STATE OF ALASKA
INVITATION TO BID (ITB)

ICY CAPE TRAIL CONSTRUCTION AND STRUCTURE ASSEMBLY PROJECT

ITB 2021 1000 4769

FEBRUARY 22, 2021

THE DEPARTMENT OF NATURAL RESOURCES, ALASKA MENTAL HEALTH TRUST LAND OFFICE IS SOLICITING BIDS FOR A QUALIFIED CONTRACTOR TO PROVIDE TRAIL AND STRUCTURE ASSEMBLY SERVICES IN ICY CAPE, ALASKA.

IMPORTANT NOTICE: If you received this solicitation from the State of Alaska's "Online Public Notice" web site, you must register with the procurement officer listed below in order to receive notification of subsequent amendments to the solicitation. Failure to register with the procurement officer may result in the rejection of your offer.

BIDDER'S NOTICE: By signature on this form, the bidder certifies that they comply with the following:

(1) the bidder has a valid Alaska business license or will obtain one prior to award of any contract resulting from this ITB. If the bidder possesses a valid Alaska business license, the license number must be written below or one the following forms of evidence submitted with the bid:
- a canceled check for the business license fee;
- a copy of the business license application with a receipt date stamp from the State's business license office;
- a receipt from the State's business license office for the license fee;
- a copy of the bidder's valid business license;
- a sworn notarized affidavit that the bidder has applied and paid for a business license;

(2) the price(s) submitted was arrived at independently and without collusion, under penalty of perjury, and that the bidder is complying with:
- the laws of the State of Alaska;
- the applicable portion of the Federal Civil Rights Act of 1964;
- the Equal Employment Opportunity Act and the regulations issued thereunder by the state and federal Government;
- the Americans with Disabilities Act of 1990 and the regulations issued thereunder by the state and federal government;
- the bid will remain open and valid for at least 90 days;
- all terms and conditions set out in this Invitation to Bid (ITB).

If a bidder does not hold an Alaska Business License (1) at the time designated in the ITB for opening the State will disallow the Alaska Bidder Preference. Bids must also be submitted under the name as appearing on the bidder's current Alaska business license in order to receive the Alaska Bidder Preference. If a bidder fails to comply with (2) of this paragraph, the State may reject the bid, terminate the contract, or consider the contractor in default.

NAME Chris Brooks	COMPANY SUBMITTING BID	*DOES YOUR BUSINESS QUALIFY FOR THE ALASKA BIDDER'S PREFERENCE? [ ] YES [ ] NO
	AUTHORIZED SIGNATURE	*DOES YOUR BUSINESS QUALIFY FOR THE ALASKA VETERAN PREFERENCE? [ ] YES [ ] NO
Phone: (907)269-8666	PRINTED NAME	*SEE ITB FOR EXPLANATION OF CRITERIA TO QUALIFY
Email: christopher.brooks@alaska.gov	DATE	TELEPHONE NUMBER
ALASKA BUSINESS LICENSE NUMBER	FEDERAL TAX ID NUMBER	E-MAIL ADDRESS

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SECTION 1. INTRODUCTION & INSTRUCTIONS

SEC. 1.01 PURPOSE OF THE ITB

The Department of Natural Resources, Alaska Mental Health Trust Land Office is soliciting bids for a qualified contractor to provide trail and structure assembly services in Icy Cape, Alaska.

SEC. 1.02 DEADLINE FOR RECEIPT OF BIDS

Bids must be received no later than 2:00 p.m. Alaska Time on March 8, 2021 at which time they will be publicly opened. Late bids or amendments will be disqualified and not opened or accepted for evaluation.

SEC. 1.03 PRIOR EXPERIENCE

Not applicable to this ITB.

SEC. 1.04 INVITATION TO BID (ITB) REVIEW

Bidders shall carefully review this ITB for defects and questionable or objectionable material. Comments concerning defects and questionable or objectionable material in the ITB should be made in writing and received by the procurement officer at least ten days before the bid opening date. This will allow time for an amendment to be issued if one is required. It will also help prevent the opening of a defective bid, upon which award cannot be made, and the resultant exposure of bidders' prices.

SEC. 1.05 QUESTIONS PRIOR TO DEADLINE FOR RECEIPT OF BIDS

All questions must be in writing and directed to the procurement officer. The interested party must confirm telephone conversations in writing. Two types of questions generally arise. One may be answered by directing the questioner to a specific section of the ITB. These questions may be answered over the telephone. Other questions may be more complex and may require a written amendment to the ITB. The procurement officer will make that decision.

The deadline for submission of questions is March 1, 2021 at 2:00 p.m. Alaska Time.

SEC. 1.06 SITE INSPECTION

Not applicable to this ITB.

SEC. 1.07 SUBMITTING BIDS

Bidders must submit one hard copy of their bid, in writing, to the procurement officer in a sealed package. The sealed bid package must be addressed as follows:

Department of Natural Resources
Procurement Section
Attention: Chris Brooks
Invitation to Bid (ITB) Number: 2021 1000 4769
ITB Title: Icy Cape Trail Construction and Structure Assembly Project
550 West 7th Avenue, Suite 1330
Anchorage, Alaska 99501

If using U.S. mail, please use the following address:

550 West 7th Avenue, Suite 1330
Anchorage, Alaska 99501

If using a delivery service, please use the following address:

550 West 7th Avenue, Suite 1330
Anchorage, Alaska 99501

If submitting a bid via email, the bid may be emailed to christopher.brooks@alaska.gov and must contain the ITB number in the subject line of the email. The **maximum** size of a single email (including all text and attachments) that can be received by the State is **20mb (megabytes)**. If the email containing the bid exceeds this size, the bid must be sent in multiple emails that are each less than 20 megabytes and each email must comply with the requirements described above.

Please note that email transmission is not instantaneous. Similar to sending a hard copy bid, if you are emailing your bid, the State recommends sending it enough ahead of time to ensure the email is delivered by the deadline for receipt of bid.

It is the bidder's responsibility to contact the issuing agency at (907) 269-8666 to confirm that the bid has been received. The State is not responsible for unreadable, corrupt, or missing attachments.

SEC. 1.08 ENROLLMENT IN IRIS

Bidders will be required to be enrolled in the State of Alaska's Integrated Resource Information System (IRIS) database prior to award of a contract resulting from this RFP. Enrollment can be done online at the following link: https://iris-vss.alaska.gov/webapp/PRDVSS1X1/AltSelfService. Bidders who are not enrolled prior to award of a contract will be notified by DNR Procurement. Failure of a bidder to enroll in the IRIS database will delay award of the contract and may delay issuance of contract work.

SEC. 1.09 BID FORMS

Bidders shall use the front page of this ITB and any other forms identified in this ITB for submitting bids. All bids must be signed by an individual authorized to bind the bidder to the provisions of the ITB.

BIDDER'S CERTIFICATION

By signature on the bid, the bidder certifies that they comply with the following:

A. the laws of the State of Alaska;

B. the applicable portion of the Federal Civil Rights Act of 1964;

C. the Equal Employment Opportunity Act and the regulations issued thereunder by the state and federal government;

D. the Americans with Disabilities Act of 1990 and the regulations issued thereunder by the state and federal government;

E. all terms and conditions set out in this ITB;

F. the price(s) submitted was arrived at independently arrived and without collusion, under penalty of perjury; and

G. that the bid will remain open and valid for at least 90 days.

If any bidder fails to comply with [a] through [g] of this paragraph, the State reserves the right to disregard the bid, terminate the contract, or consider the Contractor in default.

CONFLICT OF INTEREST

Each bid shall include a statement indicating whether or not the company or any individuals working on the contract has a possible conflict of interest (e.g., currently employed by the State of Alaska or formerly employed by the State of Alaska within the past two years) and, if so, the nature of that conflict. The procurement officer reserves the right to consider a bid non-responsive and reject it or cancel the award if any interest disclosed from any source could either give the appearance of a conflict or cause speculation as to the objectivity of the contract to be performed by the bidder.

SEC. 1.10 PRICES

The bidder shall state prices in the units of issue on this ITB. Prices quoted in bids must be exclusive of federal, state, and local taxes. If the bidder believes that certain taxes are payable by the state, the bidder may list such taxes separately, directly below the bid price for the affected item.

SEC. 1.11 PRE-BID CONFERENCE

Not applicable to this ITB.

SEC. 1.12 ASSISTANCE TO BIDDERS WITH A DISABILITY

Bidders with a disability may receive accommodation regarding the means of communicating this ITB or participating in the procurement process. For more information, contact the procurement officer no later than ten days prior to the deadline for receipt of bids.

SEC. 1.13 AMENDMENTS TO BIDS

Amendments to or withdrawals of bids will only be allowed if acceptable requests are received prior to the deadline that is set for receipt of bids, in accordance with 2 AAC 12.140. No amendments or withdrawals will be accepted after the deadline unless the delay is due to an error of the contracting agency, in accordance with 2 AAC 12.160.

SEC. 1.14 AMENDMENTS TO THE ITB

If an amendment is issued, it will be provided to all who were notified of the ITB and to those who have registered with the procurement officer after receiving the ITB from the State of Alaska Online Public Notice website.

SEC. 1.15 ITB SCHEDULE

The ITB schedule set out herein represents the State of Alaska's best estimate of the schedule that will be followed. If a component of this schedule, such as the deadline for receipt of bids, is delayed, the rest of the schedule may be shifted accordingly. All times are Alaska Time.

ACTIVITY	TIME	DATE
Issue Date / ITB Released		February 22, 2021
Deadline for Receipt of Bids / Bid Due Date	2:00 p.m.	March 8, 2021
ANTICIPATED Bid Evaluations Complete		**Week** of March 8, 2021
ANTICIPATED Notice of Intent to Award		**Week** of March 8, 2021
ANTICIPATED Contract Issued		**Week** of March 22, 2021
ANTICIPATED Kickoff Meeting		**Week** of March 22, 2021

This ITB does not, by itself, obligate the State. The State's obligation will commence when the contract is approved by the Commissioner of the Department of Natural Resources, or the Commissioner's designee. Upon written notice to the Contractor, the State may set a different starting date for the contract. The State will not be responsible for any work done by the Contractor, even work done in good faith, if it occurs prior to the contract start date set by the State.

SEC. 1.16 ALTERNATE BIDS

Bidders may only submit one bid for evaluation. In accordance with 2 AAC 12.830 alternate bids (bids that offer something different than what is asked for) will be rejected.

SEC. 1.17 SUPPORTING INFORMATION

Bidders shall submit all required technical, specification, and other supporting information with their bid, so that a detailed analysis and determination can be made by the procurement officer that the product offered meets the ITB specifications and that other requirements of the ITB have been met. However, provided a bid meets the requirements for a definite, firm, unqualified, and unconditional offer, the State reserves the right to request supplemental information from the bidder, after the bids have been opened, to ensure that the products or services offered completely meet the ITB requirements. The requirement for such supplemental information will be at the reasonable discretion of the State and may include the requirement that a bidder will provide a sample product(s) so that the State can make a first-hand examination and determination.

A bidder's failure to provide this supplemental information or the product sample(s), within the time set by the State, will cause the State to consider the offer non-responsive and reject the bid.

SEC. 1.18 FIRM, UNQUALIFIED, AND UNCONDITIONAL OFFER

Bidders must provide enough information with their bid to constitute a definite, firm, unqualified and unconditional offer. To be responsive a bid must constitute a definite, firm, unqualified and unconditional offer to meet all the material terms of the ITB. Material terms are those that could affect the price, quantity, quality, or delivery. Also included as material terms are those which are clearly identified in the ITB and which, for reasons of policy, must be complied with at risk of bid rejection for non-responsiveness.

SECTION 2. CONTRACT INFORMATION

SEC. 2.01 CONTRACT TERM

The length of the contract will be from the date of award to September 30, 2021.

SEC. 2.02 CONTRACT ADMINISTRATION

The administration of this contract is the responsibility of the procurement officer or approved designee.

SEC. 2.03 CONTRACT FUNDING

The State estimates a budget of approximately $350,000.00 dollars for the term of contract. The State does not guarantee a minimum or maximum number of services to be provided or dollar amount to be spent under any contract resulting from this ITB. Bids priced at more than $350,000.00 will be considered non-responsive.

Approval or continuation of a contract resulting from this ITB is contingent upon legislative appropriation.

SEC. 2.04 CONTRACT EXTENSION

Unless otherwise provided in this ITB, the State and the successful bidder/Contractor agree: (1) that any extension of the contract excluding any exercised renewal options, will be considered as a month-to-month extension, and all other terms and conditions shall remain in full force and effect and (2) the procurement officer will provide written notice to the Contractor of the intent to cancel the month-to-month extension at least 30 days before the date of cancellation. A month-to-month extension may only be executed by the procurement officer via a written contract amendment.

SEC. 2.05 CONTRACT CHANGES – UNANTICIPATED AMENDMENTS

During the course of this contract, the Contractor may be required to perform additional work. That work will be within the general scope of the initial contract. When additional work is required, the State will provide the Contractor a written description of the additional work and request the Contractor to submit a firm time schedule for accomplishing the additional work and a firm price for the additional work. Cost and pricing data must be provided to justify the cost of such amendments per AS 36.30.400.

The Contractor will not commence additional work until the procurement officer has secured required State approvals necessary for the amendment and issued a written contract amendment.

SEC. 2.06 SUBCONTRACTORS

Subcontractors will not be allowed.

SEC. 2.07 JOINT VENTURES

Joint ventures will not be allowed.

SEC. 2.08 CONTRACT PERFORMANCE LOCATION

The project location site is located in Icy Cape, Alaska.

The State will not provide workspace for the Contractor. The Contractor must provide its own workspace.

By signature on their bid, the bidder certifies that all services provided under this contract by the Contractor and all subcontractors shall be performed in the United States.

If the bidder cannot certify that all work will be performed in the United States, the bidder must contact the procurement officer in writing to request a waiver at least 10 days prior to the deadline for receipt of bids.

The request must include a detailed description of the portion of work that will be performed outside the United States, where, by whom, and the reason the waiver is necessary.

Failure to comply with these requirements may cause the State to reject the bid as non-responsive, or cancel the contract.

SEC. 2.09 RIGHT TO INSPECT PLACE OF BUSINESS

At reasonable times, the State may inspect those areas of the Contractor's place of business that are related to the performance of a contract. If the State makes such an inspection, the Contractor must provide reasonable assistance.

SEC. 2.10 SCOPE OF WORK AND SPECIFICATIONS

The Department of Natural Resources (DNR), Trust Land Office (TLO) is requesting bids for construction of trails and assembly of a prefabricated metal structure in Icy Cape, Alaska. The Icy Cape land block is located in the Gulf of Alaska near Icy Bay about 75 miles northwest of Yakutat, Alaska. Land and resources are owned by the Alaska Mental Health Trust Authority and managed by the TLO. The area is remote; is accessible only by boat, airplane, or helicopter; and has a poorly developed and non-maintained road infrastructure created by past timber logging operations. There is no camp or electricity at the project site, nor potable water. The successful bidder is required to bring in his own camp, heavy equipment, power, supplies, and fuel for the project. Barge service from Ketchikan to Icy Cape will be provided around June 2, 2021 (one trip) and from Icy Cape back to Ketchikan around mid-September (one trip). All other barge trips as well as air transportation to Icy Cape will be at the contractor’s own expense.

Scope of Work

Contractor is required to:

- Have all necessary equipment, supplies etc. in Ketchikan no later than May 25, 2021.

- Start work immediately after barge delivers all equipment to Icy Cape.

- Construction of approximately four miles of drill access trails, including drill pads and turnaround locations in the area. Due to confidentiality, the drill access trail plan with be shared and discussed with the successful bidder only. Access trails must accommodate conventional drilling trucks and support vehicles of up to 40,000 lbs. and 35’ x 10’ x 12’ dimensions. Work requires logging and harvesting and ground clearing to provide a trail system that can accommodate Marookas and Nodwells that are wheel and track mounted and/or other heavy equipment such as bulldozers.

- Reinforce trail surfaces with gravel and/or with harvested timber to accommodate ground conditions and drainage crossings as required. Gravel pits in the vicinity of project area may

provide fill and surface materials. Trails will be constructed to standards that allow access with minor maintenance for a period of five years after completion. Harvested timber will be stacked for future construction use near camp.

▪ Assembly and erection of a 40’ x 60’ prefabricated metal structure according to specifications outlined on Attachment 2. Additional electrical wiring work may be included at an agreed-to cost.

▪ Prepare pads for and set-up containerized housing (approximately four units) at campsite and hook up to existing septic and electrical systems.

▪ Contractor must have all equipment and supplies needed to complete the project.

▪ All work must be completed by September 30, 2021. Barge service to Ketchikan will be provided around mid-September 2021.

▪ Participate in a pre-project meeting with the Project Manager before services begin.

▪ Obtain approval from DNR/TLO before starting construction on trails and assembly of prefabricated metal structure.

DNR/TLO is required to:

▪ Coordinate a date/time with the contractor to conduct the pre-project meeting.

▪ Provide contractor sequence/timing of construction, specifications, and location of construction for trails, and assembly of prefabricated metal structure.

Mobilization and Demobilization

Mobilization and demobilization costs must be included in the prices offered for this Invitation to Bid (ITB).

Site Inspection

Bidders are encouraged to visit the work site to evaluate this project and to see the conditions under which the work described in this ITB will be performed. The bidder's failure to visit the work site will in no way relieve the bidder of the responsibility of performing the work in strict compliance with the true intent and meaning of the terms, conditions, and specifications of this ITB.

Project Completion Deadline

Work is anticipated to begin in the beginning of May 2021. Project work shall be completed by no later than September 30, 2021.

Project Manager – Day-to-Day Project Administration

Project Manager Karsten Eden or designated representative will work with the contractor on day-to-day project administration. Karsten Eden may be contacted by phone at (907) 269-8656 or by email at karsten.eden@alaska.gov. Neither Karsten Eden nor designated representative can substantially change or alter a contract resulting from this ITB.

Termination for Default

If the Project Manager determines that the contractor has refused to perform the work or has failed to perform the work with such diligence as to ensure its timely and accurate completion, the State may, by providing written notice to the contractor, terminate the contractor's right to proceed with part or all of the remaining work.

Payment of Work

Complete payment will be made 1) upon completion of the project to the satisfaction of the Project Manager 2) upon receipt of the contractor's original, accurate and complete invoice.

Submit Invoices To

State of Alaska
Department of Natural Resources
Trust Land Office
Katie Vachris, Business Analyst
Email: katie.vachris@alaska.gov
Phone: 907-269-8659

SEC. 2.11 INSPECTION & MODIFICATION - REIMBURSEMENT FOR UNACCEPTABLE DELIVERABLES

The Contractor is responsible for proving all products or the completion of all work set out in the contract. All products or work is subject to inspection, evaluation, and approval by the State. The State may employ all reasonable means to ensure that the work is progressing and being performed in compliance with the contract. The State may instruct the Contractor to make corrections or modifications if needed in order to accomplish the contract's intent. The Contractor will not unreasonably withhold such changes.

Substantial failure of the Contractor to perform the contract may cause the State to terminate the contract. In this event, the State may require the Contractor to reimburse monies paid (based on the identified portion of unacceptable products or work received) and may seek associated damages.

SEC. 2.12 CONTINUING OBLIGATION OF CONTRACTOR

Notwithstanding the expiration date of a contract resulting from this ITB, the Contractor is obligated to fulfill its responsibilities until warranty, guarantee, maintenance, and parts availability requirements have completely expired.

SEC. 2.13 ESTIMATED QUANTITIES

The quantities referenced in this ITB are the State's estimated requirements and may vary more or less from the quantities actually purchased. The State does not guarantee any minimum or maximum purchase. Orders will be issued throughout the contract period on an as-needed basis.

SEC. 2.14 INDEMNIFICATION

The Contractor shall indemnify, hold harmless, and defend the contracting agency from and against any claim of, or liability for error, omission or negligent act of the Contractor under this agreement. The Contractor shall not be required to indemnify the contracting agency for a claim of, or liability for, the independent negligence of the contracting agency. If there is a claim of, or liability for, the joint negligent error or omission of the Contractor and the independent negligence of the contracting agency, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. "Contractor" and "contracting agency", as used within this and the following article, include the employees, agents and other contractors who are directly responsible, respectively, to each. The term "independent negligence" is negligence other than in the contracting agency's selection, administration, monitoring, or controlling of the Contractor and in approving or accepting the Contractor's work.

SEC. 2.15 INSURANCE

Without limiting the Contractor's indemnification, it is agreed that the Contractor shall purchase at its own expense and maintain in force at all times during the performance of services under this agreement the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the Contractor's policy contains higher limits, the State shall be entitled to coverage to the extent of such higher limits.

Certificates of Insurance must be furnished to the procurement officer prior to contract approval and must provide for a notice of cancellation, non-renewal, or material change of conditions in accordance with policy provisions. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach of this contract and shall be grounds for termination of the Contractor's services. All insurance policies shall comply with and be issued by insurers licensed to transact the business of insurance under AS 21.

Proof of insurance is required for the following:

- Workers' Compensation Insurance: The Contractor shall provide and maintain, for all employees engaged in work under this contract, coverage as required by AS 23.30.045, and; where applicable, any other statutory obligations including but not limited to Federal U.S.L. & H. and Jones Act requirements. The policy must waive subrogation against the State.

- Commercial General Liability Insurance: covering all business premises and operations used by the Contractor in the performance of services under this agreement with minimum coverage limits of $300,000 combined single limit per occurrence.

- Commercial Automobile Liability Insurance: covering all vehicles used by the Contractor in the performance of services under this agreement with minimum coverage limits of $300,000 combined single limit per occurrence.

The State shall be added as Additional Insured. This insurance shall be considered to be primary and non-contributory to any other insurance carried by the State through self-insurance or otherwise. In addition to providing the above insurance coverage the Contractor shall in any contract or agreement with subcontractors performing work, require that all indemnities and waivers of subrogation it obtains, and that any stipulation to be named as an additional insured it obtains, also be extended to waive rights of subrogation against the State and add the State as additional named indemnity and as additional insured.

SECTION 3. CONTRACT INVOICING AND PAYMENTS

SEC. 3.01 BILLING INSTRUCTIONS

All invoices produced by the Contractor must contain the following information at a minimum:

- Contract number and title;
- Identification of the billing period;
- An itemized listing of deliverables and charges for the invoiced period;
- Total amount billed;
- Date invoice was submitted for payment;
- Entity name, contact information, and Alaska vendor number.

Invoices must be billed to the ordering agency's address shown on the individual Purchase Order, Contract Award or Delivery Order. The State will make payment after it receives the goods or services and the invoice. Questions concerning payment must be addressed to the ordering agency.

SEC. 3.02 PAYMENT FOR STATE PURCHASES

Payment for agreements under $500,000 for the undisputed purchase of goods or services provided to a state agency, will be made within 30 days of the receipt of a proper billing or the delivery of the goods or services to the location(s) specified in the agreement, whichever is later. A late payment is subject to 1.5% interest per month on the unpaid balance. Interest will not be paid if there is a dispute or if there is an agreement that establishes a lower interest rate or precludes the charging of interest.

Any single contract payments of $1 million or higher must be accepted by the Contractor via Electronic Funds Transfer (EFT).

SEC. 3.03 PROMPT PAYMENT FOR STATE PURCHASES

The State is eligible to receive a 5% discount for all invoices paid within 15 business days from the date of receipt of the commodities or services and/or a correct invoice, whichever is later. The discount shall be taken on the full invoice amount. The State shall consider payment being made as either the date a printed warrant is issued or the date an Electronic Funds Transfer (EFT) is initiated.

SEC. 3.04 THIRD-PARTY FINANCING AGREEMENTS NOT ALLOWED

Because of the additional administrative and accounting time required of the State when third party financing agreements are permitted, they will not be allowed under this contract.

SECTION 4. EVALUATION AND CONTRACTOR SELECTION

SEC. 4.01 EVALUATION OF BIDS

After bid opening, the procurement officer will evaluate the bids for responsiveness. Bids deemed non-responsive will be eliminated from further consideration. An evaluation may not be based on discrimination due the race, religion, color, national origin, sex, age, marital status, pregnancy, parenthood, disability, or political affiliation of the bidder.

SEC. 4.02 APPLICATION OF PREFERENCES

Certain preferences apply to all State contracts, regardless of their dollar value. The Alaska Bidder and Alaska Veteran preferences are the most common preferences involved in the ITB process. Additional preferences that may apply to this procurement are listed below. Guides that contain excerpts from the relevant statutes and codes, explain when the preferences apply and provide examples of how to calculate the preferences are available at the following website:

http://doa.alaska.gov/dgs/pdf/pref1.pdf

- Alaska Products Preference - AS 36.30.332
- Recycled Products Preference - AS 36.30.337
- Local Agriculture and Fisheries Products Preference - AS 36.15.050
- Employment Program Preference - AS 36.30.321(b)
- Alaskans with Disabilities Preference - AS 36.30.321(d)

The Division of Vocational Rehabilitation in the Department of Labor and Workforce Development keeps a list of qualified employment programs and individuals who qualify as persons with a disability. As evidence of a business' or an individual's right to the Employment Program or Alaskans with Disabilities preferences, the Division of Vocational Rehabilitation will issue a certification letter. To take advantage of these preferences, a business or individual must be on the appropriate Division of Vocational Rehabilitation list prior to the time designated for receipt of proposals. Bidders must attach a copy of their certification letter to the proposal. **A bidder's failure to provide this certification letter with their proposal will cause the State to disallow the preference**.

SEC. 4.03 ALASKA BIDDER PREFERENCE

An Alaska Bidder Preference of 5% will be applied to the total bid price. The preference will be given to a bidder who:

1) holds a current Alaska business license prior to the deadline for receipt of bids;
2) submits a bid for goods or services under the name appearing on the bidder's current Alaska business license;
3) has maintained a place of business within the state staffed by the bidder, or an employee of the bidder, for a period of six months immediately preceding the date of the bid;

4) is incorporated or qualified to do business under the laws of the state, is a sole proprietorship and the proprietor is a resident of the state, is a limited liability company (LLC) organized under AS 10.50 and all members are residents of the state, or is a partnership under AS 32.06 or AS 32.11 and all partners are residents of the state; and

5) if a joint venture, is composed entirely of ventures that qualify under (1)-(4) of this subsection.

Alaska Bidder Preference Certification Form

In order to receive the Alaska Bidder Preference, the bid must include the Alaska Bidder Preference Certification Form attached to this ITB. A bidder does not need to complete the Alaska Veteran Preference questions on the form if not claiming the Alaska Veteran Preference. A bidder's failure to provide this completed form with their bid will cause the State to disallow the preference.

SEC. 4.04 ALASKA VETERAN PREFERENCE

An Alaska Veteran Preference of 5%, not to exceed $5,000, will be applied to the total bid price. The preference will be given to a bidder who qualifies under AS 36.30.990(2) as an Alaska Bidder and is a:

a) sole proprietorship owned by an Alaska veteran;

b) partnership under AS 32.06 or AS 32.11 if a majority of the partners are Alaska veterans;

c) limited liability company organized under AS 10.50 if a majority of the members are Alaska veterans; or

d) corporation that is wholly owned by individuals, and a majority of the individuals are Alaska veterans.

In accordance with AS 36.30.321(i), the bidder must also add value by actually performing, controlling, managing, and supervising the services provided, or for supplies, the bidder must have sold supplies of the general nature solicited to other state agencies, other government, or the general public.

Alaska Veteran Preference Certification

In order to receive the Alaska Veteran Preference, the bid must include the Alaska Bidder Preference Certification Form attached to this ITB. A bidder's failure to provide this completed form with their bid will cause the State to disallow the preference.

SEC. 4.05 EMPLOYMENT PROGRAM PREFERENCE

If a bidder qualifies for the Alaska Bidder Preference and is offering goods or services through an employment program as defined under AS 36.30.990(12), an Employment Program Preference of 15% will be applied to the total bid price.

In accordance with AS 36.30.321(i), the bidder must also add value by actually performing, controlling, managing, and supervising the services provided, or for supplies, the bidder must have sold supplies of the general nature solicited to other state agencies, other government, or the general public.

SEC. 4.06 ALASKANS WITH DISABILITIES PREFERENCE

If a bidder qualifies for the Alaska Bidder Preference and is a qualifying entity as defined in AS 36.30.321(d), an Alaskans with Disabilities Preference of 10% will be applied to the total bid price.

In accordance with AS 36.30.321(i), the bidder must also add value by actually performing, controlling, managing, and supervising the services provided, or for supplies, the bidder must have sold supplies of the general nature solicited to other state agencies, other government, or the general public.

SEC. 4.07 PREFERENCE QUALIFICATION LETTER

Regarding the Employment Program Preference and the Alaskans with Disabilities Preference, the Division of Vocational Rehabilitation in the Department of Labor and Workforce Development maintains lists companies who qualify for those preferences. As evidence of a company's right to the preferences, the Division of Vocational Rehabilitation will issue a certification letter. To take advantage of the preferences, a bidder must be on the appropriate Division of Vocational Rehabilitation list at the time the bid is opened and must attach a copy of their certification letter to their bid. The bidder's failure to provide this certification letter with their bid will cause the State to disallow the preference.

SEC. 4.08 EXTENSION OF PRICES

In case of error in the extension of prices in the bid, the unit prices will govern; in a lot bid, the lot prices will govern.

SEC. 4.09 METHOD OF AWARD

Award will be made to the lowest responsive and responsible bidder. The maximum allowable budget for this ITB is $350,000. Bids that exceed this budget shall be deemed non-responsive to the ITB.

SEC. 4.10 NOTICE OF INTENT TO AWARD

After the responses to this ITB have been opened and evaluated, a tabulation of the bids will be prepared. This tabulation, called a Notice of Intent to Award, serves two purposes. It lists the name of each company or person that offered a bid and the price they bid. It also provides notice of the State's intent to award a contract(s) to the bidder(s) indicated. A copy of the Notice of Intent will be mailed to each company or person who responded to the ITB. Bidders identified as the apparent low responsive bidders are instructed not to proceed until a Purchase Order, Contract Award, Lease, or some other form of written notice is given by the procurement officer. A company or person who proceeds prior to receiving a Purchase Order, Contract Award, Lease, or some other form of written notice from the procurement officer does so without a contract and at their own risk.

SECTION 5. GENERAL PROCESS AND LEGAL INFORMATION

SEC. 5.01 ALASKA BUSINESS LICENSE AND OTHER REQUIRED LICENSES

Prior to the award of a contract, a bidder must hold a valid Alaska business license. However, in order to receive the Alaska Bidder Preference and other related preferences, such as the Alaska Veteran Preference and Alaskans with Disabilities Preference, a bidder must hold a valid Alaska business license prior to the deadline for receipt of bids. Bidders should contact the **Department of Commerce, Community and Economic Development, Division of Corporations, Business, and Professional Licensing, PO Box 110806, Juneau, Alaska 99811-0806**, for information on these licenses. Acceptable evidence that the bidder possesses a valid Alaska business license may consist of any one of the following:

- copy of an Alaska business license;
- certification on the bid that the bidder has a valid Alaska business license and has included the license number in the bid;
- a canceled check for the Alaska business license fee;
- a copy of the Alaska business license application with a receipt stamp from the State's occupational licensing office; or
- a sworn and notarized statement that the bidder has applied and paid for the Alaska business license.

You are not required to hold a valid Alaska business license at the time bids are opened if you possess one of the following licenses and are offering services or supplies under that specific line of business:

- fisheries business licenses issued by Alaska Department of Revenue or Alaska Department of Fish and Game,
- liquor licenses issued by Alaska Department of Revenue for alcohol sales only,
- insurance licenses issued by Alaska Department of Commerce, Community and Economic Development, Division of Insurance, or
- Mining licenses issued by Alaska Department of Revenue.

Prior the deadline for receipt of bids, all bidders must hold any other necessary applicable professional licenses required by Alaska Statute.

SEC. 5.02 AUTHORITY

This ITB is written in accordance with AS 36.30 and 2 AAC 12.

SEC. 5.03 COMPLIANCE

In the performance of a contract that results from this ITB, the Contractor must comply with all applicable federal, state, and borough regulations, codes, and laws; be liable for all required insurance, licenses, permits and bonds; and pay all applicable federal, state, and borough taxes.

SEC. 5.04 SUITABLE MATERIALS, ETC.

Unless otherwise specified in this ITB, all materials, supplies or equipment offered by a bidder shall be new, unused, and of the latest edition, version, model or crop and of recent manufacture.

SEC. 5.05 SPECIFICATIONS

Unless otherwise specified in this ITB, product brand names or model numbers specified in this ITB are examples of the type and quality of product required, and are not statements of preference. If the specifications describing an item conflict with a brand name or model number describing the item, the specifications govern. Reference to brand name or number does not preclude an offer of a comparable or better product, if full specifications and descriptive literature are provided for the product. Failure to provide such specifications and descriptive literature may be cause for rejection of the offer.

SEC. 5.06 CONTRACTOR SITE INSPECTION

The State may conduct on-site visits to evaluate the bidder's capacity to perform the contract. A bidder must agree, at risk of being found non-responsive and having its bid rejected, to provide the State reasonable access to relevant portions of its work sites. Individuals designated by the procurement officer at the State's expense will make site inspection.

