



**STATE OF ALASKA**

**DEPARTMENT OF NATURAL RESOURCES**

**INVITATION TO BID (ITB)  
ITB No. 10-022-21**

**DATE OF ISSUE: January 27, 2021**

**TITLE:  
Icy Cape Trail, Concrete Pads, and Metal Structure Construction**

Important Notice: If you receive this solicitation from the State's Online Public Notice website you must register with the DNR Procurement Officer to receive subsequent amendments. Registration must be in writing and may be made via email to [christopher.brooks@alaska.gov](mailto:christopher.brooks@alaska.gov). Failure to register with the DNR Procurement Section may result in rejection of your offer.

ADA: The State of Alaska complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications to submit a bid should contact the DNR Procurement Officer via email to [christopher.brooks@alaska.gov](mailto:christopher.brooks@alaska.gov) or telephone at 907-269-8666 not later than 10 calendar days prior to the bid closing date to make necessary arrangements.

Procurement Officer: Chris Brooks  
Phone Number: 907-269-8666  
Email: [christopher.brooks@alaska.gov](mailto:christopher.brooks@alaska.gov)

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State wage rates can be obtained at <http://www.labor.state.ak.us/lss/pamp600.htm>. Use the State wage rates that are in effect 10 days before Bid Opening.

STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES



**INVITATION FOR BIDS**  
for Construction Contract

Date January 27, 2021

**Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21**

**Project Name and Number**

Location of Project: Icy Cape, Alaska

Contracting Officer: Chris Brooks, Procurement Officer

Issuing Office: Procurement Section

State Funded ☒

Federal Aid ☐

**Description of Work:**

Icy Cape trail, concrete pads, and metal structure construction. See Scope of Work for detailed description of services and project schedule.

The Engineer's Estimate is: ☐ Less than \$100,000 ☐ Between \$1,000,000 and \$2,500,000  
☐ Between \$100,000 and \$250,000 ☐ Between \$2,500,000 and \$5,000,000  
☒ Between \$250,000 and \$500,000 ☐ Greater than \$5,000,000  
☐ Between \$500,000 and \$1,000,000

All work shall be completed by **August 31, 2021.**

Interim Completion dates, if applicable, will be shown in the Special Provisions.

**Bidders are invited to submit sealed bids, in single copy, for furnishing all labor, equipment, and materials and for performing all work for the project described above. Bids will be opened publicly at 2:00 PM local time, at 550 W. 7<sup>th</sup> Ave., Suite 1330; Anchorage, AK 99501 on the 5<sup>th</sup> of February 2021.**

**SUBMISSION OF BIDS**

ALL BIDS INCLUDING ANY AMENDMENTS OR WITHDRAWALS MUST BE RECEIVED PRIOR TO BID OPENING. BIDS SHALL BE SUBMITTED ON THE FORMS FURNISHED AND MUST BE MARKED AS FOLLOWS:

**Bid for Project:**  
**Icy Cape Trail, Concrete Pads, and Metal**  
**Structure Construction**  
**ITB No. 10-022-21**

**ATTN:**  
**Chris Brooks, Procurement Officer**  
**Dept. Natural Resources**  
**550 W. 7<sup>th</sup> Ave., Suite 1330**  
**Anchorage AK 99501-3564**  
**Phone: (907) 269-8666 / Email: christopher.brooks@alaska.gov**

Bids, amendments or withdrawals transmitted by mail must be received at the above specified address no later than 30 minutes prior to the scheduled time of bid opening. Hand-delivered bids, amendments or withdrawals must be received at the above specified address prior to the scheduled time of bid opening. Faxed bid amendments must be addressed to the above specific address. Fax number: (907) 269-8909.

*A bid guaranty is required with each bid in the amount of 5% of the amount bid. (Alternate bid items as well as supplemental bid items appearing on the bid schedule shall be included as part of the total amount bid when determining the amount of bid guaranty required for the project.)*

The Department hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this Invitation, Disadvantaged Business Enterprises (DBEs) will be afforded full opportunity to submit bids and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

## NOTICE TO BIDDERS

Any questions about bidding procedures, site conditions, or contract requirements must be submitted in writing to the Procurement Officer designated on the Invitation to Bid. Questions must be submitted in sufficient time to get a reply before submitting a bid. No oral responses or other oral statements are binding on the department. Any response to a material question shall be issued by addendum sent to all bidders. Questions submitted within two business days of bid opening may or may not be considered at the department's discretion. If a significant question is asked just prior to bid opening, the department will determine whether the issue raised is significant enough to delay the bid opening and issue an addendum or to proceed with the scheduled bid opening. At increments of time determined by the department, all questions and answers on the project received will be published on the On-line Public Notice Site.

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For additional information or questions concerning bidding procedures contact:

Chris Brooks, Procurement Officer  
Dept. of Natural Resources  
550 W. 7th Avenue, Suite 1330  
Anchorage, AK 99501-3564  
Email: [christopher.brooks@alaska.gov](mailto:christopher.brooks@alaska.gov)  
Phone: (907) 269-8666

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STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

## REQUIRED DOCUMENTS

**REQUIRED FOR BID.** Bids will not be considered if the following documents are not completely filled out and submitted at the time of bidding:

1. **Bid Form (Form 25D-9DNR)**
  2. **Bid Schedule**
  3. **Bid Bond (Form 25D-14DNR)**
  4. Any bid revisions must be submitted by the bidder prior to bid opening on the following form:  
**Bid Modification (Form 25D-16DNR)**
- 

**REQUIRED AFTER NOTICE OF APPARENT LOW BIDDER.** The apparent low bidder is required to complete and submit the following document within 5 working days after receipt of written notification:

1. **Subcontractor List (Form 25D-5DNR)**
- 

**REQUIRED FOR AWARD.** In order to be awarded the contract, the successful bidder must completely fill out and submit the following documents within the time specified in the intent to award letter:

1. **Construction Contract (Form 25D-10ADNR)**
2. **Payment Bond (Form 25D-12DNR)**
3. **Performance Bond (Form 25D-13DNR)**
4. **Contractor's Questionnaire (25D-8DNR)**
5. **Certificate of Insurance**



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

## SUBCONTRACTOR LIST

### Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21

#### Project Name and Number

The apparent low bidder shall complete this form and submit it so as to be received by the Contracting Officer prior to the close of business day on the fifth working day after receipt of written or verbal notice from the Department.

Failure to submit this form with all required information by the due date will result in the bidder being declared nonresponsive and may result in the forfeiture of the Bid Security.

Scope of work must be clearly defined. If an item of work is to be performed by more than one firm, indicate the portion or percent of work to be done by each.

**Check as applicable:** ☐ All Work on the above-referenced project will be accomplished without subcontracts greater than ½ of 1% of the contract amount.

OR

☐ Subcontractor List is as follows:

#### LIST FIRST TIER SUBCONTRACTORS ONLY

FIRM NAME, ADDRESS, PHONE NUMBER	AK BUSINESS LICENSE NO., CONTRACTOR'S REGISTRATION NO.	SCOPE OF WORK TO BE PERFORMED

CONTINUE SUBCONTRACTOR INFORMATION ON REVERSE SIDE

I hereby certify that the listed licenses and registrations were valid at the time bids were received for this project. For contracts involving Federal-aid funding, Alaska Business License and Contractor Registration will be required prior to award of subcontract.

Signature of Authorized Company Representative

Title

Company Name

Company Address (Street or PO Box, City, State, Zip)

Date

( )

Phone Number





STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

## CONTRACTOR'S QUESTIONNAIRE

**Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21**

**Project Name and Number**

### A. FINANCIAL

1. Have you ever failed to complete a contract due to insufficient resources?

☐ NO

☐ YES

If YES, explain:

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2. Describe any arrangements you have made to finance this work: \_\_\_\_\_

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### B. EQUIPMENT

1. Describe below the equipment you have available and intend to use for this project:

ITEM	QUAN.	MAKE	MODEL	SIZE / CAPACITY	PRESENT MARKET VALUE

2. What percent of the total value of this contract do you intend to subcontract? \_\_\_\_\_%

3. Do you propose to purchase any equipment for use on this project?

☐ NO      ☐ YES      If YES, describe type, quantity, and approximate cost:

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4. Do you propose to rent any equipment for this work?

☐ NO      ☐ YES      If YES, describe type and quantity:

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5. Is your bid based on firm offers for all material necessary for this project?

☐ NO      ☐ YES      If NO, explain:

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### C. EXPERIENCE

1. Have you had previous construction contracts or subcontracts with the State of Alaska?

☐ NO      ☐ YES      If YES, explain:

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2. List, as an attachment to this questionnaire, other construction projects you have completed, the dates of completion, scope of work, and total contract amount for each project completed in the past 12 months.

**I hereby certify that the above statements are true and complete.**

\_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Name & Title of Person Signing

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**BID FORM**

for

**Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21**

Project Name and Number

by

Company Name

Company Address (Street or PO Box, City, State, Zip)

**TO THE CONTRACTING OFFICER,  
DEPARTMENT OF NATURAL RESOURCES:**

In compliance with your Invitation for Bids dated **January 27, 2021**, the Undersigned proposes to furnish and deliver all the materials and do all the work and labor required in the construction of the above-referenced Project, located at Icy Cape, Alaska, according to the plans and specifications and for the amount and prices named herein as indicated on the Bid Schedule consisting of **one** sheet, which is made a part of this Bid.

The Undersigned declares that he has carefully examined the contract requirements and that he has made a personal examination of the site of the work; that he understands that the quantities, where such are specified in the Bid Schedule or on the plans for this project, are approximate only and subject to increase or decrease, and that he is willing to perform increased or decreased quantities of work at unit prices bid under the conditions set forth in the Contract Documents.

The Undersigned hereby agrees to execute the said contract and bonds within fifteen calendar days, or such further time as may be allowed in writing by the Procurement Officer, after receiving notification of the acceptance of this bid, and it is hereby mutually understood and agreed that in case the Undersigned does not, the accompanying bid guarantee shall be forfeited to the State of Alaska, Department of Natural Resources as liquidated damages, and the said Contracting officer may proceed to award the contract to others.

The Undersigned agrees to commence the work within 10 calendar days after the Notice to Proceed and to complete the work by **August 31, 2021**, unless extended in writing by the Procurement Officer.

The Undersigned proposes to furnish Payment Bond in the amount of **50%** (of the contract) and Performance Bond in the amount of **50%** (of the contract), as surety conditioned for the full, complete and faithful performance of this contract.

The Undersigned acknowledges receipt of the following addenda to the drawings and/or specifications (give number and date of each).

Addenda Number	Date Issued	Addenda Number	Date Issued	Addenda Number	Date Issued

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### NON-COLLUSION DECLARATION

The Undersigned declares, under penalty of perjury under the laws of the United States, that neither he nor the firm, association, or corporation of which he is a member, has, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this bid.

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**The Undersigned has read the foregoing and hereby agrees to the conditions stated therein by affixing his signature below:**

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**Signature of Authorized Company Representative**

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**Typed Name and Title**

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(     )

**Phone Number**

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(     )

**Fax Number**

---

**Email Address**

(See Reverse Side for Instructions)

Bid Phase: \_\_\_\_\_ Bidder: \_\_\_\_\_

1. This worksheet accurately reports the type and quantity of product(s) that: (a) qualify for application of the Alaska Product Preference under AS 36.30.321 *et seq.* and (b) this bidder will use in performing the advertised project, if awarded the contract; and
2. All listed product(s) are specified for use on the project and will be permanently incorporated; and
3. I am the duly appointed representative of this bidder, which has authorized and empowered me to legally bind it concerning its proposal.

Date \_\_\_\_\_

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## INSTRUCTIONS FOR ALASKA PRODUCTS PREFERENCE WORKSHEET

**Special Notice:** All procurements, except those funded from Federal sources, shall contain Contract provisions for the preference of Alaska products. To be considered for the Alaska Product Preference, each product listed by the Bidder on this worksheet must have current certification from the Alaska Products Preference Program at the time of Bid Opening or the proposal due date. A product with expired certification at the bid opening or proposal due date will not be considered eligible. Products that are not specified for use on the project will not be considered eligible.

The Alaska Product Preference Program List of certified products is available online at:

<https://www.commerce.alaska.gov/web/dcra/AlaskaProductPreferenceProgram.aspx> or may be obtained by contacting Dept. of Commerce & Economic Development Alaska Division of Community and Regional Affairs, Alaska Products Preference Program, 550 W. 7th Ave., Suite 1650, Anchorage AK 99501-3510; Phone: (907) 269- 4501 Fax: (907) 269-4563, E-mail: [madeinalaska@alaska.gov](mailto:madeinalaska@alaska.gov)

### BIDDERS INSTRUCTIONS:

**A. General.** The contracting Agency may request documentation to support entries made on this form. False presentations may be subject to AS 36.30.687. All Bidder's entries must conform to the requirements covering bid preparations in general. Discrepancies in price extensions shall be resolved by multiplying the declared total value times the preference percentage and adjusting any resulting computation(s) accordingly.

#### **B. Form Completion – BASIC BIDS.**

- (1) Enter project number and name, the words "Basic Bid" and the CONTRACTOR'S name in the heading of each page as provided.
- (2) The Bidder shall compare those candidate products appearing on the preference listing (see Special Notice comments above) against the requirements of the technical specifications appearing in the contract documents. If the Bidder determines that a candidate product can suitably meet the contract requirements, then that product may be included in the worksheet as follows.
- (3) For each suitable product submitted under the "Basic Bid" enter:
  - The product name, generic description and its corresponding technical specification section number under the heading "PRODUCT",
  - The company name of the Alaska producer under the heading "Manufacturer", and
  - The product class (I, II, or III) and preference percentage (3, 5, or 7% respectively) under the "CLASS/% heading.
- (4) For each product appearing on the list and to be utilized by the CONTRACTOR enter:
  - Under the heading "TOTAL DECLARED VALUE" the manufacturer's quoted price of the product, (caution: this value is to be the manufacturer's quoted price at the place of origin and shall not include costs for freight, handling or miscellaneous charges of incorporating the product into the Work,) and
  - The resulting preference – i.e. the preference percentage times the total declared value amount – under the heading "REDUCTION AMOUNT".
- (5) Continue for all "suitable" basic bid products. If the listing exceeds one page enter the words "Page # \_\_ SUB" in front of the word "TOTAL" and on the first line of the following pages enter "SUBTOTAL OF REDUCTION AMOUNT FROM PREVIOUS PAGE".
- (6) On the final page of the listing enter "BASIC BID PREFERENCE GRAND" immediately before the word "TOTAL".
- (7) Total the entries in the "REDUCTION AMOUNT" column for each page by commencing at the first entry for that page. If a continuation page exists, ensure that the subtotal from the previous page is computed into the running total. Number pages as appropriate.
- (8) Compute a Grand Total for the Basic Bid Preference. Enter the amount on the final page of the worksheet. (Note: When solicitations require written bids this amount should also be entered on line "C" of the Basic Bid Schedule.) Submit worksheet(s) with the Bid Schedule.

#### **C. Form Completion – ALTERNATE BIDS.**

- (1) Enter project number and name, the words "ALTERNATE BID # \_\_", and CONTRACTOR'S name in the heading of each page as provided.
- (2) On the first entry line enter "ADDITIONAL ALASKA PRODUCTS FOR ALTERNATE BID # \_\_", and repeat procedures 2 through 5 under part B these Bidder's instructions except that references to "Basic Bid" shall be replaced with the words "Alternate Bid # \_\_."
- (3) Following the listing of all additional Alaska products enter the words "ADDITIONAL PRODUCTS PREFERENCE FOR ALTERNATE BID # \_\_ - SUBTOTAL" and enter a subtotal amount for all additional products as listed. Subtotal amount to be determined by adding all additional product entries in the "REDUCTION AMOUNT" column.
- (4) Skip three lines and enter "LESS THE FOLLOWING NON-APPLICABLE ALASKA PRODUCTS:
- (5) Beginning on the next line, enter the product name and manufacturer of each Alaska Product appearing on the "Basic Bid" listing which would be deleted or reduced from the Project should the "Alternate Bid" be selected. Details of entry need only be sufficient to clearly reference the subject product. (i.e. "Pre-hung doors by Alaska Door Co., Anchorage.") Products being reduced shall specify the amount of the reduction. Should no products require deletion enter "None". When a product is listed as a "NON-APPLICABLE ALASKA PRODUCT" for this alternate bid and if under the basic bid the Bidder received a preference on his basic bid as a result of that product, then the applicable entries under the headings "TOTAL DECLARED VALUE" and "REDUCTION AMOUNT" (for each product and from the basic bid listing) shall also be entered into the corresponding headings of this form. Where only a portion of the products has been deleted, the entry (which will differ from those on the basic bid listing) may be "pro-rated" or as otherwise substantiated.
- (6) Following the listing of all non-applicable Alaska products enter the words "NON-APPLICABLE PRODUCTS PREFERENCE FROM BASIC BID \_\_ SUBTOTAL" and enter a subtotal amount for all non-applicable products listed. Subtotal amount to be determined by adding all non-applicable entries in the "REDUCTION AMOUNT" column.
- (7) At the bottom of the final page enter the words "ALTERNATE BID # \_\_ PREFERENCE GRAND" immediately before the word "TOTAL".
- (8) Compute a Grand Total for the Alternate Bid Preference (for Alternate # \_\_) by subtracting the non-applicable product preference subtotal from the additional product preference subtotal. Enter on the final page. (Note: When solicitations require written bids this amount should also be entered on line "C" of the Alternate Bid Schedule.) Submit separate worksheet(s) with each Alternate Bid

**STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES**

**ALASKA BIDDER PREFERENCE CERTIFICATION**

In response to the advertised procurement for:

Project Name and Number: \_\_\_\_\_

Bidder/Proposer (company name): \_\_\_\_\_

**Operation of Alaska Bidder Preference**

Procurement preferences under the Alaska Procurement Code are benefits that the State grants only to qualified bidders. Under AS 36.30.990(2), if a bidder is an eligible "Alaska Bidder", the Department will apply a five percent preference to the price of the bidder's proposal.

**Instructions regarding Alaska Bidder Preference**

A bidder that claims the Alaska Bidder Preference must review and then certify that each statement appearing under the heading "Alaska Bidder Certification" is true. The individual that signs the certification shall include his/her printed name and position within bidder's organization, *e.g.*, sole proprietor, partner, etc. If a bidder fails to submit a signed certification, the Department will not apply the claimed preference.

**Alaska Bidder Certification**

The bidding entity for which I am the duly authorized representative:

- (A) Holds a current Alaska business license;
- (B) Is submitting a bid or proposal for goods, services, or construction under the name appearing on the bidder's current Alaska business license;
- (C) Has maintained a place of business in the State staffed by the bidder or an employee of the bidder for a period of six months immediately preceding the date of the proposal;
- (D) 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 organized under AS 10.50 and all members are residents of the State, or is a partnership under former AS 32.05, AS 32.06, or AS 32.11 and all partners are residents of the State; and
- (E) If a joint venture, is composed entirely of ventures that qualify under the four preceding paragraphs of this Alaska Bidder Certification.

By applying my signature below, I certify under penalty of perjury that I am the duly appointed representative of this bidder, which has authorized and empowered me to legally bind it concerning its proposal, and that the foregoing statements are true and correct.

\_\_\_\_\_  
By (signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name

\_\_\_\_\_  
Alaska Business License Number

\_\_\_\_\_  
Title:

**STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES**

**ALASKA VETERAN PREFERENCE CERTIFICATION**

In response to the advertised procurement for:

Project Name and Number \_\_\_\_\_,

Bidder (Contractor) \_\_\_\_\_

**Operation of Alaska Veteran Preference**

Procurement preferences under the Alaska Procurement Code are benefits that the State grants only to qualified bidders. Under AS 36.30.321, an eligible entity receives a five percent preference to the price of in the bidder's proposal if the bidder meets three requirements.

The bidder must be:

1. an "Alaska Veteran";
2. a "Qualifying Entity"; and
3. an "Alaska Bidder".

Unless a bidder satisfies all three requirements and furnishes corresponding certifications, it is not eligible for the Alaska Veteran Preference. This preference may not exceed \$5,000.

**Instructions regarding Alaska Veteran Preference**

A bidder that claims the Alaska Veteran Preference must review and complete the "Alaska Veteran Certification", the "Qualifying Entity Certification", and the "Alaska Bidder Certification". The individual that signs a certification shall include his/her printed name and position within bidder's organization, *e.g.*, sole proprietor, partner, etc. If a bidder fails to submit properly completed certifications, the Department will not apply the claimed preference.

**Alaska Veteran Certification**

*(To be completed by individual(s) upon whom the bidder relies in claiming the Alaska Veteran status. If bidder is a partnership, limited liability company, or corporation, then a majority of partners, members, or shareholders who are Alaska Veterans must sign this Alaska Veteran Certification for the Bidder to be eligible for this preference.)*

I hereby represent to the Department that:

I served in the armed forces of the United States, a reserve unit of the United States armed forces, the Alaska Territorial Guard, the Alaska Army National Guard, the Alaska Air National Guard, or the Alaska Naval Militia; and

I was separated from service under a condition that was not dishonorable; and

I am Alaska resident in that I am physically present in the State of Alaska with the intent to remain in the State indefinitely and to make a home in the State.

I certify under penalty of perjury that the foregoing statements are true and correct as they apply to me.

\_\_\_\_\_  
By (signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name

\_\_\_\_\_  
Title

### Qualifying Entity Veteran Certification

The bidding entity for which I am the duly authorized representative is a:

***(Check the appropriate box)***

- ☐ sole proprietorship owned by an Alaska Veteran;
- ☐ partnership under AS 32.06 or AS 32.11 and a majority of the partners are Alaska Veterans;
- ☐ limited liability company organized under AS 10.50 and a majority of the members are Alaska Veterans;  
or
- ☐ corporation that is wholly owned by individuals and a majority of the individuals are Alaska Veterans.

By applying my signature below, I certify under penalty of perjury that I am the duly appointed representative of this bidder, which has authorized and empowered me to legally bind it concerning the proposal and that the statement I have acknowledged above by checking the appropriate box is true and correct.

\_\_\_\_\_  
By (signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name

\_\_\_\_\_  
Title

### Alaska Bidder Certification

*(To complete your claim for the Alaska Veteran Preference, you must also submit an Alaska Bidder Certification, which the bidder can view, download, and print from the AKDOT&PF's Bid Express Proposal page.)*

**State of Alaska  
Department of Natural Resources**

**BID SCHEDULE**

**for**

**Icy Cape Trail, Concrete Pads, and Metal Structure Construction - ITB No.  
10-022-21**

The Bidder shall insert, as called for, a unit price or a lump sum price in figures opposite each Pay Item for which an estimated quantity appears in the Bid Schedule. A unit price or lump sum price is not to be entered or tendered for any Pay Item not appearing in the Bid Schedule. The Estimated Quantity of work for payment on a lump sum basis will be "All Required" and as further specified in the Contract. Wherever a contingent sum is shown for any item in this Bid Schedule, such amount shall govern and be included in the Bid Total.

Conditioned or qualified bids will be considered Non-Responsive.  
Contract award will be made to the lowest responsive and responsible bidder.

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**The bidder shall insert a bid price for the pay item listed below. Type or print legibly.**

Pay Item Number	Pay Item Description	Quantity	Amount Bid
1(A)	Icy Cape Trail, Concrete Pads, and Metal Structure Construction	All Required	\$_____

Name of Bidding Vendor\_\_\_\_\_

Signature of Bidding Vendor\_\_\_\_\_

Date\_\_\_\_\_



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

## CONSTRUCTION CONTRACT

**Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21**

Project Name and Number

This CONTRACT, between the STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES, herein called the Department, acting by and through its Contracting Officer, and

\_\_\_\_\_  
**Company Name**

\_\_\_\_\_  
**Company Address (Street or PO Box, City, State, Zip)**

a/an ☐ Individual ☐ Partnership ☐ Joint Venture ☐ Sole Proprietorship ☐ Corporation incorporated under the laws of the State of \_\_\_\_\_ its successors and assigns, herein called the Contractor, is effective the date of the signature of the Contracting Officer on this document.

WITNESSETH: That the Contractor, for and in consideration of the payment or payments herein specified and agreed to by the Department, hereby covenants and agrees to furnish and deliver all the materials and to do and perform all the work and labor required in the construction of the above-referenced project at the prices bid by the Contractor for the respective estimated quantities aggregating approximately the sum of

**Dollars**

(\$ \_\_\_\_\_), and such other items as are mentioned in the original Bid, which Bid and prices named, together with the Contract Documents are made a part of this Contract and accepted as such.

It is distinctly understood and agreed that no claim for additional work or materials, done or furnished by the Contractor and not specifically herein provided for, will be allowed by the Department, nor shall the Contractor do any work or furnish any material not covered by this Contract, unless such work is ordered in writing by the Department. In no event shall the Department be liable for any materials furnished or used, or for any work or labor done, unless the materials, work, or labor are required by the Contract or on written order furnished by the Department. Any such work or materials which may be done or furnished by the Contractor without written order first being given shall be at the Contractor's own risk, cost, and expense and the Contractor hereby covenants and agrees to make no claim for compensation for work or materials done or furnished without such written order.

The Contractor further covenants and agrees that all materials shall be furnished and delivered and all labor shall be done and performed, in every respect, to the satisfaction of the Department, on or before: **August 31, 2021** or within N/A calendar days. It is expressly understood and agreed that in case of the failure on the part of the Contractor, for any reason, except with the written consent of the Department, to complete the furnishing and delivery of materials and the doing and performance of the work before the aforesaid date, the Department shall have the right to deduct from any money due or which may become due the Contractor, or if no money shall be due, the Department shall have the right to recover dollars (\$**0.00**) per day for each calendar day elapsing between the time stipulated for the completion and the actual date of completion in accordance with the terms hereof; such deduction to be made, or sum to be recovered, not as a penalty but as liquidated damages.

The bonds given by the Contractor in the sum of \$\_\_\_\_\_ Payment Bond, and \$\_\_\_\_\_ Performance Bond, to secure the proper compliance with the terms and provisions of this Contract, are submitted herewith and made a part hereof.

IN WITNESS WHEREOF, the parties hereto have executed this Contract and hereby agree to its terms and conditions.

