  1.00
BRACO     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
           0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
BRACI     0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
           0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
SECT      80D       WL        80D        0.000  0.000
LOAD CONDITIONS

    DL+LL+DL1/
LDCN 100. DL  100. COL 100. SL  100. DL1

    DL+LL+DL2/
LDCN 100. DL  100. COL 100. SL  100. DL2

    DL+LL+DL3/
LDCN 100. DL  100. COL 100. SL  100. DL3
```

J1	J2	GROUP	SYST	DIR	TYPE	DIST	LOAD	*E or L	LOAD
1	2	DL	GLOB	Y	UNIF	0.000	-0.035		
1	2	COL	GLOB	Y	UNIF	0.000	-0.006		
1	2	SL	GLOB	Y	UNIF	0.000	-0.060		
1	2	DL1	GLOB	Y	CONC	4.833	-0.700		
1	2	DL1	GLOB	Y	CONC	15.750	-0.550		
1	2	DL2	GLOB	Y	CONC	7.500	-0.700		
1	2	DL2	GLOB	Y	CONC	10.500	-0.700		
1	2	DL2	GLOB	Y	CONC	18.417	-0.550		
1	2	DL2	GLOB	Y	CONC	21.667	-0.550		
1	2	DL3	GLOB	Y	CONC	13.000	-0.700		
1	2	DL3	GLOB	Y	CONC	18.417	-0.550		
1	2	DL3	GLOB	Y	CONC	21.667	-0.550		

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

LOAD CONDITION DESCRIPTIONS
1 DL+LL+DL1/
2 DL+LL+DL2/
3 DL+LL+DL3/

LOAD COND 1 - DL+LL+DL1/

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	1.984	0.000	0.000	0.000
2	1.724	0.000	0.000	0.000

LOAD COND 2 - DL+LL+DL2/

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	2.305	0.000	0.000	0.000
2	2.653	0.000	0.000	0.000

LOAD COND 3 - DL+LL+DL3/

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	1.749	0.000	0.000	0.000
2	2.509	0.000	0.000	0.000

LOAD COND 4 - DL - DEAD LOAD

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	0.426	0.000	0.000	0.000
2	0.426	0.000	0.000	0.000

LOAD COND 5 - COL- COLLATERAL

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	0.073	0.000	0.000	0.000
2	0.073	0.000	0.000	0.000

LOAD COND 6 - SL - SNOW LOAD

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	0.730	0.000	0.000	0.000

2	0.730	0.000	0.000	0.000

LOAD COND 7 - DL1- DEAD LOAD

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	0.755	0.000	0.000	0.000
2	0.495	0.000	0.000	0.000

LOAD COND 8 - DL2- DEAD LOAD

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	1.076	0.000	0.000	0.000
2	1.424	0.000	0.000	0.000

LOAD COND 9 - DL3- DEAD LOAD

JOINT NUMBER	VERTICAL REACTION (KIPS)	HORIZ (X) REACTION (KIPS)	HORIZ (Z) REACTION (KIPS)	MOMENT REACTION (KIP-FT)
1	0.520	0.000	0.000	0.000
2	1.280	0.000	0.000	0.000

MEMBER NO. 1- 2 LENGTH 24.33 FT MEMBER ANGLE 0.00 DEG WEIGHT 409. LB

SECT NO	LENGTH (FT)	START DEPTH	END DEPTH	OUTSIDE FLANGE	WEB THICK	INSIDE FLANGE	COMB. RATIO	AT DIST	LOAD COND
1	24.33	8.00	8.00	8.0 X 1/4	1/8	8.0 X 1/4	0.861	10.3	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	0.00	16.42	7.6	14.2	14.2	0.00	12.22	-12.22	0.00	0.86	0.86

TOTAL FRAME WEIGHT IS 409. LBS.

CYCLE # 1 FOR LDC # 1 DL+LL+DL1/

ANALYSIS POINT	X-DEFL (IN)	Y-DEFL (IN)	Z-ROTATION (DEGREES)	X-COORD (FT)	Y-COORD (FT)	ANGLE (DEGREES)
1*	0.000	0.000	-0.429	0.000	0.000	-0.429
100	0.000	-0.083	-0.424	0.936	-0.007	-0.424
101	0.000	-0.245	-0.395	2.808	-0.020	-0.395
102	0.000	-0.390	-0.339	4.679	-0.032	-0.339
103	0.000	-0.509	-0.266	6.551	-0.042	-0.266
104	0.000	-0.597	-0.182	8.423	-0.050	-0.182
105	0.000	-0.651	-0.091	10.295	-0.054	-0.091
106	0.000	-0.669	0.003	12.167	-0.056	0.003
107	0.000	-0.650	0.098	14.038	-0.054	0.098
108	0.000	-0.593	0.191	15.910	-0.049	0.191
109	0.000	-0.502	0.274	17.782	-0.042	0.274
110	0.000	-0.381	0.340	19.654	-0.032	0.340
111	0.000	-0.238	0.388	21.525	-0.020	0.388
112	0.000	-0.081	0.413	23.397	-0.007	0.413