SEC. 5.07 ORDER DOCUMENTS

Except as specifically allowed under this ITB, an ordering agency will not sign any vendor contract. The State is not bound by a vendor contract signed by a person who is not specifically authorized to sign for the State under this ITB. Unless otherwise specified in this ITB, the State of Alaska Purchase Order, Contract Award and Delivery Order are the only order documents that may be used to place orders against the contract(s) resulting from this ITB.

SEC. 5.08 HUMAN TRAFFICKING

By signature on their bid, the bidder certifies that the bidder is not established and headquartered or incorporated and headquartered in a country recognized as Tier 3 in the most recent United States Department of State's Trafficking in Persons Report.

The most recent United States Department of State's Trafficking in Persons Report can be found at the following website: http://www.state.gov/j/tip/

Failure to comply with this requirement will cause the State to reject the bid as non-responsive, or cancel the contract.

SEC. 5.09 RIGHT OF REJECTION

Bidders must comply with all of the terms of the ITB, the State Procurement Code (AS 36.30), and all applicable local, state, and federal laws, codes, and regulations. The procurement officer may reject any bid that does not comply with all of the material and substantial terms, conditions, and performance requirements of the ITB.

Bidders may not qualify the bid nor restrict the rights of the State. If a bidder does so, the procurement officer may determine the bid to be a non-responsive counter-offer and the bid may be rejected.
Minor informalities that:

- do not affect responsiveness;
- are merely a matter of form or format;
- do not change the relative standing or otherwise prejudice other offers;
- do not change the meaning or scope of the ITB;
- are trivial, negligible, or immaterial in nature;
- do not reflect a material change in the work; or
- do not constitute a substantial reservation against a requirement or provision;

may be waived by the procurement officer.

The State reserves the right to refrain from making an award if it determines that to be in its best interest. A bid from a debarred or suspended bidder shall be rejected.

SEC. 5.10 STATE NOT RESPONSIBLE FOR PREPARATION COSTS

The State will not pay any cost associated with the preparation, submittal, presentation, or evaluation of any bid.

SEC. 5.11 DISCLOSURE OF BID CONTENTS

All bid prices become public information at the bid opening. After the deadline for receipt of bids, all other bid material submitted become the property of the State of Alaska and may be returned only at the State's option. AS 40.25.110 requires public records to be open to reasonable inspection. All other bid information will be held in confidence during the evaluation process and prior to the time a Notice of Intent to Award is issued. Thereafter, bids will become public information.

Trade secrets and other proprietary data contained in bids may be held confidential if the bidder requests, in writing, that the procurement officer does so, and if the procurement officer agrees, in writing, to do so. The bidder's request must be included with the bid, must clearly identify the information they wish to be held confidential, and include a statement that sets out the reasons for confidentiality. Unless the procurement officer agrees in writing to hold the requested information confidential, that information will also become public after the Notice of Intent to Award is issued.

SEC. 5.12 ASSIGNMENTS

Per 2 AAC 12.480, the Contractor may not transfer or assign any portion of the contract without prior written approval from the procurement officer. Bids that are conditioned upon the State's approval of an assignment will be rejected as non-responsive.

SEC. 5.13 FORCE MAJEURE (IMPOSSIBILITY TO PERFORM)

The parties to a contract resulting from this ITB are not liable for the consequences of any failure to perform, or default in performing, any of its obligations under the contract, if that failure or default is caused by any unforeseeable Force Majeure, beyond the control of, and without the fault or negligence of, the respective party.

For the purposes of this ITB, Force Majeure will mean war (whether declared or not); revolution; invasion; insurrection; riot; civil commotion; sabotage; military or usurped power; lightning; explosion; fire; storm; drought; flood; earthquake; epidemic; quarantine; strikes; acts or restraints of governmental authorities affecting the project or directly or indirectly prohibiting or restricting the furnishing or use of materials or labor required; inability to secure materials, machinery, equipment or labor because of priority, allocation or other regulations of any governmental authorities.

SEC. 5.14 DEFAULT

In case of default by the Contractor, for any reason whatsoever, the State may procurement the goods or services from another source and hold the Contractor responsible for any resulting excess cost and may seek other remedies under law or equity.

SEC. 5.15 DISPUTES

If the Contractor has a claim arising in connection with the contract that it cannot resolve with the State by mutual agreement, it shall pursue the claim, if at all, in accordance with the provisions of AS 36.30.620 – AS 36.30.632.

SEC. 5.16 SEVERABILITY

If any provision of the contract or agreement is found to be invalid or declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions will not be affected; and, the rights and obligations of the parties will be construed and enforced as if the contract did not contain the particular provision held to be invalid.

SEC. 5.17 CONTRACT CANCELLATION

The State reserves the right to cancel the contract at its convenience upon 30 calendar days written notice to the Contractor. The State is only liable for payment in accordance with the payment provisions of this contract for supplies or services provide before the effective date termination.

SEC. 5.18 GOVERNING LAW; FORUM SELECTION

A contract resulting from this ITB is governed by the laws of the State of Alaska. To the extent not otherwise governed by Section 5.15 of this ITB, any claim concerning the contract shall be brought only in the Superior Court of the State of Alaska and not elsewhere.

SEC. 5.19 SOLICITATION ADVERTISING

Public notice has been provided in accordance with 2 AAC 12.220.

SEC. 5.20 QUALIFIED BIDDERS

Per 2 AAC 12.875, unless provided for otherwise in the ITB, to qualify as a bidder for award of a contract issued under AS 36.30, the bidder must:

1) Add value in the contract by actually performing, controlling, managing, or supervising the services to be provided; or

2) Be in the business of selling and have actually sold on a regular basis the supplies that are the subject of the ITB.

If the bidder leases services or supplies or acts as a broker or agency in providing the services or supplies in order to meet these requirements, the procurement officer may not accept the bidder as a qualified bidder under AS 36.30.

SEC. 5.21 FEDERALLY IMPOSED TARIFFS

Changes in price (increase or decrease) resulting directly from a new or updated federal tariff, excise tax, or duty, imposed after contract award may be adjusted during the contract period or before delivery into the United States via contract amendment.

- Notification of Changes: The Contractor must promptly notify the procurement officer in writing of any new, increased, or decreased federal excise tax or duty that may result in either an increase or decrease in the contact price and shall take appropriate action as directed by the procurement officer.

- After-imposed or Increased Taxes and Duties: Any federal excise tax or duty for goods or services covered by this contract that was exempted or excluded on the contract award date but later imposed on the Contractor during the contract period, as the result of legislative, judicial, or administrative action may result in a price increase provided:

    a) The tax or duty takes effect after the contract award date and isn't otherwise addressed by the contract;

    b) The Contractor warrants, in writing, that no amount of the newly imposed federal excise tax or duty or rate increase was included in the contract price, as a contingency or otherwise.

- After-relieved or Decreased Taxes and Duties: The contract price shall be decreased by the amount of any decrease in federal excise tax or duty for goods or services under the contract, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the procurement officer.

- State's Ability to Make Changes: The State reserves the right to request verification of federal excise tax or duty amounts on goods or services covered by this contract and increase or decrease the contract price accordingly.

- Price Change Threshold: No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds $250.

SEC. 5.22 PROTEST

AS 36.30.560 provides that an interested party may protest the content of the ITB.

An interested party is defined in 2 AAC 12.990(a) (7) as "an actual or prospective bidder or offeror whose economic interest might be affected substantially and directly by the issuance of a contract solicitation, the award of a contract, or the failure to award a contract."

If an interested party wishes to protest the content of a solicitation, the protest must be received, in writing, by the procurement officer at least ten days prior to the deadline for receipt of bids.

AS 36.30.560 also provides that an interested party may protest the award of a contract or the proposed award of a contract.

If a bidder wishes to protest the award of a contract or the proposed award of a contract, the protest must be received, in writing, by the procurement officer within ten days after the date the Notice of Intent to Award the contract is issued.

A protester must have submitted a bid in order to have sufficient standing to protest the proposed award of a contract. Protests must include the following information:

- the name, address, and telephone number of the protester;
- the signature of the protester or the protester's representative;
- identification of the contracting agency and the solicitation or contract at issue;
- a detailed statement of the legal and factual grounds of the protest including copies of relevant documents; and the form of relief requested.

Protests filed by telex or telegram are not acceptable because they do not contain a signature. Fax copies containing a signature are acceptable.

The procurement officer will issue a written response to the protest. The response will set out the procurement officer's decision and contain the basis of the decision within the statutory time limit in AS 36.30.580. A copy of the decision will be furnished to the protester by certified mail, fax or another method that provides evidence of receipt.

All bidders will be notified of any protest. The review of protests, decisions of the procurement officer, appeals, and hearings, will be conducted in accordance with the State Procurement Code (AS 36.30), Article 8 "Legal and Contractual Remedies."

SECTION 6. ATTACHMENTS

SEC. 6.01 ATTACHMENTS

Attachments:

1) Attachment 1 – Bid Schedule

2) Attachment 2 - Prefabricated Metal Structure Specifications

ATTACHMENT 1
BID SCHEDULE
ITB 2021 1000 4769
ICY CAPE TRAIL CONSTRUCTION AND STRUCTURE ASSEMBLY PROJECT

Bidders are to submit their bid using this Bid Schedule. Bid prices are to remain firm for the duration of the contract and are to include all costs associated with providing required services, to include but not limited to, materials, supplies, equipment, labor, overhead, and profit.

1. BID OFFERED:

Description	Total Cost
Icy Cape Trail Construction and Structure Assembly Project - as specified in Section 2.10 Scope of Work and Specifications	$
Company Name:	
Authorized Representative's Printed Name:	
Authorized Representative's Signature:	
Date Bid Schedule Signed:	

2. PREFERENCE CERTIFICATION:

ITEM	QUESTION	YES	NO
1.	Does your company qualify for the Alaska Bidder's Preference?		
2.	Does your company qualify for the Alaska Veteran's Preference? If yes, provide a copy of your DD 214 with your service/social security number, date of birth, and other Privacy Act protected information redacted or "inked" out.		
3.	Does your company qualify for the Alaskans with Disabilities preference? If yes, you must provide a copy of your certification letter issued by the Division of Vocational Rehabilitation to receive this preference.		
4.	Does your company qualify for the Employment Program Preference? If yes, you must provide a copy of your certification letter issued by the Division of Vocational Rehabilitation to receive this preference.		

CBC STEEL BUILDINGS
A NUCOR Company

1700 E. Louise Avenue, Lathrop, Ca. 95330
Tel: (209) 983-0910 • Fax: (209) 858-2354

DESIGN PARAMETERS

Job No. : C17C0461
Customer : Icy Cape Sample Processing Bldg.
Designed by : BC
Checked by : MW
Date : 9-Jan-2018

Sheet : A - 1

Revision : 00

STRUCTURE DESCRIPTION

Frame Type	:	Clear Span
Building Width	:	40.00 ft.
Building Length	:	60.00 ft.
Eave Height	:	16.00 ft.
Max. Tributary Spac.	:	20.00 ft.
Roof Slope	:	2 in. / ft.

BASIC LOADS

Building Code : IBC 2012
Risk Category : II
Roof Live Load : 20 psf
Tributary Reduction (Y/N) : n
Frame Live Load : 20 psf

Wind Load
- Speed, V_{ult} : 150 mph (3-sec gust)
- Exposure : C

Enclosure Condition : Enclosed

Seismic Load
- Design Category : E
- Importance : 1.00
- Site Class : D

Ss : 171.80% S1 : 80.80%
R_{trans}: 3.50 / Ω_o : 3.00
R_{long}: 3.25 / Ω_o : 2.00

Snow Load
- Roof Snow : 105 psf
- Ground Snow : 150 psf
- Importance : 1.00

Ce : 1.0 Ct : 1.0

Collateral Load : 5.0 psf

Dead Load : 5.0 psf (Total)

Frame Wt: 2.0 psf
Purlins: 1.5 psf
Panels: 1.0 psf
Misc.: 0.5 psf

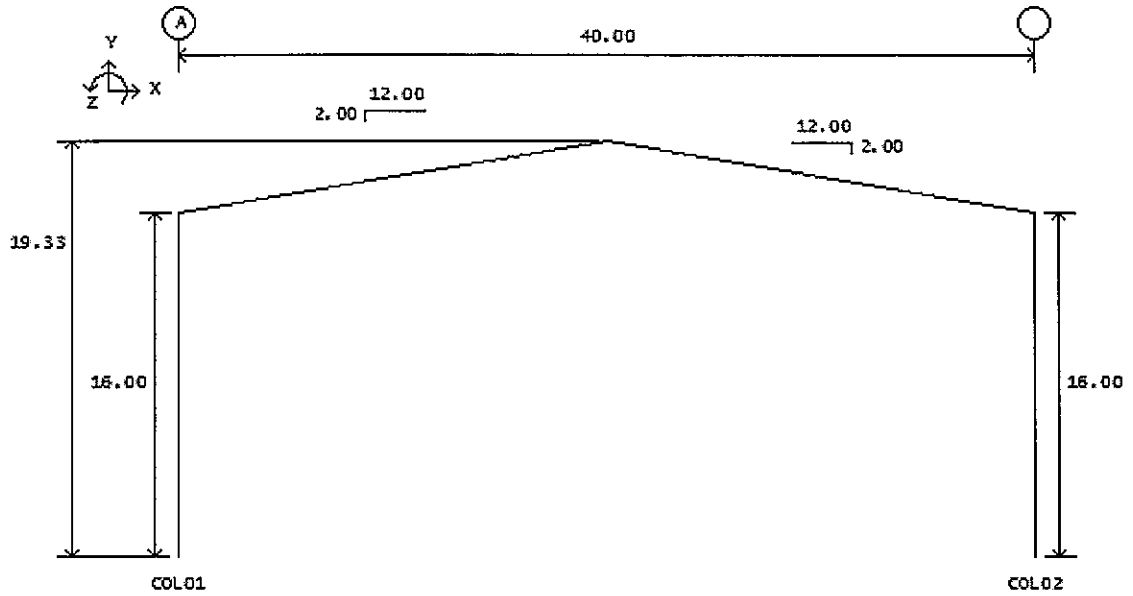
NOTES

REVISIONS

*** This structure is designed in compliance with CBC Steel Buildings specifications and standards utilizing the pertinent provisions and recommendations of the American Institute of Steel Construction (AISC), International Conference of Building Officials (ICBO), American Iron and Steel Institute (AISI), the Metal Building Manufacturer's Association (MBMA) and their publications. ***

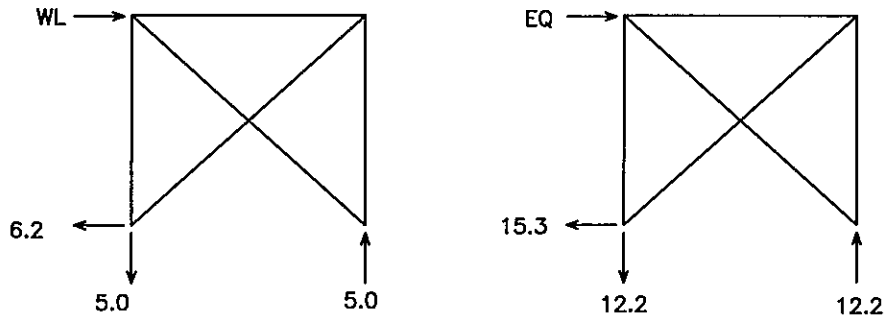
NUCOR BUILDINGS GROUP Job #: 12/1/17 Page:
Frame : Frame @ Line(s) 2,3 ' Frame Nam By: Date: 01-09-18
Job Name: Icy Cape Sample Processing Building File: F01-800825

*** DESIGN SUMMARY - FRAME REACTIONS BY LOAD CASE ***

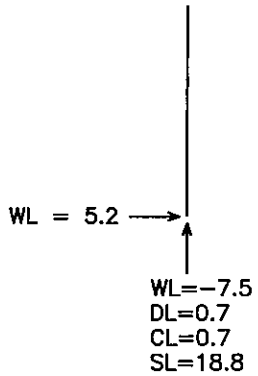


Member	X (kips)	Y (kips)	Z (kip-ft)
LOAD CASE 1 - DEAD			
COL01	1	3	0
COL02	-1	3	0
LOAD CASE 2 - COLLATERAL			
COL01	1	3	0
COL02	-1	3	0
LOAD CASE 3 - ROOF LIVE			
COL01	3	8	0
COL02	-3	8	0
LOAD CASE 4 - SNOW			
COL01	13	40	0
COL02	-13	40	0
LOAD CASE 5 - USER OVERRIDE SNOW			
COL01	14	42	0
COL02	-14	43	0
LOAD CASE 6 - WIND CASE 1 TO RIGHT			
COL01	-8	-10	0
COL02	-1	-4	0
LOAD CASE 7 - WIND CASE 1 TO LEFT			
COL01	1	-4	0
COL02	8	-10	0
LOAD CASE 8 - WIND CASE 2 TO RIGHT			
COL01	-8	-16	0
COL02	-1	-10	0
LOAD CASE 9 - WIND CASE 2 TO LEFT			
COL01	1	-10	0
COL02	8	-16	0
LOAD CASE 10 - LONG. WIND 1 TO BACK			
COL01	-1	-7	0
COL02	1	-5	0
LOAD CASE 11 - LONG. WIND 1 TO FRONT			
COL01	-1	-5	0
COL02	1	-7	0
LOAD CASE 12 - LONG. WIND 2 TO BACK			
COL01	-1	-14	0
COL02	2	-11	0
LOAD CASE 13 - LONG. WIND 2 TO FRONT			
COL01	-2	-11	0
COL02	1	-14	0
LOAD CASE 14 - SEISMIC TO RIGHT			
COL01	-4	-3	0
COL02	-4	3	0
LOAD CASE 15 - SEISMIC TO LEFT			
COL01	4	3	0
COL02	4	-3	0
LOAD CASE 16 - ALTERNATE SNOW 1			
COL01	11	41	0
COL02	-11	22	0
LOAD CASE 17 - ALTERNATE SNOW 2			
COL01	11	22	0
COL02	-11	41	0

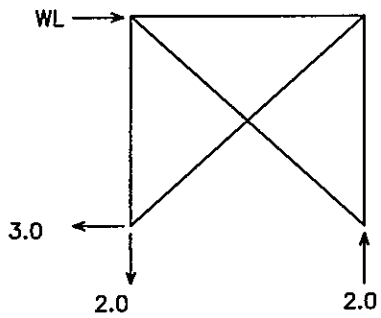
NOTE: ALL SEISMIC LOAD REACTIONS ARE SHOWING WITH BASE SHEAR VALUES

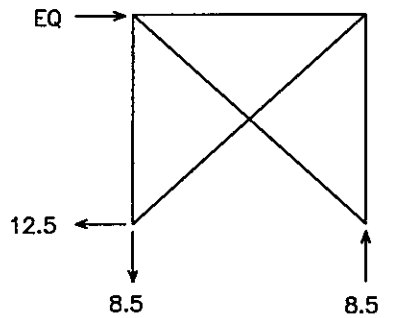


BRACING REACTION SIDEWALL @ BAY 2

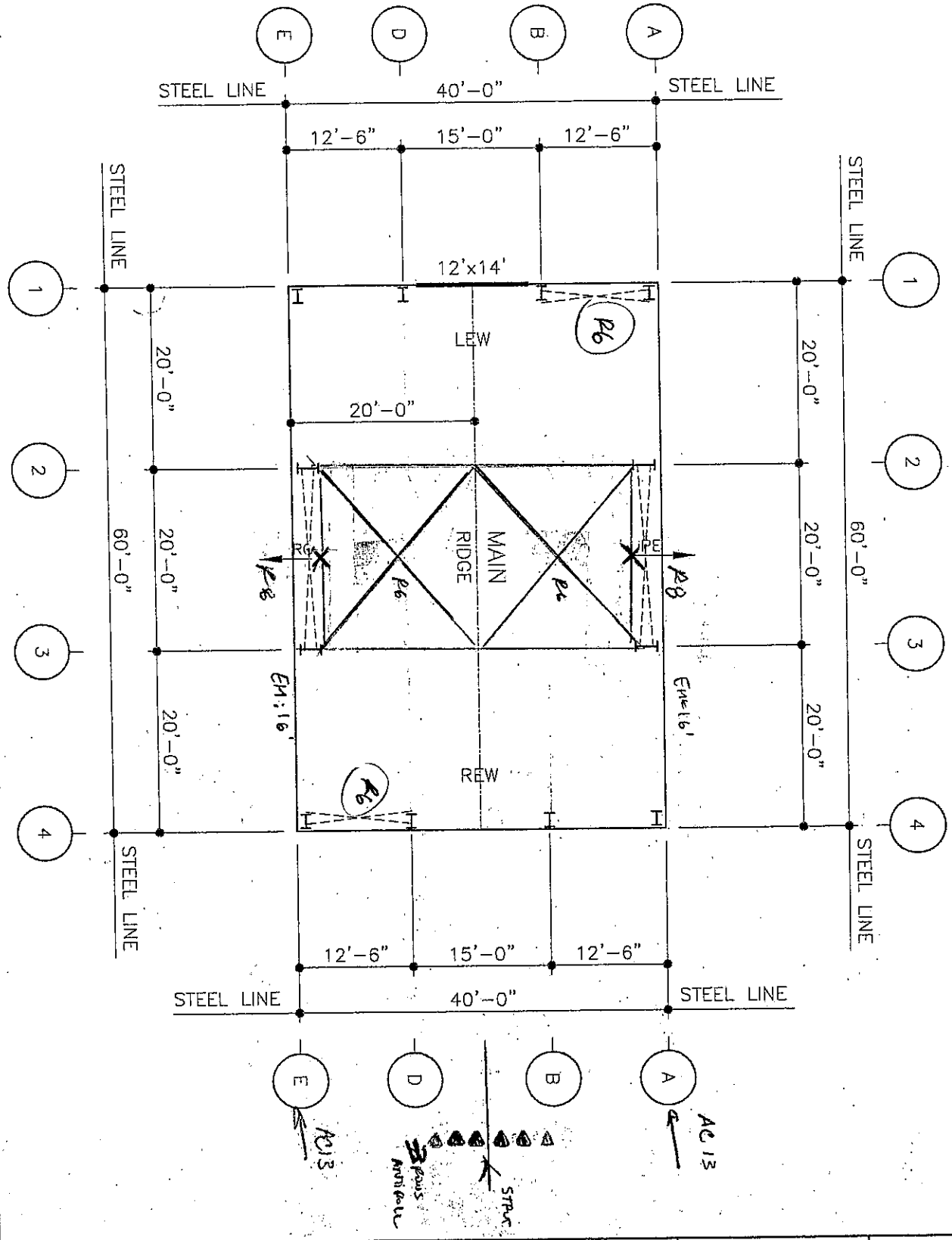


END POST REACTIONS LINE 1/4





BRACING REACTION ENDWALL 1/4



12/27/2017 1:08 PM	PROJECT NAME: ICY CAPE SAMPLE PROCESSING BUILDING YAKUTAT, AK	CBS STEEL BUILDINGS A KIRKBRIDE COMPANY
SHEET NUMBER:	CUSTOMER NAME: ARCTIC FOX STEEL BUILDINGS WASILLA, AK	eQuote
QUOTE NUMBER:		

nd

CBC STEEL BUILDINGS
A NUCOR Company

Sheet : C - 1
Job # :
Date : 9-Jan-18
By : BC

SHEETING DESIGN

ROOF PANELS

Loads:

Dead, DL = 3.00 psf (Panel Wt.)
Live (or Snow), LL = 137.47 psf (Unreduced)

Wind, WL:
q_h = 42.13 psf
WL = -79.20 psf

Gravity Load:
DL+LL = 140.47 psf **< Allo. (ok)**
Uplift Load:
DL+0.6WL = -44.52 psf **< Allo. (ok)**

Building Enclosure = Enclosed

Overhang Panel (Y/N) = N
Type of Span = Three or More Span

Panel Span = 3.00 ft
Trib. Width = 1.00 ft
Roof Slope = 2.00:12
= 9.46 °

Effective Wind Area = 3.00 ft²
GC_p = -1.70
GC_{pi} = -0.18

USE: 24 Ga. Standard 'R' Panel (50 ksi)

Allowable Load: Gravity = **155 psf**
(See Chart at Sht. C-) Uplift = **152 psf**

WALL PANELS

q_h = 42.13 psf
Panel Span = 5.00 ft
Trib. Width = 1.00 ft

Wind, 0.6WL = -36.40 psf **< Allo. (ok)**

Roof Slope = 9.46 ° < 10 °
Type of Span = Three or More Span
Effective Wind Area = 5.00 ft²
GC_p = -1.26
GC_{pi} = -0.18

USE: 26 Ga. Standard 'R' Panel (80 ksi)

Allowable Load: Suction = **44 psf**
(See Chart at Sht. C-)

FASTENERS

Purlin Spacing = 3.00 ft
Wind Uplift = -79.20 psf

Actual Load = 142.57 lbs/ft

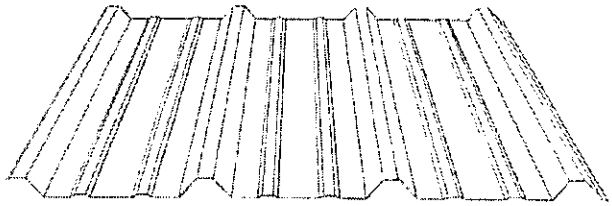
USE: #12-14 x 1 in. Self Drilling Screw at 12 in. o.c
(Atlas Bolt & Screw Co.)

Allowable = **252 lbs.**

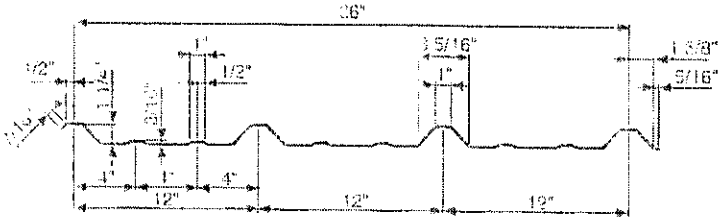
STEEL BUILDINGS
A NUCOR Company

SHEET: C - 2

CHART – 'C'
('R'-Panel)



R-Panel Profile



R-Panel Cross Section

Standard R-Panel Engineering Properties							
Gauge	Design Thickness	Total Thickness	Panel Weight	Top in Compression		Bottom in Compression	
	IN	IN	PSF	Ix	Sx	Ix	Sx
26	0.0177	0.0199	0.97	0.0397	0.0398	0.0317	0.0471
24	0.0225	0.0244	1.19	0.0543	0.0551	0.0423	0.0607

R Panel SAFE UNIFORM LOAD (PSF)

GRAVITY (PRESSURE)

TYPE OF SPAN	GAUGE	SPAN (FT)												
		2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.3333	8
SIMPLE SPAN	26	238	152	106	78	60	47	38	32	26	23	19	18	15
	80 ksi	430	220	127	80	54	38	28	21	16	13	10	9	7
	26	211	135	94	69	53	42	34	28	23	20	17	16	13
	50 ksi	433	222	128	81	54	38	28	21	16	13	10	9	7
	24	294	188	131	96	73	58	47	39	33	28	24	22	18
	50 ksi	619	317	183	116	77	54	40	30	23	18	14	13	10
TWO SPAN	26	277	177	123	90	69	55	44	37	31	26	23	21	17
	80 ksi	1035	530	307	193	129	91	66	50	38	30	24	21	16
	26	233	149	104	76	58	46	37	31	26	22	19	17	15
	50 ksi	1044	535	309	195	130	92	67	50	39	30	24	21	16
	24	299	192	133	98	75	59	48	40	33	28	24	22	19
	50 ksi	1491	764	442	278	186	131	95	72	55	43	35	30	23
THREE OR MORE SPANS	26	323	207	144	106	81	64	52	43	36	31	26	24	20
	80 ksi	861	441	255	161	108	76	55	41	32	25	20	17	13
	26	272	174	121	89	68	54	44	36	30	26	22	20	17
	50 ksi	868	445	257	162	109	76	56	42	32	25	20	18	14
	24	349	224	155	114	87	69	56	46	39	33	29	26	22
	50 ksi	1240	635	367	231	155	109	79	60	46	36	29	25	19

UPLIFT (SUCTION)

TYPE OF SPAN	GAUGE	SPAN (FT)												
		2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.3333	8
SIMPLE SPAN	26	277	177	123	90	69	55	44	37	31	26	23	21	17
	80 ksi	350	179	104	65	44	31	22	17	13	10	8	7	5
	26	233	149	104	76	58	46	37	31	26	22	19	17	15
	50 ksi	361	185	107	67	45	32	23	17	13	11	8	7	6
	24	299	192	133	98	75	59	48	40	33	28	24	22	19
	50 ksi	481	246	142	90	60	42	31	23	18	14	11	10	8
TWO SPAN	26	238	152	106	78	60	47	38	32	26	23	19	18	15
	80 ksi	842	431	250	157	105	74	54	40	31	25	20	17	13
	26	211	135	94	69	53	42	34	28	23	20	17	16	13
	50 ksi	869	445	257	162	109	76	56	42	32	25	20	18	14
	24	294	188	131	96	73	58	47	39	33	28	24	22	18
	50 ksi	1158	593	343	216	145	102	74	56	43	34	27	23	18
THREE OR MORE SPANS	26	278	178	124	91	70	55	44	37	31	26	23	21	17
	80 ksi	700	359	208	131	88	61	45	34	26	20	16	14	11
	26	246	158	109	80	62	49	39	33	27	23	20	18	15
	50 ksi	722	370	214	135	90	63	46	35	27	21	17	15	11
	24	343	220	152	112	86	68	55	45	38	32	28	26	21
	50 ksi	963	493	285	180	120	85	62	46	36	28	22	20	15

Notes:
1. E = 29500
2. Top value is based on stress and bottom value is based on deflection.
3. Weight of panel is not included in the above allowables.
4. Deflection allowables are based on l/180. To adjust for other limits use the following:
   For l/90 multiply the above allowables by 2.0
   For l/240 multiply the above allowables by 0.75
5. Stress allowables may be increased by 4/3 for wind loading if allowed by the building code.
6. The panel properties are calculated in accordance with the *2012 North American Specification for the Design of Cold Formed Steel Structural Members.*

Front Roof Design

Designer: Version Number: Ver. 47.5
Job Number: 37461, Module: 1 Date/Time: 01/09/18 02:06 PM

Type	Width	Length	Ridge Dist	Slope(F)	Slope(R)	No.BAYS
LRF	40.000 ft	60.000 ft	20.000 ft	2.000:12	2.000:12	3

Wall Base Adjustments:	FSW	RSW	LEW	REW
	0.000 ft	0.000 ft	0.000 ft	0.000ft

S.Wall	Eave Ht.	Lean-To Width	E.Wall	Type	Col_Spc.	Girt Type	Overhang
Front:	16.000 ft	0.000 ft	Left	1	C	I	0.000 ft
Rear:	16.000 ft	0.000 ft	Right	1	C	I	0.000 ft

Building Code: 2012 International Building Code

Building Use Category: II. All buildings and other structures except those listed in Risk Categories I, III, and IV (Snow Importance Factor = 1.000)
Roof Dead Load = 3.000 psf Collateral Load = 5.000 psf
Roof Live Load = 20.000 psf
Ground Snow Load = 150.000 psf
Snow Exposure Category: Partially Exposed (Snow Exposure Factor = 1.000)
Thermal Condition: All structures except as indicated below (Thermal Factor = 1.000)
Roof Snow Load = 105.000 psf
Wind Velocity = 150.000 mph
Open Condition: Enclosed Buildings
Wind Exposure Category: C. Open terrain with scattered obstructions having heights generally less than 30 feet & where Exposures B or D do not apply
Design Wind Pressure (Cladding and Secondary) = 42.130 psf

Anti-Roll Region #1 from eave to peak
Width: 20.2759 ft On Slope: 2:12 Lines(np): 8
W(gravity): 148.859 psf At Frame Line: 2 Applied Force(PL): -3791.55 lbs
Qty Clips Needed: 2 Qty Clips Utilized: 2 Resistance: -4000 lbs

Purlin locations on slope from peak to eave.

