CITY OF HOMER

BID DOCUMENTS

Paintbrush Booster Pump Station Upgrade

PREPARED BY:

CITY OF HOMER – PUBLIC WORKS DEPARTMENT

3575 HEATH STREET

HOMER ALASKA, 99603

(907) 235-3170

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Paintbrush Booster Pump Station Upgrade Project

INVITATION TO BID

By the City of Homer, Alaska
For the Paintbrush Booster Pump Station Upgrade

Sealed Bids for construction of the Paintbrush Booster Station Upgrade Project will be received by the Office of the City Clerk, 491 E. Pioneer Avenue, Homer, Alaska 99603 until **3:00 PM on Tuesday, June 18, 2024,** at which time they will be publicly opened. Bids received after the time fixed for receipt of the Bid shall not be considered. **All bidders must submit a City of Homer Plan Holders Registration form to be on the Plan Holders List to be considered responsive.** Plan Holder Registration Forms must be submitted separate from Bid Submittal.

An electronic copy of the Bid Documents and Plan Holder Registration form are available online at https://www.cityofhomer-ak.gov/rfps. Paper copies of the Bid Documents may be purchased at the Office of the City Clerk upon payment of $100 per set ($150 for priority mail delivery). All fees are non-refundable.

For Bid Plans and Specifications contact: City Clerk's Office 491 E. Pioneer Avenue, Homer, Alaska 99603 (907) 235-3130.

The project consists of furnishing all labor, materials, equipment, tools, supervision, and other facilities necessary to perform the project in accordance with the plans and specifications. The work includes, but is not limited to the following:

> Replace the pumps, VFD systems, control panels and electrical equipment within the Paintbrush Booster Pump Station.

Please direct all questions in writing regarding this project to: Daniel Kort, Public Works Director
City of Homer Public Works Dept. 3575 Heath Street Homer, Alaska 99603 Email: dkort@ci.homer.ak.us Phone: (907) 435-3141

The City of Homer reserves the right to accept or reject any or all bids, and to waive irregularities or informalities in the bids.

Dated this 13th day of May, 2024.

City of Homer

_____
Melissa Jacobsen, Interim City Manager

Publish: Homer News May 16 & 23, 2024
Ad#24-051
Anchorage Daily News May 19, 2024
Ad#24-052

INSTRUCTIONS TO BIDDERS
City of Homer, Alaska
Paintbrush Booster Pump Station Upgrade

The City of Homer, Alaska is requesting bids from qualified firms and individuals for the project described herein.

The following subjects are discussed herein to assist you in the preparation of your bid.

I. Introduction

The City of Homer requests bids for the Paintbrush Booster Pump Station Upgrade Project. The purpose of this project is upgrade mechanical and electrical components within the Paintbrush Booster Pump Station.

All work activity associated with the project shall be completed by December 31, 2024.

II. Scope of Services

The proposed work is located within the limits of the City of Homer and is illustrated on the plans entitled Paintbrush Booster Pump Station Upgrade.

The project consists of furnishing all labor, materials, equipment, tools, supervision and other facilities necessary for the performance of the work described herein and shown on the project drawings. The work includes, but is not limited to:

- Replace existing pumps with integral VFDs with new, vertical multistage centrifugal pumps and wall mounted VFDs.
- Salvage and reinstall stainless-steel inlet and outlet headers, isolation valves, and check valves.
- Replace pressure tank.
- Furnish and install VFDs and enclosures.
- Furnish and install RTU and enclosure.
- Furnish and install combination meter base.
- Furnish and install 1-phase, 3-wire panelboard with 200-amp rated main circuit breaker.

III. General Bidding Requirements

The work must be performed by a Contractor skilled and regularly engaged in the type of work called for under the Contract. Bidders must have a current contractor's license issued by the State of Alaska. The

license must apply to the work described in the Invitation. The City's local bidder preference requirements apply to this contract. State prevailing wage rates will apply.

An electronic copy of Plans and Specifications is available on the City's website http://www.cityofhomer-ak.gov/rfps or you may purchase hard copies at the Office of the City Clerk upon payment of $100 per set ($150 for overnight delivery). City of Homer Standard Construction Specifications 2011 Edition (containing general contract provisions) may also be downloaded from the city's website. All fees are non-refundable. The City of Homer reserves the right to accept or reject any or all bids, to waive irregularities or informalities in the bids, and to award the contract to the lowest responsive, responsible bidder.

Performance and Payment bonds in the amount of 100 percent (100%) of the bid amount are required.

Bids must be submitted on the Bid Form and be received by **3:00 PM on Tuesday, June 18, 2024** at the Office of the City Clerk, City of Homer 491 E. Pioneer Avenue, Homer, Alaska, 99603. **A bid bond is required.** Cashier checks in an amount equal to five percent (5%) of the bid are acceptable. Surety bonds are acceptable.

A Pre-Bid Meeting will be held at 2:00 p.m. on May 27, 2024 at the Cowles Council Chamber, City Hall 491 E Pioneer Ave Homer, Alaska 99603. This meeting will be conducted simultaneously via Zoom. Invitations will be distributed to all bidders listed on the Plan Holder's List maintained by the City Clerk's Office.

A Site Visit will be conducted immediately following the meeting.

IV. The Bid Package

The City of Homer requires a two-part Bid Package, Part A and Part B. Each portion of the Bid Package must be submitted in separate envelopes, which shall be combined into one single Bid Package, marked with the name of the project and the time/date of the bid opening.

At the bid opening, Part A is opened first and must be complete or Part B will not be opened and the bid will be rejected.

Part A of the bid contains:

a. Addenda Acknowledgment Form
b. If signature on the Bid is by an agent, other than an Officer of a Corporation, or of a member of a Co-partnership, a Power of Attorney must be submitted in Part A.
c. EEO-1 Certification
d. Equal Employment Opportunity Clause

Part A must be submitted, as part of the Bid Package, in a separate envelope marked Part A.

Part B of the bid contains:

a. Bid Form
b. Bid Bond

Part B must be submitted, as part of the Bid Package, in a separate envelope marked Part B.

V. Tentative Project Schedule

- Pre-bid Conference 2:00 p.m. on May 27, 2024
- Bids Due 3:00 p.m. on June 18, 2024
- Notice of Intent to Award June 19, 2024
- Award by City Council June 24, 2024
- Notice to Proceed June 26, 2024
- Pre-Construction Meeting July 2, 2024
- Start Construction July 8, 2024
- Contract Completion December 31, 2024

VI. Instructions to Bidders

The City of Homer intends to award the contract to the lowest responsive, responsible bidder but reserves the right to accept or reject any or all proposals, to waive irregularities or informalities in the bids or bid process, and to award the contract to the bidder that best meets the criteria stated below.

A. Qualification of Bidders

It is the intention of the City of Homer to award this contract to the Bidder who furnishes satisfactory evidence they have the requisite experience, ability and sufficient capital, facilities and plant to prosecute the work successfully (and properly) and to complete it within the time allowed in the Contract at the least cost to the City of Homer for dollars spent for value received. Bidders will be required to fill out a questionnaire attesting to their qualifications.

B. Taxes

Attention is directed to the requirements of the General Conditions regarding the payment of taxes. All taxes that are lawfully assessed against Owner or Contractor in connection with the work shall be paid by the Contractor. The Bid prices shall include all such taxes.

The City of Homer is exempt from local sales taxes. The Contractor shall not include sales tax markup in his bid. However, in order to recoup sales tax the Contractor might pay at local vendors, the Contractor must secure a Tax Exempt card from the Kenai Peninsula Borough Tax Department.

C. Familiarization with the Work

Before submitting its Bid, each prospective Bidder shall familiarize itself with the work, labor conditions and all laws, regulations and other factors affecting performance of the work. Bidders shall carefully correlate their observations with the requirements of the Contract Documents and otherwise satisfy themselves of the expense and difficulties attending performance of the work. The submission of a Bid shall constitute an acknowledgement that the Bidder has thoroughly examined and is familiar with the Contract Documents and the provisions thereof. The failure or neglect of a Bidder to receive or examine any of the Bid Documents shall in no way relieve the bidder from any obligations with the respect to their Bid or to the Contract. Misinterpretation or a reputed lack of knowledge concerning the Bid will not serve as a basis for a claim for additional compensation.

Each Bidder shall visit the site of the work and completely inform themselves relative to construction hazards and procedures, the availability of lands, the character and quantity of surface and subsurface materials and utilities to be encountered, the arrangement and conditions of existing structures and facilities, the procedure necessary for maintenance of uninterrupted operations of existing facilities, the character of construction equipment and facilities needed for performance of the work, and facilities for transportation, handling and storage of materials and equipment. All such factors shall be properly investigated and considered in the preparation of the Bid.

D. Interpretation of Bid Documents

All questions about the meaning or intent of the Contract Documents shall be submitted to the Office of the Director of Public Works in writing. Replies will be issued by Addenda and delivered to all parties recorded by the City Clerk's Office as having received the Bidding documents. **The City of Homer will not be held responsible for questions received less than (5) calendar days prior to the date of opening of Bids.** Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

The Bidder shall acknowledge receipt of all Addenda on the Addendum Form, which shall be properly signed by the Bidder and placed in Part A.

It shall be the Bidder's responsibility to inquire as to addenda issued. **Failure to include the Addenda Form in Part A of the Bid Package shall result in the Bid being rejected as non-responsive.**

E. Bid Bond

Each Bid shall be accompanied by a Bid Bond duly completed on the suggested form provided by a guaranty company authorized to conduct business in the State of Alaska, along with a General Power of Attorney form, if applicable, for payment to the City in the sum of five percent (5%) of the total amount of the Bid. **Failure to include the Bid Bond in Part B of the Bid Package shall result in the Bid being rejected as non-responsive.**

The amount payable to the City under the Bid Bond or the certified or cashier's check, as the case may be, shall be forfeited to the City in case of a failure or neglect of the Bidder to furnish, execute, and deliver to the City required Performance and Payment Bonds, Evidences of Insurance, necessary forms or material required by the Bid or failure to enter into, execute and deliver to the City the Contract on the form provided therefore, within ten (10) working days after receipt of "Notice of Intent to Award Contract" by the City that the Contract is ready for execution. The "Award of Contract" will be made upon the execution of the Contract by the Bidder and the City.

F. Return of Bid Guarantee

Within thirty (30) days after the Bids are opened, the City will return the Bid Guarantees accompanying the Bids, which are not to be considered in making the award. The bid Guarantees of the three (3) lowest responsive Bids will be held until the Contract has been fully executed after which time the Guarantees will be returned to the respective Bidders whose Bids the Guarantees accompanied.

G. Contract Time

The Contract Time is an essential part of the Contract and it will be necessary for each Bidder to satisfy the City of his ability to complete the work within the time set forth in the Bid form. Provisions for delays, liquidated damages, and extensions of time are set forth in the Standard Construction Specifications. Time is of the essence in this contract.

H. Preparation of Bids

Bids must be submitted on the forms provided by the City and completed in all respects as required by the Bid Documents. Bids shall include all information requested herein, and be manually signed by the Bidder or the Bidder's duly authorized representative, with the Bidder's address and phone number. If the signature is by an agent, other than an Officer of a Corporation, or a member of a Co-partnership, a Power of Attorney must be submitted in Part A of the Bid; otherwise, the Bid will be rejected as non-responsive. **All Bids must be regular in every respect, and no alterations shall be made to the Bid form.**

If erasures or changes appear on the forms, each must be initialed by the person signing the Bid. No oral, telegraphic, electronic or telephone proposals will be considered.

Bid Packages, containing separate envelopes for Part A and Part B of the bid, will be received at the City Clerk's Office located at City Hall 491 East Pioneer Avenue, Homer, Alaska 99603, until the time indicated on the Invitation to Bid. Each Bid shall be submitted enclosed in a sealed, opaque envelope. **The envelope shall have the Bid title and date of Bid opening on the lower left-hand corner of the Bid Package.** The City is not responsible for the premature opening of, or failure to open, a bid not properly addressed and identified.

No consideration will be given by the City to a claim or error unless such claim is made to the City in writing within two (2) hours after the time of Bid opening. Written verification and supporting evidence of the error shall be delivered to the City Clerk within 24 hours of the Bid Opening (not including Saturday, Sunday or legal holidays) to allow consideration of the claim for error. Supporting evidence shall be original documents, including cost breakdown sheets, supplier quotes and other documents used to compute the Bid.

It is the bidder's responsibility to see that Bid Packages are deposited at the time and place set forth for the public opening of Bids. Bids not received by the time will not be considered responsive and shall not be considered.

VII. Labor Rates

State Labor Rates.

This project is covered by the State of Alaska Title 36 Laborer's and Mechanic's Minimum Rate of Pay (AS 36.05.010 & 36.05.050) Pamphlet No. 600, Issue 48, Effective April 1, 2024. It is the responsibility of the bidder to determine the current rates of pay required and to submit the proper certified payrolls to the State Department of Labor.

VIII. Equal Opportunity Employment

Bidders must submit forms related to Equal Employment Opportunity with their bids, including:

- Equal Employment Opportunity Clause
- EEO-1 Certification

Project Schedule

Paintbrush Booster Pump Station Upgrade

Advertise	Homer News	May 16, May 23
	Anchorage Daily News	May 19
Pre-Bid Site Meet via Zoom Cowles Council Chambers followed immediately by Site Visit		2:00 p.m. Monday, May 27, 2024
Bids Due		3:00 p.m. Tuesday, June 18, 2024
Notice of Intent to Award		June 19, 2024
Council Award		June 24, 2024
Notice to Proceed		June 26, 2024
Pre-Construction Meeting		July 2, 2024
Start Construction		July 8, 2024
Construction Complete		December 31, 2024

SPECIAL PROVISIONS

Paintbrush Booster Pump Station Upgrade

The construction contract for this project will be administered in accordance with the General Provisions of the City's Standard Construction Specifications (2011).

MODIFICATIONS TO GENERAL PROVISIONS

SP - 1: Section 10.04 – Add New Article 4.6 – Scope of Work

The Work included under this Contract consists of furnishing all labor, materials, equipment, supervision, and other facilities necessary to successfully complete the Work set forth in the drawings, specifications, and the terms of the Contract, including, but not limited to the following work:

- Replace existing pumps with integral VFDs with new, vertical multistage centrifugal pumps and wall mounted VFDs.
- Salvage and reinstall stainless-steel inlet and outlet headers, isolation valves, and check valves.
- Replace pressure tank.
- Furnish and install VFDs and enclosures.
- Furnish and install RTU and enclosure.
- Furnish and install combination meter base.
- Furnish and install 1-phase, 3-wire panelboard with 200-amp rated main circuit breaker.

SP - 2: Article 5.25 - Unusual Work Hours

Add the following sentence:

"The noise level from work completed before 8:00 AM and after 8:00 PM cannot exceed 75 db at a distance of 50 feet."