---

## CONTRACTOR

---

Company Name

---

Signature of Authorized Company Representative

---

Typed Name and Title

---

Email Address

---

Date

(Corporate Seal)

---

## STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

---

Design & Construction Duly Authorized Representative (Signature)

Date

---

Typed Name

---

Signature of Contracting Officer

Date

---

Typed Name



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**PAYMENT BOND**

Bond No. \_\_\_\_\_

For

**Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21**

**Project Name and Number**

KNOW ALL WHO SHALL SEE THESE PRESENTS:

That

of \_\_\_\_\_ as Principal,

and \_\_\_\_\_

of \_\_\_\_\_ as Surety,

firmly bound and held unto the State of Alaska in the penal sum of

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) good and lawful money of the United States of America for the payment whereof,

well and truly to be paid to the State of Alaska, we bind ourselves, our heirs, successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has entered into a written contract with said State of Alaska, on the \_\_\_\_\_ of \_\_\_\_\_ A.D., 20\_\_\_\_, for construction of the above-referenced project, said work to be done according to the terms of said contract.

Now, THEREFORE, the conditions of the foregoing obligation are such that if the said Principal shall comply with all requirements of law and pay, as they become due, all just claims for labor performed and materials and supplies furnished upon or for the work under said contract, whether said labor be performed and said materials and supplies be furnished under the original contract, any subcontract, or any and all duly authorized modifications thereto, then these presents shall become null and void; otherwise they shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at \_\_\_\_\_, \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_.

**Principal:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**By:** \_\_\_\_\_

**Contact Name:** \_\_\_\_\_

**Phone: (     )** \_\_\_\_\_

**Surety:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**By:** \_\_\_\_\_

**Contact Name:** \_\_\_\_\_

**Phone: (     )** \_\_\_\_\_

The offered bond has been checked for adequacy under the applicable statutes and regulations:

\_\_\_\_\_  
Alaska Department of Natural Resources Authorized Representative

\_\_\_\_\_  
Date



## **INSTRUCTIONS**

1. This form, for the protection of persons supplying labor and material, shall be used whenever a payment bond is required. There shall be no deviation from this form without approval from the Contracting Officer.
2. The full legal name, business address, phone number, and point of contact of the Principal and Surety shall be typed on the face of the form. Where more than a single surety is involved, a separate form shall be executed for each surety.
3. The penal amount of the bond, or in the case of more than one surety the amount of obligation, shall be typed in words and in figures.
4. Where individual sureties are involved, a completed Affidavit of Individual Surety shall accompany the bond. Such forms are available upon request from the Contracting Officer.
5. The bond shall be signed by authorized persons. Where such persons are signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of authority must be furnished.



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**PERFORMANCE BOND**

Bond No. \_\_\_\_\_

For

**Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21**  
Project Name and Number

KNOW ALL WHO SHALL SEE THESE PRESENTS:

That \_\_\_\_\_  
of \_\_\_\_\_ as Principal,  
and \_\_\_\_\_  
of \_\_\_\_\_ as Surety,  
firmly bound and held unto the State of Alaska in the penal sum of \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) good and lawful money of the United States of America for the payment whereof,  
well and truly to be paid to the State of Alaska, we bind ourselves, our heirs, successors, executors, administrators, and assigns,  
jointly and severally, firmly by these presents.

WHEREAS, the said Principal has entered into a written contract with said State of Alaska, on the \_\_\_\_\_ of \_\_\_\_\_  
A.D., 20\_\_\_\_, for construction of the above-named project, said work to be done according to the terms of said contract.

Now, THEREFORE, the conditions of the foregoing obligation are such that if the said Principal shall well and truly perform and  
complete all obligations and work under said contract and if the Principal shall reimburse upon demand of the Department of Natural  
Resources any sums paid him which exceed the final payment determined to be due upon completion of the project, then these  
presents shall become null and void; otherwise they shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at \_\_\_\_\_  
\_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_.

**Principal:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**By:** \_\_\_\_\_

**Contact Name:** \_\_\_\_\_

**Phone: (     )** \_\_\_\_\_

**Surety:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**By:** \_\_\_\_\_

**Contact Name:** \_\_\_\_\_

**Phone: (     )** \_\_\_\_\_

The offered bond has been checked for adequacy under the applicable statutes and regulations:

\_\_\_\_\_  
Alaska Department of Natural Resources Authorized Representative

\_\_\_\_\_  
Date

## **INSTRUCTIONS**

1. This form shall be used whenever a performance bond is required. There shall be no deviation from this form without approval from the Contracting Officer.
2. The full legal name, business address, phone number, and point of contact of the Principal and Surety shall be typed on the face of the form. Where more than a single surety is involved, a separate form shall be executed for each surety.
3. The penal amount of the bond, or in the case of more than one surety the amount of obligation, shall be typed in words and in figures.
4. Where individual sureties are involved, a completed Affidavit of Individual Surety shall accompany the bond. Such forms are available upon request from the Contracting Officer.
5. The bond shall be signed by authorized persons. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of authority must be furnished.



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**BID BOND**

For

**Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21**

**Project Name and Number**

DATE BOND EXECUTED: \_\_\_\_\_

PRINCIPAL (Legal name and business address):

TYPE OF ORGANIZATION:

	<input type="checkbox"/> Individual	<input type="checkbox"/> Partnership
	<input type="checkbox"/> Joint Venture	<input type="checkbox"/> Corporation
STATE OF INCORPORATION:		

SURETY(IES) (Name and business address):

<b>A.</b>	<b>B.</b>	<b>C.</b>
PENAL SUM OF BOND:		DATE OF BID:

We, the PRINCIPAL and SURETY above named, are held and firmly bound to the State (State of Alaska), in the penal sum of the amount stated above, for the payment of which sum will be made, we bind ourselves and our legal representatives and successors, jointly and severally, by this instrument.

THE CONDITION OF THE FOREGOING OBLIGATION is that the Principal has submitted the accompanying bid in writing, date as shown above, on the above-referenced Project in accordance with contract documents filed in the office of the Contracting Officer, and under the Invitation for Bids therefor, and is required to furnish a bond in the amount stated above.

If the Principal's bid is accepted and he is offered the proposed contract for award, and if the Principal fails to enter into the contract, then the obligation to the State created by this bond shall be in full force and effect.

If the Principal enters into the contract, then the foregoing obligation is null and void.

**PRINCIPAL**

Signature(s)	1.	2.	3.
Name(s) & Title(s) (Typed)	1.	2.	3.

Corporate  
Seal

**See Instructions on Reverse**

**CORPORATE SURETY(IES)**

<b>Surety A</b>	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

<b>Surety B</b>	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

<b>Surety C</b>	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

**INSTRUCTIONS**

1. This form shall be used whenever a bid bond is submitted.
2. Insert the full legal name and business address of the Principal in the space designated. If the Principal is a partnership or joint venture, the names of all principal parties must be included (e.g., "Smith Construction, Inc. and Jones Contracting, Inc. DBA Smith/Jones Builders, a joint venture"). If the Principal is a corporation, the name of the state in which incorporated shall be inserted in the space provided.
3. Insert the full legal name and business address of the Surety in the space designated. The Surety on the bond may be any corporation or partnership authorized to do business in Alaska as an insurer under AS 21.09. Individual sureties will not be accepted.
4. The penal amount of the bond may be shown either as an amount (in words and figures) or as a percent of the contract bid price (a not-to-exceed amount may be included).
5. The scheduled bid opening date shall be entered in the space marked Date of Bid.
6. The bond shall be executed by authorized representatives of the Principal and Surety. Corporations executing the bond shall also affix their corporate seal.
7. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
8. The states of incorporation and the limits of liability of each surety shall be indicated in the spaces provided.
9. The date that bond is executed must not be later than the bid opening date.



**Icy Cape Trail, Concrete Pads, and Metal Structure Construction – ITB No. 10-022-21**

Changes to the adjusted bid amounts will be computed by the Department.

**TOTAL REVISION: \$** \_\_\_\_\_

This form may be duplicated if additional pages are needed.

## Icy Cape Trail, Concrete Pads, and Metal Structure Construction

### Project # 10-022-21

The Department of Natural Resources (DNR), Trust Land Office (TLO) is requesting bids for construction of trails, concrete pads, 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 May 1<sup>st</sup>, 2021 (1 trip) and from Icy Cape back to Ketchikan around September 1<sup>st</sup> (1 trip). All other barge trips as well as air transportation to Icy Cape will be on the contractor's own expense.

### Scope of Work

Contractor is required to:

- Have all necessary equipment, supplies etc. in Ketchikan no later than April 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 turn-around locations in the area. Due to confidentiality, the drill access trail plan will 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.
- Construction of a rebar reinforced concrete pad (6" thick) for a 40' x 60' prefabricated metal structure to be erected 60' away from the 2018 built metal structure (the shop site). Concrete pad will be poured according to specifications outlined in Exhibit 1. Water and wet sediment conduits will be needed in some of the concrete. The ground surface will be raised for the new metal structure and compacted prior to concrete pouring into a rebar reinforced mold. High early strength concrete must be used. It is the contractor's responsibility to prepare a material list to ensure all necessary material is ordered.

- Construction of a 20' x 60' rebar reinforced concrete pad (6" thick) to connect the 2018 built metal structure with the new metal structure. Concrete pad will to be poured according to specifications outlined in Exhibit 1. The ground surface will be raised for the connecting pad and compacted prior to concrete pouring into a rebar reinforced mold. High early strength concrete must be used. It is the contractor's responsibility to prepare a material list to ensure all necessary material is ordered.
- Assembly and erection of a 40' x 60' prefabricated metal structure according to specifications outlined in Exhibit 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 August 31, 2021. Barge service to Ketchikan will be provided around September 1<sup>st</sup>, 2021.
- Participate in a pre-construction meeting with the Project Manager.
- Obtain approval from DNR/TLO before starting construction on trails, concrete pads, and assembly of prefabricated metal structure.

DNR/TLO is required to:

- Coordinate a date/time with the contractor to conduct the pre-construction meeting.
- Provide contractor sequence/timing of construction, specifications and location of construction for trails, concrete pads, 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**

Offerors 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 offeror's failure to visit the work site will in no way relieve the offeror 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 August 31, 2021.



## **Method of Award**

Award will be made to the responsive and responsible offeror who submits the lowest bid. The maximum allowable budget for this ITB is \$500,000. Bids that exceed this budget shall be deemed non-responsive to the ITB.

## **Contract Administration**

Contract administration will be the responsibility of DNR Procurement Officer Chris Brooks or his designated representative. Chris Brooks may be contacted by phone at (907) 269-8666 or by email at christopher.brooks@alaska.gov. Only the Procurement Officer has full authority to alter, amend, or change a contract resulting from this ITB.

## **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.

## **Inspection and Modification - Reimbursement for Unacceptable Deliverables**

The contractor is responsible for the completion of all work set out in the contract. All work is subject to inspection, evaluation, and approval by the Project Manager who is responsible for coordinating this project. 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 work received) and may seek associated damages.

## **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 Project Manager in charge 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 State has secured any required approvals necessary for the amendment and issued a written contract amendment.

## **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**

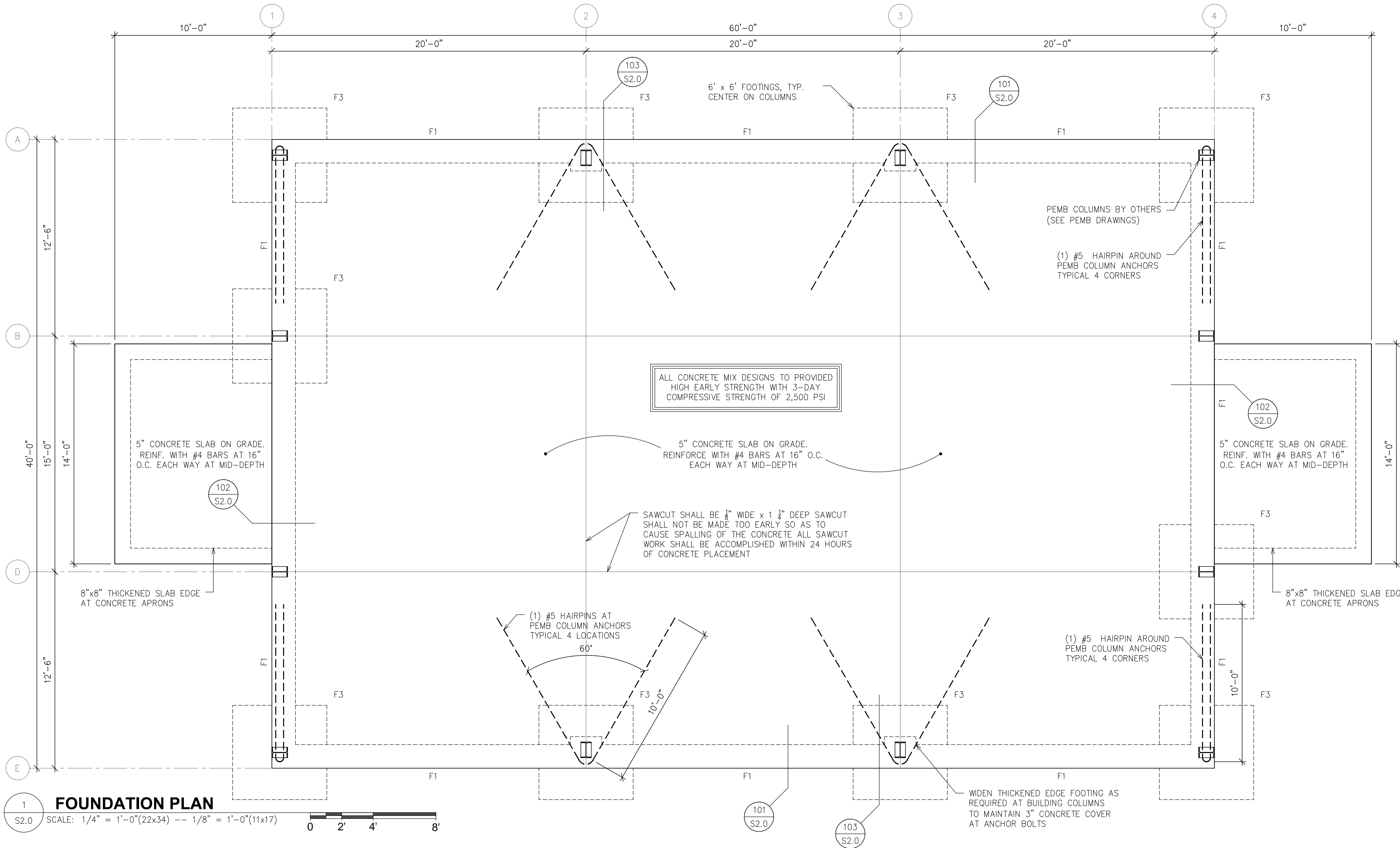
Complete payment will be made 1) upon completion of the project to the satisfaction of the Project Manager 2) upon receipt of the contractor's original, accurate and complete invoice, and (3) receipt of an approved Notice of Completion (NOC) from Department of Labor and Workforce Development (DOL). Full payment cannot be made without the NOC of public works form signed by DOL.

## **Little Davis Bacon Project Wage Requirements**

DOL/Wage and Hour Administration must be notified in accordance with AS 36.05.010 and AS 36.05.030 if the resulting contract for repairs or construction exceeds \$25,000. The contractor must comply with the requirements noted within DOL Pamphlet 600 entitled "Laborers' and Mechanics' Minimum Rates of Pay." To obtain a copy of the referenced packet contact DOL. The primary contractor working on public construction projects with an amount of \$25,000 or more must file a Notice of Work (NOW) and pay a one percent fee based on the estimated value of work performed by the prime contractor and one percent of the value of each subcontractor's price, to DOL/Wage and Hour Administration. The maximum fee is \$5,000.00. The notice and fees must be filed with DOL before work commences on the project. Upon completing the construction project, the primary contractor must file a NOC and make payment of any additional fees due to increases in the contract amounts due the primary contractor. The NOW and NOC forms are available at: <http://www.labor.state.ak.us/lss/lssforms.htm>.

## **Submit Invoices To**

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



1 FOUNDATION PLAN  
S2.0 SCALE: 1/4" = 1'-0" (22x34) -- 1/8" = 1'-0" (11x17)

## GENERAL STRUCTURAL NOTES

### DESIGN CRITERIA:

2012 EDITION OF THE INTERNATIONAL BUILDING CODE, WITH LOCAL AMENDMENTS.

FRAME REACTIONS PROVIDED BY BUILDING MANUFACTURER.

### GENERAL:

- THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OR SEQUENCE OF CONSTRUCTION.
- ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS.

### FOUNDATIONS:

- NO SOILS REPORT PROVIDED. FOUNDATION DESIGN IS BASED ON MAXIMUM SOIL BEARING PRESSURE = 2,500 PSF PER IBC TABLE 1804.2. SPREAD FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR COMPACTED FILL MATERIAL LESS THAN 12" IN DEPTH.
- COMPACTED FILL MATERIAL SHALL BE PLACED IN MAXIMUM 12" LIFTS AND SHALL BE COMPACTED TO MINIMUM 90% MODIFIED PROCTOR IN ACCORDANCE WITH ASTM D1557.
- PROVIDE POSITIVE DRAINAGE SLOPES, BOTH DURING AND AFTER CONSTRUCTION, FOR SURFACE AND ROOF RUNOFF. MINIMUM 10'-0" FROM BUILDING FOUNDATIONS.

### CONCRETE:

- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301 AND ACI 318. CEMENT SHALL CONFORM TO ASTM C150, TYPE II/III. AGGREGATE SHALL CONFORM TO ASTM C33. CONCRETE SHALL BE READY MIXED IN ACCORDANCE WITH ASTM C94 AND SHALL BE DESIGNED FOR HIGH EARLY STRENGTH WITH MINIMUM 3-DAY COMPRESSIVE STRENGTHS. RECOMMENDED MIX TO BE STANDARD DOT CLASS A 6 SACK WITH 0.4 WATER-CEMENT RATIO.

SLABS ON GRADE -----4,000 PSI  
FOUNDATIONS -----4,000 PSI

- CONCRETE SHALL BE FREE OF CHLORIDE. MAXIMUM SLUMP 4 1/2" FOR CONCRETE WITHOUT PLASTICIZER. IF PLASTICIZER IS USED, AN 8" MAXIMUM SLUMP IS ALLOWED AT PLACEMENT.
- ALL CONCRETE SLABS ON GRADE SHALL BE BOUND BY CONTROL JOINTS (KEYED OR SAW CUT). THE ENCLOSED AREA SHALL NOT EXCEED 225 SQUARE FEET. KEYED CONTROL JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING POURING, ALL OTHER JOINTS MAY BE SAW CUT.
- PROVIDE SLEEVES FOR ALL UTILITY OPENINGS.

### REINFORCING STEEL:

- REINFORCING STEEL SHALL CONFORM TO ASTM A615 (Fy = 60 KSI) DEFORMED BARS FOR ALL BARS #4 AND LARGER. WELDED WIRE FABRIC PER ASTM A185, WIRE PER ASTM A82. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER.
- ACCURATELY PLACE OR SUPPORT ALL REINFORCING, INCLUDING WELDED WIRE FABRIC WITH GALVANIZED METAL CHAIRS, SPACERS OR HANGERS FOR THE FOLLOWING CLEAR CONCRETE COVERAGES:  

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH -----	3"
EXPOSED TO EARTH OR WEATHER -----	2"
#6 OR LARGER -----	1 1/2"
#5 AND SMALLER -----	3/4"
FLAT SLAB -----	3/4"

ALL OTHER PER LATEST EDITION OF ACI 318.
- SEE DRAWINGS FOR SIZE AND SPACING OF REINFORCING. LAP SPLICE ALL REINFORCING 60 BAR DIAMETERS MINIMUM. LAPS IN WELDED WIRE FABRIC SHALL BE MADE SUCH THAT THE OVERLAP, MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET, IS NOT LESS THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES.

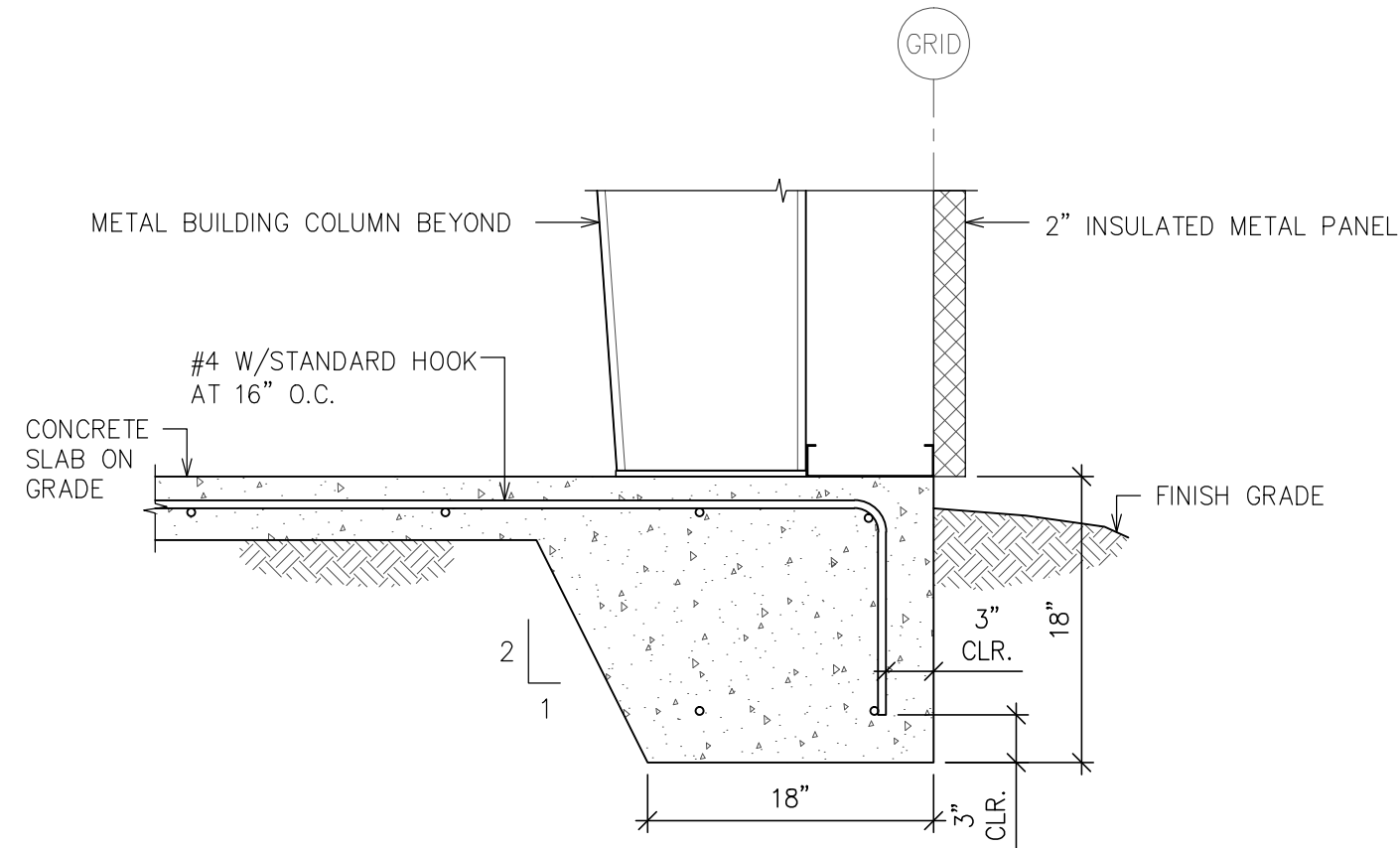
### ANCHOR BOLTS:

- ANCHOR BOLTS SHALL BE ASTM A36 OR A307, GRADE A. ANCHOR RODS SHALL BE ASTM F1554, GRADE 36. THREADED RODS SHALL BE ASTM A36.