Line No.	Distance (feet)	Design Spacing	Interest Line	Anti-Roll Region	Anti-Roll Clip	Lt.Edge Package	Rt.Edge Package	Weight (lbs)	
1	1.50	2.75		1	Y(DnHill)			381.8	
2	4.00	2.50		1	Y(DnHill)			381.8	
3	6.50	2.50	Y					381.8	TYP
4	9.00	2.50						381.8	
5	11.50	2.50						381.8	
6	14.00	2.50						381.8	
7	16.50	2.19	Y					381.8	
8	18.39	1.89						381.8	
9	20.28	0.94	Y					356.7	eave strut
						LINE WEIGHT TOTAL		3411.1	
								60.3	sag lines
						EXTENDED WEIGHT TOTAL		3471.3	

use (3) each roof slope

D-2

Roof purlin line 3 (Unbalanced Snow w/ Peak Surcharge)

Design Spacing	2.500 ft (max)
Mounting Condition at Supports	BYPASS
Lateral Restraint by Panel Attachment	THROUGH-FASTENED
End Inset Dimension at Lt End of Line	0.458 ft
End Inset Dimension at Rt End of Line	0.458 ft

With a 4.000 ft Edge Strip at Lt End and a 4.000 ft Edge Strip at Rt End

Wind Suction Coefficient at Interior Region	-0.980
Wind Suction Coefficient in Edge Strip at End	-1.380
Wind Pressure Coefficient	0.480

DESIGN SUMMARY
Roof purlin line 3 (Unbalanced Snow w/ Peak Surcharge)

Span ID	Length (ft)	Mark No.	Left Lap (ft)	Right Lap (ft)	Brace Pts	End Clips	Load Case	Check Ratio	Controlling Check
1L	1.000	95Z12	0.000	0.000	0	B.End	3	0.041	bending+shear
							3	L/ 80	deflection
1	19.000	95Z12	0.000	2.000	1	B.End	3	0.950	bending
							20	L/ 321	deflection
2	20.000	95Z12	2.000	2.000	1	B.End	3	0.935	bending
							27	L/1273	deflection
3	19.000	95Z12	2.000	0.000	1	B.End	3	0.950	bending
							20	L/ 321	deflection
3R	1.000	95Z12	0.000	0.000	0	B.End	3	0.041	bending+shear
							3	L/ 80	deflection

Total weight (extended) = 381.8 (389.4) lbs. Max check ratio = 0.950

LOAD COMBINATIONS
Roof purlin line 3 (Unbalanced Snow w/ Peak Surcharge)

No.	Load Case Description
1	D+C + L
	Check By ASD; No Deflection Limit
2	D+C + S
	Check By ASD; No Deflection Limit
3	D+C + SU~
	Check By ASD; No Deflection Limit
4	D+C + SEFHL~
	Check By ASD; No Deflection Limit
5	D+C + SEFHR~
	Check By ASD; No Deflection Limit
6	D+C + SEHFL~
	Check By ASD; No Deflection Limit
7	D+C + SEHFR~
	Check By ASD; No Deflection Limit
8	D+C + SDFH1L~
	Check By ASD; No Deflection Limit
9	D+C + SDFHX1~
	Check By ASD; No Deflection Limit
10	D+C + SDFHX2~

		Check By ASD; No Deflection Limit
11	D+C + SDFHX3~	
		Check By ASD; No Deflection Limit
12	D + 0.6W-	
		Check By ASD; No Deflection Limit
13	D+C + 0.6W+	
		Check By ASD; No Deflection Limit
14	D+C + 0.45W+ + 3/4L	
		Check By ASD; No Deflection Limit
15	D+C + 0.45W+ + 3/4S	
		Check By ASD; No Deflection Limit
16	0.6D + 0.6W-	
		Check By ASD; No Deflection Limit
17	0.6(D+C) + 0.6W+	
		Check By ASD; No Deflection Limit
18	L	
		No Stress Check; L/150 Deflection Limit
19	S	
		No Stress Check; L/180 Deflection Limit
20	SU~	
		No Stress Check; L/180 Deflection Limit
21	SEFHL~	
		No Stress Check; L/180 Deflection Limit
22	SEFHR~	
		No Stress Check; L/180 Deflection Limit
23	SEHFL~	
		No Stress Check; L/180 Deflection Limit
24	SEHFR~	
		No Stress Check; L/180 Deflection Limit
25	SDFH1L~	
		No Stress Check; L/180 Deflection Limit
26	SDFHX1~	
		No Stress Check; L/180 Deflection Limit
27	SDFHX2~	
		No Stress Check; L/180 Deflection Limit
28	SDFHX3~	
		No Stress Check; L/180 Deflection Limit
29	0.42W-	
		No Stress Check; L/180 Deflection Limit
30	0.42W+	
		No Stress Check; L/180 Deflection Limit

APPLIED LOADS
Roof purlin line 3 (Unbalanced Snow w/ Peak Surcharge)

No.	Load Type	Load Group	Designation	Span #	Intensity lb/ft(kips)	From feet	Intensity lb/ft	To feet
1	UNIF		D	ALL	7.398	0.000	7.398	0.000
2	UNIF		D+C	ALL	19.560	0.000	19.560	0.000
3	UNIF		L	ALL	48.649	0.000	48.649	0.000
4	UNIF		S	ALL	255.405	0.000	255.405	0.000
5	UNIF		SU~	ALL	343.937	0.000	343.937	0.000
6	UNIF		SEFHL~	1L	255.405	0.000	255.405	1.000
7	UNIF		SEFHL~	1	255.405	0.000	255.405	19.000
8	UNIF		SEFHL~	2	127.703	0.000	127.703	20.000
9	UNIF		SEFHL~	3	127.703	0.000	127.703	19.000
10	UNIF		SEFHL~	3R	127.703	0.000	127.703	1.000
11	UNIF		SEFHR~	1L	127.703	0.000	127.703	1.000
12	UNIF		SEFHR~	1	127.703	0.000	127.703	19.000

13	UNIF	SEFHR~	2	127.703	0.000	127.703	20.000
14	UNIF	SEFHR~	3	255.405	0.000	255.405	19.000
15	UNIF	SEFHR~	3R	255.405	0.000	255.405	1.000
16	UNIF	SEHFL~	1L	127.703	0.000	127.703	1.000
17	UNIF	SEHFL~	1	127.703	0.000	127.703	19.000
18	UNIF	SEHFL~	2	255.405	0.000	255.405	20.000
19	UNIF	SEHFL~	3	255.405	0.000	255.405	19.000
20	UNIF	SEHFL~	3R	255.405	0.000	255.405	1.000
21	UNIF	SEHFR~	1L	255.405	0.000	255.405	1.000
22	UNIF	SEHFR~	1	255.405	0.000	255.405	19.000
23	UNIF	SEHFR~	2	255.405	0.000	255.405	20.000
24	UNIF	SEHFR~	3	127.703	0.000	127.703	19.000
25	UNIF	SEHFR~	3R	127.703	0.000	127.703	1.000
26	UNIF	SDFH1L~	1L	127.703	0.000	127.703	1.000
27	UNIF	SDFH1L~	1	127.703	0.000	127.703	19.000
28	UNIF	SDFH1L~	ALL	127.703	0.000	127.703	0.000
29	UNIF	SDFHX1~	1L	127.703	0.000	127.703	1.000
30	UNIF	SDFHX1~	1	127.703	0.000	127.703	19.000
31	UNIF	SDFHX1~	2	127.703	0.000	127.703	20.000
32	UNIF	SDFHX1~	ALL	127.703	0.000	127.703	0.000
33	UNIF	SDFHX2~	2	127.703	0.000	127.703	20.000
34	UNIF	SDFHX2~	3	127.703	0.000	127.703	19.000
35	UNIF	SDFHX2~	3R	127.703	0.000	127.703	1.000
36	UNIF	SDFHX2~	ALL	127.703	0.000	127.703	0.000
37	UNIF	SDFHX3~	3	127.703	0.000	127.703	19.000
38	UNIF	SDFHX3~	3R	127.703	0.000	127.703	1.000
39	UNIF	SDFHX3~	ALL	127.703	0.000	127.703	0.000
40	UNIF	W-	1L	-145.348	0.000	-145.348	0.458
41	UNIF	W-	1	-145.348	0.000	-145.348	3.542
42	UNIF	W-	1	-103.218	3.542	-103.218	19.542
43	UNIF	W-	2	-103.218	0.000	-103.218	20.000
44	UNIF	W-	3	-103.218	0.000	-103.218	16.000
45	UNIF	W-	3	-145.348	16.000	-145.348	19.542
46	UNIF	W-	3R	-145.348	0.000	-145.348	0.458
47	UNIF	W+	ALL	50.556	0.000	50.556	0.000

D-5

NBG LIGHT GAGE ANALYSIS SHORT REPORT | 01/09/2018

Software: NBG Light Gage Analysis [version: 2017.06.28.1 date: 06/28/2017]
Analysis Config: CBC [version: 2016.07.12.001]

Input File: C:\Users\Brian.Cuan\Documents\Jobs\C17C0461 Icy Cape Sample Processing Bldg\LIGHTGAGE\G1

Project Name: GIRT SW <-- (JOB DESCRIPTION) / NAME

AISI Spec Year: 2010
Building Code: IBC2012
Inventory: CBCCA-GZ

Purlin spacing: 5.00 o.c.
Insulation Thickness: 0.00

SPACING: 3'6, 3'10, 5' O.C.

ALL BZ46 W/ 2' LAP

SPAN PARAMETERS

Span	Length	Section	Design Group	Design	Brace Type	Left Support	Right Support	Left Lap	Right Lap
	(ft)							(in)	(in)
1	1.00	08Z060	1	Yes	Top	1	2	Cant.	0.00
2	19.00	08Z060	1	Yes	Top	2	3	0.00	22.50
3	20.00	08Z060	2	Yes	Top	3	4	22.50	22.50
4	19.00	08Z060	3	Yes	Top	4	5	22.50	0.00
5	1.00	08Z060	3	Yes	Top	5	6	0.00	Cant.

MAXIMUM COMPUTED DISPLACEMENTS, FORCES & LOAD RATIOS

Span Properties			Maximum Computed Displacements & Forces						Maximum Computed Load Ratios				
No	Length	Section	Displacement	Axial	Shear	Moment(+)	Moment(-)	Ten.(T)	Comp.(P)	Shear(V)	Mom.(M)	T&M	P&M	V&M
1	1.00	08Z060	-0.131	0.00	-0.12	0.06	-0.05	0.00	0.00	0.05	0.01	0.01	0.01	0.05
		x	0.00	0.00	12.00	12.00	12.00	0.00	0.00	12.00	12.00	12.00	12.00	12.00
		comb	2	0	2	2	1	0	0	2	2	2	2	2
2	19.00	08Z060	0.669	0.00	-1.37	4.87	-4.40	0.00	0.00	0.44	0.93	0.93	0.93	0.69
		x	102.09	0.00	228.00	228.00	228.00	0.00	0.00	205.50	90.75	90.75	90.75	205.50
		comb	2	0	2	2	1	0	0	2	2	2	2	2
3	20.00	08Z060	-0.061	0.00	-1.18	4.87	-4.40	0.00	0.00	0.37	0.67	0.67	0.67	0.70
		x	34.50	0.00	0.00	240.00	0.00	0.00	0.00	22.50	22.50	22.50	22.50	22.50
		comb	2	0	2	2	1	0	0	2	1	1	1	2
4	19.00	08Z060	0.669	0.00	-1.37	4.87	-4.40	0.00	0.00	0.44	0.93	0.93	0.93	0.69
		x	125.91	0.00	0.00	0.00	0.00	0.00	0.00	22.50	137.25	137.25	137.25	22.50
		comb	2	0	2	2	1	0	0	2	2	2	2	2
5	1.00	08Z060	-0.131	0.00	-0.12	0.06	-0.05	0.00	0.00	0.05	0.01	0.01	0.01	0.05
		x	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		comb	2	0	2	2	1	0	0	2	2	2	2	2

	Displacement	Axial	Shear	Moment(+)	Moment(-)	Ten.(T)	Comp.(P)	Shear(V)	Mom.(M)	T&M	P&M	V&M
Max of All Spans	0.669	0.00	-1.37	4.87	-4.40	0.00	0.00	0.44	0.93	0.93	0.93	0.70
Distance from Left	102.09	0.00	0.00	228.00	0.00	0.00	0.00	22.50	90.75	90.75	90.75	22.50
Span	2	0	4	2	3	0	0	4	2	2	2	3
Load Combination	2	0	2	2	1	0	0	2	2	2	2	2

SUPPORT CONNECTIONS

Support No.	2	3	4	5
Connection Code	NC	NC	NC	NC

VERTICAL REACTIONS [kips]

Comb	Support No					
	1	2	3	4	5	6
1	0.00	-0.89	-2.30	-2.30	-0.89	0.00
2	0.00	1.00	2.55	2.55	1.00	0.00
3	0.00	-0.62	-1.61	-1.61	-0.62	0.00
4	0.00	0.70	1.78	1.78	0.70	0.00

* Negative reaction for gravity loads

SUPPORT RATIOS

Support	Support Type*		Crippling	Crip & Bend	Bolt Shear	Bearing*
2	1	Max Ratios	0.84	0.57	0.23	0.20
		Combo	1	1	2	2
3	1	Max Ratios	0.69	0.65	0.58	0.25
		Combo	1	1	2	2
4	1	Max Ratios	0.69	0.65	0.58	0.25
		Combo	1	1	2	2
5	1	Max Ratios	0.84	0.57	0.23	0.20
		Combo	1	1	2	2

Maximum Ratios of All Supports	0.84	0.65	0.58	0.25
Support	5	4	4	4
Combo	1	1	2	2
Support Type	1	1	1	1

* Bolt type between purlin & clip: A307
* Support types: 1 = No Clip | 2 = Crippling Clip | 3 = Bolted or Welded Clip w/ A307 | 4 = Bolted or Welded Clip w/ A325
* Bearing ratio is check of bearing of clip bolts on purlins

GENERAL LOADS

Load Case	Uniform Load (psf)	Load Case Name
1	35.4	Pressure Wind Load
2	-39.2	Suction Wind Load
3	-40.5	Edge Suction Wind Load

LINEAR LOADS

Load Case	Span	Load Type	Start Load (lb/ft)	Start X (ft)	End Load (lb/ft)	End X (ft)
1	1	Shear	177.10	0.00	177.10	1.00
1	2	Shear	177.10	0.00	177.10	19.00
1	3	Shear	177.10	0.00	177.10	20.00
1	4	Shear	177.10	0.00	177.10	19.00
1	5	Shear	177.10	0.00	177.10	1.00
2	1	Shear	-202.50	0.00	-202.50	1.00
2	2	Shear	-196.00	3.00	-196.00	19.00
2	3	Shear	-196.00	0.00	-196.00	20.00
2	4	Shear	-196.00	0.00	-196.00	16.00
2	5	Shear	-202.50	0.00	-202.50	1.00
2	2	Shear	-202.50	0.00	-202.50	3.00
2	4	Shear	-202.50	16.00	-202.50	19.00

LOAD COMBINATIONS

Comb #	Active (Y/N)	Load Combination Name	Allowable Factor	Load Case No. 1	Load Case No. 2
1	Y	Wind Pressure	1.00	0.60	0.00
2	Y	Wind Suction	1.00	0.00	0.60
3	Y	Wind Pressure Deflection	1.00	0.42	0.00
4	Y	Wind Suction Deflection	1.00	0.00	0.42

DEFLECTION LIMITATIONS

The 50 year deflection limit	= L / 90.0
The 50 year maximum deflection	= 2.67"

* Deflection limitations were applied to combinations 3-4

GENERAL NOTES

* '* Ends of laps are considered as brace points.'
* '* Inflection points are considered brace points except for spans with discrete bracing.'
* All calculations are in accordance with the 2007 North American Specification with S2-2010 Supplement.

SYSTEM WEIGHT & COST

Total system weight	= 193.72 lbs
Total system cost	= 245.03 dollars

PURLIN PRODUCTION LIST

Purlin	Section	Length
1	08Z060	21.88
2	08Z060	23.75
3	08Z060	21.88

MATERIAL SUMMARY

Section	Weight	Cost	Fy
08Z060	193.72	245.03	55.0

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NBG LIGHT GAGE ANALYSIS SHORT REPORT | 01/09/2018

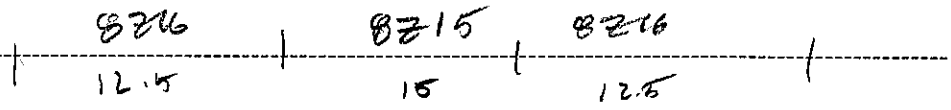
Software: NBG Light Gage Analysis [version: 2017.06.28.1 date: 06/28/2017]
Analysis Config: CBC [version: 2016.07.12.001]

Input File: C:\Users\Brian.Cuan\Documents\Jobs\C17C0461 Icy Cape Sample Processing Bldg\LIGHTGAGE\G2

Project Name: GIRT EW 1 <-- (JOB DESCRIPTION) / NAME

AISI Spec Year: 2010
Building Code: IBC2012
Inventory: CBCCA-GZ

Purlin spacing: 5.00 o.c.
Insulation Thickness: 0.00



SPAN PARAMETERS

Span	Length	Section	Design Group	Design	Brace Type	Left Support	Right Support	Left Lap	Right Lap
	(ft)							(in)	(in)
1	12.50	08Z060	1	Yes	Top	1	2	-----	0.00
2	15.00	08Z067	2	Yes	Top	2	3	0.00	0.00
3	12.50	08Z060	3	Yes	Top	3	4	0.00	-----

MAXIMUM COMPUTED DISPLACEMENTS, FORCES & LOAD RATIOS

Span Properties			Maximum Computed Displacements & Forces					Maximum Computed Load Ratios					
No	Length	Section	Displacement	Axial	Shear	Moment(+)	Moment(-)	Ten.(T)	Comp.(P)	Shear(V)	Mom.(M)	T&M	P&M	V&M
1	12.50	08Z060	0.293	0.00	-0.82	2.21	-2.48	0.00	0.00	0.32	0.80	0.80	0.80	0.52
		x	69.23	0.00	0.00	80.77	69.23	0.00	0.00	0.00	69.23	69.23	69.23	69.23
		comb	2	0	2	1	2	0	0	2	2	2	2	2
2	15.00	08Z067	0.535	0.00	-0.94	3.19	-3.51	0.00	0.00	0.26	1.00	1.00	1.00	0.65
		x	84.00	0.00	0.00	96.00	84.00	0.00	0.00	0.00	84.00	84.00	84.00	84.00
		comb	2	0	2	1	2	0	0	2	2	2	2	2
3	12.50	08Z060	0.293	0.00	-0.82	2.21	-2.48	0.00	0.00	0.32	0.80	0.80	0.80	0.52
		x	80.77	0.00	150.00	69.23	80.77	0.00	0.00	150.00	80.77	80.77	80.77	80.77
		comb	2	0	2	1	2	0	0	2	2	2	2	2

	Displacement	Axial	Shear	Moment(+)	Moment(-)	Ten.(T)	Comp.(P)	Shear(V)	Mom.(M)	T&M	P&M	V&M
Max of All Spans	0.535	0.00	-0.94	3.19	-3.51	0.00	0.00	0.32	1.00	1.00	1.00	0.65
Distance from Left	84.00	0.00	0.00	96.00	84.00	0.00	0.00	0.00	84.00	84.00	84.00	84.00
Span	2	0	2	2	2	0	0	1	2	2	2	2
Load Combination	2	0	2	1	2	0	0	2	2	2	2	2

SUPPORT CONNECTIONS

Support No.	1	2	3	4
Connection Code	NC	NC	NC	NC

VERTICAL REACTIONS [kips]

Comb	Support No			
	1	2	3	4
1	-0.71	-1.57	-1.57	-0.71
2	0.82	1.73	1.73	0.82
3	-0.50	-1.10	-1.10	-0.50
4	0.58	1.21	1.21	0.58

* Negative reaction for gravity loads

SUPPORT RATIOS

Support	Support Type*		Crippling	Crip & Bend	Bolt Shear	Bearing*
1	1	Max Ratios	0.67	0.45	0.19	0.16
		Combo	1	1	2	2
2	1	Max Ratios	1.48	0.99	0.39	0.31
		Combo	1	1	2	2
3	1	Max Ratios	1.48	0.99	0.39	0.34
		Combo	1	1	2	2
4	1	Max Ratios	0.67	0.45	0.19	0.16
		Combo	1	1	2	2
Maximum Ratios of All Supports			1.48	0.99	0.39	0.34
Support			2	2	2	3
Combo			1	1	2	2
Support Type			1	1	1	1

* Bolt type between purlin & clip: A307
* Support types: 1 = No Clip | 2 = Crippling Clip | 3 = Bolted or Welded Clip w/ A307 | 4 = Bolted or Welded Clip w/ A325
* Bearing ratio is check of bearing of clip bolts on purlins

D-2

GENERAL LOADS

Load Case	Uniform Load (psf)	Load Case Name
1	38.0	Pressure Wind Load
2	-41.8	Suction Wind Load
3	-45.6	Edge Suction Wind Load

LINEAR LOADS

Load Case	Span	Load Type	Start Load (lb/ft)	Start X (ft)	End Load (lb/ft)	End X (ft)
1	1	Shear	189.90	0.00	189.90	12.50
1	2	Shear	189.90	0.00	189.90	15.00
1	3	Shear	189.90	0.00	189.90	12.50
2	1	Shear	-208.80	4.00	-208.80	12.50
2	2	Shear	-208.80	0.00	-208.80	15.00
2	3	Shear	-208.80	0.00	-208.80	8.50
2	1	Shear	-228.00	0.00	-228.00	4.00
2	3	Shear	-228.00	8.50	-228.00	12.50

LOAD COMBINATIONS

Comb #	Active (Y/N)	Load Combination Name	Allowable Factor	Load Case No. 1	2
1	Y	Wind Pressure	1.00	0.60	0.00
2	Y	Wind Suction	1.00	0.00	0.60
3	Y	Wind Pressure Deflection	1.00	0.42	0.00
4	Y	Wind Suction Deflection	1.00	0.00	0.42

DEFLECTION LIMITATIONS

The 50 year deflection limit = L / 90.0
The 50 year maximum deflection = 2.00"

* Deflection limitations were applied to combinations 3-4

GENERAL NOTES

* '* Ends of laps are considered as brace points.'
* '* Inflection points are considered brace points except for spans with discrete bracing.'
* All calculations are in accordance with the 2007 North American Specification with S2-2010 Supplement.

SYSTEM WEIGHT & COST

Total system weight = 119.75 lbs
Total system cost = 150.52 dollars

PURLIN PRODUCTION LIST

Purlin	Section	Length
1	08Z060	12.50
2	08Z067	15.00
3	08Z060	12.50

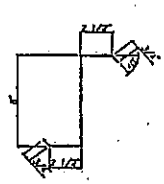
MATERIAL SUMMARY

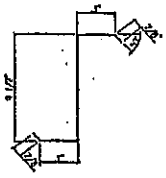
Section	Weight	Cost	Fy
08Z060	71.75	90.75	55.0
08Z067	48.00	59.76	55.0

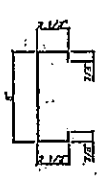
CSC STEEL BUILDINGS
A NUCOR Company

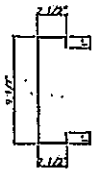
Sheet
Job #
Date
By

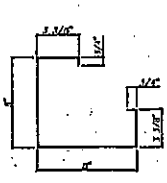
8" & 9.5" COLD-FORMED MEMBER SECTION PROPERTIES

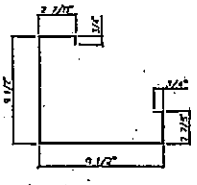

8" Zee

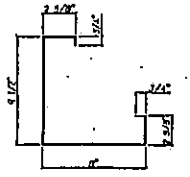

9.5" Zee

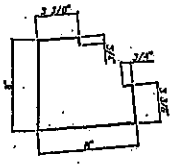

8" Cee

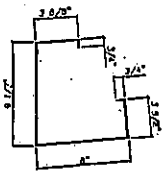

9.5" Cee

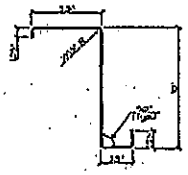

8" Gee


9.5" Gee


8" - 9.5" Gee


8" Eave Strut


9.5" Eave Strut


10" Zee Rake Beam

Note: Inside Radius 0.25" (Typical all Members).

Size	T In	W lb/ft	A_g In^2	A_n In^2	I_{xe} In^4	$I_{x\text{-}Defn}$ In^4	S_{xe} In^3	M_a k-in	M_a k-ft	V_a k
ZEE										
8 Z 16	0.060	2.87	0.84	0.45	7.36	8.09	1.74	57.25	4.77	2.60
8 Z 15	0.067	3.20	0.94	0.53	8.27	8.99	1.97	64.74	5.39	3.63
8 Z 14	0.075	3.59	1.05	0.64	9.42	10.02	2.27	74.69	6.22	5.11
8 Z 13	0.089	4.26	1.25	0.84	11.45	11.80	2.81	92.45	7.70	8.57
8 Z 12	0.099	4.73	1.39	0.98	12.79	13.05	3.15	103.87	8.66	10.82
9.5 Z 15	0.067	3.82	1.12	0.57	13.44	15.28	2.61	85.96	7.16	3.02
9.5 Z 14	0.075	4.27	1.26	0.67	15.49	17.04	3.08	101.54	8.46	4.24
9.5 Z 13	0.089	5.07	1.49	0.87	18.65	20.78	3.75	123.60	10.30	7.11
9.5 Z 12	0.099	5.64	1.66	1.05	21.17	22.24	4.32	142.28	11.86	9.81
CEE										
8 C 16	0.060	2.87	0.84	0.48	7.47	7.94	1.80	59.27	4.94	2.60
8 C 15	0.067	3.20	0.94	0.56	8.42	8.82	2.05	67.38	5.62	3.63
8 C 14	0.075	3.59	1.05	0.71	9.75	9.81	2.37	78.12	6.51	5.11
8 C 13	0.089	4.26	1.25	0.89	11.52	11.53	2.88	94.85	7.90	8.57
8 C 12	0.099	4.73	1.39	1.02	12.73	12.73	3.18	104.83	8.74	10.82
9.5 C 15	0.067	3.59	1.05	0.62	13.28	13.53	2.76	91.10	7.59	3.02
9.5 C 14	0.075	4.26	1.25	0.71	15.06	15.68	3.06	100.75	8.40	4.24
9.5 C 13	0.089	5.03	1.48	0.93	18.21	18.81	3.76	123.80	10.32	7.11
9.5 C 12	0.099	5.25	1.54	1.06	19.59	19.59	4.13	135.81	11.32	9.81
GEE										
GP 8X8X16 (Gravity, +ve)	0.060	4.76	1.41	0.64	9.82	11.14	4.13	57.54	4.80	3.58
(Uplift, -ve)	-	-	-	-	9.75	10.48	2.34	77.02	6.42	-
GP 9.5X9.5X14 (Gravity, +ve)	0.075	6.44	1.89	0.90	19.17	22.17	7.43	91.90	7.66	5.30
(Uplift, -ve)	-	-	-	-	18.66	19.96	3.82	114.28	9.52	-
GPX 8X9.5X16 (Gravity, +ve)	0.060	4.76	1.41	0.63	13.64	15.75	5.20	65.29	5.44	2.65
(Uplift, -ve)	-	-	-	-	13.74	14.71	2.62	86.46	7.21	-
EAVE STRUT										
GE 8X8X16 1:12 (Gravity, +ve)	0.060	4.76	1.41	0.64	9.36	10.65	1.68	55.56	4.63	3.59
(Uplift, -ve)	-	-	-	-	9.29	9.93	2.20	72.06	6.01	-
GE 8X8X16 4:12 (Gravity, +ve)	0.060	4.75	1.40	0.64	8.79	9.56	1.63	53.74	4.48	3.86
(Uplift, -ve)	-	-	-	-	8.25	8.98	1.81	59.72	4.98	-
GE 9.5X8X14 1:12 (Gravity, +ve)	0.075	6.44	1.89	0.92	18.28	20.87	2.81	92.54	7.71	5.69
(Uplift, -ve)	-	-	-	-	18.98	20.24	3.65	120.20	10.02	-
GE 9.5X8X14 4:12 (Gravity, +ve)	0.075	6.42	1.89	0.92	17.01	18.57	2.65	87.35	7.28	6.05
(Uplift, -ve)	-	-	-	-	17.38	18.40	3.20	105.46	8.79	-
ZEE RAKE BEAM										
ER 10X14 (Gravity, +ve)	0.075	4.96	1.46	0.76	18.04	19.59	3.68	116.64	9.72	4.02
(Uplift, -ve)	-	-	-	-	20.65	22.03	3.43	112.83	9.40	-
EH 10X12 (Gravity, +ve)	0.102	6.70	1.97	1.18	25.30	27.36	5.30	159.23	13.27	10.16
(Uplift, -ve)	-	-	-	-	29.53	29.53	4.83	168.60	14.05	-

Notes -

1. Section properties are calculated in accordance with the 2012 North American Specification for the Design of Cold-Formed Steel Members. Fy = 55 ksi.
2. Bending allowables shown may be utilized for members having the compression flange continuously fastened to sheathing.
3. Effective section properties are calculated at yield stress of Fy = 55 ksi. Deflection Moment of Inertia, $I_{x\text{-}Defn}$ is calculated at working stress level of 0.6 Fy.

NUCOR BUILDINGS GROUP
A DIVISION OF NUCOR CORPORATION

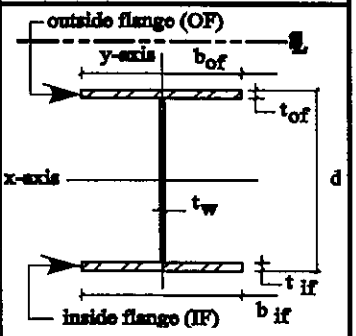
Project No. : C17C046
Description :
Engineer : BC
Date : 1/9/2018

BEAM-COLUMN S.S. (AISC 14th Edition)

MAIN REPORT: DESIGN SUMMARY

Version: 2015.04.22 (Date: 04/22/15) By NBG

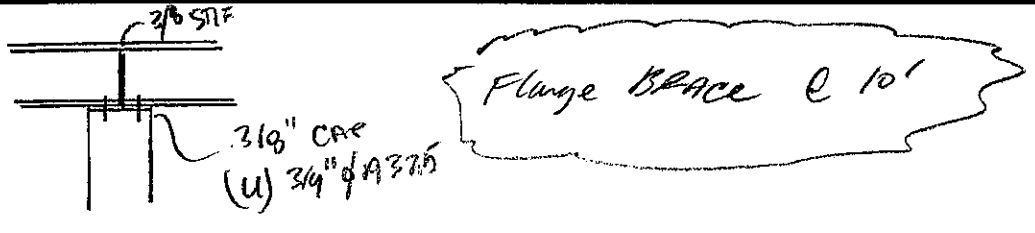
GENERAL INFORMATION (ENTER DATA IN GRAY SHADED CELLS!)			Span and Loading Conditions				Remarks
			EW		EW		
			Rafter		Column		
Member Length	L_{bx}	ft.	15.00		18.08		Assumes Lbx = L
Unbraced Length - Minor	L_{by}	ft.	10.00		10.00		
Consideration of *Tension Field Action* for Shear			FALSE	FALSE	FALSE	FALSE	<= See cell comment & Chapter G.
Clear Distance between Transverse Stiffeners	a	in.					<= See cell comment & Section G2.
Lateral-torsional buckling factor	C_b		1.000	1.000	1.000	1.000	<= See cell comment
Kx Factor	K_x		1.000	1.000	1.000	1.000	
Ky Factor	K_y		1.000	1.000	1.000	1.000	
Kz Factor	K_z		1.000	1.000	1.000	1.000	<= See cell comment
SECTION GEOMETRY							
Select Wide-flange or Built-up Section:			BU	None	BU	None	
Section Description:			BU12x15	--	BU12x14	--	
Enter WF-Section:							
Total Depth	d	in.	12.000	--	12.000	--	
Web Thickness	t_w	in.	0.135	--	0.135	--	
Outside Flange Width	b_{of}	in.	6.000	--	5.000	--	
Outside Flange Thickness	t_{of}	in.	0.250	--	0.250	--	
Inside Flange Width	b_{if}	in.	6.000	--	5.000	--	
Inside Flange Thickness	t_{if}	in.	0.250	--	0.250	--	
MATERIAL INFORMATION							
Material Strength	F_y	ksi	55	55	55	55	
Elastic Modulus	E	ksi	29,000	29,000	29,000	29,000	Standard for steel shown
Shear Modulus	G	ksi	11,200	11,200	11,200	11,200	Standard for steel shown
Flange Yield Strength	F_{yf}	ksi	55	55	55	55	
Web Yield Strength	F_{yw}	ksi	55	55	55	55	
Ultimate Strength	F_u	ksi	70	70	70	70	
APPLIED LOADS			☐ Applied Loading includes second order effects.				
Factor of Safety (Allowable Stress Factor)	S_f		1.000	1.000	1.000	1.000	
Axial (compression => + pos., tension => - neg.)	P_a	kips			20.281		
Shear (absolute value)	V_x	kips	11.250		3.200		Major Axis (x-axis)
Moment (outside flange in compression => + pos.)	M_x	ft-kip	42.200		14.300		
Shear (absolute value)	V_y	kips					Minor Axis (y-axis)
Moment (absolute value)	M_y	ft-kip					



Design Results:	ASD		OK	--	OK	--	Remarks
ASD Combined Strength Ratio	CSR		0.963	--	0.788	--	Eq. H1-1a or H1-1b
ASD Shear Strength Ratio (x-axis)	V_{rx}/V_{cx}		0.668	--	0.190	--	Major Axis (x-axis)
ASD Shear Strength Ratio (y-axis)	V_{ry}/V_{cy}		0.000	--	0.000	--	Minor Axis (y-axis)

Deflection Results (Major-axis)			OK	--	OK	--	Remarks
Deflection Limits (about x-axis)			L / 180	L / 100	L / 180	L / 100	Limits as numerals (i.e. 360 = L/360)
Maximum Deflection (about x-axis)	Δ_{max}	in.	1.000 in.	0.000 in.	1.206 in.	0.000 in.	
Member Deflection (about x-axis)	$\Delta_{x\text{-}axis}$	in.	0.488 in.	--	0.281 in.	--	$\Delta_{x\text{-}axis} \le \Delta_{max}$

Deflection Results (Minor-axis)			OK	--	OK	--	Remarks
Deflection Limits (about y-axis)			L / 100	L / 100	L / 100	L / 100	Limits as numerals (i.e. 360 = L/360)
Maximum Deflection (about y-axis)	Δ_{max}	in.	1.800 in.	0.000 in.	2.170 in.	0.000 in.	
Member Deflection (about y-axis)	$\Delta_{y\text{-}axis}$	in.	0.000 in.	--	0.000 in.	--	$\Delta_{y\text{-}axis} \le \Delta_{max}$



CBC STEEL BUILDINGS
A NUCOR Company
www.cbcsteelbuildings.com

1700 E. Louise Avenue • Lathrop, CA 95330
Tel: (209) 983-0910 • Fax: (209) 858-2354

Job: C17C0461 Sheet No. E2

Date: _____ By: RC.