SP – 3: Section 10.07 – Modify Article 7.6 – Progress Payments

Remove the following language:
"Until such time as the work is accepted by the City, retainage shall be withheld in accordance with the following schedule:

Contract Completion Percentage	Retainage Percentage
0-75%	10%

76-95%	**5%***
Over 95%	**5%***

*May be reduced to these percentages depending upon satisfactory performance and adherence to the Contractor's progress schedule, clean-up, Contract completion cost and other factor, in the judgement of the Engineer."

And replace with:
"Until such time as the work is accepted by the City, 10% of the final payment application shall be withheld as retainage."

MODIFICATIONS TO STANDARD SPECIFICATIONS

DIVISION 600 WATER SYSTEMS

SP – 4: Add Section 609 – Instrumentation, Control and Telemetry Systems

609.1 General

609.1-1 References

A. The following is a list of standards which may be referenced in this Section:

1. International Society of Automation (ISA):
    a. S5.1, Instrumentation Symbols and Identification.
    b. S5.4, Standard Instrument Loop Diagrams.
    c. S20, Specification Forms for Process Measurement and Control Instruments, Primary Elements and Control Valves.
    d. S50.1, Compatibility of Analog Signals for Electronic Industrial Process Instruments.
2. National Electrical Manufacturers Association (NEMA):
    a. 250, Enclosures for Electrical Equipment (1,000 Volts Maximum).
    b. ICS 1, General Standards for Industrial Control and Systems.
3. National Institute of Standards and Technology (NIST).
4. Underwriters Laboratory, Inc. (UL): 508A, Standard for Safety, Industrial Control Panels.
5. National Electrical Code: NFPA 70.

609.1-2 Summary

A. Work Includes Engineering, furnishing, installing, calibrating, adjusting, testing, documenting, starting up, and Owner training for complete Instrumentation and Control (I&C) including the pump motor controllers. The system integrator shall have unit responsibility of the design and implementation of the control system including software and hardware in accordance with the design directives provided herein.

B. Major parts are:

1. Primary elements, transmitters, and control devices.

2. Programmable Logic Controller (PLC) based station control panel.

3. Variable Frequency Drive motor control panel

4. Application software development for VFD, PLC, HMI and SCADA systems.

C. The I&C system provided as part of this Contract is an addition and modification to the Owner's existing SCADA system, which was designed and furnished by S&B, Inc. For compatibility with their comprehensive system, I&C design and system integration will be provided by the Owner's I&C System Integrator, S&B, Inc.

D. Installation of equipment supplied in this section shall be performed by the electrical and mechanical contractors as assigned by the General Contractor.

609.1-3 Definitions

A. Abbreviations:

1. I&C: Instrumentation and Control System

2. LCP: Local Control Panel.

3. PLC: Programmable Logic Controller.

4. RTU: Remote Telemetry Unit (also referred to SCP)

5. SCP: Station Control Panel (also referred to RTU)

6. VFD: Variable Frequency Drive (Motor Controller).

B. Rising/Falling actions of discrete devices about their setpoints.

1. Rising contacts close when an increasing process variable rises through setpoint.

2. Falling contacts close when a decreasing process variable falls through setpoint.

C. Signal Types:

D. Analog Signals, Current Type:

1. 4 to 20 mA dc signals conforming to ISA S50.1.

2. Unless otherwise indicated for specific I&C Subsystem components, use the following ISA 50.1 options:

3. Transmitter Type: Number 2, two-wire.

4. Transmitter Load Resistance Capacity: Class L.

5. Fully isolated transmitters and receivers.

6. Analog Signals, Voltage Type: 1 to 5 volts dc within panels where a common high precision dropping resistor is used.

7. Discrete signals, two-state logic signals using dc or 120V ac sources as indicated.

8. Pulse Frequency Signals:

   a. Direct current pulses whose repetition rate is linearly proportional to process variable.

   b. Pulses generated by contact closures or solid state switches as indicated.

   c. Power source less than 30V dc.

9. Network Communicated Signals: Process fieldbus data communicated over RS485 and Ethernet signal cables.

E. Instrument Tag Numbers:

1. A shorthand tag number notation is used in the Equipment Descriptions. For example: AI-2 [pH].

Notation	Explanation
PIT	ISA designator for Pressure Indicator Transmitter.
2	Loop number.
[A]	Same notation shown at 2 o'clock position on ISA circle symbol on P&ID. Refers to redundancy or detail in function.

609.1-4 Submittals

A. Action Submittals:

1. General:

a. Shop Drawings, full-scaled details, wiring diagrams.

b. Identify proposed items and options. Identify installed spares and other provisions for future work (for example, reserved panel space; unused components, wiring, and terminals).

c. Legends and Abbreviation Lists:

d. Complete definition of symbols and abbreviations used on this Project (for example, engineering units, flow streams, instruments, structures, and other process items used in nameplates, legends, and data sheets).

2. Bill of Materials: List of required equipment.

a. Group equipment items by enclosure and field, and within an enclosure, as follows:

b. I&C Components: By component identification code.

c. Other Equipment: By equipment type.

d. Data Included:

1) Equipment tag number.

2) Description.

3) Manufacturer, complete model number, and all options not defined by model number.

4) Quantity supplied.

5) Component identification code where applicable.

3. Field Instrument and Sensor Data: for

a. I&C components supplied for installation by the mechanical and electrical contractors:

b. Catalog information, identifying proposed items and options.

c. Descriptive literature.

d. External power and signal connections.

e. Scaled drawings showing exterior dimensions and locations of electrical and mechanical interfaces.

4. Panel Construction Drawings:
    a. Scale Drawings:
    b. Show dimensions and location of panel mounted devices, doors, louvers, and subpanels, internal and external.
    c. Panel Legend:
    d. List front of panel devices by tag numbers, nameplate inscriptions, service legends, and annunciator inscriptions.
    e. Construction Details:
    f. UL conformance, NEMA rating, materials, lifting lugs, mounting brackets, door hinges and latches, and welding and other connection callouts and details.
    g. Construction Notes:
    h. Finishes, wire color schemes, wire ratings, wire and terminal block, numbering and labeling scheme.
5. Panel Control Diagrams: For discrete control and power circuits.
    a. Diagram Type: Ladder diagrams in format same as shown on Drawings. Include devices, related to discrete functions, that are mounted in or on the panel and that require electrical connections.
    b. Item Identification: Identify each item with attributes listed.
        1) Wires: Wire number and color. Cable number if part of multiconductor cable.
        2) Terminals: Location (enclosure number, terminal junction box number, or MCC number), terminal strip number, and terminal block number.
        3) Discrete Components:
        4) Tag number, terminal numbers, and location
        5) Switching action (open or close on rising or falling process variable), setpoint value and units, and process variable description (for example, Sump Level High).
        6) Relay Coils: Tag number and its function.
    c. Ground wires, surge protectors, and connections.
    d. Circuit Names: Show names corresponding to Circuit and Raceway Schedule for circuits entering and leaving a panel.
6. Panel Plumbing Diagrams:

7. For each panel containing piping and tubing. Show type and size for:

8. Pipes and Tubes: Thickness, pressure rating, and materials.
    a. Components: Valves, regulators, and filters.
    b. Connections to panel mounted devices.
    c. Panel interface connections.

9. Interconnecting Wiring Diagrams:
    a. Diagrams, device designations, and symbols in accordance with NEMA ICS 1.
    b. Show:
        1) Electrical connections between equipment, consoles, panels, terminal junction boxes, and field mounted components.
        2) Component and panel terminal board identification numbers, and external wire and cable numbers.
        3) Circuit names matching Circuit and Raceway Schedule.

10. Installation Details:

11. Include modifications or further details required to adequately define installation of I&C components.

B. Informational Submittals:

1. For I&C equipment, provide Manufacturer's Certificate of Proper Installation and readiness for operation.

2. Owner Training Plan.

3. Operation and Maintenance (O&M) Manual: Supply detailed O&M data on indexed and hyperlinked USB stick to match City SCADA standard. Provide digital and paper copies of drawings and operating narrative.in accordance with quantities identified in the project submittals section.
    a. Content and Format:
        1) USB stick content hyperlinked from centralized index page.
        2) Complete hardware information provided in pdf file format organized by manufacturer and item description.
        3) Sufficient detail to allow operation, removal, installation, adjustment, calibration, maintenance and purchasing replacements for each I&C component.

4) Final versions of drawings reflecting installation As Built wiring.

5) Final version of operating narrative to include any additional requirements determined during performance acceptance testing.

b. Include hard copy and digital copy:

1) Shop Drawings per the following items:
Bill of Materials.
Field Instrument Data Sheets.
Panel Control Diagrams.
Panel Wiring Diagrams
Panel Plumbing Diagrams
Interconnecting Wiring Diagrams,
Application Software Operating Narrative

2) Device O&M manuals indexed on USB stick for components, electrical devices, and mechanical devices include:
Operations procedures.
Installation requirements and procedures.
Maintenance requirements and procedures.
Troubleshooting procedures.
Calibration procedures.
Internal schematic and wiring diagrams.
Component Calibration Sheets from field quality control calibrations.

4. Acceptance Tests:

a. Test Procedure:

1) Calibration confirmation of field instrument signals per Field Instrument Data Sheet specification.

2) Paragraph by paragraph confirmation of project supplement attached control description.

3) Section paragraph confirmation of Operating Narrative.

b. Test Documentation: Copy of System Integrator signed off test procedures when tests are completed.

609.1-5 Quality Assurance

A. Calibration Instruments: Each instrument used for calibrating I&C equipment shall bear the seal of a reputable laboratory certifying that instrument has been calibrated within the previous 12 months to a standard endorsed by the NIST.

B. Factory Calibration Records: Provide all factory instrument calibration record certifying instrument testing parameters. Instrument calibration from process measurement to local display and from local display to signal interface shall be demonstrated by either factory certified record or field testing and meet specified accuracy.

C. Coordination Meetings:

1. Location: City offices

2. Teams meeting attended By: System Integrator, Electrical foreman, mechanical foreman, and General Contractor. Owner and/or Engineer may elect to attend meetings.

3. Notice: minimum five working day advance notice.

4. Meetings:

a. Pre-energization: System Integrator provides onsite review and approval of installed components and confirms wiring termination prior to energizing electrical circuits. Any devices not approved for energization are identified as exceptions to system integrator's installation certificate. Two to six hours are estimated for site review along with a one hour post review meeting. Pre-energization is performed on same trip as startup.

b. Startup: System testing requirements are confirmed with General Contractor and electrical contractor. System Integrator will begin startup and acceptance testing following confirmation that all process equipment receive confirmation from the General Contractor that all process equipment is ready to begin.

c. Minimum of one is required. Specific dates will be established in Progress Schedule.

609.1-6 Delivery, Storage & Handling

1. System Integrator will provide temperature controlled warehouse storage for I&C equipment at its facility until Contractor requested delivery date.

2. Prior to installation at project location, store items in dry indoor locations. Provide heating in storage areas for items subject to corrosion under damp conditions.

3. Schedule delivery of electrical control panels and adjustable frequency drive units to coincide with station retrofit work. Cover panels and other elements that are exposed to dusty construction environments.

609.1-7 Environmental Requirements

A. Standard Environmental Requirements: Unless otherwise noted, design equipment for continuous operation in these environments:

1. Freestanding Panel and Consoles:
    a. Inside, Air Conditioned: NEMA 1.
    b. Inside: NEMA 12.
2. Wall Mounted Panels and Assemblies
    a. Inside, Noncorrosive: NEMA 12.
    b. Inside an environment controlled vault , Noncorrosive: NEMA 12 or 3R.
    c. All Other Locations: NEMA 4X.
3. Field Elements:
    a. Inside, Nema 12
    b. Outside, Nema 4
    c. Corrosive, Nema 4X

B. Environmental Design Requirements: Following defines the types of environments referred to in the above.

1. Inside, Air Conditioned, Temperature:
    a. Normal: 60 to 80 degrees F.
    b. With Up to 4-Hour HVAC System Interruptions: 40 to 105 degrees F.
2. Relative Humidity:
    a. Normal: 10 percent (winter) to 70 percent (summer).
    b. Up to 4-Hour HVAC System Interruption: 10 to 95 percent non-condensing
3. Inside NEC Classification, nonhazardous.
    a. Temperature: 20 to 104 degrees F.
    b. Relative Humidity: 10 to 95 percent non-condensing.
    c. NEC Classification: Nonhazardous.

4. Inside, Corrosive:
    a. Temperature: Minus 20 to 104 degrees F.
    b. Relative Humidity: 10 to 95 percent non-condensing.
    c. Corrosive Environment per drawing indication.
    d. NEC Classification: Nonhazardous.
5. Outside:
    a. Temperature: Minus 20 to 104 degrees F.
    b. Relative Humidity: 10 to 95 percent noncondensing, rain, snow, freezing rain.
    c. NEC Classification: Nonhazardous.

609.1-8 Sequencing & Scheduling

1. Activity Completion: The following is a list of key activities and their completion criteria:
    a. Action Submittals: Reviewed and accepted.
    b. Factory Test Complete: Hardware and Software is factory tested, packaged, and ready for shipment.
    c. Modifications to existing SCADA Master System Complete
    d. Acceptance Test: Completed and required test documentation accepted.
2. I&C Substantial Completion: When Owner issues Certificate of Substantial Completion.
    a. Prerequisites:
        1) All I&C Submittals have been completed.
        2) System Integrator has successfully completed acceptance testing.
        3) Owner training plan is on schedule.
    b. Finalization: When Engineer issues a written notice of Final Payment and Acceptance:
        1) Certificate of Substantial Completion issued for I&C.
        2) I&C Punch-list items completed.
        3) Final revisions to O&M manuals accepted.

3. Prerequisite Activities and Lead Times: Do not start the following key Project activities until the prerequisite activities and lead times listed below have been completed and satisfied:

Activity	Prerequisites and Lead Times
Submittal reviews by Engineer	Engineer acceptance of Submittal breakdown and schedule.
Hardware purchasing, fabrication, and assembly	Associated Shop Drawing Submittals completed.
Shipment	Completion of I&C Shop Drawing Submittals and preliminary O&M manuals.
Owner Training	Owner training plan completed
Acceptance Testing	Startup, Owner training, and test procedures completed

609.1-9 Guarantee

A. The System Integrator shall repair or replace defective components, rectify malfunctions, correct faulty workmanship, all at no additional cost to the Owner during the warranty period.

To fulfill this obligation, the System Integrator shall utilize qualified technical service personnel. Services shall be performed within five calendar days after notification by the Owner's Representative.

609-2 Materials

609.2-1 General

1. I&C functions as shown on Drawings and as required for each loop. Furnish equipment items as required and identified in this Section on the project drawings. Furnish all materials, equipment, and software, necessary to affect required system and loop performance.

2. Manufacturer: I&C design is based on Siemens equipment as preferred manufacturer for all automation and control equipment. Products have, therefore, been selected to be fully compatible and, when possible, to match existing parts used throughout the Owner’s control systems.