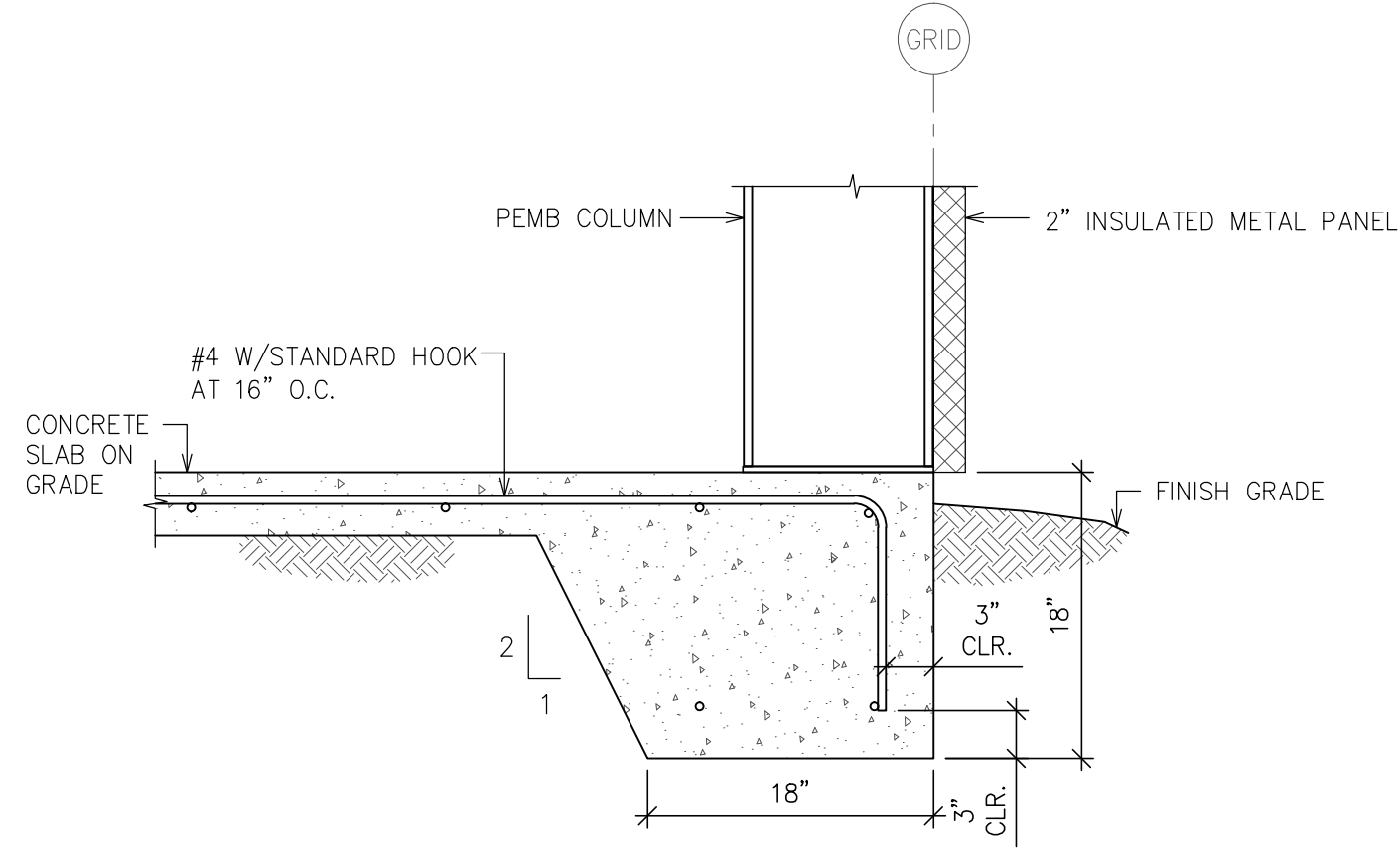
FOOTING ( F ) SCHEDULE					
MARK	HEIGHT	WIDTH	LENGTH	FOOTING REINFORCING	NOTES
F1	18"	18"	CONTINUOUS	(2) #5 CONTINUOUS AT TOP AND BOTTOM SLAB TIES PER DETAILS	--
F2	18"	6-0"	6-0"	(7) #5 BARS EACH WAY AT TOP AND BOTTOM	--

### PRE-ENGINEERED BUILDING DESIGN CRITERIA:

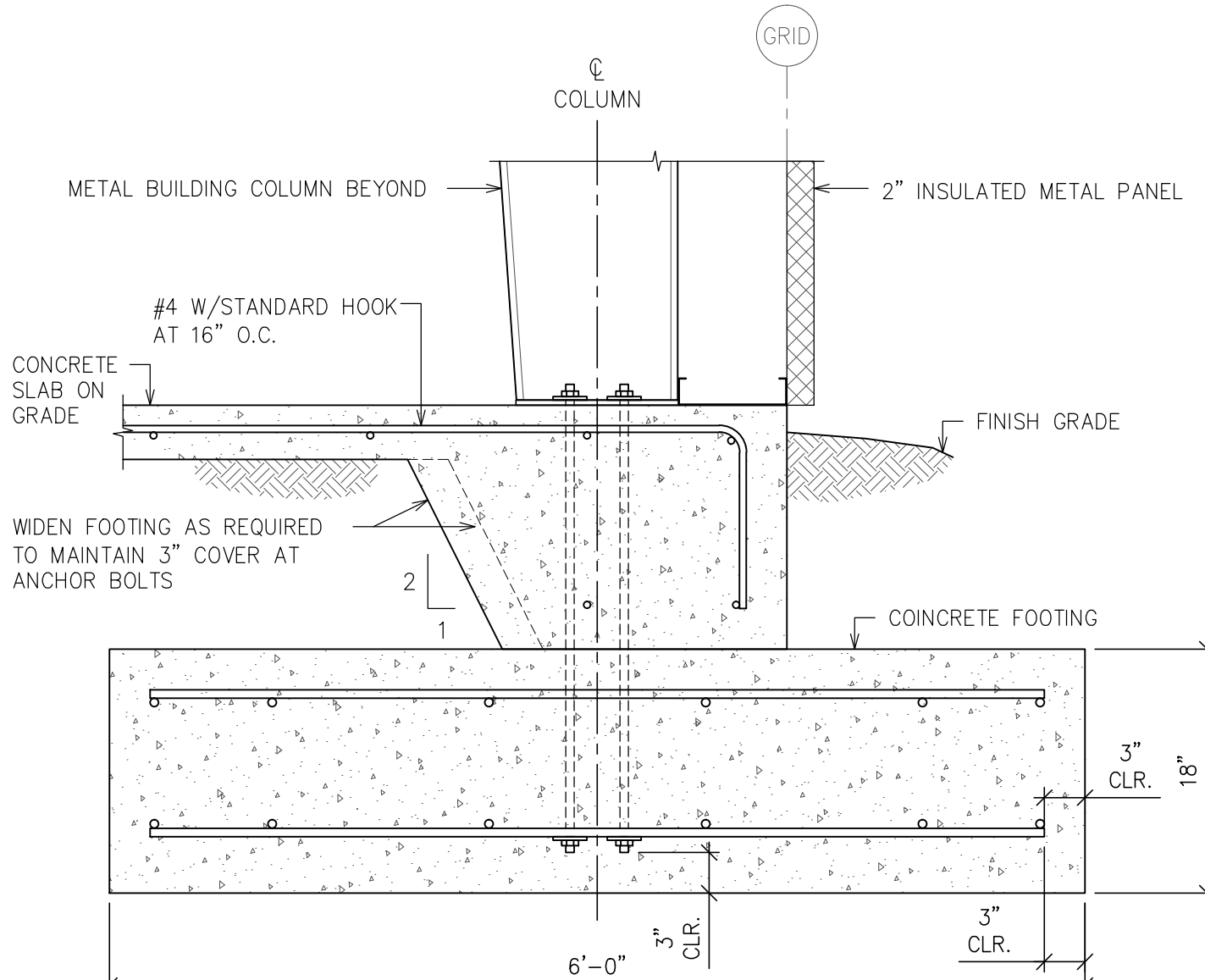
- PRE-ENGINEERED BUILDING MANUFACTURER SHALL BE RESPONSIBLE FOR THE ENTIRE DESIGN OF THE STEEL SUPERSTRUCTURE, ROOF, DECK, FASCIAS, SUPPORT, BRACING, LATERAL ANALYSIS, ANCHOR BOLT DIAMETERS AND LOCATIONS, AND ALL RELATED WORK.
- THE ENTIRE SUPERSTRUCTURE, INCLUDING THE ROOF DECK, SHALL BE DESIGNED IN ACCORDANCE WITH THE BUILDING CODE AND SHALL CONFORM TO THE LATEST APPLICABLE STANDARDS AND SPECIFICATIONS OF THE METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA). WIND UPLIFT PRESSURES FOR ENCLOSED AND UNENCLOSED BUILDING AREAS SHALL BE CONSIDERED IN ACCORDANCE WITH THE BUILDING CODE.
- THE PRE-ENGINEERED BUILDING SHALL BE DESIGNED TO SUPPORT SELF WEIGHT PLUS SUPERIMPOSED DEAD, LIVE, WIND OR SEISMIC LOADING, WHICHEVER COMBINATION PRODUCES THE MOST SEVERE CONDITION, IN ACCORDANCE WITH THE LATEST RECOMMENDATIONS OF THE MBMA. SUPERIMPOSED OR COLLATERAL DEAD LOADS SHALL NOT BE USED TO RESIST WIND UPLIFT LOADS. TOTAL LOAD DEFLECTIONS SHALL BE LIMITED TO SPAN/180 U.N.O. LIVE LOAD DEFLECTION OF MEMBERS SUPPORTING STUCCO SHALL BE LIMITED TO SPAN/360. LIMIT LATERAL DEFLECTION OF MEMBERS SUPPORTING OR BRACING MASONRY WALLS TO SPAN/600. DRIFT SHALL BE LESS THAN HEIGHT/200 FOR BUILDINGS WITH FULL HEIGHT MASONRY OR CONCRETE WALLS.



101 TYPICAL THICKENED SLAB FOOTING AT GRIDS A AND E  
S2.0 SCALE: 1/4" = 1'-0" (22x34) -- 1/8" = 1'-0" (11x17)



102 TYPICAL THICKENED SLAB FOOTING AT GRIDS 1 AND 4  
S2.0 SCALE: 1/4" = 1'-0" (22x34) -- 1/8" = 1'-0" (11x17)



103 TYPICAL PEMB COLUMN AT CONCRETE FOOTING  
S2.0 SCALE: 1/4" = 1'-0" (22x34) -- 1/8" = 1'-0" (11x17)



Arete LLC

101 West Harvard Avenue  
Anchorage, Alaska 99501  
907.441.5772  
arete.seth@gmail.com

Icy Bay PEMB Foundation  
Icy Bay, Alaska

DATE:  
2-06-18

SUBMITTALS:  
REVIEW SET

DRAWING:  
FOUNDATION PLAN  
AND DETAILS

S2.0



**STEEL BUILDINGS**  
A **NUCOR** Company

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

## DESIGN PARAMETERS

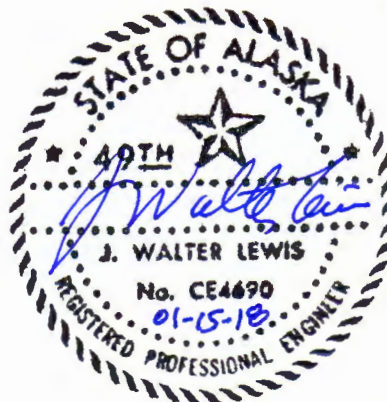
Job No. : C17C0461  
Customer : Icy Cape Sample Processing Bldg.  
Designed by : BC  
Checked by : MW  
Date : 9-Jan-2018

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  
Roof Live Load : 20 psf  
Frame Live Load : 20 psf

Risk Category : II

Tributary Reduction (Y/N) : n

#### 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

$S_s$  : 171.80%      $S_1$  : 80.80%  
 $R_{trans}$  : 3.50 /  $\Omega_o$  : 3.00  
 $R_{long}$  : 3.25 /  $\Omega_o$  : 2.00

#### Snow Load

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

$C_e$  : 1.0      $C_t$  : 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

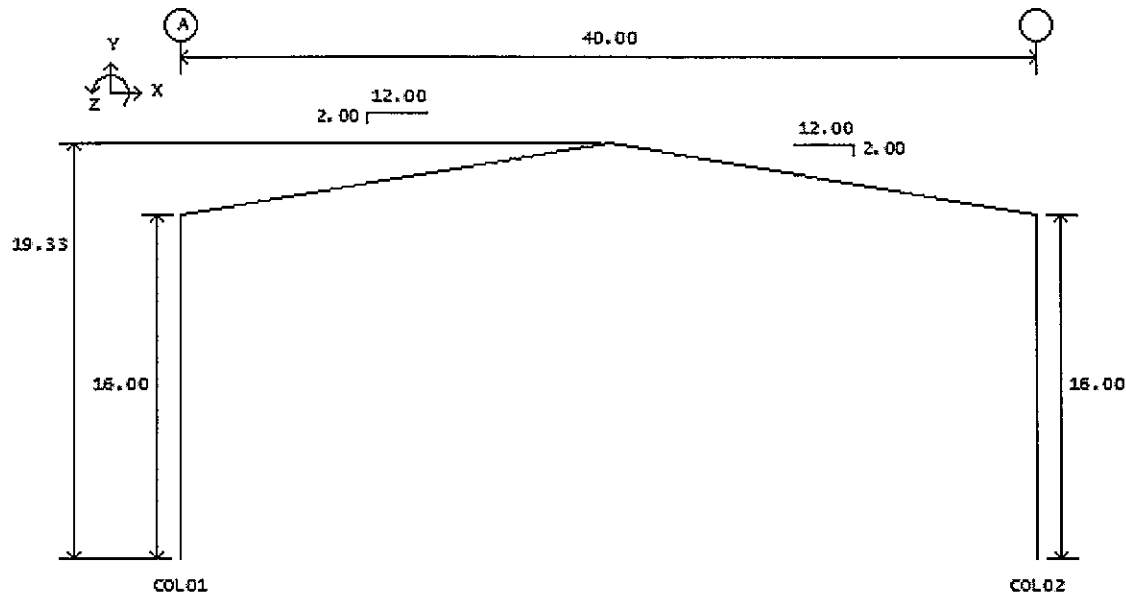
\*\*\* This structure is designed in compliance with CBC Steel Buildings specifications and standards utilizing the pertinent provisions and recommendations of the American Institute of Steel Construction (AISC), International Conference of Building Officials (ICBO), American Iron and Steel Institute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

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

Page: \_\_\_\_\_  
 Date: 01-09-18  
 File: F01-800825

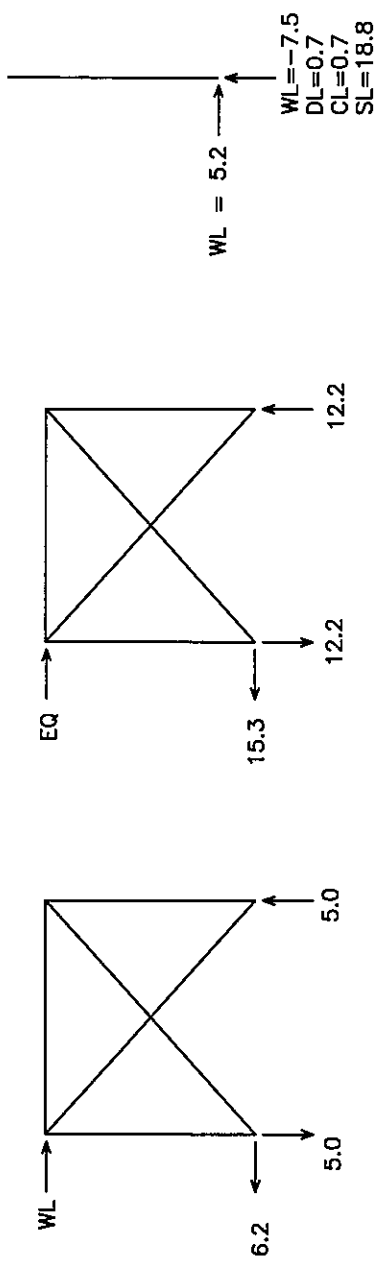
A-2

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



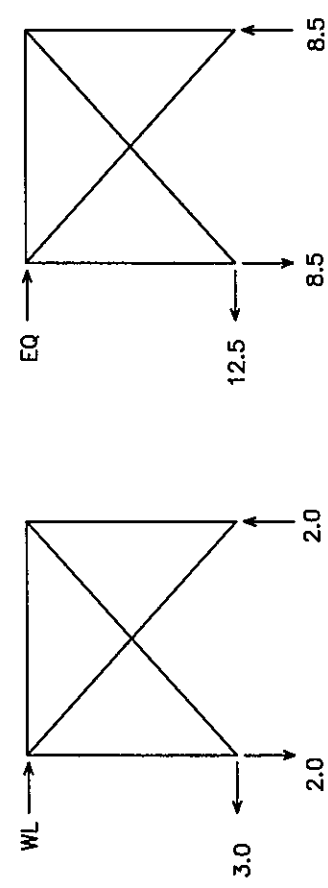
Member	X (kips)	Y (kips)	Z (kip-ft)	Member	X (kips)	Y (kips)	Z (kip-ft)
LOAD CASE 1 - DEAD				LOAD CASE 10 - LONG. WIND 1 TO BACK			
COL01	1	3	0	COL01	-1	-7	0
COL02	-1	3	0	COL02	1	-5	0
LOAD CASE 2 - COLLATERAL				LOAD CASE 11 - LONG. WIND 1 TO FRONT			
COL01	1	3	0	COL01	-1	-5	0
COL02	-1	3	0	COL02	1	-7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





**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 (Unstressed)

#### 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 ft<sup>2</sup>

GC<sub>p</sub> = -1.70

GC<sub>pi</sub> = -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 ft<sup>2</sup>

GC<sub>p</sub> = -1.26

GC<sub>pi</sub> = -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

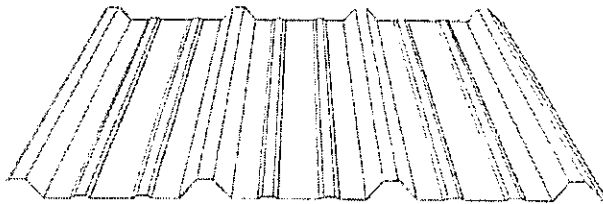
**USE: #12-14 x 1 in. Self Drilling Screw at 12 in. o.c**  
(Atlas Bolt & Screw Co.)

Allowable = 252 lbs.

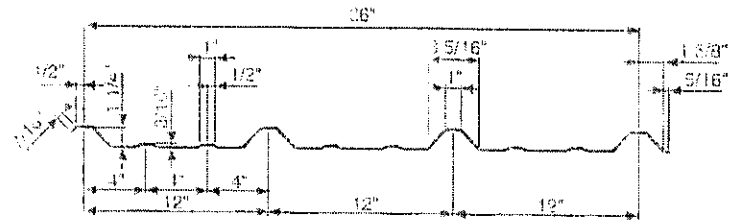




**CHART – 'C'**  
**('R'-Panel)**



**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	I <sub>x</sub>	S <sub>x</sub>	I <sub>x</sub>	S <sub>x</sub>
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	0.000 ft
Rear:	16.000 ft	0.000 ft	Right	1	C	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 &amp; 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	Lt.Edge Clip	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 Load Clips	Case	Check Ratio	Controlling Check
1L	1.000	95Z12	0.000	0.000	0	B.End	3	0.041	bending+shear
1	19.000	95Z12	0.000	2.000	1	B.End	3	0.950	deflection
2	20.000	95Z12	2.000	2.000	1	B.End	3	0.935	deflection
3	19.000	95Z12	2.000	0.000	1	B.End	3	0.950	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

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\Cl7C0461 Icy Cape Sample Processing Bldg\LIGHTGAGE\G1  
 Project Name: GIRT SW <-- (JOB DESCRIPTION) / NAME  
 AISI Spec Year: 2010  
 Building Code: IBC2012  
 Inventory: CBCCA-GZ

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

SPACING: 3' 6", 3' 10", 5' o.c.

ALL BR26 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.	1	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 Combo 0.84 1	0.57 1	0.23 2	0.20 2
3	1	Max Ratios Combo 0.69 1	0.65 1	0.58 2	0.25 2
4	1	Max Ratios Combo 0.69 1	0.65 1	0.58 2	0.25 2
5	1	Max Ratios Combo 0.84 1	0.57 1	0.23 2	0.20 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

D-6

\* 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	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

\*\*\*\*\*  
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\CL7C0461 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

8216 | 8215 | 8216  
12.5 | 15 | 12.5

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 Combo 1	0.67 1	0.45 1	0.19 2
2	1	Max Ratios Combo 1	1.48 1	0.99 1	0.39 2
3	1	Max Ratios Combo 1	1.48 1	0.99 1	0.39 2
4	1	Max Ratios Combo 1	0.67 1	0.45 1	0.19 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



D2

# 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

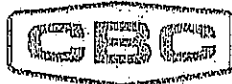
Total system weight =	119.75 lbs
Total system cost =	150.52 dollars

# PURLIN PRODUCTION LIST

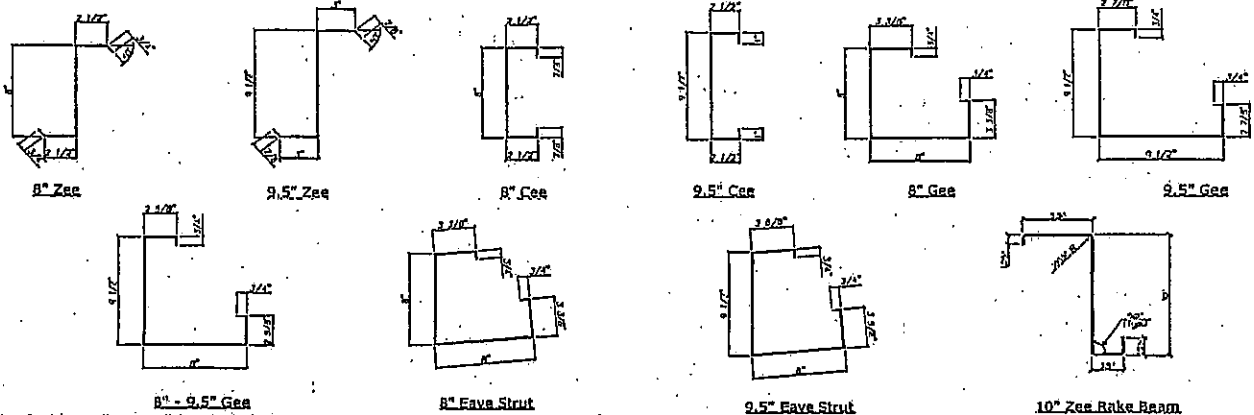
Purlin	Section	Length
1	08Z060	12.50
2	08Z067	15.00
3	08Z060	12.50

# MATERIAL SUMMARY

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



### 8" & 9.5" COLD-FORMED MEMBER SECTION PROPERTIES



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

SECTION PROPERTIES										
Size	T In	W lb/ft	A <sub>f</sub> In <sup>2</sup>	A <sub>w</sub> In <sup>2</sup>	I <sub>x</sub> In <sup>4</sup>	I <sub>x-Defn</sub> In <sup>4</sup>	S <sub>xx</sub> In <sup>3</sup>	M <sub>a</sub> k-in	M <sub>b</sub> k-ft	V <sub>a</sub> k
<b>ZEE</b>										
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
<b>CEE</b>										
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
<b>GEE</b>										
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	-
<b>EAVE STRUT</b>										
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	-
<b>ZEE RAKE BEAM</b>										
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. F<sub>y</sub> = 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 F<sub>y</sub> = 55 ksi. Deflection Moment of Inertia, I<sub>x-Defn</sub> is calculated at working stress level of 0.6 F<sub>y</sub>.

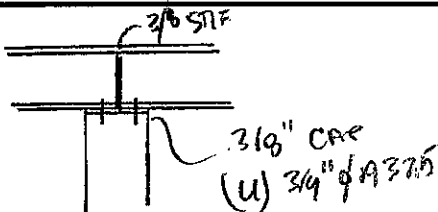
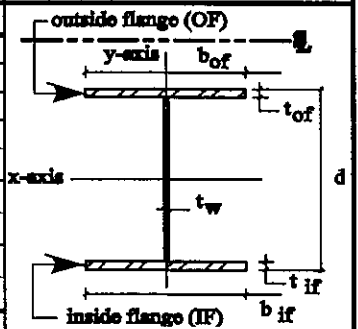
**BEAM-COLUMN S.S. (AISC 14th Edition)**

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

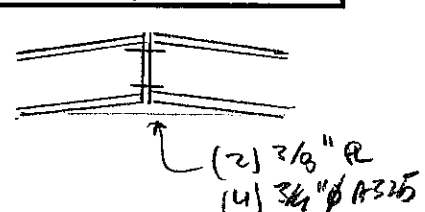
**MAIN REPORT: DESIGN SUMMARY**

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 $L_{bx} = L$
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
<b>SECTION GEOMETRY</b>							
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	--	
<b>MATERIAL INFORMATION</b>							
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	
<b>APPLIED LOADS</b>							
<input type="checkbox"/> 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					
<b>Design Results:</b>							
ASD Combined Strength Ratio	CSR		0.963	--	0.788	--	Eq. H1-1a or H1-1b
ASD Shear Strength Ratio (x-axis)	$V_x/V_{cx}$		0.668	--	0.190	--	Major Axis (x-axis)
ASD Shear Strength Ratio (y-axis)	$V_y/V_{cy}$		0.000	--	0.000	--	Minor Axis (y-axis)
<b>Deflection Results (Major-axis)</b>							
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)	$\Delta_{max}$	in.	1.000 in.	0.000 in.	1.206 in.	0.000 in.	
Member Deflection (about x-axis)	$\Delta_{x-axis}$	in.	0.488 in.	--	0.281 in.	--	$\Delta_{x-axis} \leq \Delta_{max}$
<b>Deflection Results (Minor-axis)</b>							
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)	$\Delta_{max}$	in.	1.800 in.	0.000 in.	2.170 in.	0.000 in.	
Member Deflection (about y-axis)	$\Delta_{y-axis}$	in.	0.000 in.	--	0.000 in.	--	$\Delta_{y-axis} \leq \Delta_{max}$



Flange BRACE @ 10'



**STEEL BUILDINGS**

A Nucor Company

www.cbsteellbuildings.com

1700 E. Louise Avenue • Lathrop, CA 95330

Tel: (209) 983-0910 • Fax: (209) 858-2354

Job: C17C0461 Sheet No. E2Date: \_\_\_\_\_ By: ECEND WALL RAFTERS

D + C + SL/LL → Assume UNBALANCED SNOW

$$(5 + 5 + 137.5) \text{ psf} = 147.5 \text{ psf}$$

$$W = 147.5 \# \times \frac{10 \text{ ft}}{\text{TAB}} = 1.5 \text{ klf}$$

$$L = 15'$$

$$m = \frac{W L^2}{8} = \frac{(1.5 \text{ klf})(15')^2}{8} = \underline{42.2 \text{ K-ft}}$$

END WALL COLUMNS

$$0.6W$$

$$(0.6)(147.5 \text{ psf}) = 88.5 \text{ psf}$$

$$W = 88.5 \# \times \frac{(15 + 12' - 6)}{2} \text{ TAB} = 0.35 \text{ klf}$$

$$L = 6' + (12' - 6) \left( \frac{2}{12} \right) = 10.083'$$

$$m = \frac{W L^2}{8} = \frac{(0.35 \text{ klf})(10.083')^2}{8} = \underline{14.3 \text{ K-ft}}$$

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

*over pile snow = 105 psf.*

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

-----  
LOAD COMBINATIONS  
-----

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

F-3

Job : 12/1/17 Icy Cape Sample Processing Buildin NUCOR BUILDINGS GROUP  
 Frame: Frame @ Line(s) 2,3 ' Frame Name

Date: 01-09-18  
 By :

Page: 1  
 File: F01-

\*\*\* DESIGN SUMMARY REPORT \*\*\*

Built Up Rafter - RAF01

	T/L Flange	B/R Flange	Web	Load Comb	Loc	Axial Kips	Axial Ratio	Moment Ft-kip	T/L Bend Ratio	B/R Bend Ratio	Max Unity Check	Load Comb	Loc	SHEAR			
Section	Mat'l	Mat'l	Mat'l											Force Kips	Shear Ratio	Flow T/L	(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