END WALL RAFTERS.

D + C + SL/LL → ASSUME UNBALANCED SNOW

(5 + 5 + 137.5) psf = 147.5 psf.

$w = 147.5\# \times \underset{\text{TRIB}}{10\text{ ft}} = 1.5$ klf

$L = 15'$

$m = \frac{wl^2}{8} = \frac{(1.5\text{ klf})(15')^2}{8} = 42.2$ k-ft

ENDWALL COLUMNS.

0.6W

$(0.6)(42.13\text{ psf}) = 25.31\#$

$w = 25.31\# \times \underset{\text{TRIB}}{\frac{(15 + 12'\text{-}6)}{2}} = 0.35$ klf

$L = 16' + (12'6)\left(\frac{2'}{12}\right) = 18.083'$

$m = \frac{wl^2}{8} = \frac{(0.35\text{ klf})(18.083)^2}{8} = 14.3$ k-ft

NUCOR BUILDINGS GROUP

Job # : 12/1/17
Job Name : Icy Cape Sample Processing Building
Frame : Frame @ Line(s) 2,3 ' Frame Name
Date : 12/2/2017
Designer :
File : F01-800825.nfr
App Version : 2017.9.1.1

line 2, 3

F R A M E D E S C R I P T I O N

Frame type : RCG
Frame width : 40.00 Ft.
Bay width : 20.00 Ft.

	LEFT	RIGHT		
Dim to ridge :	20.00 Ft.	20.00 Ft.		
Roof slope :	2.00/12	-2.00/12		
Eave height :	16.00 Ft.	16.00 Ft.		
Girt offset :	8.00 In.	8.00 In.	Typ. Girt spacing :	5.00 Ft.
Purlin offset :	8.00 In.	8.00 In.	Typ. Purlin spacing:	2.50 Ft.

Col. spacing : 40.0000

Supports / Spring Constants

COL01 - Bottom V H
COL02 - Bottom V H

Column Bracing:

WP1	Girt Brace :	Y	Y	Y
	Flange Brace :	0	1	1
	Location (ft):	3.5	7.3	11.7
WP2	Girt Brace :	Y	Y	Y
	Flange Brace :	0	1	1
	Location (ft):	3.5	7.3	11.7

Other Braces:

Column :
Left Brace :
Right Brace :
Location (ft):

L O A D I N G C O N D I T I O N S

Building Code & Year : IBC2012
Risk Category : II-Standard Buildings
AISC Specification : 2010 ASD

L O A D S (Psf)

Roof Dead load : 3.00
Roof Coll load : 5.00
Roof Live load : 20.00
Roof Snow load : 97.79
Floor dead load : 0.00
Floor live load : 0.00
Ground Snow load: 150.00 Ce = 1.00

Over pipe Snow = 105 psf.

Ss = 1.718 S1 = 0.808 Seismic Design Category = E Site Class = D
R = 3.50 Cd = 3.00 Sds = 1.145 Sd1 = 0.808 rho = 1.30 omega = 2.500

Wind speed : 150.00 Mph Exp. : C
Wind pressure : 42.13 Psf

Building is Enclosed

Wind pressure coefficients

	C1	C2E	C2	C3	C3E	C4
W1R	0.619	0.000	-0.510	-0.223	0.000	-0.152
W1L	-0.152	0.000	-0.223	-0.510	0.000	0.619
W2R	0.259	0.000	-0.870	-0.583	0.000	-0.512
W2L	-0.512	0.000	-0.583	-0.870	0.000	0.259
W5B	-0.270	0.000	-0.510	-0.190	0.000	-0.270
W5F	-0.270	0.000	-0.190	-0.510	0.000	-0.270
W6B	-0.630	0.000	-0.870	-0.550	0.000	-0.630
W6F	-0.630	0.000	-0.550	-0.870	0.000	-0.630

Tributary Widths

Panel	Trib. Width (ft)
WP1	20.00
WP2	20.00
RP1	20.00
RP2	20.00

P R O G R A M - A P P L I E D L O A D S

Load Case	On Panel	Start Load Klf	End Load Klf	Start Loc Ft.	End Loc Ft.
RDL	RP1	-0.058	-0.058	0.000	20.000
RDL	RP2	-0.058	-0.058	20.000	40.000
COL	RP1	-0.100	-0.100	0.000	20.000
COL	RP2	-0.100	-0.100	20.000	40.000
SL	RP1	-1.956	-1.956	0.000	20.000
SR	RP2	-1.956	-1.956	20.000	40.000
UOS	RP1	-2.100	-2.100	0.000	20.000
UOS	RP2	-2.100	-2.100	20.000	40.000

RLL	RP1	-0.400	-0.400	0.000	20.000
RLR	RP2	-0.400	-0.400	20.000	40.000
W1R	RP1	-0.430	-0.430	0.000	20.000
W1R	RP2	-0.188	-0.188	20.000	40.000
W1R	WP1	0.521	0.521	0.000	16.000
W1R	WP2	0.128	0.128	0.000	16.000
W1L	RP1	-0.188	-0.188	0.000	20.000
W1L	RP2	-0.430	-0.430	20.000	40.000
W1L	WP1	-0.128	-0.128	0.000	16.000
W1L	WP2	-0.521	-0.521	0.000	16.000
W2R	RP1	-0.733	-0.733	0.000	20.000
W2R	RP2	-0.491	-0.491	20.000	40.000
W2R	WP1	0.218	0.218	0.000	16.000
W2R	WP2	0.431	0.431	0.000	16.000
W2L	RP1	-0.491	-0.491	0.000	20.000
W2L	RP2	-0.733	-0.733	20.000	40.000
W2L	WP1	-0.431	-0.431	0.000	16.000
W2L	WP2	-0.218	-0.218	0.000	16.000
W5B	RP1	-0.430	-0.430	0.000	20.000
W5B	RP2	-0.160	-0.160	20.000	40.000
W5B	WP1	-0.228	-0.228	0.000	16.000
W5B	WP2	0.228	0.228	0.000	16.000
W5F	RP1	-0.160	-0.160	0.000	20.000
W5F	RP2	-0.430	-0.430	20.000	40.000
W5F	WP1	-0.228	-0.228	0.000	16.000
W5F	WP2	0.228	0.228	0.000	16.000
W6B	RP1	-0.733	-0.733	0.000	20.000
W6B	RP2	-0.463	-0.463	20.000	40.000
W6B	WP1	-0.531	-0.531	0.000	16.000
W6B	WP2	0.531	0.531	0.000	16.000
W6F	RP1	-0.463	-0.463	0.000	20.000
W6F	RP2	-0.733	-0.733	20.000	40.000
W6F	WP1	-0.531	-0.531	0.000	16.000
W6F	WP2	0.531	0.531	0.000	16.000
EQR	RP1	0.185	0.185	0.000	20.000
EQR	RP2	0.185	0.185	20.000	40.000
EQL	RP1	-0.185	-0.185	0.000	20.000
EQL	RP2	-0.185	-0.185	20.000	40.000
LRD	RP1	-1.956	-1.956	0.000	20.000
LRD	RP1	-0.649	-0.649	2.682	20.000
LRD	RP2	-0.587	-0.587	20.000	40.000
RRD	RP1	-0.587	-0.587	0.000	20.000
RRD	RP2	-1.956	-1.956	20.000	40.000
RRD	RP2	-0.649	-0.649	20.000	37.318

L O A D C O M B I N A T I O N S

	ASR	Cases
1)	1.00	SW+RDL+COL+NLL
2)	1.00	SW+RDL+COL+NLR
3)	1.00	SW+RDL+COL+SL+SR+NLL
4)	1.00	SW+RDL+COL+SL+SR+NLR
5)	1.00	SW+RDL+COL+RLL+RLR+NLL
6)	1.00	SW+RDL+COL+RLL+RLR+NLR
7)	1.00	SW+RDL+0.60W1L
8)	1.00	SW+RDL+0.60W2L
9)	1.00	SW+RDL+0.60W1R
10)	1.00	SW+RDL+0.60W2R
11)	1.00	0.60SW+0.60RDL+0.60W1L
12)	1.00	0.60SW+0.60RDL+0.60W2L
13)	1.00	0.60SW+0.60RDL+0.60W1R
14)	1.00	0.60SW+0.60RDL+0.60W2R
15)	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W1L
16)	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W2L
17)	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W1R
18)	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W2R
19)	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W1L
20)	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W2L
21)	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W1R
22)	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W2R
23)	1.00	SW+RDL+0.60W5B
24)	1.00	SW+RDL+0.60W6B
25)	1.00	SW+RDL+0.60W5F
26)	1.00	SW+RDL+0.60W6F
27)	1.00	0.60SW+0.60RDL+0.60W5B
28)	1.00	0.60SW+0.60RDL+0.60W6B
29)	1.00	0.60SW+0.60RDL+0.60W5F
30)	1.00	0.60SW+0.60RDL+0.60W6F
31)	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W5B
32)	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W6B
33)	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W5F
34)	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W6F
35)	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W5B
36)	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W6B
37)	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W5F
38)	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W6F
39)	1.00	SW+RDL+COL+UOS+NLL
40)	1.00	SW+RDL+COL+UOS+NLR
41)	1.00	SW+RDL+COL+LRD+NLL
42)	1.00	SW+RDL+COL+LRD+NLR
43)	1.00	SW+RDL+COL+RRD+NLL
44)	1.00	SW+RDL+COL+RRD+NLR
45)	1.00	1.16SW+1.16RDL+1.16COL+0.91EQL
46)	1.00	1.16SW+1.16RDL+1.16COL+0.91EQR
47)	1.00	1.12SW+1.12RDL+1.12COL+0.15SL+0.15SR+0.68EQL
48)	1.00	1.12SW+1.12RDL+1.12COL+0.15SL+0.15SR+0.68EQR
49)	1.00	0.44SW+0.44RDL+0.36EQL
50)	1.00	0.44SW+0.44RDL+0.36EQR

Job : 12/1/17 Icy Cape Sample Processing Buildin NUCOR BUILDINGS GROUP Date: 01-09-18 Page: 1
Frame: Frame @ Line(s) 2,3 ' Frame Name By : File: F01-

*** DESIGN SUMMARY REPORT ***

Built Up Rafter - RAF01

Section	T/L Flange Mat'l	B/R Flange Mat'l	Web Mat'l	Load Comb	Loc	Axial Kips	Axial Ratio	Moment Ft-kip	T/L Bend Ratio	B/R Bend Ratio	Max Unity Check	SHEAR Load Comb	SHEAR Loc	SHEAR Force Kips	SHEAR Shear Ratio	Flow T/L	Flow (k/in) B/R
1	F6.38	F6.38	W250	39	1	-20.9	0.12	-162.7	0.88	0.88	0.94	39	1	36.12	0.54	1.37	1.37

Chkpt	1	9
Depth	20.00	20.00
Section	1	

	width	thick	Fy
T/L Flg	6.0	0.3750	55.00
Web		0.2500	55.00
B/R Flg	6.0	0.3750	55.00

Built Up Rafter - RAF02

Section	T/L Flange Mat'l	B/R Flange Mat'l	Web Mat'l	Load Comb	Loc	Axial Kips	Axial Ratio	Moment Ft-kip	T/L Bend Ratio	B/R Bend Ratio	Max Unity Check	SHEAR Load Comb	SHEAR Loc	SHEAR Force Kips	SHEAR Shear Ratio	Flow T/L	Flow (k/in) B/R
1	F6.38	F6.38	W250	40	18	-20.9	0.12	-162.6	0.88	0.88	0.94	40	18	-36.21	0.55	1.37	1.37

Chkpt	10	18
Depth	20.00	20.00
Section	1	

	width	thick	Fy
T/L Flg	6.0	0.3750	55.00
Web		0.2500	55.00
B/R Flg	6.0	0.3750	55.00

Built Up Column - COL01

Section	T/L Flange Mat'l	B/R Flange Mat'l	Web Mat'l	Load Comb	Loc	Axial Kips	Axial Ratio	Moment Ft-kip	T/L Bend Ratio	B/R Bend Ratio	Max Unity Check	SHEAR Load Comb	SHEAR Loc	SHEAR Force Kips	SHEAR Shear Ratio	Flow T/L	Flow (k/in) B/R
1	F6.38	F6.38	W250	39	25	-46.4	0.21	-187.1	0.80	0.80	0.92	39	25	-13.10	0.24	0.94	0.94

Chkpt	19	25
Depth	12.00	24.00
Section	1	

	width	thick	Fy
T/L Flg	6.0	0.3750	55.00
Web		0.2500	55.00
B/R Flg	6.0	0.3750	55.00

Built Up Column - COL02

Section	T/L Flange Mat'l	B/R Flange Mat'l	Web Mat'l	Load Comb	Loc	Axial Kips	Axial Ratio	Moment Ft-kip	T/L Bend Ratio	B/R Bend Ratio	Max Unity Check	SHEAR Load Comb	SHEAR Loc	SHEAR Force Kips	SHEAR Shear Ratio	Flow T/L	Flow (k/in) B/R
1	F6.38	F6.38	W250	40	32	-46.4	0.21	187.0	0.80	0.80	0.92	40	32	13.10	0.24	0.94	0.94

Chkpt	26	32
Depth	12.00	24.00
Section	1	

	width	thick	Fy
T/L Flg	6.0	0.3750	55.00
Web		0.2500	55.00
B/R Flg	6.0	0.3750	55.00

Frame Weight (lbs) = 1958
Deflections (in):

10 yr Wind dx =	-0.28 = H/ 606		WIND CASE 2 TO LEFT
Seismic dx =	0.79 = H/ 213		SEISMIC TO RIGHT
Story Drift =	2.37 = 0.014H		SEISMIC TO RIGHT
Drift Index =	0.01		1.12SW+1.12RDL+1.12COL+0.15SL+0.15SR+0.68EQR
Maximum dx =	0.75 = H/ 226		1.16SW+1.16RDL+1.16COL+0.91EQR
Maximum dy =	-1.64 = L/ 269	@ MOD 1,	SW+RDL+COL+UOS
Max. Live dy =	-1.50 = L/ 293	@ MOD 1,	SW+RDL+COL+UOS

NUCOR BUILDINGS GROUP

Job # : 12/1/17 Job Name : Icy Cape Sample Processing Building Frame : Frame @ Line(s) 2,3 ' Frame Name

File : F01-800825.nfr Designer :

App Version : 2017.9.1.1 Date : 12/2/2017

BOLTED END-PLATES (BEP) SUMMARY

PLATE SIZE: (in)

Splice ID	Left Type	Right Type	Members Joined	Loc	Web Depth	Left Plate Width	Left Plate Thick	Left Plate Length	Left Plate Fy(ksi)	Right Plate Width	Right Plate Thick	Right Plate Length	Right Plate Fy(ksi)
1	6E	6E	COL01 To RAF01	Top	19.25	6.00	0.63	25.14	55.0	6.00	0.63	25.14	55.0
1	6E	6E	COL01 To RAF01	Bot	19.25	6.00	0.63	25.14	55.0	6.00	0.63	25.14	55.0
2	6E	6E	RAF01 To RAF02	Top	19.25	6.00	0.63	25.52	55.0	6.00	0.63	25.52	55.0
2	6E	6E	RAF01 To RAF02	Bot	19.25	6.00	0.63	25.52	55.0	6.00	0.63	25.52	55.0
3	6E	6E	RAF02 To COL02	Top	19.25	6.00	0.63	25.14	55.0	6.00	0.63	25.14	55.0
3	6E	6E	RAF02 To COL02	Bot	19.25	6.00	0.63	25.14	55.0	6.00	0.63	25.14	55.0

PLATE DESIGN

Splice ID	Left Type	Right Type	Tension Location	Max Moment Load Comb	Max Moment Axial (kip)	Max Moment Shear (kip)	Max Moment Moment (ft-kip)	Max Shear Load Comb	Max Shear Axial (kip)	Max Shear Shear (kip)	Max Shear Moment (ft-kip)	Left Plate Ratio	Right Plate Ratio
1	6E	6E	Top	36	-14.65	39.06	-162.70	11	2.47	-6.98	39.61	0.81	0.80
1	6E	6E	Bot	-49	3.68	-1.40	67.39	36	-14.65	39.06	-162.70	0.31	0.31
2	6E	6E	Top	9	3.71	0.44	-16.85	37	-11.45	-9.52	113.19	0.11	0.11
2	6E	6E	Bot	36	-14.65	0.04	146.10	20	2.24	0.99	-2.01	0.75	0.75
3	6E	6E	Top	36	-14.65	-39.15	-162.57	9	2.47	6.98	39.66	0.80	0.81
3	6E	6E	Bot	-45	3.67	1.40	67.39	36	-14.65	-39.15	-162.57	0.31	0.31

BOLT RUPTURE DESIGN

Splice ID	Left Type	Right Type	Loc	Bolt Type	Pre-Tension	Dia	Gage	Gage 2	Pfi	Pfo	Pf	Pb	de	Load Comb	Axial (kip)	Moment (ft-kip)	Left Bolt Ratio	Right Bolt Ratio
1	6E	6E	Top	A325	Yes	0.75	3.00	--	1.44	1.54	3.25	2.25	1.00	36	-14.65	-162.70	0.81	0.82
1	6E	6E	Bot	A325	Yes	0.75	3.00	--	1.44	1.44	3.25	2.25	1.00	-49	3.68	67.39	0.32	0.32
2	6E	6E	Top	A325	Yes	0.75	3.00	--	1.63	1.72	3.63	2.25	1.00	9	3.71	-16.85	0.11	0.11
2	6E	6E	Bot	A325	Yes	0.75	3.00	--	1.63	1.52	3.63	2.25	1.00	36	-14.65	146.10	0.73	0.73
3	6E	6E	Top	A325	Yes	0.75	3.00	--	1.44	1.33	3.25	2.25	1.00	36	-14.65	-162.57	0.82	0.81
3	6E	6E	Bot	A325	Yes	0.75	3.00	--	1.44	1.54	3.25	2.25	1.00	-45	3.67	67.39	0.32	0.32

COMBINED BOLT BEARING SHEAR DESIGN

Splice ID	Left Type	Right Type	Loc	Bolt Type	Pre-Tension	Dia	Gage	Gage 2	Pfi	Pfo	Pf	Pb	de	Load Comb	Shear (kip)	Left Bolt Ratio	Right Bolt Ratio
1	6E	6E	Top	A325	Yes	0.75	3.00	--	1.44	1.54	3.25	2.25	1.00	11	-6.98	0.10	0.10
1	6E	6E	Bot	A325	Yes	0.75	3.00	--	1.44	1.44	3.25	2.25	1.00	36	39.06	0.55	0.55
2	6E	6E	Top	A325	Yes	0.75	3.00	--	1.63	1.72	3.63	2.25	1.00	37	-9.52	0.13	0.13
2	6E	6E	Bot	A325	Yes	0.75	3.00	--	1.63	1.52	3.63	2.25	1.00	20	0.99	0.01	0.01
3	6E	6E	Top	A325	Yes	0.75	3.00	--	1.44	1.33	3.25	2.25	1.00	9	6.98	0.10	0.10
3	6E	6E	Bot	A325	Yes	0.75	3.00	--	1.44	1.54	3.25	2.25	1.00	36	-39.15	0.55	0.55

WELD DESIGN

Splice ID	Loc	Left Welds Flg	Left Welds Web	Left Welds Stf	Left Checks Load Comb	Left Checks Tensile Rupture	Left Checks Load Comb	Left Checks Shear Rupture	Right Welds Flg	Right Welds Web	Right Welds Stf	Right Checks Load Comb	Right Checks Tensile Rupture	Right Checks Load Comb	Right Checks Shear Rupture
1	Top	FWD4	WP13		36	0.86	11	0.16	FWD4	WP13		36	0.85	11	0.16
1	Bot	FWD3	WP13		-49	0.40	36	0.90	FWD3	WP13		-49	0.40	36	0.91

WELD DESIGN

Splice ID	Loc	Left							Right						
		Welds			Checks				Welds			Checks			
		Flg	Web	Stf	Load Comb	Tensile Rupture	Load Comb	Shear Rupture	Flg	Web	Stf	Load Comb	Tensile Rupture	Load Comb	Shear Rupture
2	Top	FWD3	WP13		9	0.13	37	0.22	FWD3	WP13		9	0.13	37	0.22
2	Bot	FWD3	WP13		36	0.89	20	0.02	FWD3	WP13		36	0.89	20	0.02
3	Top	FWD4	WP13		36	0.85	9	0.16	FWD4	WP13		36	0.86	9	0.16
3	Bot	FWD3	WP13		-45	0.40	36	0.91	FWD3	WP13		-45	0.40	36	0.90

LOAD COMBINATIONS:

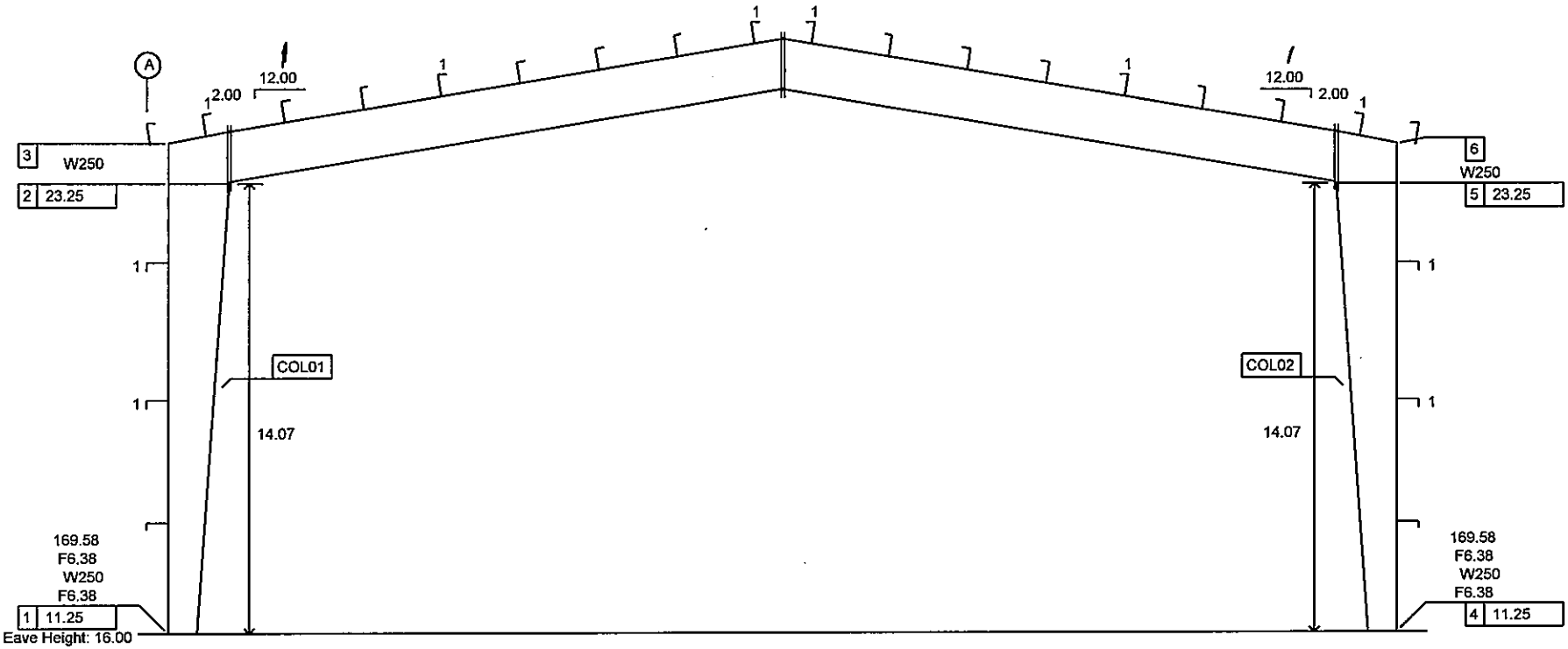
No	ASR	Combination
1	1.00	SW+RDL+COL
2	1.00	SW+RDL+COL+SL+SR
3	1.00	SW+RDL+COL+RLL+RLR
4	1.00	SW+RDL+0.60W1L
5	1.00	SW+RDL+0.60W2L
6	1.00	SW+RDL+0.60W1R
7	1.00	SW+RDL+0.60W2R
8	1.00	0.60SW+0.60RDL+0.60W1L
9	1.00	0.60SW+0.60RDL+0.60W2L
10	1.00	0.60SW+0.60RDL+0.60W1R
11	1.00	0.60SW+0.60RDL+0.60W2R
12	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W1L
13	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W2L
14	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W1R
15	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W2R
16	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W1L
17	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W2L
18	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W1R
19	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W2R
20	1.00	SW+RDL+0.60W5B
21	1.00	SW+RDL+0.60W6B
22	1.00	SW+RDL+0.60W5F
23	1.00	SW+RDL+0.60W6F
24	1.00	0.60SW+0.60RDL+0.60W5B
25	1.00	0.60SW+0.60RDL+0.60W6B
26	1.00	0.60SW+0.60RDL+0.60W5F
27	1.00	0.60SW+0.60RDL+0.60W6F
28	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W5B
29	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W6B
30	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W5F
31	1.00	SW+RDL+COL+0.75SL+0.75SR+0.45W6F
32	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W5B
33	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W6B
34	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W5F
35	1.00	SW+RDL+COL+0.75RLL+0.75RLR+0.45W6F
36	1.00	SW+RDL+COL+UOS
37	1.00	SW+RDL+COL+LRD
38	1.00	SW+RDL+COL+RRD
39	1.00	1.16SW+1.16RDL+1.16COL+0.91EQL
40	1.00	1.16SW+1.16RDL+1.16COL+0.91EQR
41	1.00	1.12SW+1.12RDL+1.12COL+0.15SL+0.15SR+0.68EQL
42	1.00	1.12SW+1.12RDL+1.12COL+0.15SL+0.15SR+0.68EQR
43	1.00	0.44SW+0.44RDL+0.31EQL
44	1.00	0.44SW+0.44RDL+0.31EQR
45*	1.20	Special Seismic
46*	1.20	Special Seismic
47*	1.20	Special Seismic
48*	1.20	Special Seismic
49*	1.20	Special Seismic
50*	1.20	Special Seismic

LOAD COMBINATIONS:

No	ASR	Combination

*Indicates a Special Seismic Load Combination

Web Depth	7 | 19.25	8 | 19.25	9 | 19.25
Length on Slope	211.63	211.63	
Left/Top Flange	F6.38	F6.38	
Web	W250	W250	
Right/Bottom Flange	F6.38	F6.38	
Horizontal Tail Dim.		20.0000	
Purlin Offset: 8.0	RAF01	RAF02	
Projected Area: 107			



Left Eave Height: 16.00
Left Girt Offset: 8.0
Right Eave Height: 16.00
Right Girt Offset: 8.0
Total Width: 40.00

Frame Wt: 2406 Max Wind dx: H/606 Max dx: H/226 Max dy: L/269

Location Code	1 P	2	3	4 P	5	6	7 M	8 M	9 M
Left Plate	-	3x0.375	6x0.375	-	3x0.375	6x0.375	6x0.625	6x0.625	6x0.625
Right Plate	8x0.375	-	-	8x0.375	-	-	6x0.625	6x0.625	6x0.625
Bolt Quantity-Diameter	4-0.750	-	-	4-0.750	-	-	12-0.750-S	12-0.750-S	12-0.750-S
Pfi/Pf	-	-	-	-	-	-	1.438/3.250	1.625/3.625	1.438/3.250
Top Welds (L/R)	FWS3/FWS3	-	W1-FWS3	FWS3/FWS3	-	W1-FWS3	FWD4/FWD4	FWD3/FWD3	FWD4/FWD4
Bottom Welds (L/R)	-	-	W3-FWS5	-	-	W3-FWS5	FWD3/FWD3	FWD3/FWD3	FWD3/FWD3
Web Welds (L/R)	FWR3	-	W4-FWS3	FWR3	-	W4-FWS3	WP13/WP13	WP13/WP13	WP13/WP13
Connection Code	BHFCNA	-	-	BHFCNA	-	-	KVEUEU	SVEUEU	KVEUEU
Pb/Gage	-		-	-		-	2.250/3.000	2.250/3.000	2.250/3.000

6-1

CBC STEEL BUILDINGS A NUCOR Company

Minimum Seismic And Wind Forces Calculation

(IBC2012)

Job Number: C17C0461 Engineer: BC

Building Geometry Information

Building Width =	40.00	ft.	Roof Weight D + C =	10.00	psf
Building Length =	60.00	ft.	Roof20 % Snow for Seismic =	21.00	psf
FSW Eave Height =	16.00	ft.	Weight of Sidewall =	3.00	psf
Ridge From FSW =	20.00	ft.	Weight of Endwall =	3.00	psf
Roof Pitch =	2	/12	Longitudinal Partition WT. =	0.00	psf
Canopy Width @ FSW =	0.00	ft.	Quantity of Longitudinal Part. =	0	
Canopy Width @ RSW =	0.00	ft.	Transverse Partition WT. =	0.00	psf
Max. Interior Bay Trib. =	20.00	ft.	Quantity of Transverse Part. =	0	
Building End Bay Trib. =	10.00	ft	Longitudinal Special Weight =	0.00	kips
			Transverse Special Weight =	0.00	kips

Regular Structure: Yes Stories Above Grade: 1 Flexible Diaphragm: Yes

Seismic Information

Risk Category = II S_s(%) = 171.80% S_1(%) = 80.80% Site Class = D

Transverse Direction(Interior):	R = 3.50	Ω_o = 3.00	T_a = 0.26
Transverse Direction(End):	R = 3.50	Ω_o = 3.00	T_a = 0.26
Longitudinal Direction:	R = 3.25	Ω_o = 2.00	T_a = 0.16

Seismic Factor I_E = 1.00 F_a = 1.00 F_v = 1.50 S_{MS} = 1.50 S_{M1} = 1.21

Seismic Design Category = E S_{DS} = 1.00 S_{D1} = 0.81

Wind Information

$q_h = 0.00256 K_h K_{zt} K_d V^2$ = 42.13 psf Longitudinal GC_{pf} - GC_{pi} = 0.69/1.04

Transverse GC_{pf} - GC_{pi} = 0.96/1.44

Wind/Seismic Forces in Transverse Direction

Interior Bay Tributary Width = 20 ft

1. Wind Load

Total Load = P_w* B* H/2 = *7.8 Kips*

2. Seismic Load

Redundancy Factor ρ = 1.30

W = 25.76 Kips

C_s = 0.29 V = Q_E = 7.36 Kips

E_h = ρ*Q_E = 9.6 Kips E_v = 0.2S_{Ds}*D = 1.8 Kips

E_m = Ω_O*Q_E = 22.1 Kips

End Bay Tributary Width = 10 ft

1. Wind Load

Total Load = P_w* B* H/2 = *5.9 Kips*

2. Seismic Load

Redundancy Factor ρ = 1.30

W = 12.88 Kips

C_s = 0.29 V = Q_E = 3.68 Kips

E_h = ρ*Q_E = 4.8 Kips E_v = 0.2S_{Ds}*D = 0.9 Kips

E_m = Ω_O*Q_E = 11.0 Kips

Wind/Seismic Forces in Longitudinal Direction

1. Wind Load

Total Load = P_w*B* H/2 = *12.4 Kips*

2. Seismic Load (Accidental Torsion Included if not flexible diaphragm)

Redundancy Factor ρ = 1.30

W = 76.5 Kips

C_s = 0.31 V = Q_E = 23.5 Kips

E_h = ρ*Q_E = 30.6 Kips E_v = 0.2S_{Ds}*D = 5.5 Kips

E_m = Ω_O*Q_E = 47.1 Kips

NUCOR
BUILDINGS GROUP
A DIVISION OF NUCOR CORPORATION

Project No. : C17C0461
Description :
Engineer : BC
Date : 1/9/2018

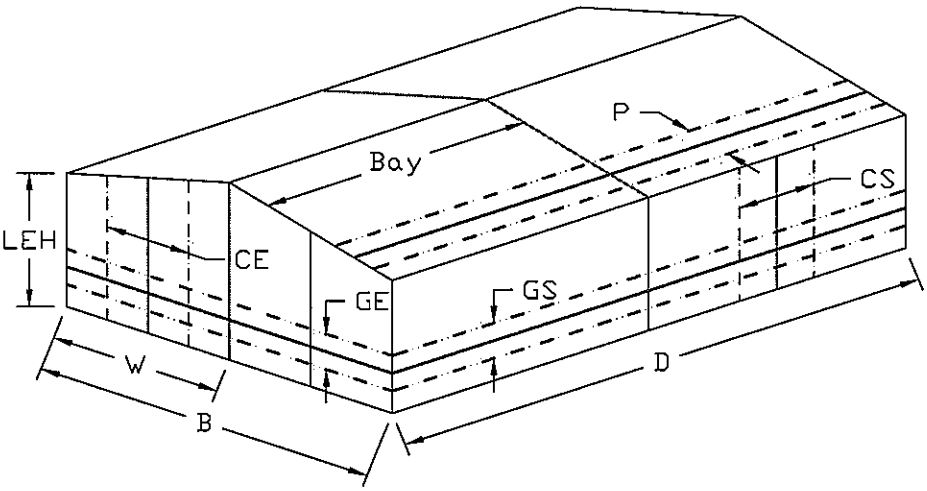
Wind Loading per ASCE 7-10

Geometry

Version: 2015.1.26 (Date: 01/26/15) By NBG-GS

Building Name: Building A **Building Type:** Gable **Roof:** Not by Nucor

Bldg. Width [B]:	40.0000'
Dist. To Ridge [W]:	20.0000'
Bldg. Length [D]:	60.0000'
Left Eave Ht. [LEH]:	16.0000'
Right Eave Ht. [REH]:	16.0000'
Left Roof Slope:	2.00:12
Right Roof Slope:	2.00:12
Bay Width [Bay]:	20.0000'
Purlin Trib. Width [P]:	5.0000'
EW Girt Trib Ht. [GE]:	5.0000'
SW Girt Trib. Ht. [GS]:	5.0000'
EW Girt Length:	20.0000'
SW Girt Length:	20.0000'



EW Col. Trib. Width [CE]:	13.7500'	**BSW Top-of-Parapet:**	0.0000'
SW Col. Trib. Width [CS]:	20.0000'	**Opening Area:**	0.0 sf
		FSW Top-of-Parapet:	
		EW Top-of-Parapet:	

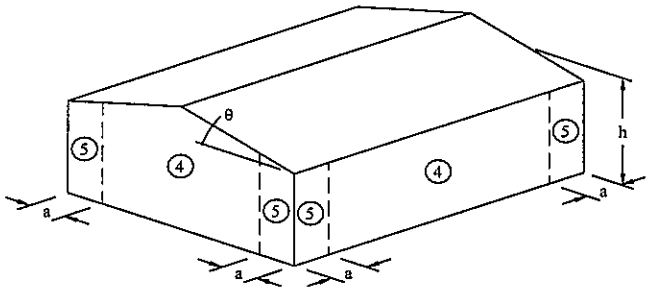
Loading Information

Wind Speed: 150 mph
Wind Exposure: C
Building Porosity: Enclosed
Interior Partition Walls? No

General Loading Calculations

h: 16.0000' **K_d:** 0.85 **K_{zt}:** 1.00 **R_i:** 1.00 **q_h:** 42.13 psf
K_z or K_h: 0.86 **G:** 0.85 **GC_{pi}:** ± 0.18

Components and Cladding, Walls



a = 4.00 ft.