3. The instrumentation and control and telemetry system is designed to function as an integral part of the Owner’s comprehensive water telemetry, control, and reporting system in place at other facilities. This system is designed to allow new facilities to be constructed or existing facilities to be modified and then to be fully

integrated as part of this overall system. The master telemetry unit and graphical user interface shall be modified by the System Integrator to accommodate the new facilities specified and indicated on Drawings.

4. The System Integrator shall furnish control panels, field instrumentation and sensors for installation by the Contractor.

   a. Control Panels
   The following I&C control panels are covered by this Section. The automation system shall consist of Siemens S7-1500 series / ET200SP platform PLC components and Comfort Series touch panel as the HMI. The VFD control panels shall consist of Siemen G120 Series drives. The System Integrator shall design, supply, startup and test the following panels:

Panel No.	Service	Mount	NEMA	Dimensions	Location
SCP	Control Panel (RTU)	Wall	12	30"x24"x10"	BPS Vault
VFD-01	BP1 VFD Panel	Wall	3R	47"x26"x20"	BPS Vault
VFD-02	BP2 VFD Panel	Wall	3R	47"x26"x20"	BPS Vault

   b. Instruments and field sensors per list below

   Details regarding each instrument are provided in the 409100-Supplement immediately following this section.

Tag #	Location	Description	Instrument Type	Supplier
PIT-01	BPS Vault	Suction Pressure	Pressure Transmitter	S&B Inc.
PIT-02	BPS Vault	Discharge Pressure	Pressure Transmitter	S&B Inc.
TIT-01	BPS Vault	Vault Temperature	Temperature Transmitter	S&B Inc.
USH-01	BPS Vault	Air Quality Sensor	Smoke Detector	S&B Inc.
ZS-01	BPS Vault	Hatch Ajar Sensor	Limit Switch	S&B Inc.
LSH-01	BPS Vault	Station Flood	Float Switch	S&B Inc.

5. The System Integrator shall furnish application software for logic and graphic display units for the following sub-systems.

   a. Programmable Logic Controller (PLC) - application software for logic processing of automatic operation. Deliverable product in Siemens TIA Portal. Software loaded and factory tested in Siemens S7 PLC.

   b. Human Machine Interface (HMI) – application software for graphic depiction of process signals and setpoint entries. Deliverable will include screen development for operation of pumps, and valve control systems.

Deployment will load to Siemens Comfort Series color touch screens using TIA Portal software.

c. Supervisory Control and Data Acquisition (SCADA), screen modification for new Pump Station to existing SCADA System.

d. Variable Frequency Drive – application software to integrate with PLC.

6. The System Integrator shall provide onsite services with support from an electrical sub-contractor.

a. Pre-installation review with electrical and mechanical trade foreman. Provide four hours. (done on same trip as Startup)

b. Pre-energization inspection and certificate of proper installation of I&C components. Provide one day. (done on same trip as startup)

c. Startup and Commissioning of supplied equipment. Provide three days, two days from completion of pump station construction and one day of remote access for follow up and punch list.

d. Acceptance Test and owner training. Provide six hours.

609-2.2 System Description

A. General:

1. The instrumentation, control, and telemetry system is designed to provide overall control for the Pump Station using locally sensed pressure and status conditions and feedback from remote sensors. The instrumentation, control and telemetry system provide local control for the station based on commands and parameters provided by the MTU.

2. The block diagrams illustrate electrical interconnection requirements between the I&C system and field equipment and sensors. The loop descriptions briefly describe each of the instrument loops and the major instrument components involved. The System Integrator shall be responsible for the design of the system and developing all software for the PLCs, VFDs and GUI systems.

3. Any equipment or devices shown on Drawings as future are shown for information purposes. No future hardware shall be included as part of this Contract.

4. The System Integrator shall develop application software for the PLC units in the RTU Panel, and Master Telemetry Unit (MTU). At the RTU Panel, the PLC shall be programmed to provide local automatic as well as supervisory control of the station provided by the MTU PLC via the communications system. All alarm and

control functions are monitored locally on the HMI as well as transmitted to the MTU. Fail-safe features shall be included for all operations.

5. At the MTU locations, the System Integrator shall provide application software for the Master PLC and the Graphic User Interface (GUI) computers. The Master PLC software shall provide the remote control and monitor as shown on the Project Drawings. The GUI computer system monitors the station and provides instructions for the Master PLC to control the system. Software for this system addition shall be consistent with the System Integrator's and the Owner's comprehensive telemetry system.

609.2-3 Equipment Descriptions

A. Control Panel Summary.

B. Instrument Supply Summary: As listed previously in this Section. Instruments and field equipment supplied under this Section are identified on the drawings.

C. Functional Requirements for Control Loops: Narrative by function in Section 409010 Control Description Supplement.

D. Shown on Block Diagram Drawings, in Panel Control Diagrams, and Process and Instrumentation Diagrams (P&ID). P&ID format and symbols are in accordance with ISA S5.1, except as specified or shown on Drawings.

609.2-4 Nameplates & Tags

A. Panel Nameplates: Enclosure identification located on the enclosure face.

1. Location and Inscription: As shown.

2. Materials: Laminated plastic attached to panel.

3. Letters: 3/16-inch white on black background, unless otherwise noted.

B. Component Nameplates—Back of Panel: Component identification located on or near component inside of enclosure.

1. Inscription: Component tag number.

2. Materials: Adhesive backed, laminated plastic.

3. Letters: 3/16-inch white on black background, unless otherwise noted.

C. Nametags: Component identification for field devices.

1. Inscription: Component tag number.

2. Materials: 16-gauge, Type 304 stainless steel, or adhesive backed laminated plastic.

3. Letters: 3/16-inch.

4. Mounting: Affix 304ss tags to component with 16- or 18-gauge stainless steel wire.

609.2-5 Electrical Requirements

A. In accordance with Division 16, Electrical.

B. I&C and Electrical Components, Terminals, Wires, and Enclosures: UL recognized, or UL listed.

C. Wires within Enclosures:

1. AC Circuits:

a. Type: 300-volt, Type MTW stranded copper.

b. Size: For current to be carried, but not less than 18 AWG.

2. Analog Signal Circuits:

a. Type: 300-volt stranded copper, twisted shielded pairs.

b. Size: 20 AWG, minimum.

3. Other dc Circuits.

a. Type: 300-volt, Type MTW stranded copper.

b. Size: For current carried, but not less than 18 AWG.

4. Special Signal Circuits: Use manufacturer's standard cables.

5. Wire Identification: Numbered and tagged at each termination.

a. Wire Tags: Machine printed, heat shrink.

b. Manufacturers: Brady Perma Sleeve or Tyco Electronics.

D. Wires entering or leaving enclosures, terminate and identify as follows:

1. Analog and discrete signal, terminate at numbered terminal blocks.

2. Special signals, terminated using manufacturer's standard connectors.

3. Identify wiring in accordance with Section 26 05 05, Conductors.

E. Terminal Blocks for Enclosures:

1. Quantity:
    a. Accommodate present and spare indicated needs.
    b. Wire spare PLC I/O points to terminal blocks.
    c. One wire per terminal for field wires entering enclosures.
    d. Maximum of two wires per terminal for 18-WG wire for internal enclosure wiring.
    e. Spare Terminals: 20 percent of all connected terminals, but not less than 5 per terminal block.

2. General:
    a. Connection Type: Screw compression clamp.
    b. Compression Clamp:
        1) Complies with DIN-VDE 0611.
        2) Hardened steel clamp with transversal groves that penetrate wire strands providing a vibration-proof connection.
        3) Guides strands of wire into terminal.
        4) Screws: Hardened steel, captive and self-locking.
        5) Current Bar: Copper or treated brass.
        6) Insulation:
            Thermoplastic rated for minus 55 to plus 110 degree C.
            Two funneled shaped inputs to facilitate wire entry.
        7) Mounting:
            Standard DIN rail.
            Terminal block can be extracted from an assembly without displacing adjacent blocks.
            End Stops: Minimum of one at each end of rail.
        8) Wire preparation: Stripping only permitted.
        9) Jumpers:
            Allow jumper installation without loss of space on terminal or rail.
        10) Marking System:

Terminal number shown on both sides of terminal block

Allow use of preprinted and field marked tags.

Terminal strip numbers shown on end stops.

Mark terminal block and terminal strip numbers as shown on Panel Control Diagrams and Loop Diagrams.

Fuse Marking for Fused Terminal Blocks: Fuse voltage and amperage rating shown on top of terminal block.

3. Terminal Block, General-Purpose:
    a. Rated Voltage: 600V ac.
    b. Rated Current: 30 amp.
    c. Wire Size: 22 AWG to 10 AWG.
    d. Rated Wire Size: 10 AWG.
    e. Color: Beige body.
    f. Spacing: 0.25 inch, maximum.
    g. Test Sockets: One screw test socket 2.3 mm diameter.
    h. Manufacturer and Product: Siemens; 8WA1011.
4. Terminal Block, Ground:
    a. Wire Size: 22 AWG to 12 AWG.
    b. Rated Wire Size: 12 AWG.
    c. Color: Green and yellow body.
    d. Spacing: 0.25 inch, maximum.
    e. Grounding: Ground terminal blocks electrically grounded to the mounting rail.
    f. Manufacturer and Product: Siemens; 8WA1011-1PH00.
5. Terminal Block, Fused, 24V dc:
    a. Rated Voltage: 600V dc.
    b. Rated Current: 16-amp.
    c. Wire Size: 22 AWG to 10 AWG.
    d. Rated Wire Size: 10 AWG.
    e. Color: Grey body.
    f. Fuse: 0.25 inch by 1.25 inches.

g. Indication: LED diode 24V dc.

h. Spacing: 0.512 inch, maximum.

i. Manufacturer and Product: Siemens; 8WA1011-1SF31.

6. Terminal Block, Fused, 120V ac:

a. Rated Voltage: 600V ac.

b. Rated Current: 16-amp.

c. Wire Size: 22 AWG to 10 AWG.

d. Rated Wire Size: 10 AWG.

e. Color: Grey body.

f. Fuse: 0.25 inch by 1.25 inches.

g. Indication: Neon Lamp 110V ac.

h. Leakage Current: 1.8 mA, maximum.

i. Spacing: 0.512 inch, maximum

j. Manufacturer and Product: Siemens; 8WA1011-1SF32.

F. Grounding of Enclosures:

1. Furnish isolated copper grounding bus for signal and shield ground connections.

2. Ground bus grounded at a common signal ground point in accordance with National Electrical Code requirements.

3. Single Point Ground for Each Analog Loop:

a. Locate at dc power supply for loop.

b. Use to ground wire shields for loop.

4. Ground terminal block rails to ground bus.

G. Power Distribution within Panels:

1. Feeder Circuits:

a. One or more 120V ac, 60-Hz feeder circuits as shown on Drawings.

b. Make provisions for feeder circuit conduit entry.

c. Furnish terminal board for termination of wires.

2. Power Panel: Furnish main circuit breaker and a circuit breaker on each individual branch circuit distributed from power panel.

a. Locate to provide clear view of and access to breakers when door is open.

b. Breaker sizes: Coordinate such that fault in branch circuit will blow only branch breaker but not trip the main breaker.

c. Branch Circuit Breaker: UL489 type breaker, 250V ac, DIN rail mounting.

d. Breaker Manufacturer and Product: Siemens; 5SJ4.

3. Circuit Wiring: P&IDs and Control Diagrams on Drawings show function only. Use following rules for actual circuit wiring:

a. Devices on Single Circuit: 20, maximum.

b. Multiple Units Performing Parallel Operations: To prevent failure of any single branch circuit from shutting down entire operation, do not group all units on same branch circuit.

c. Branch Circuit Loading: 12 amperes continuous, maximum.

d. Panel Lighting and Service Outlets: Put on separate 15-amp, 120V ac branch circuit.

e. Provide 120Vac plug mold for panel components with line cords.

H. Signal Distribution:

1. Within Panels: 4 to 20 mA dc signals may be distributed as 1 to 5V dc.

2. Outside Panels: Isolated 4 to 20 mA dc only.

3. All signal wiring twisted in shielded pairs.

I. Signal Switching:

1. Use dry circuit type relays or switches.

2. No interruption of 4 to 20 mA loops during switching.

3. Switching transients in associated signal circuit:

a. 4 to 20 mA dc Signals: 0.2 mA, maximum.

b. 1 to 5V dc Signals: 0.05V, maximum.

J. Relays:

1. General:

a. Relay Mounting: Plug-in type socket.

b. Relay Enclosure: Furnish dust cover.

c. Socket Type: Screw terminal interface with wiring.

d. Socket Mounting: Rail.

e. Provide hold down clips.

2. Signal Switching Relay:

a. Type: Dry circuit.

b. Contact Arrangement: 2 Form C contacts.

c. Contact Rating: 0 to 5 amps at 28V dc or 120V ac.

d. Contact Material: Gold or silver.

e. Coil Voltage: As noted or shown.

f. Coil Power: 0.9 watts (dc), 1.2VA (ac).

g. Expected Mechanical Life: 10,000,000 operations.

h. Expected Electrical Life at Rated Load: 100,000 operations.

i. Indication Type: Neon or LED indicator lamp.

j. Seal Type: Hermetically sealed case.

k. Manufacturer and Product: Siemens; 3TX7111.

3. Control Circuit Switching Relay, Non latching:

a. Type: Compact general-purpose plug-in.

b. Contact Arrangement: Form C contacts.

c. Contact Rating: 10A at 28V dc or 240V ac.

d. Contact Material: Silver cadmium oxide alloy.

e. Coil Voltage: As noted or shown.

f. Coil Power: 1.8 watts (dc), 2.7VA (ac).

g. Expected Mechanical Life: 10,000,000 operations.

h. Expected Electrical Life at Rated Load: 100,000 operations.

i. Indication Type: Neon or LED indicator lamp.

j. Push to test button.

k. Manufacturer and Product: Siemens; 3TX7111.

K. Power Supplies:

1. Furnish to power instruments requiring external dc power, including two-wire transmitters and dc relays.

2. Convert 120V ac, 60-Hz power to dc power of appropriate voltage(s) with sufficient voltage regulation and ripple control to assure that instruments being supplied can operate within their required tolerances.

3. Provide output over voltage and over current protective devices to:

4. Protect instruments from damage due to power supply failure.

5. Protect power supply from damage due to external failure.

6. Enclosures: NEMA 1 in accordance with NEMA 250.

7. Mount such that dissipated heat does not adversely affect other components.

8. Fuses: For each dc supply line to each individual two-wire transmitter.

   a. Type: Indicating.

   b. Mount so fuses can be easily seen and replaced.

L. Service Outlets for Freestanding Panels:

1. Type: Three-wire, 120-volt, 15-ampere, GFCI duplex receptacles.

2. Quantity:

   a. For panels 4 feet wide and smaller: One.

   b. For panels wider than 4 feet: One for every 4 feet of panel width, two minimum per panel.