2*	0.000	0.000	0.416	24.333	0.000	0.416

CYCLE # 1 FOR LDC # 2 DL+LL+DL2/

ANALYSIS POINT	X-DEFL (IN)	Y-DEFL (IN)	Z-ROTATION (DEGREES)	X-COORD (FT)	Y-COORD (FT)	ANGLE (DEGREES)
1*	0.000	0.000	-0.575	0.000	0.000	-0.575
100	0.000	-0.111	-0.569	0.936	-0.009	-0.569
101	0.000	-0.329	-0.535	2.808	-0.027	-0.535
102	0.000	-0.527	-0.469	4.679	-0.044	-0.469
103	0.000	-0.694	-0.376	6.551	-0.058	-0.376
104	0.000	-0.820	-0.259	8.423	-0.068	-0.259
105	0.000	-0.897	-0.128	10.295	-0.075	-0.128
106	0.000	-0.921	0.006	12.167	-0.077	0.006
107	0.000	-0.893	0.137	14.038	-0.074	0.137
108	0.000	-0.816	0.259	15.910	-0.068	0.259
109	0.000	-0.693	0.371	17.782	-0.058	0.371
110	0.000	-0.529	0.466	19.654	-0.044	0.466
111	0.000	-0.332	0.537	21.525	-0.028	0.537
112	0.000	-0.113	0.576	23.397	-0.009	0.576
2*	0.000	0.000	0.581	24.333	0.000	0.582

CYCLE # 1 FOR LDC # 3 DL+LL+DL3/

ANALYSIS POINT	X-DEFL (IN)	Y-DEFL (IN)	Z-ROTATION (DEGREES)	X-COORD (FT)	Y-COORD (FT)	ANGLE (DEGREES)
1*	0.000	0.000	-0.459	0.000	0.000	-0.459
100	0.000	-0.089	-0.454	0.936	-0.007	-0.454
101	0.000	-0.263	-0.429	2.808	-0.022	-0.429
102	0.000	-0.423	-0.381	4.679	-0.035	-0.381
103	0.000	-0.560	-0.313	6.551	-0.047	-0.313
104	0.000	-0.667	-0.228	8.423	-0.056	-0.228
105	0.000	-0.738	-0.129	10.295	-0.061	-0.129
106	0.000	-0.768	-0.020	12.167	-0.064	-0.020
107	0.000	-0.754	0.095	14.038	-0.063	0.095
108	0.000	-0.695	0.206	15.910	-0.058	0.206
109	0.000	-0.595	0.309	17.782	-0.050	0.309
110	0.000	-0.457	0.397	19.654	-0.038	0.397
111	0.000	-0.288	0.464	21.525	-0.024	0.464
112	0.000	-0.098	0.501	23.397	-0.008	0.501
2*	0.000	0.000	0.505	24.333	0.000	0.506

MEMBER 1 - 2 UNBRACED

Q = V X A X Y / I

MEMBER 1- 2 SECTION 1 Q MAX = 2653. X 2.00 X 3.88 / 64.48

= 318.8 LBS/IN AT ANALYSIS POINT 2

WELD SIZE FOR THE SECTION =0.1250 INCH, WELD ONE SIDE ONLY

ENDWALL DESIGN
INPUT ECHO

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

DEAD LOAD	3.59	PSF
COLLATERAL LOAD	3.00	PSF
LIVE LOAD	20.00	PSF
SNOW LOAD	30.00	PSF
WIND LOAD	23.52	PSF
RAFTER WIND COEFFICIENT	1.1330	
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	10.00	IN.
MINIMUM RAFTER DEPTH	8.00	IN.
UNSUPPORTED COLUMN LENGTH	25.00	FT.
UNSUPPORTED COLUMN LENGTH BENDING	25.00	FT.
CONSTANT PURLIN SPACING	2.00	FT.
YEILD OF B.U.P. MEMBERS	55.00	KSI
OPTIMIZATION	Y	

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

ENDWALL DESIGN DATA

LOADS:
- DEAD LOAD = 3.59 PSF
- COLL LOAD = 3.00 PSF
- LIVE LOAD = 20.00 PSF
- SNOW LOAD = 30.00 PSF
- WIND LOAD = 23.52 PSF

UNBALANCED SNOW LOAD DATA CASE 1

LOAD NUM	START DIST (FT)	START LOAD (PSF)	END DIST (FT)	END LOAD (PSF)
1	0.000	23.100	16.524	23.100
2	16.524	38.162	25.500	38.162
3	25.500	6.930	51.000	6.930

UNBALANCED SNOW LOAD DATA CASE 2

LOAD NUM	START DIST (FT)	START LOAD (PSF)	END DIST (FT)	END LOAD (PSF)
1	0.000	6.930	25.500	6.930
2	25.500	38.162	34.476	38.162
3	34.476	23.100	51.000	23.100

RAFTER POINT LOADS

- 1.000 KIPS APPLIED AT 35.0 FT FROM LEFT
- 1.000 KIPS APPLIED AT 38.0 FT FROM LEFT
- 1.500 KIPS APPLIED AT 40.0 FT FROM LEFT
- 1.500 KIPS APPLIED AT 44.5 FT FROM LEFT
- 1.200 KIPS APPLIED AT 46.5 FT FROM LEFT
- 1.200 KIPS APPLIED AT 49.7 FT FROM LEFT

ENDWALL GEOMETRY:

ENDWALL TYPE	: WIDE FLANGE
LEFT EAVE HEIGHT	: 18.33 FEET
RIGHT EAVE HEIGHT	: 18.33 FEET
BUILDING WIDTH	: 51.00 FEET
DISTANCE TO RIDGE	: 25.50 FEET
LEFT ROOF SLOPE	: 3.00/12.
RIGHT ROOF SLOPE	: 3.00/12.
SIDEWALL BAY SPACE	: 24.33 FEET
GABLE EXTENSION	: 1.17 FEET

2 ENDWALL SPACES (FT): 25.50 25.50

ENDWALL POST SIZES: W12. W12. W12.