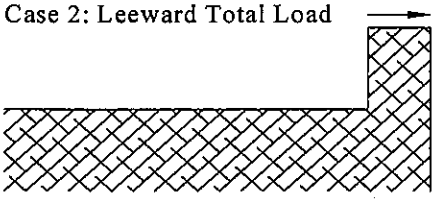
Item	Tributary Area (ft^2)	Pressure Zones 4,5 (psf)	Suction Zone 4 (psf)	Suction Zone 5 (psf)
Sidewall Wind Column	320	35.42	-39.21	-40.51
Endwall Wind Column	220	36.51	-40.30	-42.69
Sidewall Girt	133	37.97	-41.76	-45.60
Endwall Girt	133	37.97	-41.76	-45.60
Wall Panel	8	45.50	-49.29	-60.67

Note: Value of GCp in results above reduced by 10% per Note 5 of Figure 30.4-1 since slope angle is ≤ 10°.

Wind Loading Continued...

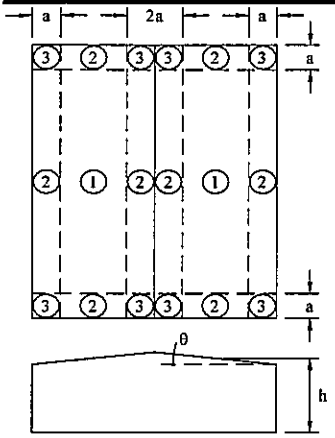
Wall Parapet Structural

Case 1: Windward Total Load ←
Case 2: Leeward Total Load →



Item	Maximum Projection (ft)	K_{h_par}	q_p (psf)	Windward Total Load (psf)	Leeward Total Load (psf)
BSW Parapet	---	---	---	---	---
FSW Parapet	---	---	---	---	---
EW Parapet	---	---	---	---	---

Components and Cladding, Roofs

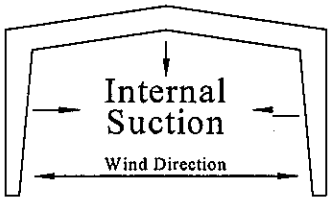


Applicable Roof Slope Angle = 9.46 deg
a = 4.00 ft.

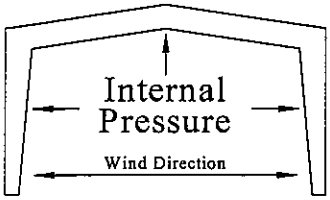
Item	Tributary Area (ft^2)	Pressure All (psf)	Suction in Zones 1 (psf)	2 (psf)	2' (psf)	3 (psf)	3' (psf)
Purlin/Joist	133	20.22	-41.29	-58.14	----	-91.84	----
Panel	0	----	----	----	----	----	----
Fastener	0	----	----	----	----	----	----
Values Below are for Overhang Portion of Roof							
Purlin/Joist	133	----	----	-92.69	----	-105.32	----
Panel	0	----	----	----	----	----	----
Fastener	0	----	----	----	----	----	----

Main Wind Force Resisting Systems (Transverse Wind Direction)

Applicable Roof Slope Angle = 9.46 deg
a = 4.00 ft.

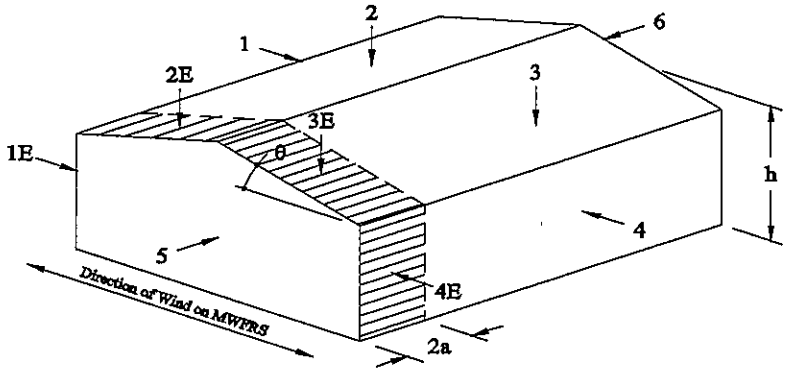


WIND W1R W1L W3R W3L



WIND W2R W2L W4R W4L

Item	Transverse Wind Direction W1R	W1L	W2R	W2L	W3R	W3L	W4R	W4L
C1:	0.62	-0.15	0.26	-0.51	----	----	----	----
Load, (psf)	26.06	-6.39	10.90	-21.56	----	----	----	----
C2:	-0.51	-0.22	-0.87	-0.58	----	----	----	----
Load, (psf)	-21.49	-9.38	-36.65	-24.55	----	----	----	----
C3:	-0.22	-0.51	-0.58	-0.87	----	----	----	----
Load, (psf)	-9.38	-21.49	-24.55	-36.65	----	----	----	----
C4:	-0.15	0.62	-0.51	0.26	----	----	----	----
Load, (psf)	-6.39	26.06	-21.56	10.90	----	----	----	----
C5:	-0.27	-0.27	-0.63	-0.63	----	----	----	----
Load, (psf)	-11.38	-11.38	-26.54	-26.54	----	----	----	----
C6:	-0.27	-0.27	-0.63	-0.63	----	----	----	----
Load, (psf)	-11.38	-11.38	-26.54	-26.54	----	----	----	----



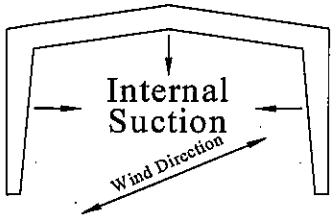
Item	Edge Zone Pressure Coefficients W1R & W3R	W1L & W3L	W2R & W4R	W2L & W4L
C1E:	0.85	-0.31	0.49	-0.67
Load, (psf)	35.66	-13.16	20.50	-28.33
C2E:	-0.89	-0.40	-1.25	-0.76
Load, (psf)	-37.50	-16.75	-52.66	-31.92
C3E:	-0.40	-0.89	-0.76	-1.25
Load, (psf)	-16.75	-37.50	-31.92	-52.66
C4E:	-0.31	0.85	-0.67	0.49
Load, (psf)	-13.16	35.66	-28.33	20.50

Wind Loading Continued...

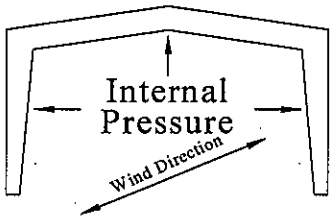
Main Wind Force Resisting Systems (Longitudinal Wind Direction)

Applicable Roof Slope Angle = 9.46 deg

a = 4.00 ft.

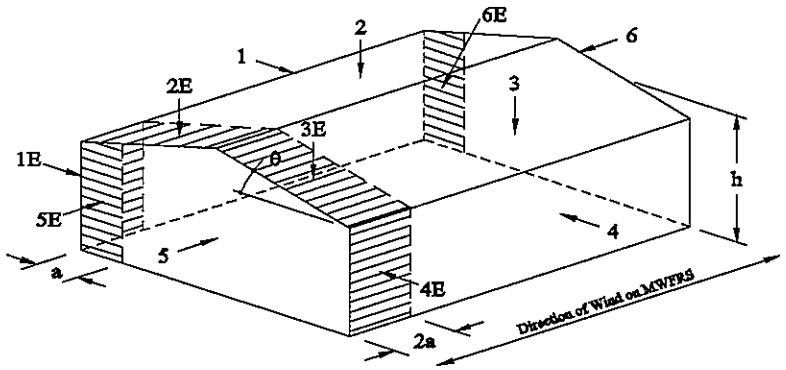


WIND W5B W5F W7B W7F



WIND W6B W6F W8B W8F

	Longitudinal Wind Direction							
Item	W5B	W5F	W6B	W6F	W7B	W7F	W8B	W8F
C1:	-0.27	-0.27	-0.63	-0.63	----	----	----	----
Load, (psf)	-11.38	-11.38	-26.54	-26.54	----	----	----	----
C2:	-0.51	-0.19	-0.87	-0.55	----	----	----	----
Load, (psf)	-21.49	-8.00	-36.65	-23.17	----	----	----	----
C3:	-0.19	-0.51	-0.55	-0.87	----	----	----	----
Load, (psf)	-8.00	-21.49	-23.17	-36.65	----	----	----	----
C4:	-0.27	-0.27	-0.63	-0.63	----	----	----	----
Load, (psf)	-11.38	-11.38	-26.54	-26.54	----	----	----	----
C1E:	-0.30	-0.30	-0.66	-0.66	----	----	----	----
Load, (psf)	-12.64	-12.64	-27.81	-27.81	----	----	----	----
C2E:	-0.89	-0.35	-1.25	-0.71	----	----	----	----
Load, (psf)	-37.50	-14.75	-52.66	-29.91	----	----	----	----
C3E:	-0.35	-0.89	-0.71	-1.25	----	----	----	----
Load, (psf)	-14.75	-37.50	-29.91	-52.66	----	----	----	----
C4E:	-0.30	-0.30	-0.66	-0.66	----	----	----	----
Load, (psf)	-12.64	-12.64	-27.81	-27.81	----	----	----	----



	End-Wall Pressure Coefficients			
Item	W5B & W7B	W5F & W7F	W6B & W8B	W6F & W8F
C5:	0.58	-0.11	0.22	-0.47
Load, (psf)	24.44	-4.63	9.27	-19.80
C6:	-0.11	0.58	-0.47	0.22
Load, (psf)	-4.63	24.44	-19.80	9.27
C5E:	0.79	-0.25	0.43	-0.61
Load, (psf)	33.28	-10.53	18.12	-25.70
C6E:	-0.25	0.79	-0.61	0.43
Load, (psf)	-10.53	33.28	-25.70	18.12

Wind Uplift for Bracing Input: -14.75 psf

Longitudinal Force Resisted by Bracing: 11.25 kip

Total Longitudinal Net Pressure Applied to Building: 31.85 psf

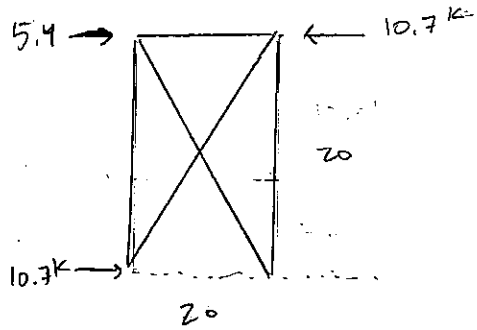
Total Longitudinal Force Applied to Building: 22.51 kip

CBC STEEL BUILDINGS
A NUCOR Company
www.cbcsteelbuildings.com

1700 E. Louise Avenue • Lathrop, CA 95330
Tel: (209) 983-0910 • Fax: (209) 858-2354

Job: CTC0461 Sheet No. C-5
Date: _____ By: BC

ROOF BRACING



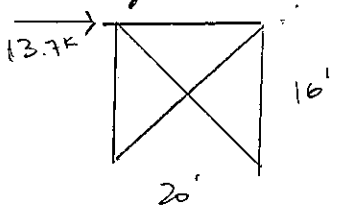
SEISMIC governs: $0.7\,E_h/1\,BAY = (0.7)(30.6^K) = 21.42^K$

DISTRIBUTED LOAD: $21.42^K/40' = 0.54^K/f$

$$T = \frac{10.7 - 5.4^K}{\cos\left(\tan^{-1}\left(\frac{20}{20}\right)\right)} = 7.5^K < 10.8^K$$

USE: 3/4 ϕ ROD (R6)

SIDE WALL BRACING.

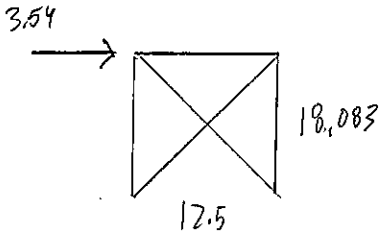


SEISMIC governs: $0.58\,E_h/2\,\text{sides} = (0.58)(47.1^K)/2 = 13.7^K$

$$T = \frac{13.7^K}{\cos\tan^{-1}\left(\frac{16}{20}\right)} = 17.5^K < 19.1^K$$

USE: 1" ϕ ROD (R8)

END WALL BRACING.



WIND governs: $0.6\,W = (6.6)(5.9^K) = 3.54^K$

$$T = \frac{3.54^K}{\cos\left(\tan^{-1}\frac{18.083}{12.5}\right)} = 6.23^K < 10.8^K$$

USE: 3/4" ϕ ROD (R10)

CBC STEEL BUILDINGS A NUCOR Company

Framed Openings Calculation

Job Number C19C0461 Engineer BC

Module 1 ☐FSW BAY ☐RSW BAY ☐LEW BAY ☐REW BAY

DIMENSIONS	
Span length (column to column)	15.00 ft
Door width (j)	12.00 ft
Door Height	14.00 ft
Distance from left column to 1st jamb (i)	1.50 ft
Distance from header to jamb support	2.00 ft
Ht. of the girt/eave above jamb support	16.00 ft
Deflection (standard is L/90 for 50 yr. wind)	L / 150

Door is 1.5 feet from column, check column weak axis bending

Wall Girt Depth ◉8" ○9.5" ○12"

Nested (2) Girts ? ☐ No

Use Hot-Rolled Channels? ○Yes ◉No

Distance Between Lateral Supports (in) N/A in

Channel Depth Selection ○C8 ○C9 ○C10

Use Hot Rolled Jambs? ☐ No

Use Different Depth Jambs? ☐ No

MSA SECONDARY FRAME OUTPUT		ω
Wind pressure (50 yr. wind)	42.13 psf	0.6
Suction coefficient	-0.99	
Pressure coefficient	0.90	
Suction	-25.03 psf	
Pressure	22.75 psf	
Design spacing, jamb supp.	0.00 in	
Allowable Stress Ratio	1.03	

PANEL CONDITION

Jamb Support(s) R = 0.65

See comment window for R values

Header R = 0.65 Jambs R = N/A

See comment windows for R values

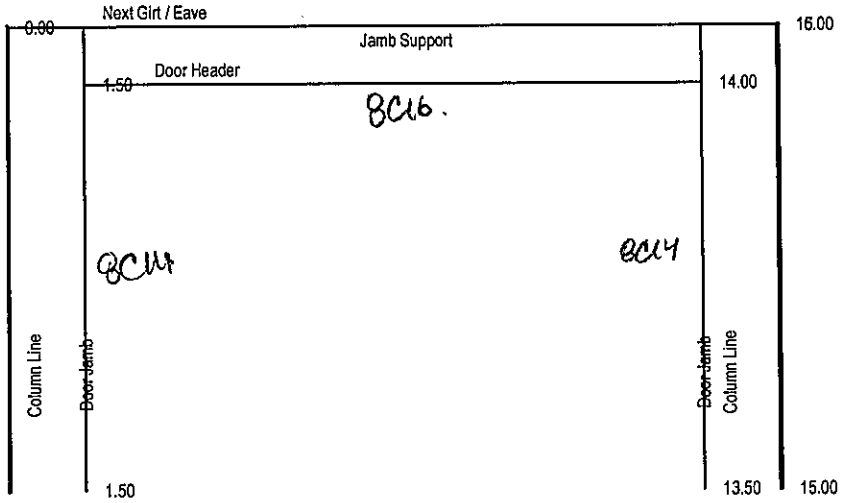
Use Different Depth Jamb Support? ☐ No

Maximum Girt Spacing = 5 ft

Recommended Member For *Jamb Support(s)*	~~8Z16~~ 8AFTCR.	Stress Ratio= 0.83	Δ_{max} = L / 631
Recommended Minimum Member Size For *Jambs*	8C14	Stress Ratio= 0.98	Δ_{max} = L / 319
Recommended Minimum Member Size For *Header*	8C16	Stress Ratio= 0.14	Δ_{max} = L / 4127

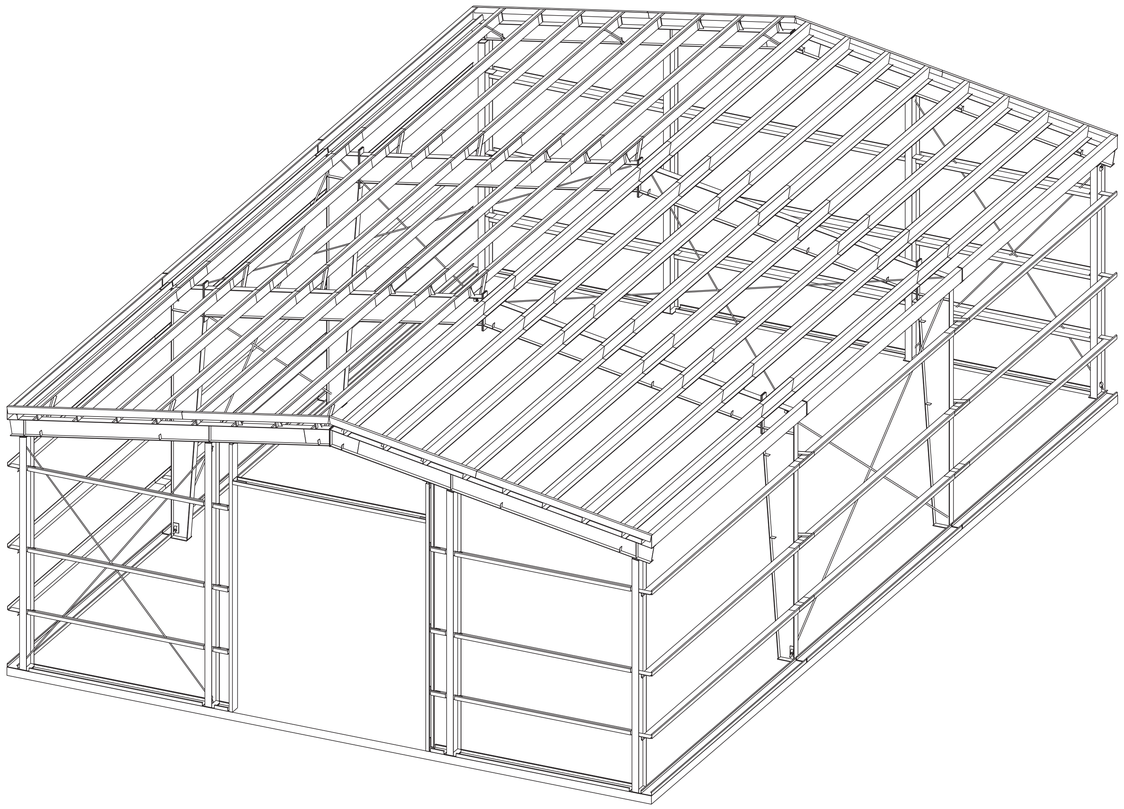
All members are designed as simple span.

The reduced sectional properties were used for cold formed members.



Building Information

Building Width:	40'-0"	Front Eave Ht.:	16'-0"
Building Length:	60'-0"	Back Eave Ht.:	16'-0"
Roof Panel Type:	24 Ga. SMP "R"	Roof Color:	HUNTER GREEN
Wall Panel Type:	26 Ga. SMP "R"	Wall Color:	SAND STONE
Roof Trim Color:	HUNTER GREEN	Wall Trim Color:	SAND STONE



Material Specifications

1. Primary Framing:
Web Plates, ASTM A529, A572, A1011, Grade 55
Flanges, ASTM A529, A572, Grade 55

2. Secondary Framing:
Galvanized 16Ga, 15Ga. 14Ga, 13Ga, 12Ga, ASTM A653 G90, Grade 55, Min. Yield 55 ksi.

3. Roof & Wall Covering:
26Ga Painted and Unpainted ZA., ASTM A792 AZ50, Grade 50 & 80
24Ga Painted and Unpainted ZA., ASTM A792 AZ50, Grade 50
26Ga Painted Galvanized, ASTM A653 G90, AZ55 Grade 50 & 80
24Ga Painted Galvanized, ASTM A653 G90, AZ55 Grade 50

4. Bracing:
Cables, ASTM A475 Extra High Strength Grade.
Angles, ASTM A36, Min. Yield 36 ksi.
Rods , A529 Grade 50

5. Bracing and Columns:
Pipe, ASTM A53 Grade B, Min. Yield 35 ksi.
Round HSS, ASTM A500 Grade B, Min. Yield 42 ksi.
Rect. HSS, ASTM A500 Grade B, Min. Yield 46 ksi.

6. Bolts:
High Strength Bolts, ASTM A325-N, Washer under turning element. Machine Bolts, ASTM A307.
Anchor Bolts (Not By CBC) Sized Based on A36 Material.

7. Shop Coating:
All Steel members except galvanized secondary framing, cables, bolts and screws shall receive one shop coat.

Product Certifications

1. IAS International Accreditation Services, Inc. Approved Fabricator AC-472, MB-152.

2. City of Los Angeles, CA. Approved Type I Fabricator No. 1436.

3. City of Riverside, CA. Approved Type I Fabricator No. SP07-0091.

4. Clark County, Approved Steel Fabricator No. 404.

Codes & Specifications

The design of this structure is in compliance with the CBC specifications and standards, utilizing the pertinent provisions and recommendations of the following Codes.

1. International Building Code, 2012 Edition (IBC 2012).

2. American Institute of Steel Construction, Fourteenth Edition (AISC 360-10 & AISC 341-10).

3. American Iron and Steel Institute, 2010 Edition (AISI S100-07/SI-10).

4. Metal Building Manufacturers Association, 2012 Edition (MBMA, 2012).

5. American Welding Society, Structural Welding Code (AWS D1.1, 2008).

Inspections

1. Shop Welding inspection is not required according to the approved status of the above Certifications.
No field welding is required by CBC Steel Buildings. However, if any field welding is required due to any field modifications, special inspection is required.

2. Special inspection is required for high strength bolts. The Turn of the Nut method of tightening is recommended, under the supervision of an independent testing laboratory. Alternate methods of tightening may be used as permitted in the Specification for Structural Joints Using ASTM A325 or A490 Bolts (AISC Thirteenth Edition). CBC Steel Buildings shall not be responsible for administration or costs associated with the inspection process.

Special Bolting Connection Inspection Req. (Made with A325 Bolts)

1) Pre-tensioning of A325 bolts is required on primary framing, bolted bracing, and strut connections if located in seismic performance/ design category "D", "E" or "F".

2) Slip critical connections are not required by CBC Steel Buildings

Design Loads

This steel building is designed utilizing the following loads, in compliance with the pertinent provisions of the International Building Code, 2012 Edition (IBC 2012).

All accessories such as doors, windows, etc. not by CBC Steel Buildings, must be designed as Structural Components in accordance with the Wind Load provisions of the applicable Codes and Specifications referenced on this page.

The Builder and/or the Engineer of Record must confirm that the following loads meet the requirements of the local building department. CBC Steel Buildings and the undersigned are "NOT the Engineer of Record for the entire project.

Building Dead Load _____5.0 psf. (Total)
Collateral Load _____5.0 psf.
Live Load _____ 20.0 psf.
Live Load Reduction Allowed ____ No
Snow Load, Roof _____ 105.0 psf.
Ce _____ 1.0
Impt. Factor _____ 1.0

Wind Load, Speed (Vult.)_____ 150 mph (3-Sec gust)
Exposure _____ C
Impt. Factor _____ 1.0
Kzt _____ 1.0

Earth Quake Load:
Seismic Design Category: E
Seismic Site Class: D
Coeff. Ss = 171.80% S1 = 0.80%
Coeff. R = 3.5 for Moment Frames Omega = 3.0
Coeff. R = 3.25 for Braced Frames Omega = 2.0
Impt. Factor _____ 1.0

Other Loads:
Mezzanine:
Live Load _____ N/A
Dead Load _____ N/A
Crane Load _____ N/A

Special Notes

N/A

STATE OF ALASKA
49TH
J. WALTER LEWIS
No. CE4690
REGISTERED PROFESSIONAL ENGINEER
01/15/18

Drawing Status

☐ Preliminary:
These drawings are conceptual only and are not to be used for the permit or construction process.

☒ For Permit
These drawings are Final and are for review by the building official or others. This set is not intended for construction, as piece markings have not been identified, nor is it intended for the ANCHOR BOLT PLAN to be poured.

☐ For Construction
Erection drawings, identified as "Detailed for Fabrication".

CBC JOB No. C17C0461 | DEALER: Arctic Fox | SHEET 1 OF 6
DATE 1/11/18 | DRAWN JA | ENGR APR. BC | SCALE
CUSTOMER: Icy Cape Sample Processing Bldg.
LOCATION: Yakutat, Ak.
GENERAL INFORMATION
PLOT DATES: 1/11/18

CBC STEEL BUILDINGS
A NUCOR Company
P.O. BOX 1009, LATHROP, CA 95330
OFFICE/PLANT: 1700 E. LOUISE AVE
(209) 983-0900 FAX: (209) 858-4254
IAS ACCREDITED
MBMA MEMBER

DATE | BY | REV.