609.2-6 Spare Parts

Description	Percent of Each Type and Size Used	No Less Than
Fuses	20	5
Relays	20	2

609.2-7 Fabrication

3. General:

   a. Panels with external dimensions and instruments arrangement as shown on Drawings.

   b. Panel Construction and Interior Wiring: In accordance with the National Electrical Code, state and local codes, NEMA, ANSI, UL, and ICECA.

c. Fabricate panels, install instruments, wire, and plumb, at the I&C factory.

d. Electrical Work: In accordance with Division 16, Electrical.

e. Factory Assembly: Assemble panels at the manufacturer's factory. No fabrication other than correction of minor defects or minor transit damage shall be done on panels at jobsite.

f. UL Listing Mark for Enclosures: Mark stating "Listed Enclosed Industrial Control Panel" per UL 508A.

4. Wiring Within I&C Panels:

a. Restrain by plastic ties or ducts or metal raceways.

b. Hinge Wiring: Secure at each end so that bending or twisting will be around longitudinal axis of wire. Protect bend area with sleeve.

c. Arrange wiring neatly, cut to proper length, and remove surplus wire.

d. Abrasion protection for wire bundles which pass through holes or across edges of sheet metal.

e. Connections to Screw Type Terminals:

1) Locking-fork-tongue or ring-tongue lugs.

2) Use manufacturer's recommended tool with required sized anvil to make crimp lug terminations.

3) Wires terminated in a crimp lug, maximum of one.

4) Lugs installed on a screw terminal, maximum of two.

f. Connections to Compression Clamp Type Terminals:

1) Strip, prepare, and install wires in accordance with terminal manufacturer's recommendations.

2) Wires installed in a compression screw and clamp, maximum of one for field wires entering enclosure, otherwise maximum of two.

g. Splicing and tapping of wires, allowed only at device terminals or terminal blocks.

h. Terminate 24V dc and analog signal circuits on separate terminal block from ac circuit terminal blocks.

i. Separate analog and dc circuits by at least 6 inches from ac power and control wiring, except at unavoidable crossover points and at device terminations.

j. Arrange wiring to allow access for testing, removal, and maintenance of circuits and components.

k. Plastic Wire Ducts Fill: Do not exceed manufacturer's recommendation.

5. Temperature Control:

   a. Freestanding Panels:

      1) Nonventilated Panels: Size to adequately dissipate heat from equipment mounted inside panel or on panel.

      2) Ventilated Panels:

      3) Furnish with louvers and forced ventilation as required to prevent temperature buildup from equipment mounted inside panel or on panel.

      4) For panels with backs against wall, furnish louvers on top and bottom of panel sides.

      5) For panels without backs against wall, furnish louvers on top and bottom of panel back.

      6) Louver Construction: Stamped sheet metal.

      7) Ventilation Fans:

      8) Furnish where required to provide adequate cooling.

      9) Create positive internal pressure within panel.

      10) Fan Motor Power: 120V ac, 60-Hz, thermostatically controlled.

      11) Air Filters: Washable aluminum, Hoffman Series A-FLT.

      12) Refrigerated System: Furnish where heat dissipation cannot be adequately accomplished with natural convection or forced ventilation. Smaller Panels (that are not freestanding): Size to adequately dissipate heat from equipment mounted inside panel or in panel face.

6. Freestanding Panel Construction:

   a. Materials: Sheet steel, unless otherwise shown on Drawings with minimum thickness of 10-gauge, unless otherwise noted.

   b. Panel Fronts:

      1) Fabricated from a single piece of sheet steel, unless otherwise shown on Drawings.

      2) No seams or bolt heads visible when viewed from front.

      3) Panel Cutouts: Smoothly finished with rounded edges.

      4) Stiffeners: Steel angle or plate stiffeners or both on back of panel face to prevent panel deflection under instrument loading or operation.

   c. Internal Framework:

1) Structural steel for instrument support and panel bracing.

2) Permit panel lifting without racking or distortion.

d. Lifting rings to allow simple, safe rigging and lifting of panel during installation.

e. Adjacent Panels: Securely bolted together so front faces are parallel.

f. Doors: Full height, fully gasketed access doors where shown on Drawings.

1) Latches: Three-point, Southco Type 44.

2) Handles: “D” ring, foldable type.

3) Hinges: Steel hinges with stainless steel pins.

4) Rear Access Doors: Extend no further than 24 inches beyond panel when opened to 90-degree position.

5) Front and Side Access Doors: As shown on Drawings.

7. Nonfreestanding Panel Construction:

a. Based on environmental design requirements required and referenced in Article Environmental Requirements, provide the following:

b. For panels listed as inside, air conditioned:

1) Enclosure Type: NEMA 12 in accordance with NEMA 250.

2) Materials: Steel.

c. For All Other Panels:

1) Enclosure Type: NEMA 4X in accordance with NEMA 250.

2) Materials: Plastic.

d. Metal Thickness: 14-gauge, minimum.

e. Doors:

1) Rubber-gasketed with continuous hinge.

2) Stainless steel lockable quick-release clamps.

8. Factory Finishing:

a. Enclosures:

1) Stainless Steel and Aluminum: Not painted.

2) Nonmetallic Panels: Not painted.

3) Steel Panels: Sand panel and remove mill scale, rust, grease, and oil. Fill imperfections and sand smooth. Paint panel interior and exterior with

one coat of epoxy coating metal primer, two finish coats of two-component type epoxy enamel. Sand surfaces lightly between coats. Dry Film Thickness: 3 mils, minimum. Manufacturer's standard finish color, except where specific color is indicated. If manufacturer has no standard color, finish equipment with light gray color.

609.2-8 Quality Control

A. Scope: Inspect and test entire I&C to ensure it is ready for shipment, installation, and operation.

B. Location: Manufacturer's factory or Owner approved staging Site.

C. Test: Exercise and test all functions.

609.3 Instruments and Field Sensors

609.3-1 Industrial Limit Switches

A. Provide a Form C contact position switch for industrial application use.

B. Switches shall be rated for use in temperatures ranging from 0^{O}F to 104^{O}F.

C. Switches located inside the reservoir shall be rated NEMA type 6P, switches located in vaults shall be rated NEMA type 6P, limit switches located in pump stations shall be rated NEMA type 4.

D. Limit switch shall have roller lever with snap action return. Actuation lever length shall be as required to accommodate installation but shall be no less than 3-inches.

E. Instruments Related to This Section:
   1. ZS-01 (NEMA 6P type)

609.3-2 Vertical Stem Mount Float Level Switches

A. Float level switches shall consist of a snap action switch with a moving Buna-N float on a brass stem and 24" connecting cable. Action shall be magnetic field, rising sensor that can be inverted for reverse logic. As the level rises and falls the float lifts or falls causing switching actions with a minimum 0.25" deadband. The hermetically sealed Mercury free switches shall be SPST with a minimum rating of 20 VA. Mount to conduit end with a 1/4" NPT male thread fitting and set actuation limit by use of a conduit clamp. Unit shall be placed to actuate 6" above the floor for station flood.

B. Manufacturer shall be ProSense FLS-VL-300 or equal

C. Instruments Related to This Section:
    1. LSH-01

609.3-3 Smoke Detector

A. The photoelectric detector shall powered by 24VDC, have C contacts, and utilize a 4-wire connection. It will feature a latching alarm, LED light indications, and mount to a standard 3.5" octagonal junction box. The smoke detector will be powered by the RTU.

B. Contacts:
    1. Form C
    2. Minim Rating: 0.5A @ 30VDC

C. Manufacturer shall be System Sensor 4WT-B, or approved equal

D. Instruments Related to This Section:
    1. USH-01

609.3-4 Gage Pressure Transmitter

A. General:
    1. Function: Indicate the rise or fall of a liquid in a reservoir, tank or vault

B. Type:
    1. Body: Die Cast Aluminum
    2. Diaphragm Fill Material: Silicone
    3. Process Connection: ½"
    4. Power: 24VDC
    5. Display: Integral type, digital reading
    6. Manufacturers and Products:
        a. Siemens 7MF0300

C. Measuring:
    1. Accuracy: 0.06% minimum
    2. Range: Field Programmable
    3. Units: Field Programmable
    4. Span: provide model with largest percentage of available span
    5. Output: 4-20mA + HART

D. Protection:
    1. Lighting Protection: Provide surge suppressor for lighting protection

E. Installation
    1. See Installation Details on Drawings
    2. Use ½" Process Connections unless otherwise noted
    3. Provide with steel wall mounting bracket

F. Instruments Related to This Section:
    1. PIT-01
    2. PIT-02

609.3-5 Temperature Transmitters

A. An RTD sensor shall measure outside temperature and transmit a 4-20mA DC output linearly proportional to a temperature span produced by the RTD. At minimum, the RTD temperature span shall measure -40°F to 140°F.

B. A ProSense model XTP25N-050-N40140F transducer and a ProSense M12 quick connect cable, model CD12L-0B-020-A0 shall be used for each device.

C. Instruments Related to This Section:
    1. TIT-01

609.4 Execution

609.4-1 Examination

A. For equipment not provided by I&C, but that directly interfaces with the I&C, verify the following conditions. If any devices fail to meet interface requirements, provide written notification to the Contractor.

1. Proper installation.

2. Calibration and adjustment of positioners and transducers.

3. Correct control action.

4. Switch settings and dead bands.

5. Opening and closing speeds and travel stops.

6. Input and output signals.

609.4-2 Installation

A. Material and Equipment Installation: Retain a copy of manufacturers' instructions at jobsite, available for review at all times.

B. Electrical Wiring: As specified in Division 16, Electrical.

C. Mechanical Systems:

1. Drawings for I&C Mechanical Systems are diagrammatic and not intended to specifically define element locations or piping and tubing run lengths. Base materials and installations on field measurements.

2. Plastic Tubing Supports: Except as shown on Drawings, provide continuous support in conduits or by aluminum tubing raceway system.

3. Install tubing conduit for plastic tubing and tubing raceways parallel with, or at right angles to, structural members of buildings. Make vertical runs straight and plumb.

4. Install conduits to I&C enclosures within areas permitted by manufacturer drawings. Top entry of conduits shall be avoided and if required, shall not be located in drip line of panel mounted equipment.

5. Enclosure Lifting Rings: Remove rings following installation and plug holes.

609.4-3 Protection

A. Protect enclosures and other equipment containing electrical, instrumentation and control devices, including spare parts, from corrosion and moisture.

B. During jobsite construction, protect I&C enclosures from exterior damage using cardboard, foam and similar temporary construction materials. Protect internal components from exposure to metal shavings and other construction debris by use of plastic wrap and tape.

609.4-4 Cleaning/Adjusting

A. Repair affected surfaces to conform to type, quality, and finish of surrounding surface.

B. Cleaning:

1. Prior to startup of system using tubing, clear tubing of interior moisture and debris.

2. Upon completion of Work, remove materials, scraps, and debris from interior and exterior of equipment.

609.4-5 Field Quality Control

A. Startup and Testing Team:

1. Thoroughly inspect installation, termination, and adjustment for components and systems.

2. Complete onsite tests.

3. Complete onsite training.

4. Provide startup assistance.

B. Operational Readiness Inspections and Calibrations: Prior to startup, inspect and test to ensure that entire I&C is ready for operation.

1. Loop/Component Inspections and Calibrations:

a. Check I&C for proper installation, calibration, and adjustment on a loop-by-loop and component-by-component basis.

b. Prepare component calibration sheet for each instrument.

1) Project name.

2) Loop number.

3) Component tag number.

4) Manufacturer for elements.

5) Model number/serial number.

6) Summary of functional requirements, for example:

7) Transmitters/converters, input and output ranges.

8) Calibrations, for example:
Analog Devices: Actual inputs and outputs at 0, 10, 50, and 100 percent of span, rising and falling.
Discrete Devices: Actual trip points and reset points.
Controllers: Mode settings (PID).

9) Space for comments.

C. Acceptance Tests: These are the activities performed by the Contractor and assisted by the System Integrator with respect to automatic control verification.

1. General:

a. Test all I&C elements to demonstrate that I&C satisfies all requirements.

b. Procedures, Forms, and Checklists:

1) Conduct tests in accordance with, and documented on, Engineer accepted procedures, forms, and checklists.

2) Sign-off after each test item after satisfactory completion.

c. Conducting Tests:

1) Provide special testing materials, equipment, and software.

2) Wherever possible, perform tests using actual process variables, equipment, and data.

3) If it is not practical to test with real process variables, equipment, and data, provide suitable means of simulation.

4) Define simulation techniques in test procedures.

d. Coordinate I&C testing with Owner and affected Subcontractors.

1) Excessive Test Witnessing: Refer to Supplementary Conditions.

2. Test Requirements:

a. Once facility has been started up and is operating, perform a witnessed Acceptance Test on complete I&C to demonstrate that it is operating as required. Demonstrate each required function on a paragraph-by-paragraph and loop-by-loop basis.

b. Perform local and manual tests for each loop before proceeding to remote and automatic modes. Where possible, verify test results using visual confirmation of process equipment and actual process variable. Unless otherwise directed, exercise and observe devices supplied by others, as needed to verify correct signals to and from such devices and to confirm overall system functionality.

c. Update operating narrative documentation as required to align with settings and conditions observed during Acceptance Testing.

d. Provide digital copy of startup/ acceptance testing manual and provide to Owner following each jobsite test period.

609.4-6 Manufacturer's Services

A. Specialty Equipment: Provide the services of a qualified manufacturer's representative during installation, startup, and demonstration testing and Owner training.

609.4-7 Training

A. General:

1. Provide an integrated training program to meet specific needs of Owner's personnel.

2. Include training sessions, for operators and maintenance personnel.

3. Provide instruction on one working shift as needed to accommodate the Owner's personnel schedule.

4. Owner reserves the right to make and reuse video tapes of training sessions.

B. Operations and Maintenance Training:

1. Include a review of O&M manuals and survey of spares, expendables, and test equipment.

2. Use equipment similar to that provided or currently owned by Owner.

3. Provide training suitable for instrument technicians with at least a 2-year associate engineering or technical degree, or equivalent education and experience in electronics or instrumentation.

C. Operations Training:

1. Training Session Duration: 4-hour instructor day.

2. Number of Training Sessions: One. Done on same trip as startup.

3. Location: Jobsite.

4. Content: Conduct training on loop-by-loop basis.

a. Loop Functions: Understanding of loop functions, including interlocks for each loop.

b. Loop Operation: For example, adjusting process variable setpoints, AUTO/MANUAL control transfer, AUTO and MANUAL control, annunciator acknowledgement and resetting.

c. Interfaces with other control systems.

609.4-8 Supplements

A. The supplements listed below, following "End of Section," are a part of this Specification:

1. Control Descriptions

609.5 Method of Measurement

Payment for the work in this section shall be included as part of the lump-sum bid amount stated in the Proposal.