ENDWALL RAFTER BEAM DESIGN SUMMARY

RAFTER SIZE: WF 14/60E/WA 4E4E/2F 3/4in bolts .5 in PL

LOAD CONDITION: D + S

UNIFORMLY DISTRIBUTED LOAD: 0.5077 KLF

(INCLUDING RAFTER BEAM DEAD LOAD)

JOINT NUM	X-AXIS MOMENT (K-FT)	Y-AXIS MOMENT (K-FT)	UNSUPPORTED LENGTH (FT)	ACTUAL FBX (KSI)	ALLOW FBX (KSI)	ACTUAL FBY (KSI)	ALLOW FBY (KSI)	COMB. STRESS RATIO
2	-53.49	0.00	8.0000	21.72	29.99	0.00	48.41	0.724
0	46.44	0.00	2.0000	18.86	33.00	0.00	48.41	0.572

LOAD CONDITION:.6D + W

UNIFORMLY DISTRIBUTED LOAD: -0.3147 KLF

(INCLUDING RAFTER BEAM DEAD LOAD)

WIND LOAD: 26.65 PSF

JOINT NUM	X-AXIS MOMENT (K-FT)	Y-AXIS MOMENT (K-FT)	UNSUPPORTED LENGTH (FT)	ACTUAL FBX (KSI)	ALLOW FBX (KSI)	ACTUAL FBY (KSI)	ALLOW FBY (KSI)	COMB. STRESS RATIO
2	25.59	2.36	8.0000	10.39	29.99	7.56	48.41	0.503
0	-14.39	0.00	14.0000	5.84	17.92	0.00	48.41	0.326

LOAD CONDITION: D + .75(S + W)

UNIFORMLY DISTRIBUTED LOAD: 0.1412 KLF

(INCLUDING RAFTER BEAM DEAD LOAD)

WIND LOAD: 26.65 PSF

JOINT NUM	X-AXIS MOMENT (K-FT)	Y-AXIS MOMENT (K-FT)	UNSUPPORTED LENGTH (FT)	ACTUAL FBX (KSI)	ALLOW FBX (KSI)	ACTUAL FBY (KSI)	ALLOW FBY (KSI)	COMB. STRESS

NUM	(K-FT)	(K-FT)	(FT)	(KSI)	(KSI)	(KSI)	(KSI)	RATIO
2	-23.69	1.77	8.0000	9.62	29.99	5.67	48.41	0.438
0	29.75	0.00	2.0000	12.08	33.00	0.00	48.41	0.366

NOTE: JOINT NUMBER ZERO INDICATES
LOCATION OF MAXIMUM MID-BAY MOMENT.

ENDWALL RAFTER BEAM DESIGN SUMMARY

RAFTER SIZE: WF 14/60E/WA 4E4E/2F 3/4in bolts .5 in PL

LOAD CONDITION: DL + PARTIAL LL

LOAD = 0.3744 KLF IN SPANS 1 & 2

LOAD = 0.3744 KLF IN ALL OTHER SPANS

JOINT NUM	X-AXIS MOMENT (K-FT)	Y-AXIS MOMENT (K-FT)	UNSUPPORTED LENGTH (FT)	ACTUAL FBX (KSI)	ALLOW FBX (KSI)	ACTUAL FBY (KSI)	ALLOW FBY (KSI)	COMB. STRESS RATIO
2	-42.65	0.00	8.0000	17.32	29.99	0.00	48.41	0.578
0	40.37	0.00	2.0000	16.39	33.00	0.00	48.41	0.497

UNBALANCED SNOW LOAD CASE 1

JOINT NUM	X-AXIS MOMENT (K-FT)	Y-AXIS MOMENT (K-FT)	UNSUPPORTED LENGTH (FT)	ACTUAL FBX (KSI)	ALLOW FBX (KSI)	ACTUAL FBY (KSI)	ALLOW FBY (KSI)	COMB. STRESS RATIO
2	-39.97	0.00	8.0000	16.24	29.99	0.00	48.41	0.541
0	27.47	0.00	2.0000	11.16	33.00	0.00	48.41	0.338

UNBALANCED SNOW LOAD CASE 2

JOINT NUM	X-AXIS MOMENT (K-FT)	Y-AXIS MOMENT (K-FT)	UNSUPPORTED LENGTH (FT)	ACTUAL FBX (KSI)	ALLOW FBX (KSI)	ACTUAL FBY (KSI)	ALLOW FBY (KSI)	COMB. STRESS RATIO
2	-39.97	0.00	8.0000	16.24	29.99	0.00	48.41	0.541
0	47.95	0.00	2.0000	19.47	33.00	0.00	48.41	0.590

NOTE: JOINT NUMBER ZERO INDICATES
LOCATION OF MAXIMUM MID-BAY MOMENT.

*** RAFTER FLANGE BRACES ARE REQUIRED ***
STANDARD LOCATIONS OF FLANGE BRACES FOR PURLIN SPACES LESS THAN 3 FEET.
FIRST PURLIN EACH SIDE OF ALL INTERIOR POSTS.
PURLIN NEAREST TO LOCATION AT 7.5 FEET EACH SIDE
OF INTERIOR POSTS.

MAXIMUM DISTANCE BETWEEN FLANGES IS 15. FEET.

SINGLE CEE SECTION COLUMNS

SIZE	DEPTH	FLANGE WIDTH	Thk	CORNER RAD	AREA	Ix	Sxe	rx	Iy	ry
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
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
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)	UNBRACED LENGTH (FT)
2	W 12/80F	12	8 x 3/8	5/32	24.12	24.12

ENDWALL POST DESIGN SUMMARY

LOAD CONDITION : D + (Lr or S)

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 12/80F	0.00	19.58	0.00	2.52	7.39	0.00	14.09	0.341

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 12/80F	7.09	-10.01	42.77	-1.29	30.77	13.91	14.09	1.008

ENDWALL POST DESIGN SUMMARY

LOAD CONDITION : D + .75(Lr or S) + .75W

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 12/80F	5.32	4.54	32.07	0.58	7.39	10.43	14.09	0.787

CORNER POST DESIGN SUMMARY

LEFT CORNER POST : W12/80F/WA

RIGHT CORNER POST : W12/80F/WA

WIDE FLANGE CORNER POSTS HAVE 8.0" X 3/8" FLANGES AND 5/32" WEB.

ENDWALL DESIGN
INPUT ECHO

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

DEAD LOAD	3.59 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	10.00 IN.	
MINIMUM RAFTER DEPTH	8.00 IN.	
UNSUPPORTED COLUMN LENGTH	25.00 FT.	
UNSUPPORTED COLUMN LENGTH BENDING	25.00 FT.	
CONSTANT PURLIN SPACING	2.00 FT.	
YEILD OF B.U.P. MEMBERS	55.00 KSI	
OPTIMIZATION	Y	

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	Y
SUM OF ALL ENDWALL OPENING WIDTHS	0.00 FT.