Detail - A

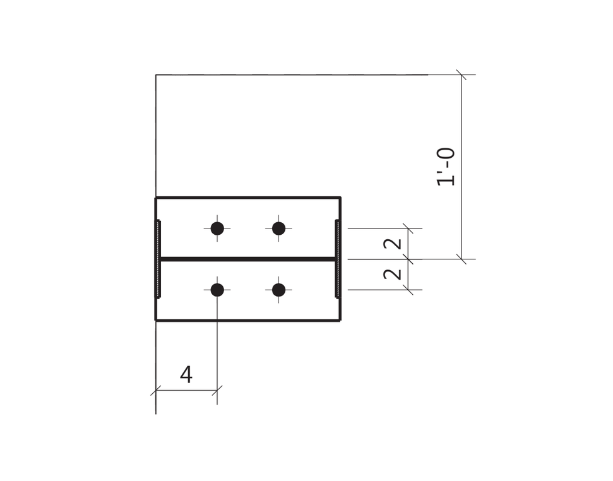


Plate : 3⁄8" x 8" x 1'-0" W/ 3⁄4" Dia. A.B.'s

Detail - B

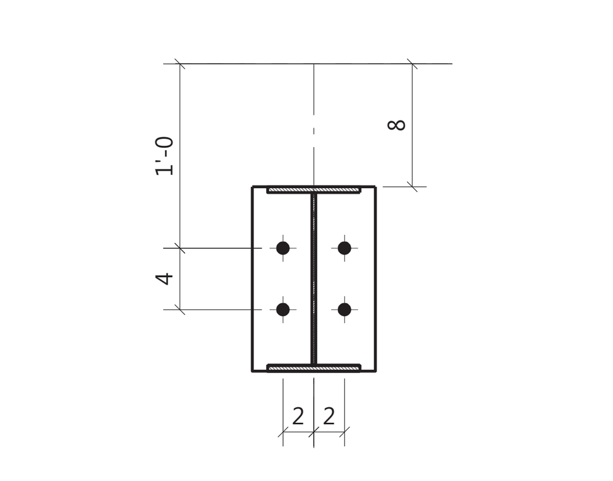


Plate : 3⁄8" x 8" x 1'-0" W/ 3⁄4" Dia. A.B.'s

Detail - C

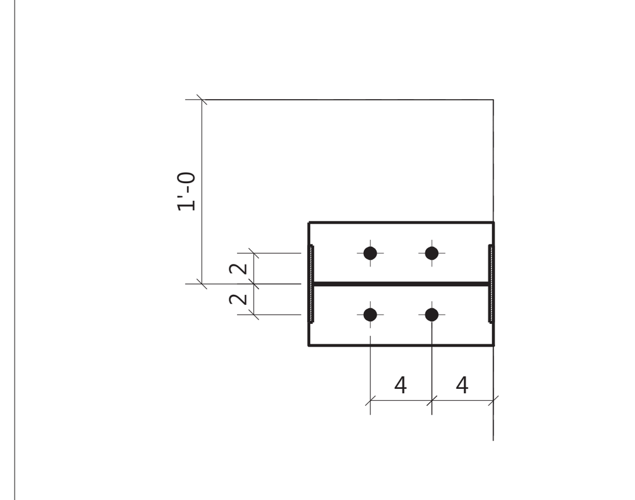


Plate : 3⁄8" x 8" x 1'-0" W/ 3⁄4" Dia. A.B.'s

Detail - D

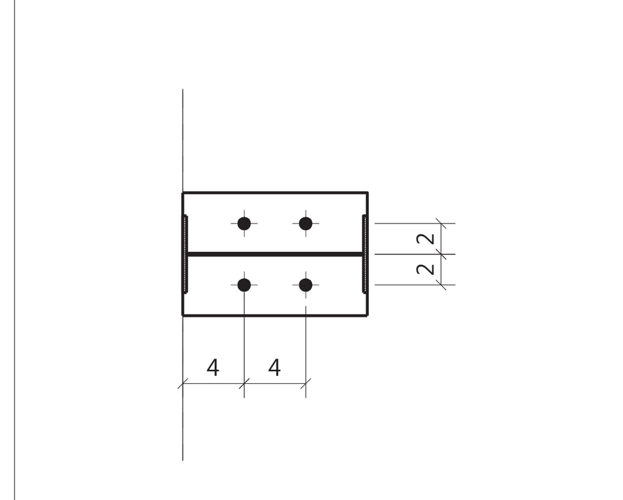


Plate : 3⁄8" x 8" x 1'-0" W/ 3⁄4" Dia. A.B.'s

Detail - E

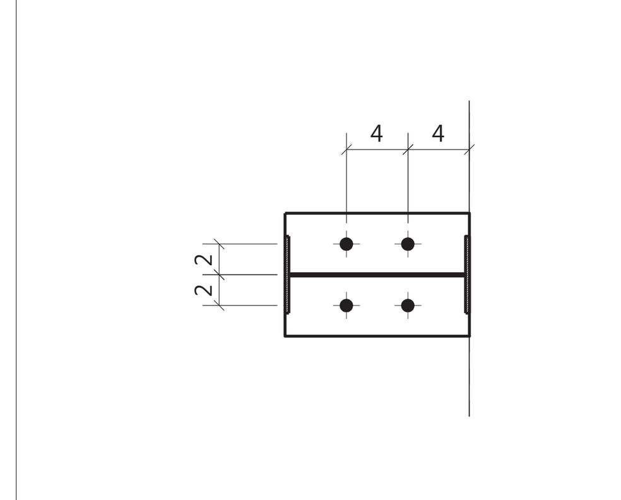


Plate : 3⁄8" x 8" x 1'-0" W/ 3⁄4" Dia. A.B.'s

Detail - F

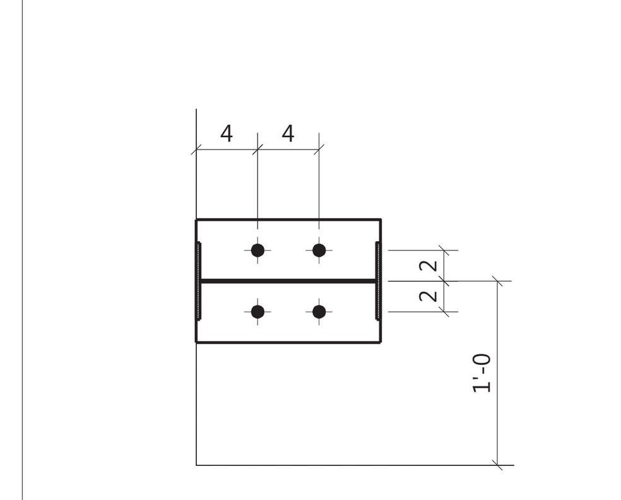


Plate : 3⁄8" x 8" x 1'-0" W/ 3⁄4" Dia. A.B.'s

Detail - G

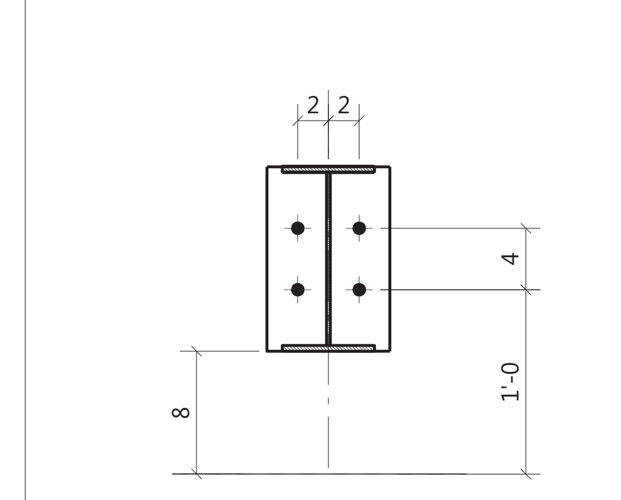


Plate : 3⁄8" x 8" x 1'-0" W/ 3⁄4" Dia. A.B.'s

Detail - H

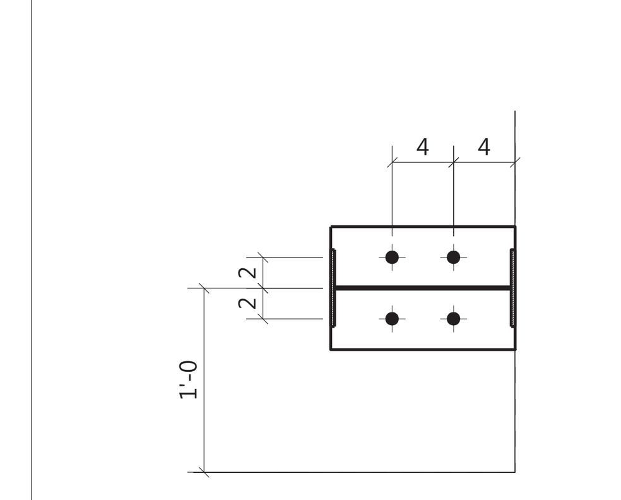
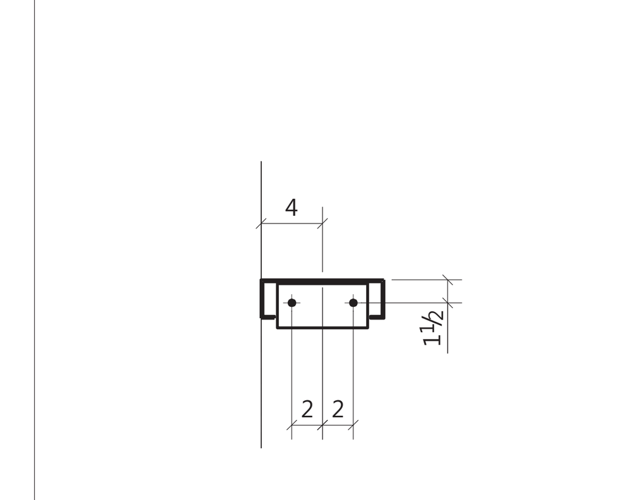
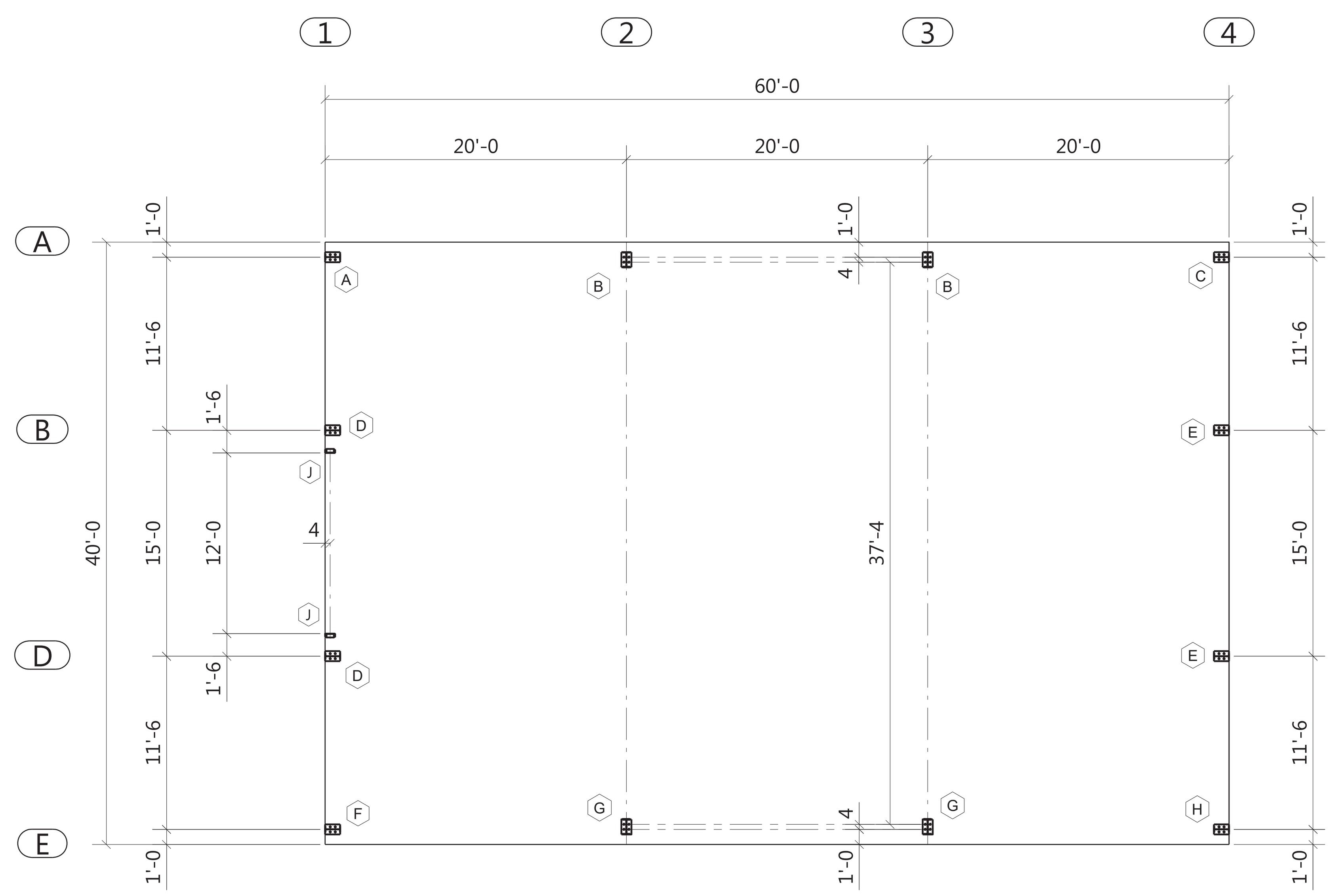


Plate : 3⁄8" x 8" x 1'-0" W/ 3⁄4" Dia. A.B.'s

Detail - J



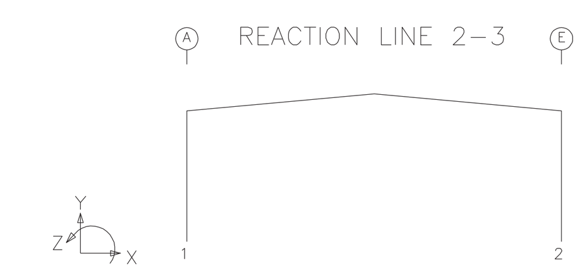
(1) AC-1R Clip W/(2) 1⁄2" Dia. A.B.'s



ANCHOR BOLT PLAN

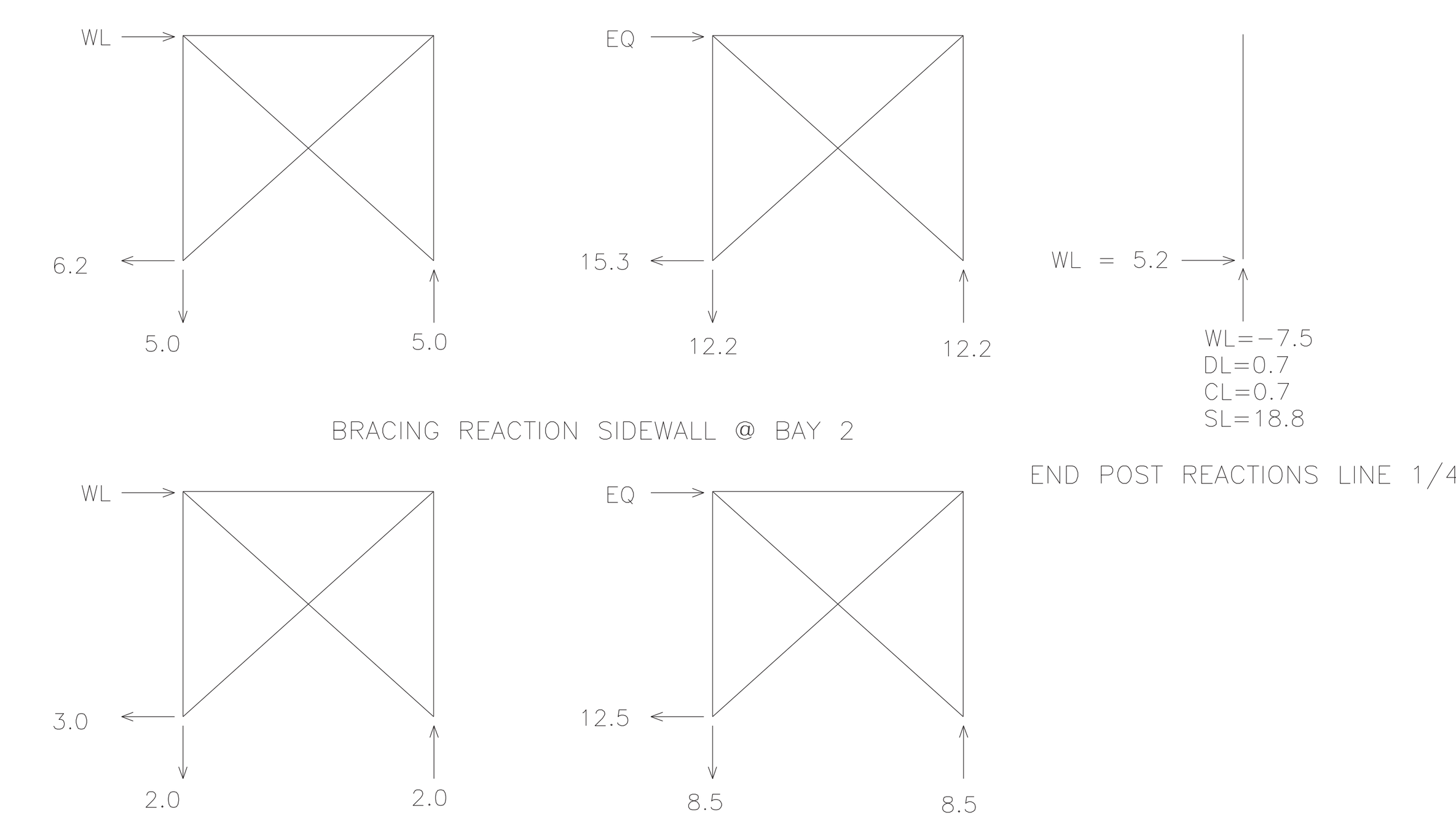
(2) 1⁄2" dia. bolts @ 2 Places See Details
(2) 3⁄4" dia. bolts @ 24 Places See Details

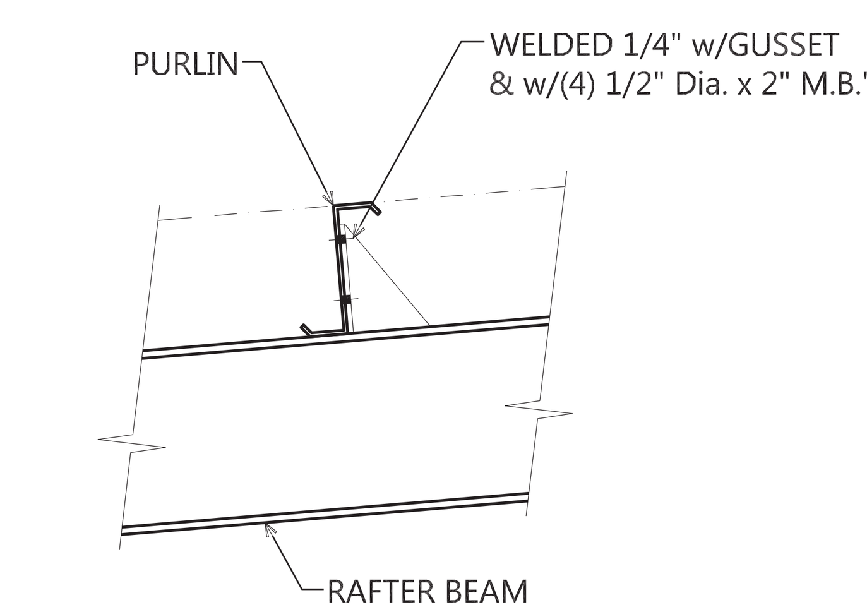
REACTION SCHEMATICS



Member	X (kips)	Y (kips)	Z (kip-ft)	Member	X (kips)	Y (kips)	Z (kip-ft)
LOAD CASE 1 - DEAD				LOAD CASE 9 - LONG. WIND 1 TO BACK			
COL01	1	3	0	COL01	-1	-7	0
COL02	-1	3	0	COL02	1	-5	0
LOAD CASE 2 - COLLATERAL				LOAD CASE 10 - LONG. WIND 1 TO FRONT			
COL01	1	3	0	COL01	-1	-5	0
COL02	-1	3	0	COL02	1	-7	0
LOAD CASE 3 - ROOF LIVE				LOAD CASE 11 - LONG. WIND 2 TO BACK			
COL01	3	8	0	COL01	-1	-14	0
COL02	-3	8	0	COL02	2	-11	0
LOAD CASE 4 - SNOW				LOAD CASE 12 - LONG. WIND 2 TO FRONT			
COL01	13	40	0	COL01	-2	-11	0
COL02	-13	40	0	COL02	1	-14	0
LOAD CASE 5 - WIND CASE 1 TO RIGHT				LOAD CASE 13 - SEISMIC TO RIGHT			
COL01	-8	-10	0	COL01	-4	-3	0
COL02	-2	-4	0	COL02	-4	3	0
LOAD CASE 6 - WIND CASE 1 TO LEFT				LOAD CASE 14 - SEISMIC TO LEFT			
COL01	2	-4	0	COL01	4	3	0
COL02	8	-10	0	COL02	4	-3	0
LOAD CASE 7 - WIND CASE 2 TO RIGHT				LOAD CASE 15 - ALTERNATE SNOW 1			
COL01	-8	-16	0	COL01	11	41	0
COL02	-1	-10	0	COL02	-11	22	0
LOAD CASE 8 - WIND CASE 2 TO LEFT				LOAD CASE 16 - ALTERNATE SNOW 2			
COL01	1	-10	0	COL01	11	22	0
COL02	8	-16	0	COL02	-11	41	0

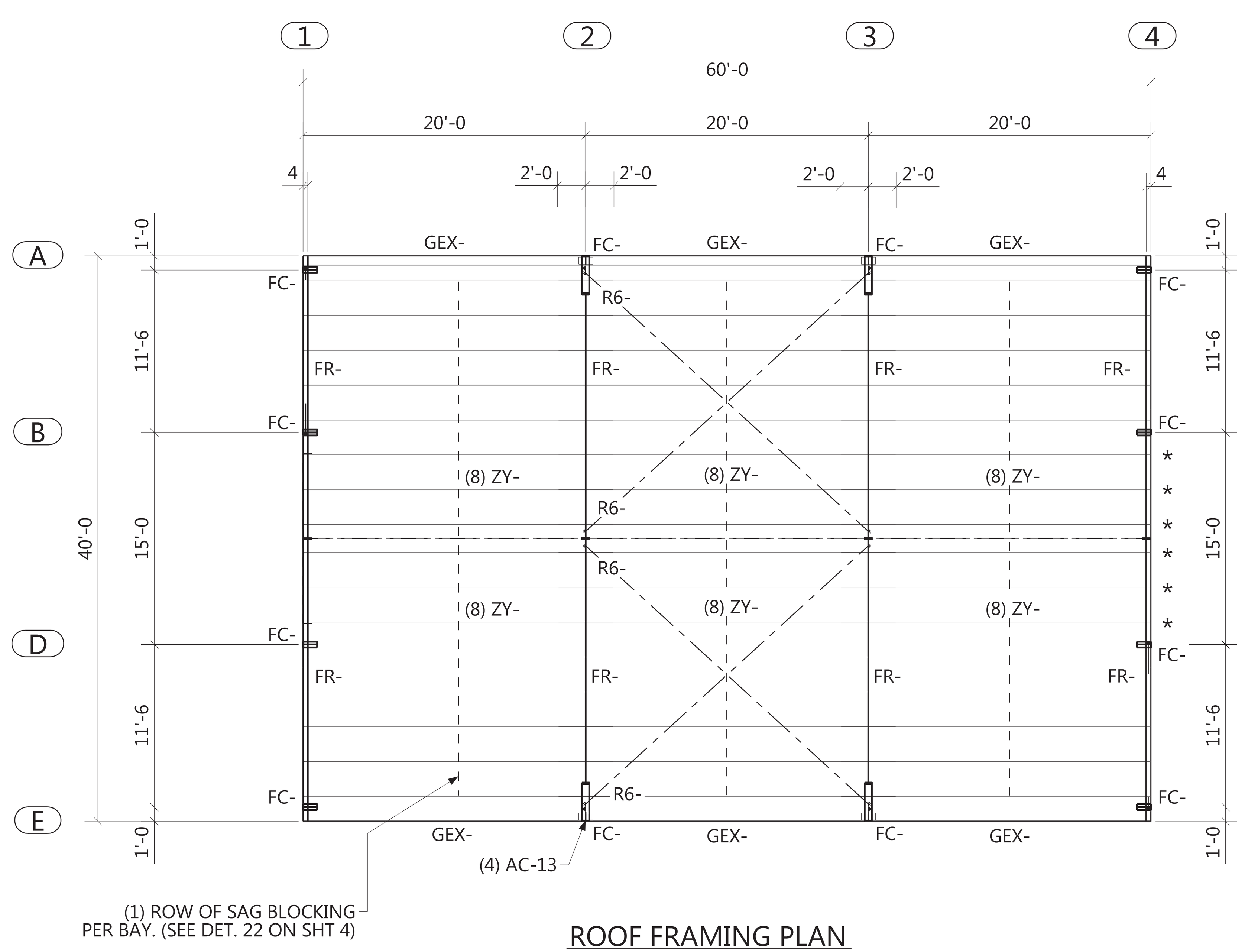
NOTE: ALL SEISMIC LOAD REACTIONS ARE SHOWING WITH BASE SHEAR VALUES



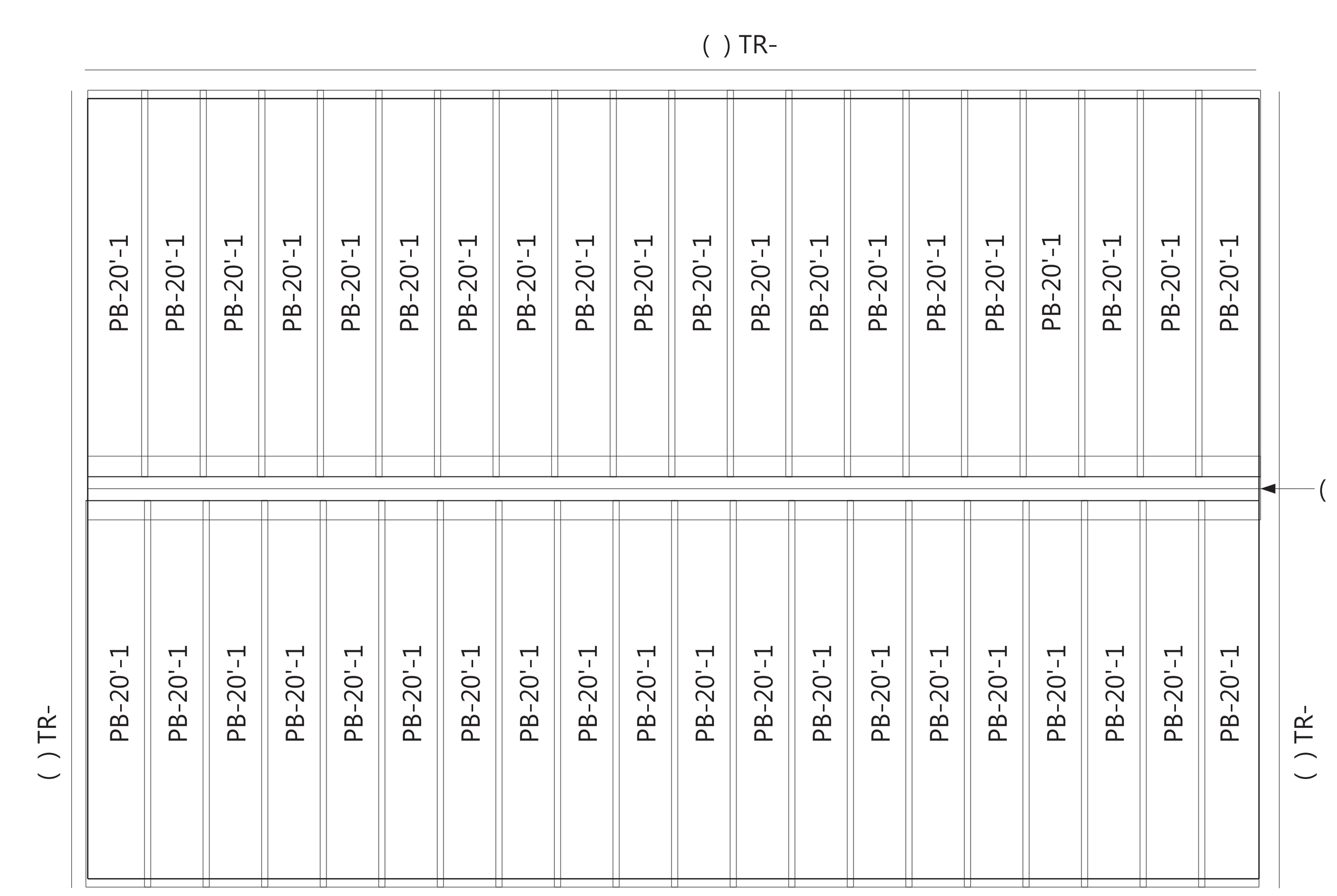


A/2 ANTI-ROLL CLIP DETAIL

* - DENOTES CLIP DETAIL @ PURLIN RUN SHOWN



ROOF FRAMING PLAN



ROOF SHEETING

MATERIAL DESCRIPTION

NOTE: ALL LIGHT Ga. MAT'L. GALVANIZED

GE8- EAVE STRUT 8"x 8"x 16 Ga. "Gee" 55 ksi.
ES- EAVE STRUT 8 1/2"x 8 1/2"x 16 Ga. "Gee" 55 ksi.
GEX- EAVE STRUT 9 1/2"x 8"x 14 Ga. "Gee" 55 ksi.
EH- RAKE BEAM 10"x 5 1/2"x 2 1/2" 12 Ga. "Zee" 55 ksi.
ER- RAKE BEAM 10"x 5 1/2"x 2 1/2" 14 Ga. "Zee" 55 ksi.
GP8- CORNER POSTS 8"x 8"x 16 Ga. "Gee" 55 ksi.
EP- CORNER POSTS 8 1/2"x 8 1/2"x 16 Ga. "Gee" 55 ksi.
GP9- CORNER POSTS 9 1/2"x 9 1/2"x 14 Ga. "Gee" 55 ksi.
GPX- CORNER POSTS 9 1/2"x 8"x 16 Ga. "Gee" 55 ksi.
RA-1 RAKE ANGLE 5"x 2" 16 Ga. 55 ksi.
SA-10 SAG ANGLE 1 1/2"x 1 1/2" 16 Ga. 55 ksi.
FB- FLANGE BRACE 2"x 2" 16 Ga. 55 ksi.
WA- WINDOW FRAME ANGLE 2"x 2" 16 Ga. 55 ksi.
PA- ROOF/WALL SHEETING 26 Ga. HIGH RIB 80 ksi Min.
PB- ROOF/WALL SHEETING 24 Ga. HIGH RIB 80 ksi Min.
RC- RIDGE CAP 26 Ga. HIGH RIB 30 ksi Min.
PP- FIBERGLASS REINFORCED PLASTIC PANEL 8 oz. 3'x 11'

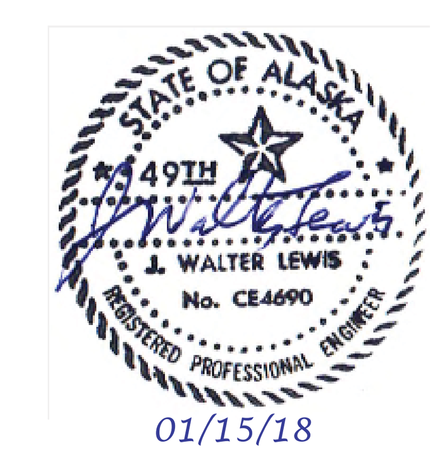
FC- STRUCTURAL BUILT-UP COLUMNS 55 ksi.
FR- STRUCTURAL BUILT-UP RAFTERS 55 ksi.
FM- STRUCTURAL BUILT-UP MISCELLANEOUS WALL SUPPORT BEAM & STRUTS 55 ksi.
FA- STRUCTURAL ANGLES 55 ksi.
FP- STRUCTURAL PIPES 55 ksi.
FT- STRUCTURAL TUBES 55 ksi.
FJ- 10 GA. PRESS BROKE MEMBERS 55 ksi.
MC- STRUCTURAL CHANNELS 55 ksi.
WF- STRUCTURAL WIDE FLANGE BEAMS 55 ksi.
BC- BRACE CABLE 3/8"Ø EXTRA HIGH STRENGTH GRADE
R6- BRACE RODS 3/4"Ø ASTM A572 STEEL
R8- BRACE RODS 1"Ø ASTM A572 STEEL
R10- BRACE RODS 1 1/4"Ø ASTM A572 STEEL

8" DEEP MEMBER DESCRIPTIONS

ZS- ROOF PURLINS / WALL GIRTS 8"x 2 1/2"x 12 Ga. "Zee" 55 ksi.
ZX- ROOF PURLINS / WALL GIRTS 8"x 2 1/2"x 13 Ga. "Zee" 55 ksi.
ZZ- ROOF PURLINS / WALL GIRTS 8"x 2 1/2"x 14 Ga. "Zee" 55 ksi.
ZT- ROOF PURLINS / WALL GIRTS 8"x 2 1/2"x 15 Ga. "Zee" 55 ksi.
ZW- ROOF PURLINS / WALL GIRTS 8"x 2 1/2"x 16 Ga. "Zee" 55 ksi.
CS- DOOR HEADERS/JAMBS & END POSTS 8"x 2 1/2"x 12 Ga. "Cee" 55 ksi.
CX- DOOR HEADERS/JAMBS & END POSTS 8"x 2 1/2"x 13Ga. "Cee" 55 ksi.
CZ- DOOR HEADERS/JAMBS & END POSTS 8"x 2 1/2"x 14 Ga. "Cee" 55 ksi.
CT- DOOR HEADERS/JAMBS & END POSTS 8"x 2 1/2"x 15 Ga. "Cee" 55 ksi.
CW- DOOR HEADERS/JAMBS & END POSTS 8"x 2 1/2"x 16 Ga. "Cee" 55 ksi.
DX- DOUBLE CEE RAKE BEAM (2) 8"x 2 1/2"x 13 Ga. "Cee" 55 ksi.
US- CAP CHANNEL 8 1/4" x 3" x 12 Ga.
UX- CAP CHANNEL 8 1/4" x 3" x 13 Ga.
UZ- CAP CHANNEL 8 1/4" x 3" x 14 Ga.
UT- CAP CHANNEL 8 1/4" x 3" x 15 Ga.
UW- CAP CHANNEL 8 1/4" x 3" x 16 Ga.

9 1/2" DEEP MEMBER DESCRIPTIONS

ZY- ROOF PURLINS / WALL GIRTS 9 1/2"x 3"x 12 Ga. "Zee" 55 ksi.
ZU- ROOF PURLINS / WALL GIRTS 9 1/2"x 3"x 13 Ga. "Zee" 55 ksi.
ZI- ROOF PURLINS / WALL GIRTS 9 1/2"x 3"x 14 Ga. "Zee" 55 ksi.
ZO- ROOF PURLINS / WALL GIRTS 9 1/2"x 3"x 15 Ga. "Zee" 55 ksi.
CC- DOOR HEADERS/JAMBS & END POSTS 9 1/2"x 2 1/2"x 12 Ga. "Cee" 55 ksi.
CR- DOOR HEADERS/JAMBS & END POSTS 9 1/2"x 2 1/2"x 15 Ga. "Cee" 55 ksi.
UY- CAP CHANNEL 9 3/4" x 3" x 12 Ga.
UU- CAP CHANNEL 9 3/4" x 3" x 13 Ga.
UI- CAP CHANNEL 9 3/4" x 3" x 14 Ga.
UO- CAP CHANNEL 9 3/4" x 3" x 15 Ga.



CBC JOB No. C17C0461
DEALER: ARctic Fox
SHEET 2 OF 6
DATE 1/11/18
DRAWN JA
ENGR. APR. BC
SCALE

BUILDING PLANS

CUSTOMER: Icy Cape Sample Processing Bldg.
LOCATION: Yakutat, Ak.