	T/L Flange	B/R Flange	Web	Load Comb		Axial Kips	Axial Ratio	Moment Ft-kip	T/L Bend Ratio	B/R Bend Ratio	Max Unity Check	----- Load Comb    Loc		SHEAR Force    Shear Kips      Ratio		----- Flow    (k/in) T/L      B/R	
Section	Mat'l	Mat'l	Mat'l		Loc												
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		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

	T/L Flange	B/R Flange	Web	Load Comb		Axial Kips	Axial Ratio	Moment Ft-kip	T/L Bend Ratio	B/R Bend Ratio	Max Unity Check	----- Load Comb    Loc		SHEAR Force    Shear Kips      Ratio		----- Flow    (k/in) T/L      B/R	
Section	Mat'l	Mat'l	Mat'l		Loc												
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		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	B/R	Web	Load	Loc	Axial	Axial	Moment	T/L	B/R	Max	-----		SHEAR		-----	
	Flange	Flange							Mat'l	Comb		Bend	Bend	Unity	Load	Loc	Force
	Mat'l	Mat'l	Mat'l			Kips	Ratio	Ft-kip	Ratio	Ratio	Check	Comb		Kips	Ratio	T/L	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		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

File : F01-800825.nfr

Designer :

Frame Name

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				Right Plate			
						Width	Thick	Length	Fy(ksi)	Width	Thick	Length	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	Load Comb	Max Moment			Load Comb	Max Shear			Left Plate Ratio	Right Plate Ratio
					Axial (kip)	Shear (kip)	Moment (ft-kip)		Axial (kip)	Shear (kip)	Moment (ft-kip)		
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				Right			
		Welds		Checks		Welds		Checks	
		Flg	Web	Stf	Load Comb	Flg	Web	Stf	Load Comb
1	Top	FWD4	WP13		36	FWD4	WP13		36
1	Bot	FWD3	WP13		-49	FWD3	WP13		-49



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:**

F.6

No	ASR	Combination
*Indicates a Special Seismic Load Combination		

Web Depth  
Length on Slope  
Left/Top Flange  
Web  
Right/Bottom Flange  
Horizontal Tail Dim.  
Purlin Offset: 8.0  
Projected Area: 107

7 19.25

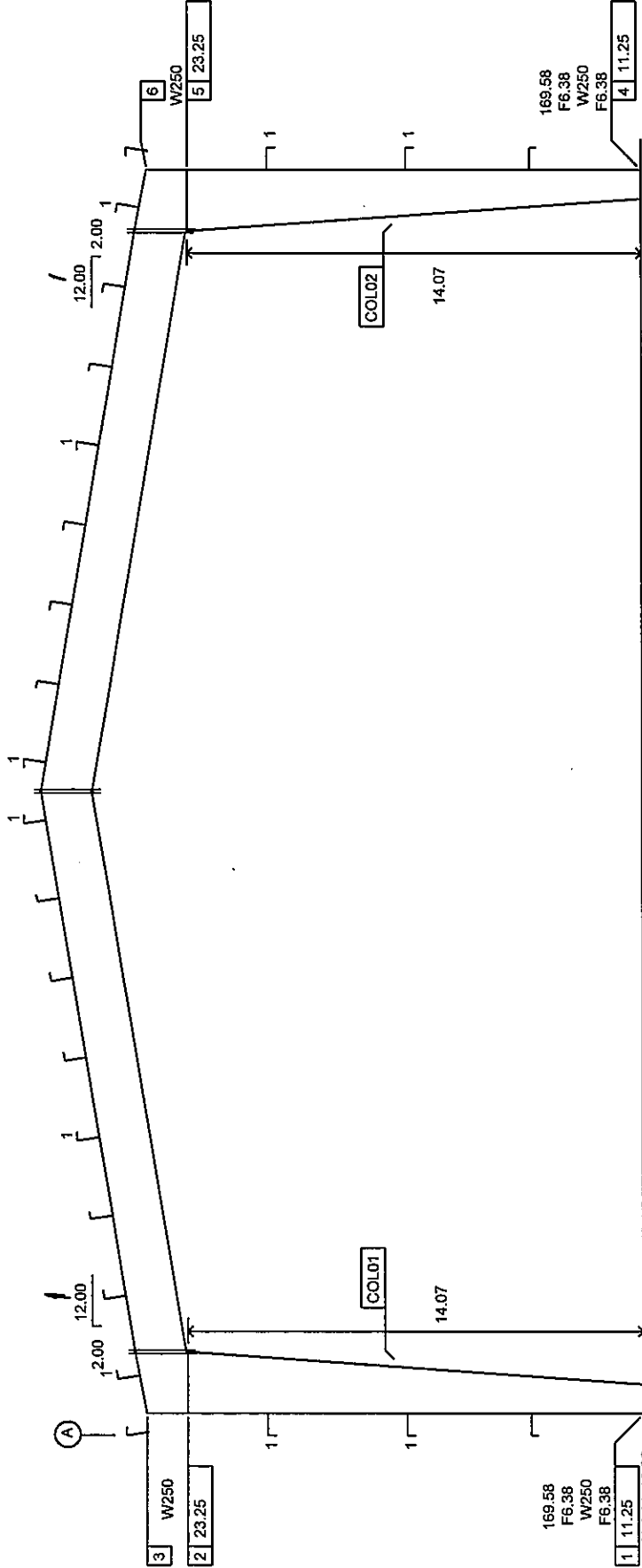
211.63  
F6.38  
W250  
F6.38  
[RAF01]

20.0000

8 19.25

211.63  
F6.38  
W250  
F6.38  
[RAF02]

9 19.25



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

40.00

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
Prt/Pt	-	-	-	-	-	-	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	-	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	-	-	SVEUEU	SVEUEU	KVEUEU
Pb/Gage	-	-	-	-	-	-	2.250/3.000	2.250/3.000	2.250/3.000

Job #: 12/11/17

File: F01-800825.nfr

Title: Frame @ Line(s) 2,3' Frame Name

Designer:

Date: 1/9/2018 - 10:47 AM

Page: \_\_\_\_



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:

Flexible Diaphragm: ☒ Yes

## Seismic Information

Risk Category =	<input checked="" type="checkbox"/> II	$S_s(\%) =$	171.80%	$S_1(\%) =$	80.80%	Site Class =	<input checked="" type="checkbox"/> D
Transverse Direction(Interior):		R =	3.50	$\Omega_o =$	3.00	$T_a =$	0.26
Transverse Direction(End):		R =	3.50	$\Omega_o =$	3.00	$T_a =$	0.26
Longitudinal Direction:		R =	3.25	$\Omega_o =$	2.00	$T_a =$	0.16
Seismic Factor $I_E =$	1.00	$F_a =$	1.00	$F_v =$	1.50	$S_{MS} =$	1.50
Seismic Design Category =	E			$S_{DS} =$	1.00	$S_{M1} =$	1.21
						$S_{D1} =$	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 $\rho =$	1.30
	$W = 25.76$ Kips
$C_s =$	0.29
$V = Q_E =$	7.36 Kips
$E_h = \rho * Q_E =$	9.6 Kips
$E_v = 0.2 S_{Ds} * D =$	1.8 Kips
$E_m = \Omega_o * Q_E =$	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 $\rho =$	1.30
	$W = 12.88$ Kips
$C_s =$	0.29
$V = Q_E =$	3.68 Kips
$E_h = \rho * Q_E =$	4.8 Kips
$E_v = 0.2 S_{Ds} * D =$	0.9 Kips
$E_m = \Omega_o * Q_E =$	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 $\rho =$	1.30
	$W = 76.5$ Kips
$C_s =$	0.31
$V = Q_E =$	23.5 Kips
$E_h = \rho * Q_E =$	30.6 Kips
$E_v = 0.2 S_{Ds} * D =$	5.5 Kips
$E_m = \Omega_o * Q_E =$	47.1 Kips

**Wind Loading per ASCE 7-10**

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

**Geometry**

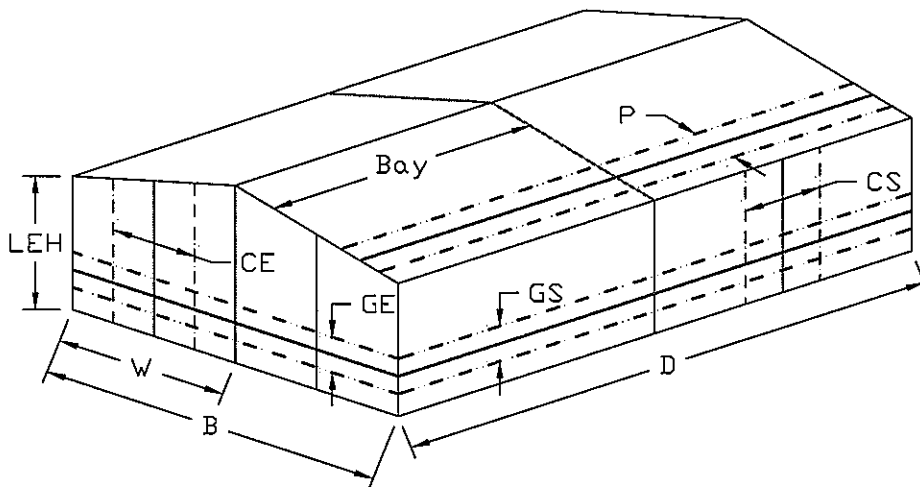
Version: 2015.1.26 (Date: 01/26/15) By NBG-GS

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'  
 SW Col. Trib. Width [CS]: 20.0000'

BSW Top-of-Parapet: 0.0000'  
 Opening Area: 0.0 sf

FSW Top-of-Parapet:  
 EW Top-of-Parapet:

**Loading Information**

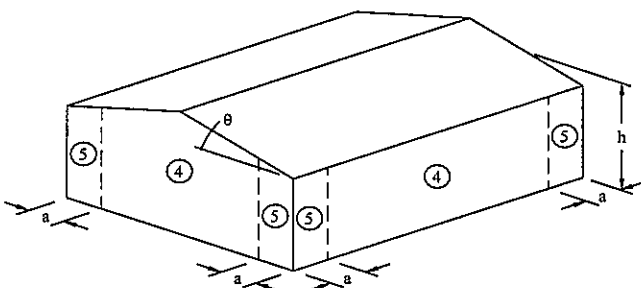
Wind Speed: 150 mph  
 Wind Exposure: C

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  $GC_{pi}$ :  $\pm 0.18$

**Components and Cladding, Walls**



a = 4.00 ft.

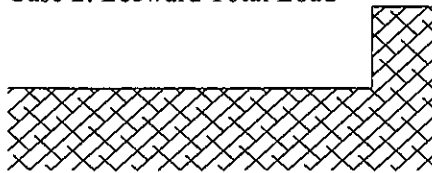
Item	Tributary Area (ft <sup>2</sup> )	Pressure Zones 4,5 (psf)	Suction Zone 4 (psf)	Suction Zone 5 (psf)
Sidewall Wind Column	320	35.42	-39.21	-40.51
Endwall Wind Column	220	36.51	-40.30	-42.69
Sidewall Girt	133	37.97	-41.76	-45.60
Endwall Girt	133	37.97	-41.76	-45.60
Wall Panel	8	45.50	-49.29	-60.67

Note: Value of  $GC_{pi}$  in results above reduced by 10% per Note 5 of Figure 30.4-1 since slope angle is  $\leq 10^\circ$ .

## Wind Loading Continued...

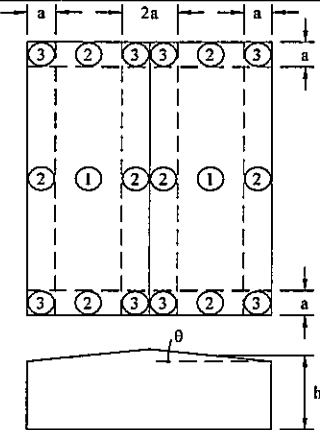
### Wall Parapet Structural

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

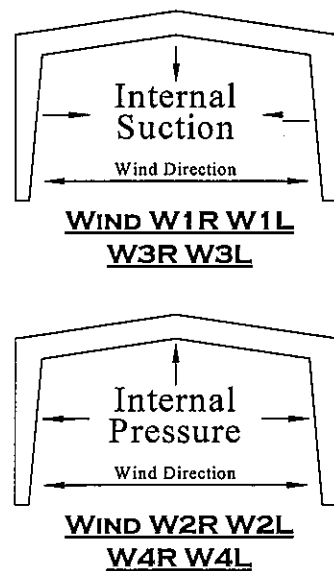


Applicable Roof Slope Angle = 9.46 deg  
 $a = 4.00$  ft.

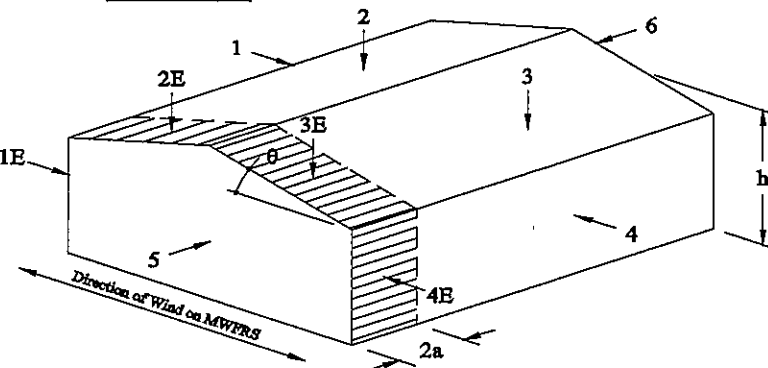
Item	Tributary Area (ft <sup>2</sup> )	Pressure All (psf)	Suction in Zones				
			1 (psf)	2 (psf)	2' (psf)	3 (psf)	3' (psf)
Purlin/Joint	133	20.22	-41.29	-58.14	---	-91.84	---
Panel	0	---	---	---	---	---	---
Fastener	0	---	---	---	---	---	---
Values Below are for Overhang Portion of Roof							
Purlin/Joint	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.



Item	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	---	---	---	---



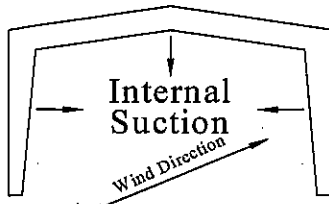
Item	Edge Zone Pressure Coefficients			
	W1R & W3R	W1L & W3L	W2R & W4R	W2L & W4L
C1E:	0.85	-0.31	0.49	-0.67
Load, (psf)	35.66	-13.16	20.50	-28.33
C2E:	-0.89	-0.40	-1.25	-0.76
Load, (psf)	-37.50	-16.75	-52.66	-31.92
C3E:	-0.40	-0.89	-0.76	-1.25
Load, (psf)	-16.75	-37.50	-31.92	-52.66
C4E:	-0.31	0.85	-0.67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

## Wind Loading Continued...

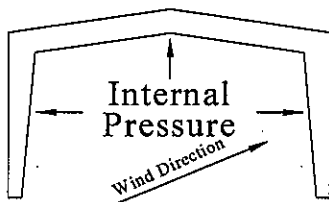
## Main Wind Force Resisting Systems (Longitudinal Wind Direction)

Applicable Roof Slope Angle = 9.46 deg

a = 4.00 ft.

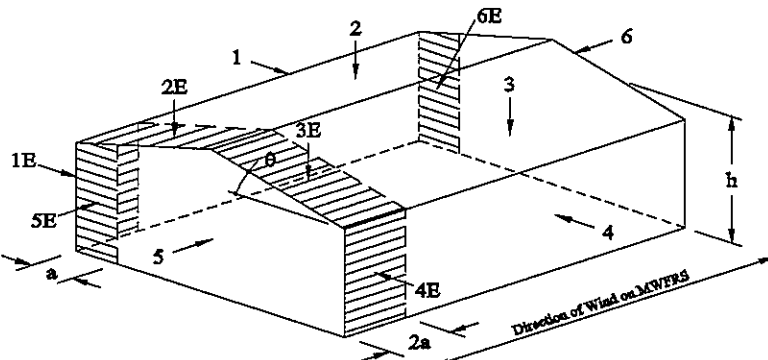


**WIND W5B W5F**  
**W7B W7F**



**WIND W6B W6F**  
**W8B W8F**

Item	Longitudinal Wind Direction							
	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	---	---	---	---



Item	End-Wall Pressure Coefficients			
	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 psfLongitudinal Force Resisted by Bracing: 11.25 kipTotal Longitudinal Net Pressure Applied to Building: 31.85 psfTotal Longitudinal Force Applied to Building: 22.51 kip

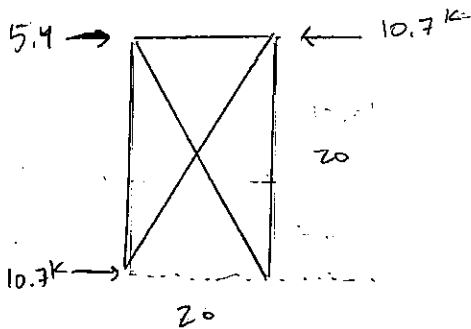
**STEEL BUILDINGS**

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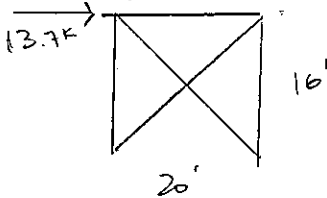
1700 E. Louise Avenue • Lathrop, CA 95330

Tel: (209) 983-0910 • Fax: (209) 858-2354

Job: CPC0461 Sheet No. G-5Date: \_\_\_\_\_ By: BCROOF BRACING

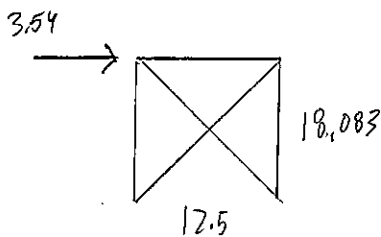
Seismic governs:  $0.7 E_h / 1 \text{ Bay} = (0.7)(30.6 \text{ k}) = 21.42 \text{ k}$   
 Distributed load:  $21.42 \text{ k} / 40' = 0.54 \text{ k/ft}$

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

Use: 3/4"  $\phi$  Rod (R6)Side Wall Bracing

Seismic governs:  $0.58 E_h / 2 \text{ sides} = (0.58)(47.1 \text{ k}) / 2 = 13.7 \text{ k}$

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

Use: 1"  $\phi$  Rod (R8)END WALL BRACING

Wind governs:  $0.6 W = (6.6)(5.9 \text{ k}) = 3.54 \text{ k}$

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

Use: 3/4"  $\phi$  Rod (R6)





# 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 1 <sup>st</sup> 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 Jams? ☐ No

Use Different Depth Jams? ☐ No

## MSA SECONDARY FRAME OUTPUT

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	

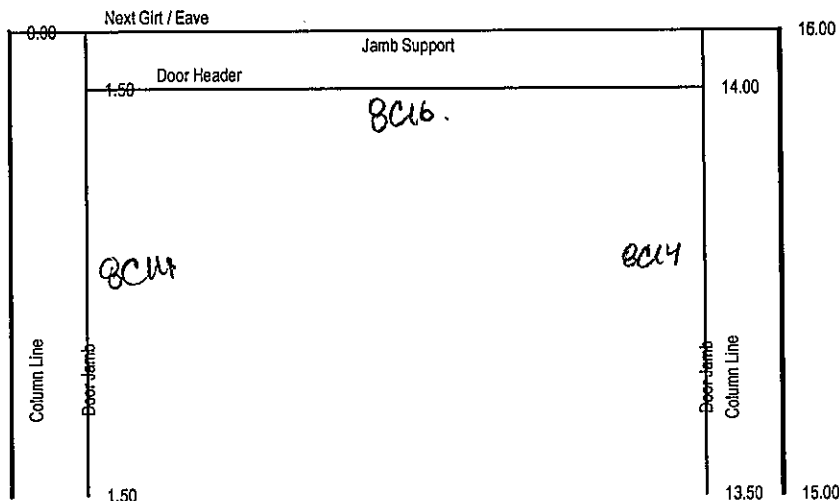
Use Different Depth Jamb Support? ☐ No

Maximum Girt Spacing = 5 ft

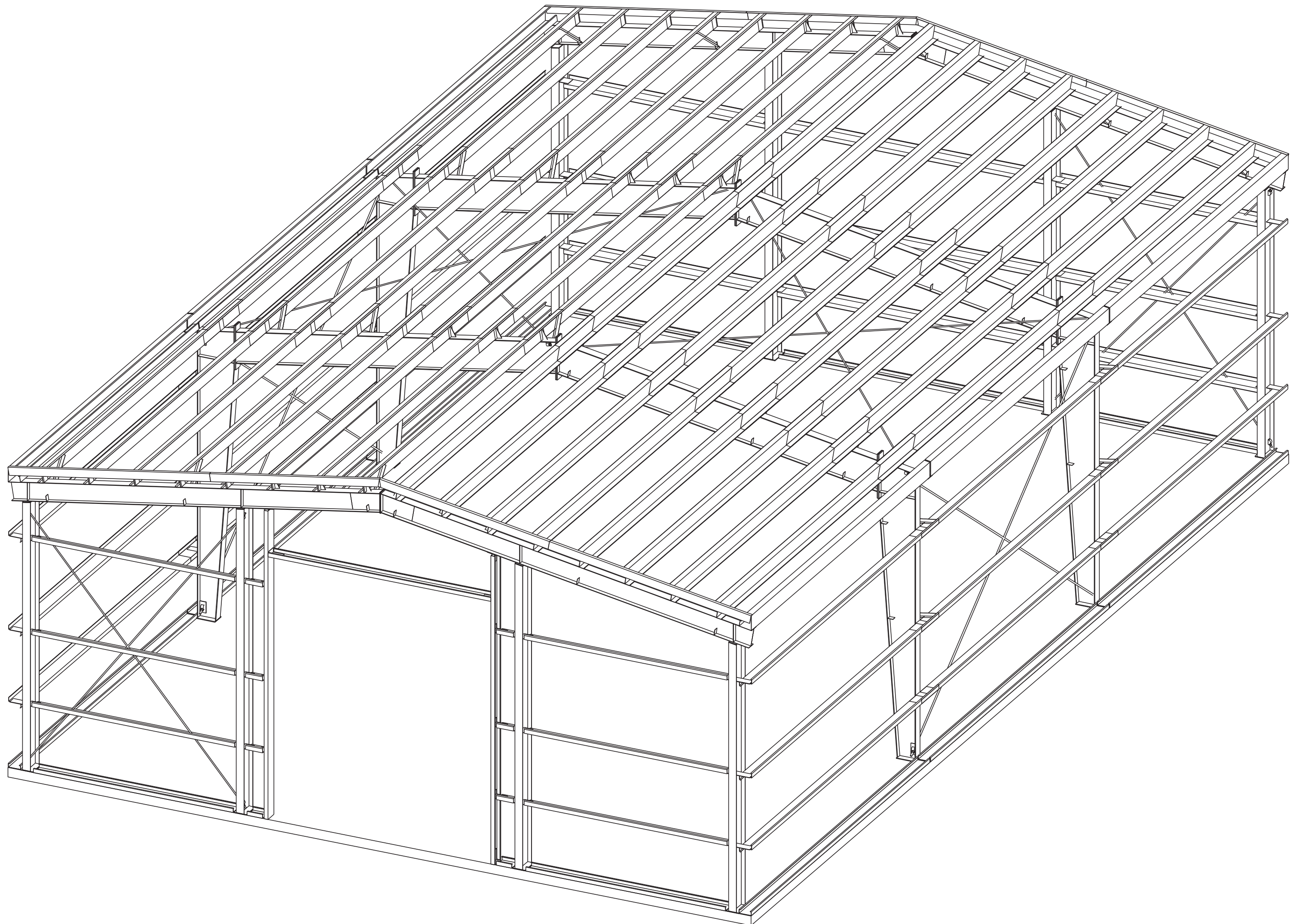
Recommended Member For Jamb Support(s)	<del>8C16</del> <b>8C14</b>	Stress Ratio= 0.83	$\Delta_{max} = L / 631$
Recommended Minimum Member Size For Jams	<b>8C14</b>	Stress Ratio= 0.98	$\Delta_{max} = L / 319$
Recommended Minimum Member Size For Header	<b>8C16</b>	Stress Ratio= 0.14	$\Delta_{max} = L / 4127$

All members are designed as simple span.

The reduced sectional properties were used for cold formed members.











<u>Building Information</u>			
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.