NUMBER OF OPENING IN FIRST ENDWALL SPACE	0
HEIGHT OF OPENING IN FIRST ENDWALL SPACE	0.00 FT.
DISTANCE FROM SIDEWALL BL TO ENDWALL OPENING.	0.00 FT.
NUMBER OF OPENING IN SIDEWALL END BAY	1
HEIGHT OF OPENING IN SIDEWALL END BAY	14.00 FT.
DISTANCE FROM ENDWALL BL TO SIDEWALL OPENING.	4.00 FT.

ENDWALL DESIGN DATA

LOADS:

DEAD LOAD =	3.59 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	:	18.33 FEET
RIGHT EAVE HEIGHT	:	18.33 FEET
BUILDING WIDTH	:	51.00 FEET
DISTANCE TO RIDGE	:	25.50 FEET
LEFT ROOF SLOPE	:	3.00/12.
RIGHT ROOF SLOPE	:	3.00/12.
SIDEWALL BAY SPACE	:	19.33 FEET
GABLE EXTENSION	:	1.17 FEET

2 ENDWALL SPACES (FT): 25.50 25.50

ENDWALL POST SIZES: C 8. W12. C 8.

SINGLE CEE SECTION COLUMNS

SIZE	DEPTH	FLANGE WIDTH	Thk	CORNER RAD	AREA	Ix	Sxe	rx	Iy	ry
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
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
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)	UNBRACED LENGTH (FT)
2	W 12/80F	12	8 x 3/8	5/32	24.12	24.12

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 12/80F	7.09	0.00	42.77	0.00	7.39	13.91	14.09	0.987

ENDWALL POST SIZES

POST NUMBER	POST SIZE	POST DESCRIPTION DEPTH	FLANGE	WEB THK	POST LENGTH (FT)	UNBRACED LENGTH (FT)
2	W 12/80F	12	8 x 3/8	5/32	24.12	24.12

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 12/80F	7.09	0.00	42.77	0.00	7.39	13.91	14.09	0.987

CORNER POST DESIGN SUMMARY

LEFT CORNER POST : NONE

RIGHT CORNER POST : NONE

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                    ********* 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   =   1.061537
PRESSURE  =  0.9615367

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

END ZONE=   5.100000      SUCT=   1.147074      PRES=  0.9615367

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

BAY NO.        1     2     3
BAY LENGTH 24.33 22.00 19.33
SPACING     4.50  4.50  4.50
SIZES        812   812   814
T SAG ANG      0     0     0
B SAG ANG      2     1     1
NUM GIRTS      3     3     3

SIMPLE SPAN LAPS

EXTENSIONS
LEFT EXTENSION (FT) =     1.166667     RIGHT EXTENSION (FT) =   1.166667
EXTENSION SUCTION COEF.  =   1.147074
EXTENSION PRESSURE COEF. =  0.9615367
FY =    55.00000      KSI
Welded clips N
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SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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 1.06 (SUCTION) / AT 5.1' END ZONES THE COEF = 1.15

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	
EXT	1.17	-0.12142	812	0.000					
1	24.33	-0.11237	812	-1.562	-8.31	12.17	-1.54	0.983	BND 3
2	22.00	-0.11237	812	-1.045	-6.80	11.00	-2.60	0.996	BND 2
3	19.33	-0.11237	814	-0.825	-5.24	9.66	-2.32	0.991	BND 2
EXT	1.17	-0.12142	814	0.000			-1.26		

THE MAXIMUM UNITY CHECK IS 0.996 IN BAY 2

WIND LOAD (PRESSURE)
WIND LOAD = 23.52 PSF X 0.96 (PRESSURE) / AT 5.1' END ZONES THE COEF = 0.96

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	
EXT	1.17	0.10178	812	0.000					
1	24.33	0.10178	812	1.409	7.50	12.19	1.36	0.788	BND 3
2	22.00	0.10178	812	0.946	6.16	11.00	2.36	0.647	BND 2
3	19.33	0.10178	814	0.742	4.72	9.63	2.10	0.717	BND 2
EXT	1.17	0.10178	814	0.000			1.11		

THE MAXIMUM UNITY CHECK IS 0.788 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	3
BAY SPACES	24.3	22.0	19.3
GIRT SIZE	812	812	814
GIRT SPACE	4.50	4.50	4.50
SAG ANGLES	2	1	1

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.996 IN BAY 2

TOTAL WEIGHT = 317.71 LBS

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                    ********* 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   =   1.043470
PRESSURE  =  0.9434696

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

END ZONE=   5.100000      SUCT=   1.110939      PRES=  0.9434696

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

BAY NO.        1     2
BAY LENGTH 24.33 17.50
SPACING     4.50  4.50
SIZES        812   812
T SAG ANG      0     0
B SAG ANG      2     0
NUM GIRTS      1     1

SIMPLE SPAN LAPS

FY =    55.00000      KSI
Welded clips N
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SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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	24.33	-0.11045	812	-1.547	-8.22	12.13	-1.38	0.973	BND 3
2	17.50	-0.11045	812	-0.416	-4.27	8.80	-2.32	0.720	BND 3
					RIGHT REACTION =		-1.00		

THE MAXIMUM UNITY CHECK IS 0.973 IN BAY 1

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	24.33	0.09987	812	1.390	7.39	12.17	1.22	0.777	BND 3
2	17.50	0.09987	812	0.372	3.82	8.75	2.09	0.402	BND 3
					RIGHT REACTION =		0.87		

THE MAXIMUM UNITY CHECK IS 0.777 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	24.3	17.5
GIRT SIZE	812	812
GIRT SPACE	4.50	4.50
SAG ANGLES	2	0