PLOT DATES: 1/11/18

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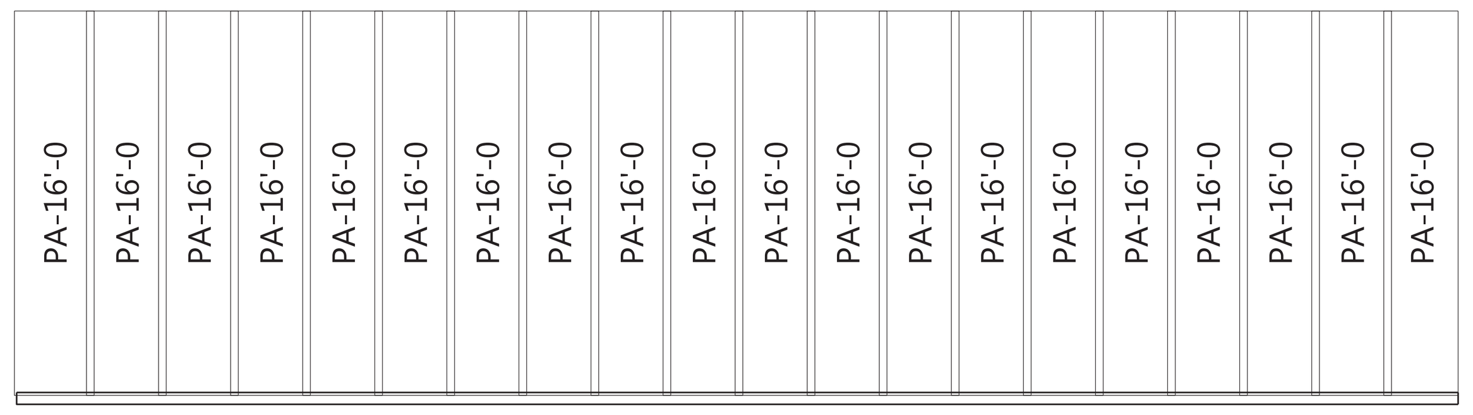
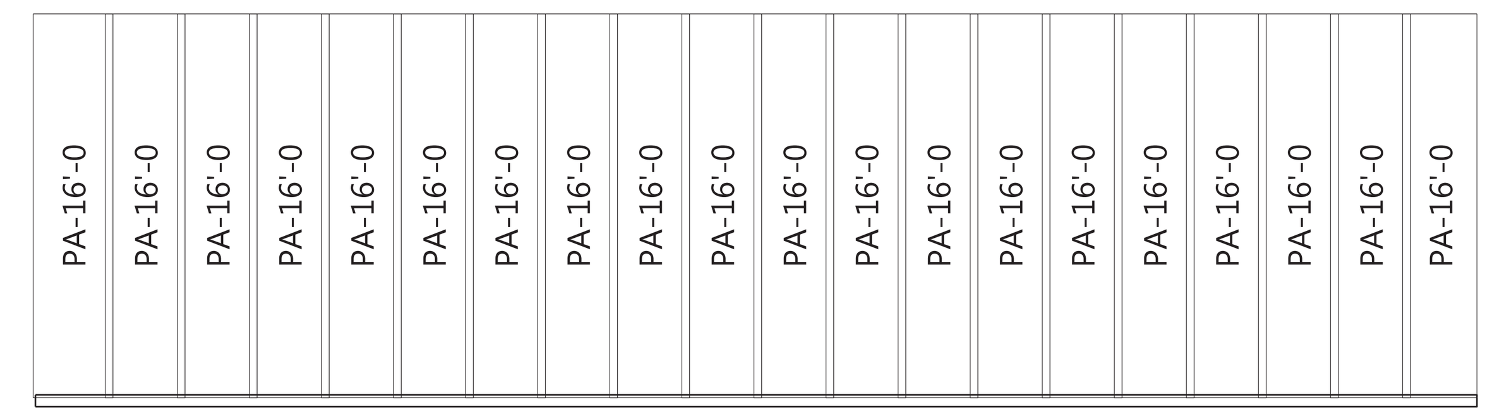
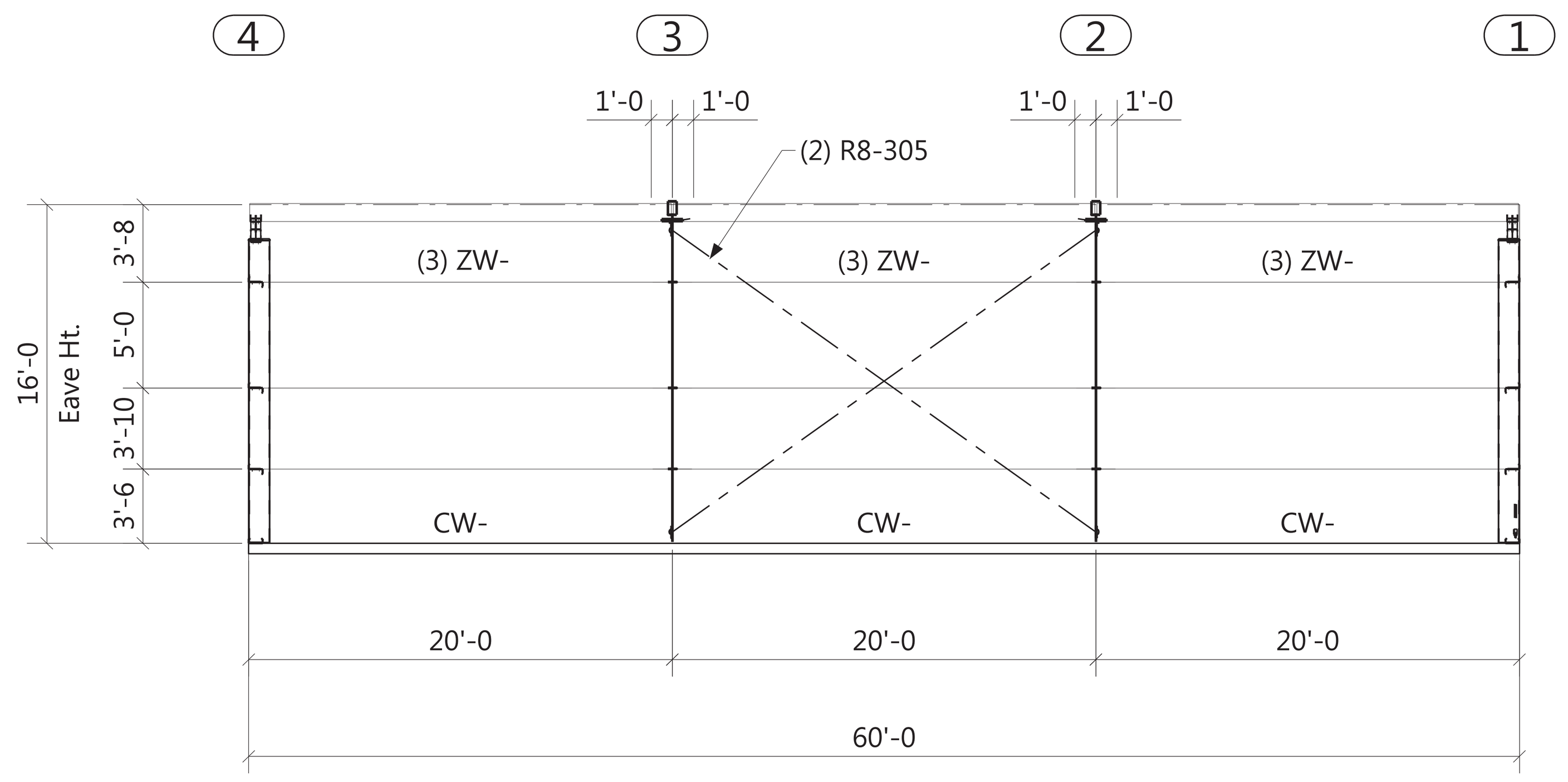


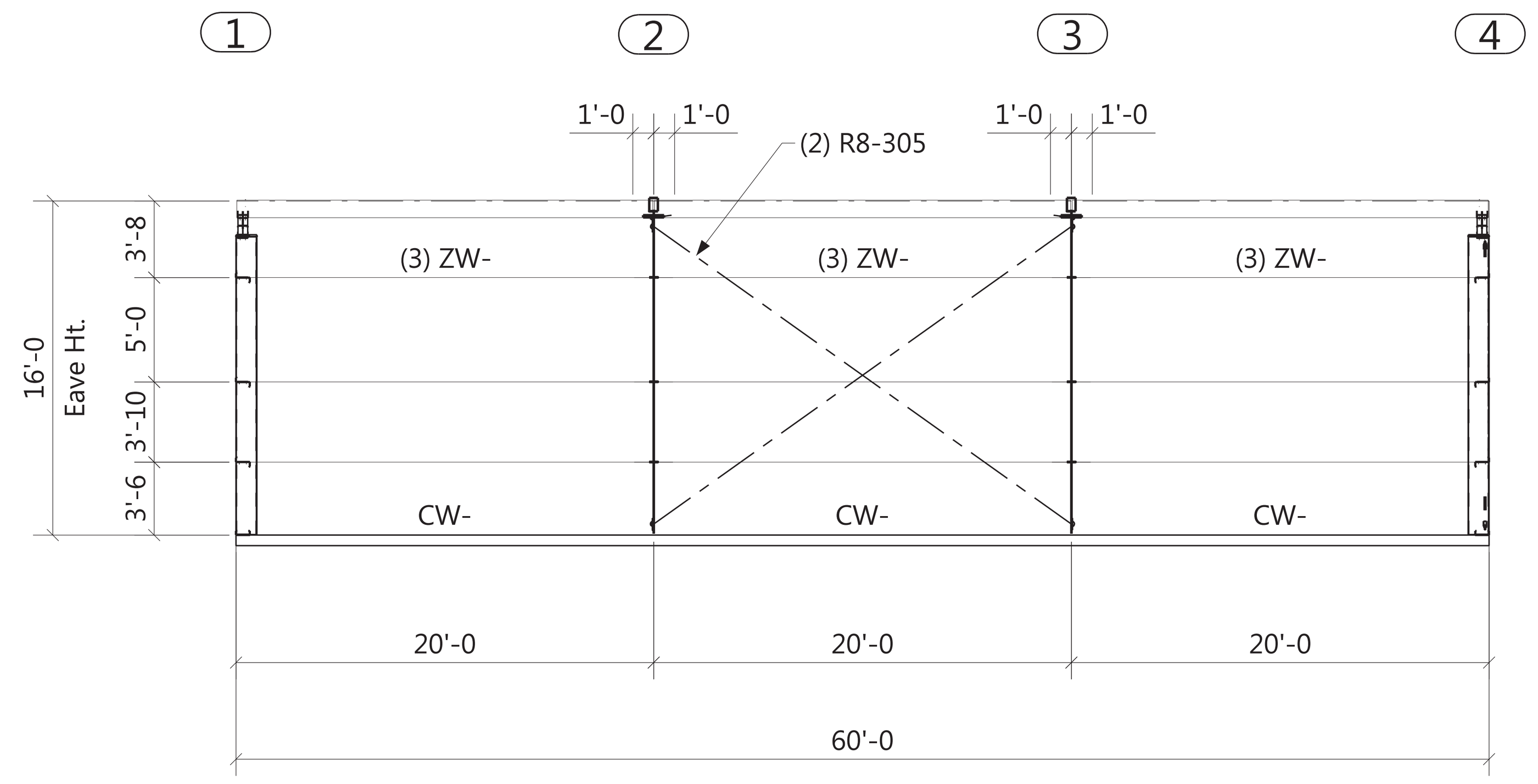
SIDEWALL SHEETING AT LINE A



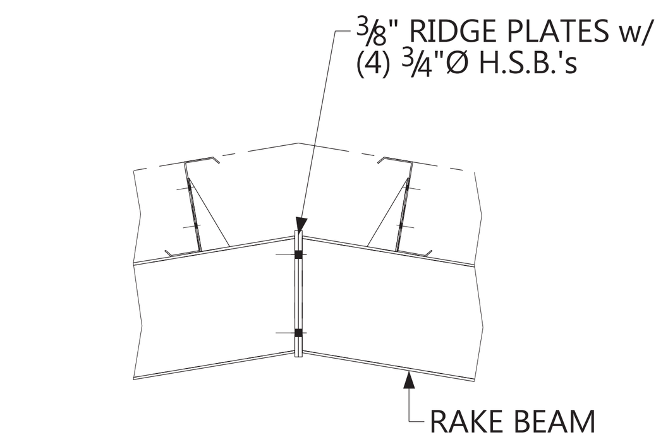
SIDEWALL SHEETING AT LINE E



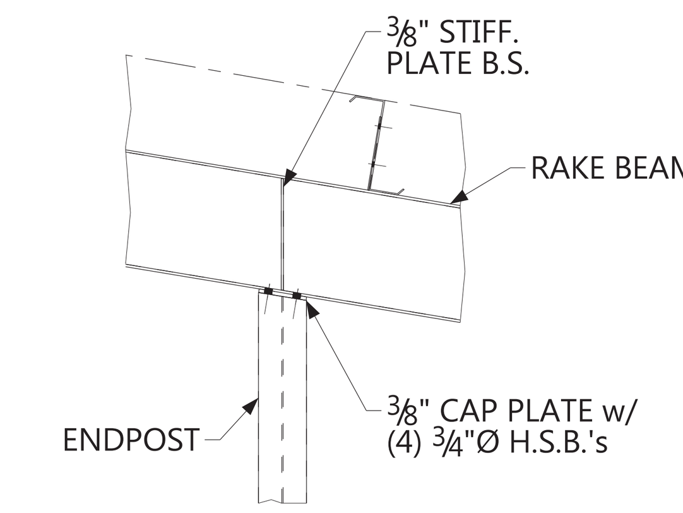
SIDEWALL ELEVATION AT LINE A



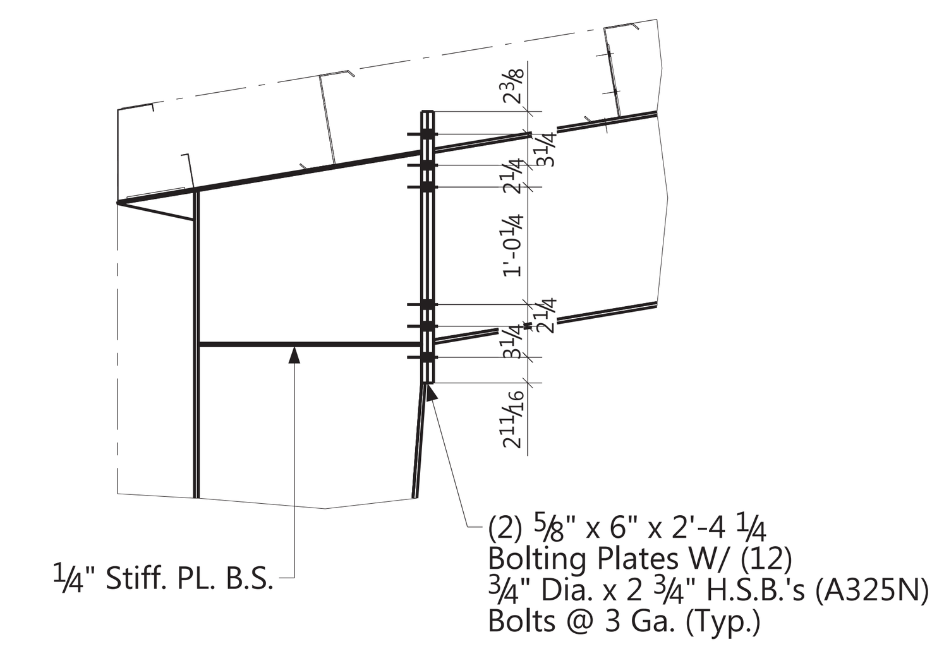
SIDEWALL ELEVATION AT LINE E



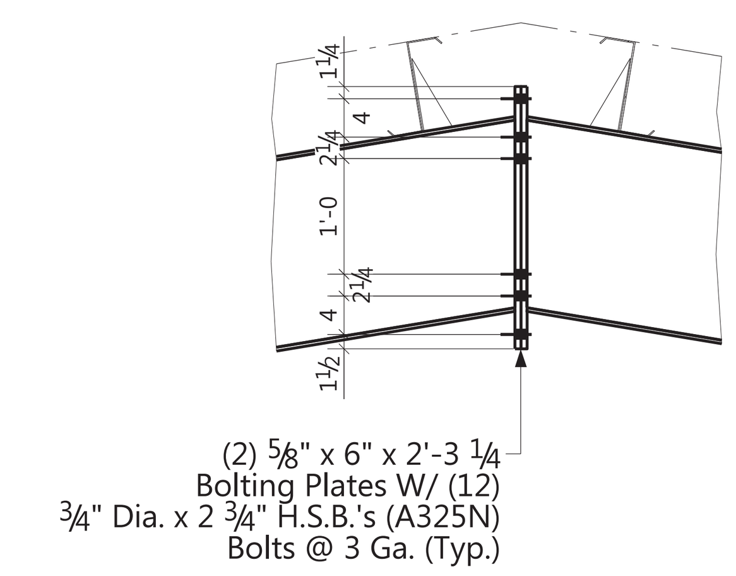
A/3 RAKE BEAM CONN. DET.



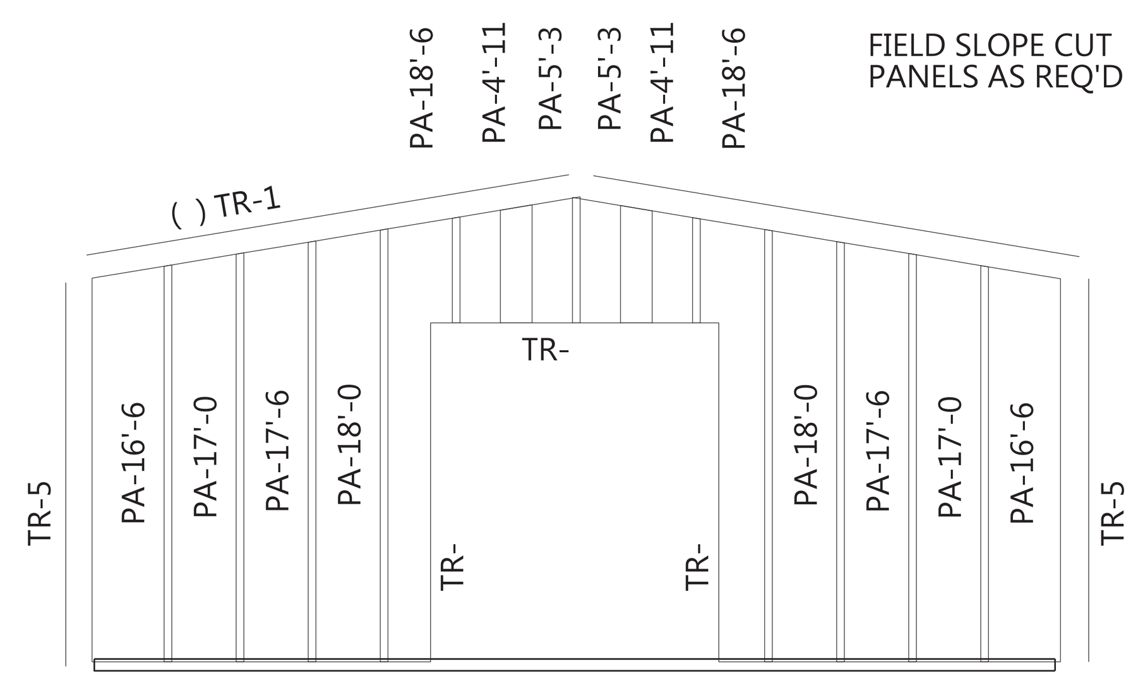
B/3 ENDPOST CONN. DET.



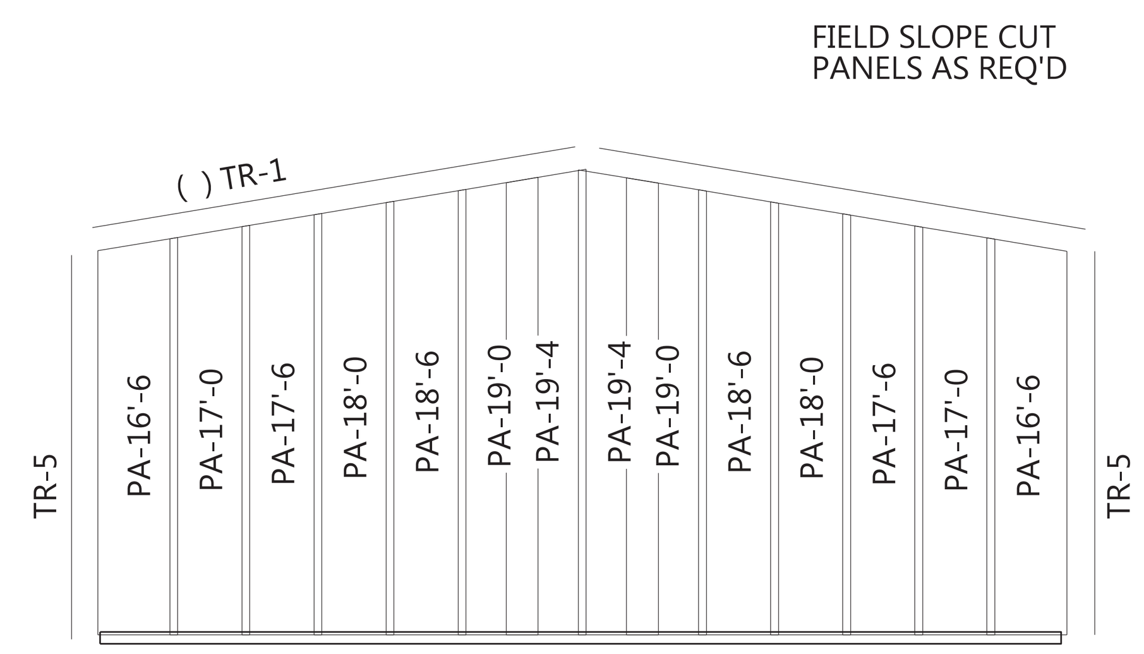
C/3 Connection Detail



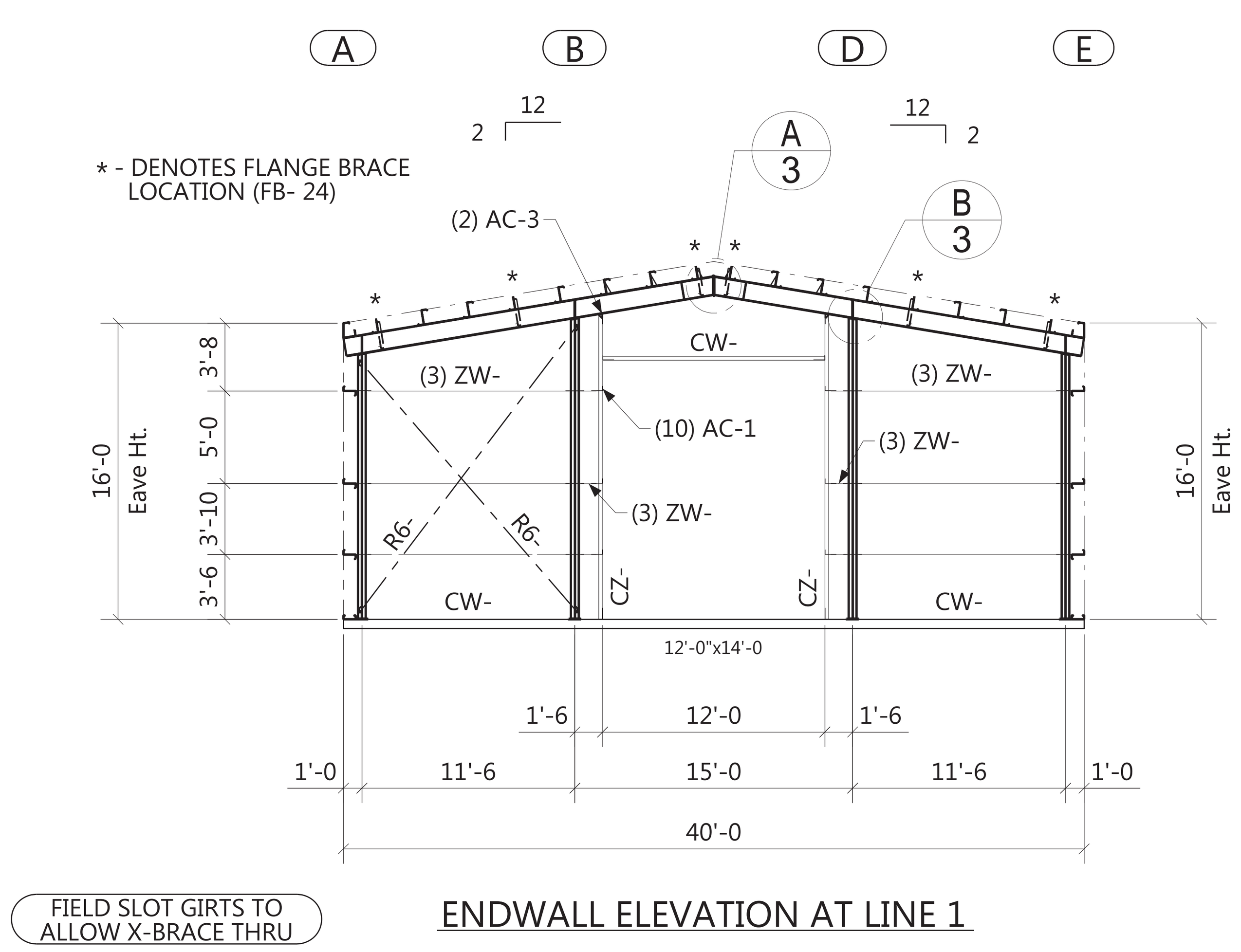
D/3 Connection Detail



ENDWALL SHEETING AT LINE 1

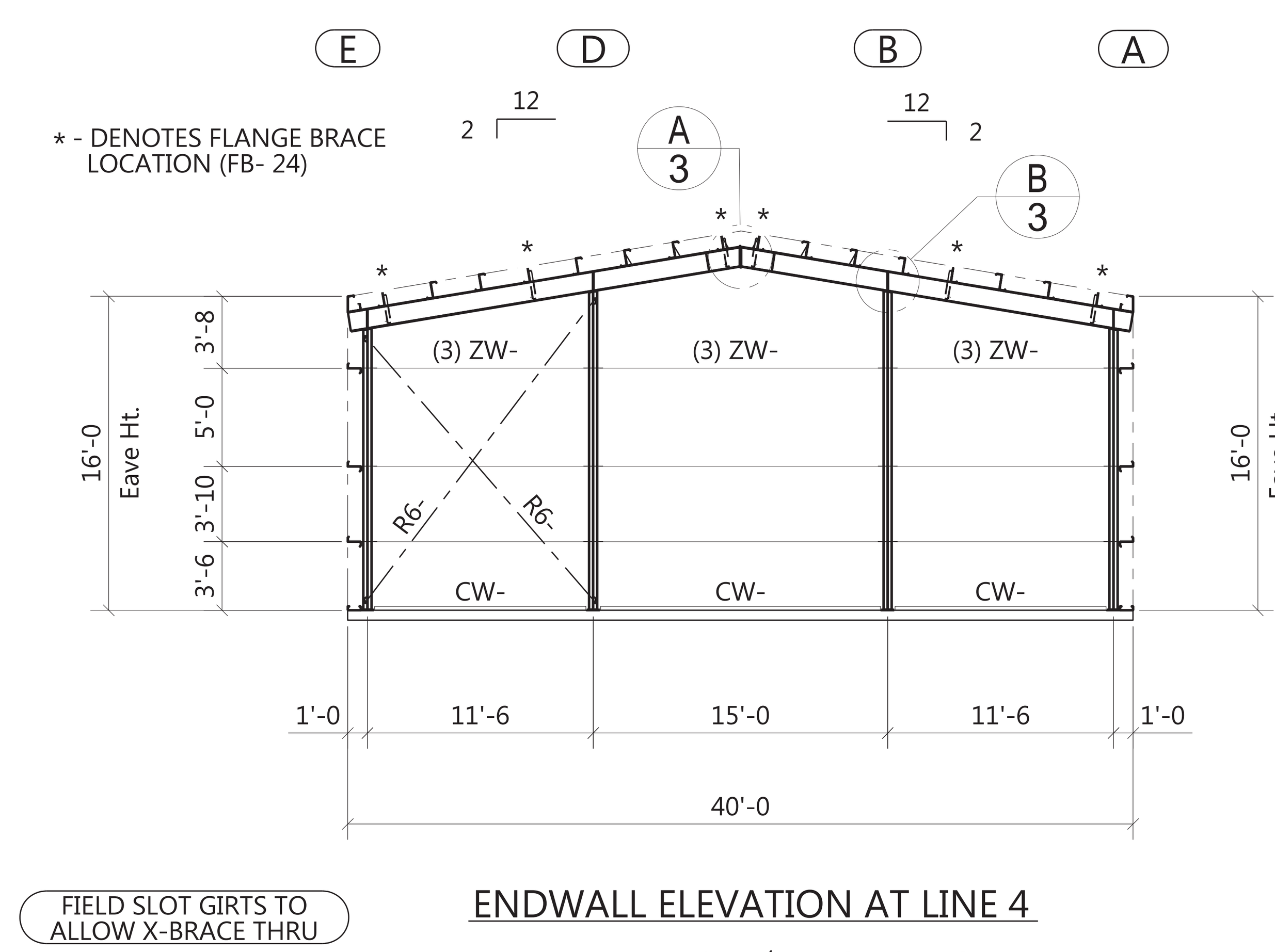


ENDWALL SHEETING AT LINE 4



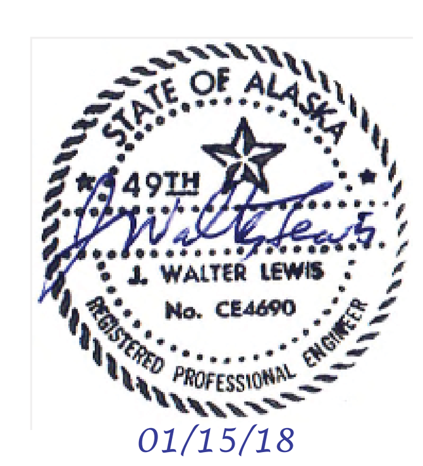
ENDWALL ELEVATION AT LINE 1

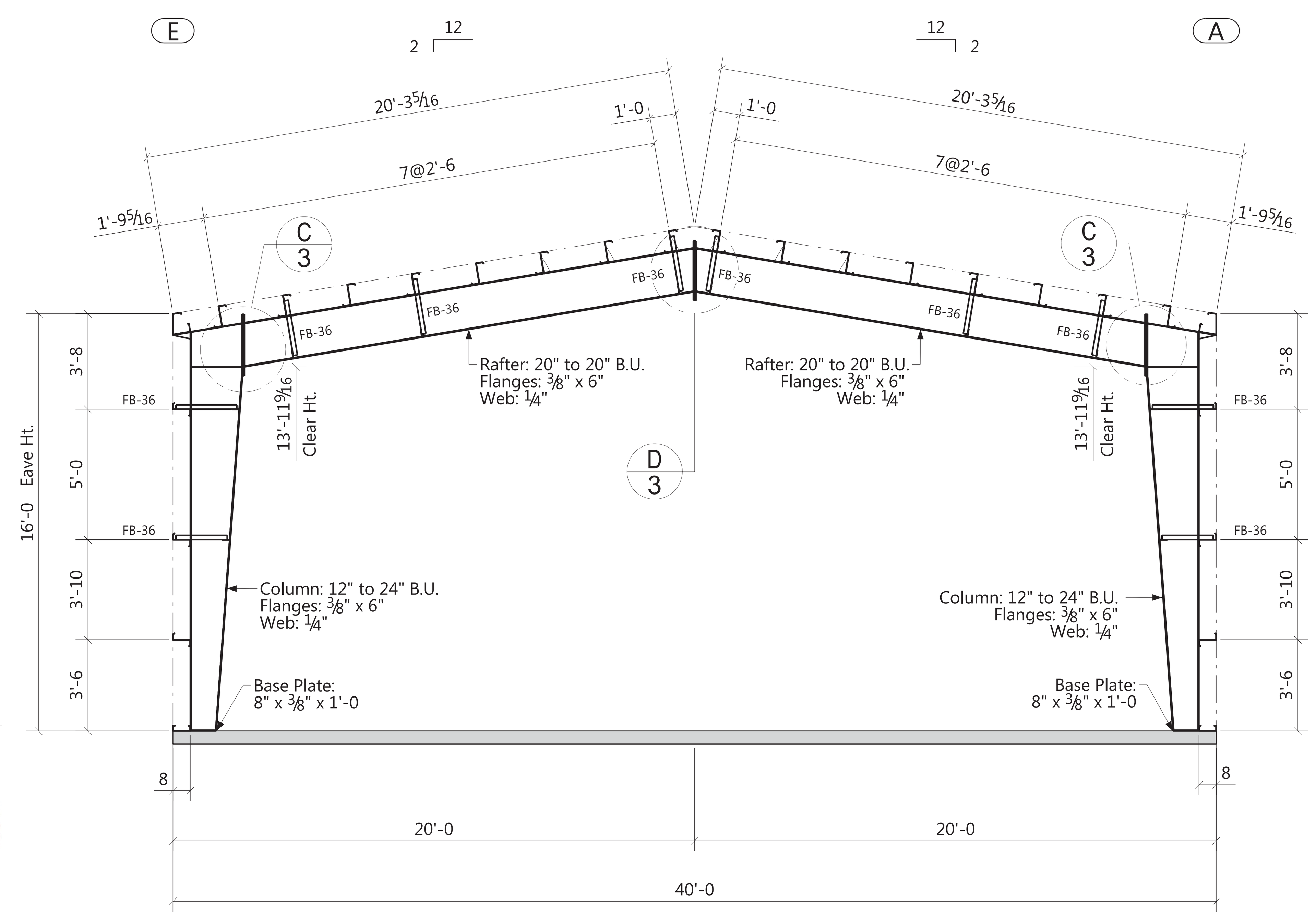
Rake Beam: 1'-0" B.U. W/ 6" x 1/4" FLG.'s & 10 Ga. WEB PL.
All End Posts: 1'-0" B.U. W/ 5" x 1/4" FLG.'s & 10 Ga. WEB PL.