<u>Product Certifications</u>  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.	<u>Design Loads</u>  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
<u>Codes &amp; Specifications</u>  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).	<u>Special Notes</u>  N/A <div></div>
<u>Inspections</u>  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.	<u>Drawing Status</u> <div><input type="checkbox"/> Preliminary: These drawings are conceptual only and are not to be used for the permit or construction process.</div> <div><input checked="" type="checkbox"/> 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.</div> <div><input type="checkbox"/> For Construction Erection drawings, identified as "Detailed for Fabrication".</div>
<u>Special Bolting Connection Inspection Req.</u> (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	

<u>GENERAL INFORMATION</u>  CUSTOMER: Icy Cape Sample Processing Bldg. LOCATION: Yakutat, Ak.	CBC-OR No.	C17C0461
	DATE	1/11/18
	DRAWN	JA
	ENGR. APR.	BC
 STEEL BUILDINGS A NUCCA Company   P.O. BOX 1009, LATHROP, CA 95330 (209) 868-0910 FAX (209) 868-2354	DEALER:	Arctic Fox
	SCALE	
	SHEET	1
	OF	6
	REV	



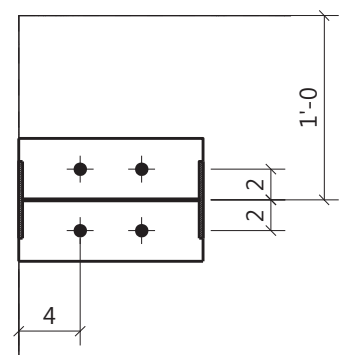


Plate :  $\frac{3}{8}$ " x 8" x 1'-0" W/  $\frac{3}{4}$ " Dia. A.B.'s

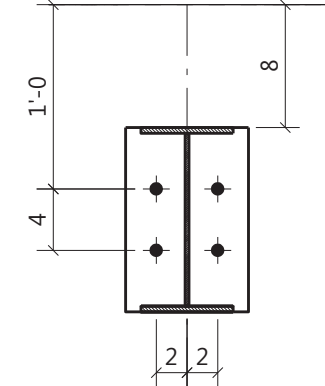


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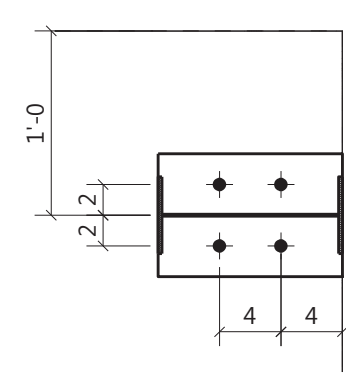


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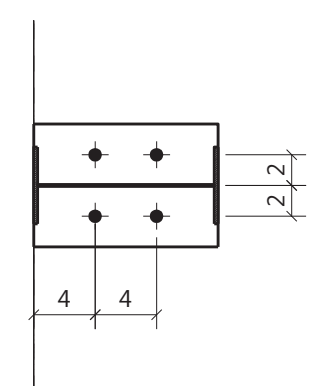


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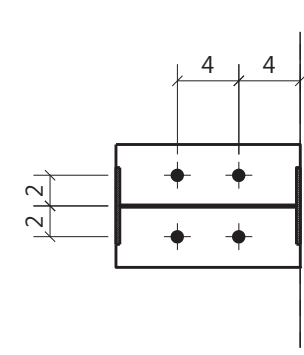


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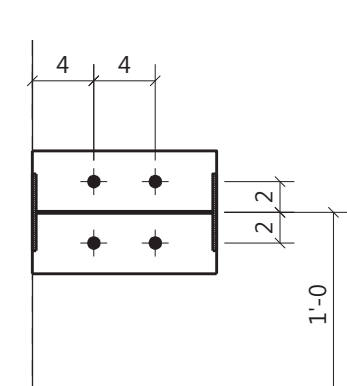


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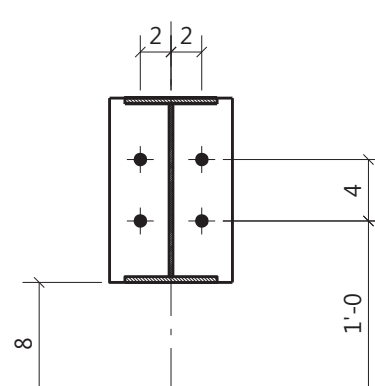


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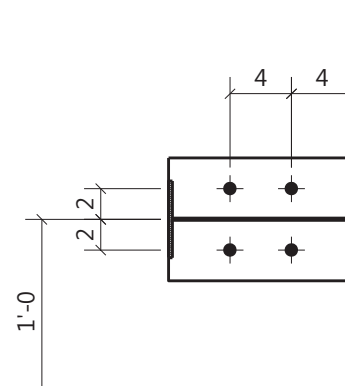
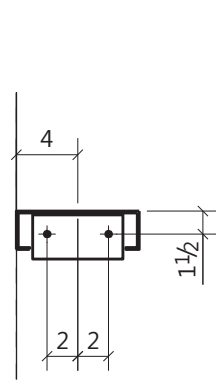
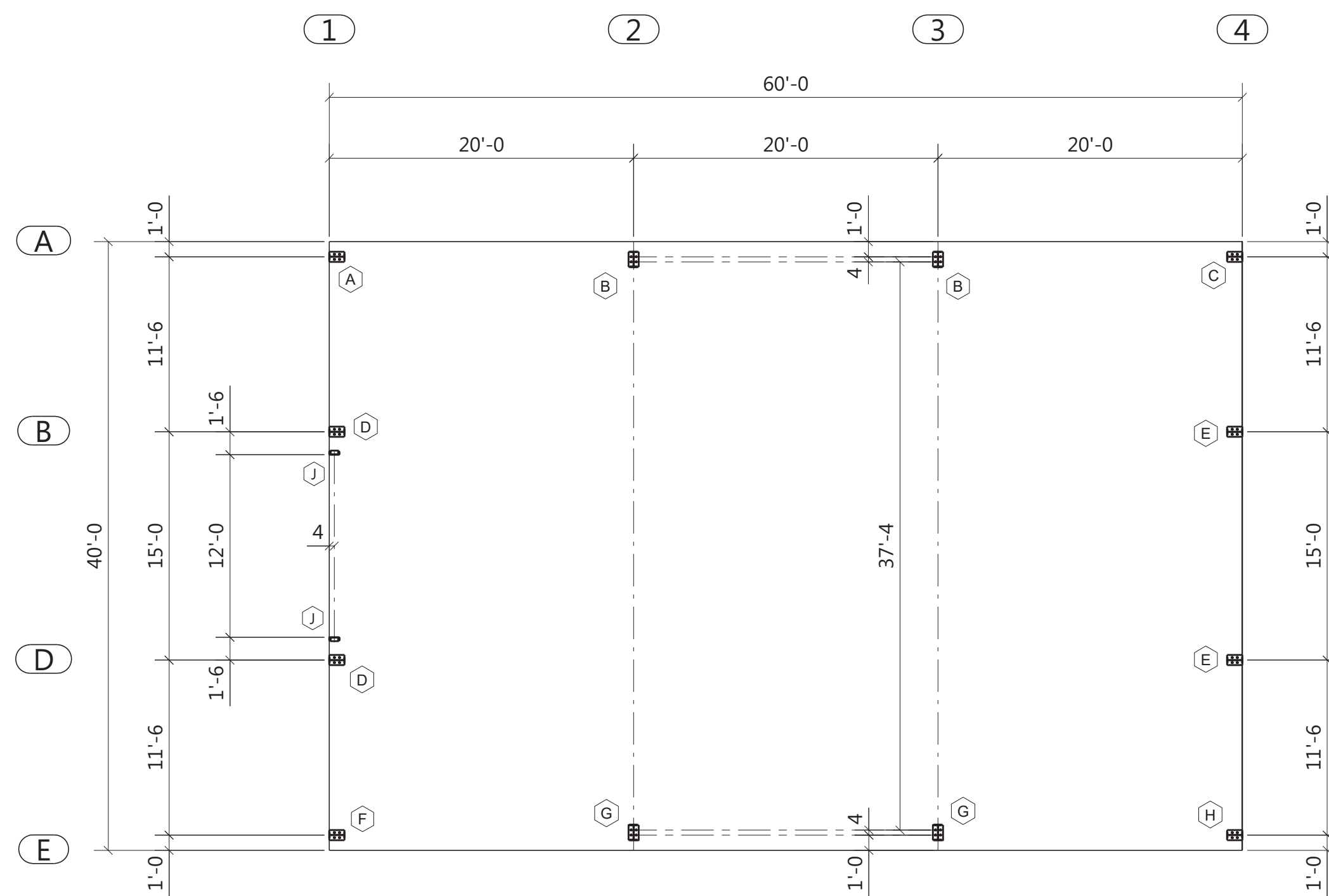


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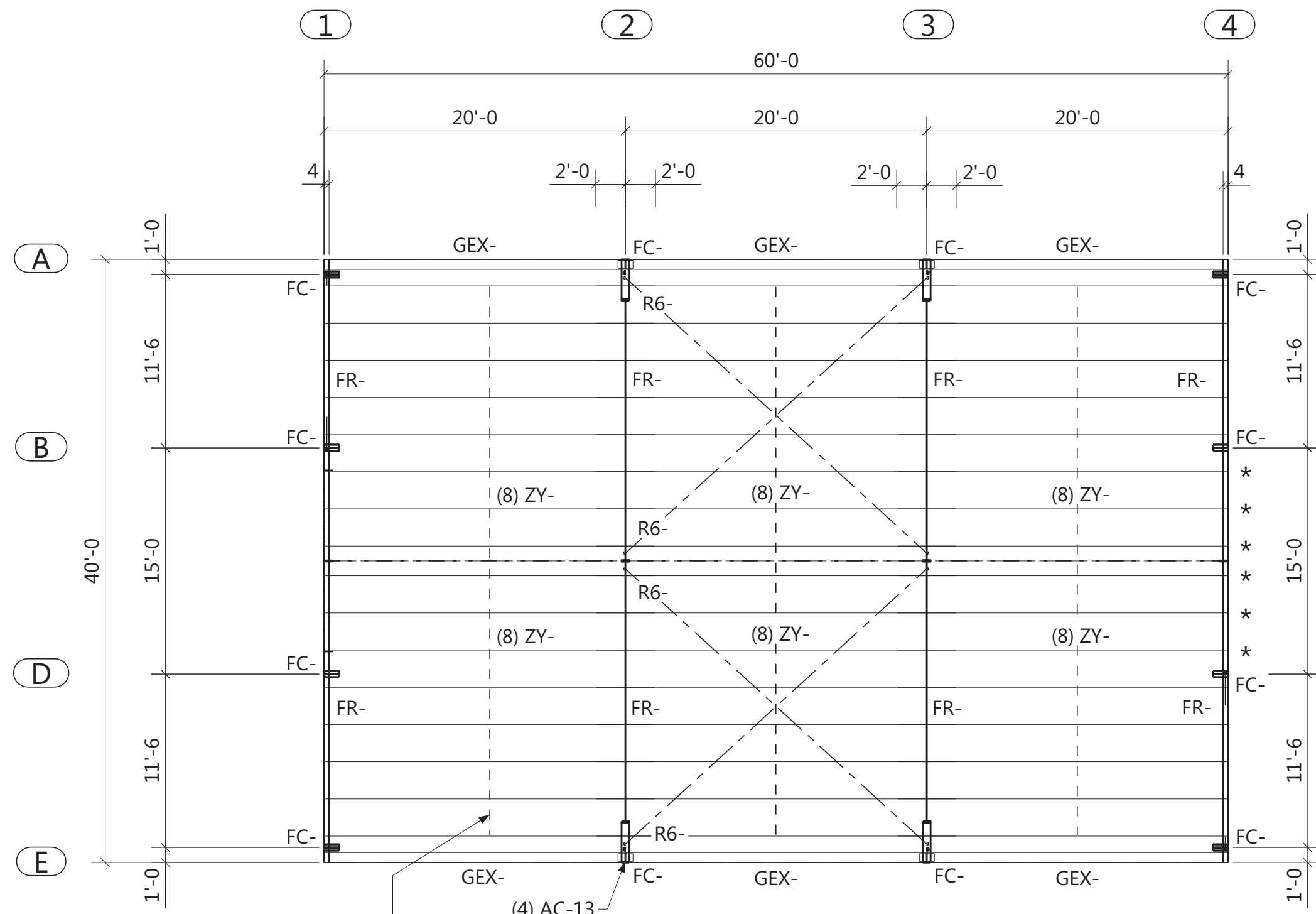
(1) AC-1R Clip W/(2) 1/2" Dia. A.B.'s



ANCHOR BOLT PLAN

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

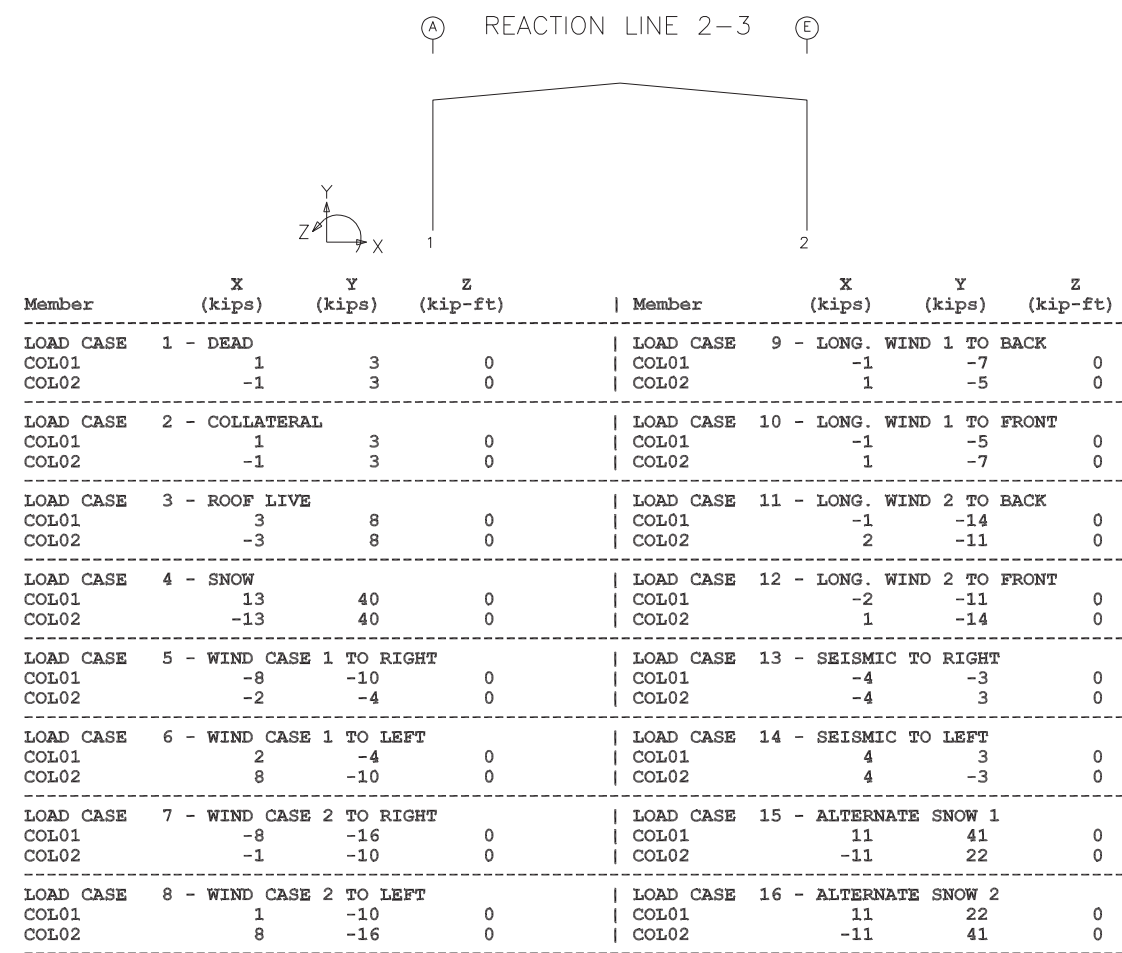
(2) 3/4" dia. bolts @ 24 Places See Details



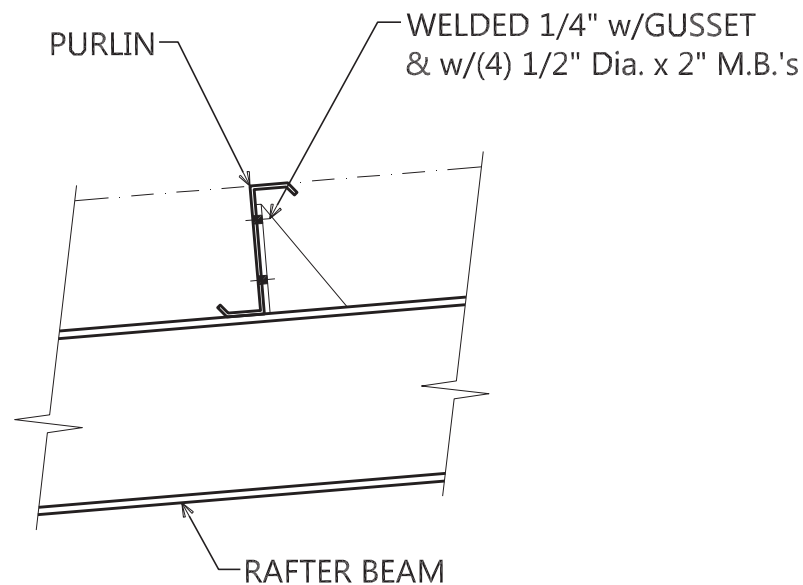
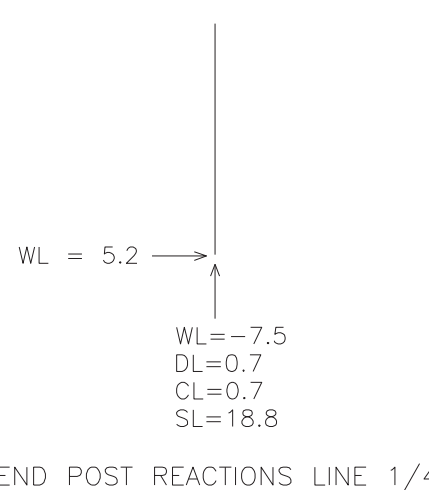
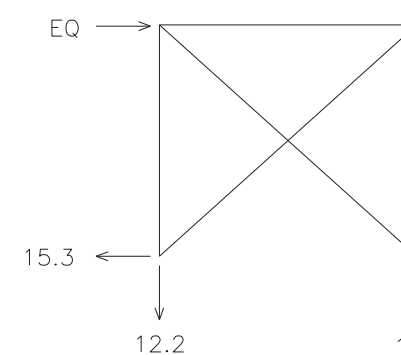
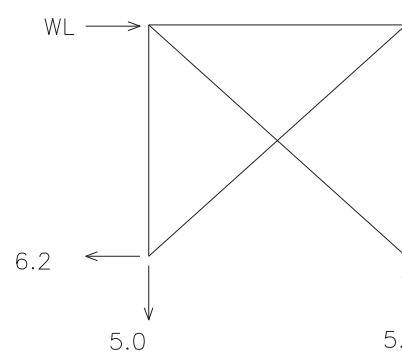
## ROOF FRAMING PLAN

(1) ROW OF SAG BLOCKING  
PER BAY. (SEE DET. 22 ON SHT 4)

(4) AC-13-

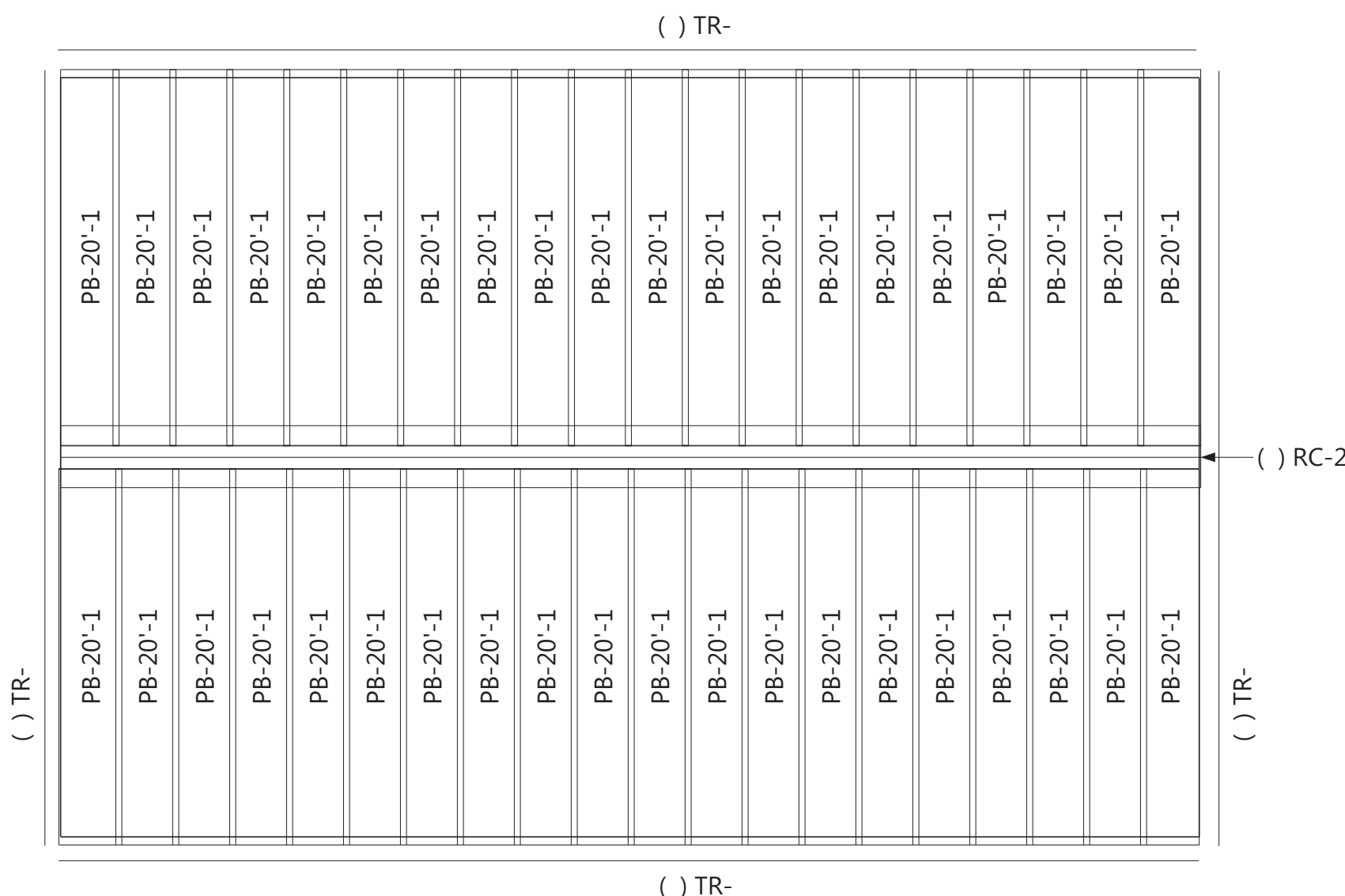


NOTE: ALL SEISMIC LOAD REACTIONS ARE SHOWING WITH BASE SHEAR VALUES

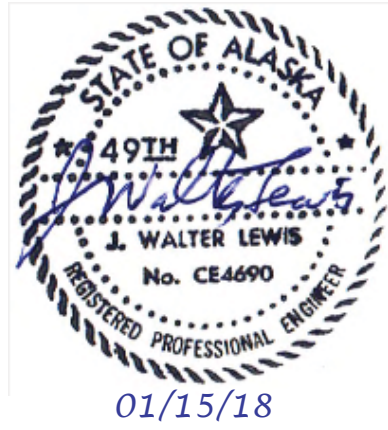


### ANTI-ROLL CLIP DETAIL

\* - DENOTES CLIP DETAIL @ PURLIN RUN SHOWN



## ROOF SHEETING

[illegible]

01/15/18



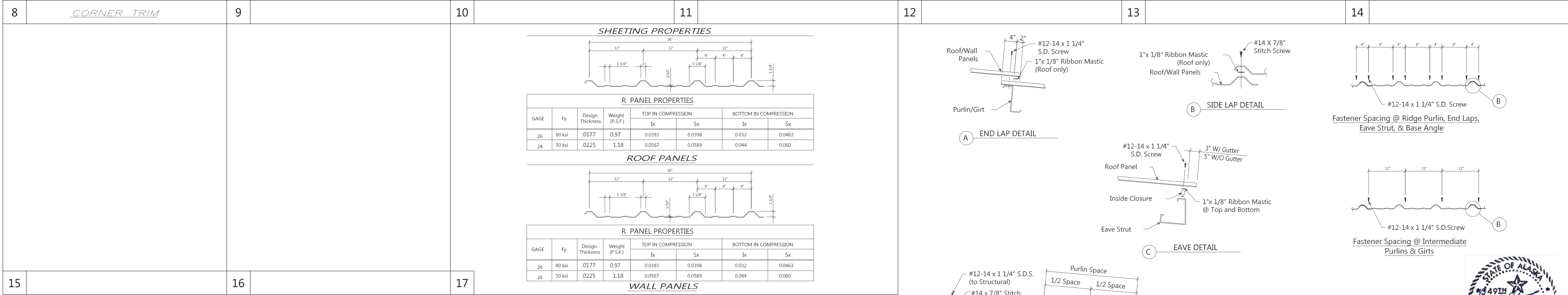




<p><u>TYPICAL MACHINE BOLT WASHER REQUIREMENTS</u> (UNLESS NOTED OTHERWISE ON DRAWINGS) <u>WASHERS ARE NOT REQUIRED AT PURLIN-GIRT LAP BOLTS</u></p> <p><u>SLOT TO SLOT CONNECTIONS</u> WASHERS ARE REQUIRED ON BOTH SIDES OF MATERIAL IF SLOTS ARE USED ON BOTH SIDES.</p> <p><u>SLOT TO HOLE CONNECTIONS</u> ONE WASHER REQUIRED ON SLOTTED SIDE ONLY.</p> <p><u>HOLE TO HOLE CONNECTIONS</u> NO WASHERS ARE REQUIRED WHEN SLOTS ARE NOT USED.</p>	<p>NOTE: SEE ROOF FRAMING PLAN OR CROSS SECTION FOR FLANGE BRACE LOCATIONS</p>	<p>NOTE: SEE ROOF FRAMING PLAN OR CROSS SECTION FOR FLANGE BRACE LOCATIONS</p> <p>NOTE: BUILDINGS W/O WALL PANELS. RAKE ANGLE ATTACHES TO BOTTOM OF PURLINS W/ LONG LEG VERTICAL</p>	<p>NOTE: SEE WALL FRAMING PLAN OR CROSS SECTION FOR FLANGE BRACE LOCATIONS</p>	<p>NOTE: SEE WALL FRAMING PLAN OR CROSS SECTION FOR FLANGE BRACE LOCATIONS</p>		<p>"AC-13" EAVE STRUT SPLICE PLATE W/ (8) 1/2" Dia. H.S.B.'s</p>	<div>1</div> <div>TYPICAL WASHER REQUIREMENTS</div> <div>2</div> <div>CONTINUOUS PURLINS</div> <div>3</div> <div>RAKEBEAM PURLINS</div> <div>4</div> <div>CONTINUOUS GIRTS</div> <div>5</div> <div>INSET GIRTS / CORNER</div> <div>6</div> <div>EW INSET GIRTS</div> <div>7</div> <div>*EAVE STRUT SPLICE PL</div>	<p>STANDARD</p>	<div>8</div> <div>DOOR JAMB / HEADER</div> <div>9</div> <div>DOOR JAMB / GIRT</div> <div>10</div> <div>END POST/RAKE BEAM</div> <div>11</div> <div></div> <div>12</div> <div></div> <div>13</div> <div></div> <div>14</div> <div></div>	<p><u>SAG BLOCKING DETAILS</u></p> <p><u>SAG BLOCKING DETAIL @ RIDGE</u></p> <p><u>SAG BLOCKING DETAIL @ EAVE</u></p>	<div>18</div> <div></div> <div>19</div> <div></div> <div>20</div> <div></div> <div>21</div> <div></div>	<p>DETAIL "A"</p> <p>DETAIL "B"</p> <p>DETAIL "C"</p> <p>DETAIL "D"</p>	<div>22</div> <div>SAG BLOCKING DETAIL</div> <div>24</div> <div></div> <div>25</div> <div></div> <div>26</div> <div></div> <div>27</div> <div>REVERSIBLE WALKDOOR AND FRAME</div>
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<div>CBC JOB No.</div> <div>C17C0461</div>	<div>DATE</div> <div>1/11/18</div>	<div>GENERAL DETAILS</div> <div>CUSTOMER:</div> <div>Icy Cape Sample Processing Bldg.</div>			<div>PROJ DATES:</div> <div>1/11/18</div>	<div> <div> <div>CBC</div> <div>STEEL BUILDINGS</div> <div>A Nucor Company</div> </div> <div> <div>49TH</div> <div>WALTER LEWIS</div> <div>REGISTERED PROFESSIONAL ENGINEER</div> <div>No. CE4690</div> </div> <div> <div>01/15/18</div> </div> </div>			<div> <div> <div>MBMA</div> <div>MEMBER</div> </div> <div> <div>P.O. BOX 1009</div> <div>LATHROP, CA 95330</div> <div>(209) 983-0910 FAX (209) 888-2354</div> </div> <div> <div>IAI</div> <div>ACCREDITED</div> </div> </div>			<div> <div> <div>DEALER:</div> <div>Arctic Fox</div> </div> <div> <div>DRAWN:</div> <div>JA</div> </div> <div> <div>ENGR. APR.</div> <div>BC</div> </div> <div> <div>SHEET</div> <div>4</div> </div> <div> <div>OF</div> <div>6</div> </div> </div>			<div>REV</div>
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**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.