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.973 IN BAY 1

TOTAL WEIGHT = 210.93 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 = 1.043470
PRESSURE = 0.9434696

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

END ZONE= 5.100000 SUCT= 1.110939 PRES= 0.9434696

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

BAY NO.	1	2
BAY LENGTH	24.33	25.00
SPACING	4.25	4.25
SIZES	812	812
T SAG ANG	0	0
B SAG ANG	2	2
NUM GIRTS	3	3

SIMPLE SPAN LAPS

FY = 55.00000 KSI
Welded clips N

SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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	24.33	-0.10432	812	-1.461	-7.76	12.13	-1.30	0.919	BND 3
2	25.00	-0.10432	812	-1.628	-8.19	12.53	-2.58	0.983	BND 3
					RIGHT REACTION =		-1.33		

THE MAXIMUM UNITY CHECK IS 0.983 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	24.33	0.09432	812	1.313	6.98	12.17	1.15	0.734	BND 3
2	25.00	0.09432	812	1.462	7.37	12.50	2.33	0.774	BND 3
					RIGHT REACTION =		1.18		

THE MAXIMUM UNITY CHECK IS 0.774 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	24.3	25.0
GIRT SIZE	812	812
GIRT SPACE	4.25	4.25
SAG ANGLES	2	2

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.983 IN BAY 2

TOTAL WEIGHT = 248.75 LBS

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                    ********* 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   =   1.043470
PRESSURE  =  0.9434696

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

END ZONE=   5.100000      SUCT=   1.110939      PRES=  0.9434696

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

BAY NO.        1     2
BAY LENGTH 17.00 17.00
SPACING     4.38  4.38
SIZES        814   814
T SAG ANG      0     0
B SAG ANG      0     0
NUM GIRTS      1     1

SIMPLE SPAN LAPS

FY =    55.00000      KSI
Welded clips N
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SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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	17.00	-0.10738	814	-0.478	-3.92	8.45	-0.94	0.956	BND 3
2	17.00	-0.10738	814	-0.478	-3.92	8.55	-1.84	0.956	BND 3
					RIGHT REACTION =		-0.94		

THE MAXIMUM UNITY CHECK IS 0.956 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	17.00	0.09709	814	0.427	3.51	8.50	0.83	0.533	BND 3
2	17.00	0.09709	814	0.427	3.51	8.50	1.65	0.533	BND 3
					RIGHT REACTION =		0.83		

THE MAXIMUM UNITY CHECK IS 0.533 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	17.0	17.0
GIRT SIZE	814	814
GIRT SPACE	4.38	4.38
SAG ANGLES	0	0

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.956 IN BAY 2

TOTAL WEIGHT = 129.70 LBS

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                    ********* 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   =   1.043470
PRESSURE  =  0.9434696

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

END ZONE=   5.100000      SUCT=   1.110939      PRES=  0.9434696

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

BAY NO.        1     2
BAY LENGTH 25.50 25.50
SPACING     4.11  4.11
SIZES        812   812
T SAG ANG      0     0
B SAG ANG      3     3
NUM GIRTS      1     1

SIMPLE SPAN LAPS

FY =    55.00000      KSI
Welded clips N
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SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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	25.50	-0.10083	812	-1.703	-8.24	12.72	-1.32	0.912	BND 3
2	25.50	-0.10083	812	-1.703	-8.24	12.78	-2.58	0.912	BND 3
					RIGHT REACTION =		-1.32		

THE MAXIMUM UNITY CHECK IS 0.912 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	25.50	0.09117	812	1.530	7.41	12.75	1.16	0.779	BND 3
2	25.50	0.09117	812	1.530	7.41	12.75	2.32	0.779	BND 3
					RIGHT REACTION =		1.16		

THE MAXIMUM UNITY CHECK IS 0.779 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	25.5	25.5
GIRT SIZE	812	812
GIRT SPACE	4.11	4.11
SAG ANGLES	3	3

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.912 IN BAY 2

TOTAL WEIGHT = 257.15 LBS

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                    ********* 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   =   1.043470
PRESSURE  =  0.9434696

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

END ZONE=   5.100000      SUCT=   1.110939      PRES=  0.9434696

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

BAY NO.        1     2
BAY LENGTH 25.50 25.50
SPACING     4.25  4.25
SIZES        812   812
T SAG ANG      0     0
B SAG ANG      3     3
NUM GIRTS      3     3

SIMPLE SPAN LAPS

FY =    55.00000      KSI
Welded clips N
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SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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	25.50	-0.10432	812	-1.761	-8.52	12.72	-1.36	0.944	BND 3