609.6 Basis of Payment

Pay Item	Description	Unit
609	Control System Upgrades	LS

CONTROL STRATEGIES

PART 1 -- GENERAL

The existing Paintbrush Booster Pump Station utilizes a control panel connected to two VFDs that are integral to the motors. Discharge pressure is used to control the speed of the VFDs to maintain system pressure. No current connection to City SCADA to provide monitoring, control and alarm notification.

The new control system will consist of a Remote Telemetry Unit (Station Control Panel) with cellular connectivity to the City's existing SCADA system, two new NEMA 3R enclosed drives that take 240VAC single phase as incoming power and outputs 3 phase 230VAC to 7.5HP motors. Pump discharge pressure, suction pressure, and applied horsepower (from the VFDs) are used to control the VFD speed and number of pumps running to maintain system pressure setpoint. Other ancillary devices are monitored for status, alarm and control include, station flood, intrusion, vault temperature, RTU enclosure temperature, smoke, operator in trouble.

Data from this site is routed from the Remote Telemetry Unit (RTU) via Cellular connection to the Master Telemetry Unit (MTU) and viewed through the SCADA graphic computers located at the STP and WTP. Updates from this site are estimated at 6 seconds based on this design.

Primary hydraulic equipment at the station includes two 5hp variable speed pumps and a pressure tank. The RTU control panel is designed for UL508A label compliance as it is not located in the hazardous area.

Control system enclosures are rated NEMA type 12 steal painted RAL5015 blue for inside the pump station. The RTU is indoors and contains input/output modules and a ProfiNet industrial Ethernet connection to provide pump control, pressure monitoring, temperature and other ancillary signals.

Automation equipment used in this system is as manufactured by Siemens Industry, with the primary controller selected as a model S7-1500, ET200SP form factor PLC to match City standard. A 12" color Human Machine Interface (HMI) graphic control screen is mounted on the control panel, providing an intuitive interface to the controller for viewing and changing operating parameters. The PLC, HMI, and variable frequency drives (VFD) equipment used on this project shall be network connected, and programmed using Siemens TIA Portal software as a fully integrated package.

The RTU logic is autonomous, operating the station independent of communication with the master system. The MTU may request changes to the station pressure setpoints, request pump alternation and reset alarm conditions only. The RTU programming has features to detect

various abnormal operating conditions and take corrective action. Alarms detected at the station may be viewed locally on a message panel and viewed on the City's SCADA system.

The control system shall connect using ProfiNet cabling for auto operation of the motor controllers. ProfiNet connectivity shall provide information required for determining pump staging via the HMI panel. Faulting conditions of electronic motor starting equipment due to power outages shall be automatically reset by the control system without need for operator interaction. The SCADA system shall receive fault indication and be able to remotely reset fault conditions by operator action. The SCADA system shall relay applied horsepower, and speed data on screen. The pump station PLC programming will allow for standard pump pressure control with staging from no pumps to two pumps based on Discharge pressure, alternation of lead and lag,. The control system monitors, applied horsepower, Discharge Pressure, and Suction Pressure to provide control of the pumps., Vault temperature, and RTU enclosure temperature. Ancillary alarm and events monitored by the RTU include authorized entry and exit detection, air quality (smoke/temp), vault high water and equipment alarm conditions, and Vault high/low temperature alarms.

PART 2 -- PROCESS SENSORS

2.01 PRESSURE TRANSMITTER (DISCHARGE AND SUCTION)

An analog pressure transmitter measures pressure in the pipeline and provides an analog signal proportional to the pressure input. The two-wire 4-20mA signal is proportional to span and is battery backed during an outage to provide continuous measurement during a power outage. The instrument includes a digital LCD display showing measured pressure.

2.02 WATER LEVEL SENSOR

The switch detects high water conditions in the vault. The switches have contacts that close as the water reaches the float. These level switches shall be located 1" above the floor level in the vault.

2.03 HATCH/DOOR AJAR SENSOR

A mechanically actuated industrial limit switch mounted on the hatch access doors provide security for the vaults. Switch contact shall open as the hatch/door opens. Environment rating of the limit switch shall Nema type 6P for vault hatches.

2.04 AIR QUALITY / SMOKE SENSOR

The sensor is sensitive to both smoke and temperature. A red LED should flash four to six times per minute during normal operation. If the unit senses an alarm condition, the LED will illuminate and remain in the alarm state until reset by removing power. Any alarm condition sensed by this unit requires a reset action from the reset switch on the RTU.

2.05 TEMPERATURE SENSOR

The internal RTD temperature sensor provides an instantaneous temperature reading Inside the Station Control Panel (or RTU). The RTU standard display and SCADA GUI computer will display the RTU enclosure current temperature.

2.06 TEMPERATURE TRANSMITTER

The RTD temperature transmitter provides an instantaneous temperature reading of the Vault temperature and should be mounted on the wall in the vault about halfway up to provide an average vault temperature. The RTU standard display and SCADA GUI computer will display the Vault current temperature.

PART 3 -- ENCLOSED VFDS

3.01 GENERAL

Motors are controlled by variable frequency drive (VFD) units. These are standalone motor controller assemblies designed to operate one pump per controller. The VFD is a modular system, a specially designed electrical switchgear panel designed to work with line voltages and high amperages and containing a power converter and inverter. The VFD is connected to the PLC system via a digital interface to command the switchgear to actuate the motor(s) according to a prescribed algorithm and read complete power data. All motors are started with variable frequency drive units which allow for efficient operation of motors at a wide range of speed. Software in the PLC sequences the motor controllers and monitors for status and alarm conditions. The VFD information is used in the algorithm to detect anomalies.

3.02 VARIABLE FREQUENCY DRIVE

VFDs are designed to produce variable output flows from pump motors by varying the speed of the motor. The control system continually monitors the pressure and adjusts the pump speed as required to maintain a constant pressure setpoint. The VFD is configured to ramp the motor up to speed over a fifteen second time period to a minimum speed where flow is achieved. The ramping speeds are controlled by entries made in the VFD control panel. A drive fault will remove the motor start operation and signal the PLC system of the condition. The run indication is active when the start command is received and the drive has begun to pass energy to the motor.

The VFD system is equipped with a “Hand/Network” button on the VFD’s intelligent operator panel (IOP) on each motor controller’s panel door. Running and Fail conditions are displayed on the local keypad. In the “Network” position, the pump motor will start and stop by command of the automation system PLC via the ProfiNet® network. In the “Hand” position, the motor is turned on and ramped up to the speed prescribed by the buttons and dials located on the IOP.

The Drives have the following features: Automatic voltage adjustment within the power range. Self-Tuning (Measurement of motor resistance & Speed loop optimization), 0.001 Hz setpoint resolution, Flying restart, Frequency avoidance, Kinetic buffering with power dip ride-through, Microprocessor based adjustable frequency drive with sinusoidal PWM current control, IGBT inverter bridge through entire power range, ProfiNet® communication for all control and status information, Warning and Fault messages viewable through the intelligent operator panel (IOP) display unit, and indicator lamps for Running and Ready conditions. The unit shall be configured for: Minimum Frequency, Maximum Frequency, Voltage Boost/ Current Boost, Motor Overload, Overload Time, Slip Compensation Method, Analog Scaling, Acceleration Time, Deceleration Time, Frequency avoidance with adjustable bandwidth.

A. Additional VFD Programming
Logic within the VFD system shall be independent of the network connection such that the features are functional in manual operation or without network cabling.

1. Provide logic within the VFD to automatically restart following a power failure or brown out condition, with up to 3 restarts, one minute apart.
2. Configure data exchange values listed in the project drawings.

PART 4 -- PUMP CONTROL ALGORITHMS

Pump control mode is pressure control. Two pumps are available for control of the system pressure. The system uses a pressure tank such that in low demand times, no pumps are required. Pumps will operate using a staging method to step up from no pumps to both pumps based on discharge pressure and step down based on horsepower.

4.01 PUMP CONTROL FEATURES
Each pump shall include the following control features.

A. Override Control Using Local VFD Operator Panel
The local Hand position will allow the operator to override the PLC and run the pumps as desired. The Off condition is reached by placing the VFD selector switches into the Hand position and then pushing the red ‘O’ button. The start command is selected by depressing the green ‘I’ button while in the ‘Hand’ position. All automatic control in the SCP requires the associated equipment switches to be placed in the “Auto” position. The SCP monitors the switch position by sensing if the control voltage in the station is on and passes this information to the MTU for operator information. The SCP is electrically disconnected when the switch is placed in the Hand. This allows for the operator to manually control the pumps at any pump station without intervening in the SCP or MTU operation.

B. Pump Operation Checks and Safety Features

For a pump to be called to run from the SCP, the PLC must recognize the pump as qualified to start. The pump must not have a "too many starts" alarm, exceeding the manufacturer's recommended number of starts within a given time and the pump must not have a command failure alarm, when the pump fails to respond to control commands from the SCP/MTU.

The PLC will also check to verify none of the following alarms are present: flood, smoke and power fail. The final check includes a check of the MTU control commands to verify that the pump is not forced off at the MTU.

C. Pump Failure Conditions

Pump failure alarms may be caused by a number of events. All events may not place the equipment at risk, but all warrant the operator's time to investigate the situation. When a pump is failed, the SCP sends this data out to the MTU immediately for action. The two failure conditions used by these SCPs are Fail to Command and Too Many Starts.

1. Too Many Starts Alarm

   This alarm monitors the number of starts of each pump. If any pump exceeds three starts in a ten-minute period, this alarm becomes active. Similar to the Fail to Start Alarm, the Too Many Starts Alarm (or Start Limit) will be displayed locally on the touch panel under the Alarm Message Log. This alarm will automatically clear after ten minutes or may be reset using the Reset push button on the panel face.

2. Fail to Command Alarm

   The SCP monitors the status of each motor by the run feedback. If the pump operating status is not in sync with the SCP command, the SCP initiates a timer to measure the length of time the pump takes to comply with the commanded state. When starting the pump, the SCP expects a run report-back confirmation within five seconds. Since some pump applications have control valves, which are designed to slowly close, a second timer is used for measuring the time taken for a pump to stop once the stop signal is sent. This time is set for a longer period to allow for the operator to occasionally test a pump without initiating a fail alarm. Anytime a pump fails to start, the fail to start alarm will be displayed locally under the Alarm Message Log. This alarm normally requires a "Reset" at the SCP or maybe remotely reset at the MTU.

D. Pump Sequencing

Pump sequencing is based on the selected control algorithm which may include discharge pressure monitoring, and applied horsepower. When operating in pressure control, the pump(s) will sequence lead and lag operation as needed to maintain the operator selected parameters. Tuning parameters associated with all pump sequencing will be presented on screen at the SCP for operator interaction. A pump failure may trigger a change in lead pump if necessary. Re-step delays are provided to allow the controller to attempt to meet the demand before pumps are added or subtracted to the output. The measured horsepower produced from each VFD is used first for stage step down control, and a pump operating at full speed and unable to meet setpoint will initiate a step up to lead+lag operation.

1. Auto Pump Alternation (pressure operation only)
   When the system is placed into auto alternation, a new lead pump is selected at the end of the previous pump operation cycle such that it is ready to start on the next cycle. Current pump availability is used by the control software to anticipate readiness of the lead pump. A failure or condition that prohibits auto operation of the pump will cause the software to select a new lead pump.

2. Manual Pump Alternation
   The operator may select a manual operation of the alternator. In this mode, the lead pump selection is made by the operator and will not change unless the lead pump fails and the standby pump is in the auto / ready condition.

4.02 STATION TEMPERATURE CONTROL

The station is below grade, requiring an electric heater to maintain above freezing temperatures and mitigate moisture build up. The SCP (or RTU) controls the station heater to maintain operator adjustable station temperature using the vault temperature signal.

PART 5 -- ANCILLARY SYSTEM CONTROL LOGIC

A. Intrusion / Unauthorized Access

Life safety and station access are provided by a separate control system and monitored by SCADA as an information source only. Per the control system listing requirements of UL508A, the control system is not listed as a life safety device, and unauthorized physical access detection is not connected to emergency dispatch personnel. Unauthorized access detected is used to mitigate control system responses only, such as securing valves and notifying the master SCADA system of this condition.

B. Flood Sensor

The station high water float senses high water level in the Vault, providing notification to operations personnel via the SCADA system.

C. Heater Control

The SCADA includes control for Vault heater. The SCADA Temperature sensor located external to the SCP, inside the vault provides instantaneous reading. High and low temperature alarms are generated by the automation system. When the station temperature drops below acceptable temperature the heater is turned on.

PART 6 -- STATION MONITORING AND VIZUALISATION

The station control is provided by the programmable logic controller (PLC) based remote telemetry unit (SCP) located inside the pumping station. This device exchanges data continuously with the Master Telemetry Unit (MTU) via a cellular connection. Data is visualized at the station through a color touch screen panel and at both plants via a comprehensive SCADA computer system that acquires data from the MTU.

5.02 SCP TOUCH PANEL

A 12” touch panel shall be supplied to display process screens, trends and control setups. Include the following list of screens developed for this project as a minimum: Screen Menu, Process Overview, System Diagnostics, Network View, Event Messaging (date/time stamped), Alarm Messaging (date/time stamped), Intrusion setup and status, security setup and status, analog setup, pump mode setup, VFD information and tuning, alternation setup, pump staging, and trending for temperature, pressures and horsepower. Trending shall be locally stored on a removal media card and configured for a minimum of two months data in a circular archive.

5.03 CENTRAL SCADA SYSTEM

The existing pump station screen data shall be updated to reflect new process features and equipment. Utilize pop-up screens accessible from the station screen to display pump configuration, mode selection, all setpoints, and trending. Add new analog variables, alarms and event conditions to SQL based Historian. Provide ability to disable alarms and disable off-duty callout on an alarm-by-alarm basis. Update the off-duty call out system to monitor all alarms from this station.

BID FORM

Paintbrush Booster Pump Station Upgrade

ITEM NO.	SPEC NO.	BID ITEM DESCRIPTION	UNIT	QUANTITY	UNIT BID PRICE	TOTAL BID PRICE
1	101	Mobilization & Demobilization	LS	1		
2	In Plans	Mechanical Upgrades	LS	1		
3	In Plans	Electrical Upgrades	LS	1		
4	609	Control System Upgrades	LS	1		

Grand Total All Bid Items: $_____

Name of Bidding Company_____

Address of Bidding Company_____

Signature of Company Representative _____ Date _____

Printed Name of Company Representative_____

Phone#/Email_____

CONTRACT

This Contract, made and entered into by and between the City of Homer, Alaska, a Municipal Corporation, hereinafter called the "City" and

_____

(Company Name)

Hereinafter called the "Contractor".