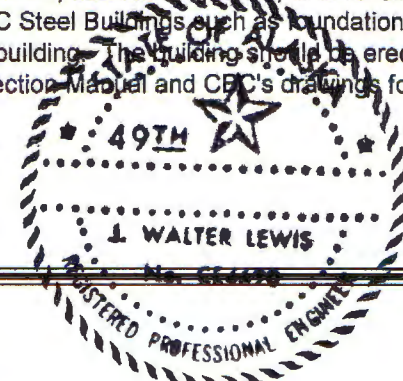
This certification is limited to the structural design of the framing and covering parts manufactured by CBC Steel Buildings and as specified in the contract. Accessory items such as doors, windows, louvers, translucent panels, and ventilators are not included. Also excluded are other parts of the project not provided by CBC Steel Buildings such as foundations, masonry walls, mechanical equipment and the erection and inspection of the building. The building should 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.







**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  
Roof Live Load : 20 psf  
Frame Live Load : 20 psf

Risk Category : II

Tributary Reduction (Y/N) : n

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

$S_s$  : 171.80%       $S_1$  : 80.80%  
 $R_{trans}$  : 3.50 /  $\Omega_o$  : 3.00  
 $R_{long}$  : 3.25 /  $\Omega_o$  : 2.00

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

$C_e$  : 1.0       $C_t$  : 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

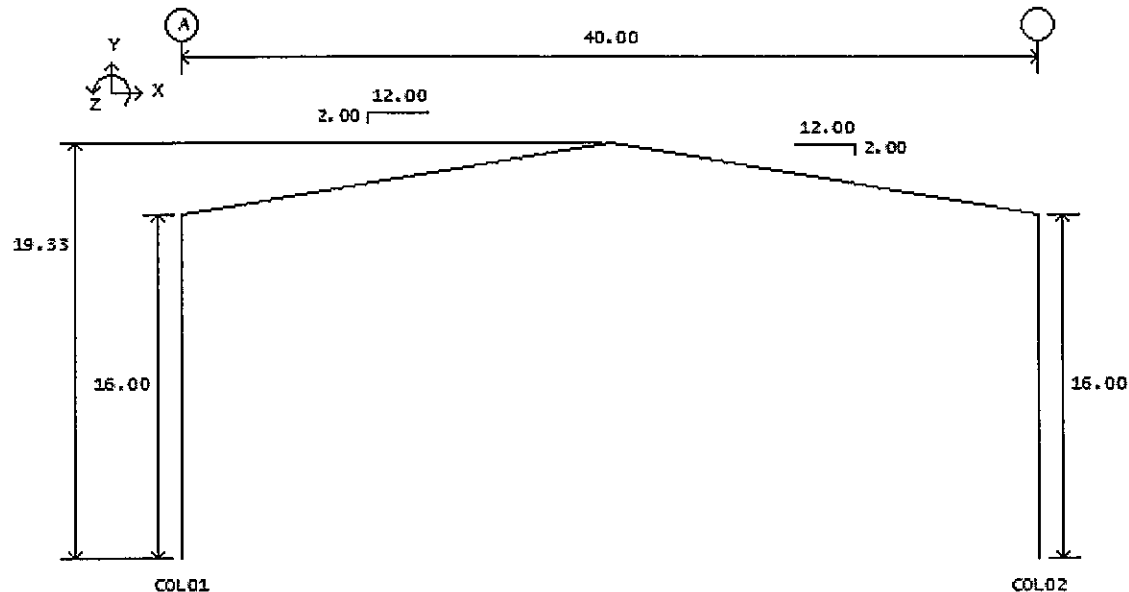
\*\*\* This structure is designed in compliance with CBC Steel Buildings specifications and standards utilizing the pertinent provisions and recommendations of the American Institute of Steel Construction (AISC), International Conference of Building Officials (ICBO), American Iron and Steel Institute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

A-2

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

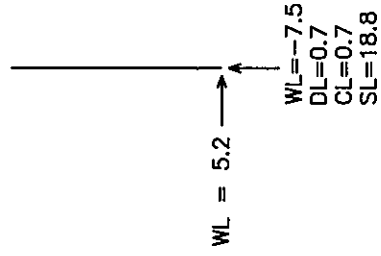
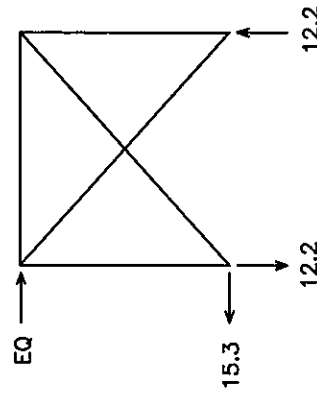
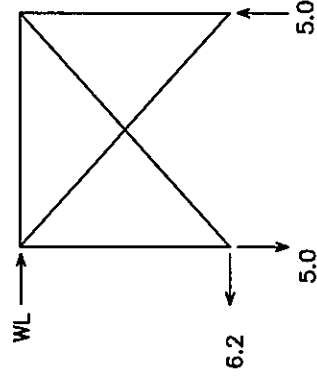
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 Date: 01-09-18  
 File: F01-800825

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



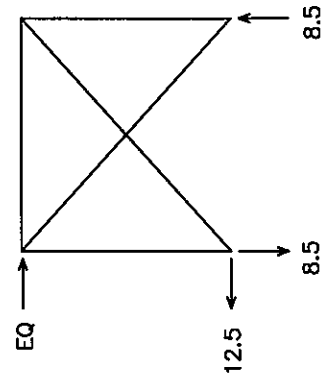
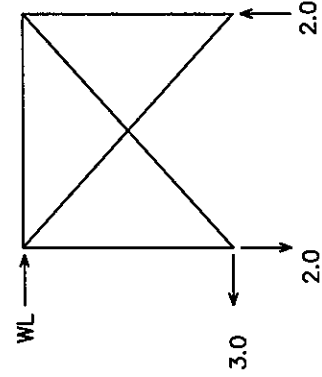
Member	X (kips)	Y (kips)	Z (kip-ft)	Member	X (kips)	Y (kips)	Z (kip-ft)
LOAD CASE 1 - DEAD				LOAD CASE 10 - LONG. WIND 1 TO BACK			
COL01	1	3	0	COL01	-1	-7	0
COL02	-1	3	0	COL02	1	-5	0
LOAD CASE 2 - COLLATERAL				LOAD CASE 11 - LONG. WIND 1 TO FRONT			
COL01	1	3	0	COL01	-1	-5	0
COL02	-1	3	0	COL02	1	-7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

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

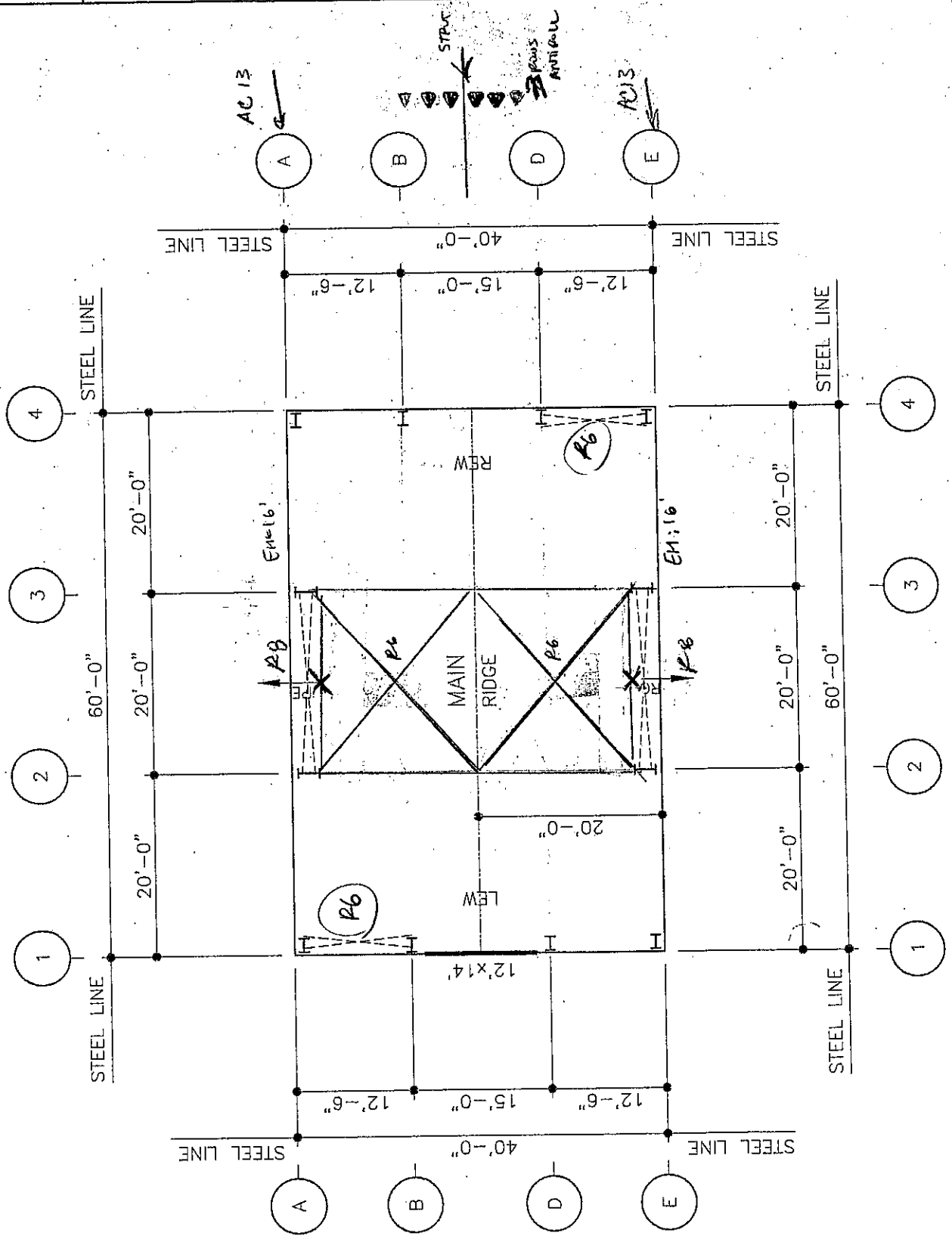


BRACING REACTION SIDEWALL @ BAY 2

END POST REACTIONS LINE 1/4



BRACING REACTION ENDWALL 1/4



## **APPENDIX B<sup>1</sup>**

### **INDEMNITY AND INSURANCE**

#### **Article 1. 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.

#### **Article 2. Insurance**

Without limiting contractor's indemnification, it is agreed that 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 contracting officer prior to beginning work 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.

**2.1 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.

**2.2 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 claim.

**2.3 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 claim.





# Laborers' and Mechanics' MINIMUM RATES OF PAY

Effective September 1, 2020  
Issue 41

PAMPHLET No. 600

Title 36. Public Contracts  
AS 36.05

DEPARTMENT OF LABOR  
AND WORKFORCE DEVELOPMENT  
Wage and Hour Administration



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THE STATE  
of **ALASKA**  
GOVERNOR MIKE DUNLEAVY

## Department of Labor and Workforce Development

Office of the Commissioner

Post Office Box 111149  
Juneau, Alaska 99811  
Main: 907.465.2700  
fax: 907.465-2784

September 1, 2020

### TO ALL CONTRACTING AGENCIES:

At the Alaska Department of Labor and Workforce Development, our goal is putting Alaskans to work. This pamphlet is designed to help contractors awarded public construction contracts understand the most significant laws of the State of Alaska pertaining to prevailing wage.

This pamphlet identifies current prevailing wage rates for public construction contracts (any construction projects awarded for the State of Alaska or its political subdivisions, such as local governments and certain non-profit organizations). Because these rates may change in a subsequent determination, please be sure you are using the appropriate rates. The rates published in this edition become effective September 1, 2020.

The prevailing wage rates contained in this pamphlet are applicable to public construction projects with a final bid date of September 11, 2020, or later. As the law now provides, these rates will remain stable during the life of a contract or for 24 calendar months, whichever is shorter. **The 24-month period begins on the date the prime contract is awarded.** Upon expiration of the initial 24-month period, the latest wage rates issued by the department shall become effective for a subsequent 24-month period or until the original contract is completed, whichever occurs first. This process shall be repeated until the original contract is completed.

The term "original contract" means the signed contract that resulted from the original bid and any amendments, including changes of work scope, additions, extensions, change orders, and other instruments agreed to by the parties that have not been subject to subsequent open bid procedures.

If a higher federal rate is required due to partial federal funding or other federal participation, the higher rate must be paid.

For additional copies of this pamphlet go to: <http://labor.state.ak.us/lss/pamp600.htm>

For questions regarding prevailing wage or employment preference requirements, please contact the nearest Wage and Hour office. These offices are listed on Page x.

Sincerely,

A handwritten signature in black ink, reading "Tamika L. Ledbetter".

Dr. Tamika L. Ledbetter  
Commissioner



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**Note to Readers:** The statutes and administrative regulations listed in this publication were taken from the official codes, as of the effective date of the publication. However, there may be errors or omissions that have not been identified and changes that occurred after the publication was printed. This publication is intended as an informational guide only and is not intended to serve as a precise statement of the statutes and regulations of the State of Alaska. To be certain of current laws and regulations, please refer to the official codes.

## EXCERPTS FROM ALASKA LAW

### **Sec. 36.05.005. Applicability.**

This chapter applies only to a public construction contract that exceeds \$25,000.

### **Sec. 36.05.010. Wage rates on public construction.**

A contractor or subcontractor who performs work on a public construction contract in the state shall pay not less than the current prevailing rate of wages for work of a similar nature in the region in which the work is done. The current prevailing rate of wages is that contained in the latest determination of prevailing rate of wages issued by the Department of Labor and Workforce Development at least 10 days before the final date for submission of bids for the contract. The rate shall remain in effect for the life of the contract or for 24 calendar months, whichever is shorter. At the end of the initial 24-month period, if new wage determinations have been issued by the department, the latest wage determination shall become effective for the next 24-month period or until the contract is completed, whichever occurs first. This process shall be repeated until the contract is completed.

### **Sec. 36.05.040. Filing schedule of employees, wages paid, and other information.**

All contractors or subcontractors who perform work on a public construction contract for the state or for a political subdivision of the state shall, before the Friday of every second week, file with the Department of Labor and Workforce Development a sworn affidavit for the previous reporting period, setting out in detail the number of persons employed, wages paid, job classification of each employee, hours worked each day and week, and other information on a form provided by the Department of Labor and Workforce Development.

### **Sec. 36.05.045. Notice of work and completion; withholding of payment.**

- (a) Before commencing work on a public construction contract, the person entering into the contract with a contracting agency shall designate a primary contractor for purposes of this section. Before work commences, the primary contractor shall file a notice of work with the Department of Labor and Workforce Development. The notice of work must list work to be performed under the public construction contract by each contractor who will perform any portion of work on the contract and the contract price being paid to each contractor. The primary contractor shall pay all filing fees for each contractor performing work on the contract, including a filing fee based on the contract price being paid for work performed by the primary contractor's employees. The filing fee payable shall be the sum of all fees calculated for each contractor. The filing fee shall be one percent of each contractor's contract price. The total filing fee payable by the primary contractor under this subsection may not exceed \$5,000. In this subsection, "contractor" means an employer who is using employees to perform work on the public construction contract under the contract or a subcontract.
- (b) Upon completion of all work on the public construction contract, the primary contractor shall file with the Department of Labor and Workforce Development a notice of completion together with payment of any additional filing fees owed due to increased contract amounts. Within 30 days after the department's receipt of the primary contractor's notice of completion, the department shall inform the contracting agency of the amount, if any, to be withheld from the final payment.
- (c) A contracting agency
  - (1) may release final payment of a public construction contract to the extent that the agency has received verification from the Department of Labor and Workforce Development that
    - (A) the primary contractor has complied with (a) and (b) of this section;
    - (B) the Department of Labor and Workforce Development is not conducting an investigation under this title; and
    - (C) the Department of Labor and Workforce Development has not issued a notice of a violation of this chapter to the primary contractor or any other contractors working on the public construction contract; and

- (2) shall withhold from the final payment an amount sufficient to pay the department's estimate of what may be needed to compensate the employees of any contractors under investigation on this construction contract, and any unpaid filing fees.
- (d) The notice and filing fee required under (a) of this section may be filed after work has begun if
  - (1) The public construction contract is for work undertaken in immediate response to an emergency; and
  - (2) The notice and fees are filed not later than 14 days after the work has begun.
- (e) A false statement made on a notice required by this section is punishable under AS 11.56.210.

**Sec. 36.05.060. Penalty for violation of this chapter.**

A contractor who violates this chapter is guilty of a misdemeanor and upon conviction is punishable by a fine of not less than \$100 nor more than \$1,000, or by imprisonment for not less than 10 days nor more than 90 days, or by both. Each day a violation exists constitutes a separate offense.

**Sec. 36.05.070. Wage rates in specifications and contracts for public works.**

- (a) The advertised specifications for a public construction contract that requires or involves the employment of mechanics, laborers, or field surveyors must contain a provision stating the minimum wages to be paid various classes of laborers, mechanics, or field surveyors and that the rate of wages shall be adjusted to the wage rate under AS 36.05.010.
- (b) Repealed by §17 ch 142 SLA 1972.
- (c) A public construction contract under (a) of this section must contain provisions that
  - (1) the contractor or subcontractors of the contractor shall pay all employees unconditionally and not less than once a week;
  - (2) wages may not be less than those stated in the advertised specifications, regardless of the contractual relationship between the contractor or subcontractors and laborers, mechanics, or field surveyors;
  - (3) the scale of wages to be paid shall be posted by the contractor in a prominent and easily accessible place at the site of the work;
  - (4) the state or a political subdivision shall withhold so much of the accrued payments as is necessary to pay to laborers, mechanics, or field surveyors employed by the contractor or subcontractors the difference between
    - (A) the rates of wages required by the contract to be paid laborers, mechanics, or field surveyors on the work; and
    - (B) the rates of wages in fact received by laborers, mechanics, or field surveyors.

**Sec. 36.05.080. Failure to pay agreed wages.**

Every contract within the scope of AS 36.05.070 shall contain a provision that if it is found that a laborer, mechanic, or field surveyor employed by the contractor or subcontractor has been or is being paid a rate of wages less than the rate of wages required by the contract to be paid, the state or its political subdivision may, by written notice to the contractor, terminate the contractor's right to proceed with the work or the part of the work for which there is a failure to pay the required wages and to prosecute the work to completion by contract or otherwise, and the contractor and the contractor's sureties are liable to the state or its political subdivision for excess costs for completing the work.

**Sec. 36.05.090. Payment of wages from withheld payments and listing contractors who violate contracts.**

- (a) The state disbursing officer in the case of a state public construction contract and the local fiscal officer in the case of a political subdivision public construction contract shall pay directly to laborers, mechanics, or field surveyors from accrued payments withheld under the terms of the contract the wages due laborers, mechanics, or field surveyors under AS 36.05.070.
- (b) The state disbursing officer or the local fiscal officer shall distribute to all departments of the state government and to all political subdivisions of the state a list giving the names of persons who have disregarded their obligations to employees. A person appearing on this list and a firm, corporation, partnership, or association in which the person has an interest may not work as a contractor or

subcontractor on a public construction contract for the state or a political subdivision of the state until three years after the date of publication of the list. If the accrued payments withheld under the contract are insufficient to reimburse all the laborers, mechanics, or field surveyors with respect to whom there has been a failure to pay the wages required under AS 36.05.070, the laborers, mechanics, or field surveyors have the right of action or intervention or both against the contractor and the contractor's sureties conferred by law upon persons furnishing labor or materials, and in the proceedings it is not a defense that the laborers, mechanics, or field surveyors accepted or agreed to accept less than the required rate of wages or voluntarily made refunds.

**Sec. 36.05.900. Definition.**

In this chapter, "contracting agency" means the state or a political subdivision of the state that has entered into a public construction contract with a contractor.

**EXCERPTS FROM ALASKA ADMINISTRATIVE CODE**

\*\*\***Notice:** Regulations relating to board and lodging and per diem went into effect on November 25, 2018. The new regulations are excerpted here\*\*\*

**8 AAC 30.051. Purpose.** The purpose of 8 AAC 30.052 – 8 AAC 30.056 is to ensure that wages paid to laborers, mechanics, and field surveyors do not fall below the prevailing rate of pay.

**8 AAC 30.052. Board and lodging; remote sites.** (a) A contractor on a public construction project located 65 or more road miles from the international airport closest to the project area in either Fairbanks, Juneau, or Anchorage, or that is inaccessible by road in a two-wheel drive vehicle, shall provide adequate board and lodging to each laborer, mechanic, or field surveyor while the person is employed on the project. If commercial lodging facilities are not available, the contractor shall provide temporary lodging facilities. Lodging facilities must comply with all applicable state and federal laws. For a highway project, the location of the project is measured from the midpoint of the project.

(b) A contractor is not required to provide board and lodging:

(1) to a laborer, mechanic, or field surveyor who is a domiciled resident of the project area; or

(2) on a laborer, mechanic, or field surveyor's scheduled days off, when the person can reasonably travel between the project and the person's permanent residence; for the purposes of this paragraph, "scheduled day off" means a day in which a person does not perform work on-site, is not required to remain at or near the job location for the benefit of the contractor, and is informed of the day off at least seven days before the day off.

(c) Upon a contractor's written request, the commissioner may waive the requirements of (a) of this section where:

(1) the project is inaccessible by road in a two-wheel drive vehicle, but the laborer, mechanic, or field surveyor can reasonably travel between the project and the person's permanent residence within one hour; or

(2) a laborer, mechanic, or field surveyor is not a domiciled resident of the project area, but has established permanent residence, with the intent to remain indefinitely, within 65 road miles of the project, or for a highway project, the mid-point of the project.

**8 AAC 30.054. Per diem instead of board and lodging.** (a) A contractor may pay a laborer, mechanic, or field surveyor per diem instead of providing board and lodging, when the following conditions are met:

(1) the department determines that per diem instead of board and lodging is an established practice for the work classification; the department shall publish and periodically revise its determinations in the pamphlet *Laborers' and Mechanics' Minimum Rates of Pay*;

(2) the contractor pays each laborer, mechanic, or field surveyor the appropriate per diem rate as published and periodically revised in the pamphlet *Laborers' and Mechanics' Minimum Rates of Pay*; and

(3) the contractor pays the per diem to each laborer, mechanic, or field surveyor on the same day that wages are paid.

(b) A contractor may not pay per diem instead of board and lodging on a highway project located

- (1) west of Livengood on the Elliot Highway, AK-2;
- (2) on the Dalton Highway, AK-11;
- (3) north of milepost 20 on the Taylor Highway, AK-5;
- (4) east of Chicken on the Top of the World Highway; or
- (5) south of Tetlin Junction to the Alaska-Canada border on the Alaska Highway, AK-2.

**8 AAC 30.056. Alternative arrangement.** Upon a contractor's written request, the commissioner may approve an alternative board and lodging or per diem arrangement, provided

- (1) the arrangement does not reduce the laborer, mechanic, or field surveyor's wages below the prevailing wage rate; and
- (2) the laborer, mechanic, or field surveyor voluntarily enters into and signs the written arrangement; a labor organization representing laborers, mechanics, or field surveyors may enter into the written agreement on their behalf.

**8 AAC 30.900. General definitions** (selected excerpts only):

In this chapter and in AS 36

(22) "domiciled resident" means a person living within 65 road miles of a public construction project, or in the case of a highway project, the mid-point of the project, for at least 12 consecutive months prior to the award of the public construction project;

(23) "employed on the project" means the time period from the date the laborer, mechanic, or field surveyor first reports on-site to the project through the final date the person reports on-site to the project.