2	25.50	-0.10432	812	-1.761	-8.52	12.78	-2.67	0.944	BND 3
					RIGHT REACTION =		-1.36		

THE MAXIMUM UNITY CHECK IS 0.944 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	25.50	0.09432	812	1.583	7.67	12.75	1.20	0.806	BND 3
2	25.50	0.09432	812	1.583	7.67	12.75	2.41	0.806	BND 3
					RIGHT REACTION =		1.20		

THE MAXIMUM UNITY CHECK IS 0.806 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	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 0.944 IN BAY 2

TOTAL WEIGHT = 257.15 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 = 1.043470
PRESSURE = 0.9434696

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

END ZONE= 5.100000 SUCT= 1.110939 PRES= 0.9434696

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

BAY NO.	1	2
BAY LENGTH	16.83	16.83
SPACING	4.38	4.38
SIZES	814	814
T SAG ANG	0	0
B SAG ANG	0	0
NUM GIRTS	1	1

SIMPLE SPAN LAPS

FY = 55.00000 KSI
Welded clips Y

SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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	16.83	-0.10738	814	-0.460	-3.85	8.37	-0.93	0.937	BND 3
2	16.83	-0.10738	814	-0.460	-3.85	8.47	-1.82	0.937	BND 3
					RIGHT REACTION =		-0.93		

THE MAXIMUM UNITY CHECK IS 0.937 IN BAY 1

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	16.83	0.09709	814	0.410	3.44	8.42	0.82	0.523	BND 3
2	16.83	0.09709	814	0.410	3.44	8.42	1.63	0.523	BND 3
					RIGHT REACTION =		0.82		

THE MAXIMUM UNITY CHECK IS 0.523 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	16.8	16.8
GIRT SIZE	814	814
GIRT SPACE	4.38	4.38
SAG ANGLES	0	0

SIMPLE SPAN LAPS

THE MAXIMUM UNITY CHECK IS 0.937 IN BAY 1

TOTAL WEIGHT = 128.43 LBS

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

DEAD LOAD =   2.000000     PSF
COLLATERAL=   3.000000     PSF
LIVE LOAD =   20.00000     PSF
SNOW LOAD =   23.10000     PSF
MIN. SNOW =   30.00000     PSF
UNB. SNOW =   30.00000     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=   5.000000       5.000000       5.000000

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

BAY NO.        1     2
BAY LENGTH 22.00 19.33
SPACING     2.00  2.00
SIZES        816   816
T SAG ANG      2     1
B SAG ANG      2     1
NUM PURLIN          26
LAP LEFT    0.00  2.00
LAP RIGHT   2.00  0.00

EXTENSIONS
LEFT EXTENSION (FT) =    0.0000000E+00 RIGHT EXTENSION (FT) =   1.166667
LEFT EXT. DL (PSF)  =     2.000000     RIGHT EXT. DL (PSF) =   2.000000
EXTENSION SUCTION COEF.  =   1.380000
FY =    55.00000      KSI
Welded clips Y
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SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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 + MIN. UNIFORM SNOW LOAD
MIN. SNOW = 30.00 PSF
DEAD LOAD = 5.00 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	22.00	0.07292	816	0.547	2.48	8.25	0.60	0.655 BND 4
2	19.33	0.07292	816	0.200	1.53	12.77	1.93	0.692 BND 2
EXT	1.17	0.06692	816	0.000			0.56	

THE MAXIMUM UNITY CHECK IS 0.692 IN BAY 2

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
END ZONE WIND ON RIGHT END ONLY
DEAD LOAD = 2.00 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	22.00	-0.06077	816	-0.434	-2.04	8.20	-0.50	0.524 BND 4
2	19.33	-0.06077	816	-0.187	-1.42	13.05	-1.63	0.546 BND 2
EXT	1.17	-0.09841	816	0.000			-0.64	

THE MAXIMUM UNITY CHECK IS 0.546 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	22.00	0.03602	816	0.115	1.02	7.54	0.27	0.454 BND 4
2	19.33	0.05912	816	0.280	1.54	12.03	1.23	0.510 BND 3
EXT	1.17	0.05312	816	0.000			0.49	

THE MAXIMUM UNITY CHECK IS 0.510 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	22.00	0.05912	816	0.420	2.01	8.24	0.49	0.532	BND 4
2	19.33	0.05912	816	0.156	1.25	12.79	1.57	0.561	BND 2
EXT	1.17	0.03002	816	0.000			0.42		

THE MAXIMUM UNITY CHECK IS 0.561 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	22.00	0.05912	816	0.537	2.23	8.68	0.51	0.532	BND 3
2	19.33	0.03602	816	-0.113	0.50	13.97	1.29	0.534	BND 2
EXT	1.17	0.03002	816	0.000			0.23		

THE MAXIMUM UNITY CHECK IS 0.534 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	22.00	0.03602	816	0.211	1.23	8.25	0.30	0.323	BND 4
2	19.33	0.03602	816	0.075	0.75	12.74	0.95	0.341	BND 2
EXT	1.17	0.05312	816	0.000			0.30		

THE MAXIMUM UNITY CHECK IS 0.341 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	22.00	0.05912	816	0.537	2.23	8.68	0.51	0.532	BND 3
2	19.33	0.03602	816	-0.113	0.50	13.97	1.29	0.534	BND 2
EXT	1.17	0.03002	816	0.000			0.23		

THE MAXIMUM UNITY CHECK IS 0.534 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	22.00	0.05912	816	0.420	2.01	8.24	0.49	0.532	BND 4
2	19.33	0.05912	816	0.156	1.25	12.79	1.57	0.561	BND 2
EXT	1.17	0.03002	816	0.000			0.42		

THE MAXIMUM UNITY CHECK IS 0.561 IN BAY 2