I. CONTRACT DOCUMENTS

The Contractor, in consideration of the sum to be paid by the City agrees to furnish all materials, tools, labor, machinery and appurtenances to perform the work set forth in the Contract documents, including:

a. Signed copy of the Bid;
b. Performance Bond;
c. Payment Bond;
d. Bid documents;
e. All Addenda, totaling _;
f. The drawings which consist of 25 sheets titled Paintbrush Booster Pump Station Upgrade Project.
g. The 2011 Homer Standard Construction Specifications, including the general provisions;

Said Contract Documents are fully and completely incorporated as part of the Contract as if the same were fully set forth herein.

In consideration of the performance of the work as set forth in these Contract Documents, the City agrees to pay to the Contractor the amounts specified in the Contract Documents and to make such payments upon the Contractor's invoicing as approved by the City.

II. CONTRACT COMPLETION TIME

The Contractor agrees to complete the Project, in all respects on or before _____, 2024.

III. CONTRACT AMOUNT

$_____

In Numbers

$_____

In Words

IV. LIQUIDATED DAMAGES

Liquidated damages in the amount of **$350.00** per day will apply to the Contractor's unexcused delay in the Completion of Construction. The liquidated damage amount specified herein shall only apply to damages and expenses the Owner may incur as a result of a delay in placing the facility into use and operation exclusive of third party damages or claims. The liquidated damage amount shall not cover any damages or expenses the Owner may incur as a result of the Contractor's unexcused delay in completing any portion of the entire Project, which delay results in whole or in part in delay, disruption, hindrance, interference, damages or expenses to any third party. The Contractor shall remain liable for the full amount of any such delay damages or expenses suffered by any third party without limitation by any liquidated damage provision set forth in the Contract.

IN WITNESS WHEREOF, we, the parties hereto, each herewith subscribe the same this _____ day of _____, 2024.

CITY OF HOMER

By: _____
Melissa Jacobsen

Title: Interim City Manager

CONTRACTOR

_____
(Contractor)

By: _____

Title: _____

PERFORMANCE BOND

KNOW ALL THESE PRESENTS: That we _____
(Name of Contractor)

_____ a _____
(Corporation, Partnership, Individual)

hereinafter called "Principal" and _____
(Surety)

of _____, State of _____

hereinafter called the "Surety" are held and firmly bound unto the City of Homer, hereinafter called "Owner," in the penal sum of _____ dollars ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION are such that Whereas, the Principal has or is about to enter into a certain contract with the Owner, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if it shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making food any default, then this obligations shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or the work to be performed thereunder or the specifications accompanying the same shall in any wise affect it obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in five (5) counterparts, each one of which shall be deemed and original, this the _____ day of _____, 2024.

ATTEST:

_____ _____

(Principal's Corporate Secretary) (Principal)

_____

Affix CORPORATE SEAL if applicable _____

(Address-Zip Code)

_____

(Witness as to Principal)

_____

(Address – Zip Code)

_____

(Surety)

ATTEST: By:_____

(Attorney-in-Fact)

_____ _____

(Surety) Secretary (Address-Zip Code)

(Affix SURETY'S SEAL)

_____

(Witness as to Surety)

_____

(Address-Zip Code)

Notes:

If Principal is Partnership, all partners must execute bond. The Attorney-in-Fact, who executes this bond on behalf of the surety, must attach a copy of his Power-of-Attorney as evidence of his authority.

PAYMENT BOND

KNOW ALL THESE PRESENTS: That we _____
(Name of Contractor)

_____ a_____
(Corporation, Partnership, Individual)

hereinafter called "Principal" and _____
(Surety)

of _____, State of _____

hereinafter called the "Surety" are held and firmly bound unto the City of Homer,

hereinafter called "Owner," in the penal sum of _____

dollars ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATIONS are such that Whereas, the Principal has or is about to enter into a certain contract with the Owner, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors and corporations furnishing material for, or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for material, lubricants, fuels, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor performed in such work, whether by subcontractor or otherwise, then this obligation shall be void: otherwise to remain in full for and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or the work to be performed thereunder or the specifications accompanying the same shall in any wise affect it obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in five (5) counterparts, each one of which shall be deemed and original, this the _____ day of _____, 2024.

ATTEST:

_____ _____

(Principal's Corporate Secretary) (Principal)

_____

Affix CORPORATE SEAL if applicable _____

(Address-Zip Code)

_____

(Witness as to Principal)

_____

(Address-Zip Code)

_____

(Surety)

ATTEST: By:_____

(Attorney-in-Fact)

_____ _____

(Surety) Secretary (Address-Zip Code)

(Affix SURETY'S SEAL)

_____

(Witness as to Surety)

_____

(Address-Zip Code)

Notes:

If Principal is Partnership, all partners must execute bond. The Attorney-in-Fact, who executes this bond on behalf of the Surety, must attach a copy of her Power-of-Attorney as evidence of her authority.

BID BOND

KNOW ALL THESE PRESENTS: That we _____
(Name of Contractor)
_____a_____hereinafter
(Corporation, Partnership, Individual)
called "Principal" and _____ of
(Surety)
_____, State of _____hereinafter called the "Surety" are held and firmly bound unto the City of Homer, hereinafter called "Owner," in the penal sum of

_____

dollars ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATIONS are such that: Whereas, the Principal has herewith submitted his or its BID for _____ said bid, by reference thereto, being hereby made a part hereof.

NOW, THEREFORE, if the Bid submitted by the Principal is accepted and the Contract awarded to the Principal, and if the Principal shall execute the proposed Contract and shall furnish such Performance and Payment Bond as required by the Contract Documents within the time fixed by the documents, then this obligation shall be void: if the Principal shall fail to execute the proposed Contract and furnish the Bond, the Surety hereby agrees to pay the Owner the penal sum as liquidated damages: _____

_____.

Signed and sealed this_____day of_____, 2024

ATTEST:

(Principal's Corporate Secretary)

(Principal)

Affix CORPORATE SEAL if applicable

(Address-Zip Code)

(Witness as to Principal)

(Address-Zip Code)

(Surety)

ATTEST:

By:_____
(Attorney-in-Fact)

(Surety) Secretary

(Address Zip Code)

(Affix SURETY'S SEAL)

(Witness as to Surety)

(Address-Zip Code)

Notes:

If Principal is Partnership, all partners must execute bond. The Attorney-in-Fact, who executes this bond on behalf of the Surety, must attach a copy of her Power-of-Attorney as evidence of her authority.

ADDENDA ACKNOWLEDGMENT

Project Name: _____

I hereby acknowledge addenda numbers:

_____ _____

_____ _____

_____ _____

Name of Firm: _____

Signature of Bidder: _____

Date: _____

This Acknowledgement must be included in the Bid/Proposal for the project if any Addenda are issued or the Bid/Proposal could be considered non-responsive.

Joint Reporting Committee
- Equal Employment Opportunity Commission
- Office of Federal Contract Compliance Programs (Labor)

EQUAL EMPLOYMENT OPPORTUNITY

EMPLOYER INFORMATION REPORT EEO—1

Standard Form 100
REV. 01/2005

O.M.B. No. 3046-0007
EXPIRES 01/2009
100-214

Section A—TYPE OF REPORT

Refer to instructions for number and types of reports to be filed.

1. Indicate by marking in the appropriate box the type of reporting unit for which this copy of the form is submitted (MARK ONLY ONE BOX).

(1) ☐ Single-establishment Employer Report

Multi-establishment Employer:
(2) ☐ Consolidated Report (Required)
(3) ☐ Headquarters Unit Report (Required)
(4) ☐ Individual Establishment Report (submit one for each establishment with 50 or more employees)
(5) ☐ Special Report

2. Total number of reports being filed by this Company (Answer on Consolidated Report only)_____

Section B—COMPANY IDENTIFICATION *(To be answered by all employers)*

1. Parent Company			OFFICE USE ONLY
a. Name of parent company (owns or controls establishment in item 2) omit if same as label			a.
Address (Number and street)			b.
City or town	State	ZIP code	c.

2. Establishment for which this report is filed. (Omit if same as label)

a. Name of establishment					
					d.
Address (Number and street)	City or Town	County	State	ZIP code	e.
b. Employer identification No. (IRS 9-DIGIT TAX NUMBER)					f.

c. Was an EEO–1 report filed for this establishment last year? ☐ Yes ☐ No

Section C—EMPLOYERS WHO ARE REQUIRED TO FILE *(To be answered by all employers)*

☐ Yes ☐ No 1. Does the entire company have at least 100 employees in the payroll period for which you are reporting?

☐ Yes ☐ No 2. Is your company affiliated through common ownership and/or centralized management with other entities in an enterprise with a total employment of 100 or more?

☐ Yes ☐ No 3. Does the company or any of its establishments (a) have 50 or more employees AND (b) is not exempt as provided by 41 CFR 60–1.5, AND either (1) is a prime government contractor or first-tier subcontactor, and has a contract, subcontract, or purchase order amounting to $50,000 or more, or (2) serves as a depository of Government funds in any amount or is a financial institution which is an issuing and paying agent for U.S. Savings Bonds and Savings Notes?

If the response to question C–3 is yes, please enter your Dun and Bradstreet identification number (if you have one): ☐☐☐☐☐☐☐☐☐

NOTE: If the answer is yes to questions 1, 2, or 3, complete the entire form, otherwise skip to Section G.

Section D-EMPLOYMENT DATA

Employment at this establishment – Report all permanent full- and part-time employees including apprentices and on-the-job trainees unless specifically excluded as set forth in the instructions. Enter the appropriate figures on all lines and in all columns. Blank spaces will be considered as zeros.

Job Categories	Number of Employees (Report employees in only one category)														
	Race/Ethnicity														
	Hispanic or Latino		Not-Hispanic or Latino												Total Col A - N
			Male						Female						
	Male	Female	White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or more races	White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or more races	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Executive/Senior Level Officials and Managers 1.1															
First/Mid-Level Officials and Managers 1.2															
Professionals 2															
Technicians 3															
Sales Workers 4															
Administrative Support Workers 5															
Craft Workers 6															
Operatives 7															
Laborers and Helpers 8															
Service Workers 9															
TOTAL 10															
PREVIOUS YEAR TOTAL 11															

1. Date(s) of payroll period used: _____ (Omit on the Consolidated Report.)

Section E - ESTABLISHMENT INFORMATION (Omit on the Consolidated Report.)

1. What is the major activity of this establishment? (Be specific, i.e., manufacturing steel castings, retail grocer, wholesale plumbing supplies, title insurance, etc. Include the specific type of product or type of service provided, as well as the principal business or industrial activity.)

Section F - REMARKS

Use this item to give any identification data appearing on the last EEO-1 report which differs from that given above, explain major changes in composition of reporting units and other pertinent information.

Section G - CERTIFICATION

Check one
1 ☐ All reports are accurate and were prepared in accordance with the instructions. (Check on Consolidated Report only.)
2 ☐ This report is accurate and was prepared in accordance with the instructions.

Name of Certifying Official	Title	Signature	Date
Name of person to contact regarding this report	Title	Address (Number and Street)	
City and State	Zip Code	Telephone No. (including Area Code and Extension)	Email Address

All reports and information obtained from individual reports will be kept confidential as required by Section 709(e) of Title VII.
WILLFULLY FALSE STATEMENTS ON THIS REPORT ARE PUNISHABLE BY LAW, U.S. CODE, TITLE 18, SECTION 1001

EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

During the performance of this contract, the contractor agrees to comply with OFCC Regulations 40 CFR 60.1.4 (1) through (7) as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

1. The contractor will send to each labor union or representative of workers with whom he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order 11246 of September 24, 1965 and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

2. The contractor will comply with all provisions of executive order 11246 of September 24, 1965 and of the rules, regulations, and relevant orders of the Secretary of Labor.

3. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965 and by the rules, regulations, and orders of the secretary of labor, or pursuant thereto, and will permit access of his books, records, and accounts by the contracting agency and the secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

4. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any such rules, regulations or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further government contracts in accordance with procedures authorized in executive order 11246 of September 24, 1965 and such other sanctions may be imposed and remedies invoked as provided in executive order 11246 of September 24, 1965 or by rule, regulation or order of the Secretary of Labor as otherwise provided by law.

5. The contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965 so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however that in the event the contractor becomes involved in, or is threatened win litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interest of the United States.

_____ _____

(Signature) (Title)

_____

(Date)

This form (2 pages) must be included with the Bid Part A, or the Bid will be considered non-responsive.

CONTRACTOR'S QUESTIONNAIRE
NOTICE TO CONTRACTORS

Prior to Award, this questionnaire shall be completely filled out for the project upon which a bid is submitted.

A. FINANCIAL

1. Have you ever failed to complete a contract on account of insufficient resources?
   _____

2. Have you made sufficient arrangements to finance the work? _____

   If so, with whom and for what amount? _____

   _____

   If so, with what company? _____

B. EQUIPMENT

1. Set forth below the equipment which you have available for the work, which you propose to do. This equipment should be listed in detail (General statements will not be accepted).

NO.	ITEMS TYPE	SIZE/CAPACITY	PRESENT VALUE

2. Do you thoroughly understand that in case the contract is awarded to you, you may be required to use any or all of the equipment listed on the work covered by this contract?
   _____

3. Do you propose to purchase any equipment for use on this project should the contract be awarded to you? If so, state type, quantity and approximate cost.
   _____
   _____

4. Do you propose to rent any equipment for this work? _____
   If so, state type, quantity, and reason for renting. _____
   _____
   _____

5. Have you made contracts or received firm offers for all necessary materials with the prices used in preparing your proposal? _____

6. Do you intend to plan to subcontract any of the work? _____
If so, what types or portions of the work. _____
_____
_____

Approximate value $_____ Percent of total bid _____

C. EXPERIENCE

1. How many years has your organization been in business as a general contractor under your present business name? _____

2. How many years of experience in construction work has your organization had:

a) As a General Contractor _____.
b) As a Subcontractor _____.

3. List previous contracts you have completed of a similar nature to this proposed contract:

a) _____
b) _____
c) _____
d) _____
e) _____

4. List projects which you currently have under contract or expect to have under contract during the life of this contract:

a) _____
b) _____
c) _____

Use additional sheets as necessary.

5. List your staff you plan to use on this project and the position they will fill for this project (include managerial and clerical personnel that will provide support services).

STAFF MEMBER	**POSITION**

Signature: _____ Title: _____

PAMPHLET No. 600

Title 36. Public Contracts
AS 36.05

MINIMUM RATES OF PAY
For Laborers and Mechanics

Effective April 1, 2024 Issue 48

DEPARTMENT OF LABOR
AND WORKFORCE DEVELOPMENT
Wage and Hour

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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

April 1, 2024

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 wages.

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 April 1, 2024.

The prevailing wage rates contained in this pamphlet are applicable to public construction projects with a final bid date of April 11, 2024, 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,

Catherine Muñoz
Commissioner Designee

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Table of Contents

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.