ENDWALL ELEVATION AT LINE 4

Rake Beam: 1'-0" B.U. W/ 6" x 1/4" FLG.'s & 10 Ga. WEB PL.
All End Posts: 1'-0" B.U. W/ 5" x 1/4" FLG.'s & 10 Ga. WEB PL.





CROSS SECTION AT LINES 2 & 3

BUILDING PLANS

CUSTOMER: Icy Cape Sample Processing Bldg.

LOCATION: Yakutat, Ak.

CBC JOB No. C17C0461

DEALER: Arctic Fox

SHEET 3 OF 6

DATE 1/11/18 | DRAWN JA | ENGR. APPR. BC | SCALE

PLOT DATES: 1/11/18

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MBMA MEMBER
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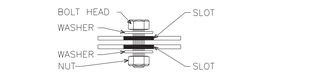
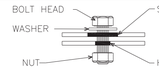
REV. | BY | DATE

1 TYPICAL WASHER REQUIREMENTS

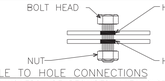
TYPICAL MACHINE BOLT WASHER REQUIREMENTS
(UNLESS NOTED OTHERWISE ON DRAWINGS)
WASHERS ARE NOT REQUIRED AT PURLIN-GIRT LAP BOLTS!



SLOT TO SLOT CONNECTIONS
WASHERS ARE REQUIRED ON BOTH SIDES OF MATERIAL IF SLOTS ARE USED ON BOTH SIDES.

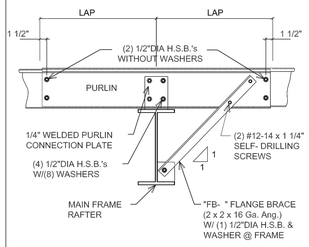


SLOT TO HOLE CONNECTIONS
ONE WASHER REQUIRED ON SLOTTED SIDE ONLY.



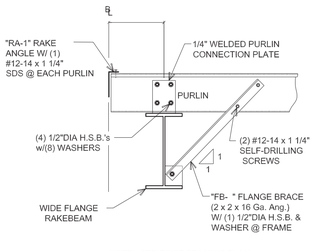
HOLE TO HOLE CONNECTIONS
NO WASHERS ARE REQUIRED WHEN SLOTS ARE NOT USED.

2 CONTINUOUS PURLINS



NOTE: SEE ROOF FRAMING PLAN OR CROSS SECTION FOR FLANGE BRACE LOCATIONS

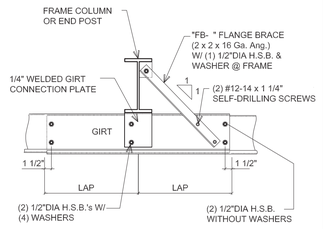
3 RAKEBEAM PURLINS



NOTE: SEE ROOF FRAMING PLAN OR CROSS SECTION FOR FLANGE BRACE LOCATIONS

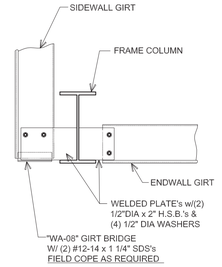
NOTE: BUILDINGS W/O WALL PANELS, RAKE ANGLE ATTACHES TO BOTTOM OF PURLINS W/ LONG LEG VERTICAL

4 CONTINUOUS GIRTS

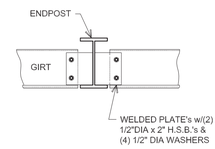


NOTE: SEE WALL FRAMING PLAN OR CROSS SECTION FOR FLANGE BRACE LOCATIONS

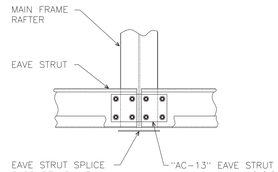
5 INSET GIRTS / CORNER



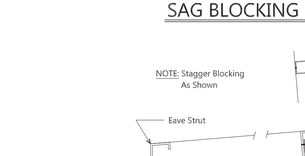
6 EW INSET GIRTS



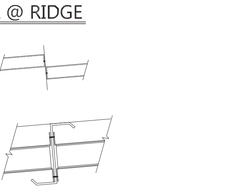
7 *EAVE STRUT SPLICE PL



8 DOOR JAMB / HEADER



9 DOOR JAMB / GIRT



10 END POST/RAKE BEAM

STANDARD

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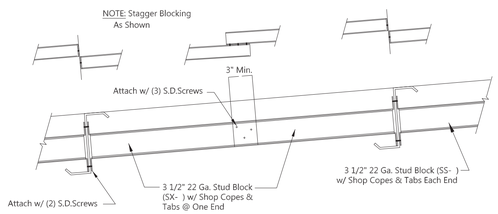
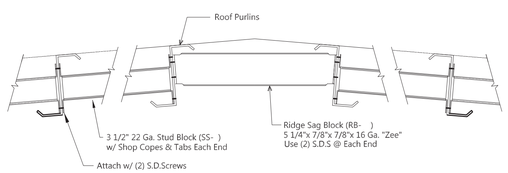
22 SAG BLOCKING DETAIL



SAG BLOCKING DETAILS



SAG BLOCKING DETAIL @ RIDGE

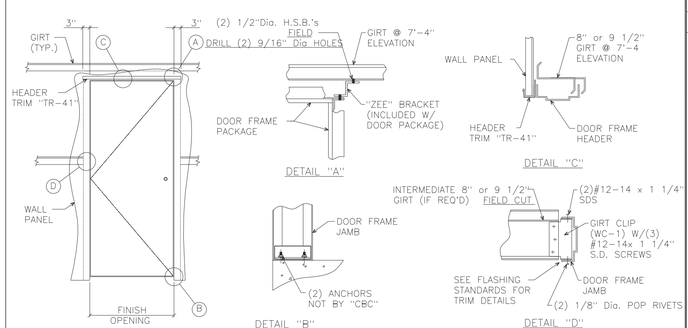
SAG BLOCKING DETAIL @ EAVE

24

25

26

27 REVERSIBLE WALKDOOR AND FRAME



STATE OF ALASKA
49TH
J. WALTER LEWIS
No. CE4690
REGISTERED PROFESSIONAL ENGINEER
01/15/18

CBC No. C17C0461
DEALER: Arctic Fox
SHEET 4 OF 6
DATE 1/11/18
DRAWN JA
ENGR-APR. BC
SCALE

GENERAL DETAILS

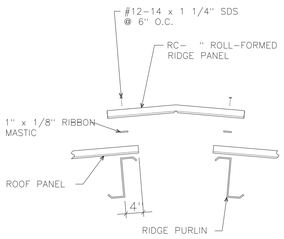
CUSTOMER: Icy Cape Sample Processing Bldg.
LOCATION: Yakutat, Ak.

PLOT DATES: 1/11/18

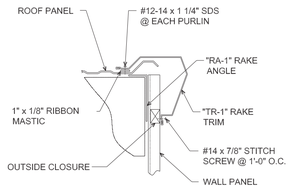
DATE
BY
REV

CBC STEEL BUILDINGS
A NUCOR Company
P.O. BOX 1009, LATHROP, CA 95330
CORPORATE PLANT 1700 E. CASE AVE
(209) 858-2909 FAX (209) 858-2244

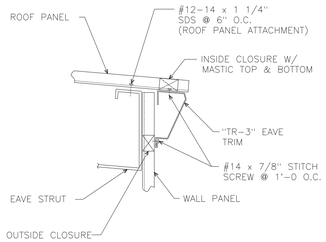
IAS ACCREDITED
MBMA MEMBER



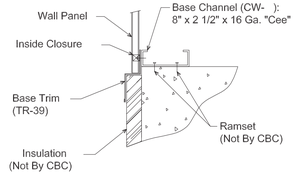
1 RIDGE CAP



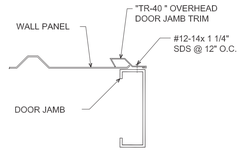
2 RAKE TRIM



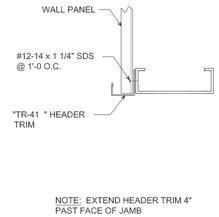
3 EAVE TRIM



4 BASE DETAIL

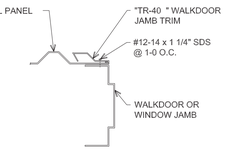


5 DOOR JAMB TRIM

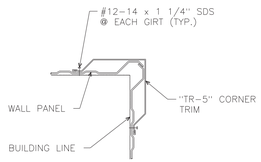


NOTE: EXTEND HEADER TRIM 4"
PAST FACE OF JAMB

6 DOOR HEADER TRIM



7 WALKDOOR JAMB TRIM



8 CORNER TRIM

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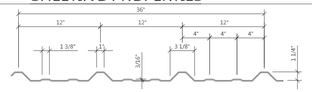
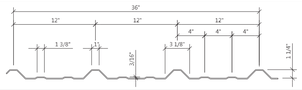
SHEETING PROPERTIES



R PANEL PROPERTIES							
GAGE	Fy	Design Thickness	Weight (P.S.F.)	TOP IN COMPRESSION		BOTTOM IN COMPRESSION	
				Ix	Sx	Ix	Sx
26	80 ksi	.0177	0.97	0.0393	0.0398	0.032	0.0463
24	50 ksi	.0225	1.18	0.0567	0.0589	0.044	0.060

ROOF PANELS



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GAGE	Fy	Design Thickness	Weight (P.S.F.)	TOP IN COMPRESSION		BOTTOM IN COMPRESSION	
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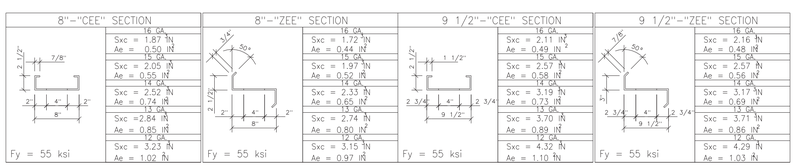
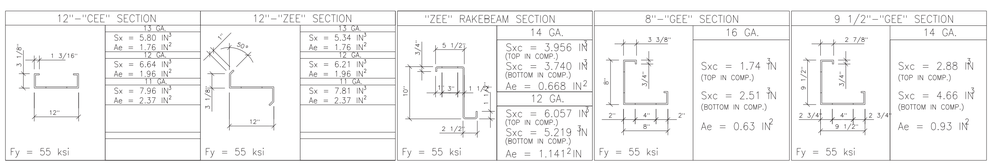
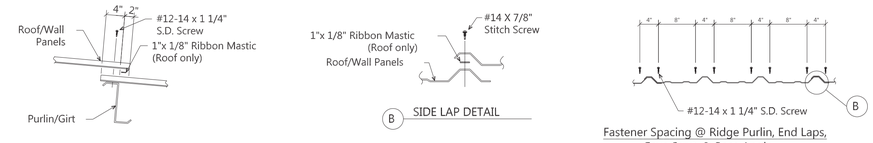
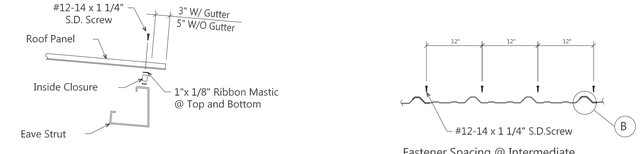
WALL PANELS

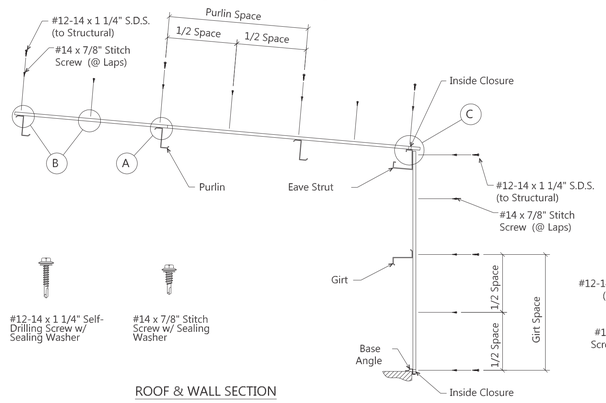
STRUCTURAL PROPERTIES

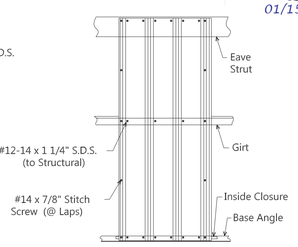












STATE OF ALASKA
#14917
J. WALTER LEWIS
No. CE4690
REGISTERED PROFESSIONAL ENGINEER
01/15/18

FASTENER PLACEMENT

26

22

CBC JOB No. C17C0461
DEALER: Arctic Fox
SHEET 5 OF 6
DATE 1/11/18
DRAWN JA
ENGR. APR. BC
SCALE

GENERAL DETAILS

CUSTOMER: Icy Cape Sample Processing Bldg.
LOCATION: Yakutat, Ak.

PLOT DATES: 1/11/18

CBC STEEL BUILDINGS
A NUCOR Company
P.O. BOX 1009, LATHROP, CA 95330
CORPORATE PLANT 1700 E. LOUISE AVE
(209) 858-2900 FAX (209) 858-2244

IAS ACCREDITED
MBMA MEMBER

DATE
BY
REVISED


HAUNCH DETAIL-RAFTER
HAUNCH DETAIL-COLUMN
A WELDING ENGINEERING STANDARDS
RIDGE DETAIL
SPLICE DETAIL-RAFTER
B WELDING ENGINEERING STANDARDS
FLANGE / WEB SPLICE DETAIL
& FLANGE TO WEB WELD DETAIL
C WELDING ENGINEERING STANDARDS
WEB STIFFENER PLATE
PARTIAL WEB STIFFENER
FLANGE BRACE CLIP
D WELDING ENGINEERING STANDARDS
PIPE COLUMN CAP DETAIL
PIPE COLUMN BASE DETAIL
E WELDING ENGINEERING STANDARDS
END POST CAP PLATE
FLUSH BUTT PLATE OR FLANGE PLATE
RIGID FRAME COLUMN
BASE DETAIL WITHOUT BRACING
F WELDING ENGINEERING STANDARDS
RIGID FRAME COLUMN
BASE DETAIL WITH BRACING
G WELDING ENGINEERING STANDARDS
UNDERHUNG CRANE BRACKET
CRANE BRACKET DETAIL
H WELDING ENGINEERING STANDARDS
CARRIER & UNIBEAM OUTSIDE BEND
HAMMER HEAD RAFTER INSIDE BEND
J WELDING ENGINEERING STANDARDS
DOUBLE SLOT
SINGLE SLOT
ROD SLOT BACK-UP PLATE DETAIL
K WELDING ENGINEERING STANDARDS
CANOPY / LEAN-TO BRACKET
L WELDING ENGINEERING STANDARDS
GIRT / PURLIN CLIP
M WELDING ENGINEERING STANDARDS
When holes are 13/16"Ø and larger in the flange or when holes are 13/16"Ø and larger in the web and within 12" of a flange
BACK-UP WELD AT FLANGE / WEB HOLES
N WELDING ENGINEERING STANDARDS
Weld must be flush with line tangent to the rod surface & perpendicular to plate
E (Effective weld size) = 5/16" (S)
ROD PAD CONNECTION
P WELDING ENGINEERING STANDARDS
CUT IN PLATE DETAIL
Q WELDING ENGINEERING STANDARDS
SECTION A-A
END POST DETAIL
R WELDING ENGINEERING STANDARDS
ENDPOST / SOLDIER / LEAN-TO
COLUMN BASE DETAIL
S WELDING ENGINEERING STANDARDS
9/16"Ø Hole min.

SHOP NOTE:
1. All structural parts to have at least two holes, 9/16" dia. minimum, located 3" in from the reference flange, within 1'-0" from each end of the piece. General tolerance on the location can be ; 2" from the reference flange. The location from the top or bottom of the part must be 3" or more from the inside of the plate, as shown above, to avoid stress fractures.

2. If a part already has brace rod slot or other hole located within the tolerance area, a drain hole does not need to be added.

3. A sidewall column is shown, rafter is similar.

T WELDING ENGINEERING STANDARDS

STATE OF ALASKA
49TH
J. WALTER LEWIS
No. CE4690
PROFESSIONAL ENGINEER
01/15/18

CBC JOB No. C17C0461
DEALER: ARctic Fox
SHEET 6 OF 6
DATE 1/11/18
DRAWN JA
ENGR. APR. BC
SCALE

GENERAL DETAILS

CUSTOMER: Icy Cape Sample Processing Bldg.
LOCATION: Yakutat, Ak.

PLOT DATES: 1/11/18

CBC STEEL BUILDINGS
A NUCOR Company
P.O. BOX 1009, LATHROP, CA 95330
OFFICES/PLANT: 1700 E. LOUISE AVE
(209) 983-0910 FAX: (209) 858-2354
IAS ACCREDITED
MBMA MEMBER

REV.	BY	DATE

CBC STEEL BUILDINGS
A NUCOR Company

P.O. BOX 1009, LATHROP, CA 95330
OFFICE/PLANT: 1700 E. LOUISE AVE.
PH: (209) 983-0910, FAX: (209) 858-2354

Date: 1/9/2018

Letter Of Certification

Time: 10:55:46 AM

CBC Job No.: C17C0461A
Builder: Arctic Fox
Customer: Icy Cape Sample Processing Building
751 Reeve Circle
Location: Yukatat, Ak
Wasilla, Ak 99654
Building Size: *Width:* 40' *Length:* 60' *Eave Ht.:* 16'
Roof Pitch: 2/12 **Bay Spacing:** (3) @ 20'

This is to certify that metal building components furnished by CBC Steel Buildings, an IAS-MB certified manufacturer, has been designed in our Lathrop office and for fabrication in our Lathrop, California plant. The members are designed to comply with the following loads specified in the order documents:

The Fabrication of the Steel Building is performed under the quality assurance procedures maintained by "CBC" as a part of its approved fabricator status with IAS, AC-472, MB-152.

Design Loads:		**IBC-2012 Section 1605.3.1 Basic Load Combinations:**
Building Dead Load:	5 psf	D + C
Collateral Load:	5 psf	D + C + (Lr or S)
Live Load:	20 psf	0.6D + W
Live Load Reduction Allowed:	No	D + W
Roof Snow Load / Imp. Factor / Ce.:	105 psf / 1 / 1 (SL)	D + C + 0.7E
Wind Speed & Exp./ Imp. Factor / Kzt:	150 mph C / 1 / 1.0 (WL)	D + C + 0.75(W + (Lr or S))
Wind Enclosure:	Enclosed	D + C + 0.75(0.7E + (Lr or S))
Seismic Design Category / Imp. Factor / Soil / S1 /Ss:	E / 1 / D / 80.8 / 171.8	0.6(D + C) + 0.7E
Other Loads:		

Note: Accessories (doors, windows, etc.) by others must be designed as "components and cladding" in accordance to specific wind provisions of the referenced Building Code.

Please note that unless otherwise specified on your Purchase Order, CBC Steel Buildings Serviceability Standards will be used for design and fabrication of your order.

These design loads and combinations are applied in accordance with The International Building Code, 2012 Edition, (IBC-2012). The design is in general accordance with the AISC 360-10, AISC 341-10, and AISI S100-2012 specifications.

This certification is limited to the structural design of the framing and covering parts manufactured by CBC Steel Buildings and as specified in the contract. Accessory items such as doors, windows, louvers, translucent panels, and ventilators are not included. Also excluded are other parts of the project not provided by CBC Steel Buildings such as foundations, masonry walls, mechanical equipment and the erection and inspection of the building. The building shall be erected on a properly designed foundation in accordance with The CBC Steel Buildings Erection Manual and CBC's drawings for the referenced job.

Note: The undersigned is not the Engineer of Record for the entire project.

Sincerely,

JWL/

J. Walter Lewis, P.E.

STATE OF ALASKA
49TH
J. WALTER LEWIS
No. [illegible]
REGISTERED PROFESSIONAL ENGINEER

CBC STEEL BUILDINGS
A NUCOR Company

1700 E. Louise Avenue, Lathrop, Ca. 95330
Tel: (209) 983-0910 • Fax: (209) 858-2354

DESIGN PARAMETERS

Job No. : C17C0461 Sheet : A - 1
Customer : Icy Cape Sample Processing Bldg.
Designed by : BC
Checked by : MW
Date : 9-Jan-2018 Revision : 00

STRUCTURE DESCRIPTION

Frame Type	:	Clear Span
Building Width	:	40.00 ft.
Building Length	:	60.00 ft.
Eave Height	:	16.00 ft.
Max. Tributary Spac.	:	20.00 ft.
Roof Slope	:	2 in. / ft.

BASIC LOADS

Building Code : IBC 2012 Risk Category : II
Roof Live Load : 20 psf Tributary Reduction (Y/N) : n
Frame Live Load : 20 psf

Wind Load
- Speed, V_{ult} : 150 mph (3-sec gust) Enclosure Condition : Enclosed
- Exposure : C

Seismic Load
- Design Category : E Ss : 171.80% S1 : 80.80%
- Importance : 1.00 R_{trans}: 3.50 / Ω_o : 3.00
- Site Class : D R_{long}: 3.25 / Ω_o : 2.00

Snow Load
- Roof Snow : 105 psf Ce : 1.0 Ct : 1.0
- Ground Snow : 150 psf
- Importance : 1.00

Collateral Load : 5.0 psf

Dead Load : 5.0 psf (Total)
- Frame Wt: 2.0 psf
- Purlins: 1.5 psf
- Panels: 1.0 psf
- Misc.: 0.5 psf

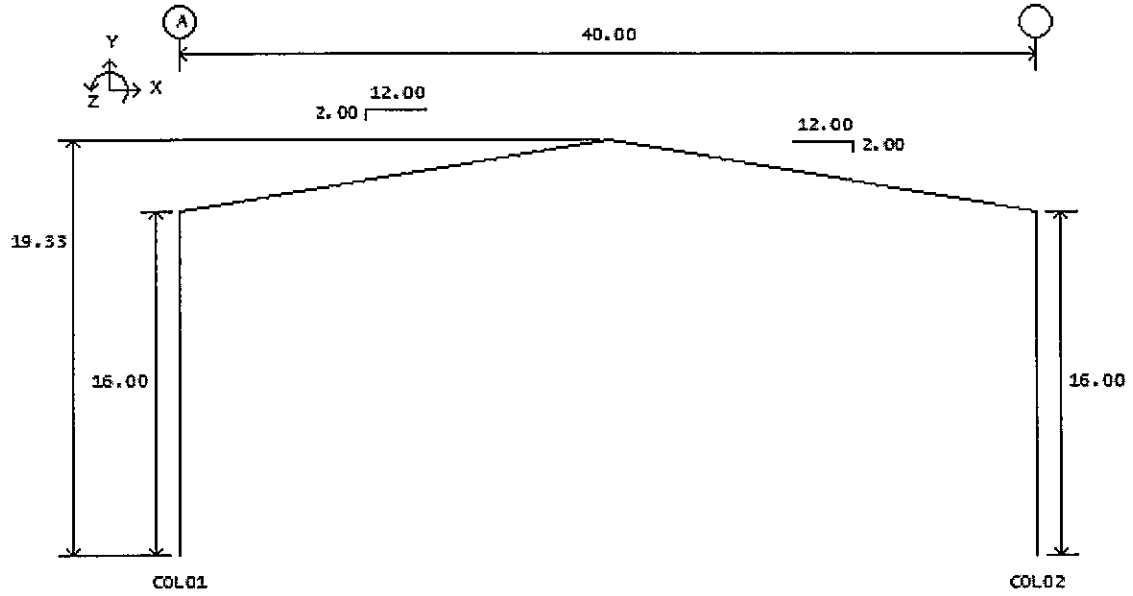
NOTES

REVISIONS

*** This structure is designed in compliance with CBC Steel Buildings specifications and standards utilizing the pertinent provisions and recommendations of the American Institute of Steel Construction (AISC), International Conference of Building Officials (ICBO), American Iron and Steel Institute (AISI), the Metal Building Manufacturer's Association (MBMA) and their publications. ***

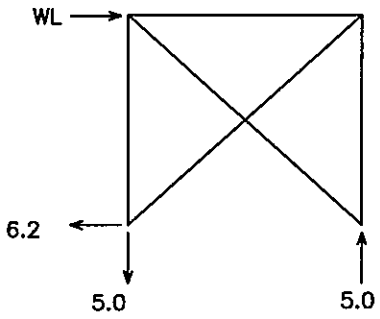
NUCOR BUILDINGS GROUP Job #: 12/1/17 Page: ____
Frame : Frame @ Line(s) 2,3 ' Frame Nam By: Date: 01-09-18
Job Name: Icy Cape Sample Processing Building File: F01-800825

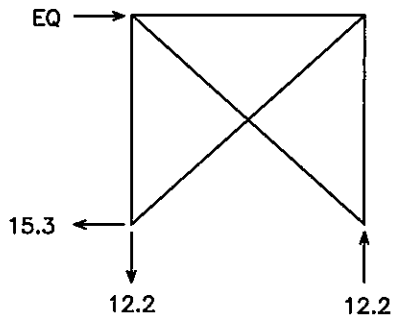
*** DESIGN SUMMARY - FRAME REACTIONS BY LOAD CASE ***



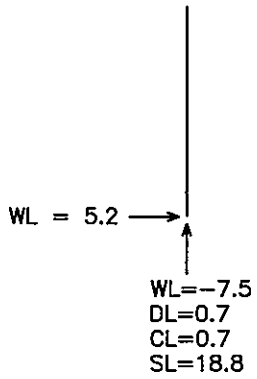
Member	X (kips)	Y (kips)	Z (kip-ft)
LOAD CASE 1 - DEAD			
COL01	1	3	0
COL02	-1	3	0
LOAD CASE 2 - COLLATERAL			
COL01	1	3	0
COL02	-1	3	0
LOAD CASE 3 - ROOF LIVE			
COL01	3	8	0
COL02	-3	8	0
LOAD CASE 4 - SNOW			
COL01	13	40	0
COL02	-13	40	0
LOAD CASE 5 - USER OVERRIDE SNOW			
COL01	14	42	0
COL02	-14	43	0
LOAD CASE 6 - WIND CASE 1 TO RIGHT			
COL01	-8	-10	0
COL02	-1	-4	0
LOAD CASE 7 - WIND CASE 1 TO LEFT			
COL01	1	-4	0
COL02	8	-10	0
LOAD CASE 8 - WIND CASE 2 TO RIGHT			
COL01	-8	-16	0
COL02	-1	-10	0
LOAD CASE 9 - WIND CASE 2 TO LEFT			
COL01	1	-10	0
COL02	8	-16	0
LOAD CASE 10 - LONG. WIND 1 TO BACK			
COL01	-1	-7	0
COL02	1	-5	0
LOAD CASE 11 - LONG. WIND 1 TO FRONT			
COL01	-1	-5	0
COL02	1	-7	0
LOAD CASE 12 - LONG. WIND 2 TO BACK			
COL01	-1	-14	0
COL02	2	-11	0
LOAD CASE 13 - LONG. WIND 2 TO FRONT			
COL01	-2	-11	0
COL02	1	-14	0
LOAD CASE 14 - SEISMIC TO RIGHT			
COL01	-4	-3	0
COL02	-4	3	0
LOAD CASE 15 - SEISMIC TO LEFT			
COL01	4	3	0
COL02	4	-3	0
LOAD CASE 16 - ALTERNATE SNOW 1			
COL01	11	41	0
COL02	-11	22	0
LOAD CASE 17 - ALTERNATE SNOW 2			
COL01	11	22	0
COL02	-11	41	0

NOTE: ALL SEISMIC LOAD REACTIONS ARE SHOWING WITH BASE SHEAR VALUES

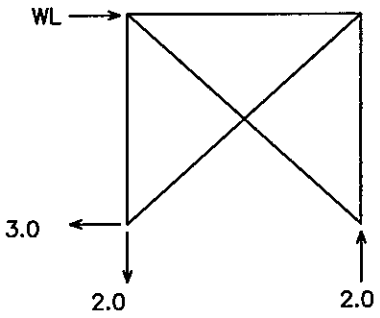


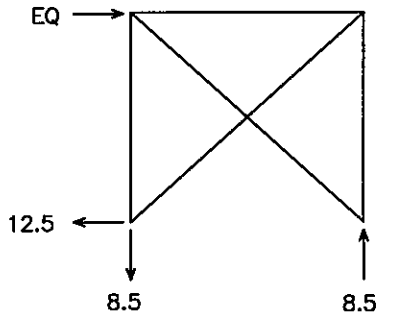


BRACING REACTION SIDEWALL @ BAY 2

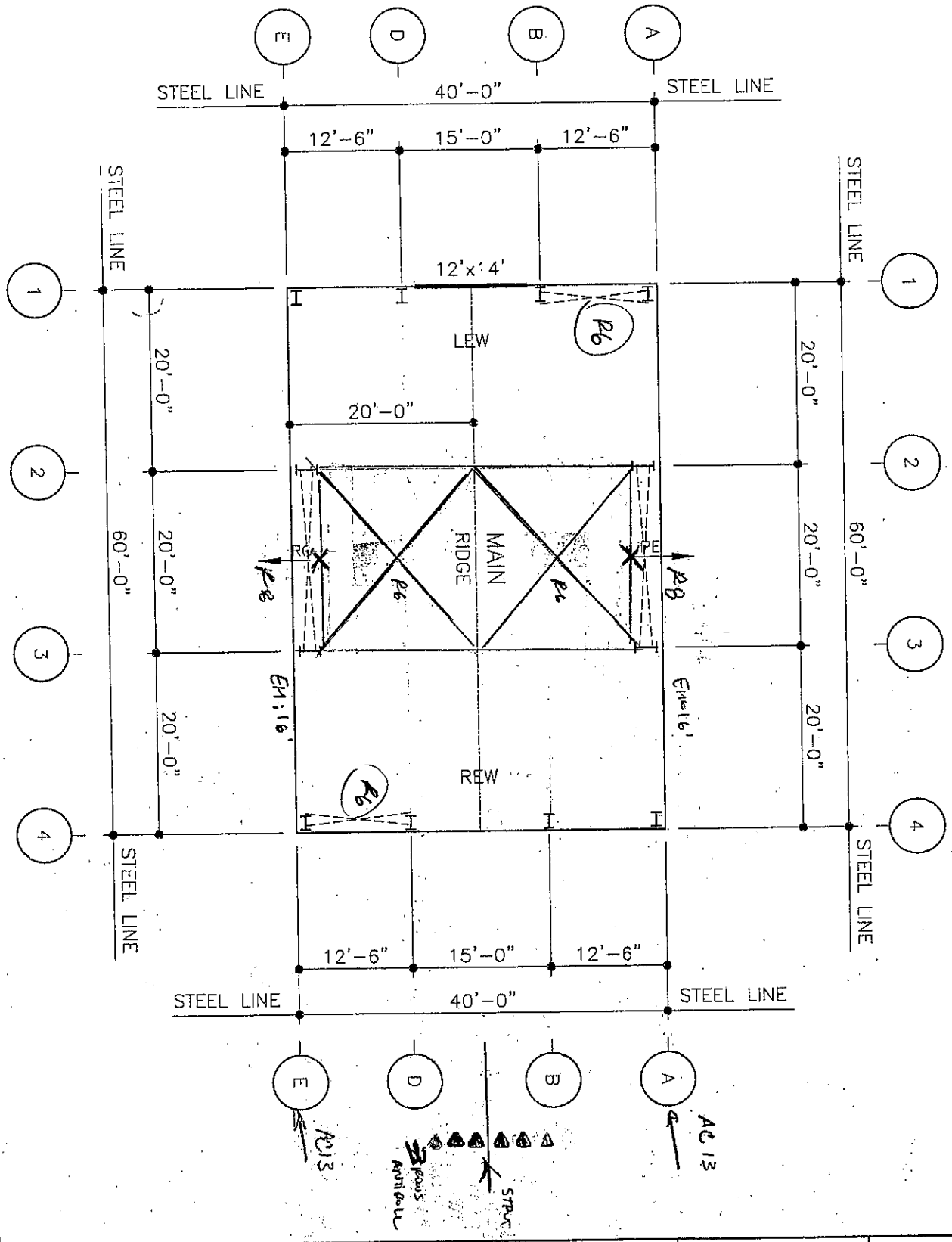


END POST REACTIONS LINE 1/4





BRACING REACTION ENDWALL 1/4



12/27/2017 1:08 PM	PROJECT NAME: ICY CAPE SAMPLE PROCESSING BUILDING YAKUTAT, AK	CBC STEEL BUILDINGS A PACKAGING COMPANY
SHEET NUMBER: QUOTE NUMBER:	CUSTOMER NAME: ARCTIC FOX STEEL BUILDINGS WASILLA, AK	eQuote

nd