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	22.00	0.03602	816	0.115	1.02	7.54	0.27	0.454	BND 4
2	19.33	0.05912	816	0.280	1.54	12.03	1.23	0.510	BND 3
EXT	1.17	0.05312	816	0.000			0.49		

THE MAXIMUM UNITY CHECK IS 0.510 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 + MINIMUM SNOW LOAD
0.6 DEAD LOAD + WIND LOAD (SUCTION)
DEAD LOAD + PARTIAL SNOW LOAD

LOADS

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        DEAD LOAD =  2.00 PSF
  COLLATERAL LOAD =  3.00 PSF
        LIVE LOAD = 20.00 PSF
MINIMUM ROOF SNOW = 30.00 PSF
  UNBALANCED SNOW = 30.00 PSF
   ROOF SNOW (Pf) = 23.10 PSF
        WIND LOAD = 23.52 PSF
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BAY NO.	1	2
BAY SPACES	22.0	19.3
PURLIN SIZE	816	816
PUR SPACE	2.00	2.00
TOP ANGLES	2	1
BOT ANGLES	2	1

LAP LENGTHS 2.00

THE MAXIMUM UNITY CHECK IS 0.692 IN BAY 2

TOTAL WEIGHT = 135.63 LBS

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

Np = 13 ROOF SLOPE = 3.0/12 DIST TO PEAK= 25.5' AVG LOAD= 38.2 PSF

BAY NO.	1	2
BAY SPACES	22.0	19.3
PURLIN SIZE	816	816
TOP ANGLES	2	1
SAG FORCES	-1.4	-1.2

POSITIVE FORCES ARE TO RESIST UPHILL ROLL

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

DEAD LOAD =   2.000000     PSF
COLLATERAL=   3.000000     PSF
LIVE LOAD =   20.00000     PSF
SNOW LOAD =   23.10000     PSF
MIN. SNOW =   30.00000     PSF
UNB. SNOW =   38.16243     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=   5.000000       5.000000       5.000000

END ZONE=   5.100000      SUCT=   2.180000

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

BAY NO.        1     2     3
BAY LENGTH 24.33 22.00 19.33
SPACING     2.00  2.00  2.00
SIZES        816   816   816
T SAG ANG      2     1     1
B SAG ANG      2     1     1
NUM PURLIN          26
LAP LEFT    0.00  2.00  1.00
LAP RIGHT   2.00  1.00  0.00

EXTENSIONS
LEFT EXTENSION (FT) =     1.166667     RIGHT EXTENSION (FT) =   1.166667
LEFT EXT. DL (PSF)  =     2.000000     RIGHT EXT. DL (PSF) =   2.000000
EXTENSION SUCTION COEF.  =   1.380000
FY =    55.00000      KSI
Welded clips Y
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SIZE	AREA	WEIGHT	DEPTH	FLANGE WIDTH	FLANGE 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 = 38.16 PSF
DEAD LOAD = 5.00 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	
EXT	1.17	0.08324	816	0.000					
1	24.33	0.08924	816	1.203	4.00	9.54	0.95	1.022	BND 2
2	22.00	0.08924	816	-0.139	0.82	12.15	2.40	0.966	BND 2
3	19.33	0.08924	816	0.491	2.57	11.67	1.92	0.839	BND 3
EXT	1.17	0.08324	816	0.000			0.78		

THE MAXIMUM UNITY CHECK IS 1.022 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 = 2.00 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	
EXT	1.17	-0.09841	816	0.000					
1	24.33	-0.06077	816	-0.808	-2.86	9.32	-0.83	0.746	BND 2
2	22.00	-0.06077	816	0.100	-0.51	12.16	-1.65	0.655	BND 2
3	19.33	-0.06077	816	-0.340	-1.89	11.93	-1.32	0.633	BND 3
EXT	1.17	-0.09841	816	0.000			-0.71		

THE MAXIMUM UNITY CHECK IS 0.746 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.03002	816	0.000					
1	24.33	0.05912	816	0.732	2.66	9.52	0.60	0.681	BND 2
2	22.00	0.05912	816	-0.085	0.54	12.15	1.59	0.641	BND 2
3	19.33	0.05912	816	0.298	1.70	11.67	1.27	0.556	BND 3
EXT	1.17	0.05312	816	0.000			0.52		

THE MAXIMUM UNITY CHECK IS 0.681 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.05312	816	0.000					
1	24.33	0.05912	816	0.729	2.65	9.54	0.63	0.678	BND 2
2	22.00	0.05912	816	-0.085	0.54	12.14	1.59	0.640	BND 2
3	19.33	0.05912	816	0.300	1.71	11.69	1.27	0.560	BND 3
EXT	1.17	0.03002	816	0.000			0.49		

THE MAXIMUM UNITY CHECK IS 0.678 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.05312	816	0.000					
1	24.33	0.03602	816	0.362	1.61	9.56	0.41	0.410	BND 2
2	22.00	0.03602	816	-0.042	0.33	12.14	0.97	0.389	BND 2
3	19.33	0.03602	816	0.149	1.04	11.67	0.78	0.339	BND 3
EXT	1.17	0.03002	816	0.000			0.31		

THE MAXIMUM UNITY CHECK IS 0.410 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.03002	816	0.000					
1	24.33	0.03602	816	0.364	1.62	9.53	0.38	0.413	BND 2
2	22.00	0.03602	816	-0.042	0.33	12.15	0.97	0.390	BND 2
3	19.33	0.03602	816	0.147	1.03	11.64	0.77	0.336	BND 3
EXT	1.17	0.05312	816	0.000			0.34		

THE MAXIMUM UNITY CHECK IS 0.413 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.03002	816	0.000					
1	24.33	0.03602	816	0.273	1.46	9.06	0.36	0.439	BND 4
2	22.00	0.05912	816	0.150	0.89	11.09	1.21	0.515	BND 4
3	19.33	0.05912	816	0.253	1.58	11.93	1.35	0.522	BND 3
EXT	1.17	0.05312	816	0.000			0.50		

THE MAXIMUM UNITY CHECK IS 0.522 IN BAY 3

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.05312	816	0.000					
1	24.33	0.05912	816	0.693	2.59	9.43	0.62	0.665	BND 2
2	22.00	0.05912	816	0.092	0.80	12.71	1.63	0.662	BND 2