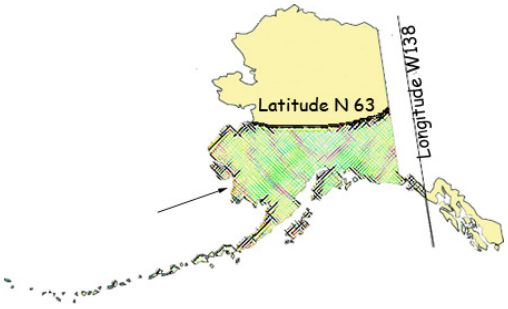
The Alaska Department of Labor and Workforce Development has determined that per diem is an established work practice for certain work classifications. These classifications are indicated throughout the Pamphlet by an asterisk (*) under the classification title. If all of the conditions of 8 AAC 30.054 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, 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.

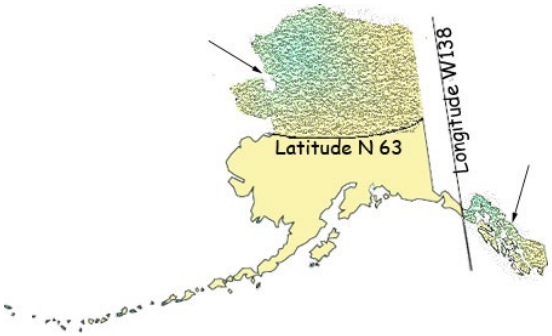
LABORER CLASSIFICATION CLARIFICATION

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:

S1201-
S1206



N1201-
N1206



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
P.O. Box 111149
Juneau, AK 99811-1149
-or-
Email: 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

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

Anchorage	Juneau	Fairbanks
1251 Muldoon Road, Suite 113 Anchorage, Alaska 99504-2098 Phone: (907) 269-4900 Email: statewide.wagehour@alaska.gov	PO Box 111149 Juneau, Alaska 99811 Phone: (907) 465-4842 Email: statewide.wagehour@alaska.gov	Regional State Office Building 675 7th 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 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	Debarment Expires

No companies are currently debarred.

Laborers' & Mechanics' Minimum Rates of Pay

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
Boilermakers	*See per diem note on last page							
						VAC	**SAF**	
A0101	Boilermaker (journeyman)	48.15	8.57	18.40	2.15	4.25	0.34	81.86
Bricklayers & Blocklayers	*See per diem note on last page							
						L&M		
A0201	Blocklayer	42.01	9.00	10.20	0.62	0.20		62.03
	Bricklayer Marble or Stone Mason Refractory Worker (Firebrick, Plastic, Castable, and Gunite Refractory Applications) Terrazzo Worker Tile Setter							
						L&M		
A0202	Tuck Pointer Caulker	42.01	9.00	10.20	0.62	0.20		62.03
	Cleaner (PCC)							
						L&M		
A0203	Marble & Tile Finisher	35.84	9.00	10.20	0.62	0.20		55.86
	Terrazzo Finisher							
						L&M		
A0204	Torginal Applicator	35.84	9.00	10.20	0.62	0.20		55.86
Carpenters, Region I (North of 63 latitude)	*See per diem note on last page							
						L&M	**SAF**	
N0301	Carpenter (journeyman)	44.39	10.35	15.82	1.75	0.20	0.20	72.71
	Lather/Drywall/Acoustical							
Carpenters, Region II (South of N63 latitude)	*See per diem note on last page							
						L&M	**SAF**	
S0301	Carpenter (journeyman)	44.39	10.35	16.36	1.75	0.20	0.20	73.25
	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=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
Cement Masons							
	*See per diem note on last page						
						L&M	
A0401	Group I, including:	46.93	8.80	11.80	1.53	0.10	69.16
	Application of Sealing Compound						
	Application of Underlayment						
	Building, General						
	Cement Finisher						
	Cement Mason (journeyman)						
	Concrete						
	Concrete Paving						
	Concrete Polishing						
	Concrete Repair						
	Curb & Gutter, Sidewalk						
	Curing of All Concrete						
	General Concrete Pour Tender						
	Grouting & Caulking of Tilt-Up Panels						
	Grouting of All Plates						
	Patching Concrete						
	Screed Pin Setter						
	Screeder or Rodder						
	Spackling/Skim Coating						
						L&M	
A0402	Group II, including:	46.93	8.80	11.80	1.53	0.10	69.16
	Form Setter						
						L&M	
A0403	Group III, including:	46.93	8.80	11.80	1.53	0.10	69.16
	Concrete Saw Cutter Operator (All Control Joints and Self-powered)						
	Curb & Gutter Machine						
	Floor Grinder						
	Pneumatic Power Tools						
	Power Chipping & Bushing						
	Sand Blasting Architectural Finish						
	Screed & Rodding Machine Operator						
	Troweling Machine Operator (all concrete surfaces)						
						L&M	
A0404	Group IV, including:	46.93	8.80	11.80	1.53	0.10	69.16
	Acoustical or Imitation Acoustical Finish						
	Application of All Composition Mastic						
	Application of All Epoxy Material						
	Application of All Plastic Material						
	Finish Colored Concrete						
	Gunite Nozzleman						
	Hand Powered Grinder						

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
Cement Masons							
	*See per diem note on last page						
A0404	Group IV, including:	46.93	8.80	11.80	1.53	L&M 0.10	69.16
	Preparing, scratching and browsing of all ceilings and walls, finished with terrazo or tile						
	Tunnel Worker						
A0405	Group V, including:	46.93	8.80	11.80	1.53	L&M 0.10	69.16
	Casting and finishing						
	EIFS Systems						
	Finishing of all interior and exterior plastering						
	Fireproofing (Pryocrete, Cafco, Albi-Clad, sprayed fiberglass)						
	Gypsum, Portland Cement						
	Kindred material and products						
	Operation and control of all types of plastering machines, including power tools and floats, used by the industry						
	Overcoating and maintenance of interior/exterior plaster surfaces						
	Plasterer						
	Veneer plastering process (Rapid Plaster, U.S.G. "Imperial Systems", and Pabcoat Systems")						
	Venetian plaster and color-integrated Italian/Middle-Eastern line plaster						
Culinary Workers							
A0501	Baker/Cook	29.95	7.53	8.83		LEG	46.31
A0503	General Helper	25.92	7.53	8.83		LEG	42.28
	Housekeeper						
	Janitor						
	Kitchen Helper						
A0504	Head Cook	29.95	7.53	8.83		LEG	46.31
A0505	Head Housekeeper	26.20	7.53	8.83		LEG	42.56
	Head Kitchen Help						
Dredgemen							
	*See per diem note on last page						
A0601	Assistant Engineer	49.52	11.75	15.50	1.05	L&M 0.10	77.92
	Craneman						

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
Dredgemen								
	*See per diem note on last page							
A0601	Assistant Engineer	49.52	11.75	15.50	1.05	**L&M** 0.10		77.92
	Electrical Generator Operator (primary pump/power barge/dredge) Engineer Welder							
A0602	Assistant Mate (deckhand)	48.20	11.75	15.50	1.05	**L&M** 0.10		76.60
A0603	Fireman	48.70	11.75	15.50	1.05	**L&M** 0.10		77.10
A0605	Leverman Clamshell	52.39	11.75	15.50	1.05	**L&M** 0.10		80.79
A0606	Leverman Hydraulic	50.39	11.75	15.50	1.05	**L&M** 0.10		78.79
A0607	Mate & Boatman	49.52	11.75	15.50	1.05	**L&M** 0.10		77.92
A0608	Oiler (dredge)	48.70	11.75	15.50	1.05	**L&M** 0.10		77.10
Electricians								
	*See per diem note on last page							
A0701	Inside Cable Splicer	48.94	14.40	14.36	0.95	**L&M** 0.25	**LEG** 0.15	79.05
A0702	Inside Journeyman Wireman, including:	48.94	14.40	14.36	0.95	**L&M** 0.25	**LEG** 0.15	79.05
	Technicians (including use of drones in electrical construction)							
A0703	Power Cable Splicer	70.34	14.40	19.30	0.95	**L&M** 0.25	**LEG** 0.15	105.39
A0704	Tele Com Cable Splicer	54.03	14.40	18.02	0.95	**L&M** 0.25	**LEG** 0.15	87.80
A0705	Power Journeyman Lineman, including:	68.59	14.40	19.25	0.95	**L&M** 0.25	**LEG** 0.15	103.59
	Power Equipment Operator Technician (including use of drones in electrical construction)							
A0706	Tele Com Journeyman Lineman, including:	52.28	14.40	17.97	0.95	**L&M** 0.25	**LEG** 0.15	86.00
	Technician (including use of drones in telecommunications construction) Tele Com Equipment Operator							

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
Electricians								
	*See per diem note on last page							
						L&M	**LEG**	
A0707	Straight Line Installer - Repairman	52.28	14.40	17.97	0.95	0.25	0.15	86.00
						L&M	**LEG**	
A0708	Powderman	66.59	14.40	19.19	0.95	0.25	0.15	101.53
						L&M	**LEG**	
A0710	Material Handler	28.82	14.52	5.86	0.15	0.15	0.15	49.65
						L&M	**LEG**	
A0712	Tree Trimmer Groundman	32.26	14.40	14.52	0.15	0.15	0.15	61.63
						L&M	**LEG**	
A0713	Journeyman Tree Trimmer	41.32	14.40	14.79	0.15	0.15	0.15	70.96
						L&M	**LEG**	
A0714	Vegetation Control Sprayer	44.92	14.40	14.90	0.15	0.15	0.15	74.67
						L&M	**LEG**	
A0715	Inside Journeyman Communications CO/PBX	48.94	14.40	14.36	0.95	0.25	0.15	79.05
Elevator Workers								
	*See per diem note on last page							
						L&M	**VAC**	
A0802	Elevator Constructor	48.00	16.17	20.96	0.75	1.30	5.33	92.51
						L&M	**VAC**	
A0803	Elevator Constructor Mechanic	68.57	16.17	20.96	0.75	1.30	7.61	115.36
Heat & Frost Insulators/Asbestos Workers								
	*See per diem note on last page							
						IAF	**LML**	
A0902	Asbestos Abatement-Mechanical Systems	41.35	9.24	11.12	1.50	0.14	0.05	63.40
						IAF	**LML**	
A0903	Asbestos Abatement/General Demolition All Systems	41.35	9.24	11.12	1.50	0.14	0.05	63.40
						IAF	**LML**	
A0904	Insulator, Group II	41.35	9.24	11.12	1.50	0.14	0.05	63.40
						IAF	**LML**	
A0905	Fire Stop	41.35	9.24	11.12	1.50	0.14	0.05	63.40
IronWorkers								
	*See per diem note on last page							
						L&M	**IAF**	
A1101	Ironworkers, including:	42.99	10.16	26.45	0.77	0.20	0.24	80.81

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
IronWorkers								
	*See per diem note on last page							
						L&M	**IAF**	
A1101	Ironworkers, including:	42.99	10.16	26.45	0.77	0.20	0.24	80.81
	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							
						L&M	**IAF**	
A1102	Helicopter	43.99	10.16	26.45	0.77	0.20	0.24	81.81
	Helicopter (used for rigging and setting)							
	Tower (energy producing windmill type towers to include nacelle and blades)							
						L&M	**IAF**	
A1103	Fence/Barrier Installer	39.49	10.16	26.45	0.77	0.20	0.24	77.31
						L&M	**IAF**	
A1104	Guard Rail Layout Man	40.23	10.16	26.45	0.77	0.20	0.24	78.05
						L&M	**IAF**	
A1105	Guard Rail Installer	40.49	10.16	26.45	0.77	0.20	0.24	78.31
Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)								
	*See per diem note on last page							
						L&M	**LEG**	
N1201	Group I, including:	38.25	9.95	21.51	1.65	0.30	0.20	71.86
	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							

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
						L&M	LEG	
Laborers (The Alaska areas north of N63 latitude and east of W138 longitude) *See per diem note on last page								
N1201	Group I, including:	38.25	9.95	21.51	1.65	0.30	0.20	71.86
	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							
						L&M	LEG	
N1202	Group II, including:	39.25	9.95	21.51	1.65	0.30	0.20	72.86
	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							

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
						L&M	LEG	
Laborers (The Alaska areas north of N63 latitude and east of W138 longitude) *See per diem note on last page								
N1202	Group II, including:	39.25	9.95	21.51	1.65	0.30	0.20	72.86
	Environmental Laborer (asbestos, marine work)							
	Floor Preparation, Core Drilling							
	Foam Gun or Foam Machine Operator							
	Green Cutter (dam work)							
	Gunite 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	
N1203	Group III, including:	40.15	9.95	21.51	1.65	0.30	0.20	73.76
	Bit Grinder							
	Camera/Tool/Video Operator							
	Guardrail Machine Operator							
	High Rigger & Tree Topper							
	High Scaler							
	Multiplate							
	Plastic Welding							
	Slurry Seal Squeegee Man							
	Traffic Control Supervisor							
	Welding Certified (in connection with laborer's work)							
						L&M	LEG	
N1204	Group IIIA	44.28	9.95	21.51	1.65	0.30	0.20	77.89
	Asphalt Raker, Asphalt Belly Dump Lay Down							
	Drill Doctor (in the field)							

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
						L&M	LEG	
Laborers (The Alaska areas north of N63 latitude and east of W138 longitude) *See per diem note on last page								
N1204	Group IIIA	44.28	9.95	21.51	1.65	0.30	0.20	77.89
	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	
N1205	Group IV	27.82	9.95	21.51	1.65	0.30	0.20	61.43
	Final Building Cleanup							
	Permanent Yard Worker							
						L&M	LEG	
N1206	Group IIIB	50.11	5.90	21.51	1.65	0.30	0.20	79.67
	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	
S1201	Group I, including:	38.25	9.95	21.51	1.65	0.30	0.20	71.86
	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							

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
						L&M	LEG	

Laborers (The area that is south of N63 latitude and west of W138 longitude)
*See per diem note on last page

S1201	Group I, including:	38.25	9.95	21.51	1.65	0.30	0.20	71.86

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

S1202	Group II, including:	39.25	9.95	21.51	1.65	0.30	0.20	72.86

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)
Gunite Operator
Hod Carrier

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
						L&M	LEG	

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

*See per diem note on last page

S1202	Group II, including:	39.25	9.95	21.51	1.65	0.30	0.20	72.86

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

S1203	Group III, including:	40.15	9.95	21.51	1.65	0.30	0.20	73.76

Bit Grinder
Camera/Tool/Video Operator
Guardrail Machine Operator
High Rigger & Tree Topper
High Scaler
Multiplate
Plastic Welding
Slurry Seal Squeegee Man
Traffic Control Supervisor
Welding Certified (in connection with laborer's work)

S1204	Group IIIA	44.28	9.95	21.51	1.65	0.30	0.20	77.89

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)