## **ADDITIONAL INFORMATION**

### **PER DIEM**

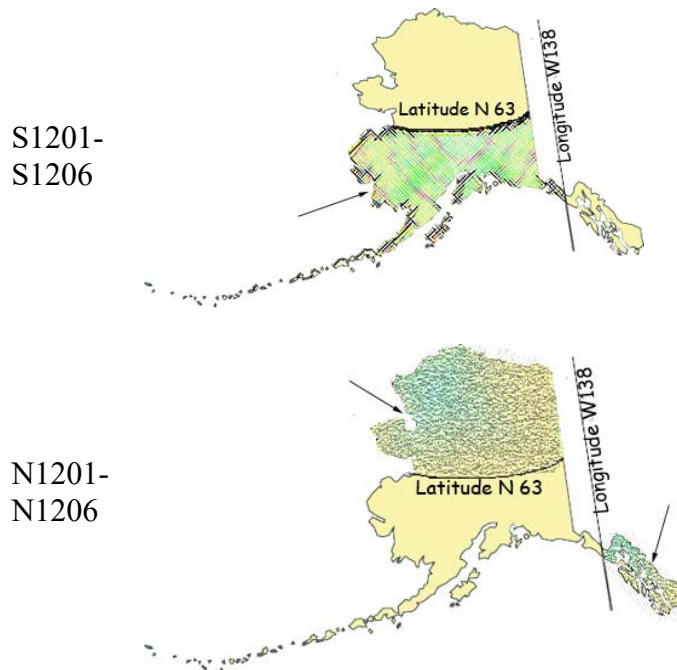
**Notice:** New regulations relating to board and lodging and per diem went into effect on November 25, 2018. The regulations provide a comprehensive set of requirements for the provision of board and lodging or per diem for workers on remote projects. Please refer to Alaska Administrative Code 8 AAC Chapter 30 and read the chapter carefully.

The Alaska Department of Labor and Workforce Development has determined that per diem is an established work practice for certain work classifications. These classifications are indicated throughout the Pamphlet by an asterisk (\*) under the classification title. If all of the conditions of 8 AAC 30.054 are met, an employer may pay workers in these classifications per diem instead of providing board and lodging on a remote project.

**Per Diem Rate:** As of May 1<sup>st</sup>, 2019, the minimum per diem rate is \$100.00 per day, or part thereof, the worker is employed on the project. In the event that a contractor provides lodging facilities, but no meals, the department will accept a payment of \$48 per day for meals to meet the per diem requirements.

### **LABORER CLASSIFICATION CLARIFICATION**

The laborer rates categorized in class code S1201-S1206 apply in one area of Alaska; the area that is south of N63 latitude and west of W138 Longitude. The laborer rates categorized in class code N1201-N1206 apply in two areas of Alaska; the Alaska areas north of N63 latitude and east of W138 longitude. The following graphic representations should assist with clarifying the applicable wage rate categories:



### **APPRENTICE RATES**

Apprentice rates at less than the minimum prevailing rates may be paid to apprentices according to an apprentice program which has been registered and approved by the Commissioner of the Alaska Department of Labor and Workforce Development in writing or according to a bona fide apprenticeship program registered with the U.S. Department of Labor, Office of Apprenticeship Training. **Any employee listed on a payroll at an apprentice wage rate who is not registered as above shall be paid the journeyman prevailing minimum wage in that work classification.** Wage rates are based on prevailing crew makeup practices in Alaska and apply to work performed regardless of either the quality of the work performed by the employee or the titles or classifications which may be assigned to individual employees.

### **FRINGE BENEFIT PLANS**

Contractors/subcontractors may compensate fringe benefits to their employees in any one of three methods. The fringe benefits may be paid into a union trust fund, into an approved benefit plan, or paid directly on the paycheck as gross wages.

Where fringe benefits are paid into approved plans, funds, or programs including union trust funds, the payments must be contributed at least monthly. If contractors submit their own payroll forms and are paying fringe benefits into approved plans, funds, or programs, the employer's certification must include, in addition to those requirements of 8 AAC 30.020(c), a statement that fringe benefit payments have been or will be paid at least monthly. Contractors who pay fringe benefits to a plan must ensure the plan is one approved by the Internal Revenue Service and that the plan meets the requirements of 8 AAC 30.025 (eff. 3/2/08) in order for payments to be credited toward the prevailing wage obligation.

### **SPECIAL PREVAILING WAGE RATE DETERMINATION**

Special prevailing wage rate determinations may be requested for special projects or a special worker classification if the work to be performed does not conform to traditional public construction for which a prevailing wage rate has been established under 8 AAC 30.050(a) of this section. Requests for special wage rate determinations must be in writing and filed with the Commissioner at least 30 days before the award of the contract. An applicant for a special wage rate determination shall have the responsibility to support the necessity for the special rate. An application for a special wage rate determination filed under this section must contain:

- (1) a specification of the contract or project on which the special rates will apply and a description of the work to be performed;
- (2) a brief narrative explaining why special wage rates are necessary;
- (3) the job class or classes involved;
- (4) the special wage rates the applicant is requesting, including survey or other relevant wage data to support the requested rates;
- (5) the approximate number of employees who would be affected; and
- (6) any other information which might be helpful in determining if special wage rates are appropriate.

Requests made pursuant to the above should be addressed to:

Director  
Alaska Department of Labor and Workforce Development  
Labor Standards and Safety Division  
Wage and Hour Administration  
P.O. Box 111149  
Juneau, AK 99811-1149  
-or-  
Email: [statewide.wagehour@alaska.gov](mailto:statewide.wagehour@alaska.gov)

### **EMPLOYMENT PREFERENCE INFORMATION**

In October 2019, the Alaska Attorney General issued a formal opinion stating that the Alaska Statutes 36.10.150 of the State's 90% Employment Preference law, also known as the Alaska Resident Hire law, violates both the U.S. and Alaska Constitutions. As a result, the state has stopped all enforcement activity.

A copy of the Attorney General opinion is found here:

[http://law.alaska.gov/pdf/opinions/opinions\\_2019/19-005\\_AK-hire.pdf](http://law.alaska.gov/pdf/opinions/opinions_2019/19-005_AK-hire.pdf)



**Alaska Department of Labor and Workforce Development**  
**Labor Standards and Safety Division**  
**Wage and Hour Administration**  
Web site: <http://labor.state.ak.us/lss/pamp600.htm>

**Anchorage**

1251 Muldoon Road, Suite 113  
Anchorage, Alaska 99504-2098  
Phone: (907) 269-4900

Email:  
statewide.wagehour@alaska.gov

**Juneau**

PO Box 111149  
Juneau, Alaska 99811  
Phone: (907) 465-4842

Email:  
statewide.wagehour@alaska.gov

**Fairbanks**

Regional State Office Building  
675 7<sup>th</sup> Ave., Station J-1  
Fairbanks, Alaska 99701-4593  
Phone: (907) 451-2886

Email:  
statewide.wagehour@alaska.gov

**LABOR STANDARDS AND SAFETY NOTICE REQUESTS**

If you would like to receive Wage and Hour Administration or Mechanical Inspection **regulation notices** or **publications information**, they are available via electronic mail, by signing up in the GovDelivery System, <https://public.govdelivery.com/accounts/AKDOL/subscriber/new> and selecting topics *LSS – Wage and Hour – Forms and Publications*, *LSS – Mechanical Inspection Regulations*, or *LSS – Wage and Hour Regulations*.

*Publications* are also available online at <http://labor.alaska.gov/lss/home.htm>

**DEBARMENT LIST**

**AS 36.05.090(b)** states that “the state disbursing officer or the local fiscal officer shall distribute to all departments of the state government and to all political subdivisions of the state a list giving the names of persons who have disregarded their obligations to employees.”

A person appearing on the following debarment list and a firm, corporation, partnership, or association in which the person has an interest may not work as a contractor or subcontractor on a public construction contract for the state or a political subdivision of the state for three years from the date of debarment.

Company Name

Tim Banach, Individual  
Boulder Creek Electric

Debarment Expires

February 23, 2021  
February 23, 2021

# Laborers' & Mechanics' Minimum Rates of Pay

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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## Boilermakers

\*See per diem note on last page

<b>A0101</b>	Boilermaker (journeyman)	46.08	8.57	16.72	1.65	<b>VAC</b>	<b>SAF</b>	
						3.50	0.34	76.86

## Bricklayers & Blocklayers

\*See per diem note on last page

<b>A0201</b>	Blocklayer	42.16	9.00	10.05	0.62	<b>L&amp;M</b>		
						0.20		62.03

Bricklayer

Marble or Stone Mason

Refractory Worker (Firebrick, Plastic, Castable, and Gunit Refractory Applications)

Terrazzo Worker

Tile Setter

<b>A0202</b>	Tuck Pointer Caulker	42.16	9.00	10.05	0.62	<b>L&amp;M</b>		
						0.20		62.03

Cleaner (PCC)

<b>A0203</b>	Marble & Tile Finisher	35.99	9.00	10.05	0.62	<b>L&amp;M</b>		
						0.20		55.86

Terrazzo Finisher

<b>A0204</b>	Torginal Applicator	40.10	9.83	8.50	0.55	<b>L&amp;M</b>		
						0.15	0.87	60.00

## Carpenters, Region I (North of 63 latitude)

\*See per diem note on last page

<b>N0301</b>	Carpenter (journeyman)	38.34	10.08	15.23	1.10	<b>L&amp;M</b>	<b>SAF</b>	
						0.10	0.10	64.95

Lather/Drywall/Acoustical

## Carpenters, Region II (South of N63 latitude)

\*See per diem note on last page

<b>S0301</b>	Carpenter (journeyman)	38.34	10.08	15.77	1.10	<b>L&amp;M</b>	<b>SAF</b>	
						0.10	0.10	65.49

Lather/Drywall/Acoustical

## Cement Masons

\*See per diem note on last page

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
------------	--	-----	-----	-----	-----	----------------	-----

## Cement Masons

\*See per diem note on last page

						L&M	
<b>A0401</b>	Group I, including:	38.38	8.70	11.80	1.43	0.10	60.41
	Application of Sealing Compound						
	Application of Underlayment						
	Building, General						
	Cement Mason (journeyman)						
	Concrete						
	Concrete Paving						
	Curb & Gutter, Sidewalk						
	Curing of All Concrete						
	Grouting & Caulking of Tilt-Up Panels						
	Grouting of All Plates						
	Patching Concrete						
	Screed Pin Setter						
	Spackling/Skim Coating						
						L&M	
<b>A0402</b>	Group II, including:	38.38	8.70	11.80	1.43	0.10	60.41
	Form Setter						
						L&M	
<b>A0403</b>	Group III, including:	38.38	8.70	11.80	1.43	0.10	60.41
	Concrete Saw (self-powered)						
	Curb & Gutter Machine						
	Floor Grinder						
	Pneumatic Power Tools						
	Power Chipping & Bushing						
	Sand Blasting Architectural Finish						
	Screed & Rodding Machine Operator						
	Troweling Machine Operator						
						L&M	
<b>A0404</b>	Group IV, including:	38.38	8.70	11.80	1.43	0.10	60.41
	Application of All Composition Mastic						
	Application of All Epoxy Material						
	Application of All Plastic Material						
	Finish Colored Concrete						
	Guniting Nozzleman						
	Hand Powered Grinder						
	Tunnel Worker						
						L&M	
<b>A0405</b>	Group V, including:	38.38	8.70	11.80	1.43	0.10	60.41
	Plasterer						

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
<b>Culinary Workers</b>								
<b>A0501</b>	Baker/Cook	28.37	8.40	7.56			LEG	44.33
<b>A0503</b>	General Helper	25.05	8.40	7.56			LEG	41.01
	Housekeeper							
	Janitor							
	Kitchen Helper							
<b>A0504</b>	Head Cook	28.97	8.40	7.56			LEG	44.93
<b>A0505</b>	Head Housekeeper	25.45	8.40	7.56			LEG	41.41
	Head Kitchen Help							
<b>Dredgemen</b>								
*See per diem note on last page								
<b>A0601</b>	Assistant Engineer	40.76	10.35	13.00	1.00		L&M	65.26
	Craneman							
	Electrical Generator Operator (primary pump/power barge/dredge)							
	Engineer							
	Welder							
<b>A0602</b>	Assistant Mate (deckhand)	39.60	10.35	13.00	1.00		L&M	64.10
<b>A0603</b>	Fireman	40.04	10.35	13.00	1.00		L&M	64.54
<b>A0605</b>	Leverman Clamshell	43.29	10.35	13.00	1.00		L&M	67.79
<b>A0606</b>	Leverman Hydraulic	41.53	10.35	13.00	1.00		L&M	66.03
<b>A0607</b>	Mate & Boatman	40.76	10.35	13.00	1.00		L&M	65.26
<b>A0608</b>	Oiler (dredge)	40.04	10.35	13.00	1.00		L&M	64.54
<b>Electricians</b>								
*See per diem note on last page								
<b>A0701</b>	Inside Cable Splicer	41.27	13.90	13.88	0.95		L&M LEG	70.35

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
<b>Electricians</b>								
*See per diem note on last page								
<b>A0702</b>	Inside Journeyman Wireman, including: Technicians (including use of drones in electrical construction)	40.94	13.90	14.12	0.95	L&M 0.20	LEG 0.15	70.26
<b>A0703</b>	Power Cable Splicer	57.79	13.90	18.92	0.95	L&M 0.20	LEG 0.15	91.91
<b>A0704</b>	Tele Com Cable Splicer	50.53	13.90	16.17	0.95	L&M 0.20	LEG 0.15	81.90
<b>A0705</b>	Power Journeyman Lineman, including: Power Equipment Operator Technician (including use of drones in electrical construction)	56.04	13.90	18.87	0.95	L&M 0.20	LEG 0.15	90.11
<b>A0706</b>	Tele Com Journeyman Lineman, including: Technician (including use of drones in telecommunications construction) Tele Com Equipment Operator	48.78	13.90	16.11	0.95	L&M 0.20	LEG 0.15	80.09
<b>A0707</b>	Straight Line Installer - Repairman	48.78	13.90	16.11	0.95	L&M 0.20	LEG 0.15	80.09
<b>A0708</b>	Powderman	54.04	13.90	18.81	0.95	L&M 0.20	LEG 0.15	88.05
<b>A0710</b>	Material Handler	26.57	13.33	4.80	0.15	L&M 0.15	LEG 0.15	45.15
<b>A0712</b>	Tree Trimmer Groundman	28.37	13.90	12.59	0.15	L&M 0.15	LEG 0.15	55.31
<b>A0713</b>	Journeyman Tree Trimmer	37.30	13.90	12.86	0.15	L&M 0.15	LEG 0.15	64.51
<b>A0714</b>	Vegetation Control Sprayer	40.85	13.90	12.97	0.15	L&M 0.15	LEG 0.15	68.17
<b>A0715</b>	Inside Journeyman Communications CO/PBX	39.52	13.90	13.83	0.95	L&M 0.20	LEG 0.15	68.55

**Elevator Workers**  
\*See per diem note on last page

<b>A0802</b>	Elevator Constructor	41.38	15.73	18.41	0.63	L&M 0.48	VAC 4.59	81.22
<b>A0803</b>	Elevator Constructor Mechanic	59.11	15.73	18.41	0.63	L&M 0.48	VAC 6.56	100.92

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
<b>Heat &amp; Frost Insulators/Asbestos Workers</b>							
*See per diem note on last page							
<b>A0902</b>	Asbestos Abatement-Mechanical Systems	38.68	9.24	11.01	1.20	SAF 0.12	60.25
<b>A0903</b>	Asbestos Abatement/General Demolition All Systems	38.68	9.24	11.01	1.20	SAF 0.12	60.25
<b>A0904</b>	Insulator, Group II	38.68	9.24	11.01	1.20	SAF 0.12	60.25
<b>A0905</b>	Fire Stop	38.68	9.24	11.01	1.20	SAF 0.12	60.25
<b>IronWorkers</b>							
*See per diem note on last page							
<b>A1101</b>	Ironworkers, including:	38.87	9.51	24.28	0.74	L&M 0.20 IAF 0.24	73.84
	Bender Operators						
	Bridge & Structural						
	Hangar Doors						
	Hollow Metal Doors						
	Industrial Doors						
	Machinery Mover						
	Ornamental						
	Reinforcing						
	Rigger						
	Sheeter						
	Signalman						
	Stage Rigger						
	Toxic Haz-Mat Work						
	Welder						
<b>A1102</b>	Helicopter	39.87	9.51	24.28	0.74	L&M 0.20 IAF 0.24	74.84
	Helicopter (used for rigging and setting)						
	Tower (energy producing windmill type towers to include nacelle and blades)						
<b>A1103</b>	Fence/Barrier Installer	35.37	9.51	23.93	0.74	L&M 0.20 IAF 0.24	69.99
<b>A1104</b>	Guard Rail Layout Man	36.11	9.51	23.93	0.74	L&M 0.20 IAF 0.24	70.73
<b>A1105</b>	Guard Rail Installer	36.37	9.51	23.93	0.74	L&M 0.20 IAF 0.24	70.99

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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**Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)**

\*See per diem note on last page

						L&M	LEG	
<b>N1201</b>	Group I, including:	31.71	8.95	17.81	1.30	0.20	0.20	60.17
	Asphalt Worker (shovelman, plant crew)							
	Brush Cutter							
	Camp Maintenance Laborer							
	Carpenter Tender or Helper							
	Choke Setter, Hook Tender, Rigger, Signalman							
	Concrete Labor (curb & gutter, chute handler, curing, grouting, screeding)							
	Crusher Plant Laborer							
	Demolition Laborer							
	Ditch Digger							
	Dumpman							
	Environmental Laborer (hazard/toxic waste, oil spill)							
	Fence Installer							
	Fire Watch Laborer							
	Flagman							
	Form Stripper							
	General Laborer							
	Guardrail Laborer, Bridge Rail Installer							
	Hydro-seeder Nozzleman							
	Laborer, Building							
	Landscaper or Planter							
	Laying of Mortarless Decorative Block (retaining walls, flowered decorative block 4 feet or less - highway or landscape work)							
	Material Handler							
	Pneumatic or Power Tools							
	Portable or Chemical Toilet Serviceman							
	Pump Man or Mixer Man							
	Railroad Track Laborer							
	Sandblast, Pot Tender							
	Saw Tender							
	Slurry Work							
	Steam Cleaner Operator							
	Steam Point or Water Jet Operator							
	Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)							
	Tank Cleaning							
	Utiliwalk & Utilidor Laborer							
	Watchman (construction projects)							
	Window Cleaner							

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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**Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)**

\*See per diem note on last page

						L&M	LEG	
<b>N1202</b>	Group II, including:	32.71	8.95	17.81	1.30	0.20	0.20	61.17

Burning & Cutting Torch  
 Cement or Lime Dumper or Handler (sack or bulk)  
 Certified Erosion Sediment Control Lead (CESCL Laborer)  
 Choker Splicer  
 Chucktender (wagon, air-track & hydraulic drills)  
 Concrete Laborer (power buggy, concrete saws, pumpcrete nozzleman, vibratorman)  
 Culvert Pipe Laborer  
 Cured Inplace Pipelayer  
 Environmental Laborer (asbestos, marine work)  
 Floor Preparation, Core Drilling  
 Foam Gun or Foam Machine Operator  
 Green Cutter (dam work)  
 Guniting Operator  
 Hod Carrier  
 Jackhammer/Chipping Gun or Pavement Breaker  
 Laser Instrument Operator  
 Laying of Mortarless Decorative Block (retaining walls, flowered decorative block over 4 feet - highway or landscape work)  
 Mason Tender & Mud Mixer (sewer work)  
 Pilot Car  
 Pipelayer Helper  
 Plasterer, Bricklayer & Cement Finisher Tender  
 Powderman Helper  
 Power Saw Operator  
 Railroad Switch Layout Laborer  
 Sandblaster  
 Scaffold Building & Erecting  
 Sewer Caulker  
 Sewer Plant Maintenance Man  
 Thermal Plastic Applicator  
 Timber Faller, Chainsaw Operator, Filer  
 Timberman

						L&M	LEG	
<b>N1203</b>	Group III, including:	33.61	8.95	17.81	1.30	0.20	0.20	62.07

Bit Grinder  
 Camera/Tool/Video Operator  
 Guardrail Machine Operator  
 High Rigger & Tree Topper  
 High Scaler

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation



Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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### Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)

\*See per diem note on last page

						L&M	LEG	
<b>N1203</b>	Group III, including:	33.61	8.95	17.81	1.30	0.20	0.20	62.07

Multiplate  
Plastic Welding  
Slurry Seal Squeegee Man  
Traffic Control Supervisor  
Welding Certified (in connection with laborer's work)

						L&M	LEG	
<b>N1204</b>	Group IIIA	36.89	8.95	17.81	1.30	0.20	0.20	65.35

Asphalt Raker, Asphalt Belly Dump Lay Down  
Drill Doctor (in the field)  
Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)  
Pioneer Drilling & Drilling Off Tugger (all type drills)  
Pipelayers  
Powderman (Employee Possessor)  
Storm Water Pollution Protection Plan Specialist (SWPPP Specialist)  
Traffic Control Supervisor, DOT Qualified

						L&M	LEG	
<b>N1205</b>	Group IV	21.28	8.95	17.81	1.30	0.20	0.20	49.74

Final Building Cleanup  
Permanent Yard Worker

						L&M	LEG	
<b>N1206</b>	Group IIIB	40.68	6.24	17.81	1.30	0.20	0.20	66.43

Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)(over 5,000 hours)  
Federal Powderman (Responsible Person in Charge)  
Grade Checking (setting or transferring of grade marks, line and grade, GPS, drones)  
Pioneer Drilling & Drilling Off Tugger (all type drills)(over 5,000 hours)  
Stake Hopper

### Laborers (The area that is south of N63 latitude and west of W138 longitude)

\*See per diem note on last page

						L&M	LEG	
<b>S1201</b>	Group I, including:	31.71	8.95	17.81	1.30	0.20	0.20	60.17

Asphalt Worker (shovelman, plant crew)  
Brush Cutter  
Camp Maintenance Laborer  
Carpenter Tender or Helper

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

**Laborers (The area that is south of N63 latitude and west of W138 longitude)**

\*See per diem note on last page

						L&M	LEG	
<b>S1201</b>	Group I, including:	31.71	8.95	17.81	1.30	0.20	0.20	60.17

Choke Setter, Hook Tender, Rigger, Signalman  
Concrete Labor (curb & gutter, chute handler, curing, grouting, screeding)  
Crusher Plant Laborer  
Demolition Laborer  
Ditch Digger  
Dumpman  
Environmental Laborer (hazard/toxic waste, oil spill)  
Fence Installer  
Fire Watch Laborer  
Flagman  
Form Stripper  
General Laborer  
Guardrail Laborer, Bridge Rail Installer  
Hydro-seeder Nozzleman  
Laborer, Building  
Landscape or Planter  
Laying of Mortarless Decorative Block (retaining walls, flowered decorative block 4 feet or less - highway or landscape work)  
Material Handler  
Pneumatic or Power Tools  
Portable or Chemical Toilet Serviceman  
Pump Man or Mixer Man  
Railroad Track Laborer  
Sandblast, Pot Tender  
Saw Tender  
Slurry Work  
Steam Cleaner Operator  
Steam Point or Water Jet Operator  
Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)  
Tank Cleaning  
Utiliwalk & Utilidor Laborer  
Watchman (construction projects)  
Window Cleaner

						L&M	LEG	
<b>S1202</b>	Group II, including:	32.71	8.95	17.81	1.30	0.20	0.20	61.17

Burning & Cutting Torch  
Cement or Lime Dumper or Handler (sack or bulk)  
Certified Erosion Sediment Control Lead (CESCL Laborer)

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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**Laborers (The area that is south of N63 latitude and west of W138 longitude)**

\*See per diem note on last page

						L&M	LEG	
<b>S1202</b>	Group II, including:	32.71	8.95	17.81	1.30	0.20	0.20	61.17

Choker Splicer  
Chucktender (wagon, air-track & hydraulic drills)  
Concrete Laborer (power buggy, concrete saws, pumpcrete nozzlemans, vibratorman)  
Culvert Pipe Laborer  
Cured Inplace Pipelayer  
Environmental Laborer (asbestos, marine work)  
Floor Preparation, Core Drilling  
Foam Gun or Foam Machine Operator  
Green Cutter (dam work)  
Guniting Operator  
Hod Carrier  
Jackhammer/Chipping Gun or Pavement Breaker  
Laser Instrument Operator  
Laying of Mortarless Decorative Block (retaining walls, flowered decorative block over 4 feet - highway or landscape work)  
Mason Tender & Mud Mixer (sewer work)  
Pilot Car  
Pipelayer Helper  
Plasterer, Bricklayer & Cement Finisher Tender  
Powderman Helper  
Power Saw Operator  
Railroad Switch Layout Laborer  
Sandblaster  
Scaffold Building & Erecting  
Sewer Caulker  
Sewer Plant Maintenance Man  
Thermal Plastic Applicator  
Timber Faller, Chainsaw Operator, Filer  
Timberman

						L&M	LEG	
<b>S1203</b>	Group III, including:	33.61	8.95	17.81	1.30	0.20	0.20	62.07

Bit Grinder  
Camera/Tool/Video Operator  
Guardrail Machine Operator  
High Rigger & Tree Topper  
High Scaler  
Multiplate  
Plastic Welding  
Slurry Seal Squeegee Man

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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### Laborers (The area that is south of N63 latitude and west of W138 longitude)

\*See per diem note on last page

						L&M	LEG	
<b>S1203</b>	Group III, including:	33.61	8.95	17.81	1.30	0.20	0.20	62.07

Traffic Control Supervisor

Welding Certified (in connection with laborer's work)

						L&M	LEG	
<b>S1204</b>	Group IIIA	36.89	8.95	17.81	1.30	0.20	0.20	65.35

Asphalt Raker, Asphalt Belly Dump Lay Down

Drill Doctor (in the field)

Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)

Pioneer Drilling & Drilling Off Tugger (all type drills)

Pipelayers

Powderman (Employee Possessor)

Storm Water Pollution Protection Plan Specialist (SWPPP Specialist)

Traffic Control Supervisor, DOT Qualified

						L&M	LEG	
<b>S1205</b>	Group IV	21.28	8.95	17.81	1.30	0.20	0.20	49.74

Final Building Cleanup

Permanent Yard Worker

						L&M	LEG	
<b>S1206</b>	Group IIIB	40.68	6.24	17.81	1.30	0.20	0.20	66.43

Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)(over 5,000 hours)

Federal Powderman (Responsible Person in Charge)

Grade Checking (setting or transferring of grade marks, line and grade, GPS, drones)

Pioneer Drilling & Drilling Off Tugger (all type drills)(over 5,000 hours)

Stake Hopper

### Millwrights

\*See per diem note on last page

						L&M		
<b>A1251</b>	Millwright (journeyman)	40.77	10.08	12.28	1.10	0.40	0.05	64.68