3	19.33	0.03602	816	0.103	0.91	12.15	0.99	0.340	BND 2
EXT	1.17	0.03002	816	0.000			0.29		

THE MAXIMUM UNITY CHECK IS 0.665 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.05312	816	0.000					
1	24.33	0.05912	816	0.835	2.82	9.83	0.64	0.712	BND 2
2	22.00	0.03602	816	-0.201	0.07	13.89	1.36	0.681	BND 2
3	19.33	0.03602	816	0.200	1.16	11.24	0.70	0.374	BND 3
EXT	1.17	0.03002	816	0.000			0.33		

THE MAXIMUM UNITY CHECK IS 0.712 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.03002	816	0.000					
1	24.33	0.05912	816	0.696	2.60	9.42	0.59	0.668	BND 2
2	22.00	0.05912	816	0.092	0.80	12.72	1.63	0.663	BND 2
3	19.33	0.03602	816	0.103	0.91	12.14	0.99	0.339	BND 2
EXT	1.17	0.03002	816	0.000			0.29		

THE MAXIMUM UNITY CHECK IS 0.668 IN BAY 1

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.03002	816	0.000					
1	24.33	0.03602	816	0.274	1.46	9.06	0.36	0.438	BND 4
2	22.00	0.05912	816	0.150	0.89	11.08	1.21	0.516	BND 4
3	19.33	0.05912	816	0.255	1.59	11.95	1.35	0.526	BND 3
EXT	1.17	0.03002	816	0.000			0.47		

THE MAXIMUM UNITY CHECK IS 0.526 IN BAY 3

DEAD LOAD + PARTIAL SNOW LOAD
DEAD LOAD = 5.00 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	
EXT	1.17	0.03002	816	0.000					
1	24.33	0.03602	816	0.405	1.68	9.71	0.38	0.426	BND 2
2	22.00	0.03602	816	-0.098	0.10	11.23	0.93	0.416	BND 4
3	19.33	0.05912	816	0.351	1.83	11.38	1.06	0.594	BND 3
EXT	1.17	0.05312	816	0.000			0.53		

THE MAXIMUM UNITY CHECK IS 0.594 IN BAY 3

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 = 2.00 PSF
COLLATERAL LOAD = 3.00 PSF
LIVE LOAD = 20.00 PSF
MINIMUM ROOF SNOW = 30.00 PSF
UNBALANCED SNOW = 38.16 PSF
ROOF SNOW (Pf) = 23.10 PSF
WIND LOAD = 23.52 PSF

BAY NO.	1	2	3
BAY SPACES	24.3	22.0	19.3
PURLIN SIZE	816	816	816
PUR SPACE	2.00	2.00	2.00
TOP ANGLES	2	1	1
BOT ANGLES	2	1	1
LAP LENGTHS	2.00	1.00	

THE MAXIMUM UNITY CHECK IS 1.022 IN BAY 1

TOTAL WEIGHT = 215.85 LBS

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

Np = 13 ROOF SLOPE = 3.0/12 DIST TO PEAK= 25.5' AVG LOAD= 38.2 PSF

BAY NO.	1	2	3
BAY SPACES	24.3	22.0	19.3
PURLIN SIZE	816	816	816
TOP ANGLES	2	1	1
SAG FORCES	-1.6	-1.7	-1.2

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 = 51.00
NUMBER WALL TRUSS PANEL POINTS = 2 EAVE HEIGHT = 18.33
NUMBER OF BAYS IN THE BUILDING = 3 ROOF SLOPE = 3.00
LOADS:
DEAD LOAD = 2.00 PSF EAVE PURLIN SPACE = 1.28 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 = 1.17 FEET
RIGHT EXTENSION LENGTH = 1.17 FEET
LEFT EXTENSION DEAD LOAD = 2.00 PSF
RIGHT EXTENSION DEAD LOAD = 2.00 PSF

NOMINAL PURLIN LOAD WIDTH = 2.00 FEET
RIDGE PURLIN LOAD WIDTH = 2.00 FEET
PURLIN YIELD =55.00 KSI

STRUT SPACES: 12.88 13.40

BAY SPACES : 24.33 22.00 19.33
PUR SIZES : Z 816 Z 816 Z 816
LAPS : 2.00 1.00
2.00 1.00
SAG ANGLES : 22 11 11

BRACED BAY NUMBER(S) : 1

BRACE 1 BAYS HORIZONTAL REACTION IN BRACED BAYS= 5.36 KIPS

STRUT NUMBERS -	1	2	3
PRES. LOADS (KIP)-	0.95	2.14	1.20
SUCT. LOADS (KIP)-	0.24	0.54	0.30
TRUSS LOADS (KIP)-	5.36	4.18	1.50
STRUT LOADS (KIP)-	5.12	3.64	1.20
STRUT SPACE (FT) -	18.33	12.88	12.65

BAY NO. 1	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:	Z 814	Z 816	Z 816	
NBOLTS	:2	2	2	2
AXIAL LOAD :	4.85	2.86	2.86	
UNITY CHECK:	0.810	0.639	0.749	
FOR LC NUM :	5	3	5	
TOP ANGLES :	2	1	1	
BOT ANGLES :	2	1	1	

FOR STRUT ROW NUMBER 3

STRUT SIZES:	Z 816	Z 816	Z 816	
NBOLTS	:2	2	2	2
AXIAL LOAD :	3.20	3.20	3.20	
UNITY CHECK:	0.816	0.681	0.812	
FOR LC NUM :	5	3	5	
TOP ANGLES :	2	1	1	
BOT ANGLES :	2	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
24.33	1	ES 812	DL+LL	0.00	2.64	0.271
24.33	1	ES 812	.6DL+WL	5.12	0.00	0.122
22.00	2	ES 812	DL+LL	0.00	2.16	0.221
22.00	2	ES 812	.6DL+WL	5.12	0.00	0.122
19.33	3	ES 812	DL+LL	0.00	1.67	0.171
19.33	3	ES 812	.6DL+WL	5.12	0.00	0.122

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

INPUT DATA :

WEB DEPTH	17.25		IN
WEB THICKNESS	0.18750		IN
FLANGE WIDTH	8.00	8.00	IN
TOP FLANGE THICKNESS	0.37500	0.37500	IN
BOTTOM FLG THICKNESS	0.37500	0.37500	IN
BOLTING PLATE WIDTH	8.00		IN
TOP ANGLE	0.00		DEGREES
BOTTOM ANGLE	0.00		DEGREES
CONNECTION TYPE	1		
MOMENT - TOP TENSION	15.00		K-FT
ASSOCIATED AXIAL LOAD	0.00		KIPS
MOMENT - BOT TENSION	15.00		K-FT
ASSOCIATED AXIAL LOAD	0.00		KIPS
MAXIMUM SHEAR FORCE	0.00		KIPS
BOLTING PLATE YIELD	55.00		KSI

AISC DESIGN GUIDE CONNECTION

BOLTING PLATE	BOLTS	
LENGTH = 18.5000	DIAMETER= 0.625	TOP EDGE DIST.= 1.6875
WIDTH = 8.0000	GAUGE= 3.500	BOT EDGE DIST.= 1.6875
THICKNESS= 0.3750	PITCH= 2.750	
TOP BOLTS= 4	TOP PITCH= 2.750	
BOT BOLTS= 4	BOT PITCH= 2.750	

CONNECTION TYPE = 4F4F
REQ THICKNESS   = 0.232
REQ BOLT DIAMETER= 0.369
Snug Tight Bolts are Permitted

CONNECTION DETAILS:	LEFT	RIGHT
TOTAL DEPTH :	18.000	18.000
TOP PROJECTION :	0.250	0.250
BOTTOM PROJECTION :	0.250	0.250