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
Laborers (The area that is south of N63 latitude and west of W138 longitude) *See per diem note on last page								
						L&M	**LEG**	
S1204	Group IIIA	44.28	9.95	21.51	1.65	0.30	0.20	77.89
	Traffic Control Supervisor, DOT Qualified							
						L&M	**LEG**	
S1205	Group IV	27.82	9.95	21.51	1.65	0.30	0.20	61.43
	Final Building Cleanup Permanent Yard Worker							
						L&M	**LEG**	
S1206	Group IIIB	50.11	5.90	21.51	1.65	0.30	0.20	79.67
	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		
A1251	Millwright (journeyman)	53.56	10.35	10.69	1.10	0.20	0.25	76.15
						L&M		
A1252	Millwright Welder	54.56	10.35	10.69	1.10	0.20	0.25	77.15
Painters, Region I (North of N63 latitude) *See per diem note on last page								
						L&M		
N1301	Group I, including:	37.83	9.77	15.10	1.08	0.07		63.85
	Brush General Painter Hand Taping Hazardous Material Handler Lead-Based Paint Abatement Roll							
						L&M		
N1302	Group II, including:	38.35	9.77	15.10	1.08	0.07		64.37
	Bridge Painter Epoxy Applicator General Drywall Finisher Hand/Spray Texturing Industrial Coatings Specialist							

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
Painters, Region I (North of N63 latitude) *See per diem note on last page							
						L&M	
N1302	Group II, including:	38.35	9.77	15.10	1.08	0.07	64.37
	Machine/Automatic Taping Pot Tender Sandblasting Specialty Painter Spray Structural Steel Painter Wallpaper/Vinyl Hanger						
N1304	Group IV, including:	43.74	9.77	18.21	1.05	0.05	72.82
	Glazier Storefront/Automatic Door Mechanic						
N1305	Group V, including:	39.86	9.77	5.00	1.10	0.10	55.83
	Carpet Installer Floor Coverer Heat Weld/Cove Base Linoleum/Soft Tile Installer						
N1306	Group VI, including:	70.00	10.79	5.00	1.10	0.10	86.99
	Traffic Control Striper						
Painters, Region II (South of N63 latitude) *See per diem note on last page							
						L&M	
S1301	Group I, including :	34.47	9.77	16.45	1.08	0.07	61.84
	Brush General Painter Hand Taping Hazardous Material Handler Lead-Based Paint Abatement Roll Spray						
						L&M	
S1302	Group II, including :	35.72	9.77	16.45	1.08	0.07	63.09
	General Drywall Finisher Hand/Spray Texturing Machine/Automatic Taping Wallpaper/Vinyl Hanger						

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
Painters, Region II (South of N63 latitude) *See per diem note on last page							
						L&M	
S1303	Group III, including :	35.82	9.77	16.45	1.08	0.07	63.19
	Bridge Painter Epoxy Applicator Industrial Coatings Specialist Pot Tender Sandblasting Specialty Painter Structural Steel Painter						
						L&M	
S1304	Group IV, including:	43.95	9.77	17.25	1.08	0.07	72.12
	Glazier Storefront/Automatic Door Mechanic						
						L&M	
S1305	Group V, including:	39.86	9.77	5.00	1.10	0.10	55.83
	Carpet Installer Floor Coverer Heat Weld/Cove Base Linoleum/Soft Tile Installer						
S1306	Group VI, including:	70.00	10.79	5.00	1.10	0.10	86.99
	Traffic Control Striper						
Piledrivers *See per diem note on last page							
						L&M	**IAF**
A1401	Piledriver	44.39	10.35	15.82	1.75	0.20	0.20 72.71
	Assistant Dive Tender Carpenter/Piledriver Rigger Sheet Stabber Skiff Operator						
						L&M	**IAF**
A1402	Piledriver-Welder/Toxic Worker	45.39	10.35	15.82	1.75	0.20	0.20 73.71
						L&M	**IAF**
A1403	Remotely Operated Vehicle Pilot/Technician	48.70	10.35	15.82	1.75	0.20	0.20 77.02
	Single Atmosphere Suit, Bell or Submersible Pilot						
						L&M	**IAF**
A1404	Diver (working) **See note on last page	88.50	10.35	15.82	1.75	0.20	0.20 116.82

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
Piledrivers								
	*See per diem note on last page							
						L&M	**IAF**	
A1405	Diver (standby) **See note on last page	48.70	10.35	15.82	1.75	0.20	0.20	77.02
						L&M	**IAF**	
A1406	Dive Tender **See note on last page	47.70	10.35	15.82	1.75	0.20	0.20	76.02
						L&M	**IAF**	
A1407	Welder (American Welding Society, Certified Welding Inspector)	49.95	10.35	15.82	1.75	0.20	0.20	78.27
Plumbers, Region I (North of N63 latitude)								
	*See per diem note on last page							
						L&M	**S&L**	
N1501	Journeyman Pipefitter	47.16	12.20	18.45	1.75	1.20		80.76
	Plumber							
	Welder							
Plumbers, Region II (South of N63 latitude)								
	*See per diem note on last page							
						L&M		
S1501	Journeyman Pipefitter	44.25	12.38	15.27	1.55	0.20		73.65
	Plumber							
	Welder							
Plumbers, Region IIA (1st Judicial District)								
	*See per diem note on last page							
						L&M		
X1501	Journeyman Pipefitter	43.50	14.17	11.75	2.95	0.24		72.61
	Plumber							
	Welder							
Power Equipment Operators								
	*See per diem note on last page							
						L&M		
A1601	Group I, including:	50.39	11.75	15.50	1.05	0.10		78.79
	Asphalt Roller: Breakdown, Intermediate, and Finish							
	Back Filler							
	Barrier Machine (Zipper)							
	Beltcrete with Power Pack & similar conveyors							
	Bending Machine							
	Boat Coxswain							
	Bulldozer							
	Cableways, Highlines & Cablecars							

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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	
A1601	Group I, including:	50.39	11.75	15.50	1.05	0.10	78.79

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
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)

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
Power Equipment Operators *See per diem note on last page							
A1601	Group I, including:	50.39	11.75	15.50	1.05	L&M 0.10	78.79
	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						
A1602	Group IA, including:	52.39	11.75	15.50	1.05	L&M 0.10	80.79
	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)						
A1603	Group II, including:	49.52	11.75	15.50	1.05	L&M 0.10	77.92
	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						

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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	
A1603	Group II, including:	49.52	11.75	15.50	1.05	0.10	77.92
	Sideboom (cradling rock drill, regardless of size) Skidder Trenching Machines (under 16 inches) Water/Waste Water Treatment Operator						
						L&M	
A1604	Group III, including:	48.70	11.75	15.50	1.05	0.10	77.10
	"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-l/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) Stake Hopper Straightening Machine Tow Tractor						
						L&M	
A1605	Group IV, including:	41.66	11.75	15.50	1.05	0.10	70.06
	Crane Assistant Engineer/Rig Oiler Drill Helper Parts & Equipment Coordinator						

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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		
A1605	Group IV, including:	41.66	11.75	15.50	1.05	0.10		70.06
	Spotter							
	Steam Cleaner							
	Swamper (on trenching machines or shovel type equipment)							
Roofers								
	*See per diem note on last page							
						L&M		
A1701	Roofer & Waterproofer	49.62	13.75	3.91	0.81	0.10	0.06	68.25
						L&M		
A1702	Roofer Material Handler	36.23	13.75	3.91	0.81	0.10	0.06	54.86
Sheet Metal Workers, Region I (North of N63 latitude)								
	*See per diem note on last page							
						L&M		
N1801	Sheet Metal Journeyman	51.93	12.55	15.86	1.80	0.12		82.26
	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							
	HVAC-R Service Mechanic, servicing and maintaining HVAC-R Systems							
	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							
Sheet Metal Workers, Region II (South of N63 latitude)								
	*See per diem note on last page							

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
Sheet Metal Workers, Region II (South of N63 latitude) *See per diem note on last page							
S1801	Sheet Metal Journeyman	47.05	12.55	14.90	2.01	L&M 0.43	76.94
	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 HVAC-R Service Mechanic, servicing and maintaining HVAC-R Systems 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							
A1901	Sprinkler Fitter	54.01	11.45	18.25	0.52	L&M 0.25	84.48
Surveyors *See per diem note on last page							
A2001	Chief of Parties	57.54	12.98	14.14	1.25	L&M 0.10	86.01
A2002	Party Chief	53.55	12.98	14.14	1.25	L&M 0.10	82.02
A2003	Line & Grade Technician/Office Technician/GPS, Drones	50.65	12.98	14.14	1.25	L&M 0.10	79.12
A2004	Associate Party Chief (including Instrument Person & Head Chain Person)/Stake Hop/Grademan	48.29	12.98	14.14	1.25	L&M 0.10	76.76

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
Surveyors	*See per diem note on last page						
						L&M	
A2006	Chain Person (for crews with more than 2 people)	43.46	12.98	14.14	1.25	0.10	71.93
Truck Drivers	*See per diem note on last page						
						L&M	
A2101	Group I, including:	49.51	12.98	14.14	1.25	0.10	77.98
	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 articulating end dumps, rockbuggy, side dump, belly dump, & trucks with pups) over 40 yards up to & including 60 yards						
	Fueler						
	Helicopter Transporter						
	Liquid Vac Truck/Super Vac Truck						
	Material Coordinator or Purchasing Agent						
	Oil Distributor Truck						
	Ready-mix (over 12 yards up to & including 15 yards) (over 15 yards to be negotiated)						
	Semi with Double Box Mixer						
	Tireman, Medium Duty (Truck Tires up to 1200-24")						
	Water Wagon (250 Bbls and above)						
						L&M	
A2102	Group 1A including:	50.92	12.98	14.14	1.25	0.10	79.39
	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)						
	Tireman Heavy Duty (earthmover tires, i.e., loader, scraper, haul truck)						
						L&M	
A2103	Group II, including:	48.10	12.98	14.14	1.25	0.10	76.57
	All Deltas, Commanders, Rollagons, & similar equipment						
	Batch Trucks (8 yards & up)						
	Batch Trucks (up to & including 7 yards)						
	Boom Truck/Knuckle Truck (over 5 tons)						
	Cacasco Truck/Heat Stress Truck						
	Construction and Material Safety Technician						

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
Truck Drivers	*See per diem note on last page						
						L&M	
A2103	Group II, including:	48.10	12.98	14.14	1.25	0.10	76.57
	Dump Trucks (including articulating end dump, 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 Partsman Ready-mix (up to & including 12 yards) Stringing Truck Turn-O-Wagon or DW-10 (not self loading)						
						L&M	
A2104	Group III, including:	47.19	12.98	14.14	1.25	0.10	75.66
	Boom Truck/Knuckle Truck (up to & including 5 tons) Dump Trucks (including articulating end dump, 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)						
						L&M	
A2105	Group IV, including:	46.55	12.98	14.14	1.25	0.10	75.02
	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 Expeditor (general) Fire Truck/Ambulance Driver Flat Beds, Dual Rear Axle Foam Distributor Truck Dual Axle Front End Loader with Fork						

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
Truck Drivers							
	*See per diem note on last page						
						L&M	
A2105	Group IV, including:	46.55	12.98	14.14	1.25	0.10	75.02
	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	
A2106	Group V, including:	45.70	12.98	14.14	1.25	0.10	74.17
	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 Seeder, Single Axle						
	Pickups (pilot cars & all light-duty vehicles)						
	Rigger						
	Swamper						
	Tack Truck (welders/gear)						
	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						
						L&M	**LEG**
N2201	Group I, including:	42.08	9.95	21.51	1.65	0.30	0.20	75.69
	Brakeman						
	Mucker						

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
	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**	
N2201	Group I, including:	42.08	9.95	21.51	1.65	0.30	0.20	75.69
	Nipper Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer) Topman & Bull Gang Tunnel Track Laborer							
						L&M	**LEG**	
N2202	Group II, including:	43.18	9.95	21.51	1.65	0.30	0.20	76.79
	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**	
N2203	Group III, including:	44.17	9.95	21.51	1.65	0.30	0.20	77.78
	Miner Retimberman							
						L&M	**LEG**	
N2204	Group IIIA, including:	48.71	9.95	21.51	1.65	0.30	0.20	82.32
	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**	
N2206	Group IIIB, including:	55.12	5.90	21.51	1.65	0.30	0.20	84.68
	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							

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
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**	
S2201	Group I, including:	42.08	9.95	21.51	1.65	0.30	0.20	75.69
	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**	
S2202	Group II, including:	43.18	9.95	21.51	1.65	0.30	0.20	76.79
	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**	
S2203	Group III, including:	44.17	9.95	21.51	1.65	0.30	0.20	77.78
	Miner Retimberman							
						L&M	**LEG**	
S2204	Group IIIA, including:	48.71	9.95	21.51	1.65	0.30	0.20	82.32
	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**	
S2206	Group IIIB, including:	55.12	5.90	21.51	1.65	0.30	0.20	84.68
	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)							

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
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**	
S2206	Group IIIB, including:	55.12	5.90	21.51	1.65	0.30	0.20	84.68
	Stake Hopper							
Tunnel Workers, Power Equipment Operators *See per diem note on last page								
						L&M		
A2207	Group I	55.43	11.75	15.50	1.05	0.10		83.83
						L&M		
A2208	Group IA	57.63	11.75	15.50	1.05	0.10		86.03
						L&M		
A2209	Group II	54.47	11.75	15.50	1.05	0.10		82.87
						L&M		
A2210	Group III	53.57	11.75	15.50	1.05	0.10		81.97
						L&M		
A2211	Group IV	45.83	11.75	15.50	1.05	0.10		74.23

*** 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.**

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Shipyard Rates Addendum

This Addendum was developed to address the specialized industry of shipbuilding/repair in Alaska, as it relates to public works. For the purposes of providing rates for shipyard work the Department is adopting Shipyard rates from the state of Washington (King County). These rates only apply to work done in shipbuilding/repair in Alaska, under a public contract. This addendum will be updated two times a year to coincide with the corresponding Issue of *Laborers and Mechanics MINIMUM RATES OF PAY.*

Class Code		BHR H&W PEN TRN Other Benefits THR
Shipyard Workers *See total hourly(THR) note below		
A2300	Ship Boilermaker	51.85
A2305	Ship Carpenter	51.85
A2310	Ship Crane Operator	45.06
A2315	Ship Electrician	51.85
A2320	Ship Heat & Frost Insulator	87.15
A2325	Ship Laborer	51.85
A2330	Ship Mechanist	51.85
A2335	Ship Operating Engineer	45.06
A2340	Ship Painter	51.95
A2345	Ship Pipefitter	51.85
A2350	Ship Rigger	51.85
A2355	Ship Sheet Metal	51.85
A2360	Ship Shipwright	51.85
A2365	Ship Warehouse	45.06

***The THR includes the base hourly rate (BHR) and fringe benefits. Employers must pay a BHR and fringe benefit package that adds up to the THR. Fringe benefits included in the THR can be paid to employees in three ways; paid into a union trust fund, into an approved benefit plan, or paid directly on the paycheck as gross wage**s.

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