						L&M		
<b>A1252</b>	Millwright Welder	41.77	10.08	12.28	1.10	0.40	0.05	65.68

### Painters, Region I (North of N63 latitude)

\*See per diem note on last page

						L&M		
<b>N1301</b>	Group I, including:	32.99	8.71	13.50	1.08	0.07		56.35

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
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### Painters, Region I (North of N63 latitude)

\*See per diem note on last page

<b>N1301</b>	Group I, including:	32.99	8.71	13.50	1.08	<b>L&amp;M</b> 0.07	56.35
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Brush  
General Painter  
Hand Taping  
Hazardous Material Handler  
Lead-Based Paint Abatement  
Roll

<b>N1302</b>	Group II, including:	33.51	8.71	13.50	1.08	<b>L&amp;M</b> 0.07	56.87
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Bridge Painter  
Epoxy Applicator  
General Drywall Finisher  
Hand/Spray Texturing  
Industrial Coatings Specialist  
Machine/Automatic Taping  
Pot Tender  
Sandblasting  
Specialty Painter  
Spray  
Structural Steel Painter  
Wallpaper/Vinyl Hanger

<b>N1304</b>	Group IV, including:	39.64	8.71	16.37	1.05	0.05	65.82
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Glazier  
Storefront/Automatic Door Mechanic

<b>N1305</b>	Group V, including:	28.63	8.71	5.02	0.83	0.07	43.26
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Carpet Installer  
Floor Coverer  
Heat Weld/Cove Base  
Linoleum/Soft Tile Installer

### Painters, Region II (South of N63 latitude)

\*See per diem note on last page

<b>S1301</b>	Group I, including :	30.33	8.71	14.15	1.08	<b>L&amp;M</b> 0.07	54.34
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Brush  
General Painter  
Hand Taping  
Hazardous Material Handler

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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### Painters, Region II (South of N63 latitude)

\*See per diem note on last page

<b>S1301</b>	Group I, including :	30.33	8.71	14.15	1.08	<b>L&amp;M</b>	0.07	54.34
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Lead-Based Paint Abatement  
Roll  
Spray

<b>S1302</b>	Group II, including :	31.58	8.71	14.15	1.08	<b>L&amp;M</b>	0.07	55.59
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General Drywall Finisher  
Hand/Spray Texturing  
Machine/Automatic Taping  
Wallpaper/Vinyl Hanger

<b>S1303</b>	Group III, including :	31.68	8.71	14.15	1.08	<b>L&amp;M</b>	0.07	55.69
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Bridge Painter  
Epoxy Applicator  
Industrial Coatings Specialist  
Pot Tender  
Sandblasting  
Specialty Painter  
Structural Steel Painter

<b>S1304</b>	Group IV, including:	39.85	8.71	15.41	1.08	<b>L&amp;M</b>	0.07	65.12
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Glazier  
Storefront/Automatic Door Mechanic

<b>S1305</b>	Group V, including:	28.63	8.71	5.02	0.83	<b>L&amp;M</b>	0.07	43.26
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Carpet Installer  
Floor Coverer  
Heat Weld/Cove Base  
Linoleum/Soft Tile Installer

### Piledrivers

\*See per diem note on last page

<b>A1401</b>	Piledriver	38.34	10.08	15.23	1.10	<b>L&amp;M</b>	<b>IAF</b>	0.10 0.10 64.95
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Assistant Dive Tender  
Carpenter/Piledriver  
Rigger  
Sheet Stabber  
Skiff Operator

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
<b>Piledrivers</b>								
*See per diem note on last page								
<b>A1402</b>	Piledriver-Welder/Toxic Worker	39.34	10.08	15.23	1.10	<b>L&amp;M</b> 0.10	<b>IAF</b> 0.10	65.95
<b>A1403</b>	Remotely Operated Vehicle Pilot/Technician	42.65	10.08	15.23	1.10	<b>L&amp;M</b> 0.10	<b>IAF</b> 0.10	69.26
	Single Atmosphere Suit, Bell or Submersible Pilot							
<b>A1404</b>	Diver (working) **See note on last page	82.45	10.08	15.23	1.10	<b>L&amp;M</b> 0.10	<b>IAF</b> 0.10	109.06
<b>A1405</b>	Diver (standby) **See note on last page	42.65	10.08	15.23	1.10	<b>L&amp;M</b> 0.10	<b>IAF</b> 0.10	69.26
<b>A1406</b>	Dive Tender **See note on last page	41.65	10.08	15.23	1.10	<b>L&amp;M</b> 0.10	<b>IAF</b> 0.10	68.26
<b>A1407</b>	Welder (American Welding Society, Certified Welding Inspector)	43.90	10.08	15.23	1.10	<b>L&amp;M</b> 0.10	<b>IAF</b> 0.10	70.51
<b>Plumbers, Region I (North of N63 latitude)</b>								
*See per diem note on last page								
<b>N1501</b>	Journeyman Pipefitter	41.91	11.25	17.20	1.50	<b>L&amp;M</b> 0.65	<b>S&amp;L</b>	72.51
	Plumber							
	Welder							
<b>Plumbers, Region II (South of N63 latitude)</b>								
*See per diem note on last page								
<b>S1501</b>	Journeyman Pipefitter	41.00	11.13	15.02	1.55	<b>L&amp;M</b> 0.20		68.90
	Plumber							
	Welder							
<b>Plumbers, Region IIA (1st Judicial District)</b>								
*See per diem note on last page								
<b>X1501</b>	Journeyman Pipefitter	38.82	13.37	11.75	2.50	<b>L&amp;M</b> 0.24		66.68
	Plumber							
	Welder							
<b>Power Equipment Operators</b>								
*See per diem note on last page								
<b>A1601</b>	Group I, including:	41.53	10.35	13.00	1.00	<b>L&amp;M</b> 0.10	0.05	66.03

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

## Power Equipment Operators

\*See per diem note on last page

						L&M		
<b>A1601</b>	Group I, including:	41.53	10.35	13.00	1.00	0.10	0.05	66.03
	Asphalt Roller: Breakdown, Intermediate, and Finish							
	Back Filler							
	Barrier Machine (Zipper)							
	Belterete with Power Pack & similar conveyors							
	Bending Machine							
	Boat Coxswain							
	Bulldozer							
	Cableways, Highlines & Cablecars							
	Cleaning Machine							
	Coating Machine							
	Concrete Hydro Blaster							
	Cranes (45 tons & under or 150 feet of boom & under (including jib & attachments))							
	(a) Hydralifts or Transporters, (all track or truck type)							
	(b) Derricks							
	(c) Overhead							
	Crushers							
	Deck Winches, Double Drum							
	Ditching or Trenching Machine (16 inch or over)							
	Drag Scraper, Yarder, and similar types							
	Drilling Machines, Core, Cable, Rotary and Exploration							
	Finishing Machine Operator, Concrete Paving, Laser Screed, Sidewalk, Curb & Gutter Machine							
	Grade Checker and/or Line and Grade including Drone							
	Helicopters							
	Hover Craft, Flex Craft, Loadmaster, Air Cushion, All-Terrain Vehicle, Rollagon, Bargecable, Nodwell, & Snow Cat							
	Hydro Ax, Feller Buncher & similar							
	Hydro Excavation (Vac-Truck and Similar)							
	Loaders (2 1/2 yards through 5 yards, including all attachments):							
	(a) Forklifts (with telescopic boom & swing attachment)							
	(b) Front End & Overhead, (2-1/2 yards through 5 yards)							
	(c) Loaders, (with forks or pipe clamp)							
	(d) Loaders, (elevating belt type, Euclid & similar types)							
	Material Transfer Vehicle (Elevating Grader, Pickup Machine, and similar types)							
	Mechanic, Welder, Bodyman, Electrical, Camp & Maintenance Engineer							
	Micro Tunneling Machine							
	Mixers: Mobile type with hoist combination							
	Motor Patrol Grader							

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation



Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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## Power Equipment Operators

\*See per diem note on last page

							L&M		
<b>A1601</b>	Group I, including:	41.53	10.35	13.00	1.00	0.10	0.05	66.03	
	Mucking Machine: Mole, Tunnel Drill, Horizontal/Directional Drill Operator and/or Shield								
	Off-Road Hauler (including Articulating and Haul Trucks)								
	Operator on Dredges								
	Piledriver Engineer, L.B. Foster, Puller or similar paving breaker								
	Plant Operator (Asphalt & Concrete)								
	Power Plant, Turbine Operator 200 k.w. & over (power plants or combination of power units over 300 k.w.)								
	Remote Controlled Equipment								
	Scraper (through 40 yards)								
	Service Oiler/Service Engineer								
	Shot Blast Machine								
	Shovels, Backhoes, Excavators with all attachments, and Gradealls (3 yards & under)								
	Sideboom (under 45 tons)								
	Sub Grader (Gurries & similar types)								
	Tack Tractor								
	Truck Mounted Concrete Pump, Conveyor/Tele-belt, & Creter								
	Wate Kote Machine								

							L&M		
<b>A1602</b>	Group IA, including:	43.29	10.35	13.00	1.00	0.10	0.05	67.79	
	Camera/Tool/Video Operator (Slipline)								
	Certified Welder, Electrical Mechanic, Camp Maintenance Engineer, Mechanic (over 10,000 hours)								
	Cranes (over 45 tons or 150 feet including jib & attachments)								
	(a) Clamshells & Draglines (over 3 yards)								
	(b) Tower Cranes								
	Licensed Water/Waste Water Treatment Operator								
	Loaders (over 5 yards)								
	Motor Patrol Grader, Dozer, Grade Tractor (finish: when finishing to final grade and/or to hubs, or for asphalt)								
	Power Plants (1000 k.w. & over)								
	Profiler, Reclaimer, and Roto-Mill								
	Quad								
	Scrapers (over 40 yards)								
	Screed								
	Shovels, Backhoes, Excavators with all attachments (over 3 yards)								
	Sidebooms (over 45 tons)								
	Slip Form Paver, C.M.I. & similar types								
	Topside (Asphalt Paver, Slurry machine, Spreaders, and similar types)								

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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## Power Equipment Operators

\*See per diem note on last page

						L&M		
<b>A1603</b>	Group II, including:	40.76	10.35	13.00	1.00	0.10	0.05	65.26

Boiler - Fireman  
 Cement Hogs & Concrete Pump Operator  
 Conveyors (except those listed in Group I)  
 Hoists on Steel Erection, Towermobiles & Air Tuggers  
 Horizontal/Directional Drill Locator  
 Locomotives, Rod & Geared Engines  
 Mixers  
 Screening, Washing Plant  
 Sideboom (cradling rock drill, regardless of size)  
 Skidder  
 Trenching Machines (under 16 inches)  
 Water/Waste Water Treatment Operator

						L&M		
<b>A1604</b>	Group III, including:	40.04	10.35	13.00	1.00	0.10	0.05	64.54

"A" Frame Trucks, Deck Winches  
 Bombardier (tack or tow rig)  
 Boring Machine  
 Brooms, Power (sweeper, elevator, vacuum, or similar)  
 Bump Cutter  
 Compressor  
 Farm Tractor  
 Forklift, Industrial Type  
 Gin Truck or Winch Truck (with poles when used for hoisting)  
 Hoists, Air Tuggers, Elevators  
 Loaders:  
 (a) Elevating-Athey, Barber Greene & similar types  
 (b) Forklifts or Lumber Carrier (on construction job sites)  
 (c) Forklifts, (with tower)  
 (d) Overhead & Front End, (under 2-1/2 yards)  
 Locomotives: Dinkey (air, steam, gas & electric) Speeders  
 Mechanics, Light Duty  
 Oil, Blower Distribution  
 Posthole Digger, Mechanical  
 Pot Fireman (power agitated)  
 Power Plant, Turbine Operator, (under 200 k.w.)  
 Pumps, Water  
 Roller (other than Asphalt)  
 Saws, Concrete  
 Skid Hustler  
 Skid Steer (with all attachments)

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
Power Equipment Operators								
*See per diem note on last page								
		L&M						
A1604	Group III, including:	40.04	10.35	13.00	1.00	0.10	0.05	64.54
	Stake Hopper							
	Straightening Machine							
	Tow Tractor							
		L&M						
A1605	Group IV, including:	33.83	10.35	13.00	1.00	0.10	0.05	58.33
	Crane Assistant Engineer/Rig Oiler							
	Drill Helper							
	Parts & Equipment Coordinator							
	Spotter							
	Steam Cleaner							
	Swamper (on trenching machines or shovel type equipment)							
Roofers								
*See per diem note on last page								
		L&M						
A1701	Roofer & Waterproofer	44.62	11.75	3.91	0.81	0.10	0.06	61.25
		L&M						
A1702	Roofer Material Handler	31.23	11.75	3.91	0.81	0.10	0.06	47.86
Sheet Metal Workers, Region I (North of N63 latitude)								
*See per diem note on last page								
		L&M						
N1801	Sheet Metal Journeyman	48.64	11.50	14.11	1.65	0.12		76.02
	Air Balancing and duct cleaning of HVAC systems							
	Brazing, soldering or welding of metals							
	Demolition of sheet metal HVAC systems							
	Fabrication and installation of exterior wall sheathing, siding, metal roofing, flashing, decking and architectural sheet metal work							
	Fabrication and installation of heating, ventilation and air conditioning ducts and equipment							
	Fabrication and installation of louvers and hoods							
	Fabrication and installation of sheet metal lagging							
	Fabrication and installation of stainless steel commercial or industrial food service equipment							
	Manufacture, fabrication assembly, installation and alteration of all ferrous and nonferrous metal work							
	Metal lavatory partitions							
	Preparation of drawings taken from architectural and engineering plans required for fabrication and erection of sheet metal work							

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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### Sheet Metal Workers, Region I (North of N63 latitude)

\*See per diem note on last page

<b>N1801</b>	Sheet Metal Journeyman	48.64	11.50	14.11	1.65		<b>L&amp;M</b> 0.12	76.02
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Sheet Metal shelving

Sheet Metal venting, chimneys and breaching

Skylight installation

### Sheet Metal Workers, Region II (South of N63 latitude)

\*See per diem note on last page

<b>S1801</b>	Sheet Metal Journeyman	43.20	11.50	14.09	1.68		<b>L&amp;M</b> 0.43	70.90
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Air Balancing and duct cleaning of HVAC systems

Brazing, soldering or welding of metals

Demolition of sheet metal HVAC systems

Fabrication and installation of exterior wall sheathing, siding, metal roofing, flashing, decking and architectural sheet metal work

Fabrication and installation of heating, ventilation and air conditioning ducts and equipment

Fabrication and installation of louvers and hoods

Fabrication and installation of sheet metal lagging

Fabrication and installation of stainless steel commercial or industrial food service equipment

Manufacture, fabrication assembly, installation and alteration of all ferrous and nonferrous metal work

Metal lavatory partitions

Preparation of drawings taken from architectural and engineering plans required for fabrication and erection of sheet metal work

Sheet Metal shelving

Sheet Metal venting, chimneys and breaching

Skylight installation

### Sprinkler Fitters

\*See per diem note on last page

<b>A1901</b>	Sprinkler Fitter	47.25	10.23	17.85	0.52		<b>L&amp;M</b> 0.25	76.10
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### Surveyors

\*See per diem note on last page

<b>A2001</b>	Chief of Parties	44.16	11.43	12.64	1.15		<b>L&amp;M</b> 0.10	69.48
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<b>A2002</b>	Party Chief	42.57	11.43	12.64	1.15		<b>L&amp;M</b> 0.10	67.89
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Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
<b>Surveyors</b>							
*See per diem note on last page							
<b>A2003</b>	Line & Grade Technician/Office Technician/GPS, Drones	41.97	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	67.29
<b>A2004</b>	Associate Party Chief (including Instrument Person & Head Chain Person)/Stake Hop/Grademan	39.85	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	65.17
<b>A2006</b>	Chain Person (for crews with more than 2 people)	35.51	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	60.83
<b>Truck Drivers</b>							
*See per diem note on last page							
<b>A2101</b>	Group I, including: Air/Sea Traffic Controllers Ambulance/Fire Truck Driver (EMT certified) Boat Coxswain Captains & Pilots (air & water) Deltas, Commanders, Rollagons, & similar equipment (when pulling sleds, trailers or similar equipment) Dump Trucks (including rockbuggy, side dump, belly dump, & trucks with pups) over 40 yards up to & including 60 yards Helicopter Transporter Liquid Vac Truck/Super Vac Truck Material Coordinator or Purchasing Agent Ready-mix (over 12 yards up to & including 15 yards) (over 15 yards to be negotiated) Semi with Double Box Mixer Tireman, Heavy Duty/Fueler Water Wagon (250 Bbbs and above)	40.94	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	66.26
<b>A2102</b>	Group 1A including: Dump Trucks (including rockbuggy, side dump, belly dump & trucks with pups) over 60 yards up to & including 100 yards (over 100 yards to be negotiated) Jeeps (driver under load) Lowboys, including tractor attached trailers & jeeps, up to & including 12 axles (over 12 axles or 150 tons to be negotiated)	42.21	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	67.53
<b>A2103</b>	Group II, including: All Deltas, Commanders, Rollagons, & similar equipment Batch Trucks (8 yards & up) Batch Trucks (up to & including 7 yards)	39.68	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	65.00

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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## Truck Drivers

\*See per diem note on last page

<b>A2103</b>	Group II, including:	39.68	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	65.00
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Boom Truck/Knuckle Truck (over 5 tons)  
 Cacasco Truck/Heat Stress Truck  
 Construction and Material Safety Technician  
 Dump Trucks (including rockbuggy, side dump, belly dump, & trucks with pups) over 20 yards up to & including 40 yards  
 Gin Pole Truck, Winch Truck, Wrecker (truck mounted "A" frame manufactured rating over 5 tons)  
 Mechanics  
 Oil Distributor Driver  
 Partsman  
 Ready-mix (up to & including 12 yards)  
 Stringing Truck  
 Turn-O-Wagon or DW-10 (not self loading)

<b>A2104</b>	Group III, including:	38.86	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	64.18
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Boom Truck/Knuckle Truck (up to & including 5 tons)  
 Dump Trucks (including rockbuggy, side dump, belly dump, & trucks with pups) over 10 yards up to & including 20 yards  
 Expeditor (electrical & pipefitting materials)  
 Gin Pole Truck, Winch Truck, Wrecker (truck mounted "A" frame manufactured rating 5 tons & under)  
 Greaser - Shop  
 Semi or Truck & Trailer  
 Thermal Plastic Layout Technician  
 Traffic Control Technician  
 Trucks/Jeeps (push or pull)

<b>A2105</b>	Group IV, including:	38.28	11.43	12.64	1.15	<b>L&amp;M</b> 0.10	63.60
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Air Cushion or similar type vehicle  
 All Terrain Vehicle  
 Buggymobile  
 Bull Lift & Fork Lift, Fork Lift with Power Boom & Swing Attachment (over 5 tons)  
 Bus Operator (over 30 passengers)  
 Cement Spreader, Dry  
 Combination Truck-Fuel & Grease  
 Compactor (when pulled by rubber tired equipment)  
 Dump Trucks (including rockbuggy, side dump, belly dump, & trucks with pups) up to & including 10 yards  
 Dumpster

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

### Truck Drivers

\*See per diem note on last page

							L&M	
<b>A2105</b>	Group IV, including:	38.28	11.43	12.64	1.15	0.10		63.60

Expeditor (general)  
 Fire Truck/Ambulance Driver  
 Flat Beds, Dual Rear Axle  
 Foam Distributor Truck Dual Axle  
 Front End Loader with Fork  
 Grease Truck  
 Hydro Seeder, Dual Axle  
 Hyster Operators (handling bulk aggregate)  
 Loadmaster (air & water operations)  
 Lumber Carrier  
 Ready-mix, (up to & including 7 yards)  
 Rigger (air/water/oilfield)  
 Tireman, Light Duty  
 Track Truck Equipment  
 Truck Vacuum Sweeper  
 Warehouseperson  
 Water Truck (Below 250 Bbls)  
 Water Truck (straight)  
 Water Wagon, Semi

							L&M	
<b>A2106</b>	Group V, including:	37.52	11.43	12.64	1.15	0.10		62.84

Buffer Truck  
 Bull Lifts & Fork Lifts, Fork Lifts with Power Boom & Swing  
 Attachments (up to & including 5 tons)  
 Bus Operator (up to 30 passengers)  
 Farm Type Rubber Tired Tractor (when material handling or pulling  
 wagons on a construction project)  
 Flat Beds, Single Rear Axle  
 Foam Distributor Truck Single Axle  
 Fuel Handler (station/bulk attendant)  
 Gear/Supply Truck  
 Gravel Spreader Box Operator on Truck  
 Hydro Seeders, Single axle  
 Pickups (pilot cars & all light-duty vehicles)  
 Rigger/Swamper  
 Tack Truck  
 Team Drivers (horses, mules, & similar equipment)

### Tunnel Workers, Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)

\*See per diem note on last page

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens  
 fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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**Tunnel Workers, Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)**

\*See per diem note on last page

						L&M	LEG	
<b>N2201</b>	Group I, including:	34.88	8.95	17.81	1.30	0.20	0.20	63.34

Brakeman  
Mucker  
Nipper  
Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)  
Topman & Bull Gang  
Tunnel Track Laborer

						L&M	LEG	
<b>N2202</b>	Group II, including:	35.98	8.95	17.81	1.30	0.20	0.20	64.44

Burning & Cutting Torch  
Certified Erosion Sediment Control Lead (CESCL Laborer)  
Concrete Laborer  
Floor Preparation, Core Drilling  
Jackhammer/Chipping Gun or Pavement Breaker  
Laser Instrument Operator  
Nozzlemen, Pumpcrete or Shotcrete  
Pipelayer Helper

						L&M	LEG	
<b>N2203</b>	Group III, including:	36.97	8.95	17.81	1.30	0.20	0.20	65.43

Miner  
Retimberman

						L&M	LEG	
<b>N2204</b>	Group IIIA, including:	40.58	8.95	17.81	1.30	0.20	0.20	69.04

Asphalt Raker, Asphalt Belly Dump Lay Down  
Drill Doctor (in the field)  
Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)  
Pioneer Drilling & Drilling Off Tugger (all type drills)  
Pipelayer  
Powderman (Employee Possessor)  
Storm Water Pollution Protection Plan Specialist (SWPPP Specialist)  
Traffic Control Supervisor, DOT Qualified

						L&M	LEG	
<b>N2206</b>	Group IIIB, including:	44.75	6.24	17.81	1.30	0.20	0.20	70.50

Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)(over 5,000 hours)  
Federal Powderman (Responsible Person in Charge)  
Grade Checking (setting or transferring of grade marks, line and grade, GPS, drones)

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation



Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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**Tunnel Workers, Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)**

\*See per diem note on last page

						L&M	LEG	
<b>N2206</b>	Group IIIB, including:	44.75	6.24	17.81	1.30	0.20	0.20	70.50
	Pioneer Drilling & Drilling Off Tugger (all type drills)(over 5,000 hours)							
	Stake Hopper							

**Tunnel Workers, Laborers (The area that is south of N63 latitude and west of W138 longitude)**

\*See per diem note on last page

						L&M	LEG	
<b>S2201</b>	Group I, including:	34.88	8.95	17.81	1.30	0.20	0.20	63.34
	Brakeman							
	Mucker							
	Nipper							
	Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)							
	Topman & Bull Gang							
	Tunnel Track Laborer							

						L&M	LEG	
<b>S2202</b>	Group II, including:	35.98	8.95	17.81	1.30	0.20	0.20	64.44
	Burning & Cutting Torch							
	Certified Erosion Sediment Control Lead (CESCL Laborer)							
	Concrete Laborer							
	Floor Preparation, Core Drilling							
	Jackhammer/Chipping Gun or Pavement Breaker							
	Laser Instrument Operator							
	Nozzlemen, Pumpcrete or Shotcrete							
	Pipelayer Helper							

						L&M	LEG	
<b>S2203</b>	Group III, including:	36.97	8.95	17.81	1.30	0.20	0.20	65.43
	Miner							
	Retimberman							

						L&M	LEG	
<b>S2204</b>	Group IIIA, including:	40.58	8.95	17.81	1.30	0.20	0.20	69.04
	Asphalt Raker, Asphalt Belly Dump Lay Down							
	Drill Doctor (in the field)							
	Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)							
	Pioneer Drilling & Drilling Off Tugger (all type drills)							
	Pipelayer							
	Powderman (Employee Possessor)							
	Storm Water Pollution Protection Plan Specialist (SWPPP Specialist)							

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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### Tunnel Workers, Laborers (The area that is south of N63 latitude and west of W138 longitude)

\*See per diem note on last page

						L&M	LEG	
<b>S2204</b>	Group IIIA, including:	40.58	8.95	17.81	1.30	0.20	0.20	69.04

Traffic Control Supervisor, DOT Qualified

						L&M	LEG	
<b>S2206</b>	Group IIIB, including:	44.75	6.24	17.81	1.30	0.20	0.20	70.50

Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)(over 5,000 hours)  
Federal Powderman (Responsible Person in Charge)  
Grade Checking (setting or transferring of grade marks, line and grade, GPS, drones)  
Pioneer Drilling & Drilling Off Tugger (all type drills)(over 5,000 hours)  
Stake Hopper

### Tunnel Workers, Power Equipment Operators

\*See per diem note on last page

						L&M		
<b>A2207</b>	Group I	45.68	10.35	13.00	1.00	0.10	0.05	70.18

						L&M		
<b>A2208</b>	Group IA	47.62	10.35	13.00	1.00	0.10	0.05	72.12

						L&M		
<b>A2209</b>	Group II	44.84	10.35	13.00	1.00	0.10	0.05	69.34

						L&M		
<b>A2210</b>	Group III	44.04	10.35	13.00	1.00	0.10	0.05	68.54

						L&M		
<b>A2211</b>	Group IV	37.21	10.35	13.00	1.00	0.10	0.05	61.71

\* Per diem is an established practice for this classification. This means that per diem is an allowable alternative to board and lodging if all criteria are met. See 8 AAC 30.051-08 AAC 30.056, and the per diem information on page vii of this Pamphlet.

\*\* Work in combination of classifications: Employees working in any combination of classifications within the diving crew (working diver, standby diver, and tender) in a shift are paid in the classification with the highest rate for a minimum of 8 hours per shift.

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pens fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation