AURORA HARBOR REBUILD – PHASE III

CONTRACT NO. DH23-015

Volume 1 of 2

FEBRUARY 2023

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DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS, CONTRACT FORMS, AND CONDITIONS OF THE CONTRACT

A list of the drawings can be found on the Plans under DRAWING INDEX

END OF SECTION

SECTION 00030 NOTICE INVITING BIDS

OBTAINING CONTRACT DOCUMENTS. The Contract Documents are entitled:

Aurora Harbor Rebuild, Phase III

Contract No. DH23-015

The Contract Documents may be downloaded from the CBJ Public Purchase webpage at https://www.publicpurchase.com/juneau,ak. Instructions for the Public Purchase registration process can be found here https://juneau.org/engineering-public-works/bids-rfps

PRE-BID CONFERENCE. Prospective Bidders are encouraged to attend a pre-Bid conference to discuss the proposed WORK, which will be conducted by the OWNER, **at 10:00 a.m. on March 1, 2023, via teleconference**. The object of the conference is to acquaint Bidders with the project and bid documents. Prospective bidders intending to participate shall email contracts@juneau.gov by 4:30 p.m., February 28, 2023.

DESCRIPTION OF WORK. The Work includes the fabrication and installation of 4500 square feet of mooring floats, four (4) 12.75" diameter steel piles and twenty-one (21) 16" diameter steel piles along with six (6) 6'x48' finger floats, three (3) 8'x60' finger floats and 1180 square feet Tee float. Additional Work includes refurbishing the existing gangway landing float and the existing gangway, furnishing and installing potable water system and fire suppression system, furnishing and installing electrical components.

ENGINEER'S ESTIMATE RANGE: Between $3,500,000 and $4,000,000.

COMPLETION OF WORK. The WORK must be completed by October 13, 2023.

DEADLINE FOR BIDDER QUESTIONS: 4:30pm Alaska Time on March 8, 2023.

DEADLINE FOR BIDS: Electronic bids must be received by the Port Director **prior to 2:00 p.m., Alaska Time on March 15, 2023,** or such later time as may be announced by addendum at any time prior to the deadline. Bids will be opened immediately thereafter via conference call, unless otherwise specified. Bidders may attend this bid opening by calling 907-713-2140, with participant code 258358, unless otherwise specified.

SUBMISSION INSTRUCTIONS: Timely responses are accepted via Electronic Submission at Public Purchase, www.publicpurchase.com, the CBJ's eProcurement Provider. Bidders must register online prior to submitting a bid, it may take up to 24 hours for registration to be complete.

Late responses will not be accepted.

To Respond, Bidders must complete an online registration.

- Registration is a two-step process, registering with Public Purchase, and then registering with CBJ within Public Purchase.
- Get help registering using the Public Purchase Help Menu Tab.
- Register early to avoid missing the deadline, as Registration may take up to 24 hours to complete.

Registered Bidders may submit a Bid Schedule to Public Purchase by downloading the provided PDF solicitation documents, filling out the fields indicated, and uploading the document to Public Purchase.

SITE OF WORK. The site of the WORK is Aurora Harbor in Juneau, Alaska.

SECTION 00030 NOTICE INVITING BIDS

BIDDING, CONTRACT, or TECHNICAL QUESTIONS. All communications relative to this WORK, prior to opening Bids, shall be directed to the following:

Greg Smith, Contract Administrator
CBJ Engineering Department, 3rd Floor, Marine View Center
Email: greg.smith@juneau.gov
Telephone: (907) 586-0800 ext. 4196
Fax: (907) 586-4530

BID SECURITY. Each Bid shall be accompanied by a certified or cashier's check or Bid Bond, in the amount of 5% percent of the Bid, payable to the City and Borough of Juneau, Alaska, as a guarantee that the Bidder, if its Bid is accepted, will promptly execute the Agreement. A Bid shall not be considered unless one of the forms of Bidder's security is provided as described in Section 00100, Article 12, at the time of bid.

CONTRACTOR'S LICENSE. All contractors are required to have a current Alaska Contractor's License, prior to submitting a Bid, and a current Alaska Business License prior to award.

BID TO REMAIN OPEN. The Bidder shall guarantee the Bid for a period of 90 Days from the date of Bid opening. Any component of the Bid including additive alternates may be awarded anytime during the 90 Days.

OWNER'S RIGHTS RESERVED. The OWNER reserves the right to reject any or all Bids, to waive any informality in a Bid, and to make award to the lowest responsive, responsible Bidder as it may best serve the interests of the OWNER.

OWNER: City and Borough of Juneau

By: Carl J Uchytil
Carl Uchytil, PE, Port Director

February 21, 2023
Date

END OF SECTION

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1.0 DEFINED TERMS. Terms used in these Instructions to Bidders and the Notice Inviting Bids, which are defined in the General Conditions, have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to the OWNER, as distinct from a sub-bidder, who submits a Bid to a Bidder.

2.0 INTERPRETATIONS AND ADDENDA.

A. INTERPRETATIONS. All questions about the meaning or intent of the Contract Documents are to be directed to the Engineering Contracts Administrator. Interpretations or clarifications considered necessary by the Engineering Contracts Administrator in response to such questions will be issued by Addendum, mailed, faxed, or delivered to all parties recorded by the Engineering Contracts Administrator, or OWNER, as having received the Contract Documents. Questions received less than seven Days prior to the Deadline for Bids may not be answered. Only questions answered by formal written Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect.

B. ADDENDA. Addenda may be issued to modify the Contract Documents as deemed advisable by the OWNER. Addenda may be faxed or, if addendum format warrants, addenda may be posted to the CBJ Engineering Department website. In any event, notification of addendum issuance will be faxed to planholders. Hard copies are available upon request. The OWNER will make all reasonable attempts to ensure that all planholders receive notification of Addenda, however, it is strongly recommended by the OWNER that bidders independently confirm the contents, number, and dates of each Addendum prior to submitting a Bid.

3.0 FAIR COMPETITION. More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. If the OWNER believes that any Bidder is interested in more than one Bid for the WORK contemplated, all Bids in which such Bidder is interested will be rejected. If the OWNER believes that collusion exists among the Bidders, all Bids will be rejected.

4.0 RESPONSIBILITY OF BIDDERS. Only responsive Bids from responsible Bidders will be considered. A Bid submitted by a Bidder determined to be not responsible may be rejected. The OWNER may find a bidder to be not responsible for any one of the following reasons, but is not limited in its responsibility analysis to the following factors:

A. Evidence of bid rigging or collusion;

B. Fraud or dishonesty in the performance of previous contracts;

C. Record of integrity;

D. More than one bid for the same work from an individual, firm, or corporation under the same or different name;

E. Unsatisfactory performance on previous or current contracts;

F. Failure to pay, or satisfactorily settle, all bills due for labor and material on previous contracts;

G. Uncompleted work that, in the judgment of the OWNER, might hinder or prevent the bidder's prompt completion of additional work, if awarded;

H. Failure to reimburse the OWNER for monies owed on any previous contracts;

I. Default under previous contracts;

J. Failure to comply with any qualification requirements of the OWNER; special standards for responsibility, if applicable, will be specified. These special standards establish minimum standards or experience required for a responsible Bidder on a specific contract;

K. Engaging in any activity that constitutes a cause for debarment or suspension under the CBJ Procurement Code 53.50 or submitting a bid during a period of debarment;

L. Lack of skill, ability, financial resources, or equipment required to perform the contract; or

M. Lack of legal capacity to contract.

N. Bidders must be registered as required by law and in good standing for all amounts owed to the OWNER per Paragraph 21.0 of this Section.

O. Failure to submit a complete Subcontractor Report as required in section Section 00360 – Subcontractor Report.

Nothing contained in this section deprives the OWNER of its discretion in determining the lowest responsible bidder. Before a Bid is considered for award, a Bidder may be requested to submit information documenting its ability and competency to perform the WORK, according to general standards of responsibility and any special standards which may apply. It is Bidder's responsibility to submit sufficient, relevant, and adequate information. OWNER will make its determination of responsibility and has no obligation to request clarification or supplementary information.

5.0 NON-RESPONSIVE BIDS. Only responsive Bids will be considered. Bids may be considered non-responsive and may be rejected. Some of the reasons a Bid may be rejected for being non-responsive are:

A. If a Bid is received by the CBJ Port Director after the Deadline for Bids.

B. If the Bid is on a form other than that furnished by the OWNER, or legible copies thereof; or if the form is altered or any part thereof is detached; or if the Bid is improperly signed.

C. If there are unauthorized additions, conditional or alternate Bids, or irregularities of any kind which may tend to make the bid incomplete, indefinite, ambiguous as to its meaning, or in conflict with the OWNER's Bid document.

D. If the Bidder adds any unauthorized conditions, limitations, or provisions reserving the right to accept or reject any award, or to enter into a contract pursuant to an award. This does not exclude a Bid limiting the maximum gross amount of awards acceptable to any one Bidder at any one Bid opening, provided that any selection of awards will be made by the OWNER.

E. If the Bid does not contain a Unit Price for each pay item listed, except in the case of authorized alternate pay items.

F. If the Bidder has not acknowledged receipt of each Addendum.

G. If the Bidder fails to furnish an acceptable Bid guaranty with the Bid.

H. If any of the Unit Prices Bid are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the OWNER.

I. If a Bid modification does not conform to Article 15.0 of this Section.

6.0 BIDDER'S EXAMINATION OF CONTRACT DOCUMENTS AND SITE. It is the responsibility of each Bidder before submitting a Bid:

A. To examine thoroughly the Contract Documents, and other related data identified in the Bidding documents (including "technical data" referred to below):

1. To visit the site to become familiar with and to satisfy the Bidder as to the general and local conditions that may affect cost, progress, or performance, of the WORK,
2. To consider federal, state and local laws and regulations that may affect cost, progress, or performance of the WORK,
3. To study and carefully correlate the Bidder's observations with the Contract Documents, and other related data; and
4. To notify the ENGINEER of all conflicts, errors, or discrepancies in or between the Contract Documents and such other related data.

7.0 REFERENCE IS MADE TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR IDENTIFICATION OF:

A. Those reports of explorations and tests of subsurface conditions at the site which have been utilized by the Engineer of Record in the preparation of the Contract Documents. The Bidder may rely upon the accuracy of the technical data contained in such reports, however, the interpretation of such technical data, including any interpolation or extrapolation thereof, together with non-technical data, interpretations, and opinions contained therein or the completeness thereof is the responsibility of the Bidder.

B. Those Drawings of physical conditions in or relating to existing surface and subsurface conditions (except underground utilities) which are at or contiguous to the site have been utilized by the Engineer of Record in the preparation of the Contract Documents. The Bidder may rely upon the accuracy of the technical data contained in such Drawings, however, the interpretation of such technical data, including any interpolation or extrapolation thereof, together with nontechnical data, interpretations, and opinions contained in such Drawings or the completeness thereof is the responsibility of the Bidder.

C. Copies of such reports and Drawings will be made available by the OWNER to any Bidder on request if said reports and Drawings are not bound herein. Those reports and Drawings are not part of the Contract Documents, but the technical data contained therein upon which the Bidder is entitled to rely, as provided in Paragraph SGC-4.2 of the Supplementary General Conditions, are incorporated herein by reference.

D. Information and data reflected in the Contract Documents with respect to underground utilities at or contiguous to the site is based upon information and data furnished to the OWNER and the Engineer of Record by the owners of such underground utilities or others, and the OWNER does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary General Conditions, or in Section 01530 - Protection and Restoration of Existing Facilities of the General Requirements.

E. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, underground utilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.2, 4.3, and 4.4 of the General Conditions.

F. Before submitting a Bid, each Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests, and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface, and underground utilities) at or contiguous to the site or otherwise which may affect cost, progress, or performance of the WORK and which the Bidder deems necessary to determine its Bid for performing the WORK in accordance with the time, price, and other terms and conditions of the Contract Documents.

G. On request in advance, the OWNER will provide each Bidder access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and shall clean up and restore the site to its former condition upon completion of such explorations.

H. The lands upon which the WORK is to be performed, rights-of-way and easements for access thereto and other lands designated for use by the CONTRACTOR in performing the WORK are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by the CONTRACTOR. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by the OWNER unless otherwise provided in the Contract Documents.

I. The submission of a Bid will constitute an incontrovertible representation by the Bidder that the Bidder has complied with every requirement of Article 6.0, "Bidder's Examination of Contract Documents and Site" herein, that without exception the Bid is premised upon performing the WORK required by the Contract Documents and such means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the WORK.

8.0 BID FORM.

A. The Bid shall be made on the Bid Schedule(s) bound herein, or by another acceptable submission method as specified in Section 00030, Notice Inviting Bids, and shall contain the following: Sections 00300, 00310 or other specified acceptable form of Bid Schedule, the required Bid Security, and any other documents required in Section 00300 – Bid.

B. All blanks on the Bid Form and Bid Schedule must be completed in ink or typed.

C. Bids by corporations must be executed in the corporate name by the president, a vice-president (or other corporate officer). The corporate address and state of incorporation must appear below the signature.

D. Bids by partnerships must be executed in the partnership name and be signed by a managing partner, and the official address of the partnership must appear below the signature.

E. The Bidder's Bid must be signed. All names must be printed or typed below the signature.

F. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form. Failure to acknowledge Addenda may render Bid non-responsive and may cause its rejection.

G. The address to which communications regarding the Bid are to be directed must be shown.

9.0 QUANTITIES OF WORK. The quantities of WORK, or material, stated in Unit Price items of the Bid are supplied only to give an indication of the general scope of the WORK; the OWNER does not expressly or by implication agree that the actual amount of WORK, or material, will correspond therewith, and reserves the right after award to increase or decrease the amount of any Unit Price item of the WORK by an amount up to and including 25 percent of any Bid item, without a change in the Unit Price, and shall include the right to delete any Bid item in its entirety, or to add additional Bid items up to and including an aggregate total amount not to exceed 25 percent of the Contract Price (see Section 00700 - General Conditions, Article 10 Changes In the WORK).

10.0 SUBSTITUTE OR "OR-EQUAL" ITEMS. Substitution requests are not accepted during the bidding process. The procedure for the submittal of substitute or "or-equal" products is specified in Section 01300 – Contractor Submittals.

11.0 SUBMISSION OF BIDS. The Bid shall be delivered by the time and to the place stipulated in Section 00030 - Notice Inviting Bids. It is the Bidder's sole responsibility to see that its Bid is received in proper time. Oral, telegraphic, emailed, or faxed Bids will not be considered. The envelope enclosing the sealed Bids shall be plainly marked in the upper left-hand corner with the name and address of the Bidder and shall also include the label included in Section 00030 – Notice Inviting Bids. The Bid Security shall be enclosed in the same envelope with the Bid

12.0 BID SECURITY, BONDS, AND INSURANCE. Each Bid shall be accompanied by a certified, or cashier's check, or approved Bid Bond in an amount of at least 5 percent of the total Bid price. The "total Bid price" is the amount of the Base Bid, plus the amount of alternate Bids, if any, which total to the maximum amount for which the CONTRACT could be awarded. Said check or Bond shall be made payable to the OWNER and shall be given as a guarantee that the Bidder, if offered the WORK, will enter into an Agreement with the OWNER, and will furnish the necessary insurance certificates, Payment Bond, and Performance Bond; each of said Bonds, if required, and insurance amounts shall be as stated in the Supplementary General Conditions. In case of refusal or failure to enter into said Agreement, the check or Bid Bond, as the case may be, may be forfeited to the OWNER. If the Bidder elects to furnish a Bid Bond as its Bid security, the Bidder shall use the Bid Bond form bound herein, or one conforming substantially to it in form. Bid Bonds must be accompanied by a legible Power of Attorney.

Bid Bonds shall be submitted by being scanned and uploaded to Public Purchase along with the other required Bid documents. When a Bid security check is used, it must be received by the Purchasing Division prior to the Deadline for Bids. Bid security checks will be time and date stamped by the Purchasing Division, which will establish the official time of receipt.

In addition to uploading a scanned file of the Bid Bond, the original hardcopy Bid Bond shall be submitted and received by the CBJ Contracts Office by 2:00 p.m. Alaska Time no more than seven calendar days after Bid Opening.

In lieu of the original hardcopy Bid Bond submittal requirement, bidders who have a Surety 2000 Bid Bond ID may validate their Bid Bond with Surety 2000 within the Bid Bond Response Information Form in the Public Purchase bid page.

Bid security checks shall be submitted in a sealed envelope that clearly indicates: that a bid security check is enclosed, the name of the bidding firm, and the project name and number. The envelope must not reveal the check amount so that the final Bid price will not be known until the sealed bids are opened.

Bid security checks delivered **in person** or by **courier** service must be delivered to:

PHYSICAL LOCATION:
CBJ Docks and Harbors
Port Director's Office
76 Egan Drive, 2nd Floor
Juneau, AK 99801

Bid security checks delivered by **U.S. Postal Service** must be mailed to:

MAILING ADDRESS:
CBJ Docks and Harbors
Port Director
155 South Seward Street
Juneau, AK 99801

Mailing/delivery times to Alaska may take longer than other areas of the U.S. Late bid security checks may cause a Bid to be deemed non-responsive

13.0 RETURN OF BID SECURITY. The OWNER will return all Bid security checks (certified or cashier's) accompanying such of the Bids as are not considered in making the award. All other Bid securities will be held until the Agreement has been executed. Following execution of the Agreement, all other Bid security checks will be returned to the respective Bidders whose Bids they accompanied and Bid security bonds will be appropriately discarded.

14.0 DISCREPANCIES IN BIDS. In the event there is more than one Pay Item in a Bid Schedule, the Bidder shall furnish a price for all Pay Items in the schedule, and failure to do so may render the Bid non-responsive and cause its rejection. In the event there are Unit Price Pay Items in a Bid Schedule and the "amount" indicated for a Unit Price Bid Item does not equal the product of the Unit Price and quantity, the Unit Price shall govern and the amount will be corrected accordingly, and the Bidder shall be bound by said correction. In the event there is more than one Pay Item in a Bid Schedule and the total indicated for the schedule does not agree with the sum of the prices Bid on the individual items, the prices Bid on the individual items shall govern and the total for the schedule will be corrected accordingly, and the Bidder shall be bound by said correction.

15.0 BID MODIFICATIONS AND UNAUTHORIZED ALTERNATIVE BIDS.

A. Any bidder may deliver a modification to a bid in person, by mail or fax (907-586-0295), provided that such modification is received by the Port Director no later than the deadline

for bids. Modifications will be time and date stamped by the Port Director, which will establish the official time of receipt of the modification. The modification must not reveal the bid price but should be in the form of an addition or subtraction or other modification so that the final prices will not be known until the sealed bid is opened.

The Bid modifications shall be provided on the **Bid Modification Form** located at the end of this Section. Submittal of any other form by the vendor may deem the modification unacceptable by the OWNER **A mail or fax modification should not reveal the Bid price but should provide the addition or subtraction or other modification so that the final prices will not be known by the City and Borough until the sealed Bid is opened.** Submitted Modification forms shall include the modification to the unit price or lump sum amount of each pay item modified.

FAX DISCLAIMER: It is the responsibility of the bidder to submit modifications in a timely manner. Bidders' use of a fax machine to modify their bid shall be at bidders' sole risk. The Port Director will attempt to keep the fax machine in good working order but will not be responsible for bid modifications that are late due to mechanical failure, a busy fax machine, or any other cause arising from bidder's use of a fax machine, even if bidder submits a transmission report or provides other confirmation indicating that the bidder transmitted a bid modification prior to the deadline. The City will not be responsible for its failure to receive the modification whether such failure is caused by equipment or human error, or otherwise. Bidders are therefore strongly encouraged to confirm receipt of their bid modification with the Port Director (907-586-0292) prior to deadline.

B. Conditioned bids, limitations, or provisos attached to the Bid or bid modification will render it unauthorized and cause its rejection as being non-responsive. The completed Bid forms shall be without interlineations, alterations, or erasures in the printed text. All changes shall be initialed by the person signing the Bid. Alternative Bids will not be considered unless called for.

16.0 WITHDRAWAL OF BID. Prior to the Deadline for Bids, the Bid may be withdrawn by the Bidder by means of a written request, signed by the Bidder or its properly authorized representative. Such written request must be delivered to the place stipulated in the Notice Inviting Bids for receipt of Bids.

17.0 AWARD OF CONTRACT.

A. Award of a contract, if it is awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Technical Specifications and will be made to the lowest responsive, responsible Bidder whose Bid complies with all the requirements prescribed. Unless otherwise specified, any such award will be made within the period stated in the Notice Inviting Bids that the Bids are to remain open. Unless otherwise indicated, a single award will be made for all the Bid items in an individual Bid Schedule.

B. If the OWNER has elected to advertise this Project with a Base Bid and Alternates, the OWNER may elect to award the contract for the Base Bid, or the Base Bid in combination with one or more Alternates selected by the OWNER. In either case, award shall be made to the responsive, responsible bidder offering the lowest total Bid for the WORK to be awarded.

C. Low Bidder will be determined on the basis of the lowest total of the Base Bid plus combinations of Alternates in order of priority as listed below within the limits of available funding.

Priority No.

Alternate A – Float H3
Alternate B – South Fingers
Alternate C – Tee Float
Alternate D - Anodes

18.0 EXECUTION OF AGREEMENT.

A. All Bids of value greater than $100,000 must be approved by the CBJ Assembly. After the CBJ Assembly has approved the award and after the Bid protest period, the OWNER will issue a Notice of Intent to Award to the approved Bidder. The Bidder to whom award is made shall execute a written Agreement with the OWNER on the Agreement form, Section 00500, collect insurance, and shall furnish all certificates and Bonds required by the Contract Documents within 10 Days (calendar) from the date of the Notice of Intent to Award letter.

B. Failure or refusal to enter into the Agreement as herein provided or to conform to any of the stipulated requirements in connection therewith shall be just cause for annulment of the award and forfeiture of the Bid security. If the lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the OWNER may award the contract to the second lowest responsive, responsible Bidder. If the second lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the OWNER may award the contract to the third lowest responsive, responsible Bidder. On the failure or refusal of such second or third lowest Bidder to execute the Agreement, each such Bidder's Bid securities shall be likewise forfeited to the OWNER.

19.0 LIQUIDATED DAMAGES. Provisions for liquidated damages if any, are set forth in Section 00500 - Agreement.

20.0 FILING A PROTEST.

A. A Bidder may protest the proposed award of a competitive sealed Bid by the City and Borough of Juneau. The protest shall be executed in accordance with CBJ Ordinance 53.50.062 PROTESTS and CBJ Ordinance 53.50.080 ADMINISTRATION OF PROTEST. The entire text of the CBJ Purchasing Ordinance can be accessed at the CBJ website, *http://www.juneau.org/law/code/code.php*, or call the CBJ Purchasing Division at (907) 586-5258 for a copy of the ordinance.

B. Late protests shall not be considered by the CBJ Port Director.

21.0 CONTRACTOR'S GOOD STANDING WITH CBJ FINANCE DEPARTMENT: Contractors must be in good standing with the CBJ prior to award, and prior to any contract renewals, and in any event no later than ***seven business days*** following notification by the CBJ of intent to award. **Good standing** means: all amounts owed to the CBJ are current and the Contractor is not delinquent with respect to any taxes, fees, assessment, or other monies due and owed the CBJ, or a Confession of Judgment has been executed and the Contractor is in

compliance with the terms of any stipulation associated with the Confession of Judgment, including being current as to any installment payments due; and Contractor is current in all CBJ reporting obligations (such as sales tax registration and reporting and business personal property declarations). Failure to meet these requirements may be cause for rejection of your bid. To determine if your business is in good standing, or for further information, contact the CBJ Finance Department's Sales Tax Division at (907) 586-5215 for sales tax issues, Assessor's Office at (907)586-5215 for business personal property issues, or Collections Division at (907) 586-5215 for all other accounts.

22.0 PERMITS AND LICENSES. The CONTRACTOR is responsible for all WORK associated with meeting any local, state, and/or federal permit and licensing requirements.

CITY AND BOROUGH OF JUNEAU
CBJ DOCKS AND HARBORS
FAX NO. 907-586-0295

BID MODIFICATION FORM

Modification Number: _____ Modification Page ____ of ____

Note: All modifications shall be made to the original bid amount(s). If more than one Modification form is submitted by any one bidder, changes from all Modification forms submitted will be combined and applied to the original bid. Changes to the modified Bid amounts will be calculated by the OWNER. Bidder may use multiple modification pages if required.

PAY ITEM NO.	PAY ITEM DESCRIPTION	MODIFICATIONS TO UNIT PRICE (*indicate* +/-)

Base Bid Total Increase or Decrease: $_____

PAY ITEM No.	ALTERNATE PAY ITEM DESCRIPTION	MODIFICATIONS TO UNIT PRICE (*indicate* +/-)

Alternate Total Increase or Decrease: $_____

_____
Name of Bidding Firm

_____
Responsible Party Signature

_____
Printed Name (must be an authorized signatory for Bidding Firm)

END OF SECTION

SECTION 00300 - BID

BID TO: THE CITY AND BOROUGH OF JUNEAU

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with the OWNER on the form included in the Contract Documents (as defined in Article 7 of Section 00500 - Agreement) to perform the WORK as specified or indicated in said Contract Documents entitled

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2. Bidder accepts all of the terms and conditions of the Contract Documents, including without limitation those in the "Notice Inviting Bids" and "Instructions to Bidders," dealing with the disposition of the Bid Security.

3. This Bid will remain open for the period stated in the "Notice Inviting Bids" unless otherwise required by law. Bidder will enter into an Agreement within the time and in the manner required in the "Notice Inviting Bids" and the "Instructions to Bidders," and will furnish insurance certificates, Payment Bond, Performance Bond, and any other documents as may be required by the Contract Documents.

4. Bidder has familiarized itself with the nature and extent of the Contract Documents, WORK, site, locality where the WORK is to be performed, the legal requirements (federal, state and local laws, ordinances, rules, and regulations), and the conditions affecting cost, progress or performance of the WORK and has made such independent investigations as Bidder deems necessary.

5. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

6. To all the foregoing, and including all Bid Schedule and information required of Bidder contained in this Bid Form, said Bidder further agrees to complete the WORK required under the Contract Documents within the Contract Time stipulated in said Contract Documents, and to accept in full payment therefore the Contract Price based on the total bid price(s) named in the aforementioned Bid Schedule.

7. Bidder has examined copies of all the Contract Documents including the following Addenda (receipt of all of which is hereby acknowledged by the Undersigned):

Addenda No.	Date Issued	Addenda No.	Date Issued

Give number and date of each Addenda above. Failure to acknowledge receipt of all Addenda may cause the Bid to be non-responsive and may cause its rejection.

8. The Bidder has read this Bid and agrees to the conditions as stated herein by signing its signature in the space provided below.

Dated: _____	Bidder: _____ (Company Name)
Alaska CONTRACTOR's Business License No: _____	By: _____ (Signature)
Alaska CONTRACTOR's License No: _____	Printed Name: _____
Telephone No: _____	Title: _____
Fax No: _____	Address: _____ (Street or P.O. Box)
E-mail: _____	_____ (City, State, Zip)

9. TO BE CONSIDERED, ALL BIDDERS MUST COMPLETE AND INCLUDE THE FOLLOWING AT THE TIME OF THE DEADLINE FOR BIDS. **MISSING DOCUMENTS WILL DEEM THIS BID NON-RESPONSIVE:**

- Bid, Section 00300 (includes Addenda receipt statement)
- Completed Bid Schedule, Section 00310, or other acceptable form of Bid Schedule as specified in Section 00030, Notice Inviting Bids
- Bid Security (Bid Bond, Section 00320, or by a certified or cashier's check as stipulated in the Notice Inviting Bids, Section 00030)
- Contractor Financial Responsibility, Section 00370

10. The apparent low Bidder is required to complete and submit the following documents by 4:30 p.m. on the ***fifth business day*** following the date of the Posting Notice.

- Subcontractor Report, Section 00360

The apparent low Bidder who fails to submit a completed Subcontractor Report within the time specified in Section 00360 – Subcontractor Report may be found to be not a responsible Bidder and may be required to forfeit the Bid security. The OWNER may then consider the next lowest Bidder for award of the contract.

11. The successful Bidder will be required to submit, ***within ten Days (calendar)*** after the date of the "Notice of Intent to Award" letter, the following executed documents:

- Agreement Forms, Section 00500
- Performance Bond, Section 00610
- Payment Bond, Section 00620
- Certificates of Insurance, (CONTRACTOR) Section 00700 and Section 00800

END OF SECTION

BASE BID – AURORA HARBOR REBUILD – PHASE III

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
1505.1	Mobilization	LS	All Reqd	LUMP	SUM	$	
2060.1	Demolition and Disposal	LS	All Req'd	LUMP	SUM	$	
2601.1	Domestic Water System and Appurtenances	LS	All Reqd	LUMP	SUM	$	
2611.1	Dry Fire Suppression System	LS	All Reqd	LUMP	SUM	$	
2702.1	Construction Surveying	LS	All Reqd	LUMP	SUM	$	
2718.1	Signage	LS	All Reqd	LUMP	SUM	$	
2882.1	Marine Mammal Work Suspension	HR	20				
2895.1	Electrical Utility Float, 16' x 25'	LS	All Reqd	LUMP	SUM	$	
2895.2	Headwalk Float, 10' x 126'	LS	All Reqd	LUMP	SUM	$	
2895.3	Mainwalk Float H, 10' x 268'	LS	All Reqd	LUMP	SUM	$	
2895.4	Finger Float, 6' x 48'	EA	1			$	
2895.5	Finger Float, 8' x 60'	EA	3			$	
2896.1	Furnish Steel Mooring Pile, 12.75" dia. x 0.500" thick	EA	3			$	
2896.2	Furnish Steel Mooring Pile, 16" dia. x 0.500" thick	EA	12			$	
2896.3	Install Steel Mooring Pile, 12.75" dia. x 0.500" thick		3				
2896.4	Install Steel Mooring Pile, 16" dia. x 0.500" thick	EA	12			$	
2896.5	Contingent Work - Pile Socket	EA	5			$	
2897.1	Supply Flotation Billet,	EA	20			$	
2897.2	Install Flotation Billet	EA	20			$	
2898.1	Refurbish Existing Aluminum Gangway	LS	All Reqd	LUMP	SUM		
2898.2	Refurbish Existing Gangway Landing Float	LS	All Reqd	LUMP	SUM		
2899.1	Life Ring and Base	EA	5			$	
2899.2	Fire Extinguisher and Base	EA	5			$	
2899.3	Hose Mount and Base	EA	6			$	
13121.1	Electrical Utility Building	LS	All Reqd	LUMP	SUM	$	
16000.1	Electrical System	LS	All Reqd	LUMP	SUM	$	
16052.1	Electrical Support Assemblies	LS	All Reqd	LUMP	SUM	$	

TOTAL BASE BID AMOUNT IN FIGURES: $ _____

TOTAL BASE BID AMOUNT IN WORDS: _____

_____

BIDDER NAME: _____

ADDITIVE ALTERNATE A – FLOAT H3

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
2895.2A	Headwalk Float H3, 10' x 54'	LS	1	LUMP	SUM	$	
2896.1A	Steel Mooring Pile, 12.75" dia. x 0.500" thick	EA	1			$	
2896.2A	Steel Mooring Pile, 12.75" dia. x 0.500" thick	EA	1			$	

TOTAL ADDITIVE ALTERNATE A AMOUNT IN FIGURES: $_____

TOTAL ADDITIVE ALTERNATE A AMOUNT IN WORDS: _____

BIDDER NAME: _____

ADDITIVE ALTERNATE B – SOUTH FINGERS

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
2895.4B	Finger Float, 6' x 48'	EA	5			$	
2896.3B	Furnish Steel Mooring Pile, 16" dia. x 0.500" thick	EA	5			$	
2896.4B	Install Steel Mooring Pile, 16" dia. x 0.500" thick	EA	5			$	

TOTAL ADDITIVE ALTERNATE B AMOUNT IN FIGURES: $_____

TOTAL ADDITIVE ALTERNATE B AMOUNT IN WORDS: _____

BIDDER NAME: _____

ADDITIVE ALTERNATE C – TEE FLOAT

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
2895.6C	Tee Float 10' x 118'	LS	All Reqd	LUMP	SUM	$	
2896.3C	Furnish Steel Mooring Pile, 16" dia. x 0.500" thick	EA	4			$	
2896.4C	Install Steel Mooring Pile, 16" dia. x 0.500" thick	EA	4			$	

TOTAL ADDITIVE ALTERNATE C AMOUNT IN FIGURES: $_____

TOTAL ADDITIVE ALTERNATE C AMOUNT IN WORDS: _____

BIDDER NAME: _____

ADDITIVE ALTERNATE D – ANODES

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
1505.1A	Mobilization	LS	All Reqd	LUMP	SUM	$	
2996.1	Supply Pile Anode, Type A	EA	50			$	
2996.2	Install Pile Anode, All Types	EA	50			$	
2996.3	Anode Potential Readings and Continuity Testing	LS	All Req'd	LUMP	SUM	$	

TOTAL ADDITIVE ALTERNATE D AMOUNT IN FIGURES: $ _____

TOTAL ADDITIVE ALTERNATE D AMOUNT IN WORDS: _____

_____

BIDDER NAME: _____

SECTION 00320 - BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that_____

_____ as Principal, and _____

as Surety, are held and firmly bound unto **THE CITY AND BOROUGH OF JUNEAU** hereinafter called "OWNER," in the sum of _____

_____dollars, (not less than five percent of the total amount of the Bid) for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under the Bid Schedule of the OWNER's Contract Documents entitled

Aurora Harbor Rebuild- Phase III
Contract No. DH23-015

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in the manner required in the "Notice Inviting Bids" and the "Instructions to Bidders" enters into a written Agreement on the form of Agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit, including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this _____ day of _____, 20___

(SEAL)_____ (SEAL)_____
(Principal) (Surety)

By:_____ By:_____
(Signature) (Signature)

END OF SECTION

SECTION 00360 - SUBCONTRACTOR REPORT

LIST OF SUBCONTRACTORS (AS 36.30.115)

The apparent low Bidder must submit a list of Subcontractors that the Bidder proposes to use in the performance of this contract ***on the fifth business day*** following the Posting Notice of Bids. If the fifth day falls on a weekend or holiday, the report is due by close of business on the next business Day following the weekend or holiday. The Subcontractor Report list must include each Subcontractor's name, address, location, evidence of valid Alaska Business License, and valid Alaska Contractor's Registration under AS 08.18. ***If no Subcontractors are to be utilized in the performance of the WORK, write in ink or type "NONE" on line (1) below.***

	SUBCONTRACTOR ADDRESS	[1] AK Contractor License No. [2] AK Business License No.	[1] Contact Name [2] Phone No.	Type of Work	Contract Amount	✓ if DBE
1.		[1] [2]			$	☐
2.		[1] [2]			$	☐
3.		[1] [2]			$	☐
4.		[1] [2]			$	☐

I certify that the above listed Alaska Business License(s) and CONTRACTOR Registration(s), if applicable, were valid at the time Bids were opened for this Project.

_____
CONTRACTOR, Authorized Signature

_____
CONTRACTOR, Printed Name

_____
COMPANY

A. A Bidder may replace a listed Subcontractor if the Subcontractor:

1. fails to comply with AS 08.18;
2. files for bankruptcy or becomes insolvent;
3. fails to execute a contract with the Bidder involving performance of the WORK for which the Subcontractor was listed and the Bidder acted in good faith;
4. fails to obtain bonding;
5. fails to obtain insurance acceptable to the OWNER;
6. fails to perform the contract with the Bidder involving work for which the Subcontractor was listed;
7. must be substituted in order for the CONTRACTOR to satisfy required state and federal affirmative action requirements;
8. refuses to agree or abide with the Bidder's labor agreement; or
9. is determined by the OWNER not to be responsible.
10. is not in "Good Standing" with the OWNER as required in Article 21.0 in Section 00100 – Instructions to Bidders.

B. If a Bidder fails to list a Subcontractor or lists more than one Subcontractor for the same portion of WORK, the Bidder shall be considered to have agreed to perform that portion of WORK without the use of a Subcontractor and to have represented the Bidder to be qualified to perform that WORK.

C. A Bidder who attempts to circumvent the requirements of this section by listing as a Subcontractor another contractor who, in turn, sublets the majority of the WORK required under the contract violates this section.

D. If a contract is awarded to a Bidder who violates this section, the OWNER may:

1. cancel the contract; or
2. after notice and a hearing, assess a penalty on the Bidder in an amount that does not exceed 10 percent of the value of the subcontract at issue.

E. On the Subcontractor Report, the apparent low Bidder must list any Subcontractors anticipated to perform WORK with a value of greater than one-half of one percent of the intended award amount, or $2,000, whichever is less.

F. An apparent low Bidder who fails to submit a completed Subcontractor Report within the time specified in this section may be found to be not a responsible Bidder and may be required to forfeit the Bid security. The OWNER will then consider the next lowest Bidder for award of the contract.

END OF SECTION

SECTION 00370 - CONTRACTOR'S FINANCIAL RESPONSIBILITY

The apparent low Bidder must complete this form and submit ***on the fifth business day*** following the Posting Notice of Bids. If the fifth day falls on a weekend or holiday, the report is due by close of business on the next business Day following the weekend or holiday. Attach additional sheets as necessary to respond to questions.

PROJECT: DH23-015 AURORA HARBOR REBUILD- PHASE III

As the General Contractor on this project, I intend to subcontract _____% of the total value of this contract.

A. EXPERIENCE

1. Have you ever failed to complete a contract due to insufficient resources?
[ ] No [ ] Yes If YES, explain:

_____
_____
_____
_____

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

_____
_____
_____
_____

3. Have you had previous construction contracts or subcontracts with the City and Borough of Juneau?
[ ] Yes [ ] No

4. Describe your most recent or current contract, its completion date, and scope of work:

_____
_____
_____
_____
_____
_____

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

_____
_____
_____
_____
_____

6. Per Alaska Statute 36.90.210, on previous public contracts, have you ever failed to pay a subcontractor within eight working days after receiving payment from the Owner (for projects occurring within the last 3 years)?

[ ] Yes [ ] No If yes, please attach a detailed explanation for each occurrence.

B. EQUIPMENT

1. Describe below, and/or as an attachment, the equipment you have available and intend to use for this project.

ITEM	QUANTITY	MAKE	MODEL	SIZE/CAPACITY	PRESENT MARKET VALUE

2. Do you propose to purchase any equipment for use on this project not listed on table B-1?

[ ] No [ ] Yes If YES, describe type, quantity, and approximate cost:

_____
_____
_____
_____

3. Do you propose to rent any equipment for this work not listed on table B-1?

[ ] No [ ] Yes If YES, describe type and quantity:

_____
_____
_____
_____
_____
_____

4. Is your bid based on firm offers for all materials necessary for this project?
[ ] Yes [ ] No If NO, please explain:

_____
_____
_____
_____
_____
_____

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

_____ _____
Contractor Name and Title of Person Signing

_____ _____
Signature Date

SECTION 00500 - AGREEMENT

THIS AGREEMENT is between THE CITY AND BOROUGH OF JUNEAU (hereinafter called OWNER) and _____ (hereinafter called CONTRACTOR) OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK.

CONTRACTOR shall complete the WORK as specified or as indicated under the Bid Schedule of the OWNER's Bid Documents entitled **Contract No. DH23-015 AURORA HARBOR REBUILD- PHASE III.**

The Work includes the fabrication and installation of 4500 square feet of mooring floats, 4 12.75" dia steel piles and 21 16" dia. steel piles along with 6ea. 6x48 finger floats, 3 ea. 8x60 finger floats and a 1180sf Tee float. Additional Work includes refurbishing the existing gangway landing float and the existing gangway, furnishing and installing potable water system and fire suppression system, furnishing and installing electrical components.

The WORK to be paid under this contract shall include the following: Total Bid as shown in Section 00310 - Bid Schedule.

ARTICLE 2. CONTRACT COMPLETION TIME.

The WORK must be completed by October 13, 2023.

ARTICLE 3. DATE OF AGREEMENT

The date of this Agreement will be the date of the last signature on page three of this section.

ARTICLE 4. LIQUIDATED DAMAGES.

OWNER and the CONTRACTOR recognize that time is of the essence of this Agreement and that the OWNER will suffer financial loss if the WORK is not completed within the time specified in Article 2 herein, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual damages suffered by the OWNER if the WORK is not completed on time. Accordingly, instead of requiring any such proof, the OWNER and the CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) the CONTRACTOR shall pay the OWNER **$0** for each Day that expires after the completion time specified in Article 2 herein. The amount of liquidated damages specified above is agreed to be a reasonable estimate based on all facts known as of the date of this Agreement.

ARTICLE 5. CONTRACT PRICE.

OWNER shall pay CONTRACTOR for completion of the WORK in accordance with the Contract Documents in the amount set forth in the Bid Schedule. The CONTRACTOR agrees to accept as full and complete payment for all WORK to be done in this contract for: **Contract No. DH23-015 AURORA HARBOR REBUILD- PHASE III**, those Lump Sum amounts as set forth in the Bid Schedule in the Contract Documents for this Project.

The total amount of this contract shall be _____ ($ _____), except as adjusted in accordance with the provisions of the Bid Documents.

ARTICLE 6. PAYMENT PROCEDURES.

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by the ENGINEER as provided in the General Conditions.

Progress payments will be paid in full in accordance with Article 14 of the General Conditions until ninety (90) percent of the Contract Price has been paid. The remaining ten (10) percent of the Contract Price may be retained, in accordance with applicable Alaska State Statutes, until final inspection, completion, and acceptance of the Project by the OWNER.

ARTICLE 7. CONTRACT DOCUMENTS.

The Contract Documents which comprise the entire Agreement between OWNER and CONTRACTOR concerning the WORK consist of this Agreement (pages 00500-1 to 00500-6, inclusive) and the following sections of the Contract Documents:

- Table of Contents (pages 00005-1- 00005-2, inclusive)
- Notice Inviting Bids (pages 00030-1 to 00030-2, inclusive).
- Instructions to Bidders (pages 00100-1 to 00100-10, inclusive).
- Bid (pages 00300-1 to 00300-2, inclusive).
- Bid Schedule (pages 00310-1-00310-3, inclusive).
- Bid Bond (page 00320-1, inclusive) or Bid Security.
- Subcontractor Report (pages 00360-1 to 00360-2, inclusive).
- Performance Bond (pages 00610-1 to 00610-2, inclusive).
- Payment Bond (pages 00620-1 to 00620-2, inclusive).
- Insurance Certificate(s).
- General Conditions (pages 00700-1 to 00700-48, inclusive).
- Supplementary General Conditions (pages 00800-1 to 00800-6, inclusive).
- Alaska Labor Standards, Reporting, and Prevailing Wage Determination (page 00830-1).
- Technical Specifications as listed in the Table of Contents.
- Drawings consisting of 72 sheets, as listed in the Table of Contents.
- Addenda numbers _____ to ____, inclusive.
- Change Orders which may be delivered or issued after the Date of the Agreement and which are not attached hereto.

There are no Contract Documents other than those listed in this Article 7. The Contract Documents may only be amended by Change Order as provided in Paragraph 3.3 of the General Conditions.

ARTICLE 8. MISCELLANEOUS.

Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.

ARTICLE 8. MISCELLANEOUS. (Cont'd.)

No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents. This Agreement shall be governed by the laws of the State of Alaska. Jurisdiction shall be in the State of Alaska, First Judicial District.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have caused this Agreement to be executed on the date listed below by OWNER.

OWNER:	**CONTRACTOR:**
City and Borough of Juneau	_____ (Company Name)
_____ (Signature)	_____ (Signature)
By: Carl Uchytil, PE, Port Director (Printed Name)	By: _____ (Printed Name, Authority or Title)
Date: _____	CONTRACTOR Signature Date: _____
OWNER's address for giving notices:	CONTRACTOR's address for giving notices:
155 South Seward Street	_____
Juneau, Alaska 99801	_____
907-586-0292 907-586-0295 (Telephone) (Fax)	_____ (Telephone) (Fax)
	_____ (E-mail address)
	Contractor License No. _____

CERTIFICATE
(if Corporation)

STATE OF)
) SS:
COUNTY OF)

I HEREBY CERTIFY that a meeting of the Board of Directors of the

_____a corporation existing under the laws of

the State of_____, held on _____, 20____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ President of the Corporation, be and is hereby authorized to **execute the Agreement** with the CITY AND BOROUGH OF JUNEAU and this corporation and that the execution thereof, attested by the Secretary of the Corporation, and with the Corporate Seal affixed, shall be the official act and deed of this Corporation."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the

corporation this _____ day of _____, 20____.

_____
Secretary

(SEAL)

CERTIFICATE
(if Partnership)

STATE OF)
) SS:
COUNTY OF)

I HEREBY CERTIFY that a meeting of the Partners of the

_____ a partnership existing under the laws of the State

of _____, held on _____, 20___, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of the Partnership, be and is hereby authorized to **execute the Agreement** with the CITY AND BOROUGH OF JUNEAU and this partnership and that the execution thereof, attested by the _____shall be the official act and deed of this Partnership."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of _____, 20_____.

_____
Secretary

(SEAL)

CERTIFICATE
(if Joint Venture)

STATE OF)
) SS:
COUNTY OF)

I HEREBY CERTIFY that a meeting of the Principals of the

_____ a joint venture existing under the laws of the

State of _____, held on _____, 20___, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of the Joint Venture, be and is hereby authorized to **execute the Agreement** with the CITY AND BOROUGH OF JUNEAU and this joint venture and that the execution thereof, attested by the _____ shall be the official act and deed of this Joint Venture."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of _____, 20___.

_____
Secretary

(SEAL)

END OF SECTION

SECTION 00610 - PERFORMANCE BOND

KNOW ALL PERSONS BY 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 to the CITY AND BOROUGH of JUNEAU, ALASKA hereinafter called "OWNER,"
(Owner) (City and State)
for 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 CONDITION OF THIS OBLIGATION is such that whereas, the CONTRACTOR has entered into a certain contract with the OWNER, the effective date of which is (CBJ Contracts Office to fill in effective date) _____, a copy of which is hereto attached and made a part hereof for the construction of:

Aurora Harbor Rebuild- Phase III
Contract No. DH23-015

NOW, THEREFORE, if the Principal shall 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 good any default, then this obligation 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 to the WORK to be performed thereunder or the specifications accompanying the same shall in any wise affect its 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.

Aurora Harbor Rebuild- Phase III
Contract No. DH23-015

IN WITNESS WHEREOF, this instrument is issued in two (2) identical counterparts, each one of which shall be deemed an original.

CONTRACTOR:

By:_____
(Signature)

_____
(Printed Name)

_____
(Company Name)

_____
(Street or P.0. Box)

_____
(City, State, Zip Code)

SURETY:

By: _____ Date Issued:_____
(Signature of Attorney-in-Fact)

_____
(Printed Name)

_____
(Company Name)

_____
(Street or P.0. Box)

_____
(City, State, Zip Code)

(Affix SURETY'S SEAL)

NOTE: If CONTRACTOR is Partnership, all Partners must execute bond.

END OF SECTION

SECTION 00620 - PAYMENT BOND

KNOW ALL PERSONS BY 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 to the CITY AND BOROUGH of JUNEAU, ALASKA hereinafter called "OWNER,"
(Owner) (City and State)

for 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 CONDITION OF THIS OBLIGATION is such that whereas, the CONTRACTOR has entered into a certain contract with the OWNER, the effective date of which is (CBJ Contracts Office to fill in effective date) _____, a copy of which is hereto attached and made a part hereof for the construction of:

Aurora Harbor Rebuild- Phase III
Contract No. DH23-015

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, Subcontractors, and corporations furnishing materials 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 materials, lubricants, oil, gasoline, coal and coke, 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 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 to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its 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.

Aurora Harbor Rebuild- Phase III
Contract No. DH23-015

IN WITNESS WHEREOF, this instrument is issued in two (2) identical counterparts, each one of which shall be deemed an original.

CONTRACTOR:

By:_____
(Signature)

_____
(Printed Name)

_____
(Company Name)

_____
(Street or P.0. Box)

_____
(City, State, Zip Code)

SURETY:

By: _____ Date Issued:_____
(Signature of Attorney-in-Fact)

_____
(Printed Name)

_____
(Company Name)

_____
(Street or P.0. Box)

_____
(City, State, Zip Code)

(Affix SURETY'S SEAL)

NOTE: If CONTRACTOR is Partnership, <u>all</u> Partners must execute bond.

END OF SECTION

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ARTICLE 16 MISCELLANEOUS

ARTICLE 1 DEFINITIONS

Wherever used in these General Conditions or in the Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof. Where an entire word is capitalized in the definitions and is found not capitalized in the Contract Documents it has the ordinary dictionary definition.

Addenda - Written or graphic instruments issued prior to the opening of Bids which make additions, deletions, or revisions to the Contract Documents.

Agreement - The written contract between the OWNER and the CONTRACTOR covering the WORK to be performed; other documents are attached to the Agreement and made a part thereof as provided therein.

Application for Payment - The form furnished by the ENGINEER which is to be used by the CONTRACTOR to request progress or final payment and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

Asbestos - Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

Bid - The offer or proposal of the Bidder submitted on the prescribed form setting forth the price or prices for the WORK.

Bonds - Bid, Performance, and Payment Bonds and other instruments which protect against loss due to inability or refusal of the CONTRACTOR to perform its contract.

CBJ Project Manager - The authorized representative of the City and Borough of Juneau Engineering Department, as OWNER, who is responsible for administration of the contract.

Change Order - A document recommended by the ENGINEER, which is signed by the CONTRACTOR and the OWNER and authorizes an addition, deletion, or revision in the WORK, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

Contract Documents - The Table of Contents, Notice Inviting Bids, Instructions to Bidders, Bid Forms (including the Bid, Bid Schedule(s), Information Required of Bidder, Bid Bond, and all required certificates and affidavits), Agreement, Performance Bond, Payment Bond, General Conditions, Supplementary General Conditions, Technical Specifications, Drawings, Permits, and all Addenda, and Change Orders executed pursuant to the provisions of the Contract Documents.

Contract Price - The total monies payable by the OWNER to the CONTRACTOR under the terms and conditions of the Contract Documents.

Contract Time - The number of successive calendar Days stated in the Contract Documents for the completion of the WORK.

CONTRACTOR - The individual, partnership, corporation, joint-venture or other legal entity with whom the OWNER has executed the Agreement.

Day - A calendar day of 24 hours measured from midnight to the next midnight.

Defective WORK - WORK that is unsatisfactory, faulty, or deficient; or that does not conform to the Contract Documents; or that does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents; or WORK that has been damaged prior to the ENGINEER's recommendation of final payment.

Drawings - The Drawings, plans, maps, profiles, diagrams, and other graphic representations which indicate the character, location, nature, extent, and scope of the WORK and which have been prepared by the ENGINEER and are referred to in the Contract Documents. Shop Drawings are not within the meaning of this paragraph.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

Engineer of Record - The individual, partnership, corporation, joint-venture or other legal entity named as such in the Contract Documents.

ENGINEER - The ENGINEER is the firm or person(s) selected by the City and Borough of Juneau (CBJ) to perform the duties of project inspection and management. CBJ will inform the CONTRACTOR of the identity of the ENGINEER at or before the Notice to Proceed.

Field Order - A written order issued by the ENGINEER which may or may not involve a change in the WORK.

General Requirements - Division 1 of the Technical Specifications.

Hazardous Waste - The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 9603) as amended from time to time.

Holidays - The CBJ legal holidays occur on:

1. New Year's Day - January 1
2. Martin Luther King's Birthday - Third Monday in January
3. President's Day - Third Monday in February
4. Seward's Day - Last Monday in March
5. Memorial Day - Last Monday in May
6. Independence Day - July 4
7. Labor Day - First Monday in September
8. Alaska Day - October 18
9. Veteran's Day - November 11
10. Thanksgiving Day - Fourth Thursday and the following Friday in November
11. Christmas Day – December 25

If any holiday listed above falls on a Saturday, Saturday and the preceding Friday are both legal holidays. If the holiday should fall on a Sunday, Sunday and the following Monday are both legal holidays.

Inspector - The authorized representative of the ENGINEER assigned to make detailed inspections for conformance to the Contract Documents. Any reference to the Resident Project Representative in this document shall mean the Inspector.

Laws and Regulations; Laws or Regulations - Any and all applicable laws, rules, regulations, ordinances, codes, and/or orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

Mechanic's Lien - A form of security, an interest in real property, which is held to secure the payment of an obligation. When referred to in these Contract Documents, "Mechanic's Lien" or "lien" means "Stop Notice".

Milestone - A principal event specified in the Contract Documents relating to an intermediate completion date of a portion of the WORK, or a period of time within which the portion of the WORK should be performed prior to Substantial Completion of all the WORK.

Notice of Award - The written notice by the OWNER to the apparent successful bidder stating that the apparent successful bidder has complied with all conditions for award of the contract.

Notice of Completion - A form signed by the ENGINEER and the CONTRACTOR recommending to the OWNER that the WORK is Substantially Complete and fixing the date of Substantial Completion. After acceptance of the WORK by the OWNER's governing body, the form is signed by the OWNER and filed with the County Recorder. This filing starts the 30-day lien filing period on the WORK.

Notice to Proceed - The written notice issued by the OWNER to the CONTRACTOR authorizing the CONTRACTOR to proceed with the WORK and establishing the date of commencement of the Contract Time.

Notice of Intent to Award - The written notice by the OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the requirements listed therein, within the time specified, the OWNER will enter into an Agreement.

OWNER - The City and Borough of Juneau (CBJ), acting through its legally designated officials, officers, or employees.

Partial Utilization - Use by the OWNER or a substantially completed part of the WORK for the purpose for which it is intended prior to Substantial Completion of all the WORK.

PCB's - Polychlorinated biphenyls.

PERMITTEE – See definition for CONTRACTOR.

Petroleum - Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.

Project - The total construction of which the WORK to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Radioactive Material - Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

Shop Drawings - All Drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the CONTRACTOR and submitted by the CONTRACTOR, to the ENGINEER, to illustrate some portion of WORK.

Specifications - Same definition as "Technical Specifications" hereinafter.

Stop Notice - A legal remedy for Subcontractors and suppliers who contribute to public works, but who are not paid for their WORK, which secures payment from construction funds possessed by the OWNER. For public property, the Stop Notice remedy is designed to substitute for mechanic's lien rights.

Sub-Consultant - The individual, partnership, corporation, joint-venture or other legal entity having a direct contract with ENGINEER, or with any of its Consultants to furnish services with respect to the Project.

Subcontractor - An individual, partnership, corporation, joint-venture or other legal entity having a direct contract with the CONTRACTOR, or with any of its Subcontractors, for the performance of a part of the WORK at the site.

Substantial Completion - Refers to when the WORK has progressed to the point where, in the opinion of the ENGINEER as evidenced by Notice of Completion as applicable, it is sufficiently complete, in accordance with the Contract Documents, so that the WORK can be utilized for the purposes for which it is intended; or if no such notice is issued, when final payment is due in accordance with Paragraph 14.8. The terms "substantially complete" and "substantially completed" as applied to any WORK refer to substantial completion thereof.

Supplementary General Conditions (SGC) - The part of the Contract Documents which make additions, deletions, or revisions to these General Conditions.

Supplier - A manufacturer, fabricator, supplier, distributor, materialman, or vendor.

Technical Specifications - Divisions 1 through 16 of the Contract Documents consisting of the General Requirements and written technical descriptions of products and execution of the WORK.

Underground Utilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: water, sewage and drainage removal, electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, traffic, or other control systems.

WORK, Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. WORK is the result of performing, or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

ARTICLE 2 PRELIMINARY MATTERS

2.1 DELIVERY OF BONDS/INSURANCE CERTIFICATES. When the CONTRACTOR delivers the signed Agreements to the OWNER, the CONTRACTOR shall also deliver to the OWNER such Bonds and Insurance Policies and Certificates as the CONTRACTOR may be required to furnish in accordance with the Contract Documents.

2.2 COPIES OF DOCUMENTS. The OWNER shall furnish to the CONTRACTOR the required number of copies of the Contract Documents specified in the Supplementary General Conditions.

2.3 COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED. The Contract Time will start to run on the commencement date stated in the Notice to Proceed.

2.4 STARTING THE WORK

A. The CONTRACTOR shall begin to perform the WORK within 10 days after the commencement date stated in the Notice to Proceed, but no WORK shall be done at the site prior to said commencement date.

B. Before undertaking each part of the WORK, the CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. The CONTRACTOR shall promptly report in writing to the ENGINEER any conflict, error, or discrepancy which the CONTRACTOR may discover and shall obtain a written interpretation or clarification from the ENGINEER before proceeding with any WORK affected thereby.

C. The CONTRACTOR shall submit to the ENGINEER for review those documents called for under Section 01300 - CONTRACTOR Submittals in the General Requirements.

2.5 PRE-CONSTRUCTION CONFERENCE. The CONTRACTOR is required to attend a Pre-Construction Conference. This conference will be attended by the ENGINEER and others as appropriate in order to discuss the WORK in accordance with the applicable procedures specified in the General Requirements, Section 01010 - Summary of WORK in the General Requirements.

2.6 FINALIZING CONTRACTOR SUBMITTALS. At least 7 days before submittal of the first Application for Payment a conference attended by the CONTRACTOR, the ENGINEER and others as appropriate will be held to finalize the initial CONTRACTOR submittals in accordance with the General Requirements. As a minimum the CONTRACTOR's representatives should include the project manager and schedule expert. The CONTRACTOR should plan on this meeting taking no less than 8 hours. If the submittals are not finalized at the end of the meeting, additional meetings will be held so that the submittals can be finalized prior to the submittal of the first application for payment. No application for payment will be processed until CONTRACTOR submittals are finalized.

ARTICLE 3 CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.1 INTENT

A. The Contract Documents comprise the entire Agreement between the OWNER and the CONTRACTOR concerning the WORK. The Contract Documents shall be construed as a whole in accordance with Alaska Law.

B. It is the intent of the Contract Documents to describe the WORK, functionally complete, to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe work, materials, or equipment such words or phrases shall be interpreted in accordance with that meaning, unless a definition has been provided in Article 1 of the General Conditions. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual, or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the OWNER, the CONTRACTOR, or the ENGINEER or any of their consultants, agents, or employees from those set forth in the Contract Documents.

C. If, during the performance of the WORK, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such Law or Regulation applicable to the performance of the WORK or of any such standard, specification, manual or code or of any instruction of any Supplier referred to in paragraph 6.5, the CONTRACTOR shall report it to the ENGINEER in writing at once, and the CONTRACTOR shall not proceed with the WORK affected thereby (except in an emergency as authorized by the ENGINEER) until a clarification field order, or Change Order to the Contract Documents has been issued.

3.2 ORDER OF PRECEDENCE OF CONTRACT DOCUMENTS

A. In resolving conflicts resulting from, errors, or discrepancies in any of the Contract Documents, the order of precedence shall be as follows:

1. Permits from other agencies as may be required by law, excepting the definition of “PERMITEE” in these permits.
2. Field Orders
3. Change Orders
4. ENGINEER’s written interpretations and clarifications.
5. Agreement
6. Addenda
7. CONTRACTOR's Bid (Bid Form)
8. Supplementary General Conditions
9. Notice Inviting Bids

10. Instructions to Bidders
11. General Conditions
12. Technical Specifications
13. Drawings

B. With reference to the Drawings the order of precedence is as follows:

1. Figures govern over scaled dimensions
2. Detail Drawings govern over general Drawings
3. Addenda/ Change Order drawings govern over Contract Drawings
4. Contract Drawings govern over standard drawings

3.3 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS. The Contract Documents may be amended to provide for additions, deletions, and revisions in the WORK or to modify the terms and conditions thereof by a Change Order (pursuant to Article 10 CHANGES IN THE WORK).

3.4 REUSE OF DOCUMENTS. Neither the CONTRACTOR, nor any Subcontractor or Supplier, nor any other person or organization performing any of the WORK under a contract with the OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Technical Specifications, or other documents used on the WORK, and they shall not reuse any of them on the extensions of the Project or any other project without written consent of the OWNER.

ARTICLE 4 AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

4.1 AVAILABILITY OF LANDS. The OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the WORK is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the OWNER, unless otherwise provided in the Contract Documents. Nothing contained in the Contract Documents shall be interpreted as giving the CONTRACTOR exclusive occupancy of the lands or rights-of-way provided. The CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment; provided, that the CONTRACTOR shall not enter upon nor use any property not under the control of the OWNER until a written temporary construction easement, lease or other appropriate agreement has been executed by the CONTRACTOR and the property owner, and a copy of said agreement furnished to the ENGINEER prior to said use; and, neither the OWNER nor the ENGINEER shall be liable for any claims or damages resulting from the CONTRACTOR's unauthorized trespass or use of any such properties.

4.2 PHYSICAL CONDITIONS - SUBSURFACE AND EXISTING STRUCTURES

A. Explorations and Reports. Reference is made to SGC 4.2 Physical Conditions of the Supplementary General Conditions for identification of those reports of explorations and tests of sub-surface conditions at the site that have been utilized by the ENGINEER in the preparation of the Contract Documents. The CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, however, reports are not to be considered complete or comprehensive and nontechnical data, interpretations, and opinions contained in such reports are not to be relied on by the CONTRACTOR. The CONTRACTOR is

responsible for any further explorations or tests that may be necessary and any interpretation, interpolation, or extrapolation that it makes of any information shown in such reports.

B. Existing Structures. Reference is made to SGC 4.2 Physical Conditions of the Supplementary General Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Utilities referred to in Paragraph 4.4 herein) which are at or contiguous to the site that have been utilized by the ENGINEER in the preparation of the Contract Documents. The CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, however, nontechnical data, interpretations, and opinions contained in such drawings are not to be relied on by the CONTRACTOR. The CONTRACTOR is also responsible for any interpretation, interpolation, or extrapolation that it makes of any information shown in such drawings.

4.3 DIFFERING SITE CONDITIONS

A. The CONTRACTOR shall promptly upon discovery (but in no event later than 14 days thereafter) and before the following conditions are disturbed, notify the ENGINEER, in writing of any:

1. Material that the CONTRACTOR believes may be material that is hazardous waste, as defined in Article 1 of these General Conditions, or asbestos, PCB's, petroleum or any other substance or material posing a threat to human or to the environment.
2. Subsurface or latent physical conditions at the site differing from those indicated.
3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the contract.

B. The OWNER shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the CONTRACTOR's cost of, or the time required for, performance of any part of the WORK shall issue a Change Order under the procedures described in the contract.

C. In the event that a dispute arises between the OWNER and the CONTRACTOR whether the conditions materially differ, or involved hazardous waste or other materials listed above, or cause a decrease or increase in the CONTRACTOR's cost of, or time required for, performance of any part of the WORK, the CONTRACTOR shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all WORK to be performed under the contract. The CONTRACTOR shall retain any and all rights provided either by contract or by Law which pertain to the resolution of disputes and protests between the contracting parties.

4.4 PHYSICAL CONDITIONS - UNDERGROUND UTILITIES

A. Indicated. The information and data indicated in the Contract Documents with respect to existing Underground Utilities at or contiguous to the site are based on information and data furnished to the OWNER or the ENGINEER by the owners of such Underground Utilities or by others. Unless it is expressly provided in the Supplementary General Conditions and/or Section 01530 - Protection and Restoration of Existing Facilities of the General Requirements, the OWNER and the ENGINEER shall not be responsible for the accuracy or

completeness of any such information or data, and the CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Utilities indicated in the Contract Documents, for coordination of the WORK with the owners of such Underground Utilities during construction, for the safety and protection thereof and repairing any damage thereto resulting from the WORK, the cost of which will be considered as having been included in the Contract Price.

B. Not Indicated. If an Underground Utility is uncovered or revealed at or contiguous to the site which was not indicated in the Contract Documents and which the CONTRACTOR could not reasonably have been expected to be aware of, the CONTRACTOR shall identify the owner of such Underground Utility and give written notice thereof to that owner and shall notify the ENGINEER in accordance with the requirements of the Supplementary General Conditions and Section 01530 - Protection and Restoration of Existing Facilities of the General Requirements.

4.5 REFERENCE POINTS

A. The ENGINEER will provide one bench mark, near or on the site of the WORK, and will provide two points near or on the site to establish a base line for use by the CONTRACTOR for alignment control. Unless otherwise specified in the General Requirements, the CONTRACTOR shall furnish all other lines, grades, and bench marks required for proper execution of the WORK.

B. The CONTRACTOR shall preserve all bench marks, stakes, and other survey marks, and in case of their removal or destruction by its own employees or by its Subcontractor's employees, the CONTRACTOR shall be responsible for the accurate replacement of such reference points by personnel qualified under the Alaska Statute governing the licensing of Architects, Engineers, and Land Surveyors.

4.6 USE OF THE CBJ/STATE LEMON CREEK GRAVEL PIT

A. On City and Borough of Juneau (CBJ) construction projects, the CBJ may make unclassified material available to CONTRACTORs, from the CBJ/State Lemon Creek gravel pit, at a rate less than charged other customers. CONTRACTORs are not required to use material from the CBJ/State pit and the CBJ makes no guarantee as to the quantity or quality of the available material. For this Project, the price shall be $1.90 per ton.

B. CONTRACTORs proposing to use gravel from the CBJ/State pit are required to be in good standing for all amounts owed to the CBJ, for previous gravel operations, prior to submitting a mining plan for approval. CONTRACTORs using the pit must comply with Allowable Use Permit USE 98-00047. Failure to meet these requirements, if so subject, shall be sufficient reason to deny use of the CBJ/State pit as a gravel source. To determine if your company is subject to these requirements, contact the CBJ Engineering Department, Gravel Pit Management, at (907) 586-0800.

C. CONTRACTORs deciding to use material from the CBJ/State pit shall provide an Individual Mining Plan prepared by a professional engineer registered in the State of Alaska. The Individual Mining Plan must be reviewed and approved by the CBJ, prior to commencing operations within the pit. CONTRACTORs shall also secure a Performance Bond to ensure

compliance with contract provisions, including any Individual Mining Plan stipulations. The bond shall remain in full force and effect until a release is obtained from the CBJ.

D. If CONTRACTOR operations for a project do not exceed 500 tons of material, the CONTRACTOR will not be required to provide an Individual Mining Plan prepared by an engineer. However, the CONTRACTOR must submit an Individual Mining Plan that is in compliance with Allowable Use Permit USE 98-00047 for gravel extraction within the CBJ/State pit. The CONTRACTOR must contact the CBJ Engineering Department for conditions for the extraction.

E. CONTRACTORs using the CBJ material may do primary dry separation (screening) of materials within the pit. Crushing and washing of material will not be allowed. CONTRACTORs shall account for placement of materials removed from the pit. The CBJ may require CONTRACTORs to cross-check weight tickets, submit to an audit, or participate in other measures required by the CBJ to ensure accountability. Unprocessed overburden removed from the pit will not be weighed. All other material mined will be weighed at the CBJ scale. CONTRACTORs will be responsible for loading and/or screening their own material. If asphalt pavement is removed as part of the WORK, CONTRACTORs shall dispose of the material at a to-be-specified location within the pit area, as directed by the CBJ Project Manager.

F. The gravel pit overhead charge shall be paid to the CBJ by the CONTRACTOR within 60 days after removal of all materials from the pit and prior to requesting and/or receiving final payment. Upon completion of each excavation CONTRACTORs shall notify the CBJ, in writing, in sufficient time to perform a field-compliance examination prior to vacating the pit. Any significant deviation from the stipulations of the Individual Mining Plan identified during the field inspection shall be corrected by the CONTRACTOR prior to release of the bond. A signed release from CBJ will be required prior to releasing the CONTRACTOR's bond.

G. If asphalt pavement is removed as part of this WORK, the CONTRACTOR shall dispose of the material at the location designated as the Asphalt Storage Facility, or as directed by the ENGINEER.

H. The CBJ/State pit is a seasonal operation. The hours of operation are from 7:00 a.m. to 6:00 p.m., Monday through Friday, from April 1 through October 15 of the year. CONTRACTORS may obtain gravel on weekends, or during the off-season, by applying for a separate agreement with the City and Borough of Juneau Engineering Department. The CONTRACTOR will be responsible for any additional costs incurred during weekend or off-season operations at the gravel pit.

I. All Contractors/Equipment Operators using the CBJ/State Pit shall be in compliance with Federal Mine Safety and Health Administration regulations for quarry and gravel operations.

ARTICLE 5 BONDS AND INSURANCE

5.1 PERFORMANCE, PAYMENT, AND OTHER BONDS

A. The CONTRACTOR shall furnish, when required, Performance and Payment Bonds on forms provided by the CBJ for the penal sums of 100% of the amount of the Bid award. The

surety on each bond may be any corporation or partnership authorized to do business in the State of Alaska as an insurer under AS 21.09. These bonds shall remain in effect for 12 months after the date of final payment and until all obligations and liens under this contract have been satisfied. The CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary General Conditions. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

B. If the surety on any Bond furnished by the CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the WORK is located, the CONTRACTOR shall within 7 days thereafter substitute another Bond and Surety, which must be acceptable to the OWNER.

C. All Bonds required by the Contract Documents to be purchased and maintained by CONTRACTOR shall be obtained from surety companies that are duly licensed or authorized in the State of Alaska to issue Bonds for the limits so required. Such surety companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions. The City Engineer may, on behalf of the OWNER, notify the surety of any potential default or liability.

5.2 INSURANCE

A. The CONTRACTOR shall purchase and maintain the insurance required under this paragraph. Such insurance shall include the specific coverages set out herein and be written for not less than the limits of liability and coverages provided in the Supplementary General Conditions, or required by law, whichever are greater. All insurance shall be maintained continuously during the life of the Agreement up to the date of Final Completion and at all times thereafter when the CONTRACTOR may be correcting, removing, or replacing Defective WORK in accordance with Paragraph 13.6, but the CONTRACTOR's liabilities under this Agreement shall not be deemed limited in any way to the insurance coverage required.

B. All insurance required by the Contract Documents to be purchased and maintained by the CONTRACTOR shall be obtained from insurance companies that are duly licensed or authorized in the State of Alaska to issue insurance policies for the limits and coverages so required. Such insurance companies shall have a current Best's Rating of at least an "A" (Excellent) general policy holder's rating and a Class VII financial size category and shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions.

C. The CONTRACTOR shall furnish the OWNER with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be cancelled, reduced in coverage, or renewal refused until at least 30 days' prior written

notice has been given to the OWNER by certified mail. All such insurance required herein (except for Workers' Compensation and Employer's Liability) shall name the OWNER, its Consultants and subconsultants and their officers, directors, agents, and employees as "additional insureds" under the policies. The CONTRACTOR shall purchase and maintain the following insurance:

1. Workers' Compensation and Employer's Liability. This insurance shall protect the CONTRACTOR against all claims under applicable state workers' compensation laws. The CONTRACTOR shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a Workers' Compensation law. This policy shall include an "all states" endorsement. The CONTRACTOR shall require each Subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees to be engaged in such WORK unless such employees are covered by the protection afforded by the CONTRACTOR's Workers' Compensation Insurance. In case any class of employees is not protected, under the Workers' Compensation Statute, the CONTRACTOR shall provide and shall cause each Subcontractor to provide adequate employer's liability insurance for the protection of such of its employees as are not otherwise protected.
2. Commercial General Liability. This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims arising from injuries to persons other than its employees or damage to property of the OWNER or others arising out of any act or omission of the CONTRACTOR or its agents, employees, or Subcontractors. The policy shall contain no exclusions for any operations within the scope of this contract.
3. Comprehensive Automobile Liability. This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles, and shall cover operation on or off the site of all motor vehicles licensed for highway use, whether they are owned, non-owned, or hired. Coverage for hired motor vehicles should include endorsement covering liability assumed under this Agreement.
4. Subcontractor's Commercial General Liability Insurance and Commercial Automobile Liability Insurance. The CONTRACTOR shall either require each of its Subcontractors to procure and to maintain Subcontractor's Commercial General Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amounts specified in the Supplementary General Conditions or insure the activities of its Subcontractors in the CONTRACTOR's own policy, in like amount.
5. Builder's Risk. This insurance shall be of the "all risks" type, shall be written in completed value form, and shall protect the CONTRACTOR, the OWNER, and the ENGINEER, against risks of damage to buildings, structures, and materials and equipment. The amount of such insurance shall be not less than the insurable value of the WORK at completion. Builder's risk insurance shall provide for losses to be payable to the CONTRACTOR and the OWNER, as their interests may appear. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the CONTRACTOR, the OWNER, and the ENGINEER. The Builder's Risk policy shall insure against all risks of direct physical loss or damage to property from any external

cause including flood and earthquake. Allowable exclusions, if any, shall be as specified in the Supplementary General Conditions.

ARTICLE 6 CONTRACTOR'S RESPONSIBILITIES

6.1 SUPERVISION AND SUPERINTENDENCE

A. The CONTRACTOR shall supervise, inspect, and direct the WORK competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the WORK in accordance with the Contract Documents. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incidental thereto. The CONTRACTOR shall be responsible to see that the completed WORK complies accurately with the Contract Documents.

B. The CONTRACTOR shall designate in writing and keep on the WORK site at all times during its progress a technically qualified, English-speaking superintendent, who is an employee of the CONTRACTOR and who shall not be replaced without written notice to the OWNER and the ENGINEER. The superintendent will be the CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR. The CONTRACTOR shall issue all its communications to the OWNER through the ENGINEER and the ENGINEER only.

C. The CONTRACTOR's superintendent shall be present at the site of the WORK at all times while WORK is in progress. Failure to observe this requirement shall be considered suspension of the WORK by the CONTRACTOR until such time as such superintendent is again present at the site.

6.2 LABOR, MATERIALS, AND EQUIPMENT

A. The CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the WORK and perform construction as required by the Contract Documents. The CONTRACTOR shall furnish, erect, maintain, and remove the construction plant and any temporary works as may be required. The CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the WORK or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all WORK at the site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday, or any legal holiday without the OWNER's written consent. The CONTRACTOR shall apply for this consent through the ENGINEER.

B. Except as otherwise provided in this Paragraph, the CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of 8 hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the ENGINEER in writing. Additional compensation will be paid the CONTRACTOR for overtime work only in the event extra work is ordered by the ENGINEER and the Change Order specifically authorizes

the use of overtime work and then only to such extent as overtime wages are regularly being paid by the CONTRACTOR for overtime work of a similar nature in the same locality.

C. All costs of inspection and testing performed during overtime work by the CONTRACTOR which is allowed solely for the convenience of the CONTRACTOR shall be borne by the CONTRACTOR. The OWNER shall have the authority to deduct the cost of all such inspection and testing from any partial payments otherwise due to the CONTRACTOR.

D. Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the WORK.

E. All materials and equipment to be incorporated into the WORK shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of the OWNER. If required by the ENGINEER, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provisions of any such instructions will be effective to assign to the ENGINEER, or any of the ENGINEER consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraphs 9.9C and 9.9D.

F. The CONTRACTOR shall at all times employ sufficient labor and equipment for prosecuting the several classes of WORK to full completion in the manner and time set forth in and required by these specifications. All workers shall have sufficient skill and experience to perform property the WORK assigned to them. Workers engaged in special WORK, or skilled WORK, shall have sufficient experience in such WORK and in the operation of the equipment required to perform all WORK, properly and satisfactorily.

G. Any person employed by the CONTRACTOR or by any Subcontractor who, in the opinion of the ENGINEER, does not perform the WORK in a proper and skillful manner, or is intemperate or disorderly shall, at the written request of the ENGINEER, be removed forthwith by the CONTRACTOR or Subcontractor employing such person, and shall not be employed again in any portion of the WORK without the approval of the ENGINEER. Should the CONTRACTOR fail to remove such person or persons as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the WORK, the ENGINEER may suspend the WORK by written notice until such orders are complied with.

6.3 ADJUSTING PROGRESS SCHEDULE. The CONTRACTOR shall submit monthly updates of the progress schedule to the ENGINEER for acceptance in accordance with the provisions in Section 01300 - CONTRACTOR Submittals in the General Requirements.

6.4 SUBSTITUTES OR "OR-EQUAL" ITEMS. The CONTRACTOR shall submit proposed substitutes or "or-equal" items in accordance with the provisions in Section 01300 - CONTRACTOR Submittals in the General Requirements.

6.5 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS.

A. The CONTRACTOR shall be responsible to the OWNER and the ENGINEER for the acts and omissions of its Subcontractors and their employees to the same extent as CONTRACTOR is responsible for the acts and omissions of its own employees. Nothing contained in this Paragraph shall create any contractual relationship between any Subcontractor and the OWNER or the ENGINEER nor relieve the CONTRACTOR of any liability or obligation under the prime contract.

B. The CONTRACTOR shall perform not less than 40% of the WORK with its own forces (i.e., without subcontracting). The 40% requirement shall be understood to mean that the CONTRACTOR shall perform, with its own organization, WORK amounting to at least 40% of the awarded contract amount. The 40% requirement will be calculated based upon the total of the subcontract amounts submitted for contract award, and any other information requested by the OWNER from the apparent low bidder.

6.6 PERMITS

A. Unless otherwise provided in the Supplementary General Conditions, the CONTRACTOR shall obtain and pay for all construction permits and licenses from the agencies having jurisdiction, including the furnishing of insurance and bonds if required by such agencies. The enforcement of such requirements under this contract shall not be made the basis for claims for additional compensation. The OWNER shall assist the CONTRACTOR, when necessary, in obtaining such permits and licenses. The CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the WORK, which are applicable at the time of opening of Bids. The CONTRACTOR shall pay all charges of utility owners for connections to the WORK.

B. These Contract Documents may require that the WORK be performed within the conditions and/or requirements of local, state and/or federal permits. These permits may be bound within the Contract Documents, included within the Contract Documents by reference, or included as part of the WORK, as designated in this Section. The CONTRACTOR is responsible for completing the WORK required for compliance with all permit requirements; this WORK is incidental to other items in the Contract Documents. Any reference to the PERMITTEE in the permits shall mean the CONTRACTOR. If any permits were acquired by the OWNER, this action was done to expedite the start of construction. If the CONTRACTOR does not complete the WORK within the specified permit window, the CONTRACTOR shall be responsible for the permit extension, and for completing any additional requirements placed upon the permit.

C. The OWNER shall apply for, and obtain, the necessary building permit for this Project, however, the CONTRACTOR is responsible for scheduling and coordinating all necessary inspections. The CBJ Inspection number is 586-1703. All other provisions of this Section remain in effect.

6.7 PATENT FEES AND ROYALTIES. The CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the WORK or the incorporation in the WORK of any invention, design, process, product, software or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the WORK and if to the actual knowledge of the OWNER or the ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by the OWNER in the Contract Documents. The CONTRACTOR shall indemnify, defend and hold harmless the OWNER and the ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees and court costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product, or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

6.8 LAWS AND REGULATIONS. The CONTRACTOR shall observe and comply with all federal, state, and local laws, ordinances, codes, orders, and regulations which in any manner affect those engaged or employed on the WORK, the materials used in the WORK, or the conduct of the WORK. If any discrepancy or inconsistency should be discovered in this contract in relation to any such law, ordinance, code, order, or regulation, the CONTRACTOR shall report the same in writing to the ENGINEER. The CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, and their officers, agents, and employees against all claims or liability arising from violation of any such law, ordinance, code, order, or regulation, whether by CONTRACTOR or by its employees, Subcontractors, or third parties. Any particular law or regulation specified or referred to elsewhere in the Contract Documents shall not in any way limit the obligation of the CONTRACTOR to comply with all other provisions of federal, state, and local laws and regulations.
The OWNER may, per AS 36.30, audit the CONTRACTOR's or Subcontractor(s) records that are related to the cost or pricing data for this contract, all related Change Orders, and/or contract modifications.

6.9 TAXES. The CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by the CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the WORK.

6.10 USE OF PREMISES. The CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to (1) the Project site, (2) the land and areas identified in and permitted by the Contract Documents, and (3) the other land and areas permitted by Laws and Regulations, rights-of-way, permits, leases and easements. The CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the WORK. Should any claim be made against the OWNER or the ENGINEER by any such owner or occupant because of the performance of the WORK, the CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim through litigation. The CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify, defend, and hold the OWNER and the ENGINEER harmless from and against all claims, damages, losses, and expenses (including, but not limited to, fees of engineers attorneys, and other professionals and court costs) arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any such owner or occupant against the OWNER, the ENGINEER, their Consultants, Sub-consultants, and the officers,

directors, employees and agents of each and any of them to the extent caused by or based upon the CONTRACTOR's performance of the WORK.

6.11 SAFETY AND PROTECTION

A. The CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all employees on the WORK and other persons and organizations who may be affected thereby;
2. all the WORK and materials and equipment to be incorporated therein, whether in storage on or off the site; and
3. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

B. The CONTRACTOR shall comply with all applicable Laws and Regulations whether referred to herein or not) of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss and shall erect and maintain all necessary safeguards for such safety and protection. The CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the WORK may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. The CONTRACTOR shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and program.

D. Materials that contain hazardous substances or mixtures may be required on the WORK. A Material Safety Data Sheet shall be requested by the CONTRACTOR from the manufacturer of any hazardous product used.

E. Material usage shall be accomplished with strict adherence to all safety requirements and all manufacturer's warnings and application instructions listed on the Material Safety Data Sheet and on the product container label.

F. The CONTRACTOR shall be responsible for coordinating communications on any exchange of Material Safety Data Sheets or other hazardous material information that is required to be made available to, or exchanged between, or among, employers at the site in accordance with Laws or Regulations.

G. The CONTRACTOR shall notify the ENGINEER if it considers a specified product or its intended usage to be unsafe. This notification must be given to the ENGINEER prior to the product being ordered, or if provided by some other party, prior to the product being incorporated in the WORK.

6.12 SHOP DRAWINGS AND SAMPLES

A. After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, the CONTRACTOR shall submit to the ENGINEER for review, all Shop Drawings in accordance with Section 01300 - CONTRACTOR Submittals in the General Requirements.

B. The CONTRACTOR shall also submit to the ENGINEER for review all samples in accordance with Section 01300 - CONTRACTOR Submittals in the General Requirements.

C. Before submittal of each shop drawing or sample, the CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the WORK and the Contract Documents.

6.13 CONTINUING THE WORK. The CONTRACTOR shall carry on the WORK and adhere to the progress schedule during all disputes or disagreements with the OWNER. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the CONTRACTOR and the OWNER may otherwise agree in writing.

6.14 INDEMNIFICATION

A. To the fullest extent permitted by Laws and Regulations, the CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, their Consultants, Sub-consultants and the officers, directors, employees, and agents of each and any of them, against and from all claims and liability arising under, by reason of or incidentally to the contract or any performance of the WORK, but not from the sole negligence or willful misconduct of the OWNER, and the ENGINEER. Such indemnification by the CONTRACTOR shall include but not be limited to the following:

1. Liability or claims resulting directly or indirectly from the negligence or carelessness of the CONTRACTOR, its employees, or agents in the performance of the WORK, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction, or by or on account of any act or omission of the CONTRACTOR, its employees, agents, or third parties;
2. Liability or claims arising directly or indirectly from bodily injury, occupational sickness or disease, or death of the CONTRACTOR’s or Subcontractor’s own employees engaged in the WORK resulting in actions brought by or on behalf of such employees against the OWNER, and the ENGINEER;
3. Liability or claims arising directly or indirectly from or based on the violation of any law, ordinance, regulation, order, or decree, whether by the CONTRACTOR, its employees, or agents;
4. Liability or claims arising directly or indirectly from the use or manufacture by the CONTRACTOR, its employees, or agents in the performance of this contract of any copyrighted or non-copyrighted composition, secret process, patented or non-patented invention, computer software, article, or appliance, unless otherwise specifically stipulated in this contract.

5. Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the OWNER or any other parties by the CONTRACTOR, its employees, or agents;
6. Liabilities or claims arising directly or indirectly from the willful or criminal misconduct of the CONTRACTOR, its employees, or agents; and,
7. Liabilities or claims arising directly or indirectly from any breach of the obligations assumed herein by the CONTRACTOR.

B. The CONTRACTOR shall reimburse the ENGINEER and the OWNER for all costs and expenses, (including but not limited to fees and charges of engineers, attorneys, and other professionals and court costs including all costs of appeals) incurred by said OWNER, and the ENGINEER in enforcing the provisions of this Paragraph 6.14.

C. The indemnification obligation under this Paragraph 6.14 shall not be limited in any way by any limitation of the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR or any such Subcontractor or other person or organization under workers' compensation acts, disability benefit acts, or other employee benefit acts.

6.15 CONTRACTOR'S DAILY REPORTS. The CONTRACTOR shall complete a daily report indicating total manpower for each construction trade, major equipment on site, each Subcontractor's manpower, weather conditions, etc., involved in the performance of the WORK. The daily report shall be completed on forms provided by the ENGINEER and shall be submitted to the ENGINEER at the conclusion of each workday. The report should comment on the daily progress and status of the WORK within each major component of the WORK. These components will be decided by the ENGINEER. CONTRACTOR shall record the name, affiliation, time of arrival and departure, and reason for visit for all visitors to the location of the WORK.

6.16 ASSIGNMENT OF CONTRACT. The CONTRACTOR shall not assign, sublet, sell, transfer, or otherwise dispose of the contract or any portion thereof, or its right, title, or interest therein, or obligations thereunder, without the written consent of the OWNER except as imposed by law. If the CONTRACTOR violates this provision, the contract may be terminated at the option of the OWNER. In such event, the OWNER shall be relieved of all liability and obligations to the CONTRACTOR and to its assignee or transferee, growing out of such termination.

6.17 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES. It is understood that any turn-on or turn-off, line locates and any other work or assistance necessary by the CBJ Water Utilities Division, will be at the CONTRACTOR's expense unless otherwise stated in the bid documents. All cost must be agreed to prior to any related actions, and will be considered incidental to the project cost. Billing to the CONTRACTOR will be direct from the CBJ Water Utilities Division.

6.18 OPERATING WATER SYSTEM VALVES

A. The CONTRACTOR shall submit a written request, to the ENGINEER, for approval to operate any valve on any in-service section of the CBJ water system. The request must be submitted at least 24-hours prior to operating any valves. The CBJ Water Utilities Division reserves the right to approve or deny the request. The request shall specifically identify each valve to be operated, the time of operation, and the operation to be performed. The

CONTRACTOR shall obtain the written approval of the ENGINEER for any scheduled operation before operating any valve.

B. The CONTRACTOR shall be responsible for all damages, both direct and consequential, to the City or any other party, caused by unauthorized operation of any valve of the CBJ water system.

6.19 CONTRACTOR'S WORK SCHEDULE LIMITATIONS. Construction of Buildings and Projects. It is unlawful to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or similar heavy construction equipment before 7:00 a.m. or after 10:00 p.m., Monday through Friday, or before 9:00 a.m. or after 10:00 p.m., Saturday and Sunday, unless a permit shall first be obtained from the City and Borough Building Official. Such permit shall be issued by the Building Official only upon a determination that such operation during hours not otherwise permitted hereunder is necessary and will not result in unreasonable disturbance to surrounding residents.

ARTICLE 7 OTHER WORK

7.1 RELATED WORK AT SITE

A. The OWNER may perform other work related to the Project at the site by the OWNER's own forces, have other work performed by utility owners, or let other direct contracts therefor which may contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to the CONTRACTOR prior to starting any such other work.

B. The CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (or the OWNER, if the OWNER is performing the additional work with the OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the WORK with theirs. The CONTRACTOR shall do all cutting, fitting, and patching of the WORK that may be required to make its several parts come together properly and integrate with such other work. The CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of the ENGINEER and the others whose work will be affected.

C. If the proper execution or results of any part of the CONTRACTOR's work depends upon the work of any such other contractor or utility owner (or OWNER), the CONTRACTOR shall inspect and report to the ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for such proper execution and results. The CONTRACTOR's failure to report such delays, defects, or deficiencies will constitute an acceptance of the other work as fit and proper for integration with the CONTRACTOR's work except for latent or nonapparent defects and deficiencies in the other work.

7.2 COORDINATION. If the OWNER contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Supplementary General Conditions, and the specific matters to be covered by such authority and

responsibility will be itemized and the extent of such authority and responsibilities will be provided in the Supplementary General Conditions.

ARTICLE 8 OWNER'S RESPONSIBILITIES

8.1 COMMUNICATIONS

A. The OWNER shall issue all its communications to the CONTRACTOR through the ENGINEER.

B. The CONTRACTOR shall issue all its communications to the OWNER through the ENGINEER.

8.2 PAYMENTS. The OWNER shall make payments to the CONTRACTOR as provided in Paragraphs 14.5, 14.8, 14.9 and 14.10.

8.3 LANDS, EASEMENTS, AND SURVEYS. The OWNER's duties in respect of providing lands and easements and providing surveys to establish reference points are set forth in Paragraphs 4.1 and 4.5.

8.4 CHANGE ORDERS. The OWNER shall execute Change Orders as indicated in Paragraph 10.1F.

8.5 INSPECTIONS AND TESTS. The OWNER's responsibility in respect of inspections, tests, and approvals is set forth in Paragraph 13.3.

8.6 SUSPENSION OF WORK. In connection with the OWNER's right to stop WORK or suspend WORK, see Paragraphs 13.4 and 15.1.

8.7 TERMINATION OF AGREEMENT. Paragraphs 15.2 and 15.3 deal with the OWNER's right to terminate services of the CONTRACTOR.

ARTICLE 9 ENGINEER'S STATUS DURING CONSTRUCTION

9.1 OWNER'S REPRESENTATIVE. The ENGINEER will be the OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of the ENGINEER as the OWNER's representative during construction are set forth in the Contract Documents.

9.2 VISITS TO SITE. The ENGINEER will make visits to the site during construction to observe the progress and quality of the WORK and to determine, in general, if the WORK is proceeding in accordance with the Contract Documents. Exhaustive or continuous on-site inspections to check the quality or quantity of the WORK will not be required of the ENGINEER. The ENGINEER will not, during such visits, or as a result of such observations of the CONTRACTOR's WORK in progress, supervise, direct, or have control over the CONTRACTOR's WORK.

9.3 PROJECT REPRESENTATION. The ENGINEER may furnish an Inspector to assist in observing the performance of the WORK. The duties, responsibilities, and limitations of authority are as follows:

A. Duties, Responsibilities and Limitations of Authority of Inspector

General. The Inspector, who is the ENGINEER's Agent, will act as directed by and under the supervision of the ENGINEER and will confer with the ENGINEER regarding its actions. The Inspector's dealings in matters pertaining to the on-site WORK shall, in general, be only with the ENGINEER and the CONTRACTOR, and dealings with Subcontractors shall only be through or with the full knowledge of the CONTRACTOR. Written communication with the OWNER will be only through or as directed by the ENGINEER.

Duties and Responsibilities. The Inspector may:

1. Review the progress schedule, list of Shop Drawing submittals and schedule of values prepared by the CONTRACTOR and consult with the ENGINEER concerning their acceptability.
2. Attend pre-construction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with the ENGINEER and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.
3. Serve as the ENGINEER's liaison with the CONTRACTOR, working principally through the CONTRACTOR's superintendent and assist said superintendent in understanding the intent of the Contract Documents. Assist the ENGINEER in serving as the OWNER's liaison with the CONTRACTOR when the CONTRACTOR's operations affect the OWNER's on-site operations.
4. As requested by the ENGINEER, assist in obtaining from the OWNER additional details or information, when required at the site for proper execution of the WORK.
5. Receive and record date of receipt of Shop Drawings and samples, receive samples which are furnished at the site by the CONTRACTOR and notify the ENGINEER of their availability for examination.
6. Conduct on-site observations of the WORK in progress to assist the ENGINEER in determining if the WORK is proceeding in accordance with the Contract Documents.
7. Report to the ENGINEER whenever the Inspector believes that any WORK is unsatisfactory, faulty, or defective or does not conform to the Contract Documents, or does not meet the requirements of any inspection, tests or approval required to be made or has been damaged prior to final payment; and advise the ENGINEER when the Inspector believes WORK should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection, or approval.
8. Verify that the tests, equipment, and systems startups and operating and maintenance instruction are conducted as required by the Contract Documents and in presence of the required personnel, and that the CONTRACTOR maintains adequate records thereof; observe, record and report to the ENGINEER appropriate details relative to the test procedures and start-ups.
9. Accompany visiting inspectors representing public or other agencies having jurisdiction over the WORK, record the outcome of these inspections, and report to the ENGINEER.
10. Transmit to the CONTRACTOR the ENGINEER's clarifications and interpretations of the Contract Documents.
11. Consider and evaluate the CONTRACTOR's suggestions for modifications in the Contract Documents and report them with recommendations to the ENGINEER.
12. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and sample submittals, reproductions of original Contract Documents including all addenda, Change Orders, field orders, additional Drawings issued

subsequent to the execution of the contract, the ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, and other related documents.

13. Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions, list all project visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of performing and observing test procedures. Send copies to the ENGINEER.
14. Record names, addresses, and telephone numbers of the CONTRACTOR, Subcontractors, and major suppliers of materials and equipment.
15. Furnish the ENGINEER with periodic reports as required of progress of the WORK and the CONTRACTOR's compliance with the accepted progress schedule and schedule of CONTRACTOR submittals.
16. Consult with the ENGINEER in advance of scheduled major tests, inspections, or start of important phases of the WORK.
17. Report immediately to the ENGINEER upon the occurrence of any accident.
18. Review applications for payment with the CONTRACTOR for compliance with the established procedure for their submittal and forward them with recommendations to the ENGINEER, noting particularly their relation to the schedule of values, WORK completed, and materials and equipment delivered at the site but not incorporated in the WORK.
19. During the course of the WORK, verify that certificates, maintenance and operation manuals, and other data required to be assembled and furnished by the CONTRACTOR are applicable to the items actually installed; and deliver this material to the ENGINEER for its review and forwarding to the OWNER prior to final acceptance of the WORK.
20. Before the ENGINEER prepares a Certificate of Substantial Completion/Notice of Completion, as applicable, review the CONTRACTOR's punch list items requiring completion or correction and add any items that CONTRACTOR has omitted.
21. Conduct final inspection in the company of the ENGINEER, the OWNER, and the CONTRACTOR, and prepare a final punch list of items to be completed or corrected.
22. Verify that all items on the punch list have been completed or corrected and make recommendations to the ENGINEER concerning acceptance.

Limitations of Authority. Except upon written instruction of the ENGINEER, the Inspector:

1. Shall not authorize any deviation from the Contract Documents or approve any substitute material or equipment.
2. Shall not exceed limitations on the ENGINEER's authority as set forth in the Contract Documents.
3. Shall not undertake any of the responsibilities of the CONTRACTOR, Subcontractors or CONTRACTOR's superintendent, or expedite the WORK.
4. Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences, or procedures of construction unless such is specifically called for in the Contract Documents.
5. Shall not advise on or issue directions as to safety precautions and programs in connection with the WORK.

9.4 CLARIFICATIONS AND INTERPRETATIONS. The ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract

Documents (in the form of Drawings or otherwise) as the ENGINEER may determine necessary, which shall be consistent with, or reasonably inferred from, the overall intent of the Contract Documents.

9.5 AUTHORIZED VARIATIONS IN WORK. The ENGINEER may authorize variations in the WORK from the requirements of the Contract Documents. These may be accomplished by a Field Order and will require the CONTRACTOR to perform the WORK involved in a manner that minimizes the impact to the WORK and the contract completion date. If the CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time, the CONTRACTOR may make a claim therefor as provided in Article 11 or 12.

9.6 REJECTING DEFECTIVE WORK. The ENGINEER will have authority to reject WORK which the ENGINEER believes to be defective and will also have authority to require special inspection or testing of the WORK as provided in Paragraph 13.3G, whether or not the WORK is fabricated, installed, or completed.

9.7 CONTRACTOR SUBMITTALS, CHANGE ORDERS, AND PAYMENTS

A. In accordance with the procedures set forth in the General Requirements, the ENGINEER will review all CONTRACTOR submittals, including Shop Drawings, samples, substitutes, or "or equal" items, etc., in order to determine if the items covered by the submittals will, after installation or incorporation in the WORK, conform to the requirements of the Contract Documents and be compatible with the design concept of the completed project as a functioning whole as indicated by the Contract Documents. The ENGINEER's review will not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions or programs incident thereto.

B. In connection with the ENGINEER's responsibilities as to Change Orders, see Articles 10, 11, and 12.

C. In connection with the ENGINEER's responsibilities in respect of Applications for Payment, see Article 14.

9.8 DECISIONS ON DISPUTES

A. The ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the WORK thereunder. Claims, disputes, and other matters relating to the acceptability of the WORK; the interpretation of the requirements of the Contract Documents pertaining to the performance of the WORK; and those claims under Articles 11 and 12 in respect to changes in the Contract Price or Contract Time will be referred initially to the ENGINEER in writing with a request for formal decision in accordance with this paragraph, which the ENGINEER will render in writing within 30 days of receipt of the request. Written notice of each such claim, dispute, and other matter will be delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 30 days) after the occurrence of the event giving rise thereto. Written supporting data will be submitted to the ENGINEER within 60 days after such occurrence unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.

B. The rendering of a decision by the ENGINEER with respect to any such claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 14.12) will be a condition precedent to any exercise by the OWNER or the CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Law or Regulations in respect of any such claim, dispute, or other matter.

9.9 LIMITATION ON ENGINEER'S RESPONSIBILITIES

A. Neither the ENGINEER's authority to act under this Article or other provisions of the Contract Documents nor any decision made by the ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any Supplier, any surety for any of them, or any other person or organization performing any of the WORK.

B. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as reviewed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of the ENGINEER as to the WORK, it is intended that such requirement, direction, review, or judgment will be solely to evaluate the WORK for compliance with the requirements of the Contract Documents, and conformance with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, unless there is a specific statement indicating otherwise. The use of any such term or adjective shall not be effective to assign to the ENGINEER any duty or authority to supervise or direct the performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.9C or 9.9D.

C. The ENGINEER will not supervise, direct, control, or have authority over or be responsible for the CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the CONTRACTOR to comply with Laws and Regulations, applicable to the performance of the WORK. The ENGINEER will not be responsible for the CONTRACTOR's failure to perform the WORK in accordance with the Contract Documents.

D. The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR nor of any Subcontractor, supplier, or any other person or organization performing any of the WORK.

ARTICLE 10 CHANGES IN THE WORK

10.1 GENERAL

A. Without invalidating the Agreement and without notice to any surety, the OWNER may at any time or from time to time, order additions, deletions, or revisions in the WORK; these will be authorized by a written Field Order and/or a Change Order issued by the ENGINEER.

B. If the CONTRACTOR believes that it is entitled to an increase or decrease in the Contract Price, or an extension or shortening in the Contract Time as the result of a Field Order, a claim may be made as provided in Articles 11 and 12.

C. If the OWNER and CONTRACTOR agree on the value of any work, or the amount of Contract Time that should be allowed as a result of a Field Order, upon receiving written notice from the ENGINEER, the CONTRACTOR shall proceed so as to minimize the impact on and delays to the work pending the issuance of a Change Order.

D. If the OWNER and the CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Field Order, the ENGINEER can direct the CONTRACTOR to proceed on the basis of Time and Materials so as to minimize the impact on and delays to WORK, and a claim may be made therefor as provided in Articles 11 and 12.

E. The CONTRACTOR shall not be entitled to an increase in the Contract Price nor an extension of the Contract Time with respect to any work performed that is not required by the Contract Documents as amended, modified, supplemented by Change Order, except in the case of an emergency and except in the case of uncovering work as provided in Paragraph 13.3G.

F. The OWNER and the CONTRACTOR shall execute appropriate Change Orders covering:

1. changes in the WORK which are ordered by the OWNER pursuant to Paragraph 10.1A;
2. changes required because of acceptance of Defective WORK under Paragraph 13.7;
3. changes in the Contract Price or Contract Time which are agreed to by the parties; or
4. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by the ENGINEER pursuant to Paragraph 9.8.

G. If notice of any change is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be the CONTRACTOR's responsibility, and the amount of each applicable Bond shall be adjusted accordingly.

10.2 ALLOWABLE QUANTITY VARIATIONS

A. In the event of an increase or decrease in Bid item quantity of a unit price contract, the total amount of WORK actually done or materials or equipment furnished shall be paid for according to the unit price established for such WORK under the Contract Documents, wherever such unit price has been established; provided, that an adjustment in the Contract Price may be made for changes which result in an increase or decrease in excess of 25% of

the estimated quantity of any major item of the WORK. Major Item is defined as any bid item amount that is ten percent (10%) or more of the total contract amount.

B. In the event a part of the WORK is to be entirely eliminated and no lump sum or unit price is named in the Contract Documents to cover such eliminated work, the price of the eliminated work shall be agreed upon in writing by the OWNER and the CONTRACTOR. If the OWNER and the CONTRACTOR fail to agree upon the price of the eliminated work, said price shall be determined in accordance with the provisions of Article 11.

ARTICLE 11 CHANGE OF CONTRACT PRICE

11.1 GENERAL

A. The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the WORK. All duties, responsibilities, and obligations assigned to or undertaken by the CONTRACTOR to complete the WORK shall be at its expense without change in the Contract Price.

B. The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 7 days) after the start of the occurrence or the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within 14 days after such occurrence (unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR's written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of said occurrence or event. All claims for adjustment in the Contract Price shall be determined by the ENGINEER in accordance with Paragraph 9.8A if the OWNER and the CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this Paragraph 11.1B.

C. The value of any WORK covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

1. Where the WORK involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.
2. By mutual acceptance of a lump sum, which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.4.
3. On the basis of the cost of WORK (determined as provided in Paragraphs 11.3) plus a CONTRACTOR's fee for overhead and profit (determined as provided in Paragraph 11.4).

11.2 COSTS RELATING TO WEATHER. The CONTRACTOR shall have no claims against the OWNER for damages for any injury to WORK, materials, or equipment, resulting from the action of the elements. If, however, in the opinion of the ENGINEER, the CONTRACTOR has made all reasonable efforts to protect the materials, equipment and work, the CONTRACTOR may be granted a reasonable extension of Contract Time to make proper repairs, renewals, and replacements of the work, materials, or equipment.

11.3 COST OF WORK (BASED ON TIME AND MATERIALS)

A. General. The term "cost of work" means the sum of all costs necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment in the proper performance of extra work. Except as otherwise may be agreed to in writing by the OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project; shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.5 EXCLUDED COSTS.

B. Labor. The costs of labor will be the actual cost for wages prevailing for each craft or type of workers performing the extra work at the time the extra work is done, plus employer payments of payroll taxes, worker's compensation insurance, liability insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. Labor costs for equipment operators and helpers shall be paid only when such costs are not included in the invoice for equipment rental. The labor costs for forepersons shall be proportioned to all of their assigned work and only that applicable to extra work shall be paid. Non-direct labor costs including superintendence shall be considered part of the mark-up set out in paragraph 11.4.

C. Materials. The cost of materials reported shall be at invoice or lowest current price at which materials are locally available and delivered to the job in the quantities involved, plus the cost of freight, delivery and storage, subject to the following:

1. Trade discounts available to the purchaser shall be credited to the OWNER notwithstanding the fact that such discounts may not have been taken by the CONTRACTOR.
2. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual supplier as determined by the ENGINEER. Mark-up except for actual costs incurred in the handling of such materials will not be allowed.
3. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from said sources on extra work items or the current wholesale price for such materials delivered to the work site, whichever price is lower.
4. If in the opinion of the ENGINEER the cost of material is excessive, or the CONTRACTOR does not furnish satisfactory evidence of the cost of such material, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned delivered to the work site less trade discount. The OWNER reserves the right to furnish materials for the extra work and no claim shall be allowed by the CONTRACTOR for costs and profit on such materials.

D. Equipment. The CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the Supplementary General Conditions. Such rental rate will be used to compute payments for equipment whether the equipment is under the CONTRACTOR's control through direct ownership, leasing, renting, or another method of acquisition. The rental rate to be applied for use of each item of equipment shall be the rate resulting in the least total cost to the OWNER for the total period of use. If it is deemed

necessary by the CONTRACTOR to use equipment not listed in the publication specified in the Supplementary General Conditions, an equitable rental rate for the equipment will be established by the ENGINEER. The CONTRACTOR may furnish cost data which might assist the ENGINEER in the establishment of the rental rate.

1. All equipment shall, in the opinion of the ENGINEER, be in good working condition and suitable for the purpose for which the equipment is to be used.
2. Before construction equipment is used on the extra work, the CONTRACTOR shall plainly stencil or stamp an identifying number thereon at a conspicuous location, and shall furnish to the ENGINEER, in duplicate, a description of the equipment and its identifying number.
3. Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.
4. Individual pieces of equipment or tools having a replacement value of $200 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.
5. Rental time will not be allowed while equipment is inoperative due to breakdowns.
6. Equipment Rental Rates. Unless otherwise agreed in writing, the CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the current edition of the following reference publication: "Rental Rate Blue Book" as published by Dataquest (a company of the Dunn and Bradstreet Corporation), 1290 Ridder Park Drive, San Jose, CA 95131, telephone number (800) 227-8444.

E. Equipment on the Work Site. The rental time to be paid for equipment on the work site shall be the time the equipment is in productive operation on the extra work being performed and, in addition, shall include the time required to move the equipment to the location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location; except, that moving time will not be paid if the equipment is used on other than the extra work, even though located at the site of the extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made for loading and transporting costs when the equipment is used at the site of the extra work on other than the extra work. The following shall be used in computing the rental time of equipment on the work site.

1. When hourly rates are listed, any part of an hour less than 30 minutes of operation shall be considered to be 1/2-hour of operation, and any part of an hour in excess of 30 minutes will be considered one hour of operation.
2. When daily rates are listed, any part of a day less than 4 hours operation shall be considered to be 1/2-day of operation. When owner-operated equipment is used to perform extra work to be paid for on a time and materials basis, the CONTRACTOR will be paid for the equipment and operator, as set forth in Paragraphs (3), (4), and (5), following.
3. Payment for the equipment will be made in accordance with the provisions in Paragraph 11.3D, herein.
4. Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the CONTRACTOR to other workers operating similar equipment already

on the work site, or in the absence of such labor, established by collective bargaining agreements for the type of worker and location of the extra work, whether or not the operator is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein in accordance with the provisions of Paragraph 11.3B, herein, which surcharge shall constitute full compensation for payments imposed by state and federal laws and all other payments made to or on behalf of workers other than actual wages.

5. To the direct cost of equipment rental and labor, computed as provided herein, will be added the allowances for equipment rental and labor as provided in Paragraph 11.4, herein.

F. Specialty Work. Specialty work is defined as that work characterized by extraordinary complexity, sophistication, or innovation or a combination of the foregoing attributes which are unique to the construction industry. The following shall apply in making estimates for payment for specialty work:

1. Any bid item of WORK to be classified as Specialty Work shall be listed as such in the Supplementary General Conditions. Specialty work shall be performed by an entity especially skilled in the work to be performed. After validation of invoices and determination of market values by the ENGINEER, invoices for specialty work based upon the current fair market value thereof may be accepted without complete itemization of labor, material, and equipment rental costs.
2. When the CONTRACTOR is required to perform work necessitating special fabrication or machining process in a fabrication or a machine shop facility away from the job site, the charges for that portion of the work performed at the off-site facility may, by agreement, be accepted as specialty work and accordingly, the invoices for the work may be accepted without detailed itemization.
3. All invoices for specialty work will be adjusted by deducting all trade discounts offered or available, whether the discounts were taken or not. In lieu of the allowances for overhead and profit specified in Paragraph 11.4, herein, an allowance of 5 percent will be added to invoices for specialty work.

G. Sureties. All work performed hereunder shall be subject to all of the provisions of the Contract Documents and the CONTRACTOR's sureties shall be bound with reference thereto as under the original Agreement. Copies of all amendments to surety bonds or supplemental surety bonds shall be submitted to the OWNER for review prior to the performance of any work hereunder.

11.4 CONTRACTOR'S FEE

A. Extra work ordered on the basis of time and materials will be paid for at the actual necessary cost as determined by the ENGINEER, plus allowances for overhead and profit. The allowance for overhead and profit shall include full compensation for superintendence, bond and insurance premiums, taxes, field office expense, extended overhead, home office overhead, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided for under Paragraph 11.3. The allowance for overhead and profit will be made in accordance with the following schedule:

Actual Overhead and Profit Allowance

Labor	15 percent
Materials	10 percent
Equipment	10 percent

To the sum of the costs and mark-ups provided for in this Article, one percent shall be added as compensation for bonding.

B. It is understood that labor, materials, and equipment may be furnished by the CONTRACTOR or by the Subcontractor on behalf of the CONTRACTOR. When all or any part of the extra work is performed by a Subcontractor, the allowance specified herein shall be applied to the labor, materials, and equipment costs of the Subcontractor, to which the CONTRACTOR may add 5 percent of the Subcontractor's total cost for the extra work. Regardless of the number of hierarchical tiers of Subcontractors, the 5 percent increase above the Subcontractor's total cost which includes the allowances for overhead and profit specified herein may be applied one time only.

11.5 EXCLUDED COSTS. The term "Cost of the Work" shall not include any of the following:

A. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, estimators, attorneys' auditors, accountants, purchasing and contracting agents, expenditures, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the work, or not specifically covered by paragraph 11.3, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

B. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

C. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the WORK and charges against CONTRACTOR for delinquent payments.

D. Cost of premiums for all bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by paragraph 11.4 above).

E. Costs due to the negligence of CONTRACTOR , any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of Defective WORK, disposal of materials or equipment wrongly supplied and making good any damage to property.

F. Other overhead or general expense costs of any kind and the cost of any item not specifically and expressly included in paragraph 11.4.

ARTICLE 12 CHANGE OF CONTRACT TIME

12.1 GENERAL

A. The Contract Time may only be changed by a Change Order. Any claim for an extension of the Contract Time (or Milestones) shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within 60 days after such occurrence (unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR's written statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by the ENGINEER in accordance with Paragraph 9.8 if the OWNER and the CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this Paragraph 12.1A. An increase in Contract Time does not mean that the Contractor is due an increase in Contract Price. Only compensable time extensions will result in an increase in Contract Price.

B. All time limits stated in the Contract Documents are of the essence of the Agreement.

C. Where CONTRACTOR is prevented from completing any part of the WORK within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost on the critical path of the project due to such delay if a claim is made therefor as provided in paragraph 12.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, unprecedented weather conditions or acts of God. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

D. Where CONTRACTOR is prevented from completing any part of the WORK within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost on the critical path of the project due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall the OWNER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of CONTRACTOR, or (ii) delays beyond the control of both parties including but not limited to fires, floods, epidemics abnormal weather conditions, acts of God or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

12.2 EXTENSIONS OF TIME FOR DELAY DUE TO WEATHER. Contract Time may be extended by the ENGINEER because of delays in completion of the WORK due to unusually severe weather, provided that the CONTRACTOR shall, within 10 days of the beginning of any such delay, notify the ENGINEER in writing of the cause of delay and request an extension of Contract Time. The

ENGINEER will ascertain the facts and the extent of the delay and extend the time for completing the work when, in the ENGINEER's judgment, the findings of fact justify such an extension. Unprecedented, abnormal, or unusually severe weather will be defined as an event, or events, with a greater than 50-year recurrence interval, as determined by the National Weather Service, or equivalent State or Federal agency

ARTICLE 13 WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

13.1 WARRANTY AND GUARANTEE. The CONTRACTOR warrants and guarantees to the OWNER and the ENGINEER that all work will be in accordance with the Contract Documents and will not be defective. Prompt notice of defects known to the OWNER or ENGINEER shall be given to the CONTRACTOR. All defective work, whether or not in place, may be rejected, corrected, or accepted as provided in this Article 13.

13.2 ACCESS TO WORK. OWNER, ENGINEER, their Consultants, sub-consultants, other representatives and personnel of OWNER, independent testing laboratories and governmental agencies with jurisdictional interests will have access to the WORK at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

13.3 TESTS AND INSPECTIONS

A. The CONTRACTOR shall give the ENGINEER timely notice of readiness of the WORK for all required inspections, tests, or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. If Laws or Regulations of any public body having jurisdiction other than the OWNER require any WORK to specifically be inspected, tested, or approved, the CONTRACTOR shall pay all costs in connection therewith. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with the OWNER's or the ENGINEER's acceptance of a Supplier of materials or equipment proposed as a substitution or (or-equal) to be incorporated in the WORK, or of materials or equipment submitted for review prior to the CONTRACTOR's purchase thereof for incorporation in the WORK. The cost of all inspections, tests, and approvals in addition to the above which are required by the Contract Documents shall be paid by the OWNER (unless otherwise specified).

C. The ENGINEER will make, or have made, such inspections and tests as the ENGINEER deems necessary to see that the WORK is being accomplished in accordance with the requirements of the Contract Documents. Unless otherwise specified in the Supplementary General Conditions, the cost of such inspection and testing will be borne by the OWNER. In the event such inspections or tests reveal non-compliance with the requirements of the Contract Documents, the CONTRACTOR shall bear the cost of corrective measures deemed necessary by the ENGINEER, as well as the cost of subsequent reinspection and retesting. Neither observations by the ENGINEER nor inspections, tests, or approvals by others shall relieve the CONTRACTOR from the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

D. All inspections, tests, or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to the ENGINEER and the CONTRACTOR.

E. If any WORK (including the work of others) that is to be inspected, tested, or approved is covered without written concurrence of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for observation. Such uncovering shall be at the CONTRACTOR's expense unless the CONTRACTOR has given the ENGINEER timely notice of the CONTRACTOR's intention to perform such test or to cover the same and the ENGINEER has not acted with reasonable promptness in response to such notice.

F. If any WORK is covered contrary to the written request of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for the ENGINEER's observation and recovered at the CONTRACTOR's expense.

G. If the ENGINEER considers it necessary or advisable that covered WORK be observed by the ENGINEER or inspected or tested by others, the CONTRACTOR, at the ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, material, and equipment. If it is found that such WORK is defective, the CONTRACTOR shall bear all direct, indirect, and consequential costs and damages of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction, including but not limited to fees and charges of engineers, attorneys, and other professionals. However, if such WORK is not found to be defective, the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, the CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

13.4 OWNER MAY STOP THE WORK. If the WORK is defective, or the CONTRACTOR fails to perform work in such a way that the completed WORK will conform to the Contract Documents, the OWNER may order the CONTRACTOR to stop the WORK, or any portion thereof, until the cause for such order has been eliminated; however, this right of the OWNER to stop the WORK shall not give rise to any duty on the part of the OWNER to exercise this right for the benefit of the CONTRACTOR or any other party.

13.5 CORRECTION OR REMOVAL OF DEFECTIVE WORK. If required by the ENGINEER, the CONTRACTOR shall promptly, either correct all defective work, whether or not fabricated, installed, or completed, or, if the WORK has been rejected by the ENGINEER, remove it from the site and replace it with non-defective work. The CONTRACTOR shall bear all direct, indirect and consequential costs and damages of such correction or removal, including but not limited to fees and charges of engineers, attorneys, and other professionals made necessary thereby.

13.6 ONE YEAR CORRECTION PERIOD

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any work is found to be defective, the CONTRACTOR shall promptly, without cost to the OWNER and in accordance with OWNER's written notification, (i) correct such Defective WORK, or, if it has been rejected by the OWNER, remove it from the site and replace it with non-defective work, and (ii) satisfactorily correct or remove and replace any damage to other work of others resulting therefrom. If the CONTRACTOR does not promptly comply with such notification, or in an emergency where delay would cause serious risk of loss or damage, the OWNER may have the Defective WORK corrected or the rejected WORK removed and replaced, and all direct, indirect, and consequential costs and damages of such removal and replacement including but not limited to fees and charges of engineers, attorneys and other professionals will be paid by the CONTRACTOR.

B. Where Defective WORK (and damage to other WORK resulting therefrom) has been corrected, removed or replaced under this paragraph 13.6, the correction period hereunder with respect to such WORK will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

13.7 ACCEPTANCE OF DEFECTIVE WORK. If, instead of requiring correction or removal and replacement of defective work, the OWNER prefers to accept the WORK, the OWNER may do so. The CONTRACTOR shall bear all direct, indirect, and consequential costs attributable to the OWNER's evaluation of and determination to accept such defective work. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK, and the OWNER shall be entitled to an appropriate decrease in the Contract Price.

ARTICLE 14 PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 SCHEDULE OF VALUES (LUMP SUM PRICE BREAKDOWN). The schedule of values or lump sum price breakdown established as provided in the General Requirements shall serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to the ENGINEER.

14.2 UNIT PRICE BID SCHEDULE. Progress payments on account of Unit Price work will be based on the number of units completed.

14.3 APPLICATION FOR PROGRESS PAYMENT

A. Unless otherwise prescribed by law, on the 25th of each month, the CONTRACTOR shall submit to the ENGINEER for review, an Application for Payment filled out and signed by the CONTRACTOR covering the WORK completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

B. The Application for Payment shall identify, as a sub-total, the amount of the CONTRACTOR'S Total Earnings to Date, plus the Value of Materials Stored at the Site which have not yet been incorporated in the WORK, and less a deductive adjustment for

materials installed which were not previously incorporated in the WORK, but for which payment was allowed under the provisions for payment for Materials Stored at the Site, but not yet incorporated in the WORK.

C. The Net Payment Due the CONTRACTOR shall be the above-mentioned subtotal from which shall be deducted the total amount of all previous payments made to the CONTRACTOR. Progress payments will be paid in full in accordance with Article 14 of the General Conditions until 90% of the Contract Price has been paid. The remaining 10% of the Contract Price amount may be withheld until:

1. final inspection has been made;
2. completion of the Project; and
3. acceptance of the Project by the OWNER.

D. The Value of Materials Stored at the Site shall be an amount equal to the specified percent of the value of such materials as set forth in the Supplementary General Conditions. Said amount shall be based upon the value of all acceptable materials and equipment not incorporated in the WORK but delivered and suitably stored at the site or at another location agreed to in writing; provided, each such individual item has a value of more than $5,000.00 and will become a permanent part of the WORK. The Application for Payment shall also be accompanied by an invoice (including shipping), a certification that the materials meet the applicable contract specifications, and any evidence required by the OWNER that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the OWNER's interest therein, all of which will be satisfactory to the OWNER. Payment for materials will not constitute final acceptance. It shall be the CONTRACTOR’s responsibility to protect the material from damage, theft, loss, or peril while in storage. Unless otherwise prescribed by law, the Value of Materials Stored at the Site shall be paid at the invoice amount up to a maximum of 85% of the Contract Price for those items.

14.4 CONTRACTOR'S WARRANTY OF TITLE. The CONTRACTOR warrants and guarantees that title to all work, materials, and equipment covered by an Application for Payment, whether incorporated in the WORK or not, will pass to the OWNER no later than the time of payment free and clear of all liens.

14.5 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

A. The ENGINEER will, within 7 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to the OWNER, or return the Application to the CONTRACTOR indicating in writing the ENGINEER's reasons for refusing to recommend payment. In the later case, the CONTRACTOR may make the necessary corrections and resubmit the Application. If the ENGINEER still disagrees with a portion of the Application, it will submit the Application recommending the undisputed portion of the Application to the OWNER for payment and provide reasons for recommending non-payment of the disputed amount. Thirty days after presentation of the Application for Payment with the ENGINEER's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.5B) become due and when due will be paid by the OWNER to the CONTRACTOR.

B. The OWNER may refuse to make payment of the full amount recommended by the ENGINEER because claims have been made against the OWNER on account of the CONTRACTOR's performance of the WORK or Liens have been filed in connection with the WORK or there are other items entitling the OWNER to a credit against the amount recommended, but the OWNER must give the CONTRACTOR written notice within 7 days (with a copy to the ENGINEER) stating the reasons for such action.

14.6 PARTIAL UTILIZATION

A. The OWNER shall have the right to utilize or place into service any item of equipment or other usable portion of the WORK prior to completion of the WORK. Whenever the OWNER plans to exercise said right, the CONTRACTOR will be notified in writing by the OWNER, identifying the specific portion or portions of the WORK to be so utilized or otherwise placed into service.

B. It shall be understood by the CONTRACTOR that until such written notification is issued, all responsibility for care and maintenance of all of the WORK shall be borne by the CONTRACTOR. Upon issuance of said written notice of partial utilization, the OWNER will accept responsibility for the protection and maintenance of all such items or portions of the WORK described in the written notice.

C. The CONTRACTOR shall retain full responsibility for satisfactory completion of the WORK, regardless of whether a portion thereof has been partially utilized by the OWNER and the CONTRACTOR's one year correction period shall commence only after the date of Substantial Completion for the WORK.

14.7 SUBSTANTIAL COMPLETION. When the CONTRACTOR considers the WORK ready for its intended use the CONTRACTOR shall notify the OWNER and the ENGINEER in writing that the WORK is substantially complete. The CONTRACTOR will attach to this request a list of all work items that remain to be completed and a request that the ENGINEER prepare a Notice of Completion. Within a reasonable time thereafter, the OWNER, the CONTRACTOR, and the ENGINEER shall make an inspection of the WORK to determine the status of completion. If the ENGINEER does not consider the WORK substantially complete, or the list of remaining work items to be comprehensive, the ENGINEER will notify the CONTRACTOR in writing giving the reasons therefor. If the ENGINEER considers the WORK substantially complete, the ENGINEER will prepare and deliver to the OWNER, for its execution and recording, the Notice of Completion signed by the ENGINEER and CONTRACTOR, which shall fix the date of Substantial Completion.

14.8 FINAL APPLICATION FOR PAYMENT. After the CONTRACTOR has completed all of the remaining work items referred to in Paragraph 14.7 and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, record as-built documents (as provided in the General Requirements) and other documents, all as required by the Contract Documents, and after the ENGINEER has indicated that the WORK is acceptable, the CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to the OWNER) of all liens arising out of or filed in connection with the WORK.

14.9 FINAL PAYMENT AND ACCEPTANCE

A. If, on the basis of the ENGINEER's observation of the WORK during construction and final inspection, and the ENGINEER's review of the final Application for Payment and accompanying documentation, all as required by the Contract Documents, the ENGINEER is satisfied that the WORK has been completed and the CONTRACTOR's other obligations under the Contract Documents have been fulfilled, the ENGINEER will, within 14 days after receipt of the final Application for Payment, indicate in writing the ENGINEER's recommendation of payment and present the Application to the OWNER for payment.

B. After acceptance of the WORK by the OWNER's governing body, the OWNER will make final payment to the CONTRACTOR of the amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Contract Documents, including the following items:

1. Liquidated damages, as applicable.
2. Two times the value of outstanding items of correction work or punch list items yet uncompleted or uncorrected, as applicable. All such work shall be completed or corrected to the satisfaction of the OWNER within the time stated on the Notice of Completion, otherwise the CONTRACTOR does hereby waive any and all claims to all monies withheld by the OWNER to cover the value of all such uncompleted or uncorrected items.

14.10 RELEASE OF RETAINAGE AND OTHER DEDUCTIONS

A. After executing the necessary documents to initiate the lien period, and not more than 45 days thereafter (based on a 30-day lien filing period and 15-day processing time), the OWNER will release to the CONTRACTOR the retainage funds withheld pursuant to the Agreement, less any deductions to cover pending claims against the OWNER pursuant to Paragraph 14.5B.

B. After filing of the necessary documents to initiate the lien period, the CONTRACTOR shall have 30 days to complete any outstanding items of correction work remaining to be completed or corrected as listed on a final punch list made a part of the Notice of Completion. Upon expiration of the 45 days, referred to in Paragraph 14.10A, the amounts withheld pursuant to the provisions of Paragraph 14.9B herein, for all remaining work items will be returned to the CONTRACTOR; provided, that said work has been completed or corrected to the satisfaction of the OWNER within said 30 days. Otherwise, the CONTRACTOR does hereby waive any and all claims for all monies withheld by the OWNER under the Contract to cover 2 times the value of such remaining uncompleted or uncorrected items.

14.11 CONTRACTOR'S CONTINUING OBLIGATION. The CONTRACTOR's obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the ENGINEER, nor the issuance of a Notice of Completion, nor any payment by the OWNER to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the WORK or any part thereof by the OWNER, nor any act of acceptance by the OWNER nor any failure to do so, nor any review of a Shop Drawing or sample submittal, will constitute an acceptance of work not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

14.12 FINAL PAYMENT TERMINATES LIABILITY OF OWNER. Final payment is defined as the last progress payment made to the CONTRACTOR for earned funds, less monies withheld as applicable, pursuant to Paragraph 14.10A. The acceptance by the CONTRACTOR of the final payment referred to in Paragraph 14.9 herein, shall be a release of the OWNER and its agents from all claims of liability to the CONTRACTOR for anything done or furnished for, or relating to, the WORK or for any act of neglect of the OWNER or of any person relating to or affecting the WORK, except demands against the OWNER for the remainder, if any, of the amounts kept or retained under the provisions of Paragraph 14.9 herein; and excepting pending, unresolved claims filed prior to the date of the Notice of Completion.

ARTICLE 15 SUSPENSION OF WORK AND TERMINATION

15.1 SUSPENSION OF WORK BY OWNER. The OWNER, acting through the ENGINEER, may, at any time and without cause, suspend the WORK or any portion thereof for a period of not more than 90 days by notice in writing to the CONTRACTOR. The CONTRACTOR shall resume the WORK on receipt from the ENGINEER of a notice of resumption of work. The CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if the CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12.

15.2 TERMINATION OF AGREEMENT BY OWNER (CONTRACTOR DEFAULT)

A. In the event of default by the CONTRACTOR, the OWNER may give 10 days written notice to the CONTRACTOR of OWNER's intent to terminate the Agreement and provide the CONTRACTOR an opportunity to remedy the conditions constituting the default. It shall be considered a default by the CONTRACTOR whenever CONTRACTOR shall: (1) declare bankruptcy, become insolvent, or assign its assets for the benefit of its creditors; (2) fail to provide materials or quality of work meeting the requirements of the Contract Documents; (3) disregard or violate provisions of the Contract Documents or ENGINEER's instructions; (4) fail to prosecute the WORK according to the approved progress schedule; or, (5) fail to provide a qualified superintendent, competent workers, or materials or equipment meeting the requirements of the Contract Documents. If the CONTRACTOR fails to remedy the conditions constituting default within the time allowed, the OWNER may then issue the Notice of Termination.

B. In the event the Agreement is terminated in accordance with Paragraph 15.2A, herein, the OWNER may take possession of the WORK and may complete the WORK by whatever method or means the OWNER may select. The cost of completing the WORK shall be deducted from the balance which would have been due the CONTRACTOR had the Agreement not been terminated and the WORK completed in accordance with the Contract Documents. If such cost exceeds the balance which would have been due, the CONTRACTOR shall pay the excess amount to the OWNER. If such cost is less than the balance which would have been due, the CONTRACTOR shall not have claim to the difference.

15.3 TERMINATION OF AGREEMENT BY OWNER (FOR CONVENIENCE). The OWNER may terminate the Agreement at any time if it is found that reasons beyond the control of either the OWNER or CONTRACTOR make it impossible or against the OWNER's interests to complete the WORK. In such a case, the CONTRACTOR shall have no claims against the OWNER except: (1) for

the value of work performed up to the date the Agreement is terminated; and, (2) for the cost of materials and equipment on hand, in transit, or on definite commitment, as of the date the Agreement is terminated which would be needed in the WORK and which meet the requirements of the Contract Documents. The value of work performed and the cost of materials and equipment delivered to the site, as mentioned above, shall be determined by the ENGINEER in accordance with the procedure prescribed for the making of the final application for payment and payment under Paragraphs 14.8 and 14.9.

15.4 TERMINATION OF AGREEMENT BY CONTRACTOR. The CONTRACTOR may terminate the Agreement upon 10 days written notice to the OWNER, whenever: 1) the WORK has been suspended under the provisions of Paragraph 15.1, herein, for more than 90 consecutive days through no fault or negligence of the CONTRACTOR, and notice to resume work or to terminate the Agreement has not been received from the OWNER within this time period; or, 2) the OWNER should fail to pay the CONTRACTOR any monies due him in accordance with the terms of the Contract Documents and within 60 days after presentation to the OWNER by the CONTRACTOR of a request therefor, unless within said 10-day period the OWNER shall have remedied the condition upon which the payment delay was based. In the event of such termination, the CONTRACTOR shall have no claims against the OWNER except for those claims specifically enumerated in Paragraph 15.3, herein, and as determined in accordance with the requirements of said paragraph.

ARTICLE 16 MISCELLANEOUS

16.1 GIVING NOTICE. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

16.2 RIGHTS IN AND USE OF MATERIALS FOUND ON THE WORK

A. The CONTRACTOR may use on the Project, with ENGINEER's approval, such stone, gravel, sand, or other material determined suitable by the ENGINEER, as may be found in the excavation. The CONTRACTOR will be paid for the excavation of such material at the corresponding contract unit price. No additional payment will be made for utilizing the material from excavation as borrow, or select borrow.

B. The CONTRACTOR shall replace, at its own expense, with other acceptable material, all of that portion of the excavated material so removed and used which was needed for use on the project. No charge for the materials so used will be made against the CONTRACTOR except that the CONTRACTOR shall be responsible for payment of any royalties required.

C. The CONTRACTOR shall not excavate or remove any material from within the Project location which is not within the grading limits, as indicated by the slope and grade lines, without written authorization from the ENGINEER.

D. In the event the CONTRACTOR has processed materials from OWNER-furnished sources in excess of the quantities required for performance of this contract, including any waste material produced as a by-product, the CBJ may retain possession of such materials without obligation to reimburse the CONTRACTOR for the cost of their production. When such

materials are in a stockpile, the ENGINEER may require: That it remain in stockpile; the CONTRACTOR level such stockpile(s); or that the CONTRACTOR remove such materials and restore the premises to a satisfactory condition at the CONTRACTOR's expense. This provision shall not preclude the CBJ from arranging with the CONTRACTOR to produce material over and above the contract needs, payment for which shall be by written agreement between the CBJ and the CONTRACTOR.

E. Unless otherwise provided, the material from any existing old structure may be used temporarily by the CONTRACTOR in the erection of the new structure. Such material shall not be cut or otherwise damaged except with the approval of the ENGINEER.

16.3 RIGHT TO AUDIT. If the CONTRACTOR submits a claim to the OWNER for additional compensation, the OWNER shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR's books to the extent they are relevant. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted. The right to audit shall include the right to inspect the CONTRACTOR's plants, or such parts thereof, as may be or have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon Subcontractors. The rights to examine and inspect herein provided for shall be exercisable through such representatives as the OWNER deems desirable during the CONTRACTOR's normal business hours at the office of the CONTRACTOR. The CONTRACTOR shall make available to the OWNER for auditing, all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the OWNER.

16.4 ARCHEOLOGICAL OR HISTORICAL DISCOVERIES. When the CONTRACTOR's operation encounters prehistoric artifacts, burials, remains of dwelling sites, paleontological remains, such as shell heaps, land or sea mammal bones or tusks, or other items of historical significance, the CONTRACTOR shall cease operations immediately and notify the ENGINEER. No artifacts or specimens shall be further disturbed or removed from the ground and no further operations shall be performed at the site until so directed. Should the ENGINEER order suspension of the CONTRACTOR's operations in order to protect an archaeological or historical finding, or order the CONTRACTOR to perform extra work, such order(s) shall be covered by an appropriate contract change document.

16.5 CONSTRUCTION OVER OR ADJACENT TO NAVIGABLE WATERS. All work over, on, or adjacent to navigable waters shall be so conducted that free navigation of the waterways will not be interfered with and the existing navigable depths will not be impaired, except as allowed by permit issued the U.S. Coast Guard and/or the U.S. Army Corps of Engineers, as applicable.

16.6 GRATUITY AND CONFLICT OF INTEREST. The CONTRACTOR agrees to not extend any loan, gratuity or gift of money of any form whatsoever to any employee or elected official of the OWNER, nor will the CONTRACTOR rent or purchase any equipment or materials from any employee or elected official of the OWNER, or to the best of the CONTRACTOR’s knowledge, from any agent of any employee or elected official of the OWNER. Before final payment, the CONTRACTOR shall execute and furnish the OWNER an affidavit certifying that the CONTRACTOR has complied with the above provisions of the contract.

16.7 SUITS OF LAW CONCERNING THE WORK

A. Should a suit of law be entered into, either by the CONTRACTOR (or the CONTRACTOR's surety) against the OWNER, or by the OWNER against the CONTRACTOR (or the CONTRACTOR's surety), the suit of law shall be tried in the First Judicial District of Alaska.

B. If one of the questions at issue is the satisfactory performance of the work by the CONTRACTOR and should the appropriate court of law judge the work of the CONTRACTOR to be unsatisfactory, then the CONTRACTOR (or the CONTRACTOR's surety) shall reimburse the OWNER for all legal and all other expenses (as may be allowed and set by the court) incurred by the OWNER because of the suit of the law and, further, it is agreed that the OWNER may deduct such expense from any sum or sums then, or any that become due the CONTRACTOR under the contract.

16.8 CERTIFIED PAYROLLS

A. All CONTRACTORs or Subcontractor who perform work on a public construction contract for the OWNER shall file a certified payroll with the Alaska Department of Labor before Friday of each week that covers the preceding week (Section 14-2-4 ACLA 1949; am Section 4 ch 142 SLA 1972).

B. In lieu of submitting the State payroll form, the CONTRACTOR's standard payroll form may be submitted, provided it contains the information required by AS 36.05.040 and a statement that the CONTRACTOR is complying with AS 36.10.010.

C. A contractor or subcontractor, who performs work on public construction in the State, as defined by AS 36.95.010(3), shall pay not less than the current prevailing rate of wages as issued by the Alaska Department of Labor before the end of the pay period. (AS 36.05.010).

16.9 PREVAILING WAGE RATES

A. Wage rates for Laborers and Mechanics on Public Contracts, AS 36.05.070. The CONTRACTOR, or Subcontractors, shall pay all employees unconditionally and not less than once a week. Wages may not be less than those stated in Paragraph 16.8C, regardless of the contractual relationship between the CONTRACTOR or Subcontractors and laborers, mechanics, or field surveyors. The scale of wages to be paid shall be posted by the CONTRACTOR in a prominent, easily accessible place at the site of the WORK.

B. Failure to Pay Agreed Wages, AS 36.05.080. 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 or wages less than the established rate, the OWNER may, by written notice, terminate the CONTRACTOR or Subcontractors right to proceed with the work. The OWNER may prosecute the work to completion by contract or otherwise, and the CONTRACTOR and sureties will be held liable to the OWNER for excess costs for completing the WORK. (Section 2 ch 52 SLA 1959).

C. Listing Contractor's Who Violate Contracts, AS 36.05.090. In addition, a list giving the names of persons who have disregarded the rights of their employees shall be distributed to all departments of State government and all political subdivisions. No person appearing on this

list, and no firm, corporation, partnership or association in which the person has an interest, may 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. (Section 3 ch 52 SLA 1959; am Section 9 ch 142 SLA).

16.10 EMPLOYMENT REFERENCE. Workers employed in the execution of the contract by the CONTRACTOR or by any Subcontractor under this contract shall not be required or permitted to labor more than 8 hours a day or 40 hours per week in violation of the provisions of the Alaska Wage and Hour Act, Section 23.10.060.

16.11 COST REDUCTION INCENTIVE

A. At any time within 45 days after the date of the Notice of Award, the CONTRACTOR may submit to the ENGINEER in writing, proposals for modifying the plans, specifications, or other requirements of this contract for the sole purpose of reducing the total cost of construction. The cost reduction proposal shall not impair in any manner the essential functions or characteristics of the project, including but not limited to, service life, economy of operation, ease of maintenance, desired appearance or design and safety standards.

B. The cost reduction proposal shall contain the following information:

1. Description of both the existing contract requirements for performing the WORK and the proposed changes.
2. An itemization of the contract requirements that must be changed if the proposal is adopted.
3. A detailed estimate of the time required and the cost of performing the WORK under both the existing contract and the proposed change.
4. A statement of the date by which the CONTRACTOR must receive the decision from the OWNER on the cost reduction proposal.
5. The contract items of WORK effected by the proposed changes including any quantity variations.
6. A description and estimate of costs the OWNER may incur in implementing the proposed changes, such as test and evaluation and operating and support costs.
7. A prediction of any effects the proposed change would have on future operations and maintenance costs to the OWNER.

C. The provisions of this section shall not be construed to require the OWNER to consider any cost reduction proposal which may be submitted; nor will the OWNER be liable to the CONTRACTOR for failure to accept or act upon any cost reduction proposal submitted, or for delays to the work attributable to the consideration or implementation of any such proposal.

D. If a cost reduction proposal is similar to a change in the plans or specifications for the project under consideration by the OWNER at the time the proposal is submitted, the OWNER will not accept such proposal and reserves the right to make such changes without compensation to the CONTRACTOR under the provisions of this section.

E. The CONTRACTOR shall continue to perform the work in accordance with the requirements of the contract until an executed Change Order incorporating the cost reduction proposal has

been issued. If any executed Change Order has not been issued by the date upon which the CONTRACTOR's cost reduction proposal specifies that a decision should be made by the OWNER, in writing, the cost reduction proposal shall be considered rejected.

F. The OWNER, shall be the sole judge of the acceptability of a cost reduction proposal and of the estimated net savings in Contract Time and construction costs resulting from the adoption of all or any part of such proposal. Should the CONTRACTOR disagree with OWNER's decision on the cost reduction proposal, there is no further consideration. The OWNER reserves the right to make final determination.

G. If the CONTRACTOR's cost reduction proposal is accepted in whole or in part, such acceptance will be made by a contract Change Order, which specifically states that the change is executed pursuant to this cost reduction proposal section. Such Change Order shall incorporate the changes in the plans and specifications which are necessary to permit the cost reduction proposal or such part of it as has been accepted to be put into effect and shall include any conditions upon which the OWNER's approval is based, if such approval is conditional. The Change Order shall also describe the estimated net savings in the cost of performing the work attributable to the cost reduction proposal, and shall further provide that the contract cost be adjusted by crediting the OWNER with the estimated net savings amount.

H. Acceptance of the cost reduction proposal and performance of the work does not extend the time of completion of the contract, unless specifically provided in the Change Order authorizing the use of the submitted proposal. Should the adoption of the cost reduction proposal result in a Contract Time savings, the total Contract Time shall be reduced by an amount equal to the time savings realized.

I. The amount specified to the CONTRACTOR in the Change Order accepted in the cost reduction proposal shall constitute full compensation for the performance of WORK. No claims for additional costs as a result of the changes specified in the cost reduction proposal shall be allowed.

J. The OWNER reserves the right to adopt and utilize any approved cost reduction proposal for general use on any contract administered when it is determined suitable for such application. Cost reduction proposals identical, similar, or previously submitted will not be accepted for consideration if acceptance and compensation has previously been approved. The OWNER reserves the right to use all or part of any cost reduction proposal without obligation or compensation of any kind to the CONTRACTOR.

K. The CONTRACTOR shall bear the costs, if any, to revise all bonds and insurance requirements for the project, to include the cost reduction WORK.

END OF SECTION

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

GENERAL. These Supplementary General Conditions make additions, deletions, or revisions to the General Conditions as indicated herein. All provisions which are not so added, deleted, or revised remain in full force and effect. Terms used in these Supplementary General Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

SGC 1 DEFINITIONS. ***Remove*** the definition for Contract Documents and ***replace*** with the following:

Contract Documents – The Table of Contents, Notice Inviting Bids, Instructions to Bidders, Bid Forms (including the Bid, Bid Schedule(s), Subcontractor Report, Bid Bond, and all required certificates and affidavits), Agreement, Performance Bond, Payment Bond, General Conditions, Supplementary General Conditions, Alaska Labor Standards, Reporting, and Prevailing Wage Rate Determination, Special Provisions, Standard Specifications, Technical Specifications, Drawings, Permits, and all Addenda, and Change Orders executed pursuant to the provisions of the Contract Documents.

SGC 2.2 COPIES OF DOCUMENTS. ***Add*** the following:

The OWNER shall furnish to the CONTRACTOR two (2) hard copies of the Contract Documents which will include bound reduced Drawings and one (1) electronic copy (pdf format) on a CD-ROM. Additional copies of contract documents are the responsibility of the contractor.

SGC 4.2 PHYSICAL CONDITIONS - SUBSURFACE AND EXISTING STRUCTURES. ***Add*** the following:

C. In the preparation of the Contract Documents, the Engineer of Record has relied upon field measurements and visual inspection of the existing structures and surface conditions.

SGC - 4.6 USE OF THE CBJ/STATE LEMON CREEK GRAVEL PIT. ***Add*** the following.

The CBJ/State Lemon Creek Gravel Pit is not available for this Project.

SGC 5.1 PERFORMANCE, PAYMENT, AND OTHER BONDS. The Contractor shall furnish Performance and Payment Bonds in the amount of 100% of the Bid.

SGC 5.2 INSURANCE AMOUNTS. The limits of liability for the insurance required by Paragraph 5.2 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations**.** The CONTRACTOR must provide certification of proper insurance coverage and amendatory endorsements or copies of the applicable policy language affecting coverage required in this agreement to the City and Borough of Juneau. All certificates of insurance supplied to the OWNER shall state that the OWNER is named as **"Additional Insured for any and all work performed for the City & Borough of Juneau" for the Commercial General Liability policy and any other policies, if required in this Section**.

Delete paragraph C and ***Replace*** with the following paragraph C:

C. The CONTRACTOR shall furnish the OWNER with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. Failure of CBJ to demand such certificate or other evidence of full compliance with these insurance requirements or failure of CBJ to identify a deficiency from evidence that is provided shall not be construed as a waiver of the obligation of the Contractor to maintain the insurance required by this contract. The coverage afforded will not be cancelled, reduced in coverage, or renewal refused until at least 30 days' prior written

notice has been given to the OWNER by the CONTRACTOR. **All such insurance required herein (except for Workers' Compensation and Employer's Liability) shall name the OWNER, its Consultants and subconsultants and their officers, directors, agents, and employees as "additional insureds" under the policies.**

The CONTRACTOR shall purchase and maintain the following insurance:

1. Workers' Compensation and Employer's Liability. This insurance shall protect the CONTRACTOR against all claims under applicable state workers' compensation laws. The CONTRACTOR shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a Workers' Compensation law. The CONTRACTOR shall require each Subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the CONTRACTOR's Workers' Compensation Insurance. In case any class of employees is not protected, under the Workers' Compensation Statute, the CONTRACTOR shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of its employees as are not otherwise protected. **The CONTRACTOR grants a waiver of any right to subrogation against the OWNER by virtue of the payment of any loss under such insurance.** This provision applies regardless of whether or not the OWNER has received a waiver of subrogation endorsement from the insurer.

Workers' Compensation: (under Paragraph 5.2C.1 of the General Conditions) as in accordance with AS 23.30.045:

a. State: Statutory
b. Applicable Federal (e.g., Longshore): Statutory

Note: If the WORK called for in the Contract Documents involves work in or on any navigable waters, the CONTRACTOR shall provide Workers' Compensation coverage which shall include coverage under the Longshore and Harbor Workers' Compensation Act, the Jones Act, and any other coverage required under Federal or State laws pertaining to workers in or on navigable waters.

a. Employers Liability

Bodily Injury by Accident:	$1,000,000.00	Each Accident
Bodily Injury by Disease:	$1,000,000.00	Each Employee
Bodily Injury by Disease:	$1,000,000.00	Policy Limit

1. CONTRACTOR agrees to waive all rights of subrogation against the OWNER for WORK performed under contract.
2. If CONTRACTOR directly utilizes labor outside of the State of Alaska in the prosecution of the WORK, "Other States" endorsement shall be required as a condition of the contract.

2. Commercial General Liability (CGL), including products and completed operations, property damage, bodily injury and personal and advertising injury, with limits no less than $1,000,000 each occurrence and $2,000,000 aggregate. (under Paragraph 5.2C.2 of the General Conditions) **This insurance policy is to contain, or be endorsed to contain, additional insured status for the CBJ, its officers, officials, employees, and volunteers.** If Additional

insured status is provided in the form of an endorsement to the Contractor's insurance, the endorsement shall be at least as broad as ISO Form CG 20 10 11 85 or **both** CG 20 10, CG 20 26, CG 20 33, or CG 20 38; **and** CG 20 37 forms if later revisions used).

3. Commercial Automobile Liability: (under Paragraph 5.2C.3 of the General Conditions) including Owned, Hired, and Non-Owned Vehicles:

Combined Single Limit, Bodily Injury and Property Damage $1,000,000.00

This insurance policy is to contain, or be endorsed to contain, additional insured status for the CBJ, its officers, officials, employees, and volunteers The CONTRACTOR shall require each Subcontractor similarly to provide Commercial Automobile Liability Insurance for all of the latter's employees to be engaged in such WORK unless such employees are covered by the protection afforded by the CONTRACTOR's Commercial Automobile Liability Insurance.

Add the following paragraphs:

C. Builder's Risk: CONTRACTOR is not required to obtain a Builder's Risk insurance policy for this project.

D. Marine Protection and Indemnity $2,000,000 per Accident or Occurrence including coverage for all crew members. Divers must have appropriate certifications. This coverage is required for any in-water work performed on a marine vessel. This coverage may be provided by the Prime Contractor or the Subcontractor, if the Subcontractor is contracted to do the in-water work on a marine vessel.

E. All Subcontractors are required to secure and maintain the insurance coverages listed above, unless otherwise noted.

F. If the CONTRACTOR maintains higher limits than the minimums shown above, the OWNER requires and shall be entitled to coverage for the higher limits maintained by the CONTRACTOR. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the OWNER.

G. Policies shall also specify insurance provided by CONTRACTOR will be considered primary and not contributory to any other insurance available to the OWNER.

H. Should any of the policies described above be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

SGC 6.5 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS. ***Add*** the following:

B. The CONTRACTOR shall perform not less than 40% of the WORK with its own forces (i.e., without subcontracting). The 40% requirement shall be understood to mean that the CONTRACTOR shall perform, with its own organization, WORK amounting to at least 40% of the original contract amount. The 40% requirement will be calculated based upon the total of the subcontract amounts submitted for Contract Award, and any other information requested by the OWNER from the apparent low Bidder.

SGC 6.5 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS, ***Add*** the following paragraph:

C. CONTRACTOR must pay Subcontractors and/or Suppliers within 30 days of receiving payment from the OWNER, if that payment was made for Work performed by the Subcontractor and/or materials received. Failure to pay Subcontractors within 30 days of receiving payment from which Subcontractor and/or Supplier is to be paid may result in the OWNER initiating debarment proceedings as prescribed in the City and Borough of Juneau Purchasing Code. *The 30 day City and Borough of Juneau requirement does not supersede AS 36.90.210.*

SGC 6.6 PERMITS, ***Add*** the following paragraph:

D. Contractor is responsible for obtaining a Hot Works permit from the CBJ Permit Center, if performing work which requires such a permit. Work requiring a Hot Works Permit includes but is not limited to the following: cutting, welding, Thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any other similar activity.

SGC 14.3 APPLICATION FOR PROGRESS PAYMENT. Paragraph D.

D. The Value of Materials Stored at the site shall be an amount equal to 85%.

SGC 14.9 FINAL PAYMENT AND ACCEPTANCE. ***Add*** the following paragraph:

C. Prior to the final payment the CONTRACTOR shall contact the Alaska Department of Labor and Workforce Development (ADOL) and provide the OWNER with clearance from the ADOL for the CONTRACTOR and all Subcontractors that have worked on the Project. This clearance shall indicate that all Employment Security Taxes have been paid. A sample form for this purpose is at the end of this section. The CONTRACTOR shall also submit a "NOTICE OF COMPLETION OF PUBLIC WORKS" signed by ADOL.

SGC 16.8 CERTIFIED PAYROLLS. ***Change*** paragraph A. to read:

A. All CONTRACTORs or Subcontractors who perform work on a public construction contract for the OWNER shall file a certified payroll with Alaska Department of Labor. See Section 00830 - Alaska Labor Standards, Reporting, and Prevailing Wage Rate Determination.

END OF SECTION

THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Labor and Workforce Development

Division of Employment and Training Services
Employment Security Tax

P.O. Box 115509
Juneau, AK 99811-5509
Relay Alaska (in state): (800) 770-8973 or 7.1.1
Relay Alaska (out of state): (800) 770-8255
Toll free: (888) 448-2937
Phone: (907) 465-2787
Fax: (907) 465-2374

Tax Clearance Request Form for Contractors

Date of request: _____

Business name of the contractor a Tax Clearance is being requested for: _____

_____

Business address: _____

Business contact phone number: _____

Federal Identification Number: _____

Alaska Employer Account Number: _____

Specific time period a tax clearance is being requested for *(i.e. beginning and ending date of a subcontract agreement)*:

_____

Subcontract project name: _____

_____

Name and address of the person this Tax Clearance is to be returned to: Greg Smith, Contract Administrator

City & Borough of Juneau, Engineering Dept., 155 S. Seward St., Juneau, AK 99801, greg.smith@juneau.gov, Fax, 907-586-4530.

Comments or additional information: _____

_____

For agency use only:

☐ Tax Clearance is granted

☐ Tax Clearance is not granted *(please have employer contact the department)*

☐ No account on file, liability unknown *(please have employer contact the department)*

☐ Employer has stated no employees, Tax Clearance not required.

Agency representative signature: _____ Date:_____

Agency representative title: _____

We are an equal opportunity employer/program. Auxiliary aids and services are available upon request to individuals with disabilities. labor.alaska.gov/estax

Rev. 8/2018

SECTION 00830 - ALASKA LABOR STANDARDS, REPORTING, AND PREVAILING WAGE RATE DETERMINATION

State of Alaska, Department of Labor, Laborers' and Mechanics' Minimum Rates of Pay, AS 36.05.010 and AS 36.05.050, Wage and Hour Administration Pamphlet No. 600, the latest edition published by the State of Alaska, Department of Labor inclusive, is provided in its entirety in SECTION 00830 – APPENDIX A.

The rates that are in effect 10 days prior to the final date for submission of bids are the rates that will apply to this project. These rates will apply for 24 calendar months from the date the project is awarded to a prime contractor. At the end of the initial 24-month period, the latest wage rates issued by the Alaska Department of Labor shall become effective for the next 24-month period. This process repeats itself until the project is completed.

The CONTRACTOR is responsible for contacting the Alaska Department of Labor to determine compliance with current regulations.

Correspondence regarding Title 36 requirements may be submitted to ADOL electronically or paper copies can be submitted by mail. To submit Title 36 documents and certified payrolls electronically, go to https://myalaska.state.ak.us/home/app.

The CONTRACTOR and each Subcontractor shall submit Certified Payrolls to the Matthew Sill at Matthew.Sill@Juneau.Gov upon request. If the Port Engineer does not receive the requested Certified Payrolls within five (5) working days, the Port Engineer will request the Certified Payrolls from ADOL. The CONTRACTOR shall be responsible for all costs charged by ADOL for delivery of the requested Certified Payrolls, including those costs for Subcontractors.

Within 10 Days of "Notice of Award/Notice to Proceed" make a list of **all** Subcontractors. Include their name, address, phone, estimated subcontract amount, and estimated start and finish dates. Send this list to the Wage and Hour Section (contact information below).

Certified Payrolls must be submitted every two weeks. Before the second Friday, each CONTRACTOR and Subcontractor must file Certified Payrolls with Statements of Compliance for the previous two weeks. Indicate ***"Start"*** on your first payroll, and ***"Final"*** on your last payroll for this Project.

As part of the **final payment request package,** CONTRACTOR must submit a "NOTICE OF COMPLETION OF PUBLIC WORKS" form signed by ADOL personnel.

Contact Information:

Wage and Hour Section
State of Alaska
Department of Labor and Workforce Development
Labor Standards and Safety Division
Wage and Hour Administration
P.O. Box 11149
Juneau, AK 99811-1149
907-465-4842
http://labor.state.ak.us/lss/home.htm

and

Matthew Sill, Port Engineer
City and Borough of Juneau
Docks and Harbors
155 S. Seward Street
Juneau, AK 99801
(907) 586-0292
Matthew.Sill@juneau.gov

SECTION 00830

APPENDIX A

Laborers' & Mechanics'
Minimum Rates of Pay

Pamphlet 600

Effective September 1, 2022

MINIMUM RATES OF PAY
For Laborers and Mechanics

Effective September 1, 2022 Issue 45

PAMPHLET No. 600

Title 36. Public Contracts
AS 36.05

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

September 1, 2022

TO ALL CONTRACTING AGENCIES:

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

This pamphlet identifies current prevailing wage rates for public construction contracts (any construction projects awarded for the State of Alaska or its political subdivisions, such as local governments and certain non-profit organizations). Because these rates may change in a subsequent determination, please be sure you are using the appropriate rates. The rates published in this edition become effective September 1, 2022.

The prevailing wage rates contained in this pamphlet are applicable to public construction projects with a final bid date of September 11, 2022, 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,

Dr. Tamika L. Ledbetter
Commissioner

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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.

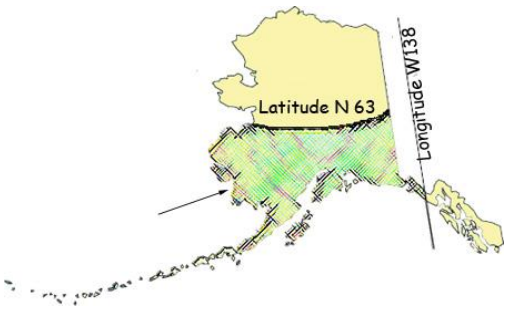
The Alaska Department of Labor and Workforce Development has determined that per diem is an established work practice for certain work classifications. These classifications are indicated throughout the Pamphlet by an asterisk (*) under the classification title. If all of the conditions of 8 AAC 30.054 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 1st, 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.

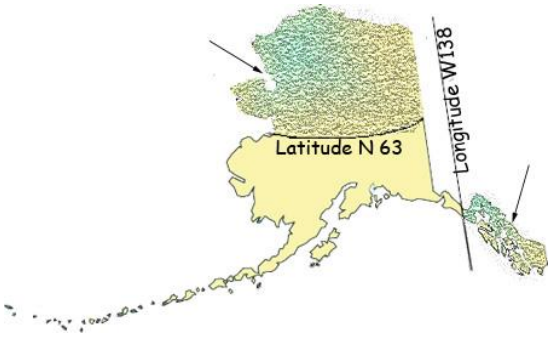
LABORER CLASSIFICATION CLARIFICATION

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)	46.97	8.57	18.08	1.90	4.25	0.34	80.11
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)	43.34	10.35	15.82	1.75	0.20	0.20	71.66
	Lather/Drywall/Acoustical							
Carpenters, Region II (South of N63 latitude)								
	*See per diem note on last page							
						L&M	**SAF**	
S0301	Carpenter (journeyman)	43.34	10.35	16.36	1.75	0.20	0.20	72.20
	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:	40.13	8.70	11.80	1.43	0.10	62.16
	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:	40.13	8.70	11.80	1.43	0.10	62.16
	Form Setter						
						L&M	
A0403	Group III, including:	40.13	8.70	11.80	1.43	0.10	62.16
	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:	40.13	8.70	11.80	1.43	0.10	62.16
	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						

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						
A0404	Group IV, including:	40.13	8.70	11.80	1.43	L&M 0.10	62.16
	Preparing, scratching and browsing of all ceilings and walls, finished with terrazo or tile						
	Tunnel Worker						
A0405	Group V, including:	40.13	8.70	11.80	1.43	L&M 0.10	62.16
	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	29.12	7.31	8.68		LEG	45.11
A0503	General Helper	25.82	7.31	8.68		LEG	41.81
	Housekeeper						
	Janitor						
	Kitchen Helper						
A0504	Head Cook	29.72	7.31	8.68		LEG	45.71
A0505	Head Housekeeper	26.20	7.31	8.68		LEG	42.19
	Head Kitchen Help						
Dredgemen							
	*See per diem note on last page						
A0601	Assistant Engineer	42.76	11.05	13.75	1.00	L&M 0.10	0.05 68.71
	Craneman						

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
Dredgemen								
	*See per diem note on last page							
A0601	Assistant Engineer	42.76	11.05	13.75	1.00	**L&M** 0.10	0.05	68.71
	Electrical Generator Operator (primary pump/power barge/dredge)							
	Engineer							
	Welder							
A0602	Assistant Mate (deckhand)	41.60	11.05	13.75	1.00	**L&M** 0.10	0.05	67.55
A0603	Fireman	42.04	11.05	13.75	1.00	**L&M** 0.10	0.05	67.99
A0605	Leverman Clamshell	45.29	11.05	13.75	1.00	**L&M** 0.10	0.05	71.24
A0606	Leverman Hydraulic	43.53	11.05	13.75	1.00	**L&M** 0.10	0.05	69.48
A0607	Mate & Boatman	42.76	11.05	13.75	1.00	**L&M** 0.10	0.05	68.71
A0608	Oiler (dredge)	42.04	11.05	13.75	1.00	**L&M** 0.10	0.05	67.99
Electricians								
	*See per diem note on last page							
A0701	Inside Cable Splicer	42.77	14.23	13.92	0.95	**L&M** 0.20	**LEG** 0.15	72.22
A0702	Inside Journeyman Wireman, including:	42.44	14.23	14.16	0.95	**L&M** 0.20	**LEG** 0.15	72.13
	Technicians (including use of drones in electrical construction)							
A0703	Power Cable Splicer	63.04	14.23	19.08	0.95	**L&M** 0.25	**LEG** 0.15	97.70
A0704	Tele Com Cable Splicer	50.53	14.23	17.17	0.95	**L&M** 0.20	**LEG** 0.15	83.23
A0705	Power Journeyman Lineman, including:	61.29	14.23	19.03	0.95	**L&M** 0.25	**LEG** 0.15	95.90
	Power Equipment Operator							
	Technician (including use of drones in electrical construction)							
A0706	Tele Com Journeyman Lineman, including:	48.78	14.23	17.11	0.95	**L&M** 0.20	**LEG** 0.15	81.42
	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	48.78	14.23	17.11	0.95	0.20	0.15	81.42
						L&M	**LEG**	
A0708	Powderman	59.29	14.23	18.97	0.95	0.25	0.15	93.84
						L&M	**LEG**	
A0710	Material Handler	26.57	13.92	5.80	0.15	0.15	0.15	46.74
						L&M	**LEG**	
A0712	Tree Trimmer Groundman	29.12	14.23	13.35	0.15	0.15	0.15	57.15
						L&M	**LEG**	
A0713	Journeyman Tree Trimmer	38.05	14.23	13.62	0.15	0.15	0.15	66.35
						L&M	**LEG**	
A0714	Vegetation Control Sprayer	41.60	14.23	13.73	0.15	0.15	0.15	70.01
						L&M	**LEG**	
A0715	Inside Journeyman Communications CO/PBX	41.02	14.23	13.87	0.95	0.20	0.15	70.42
Elevator Workers								
	*See per diem note on last page							
						L&M	**VAC**	
A0802	Elevator Constructor	44.21	16.02	20.21	0.65	0.60	4.90	86.59
						L&M	**VAC**	
A0803	Elevator Constructor Mechanic	63.16	16.02	20.21	0.65	0.60	7.01	107.65
Heat & Frost Insulators/Asbestos Workers								
	*See per diem note on last page							
						IAF	**LML**	
A0902	Asbestos Abatement-Mechanical Systems	40.32	9.24	11.12	1.20	0.14	0.05	62.07
						IAF	**LML**	
A0903	Asbestos Abatement/General Demolition All Systems	40.32	9.24	11.12	1.20	0.14	0.05	62.07
						IAF	**LML**	
A0904	Insulator, Group II	40.32	9.24	11.12	1.20	0.14	0.05	62.07
						IAF	**LML**	
A0905	Fire Stop	40.32	9.24	11.12	1.20	0.14	0.05	62.07
IronWorkers								
	*See per diem note on last page							
						L&M	**IAF**	
A1101	Ironworkers, including:	41.49	9.91	24.95	0.77	0.20	0.24	77.56

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Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
						L&M	IAF	
IronWorkers								
	*See per diem note on last page							
A1101	Ironworkers, including:	41.49	9.91	24.95	0.77	0.20	0.24	77.56
	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	42.49	9.91	24.95	0.77	0.20	0.24	78.56
	Helicopter (used for rigging and setting)							
	Tower (energy producing windmill type towers to include nacelle and blades)							
						L&M	IAF	
A1103	Fence/Barrier Installer	37.99	9.91	24.95	0.77	0.20	0.24	74.06
						L&M	IAF	
A1104	Guard Rail Layout Man	38.73	9.91	24.95	0.77	0.20	0.24	74.80
						L&M	IAF	
A1105	Guard Rail Installer	38.99	9.91	24.95	0.77	0.20	0.24	75.06
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:	33.00	8.95	21.16	1.40	0.20	0.20	64.91
	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:	33.00	8.95	21.16	1.40	0.20	0.20	64.91

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

N1202	Group II, including:	34.00	8.95	21.16	1.40	0.20	0.20	65.91

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

						L&M	LEG	
N1202	Group II, including:	34.00	8.95	21.16	1.40	0.20	0.20	65.91

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:	34.90	8.95	21.16	1.40	0.20	0.20	66.81

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	38.18	8.95	21.16	1.40	0.20	0.20	70.09

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	38.18	8.95	21.16	1.40	0.20	0.20	70.09

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

N1205	Group IV	22.57	8.95	21.16	1.40	0.20	0.20	54.48

Final Building Cleanup
Permanent Yard Worker

N1206	Group IIIB	41.97	6.24	21.16	1.40	0.20	0.20	71.17

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

S1201	Group I, including:	33.00	8.95	21.16	1.40	0.20	0.20	64.91

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:	33.00	8.95	21.16	1.40	0.20	0.20	64.91

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:	34.00	8.95	21.16	1.40	0.20	0.20	65.91

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

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:	34.00	8.95	21.16	1.40	0.20	0.20	65.91
	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	
S1203	Group III, including:	34.90	8.95	21.16	1.40	0.20	0.20	66.81
	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	
S1204	Group IIIA	38.18	8.95	21.16	1.40	0.20	0.20	70.09
	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)							

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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	38.18	8.95	21.16	1.40	0.20	0.20	70.09
	Traffic Control Supervisor, DOT Qualified							
						L&M	**LEG**	
S1205	Group IV	22.57	8.95	21.16	1.40	0.20	0.20	54.48
	Final Building Cleanup Permanent Yard Worker							
						L&M	**LEG**	
S1206	Group IIIB	41.97	6.24	21.16	1.40	0.20	0.20	71.17
	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)	46.48	10.35	12.87	1.10	0.40	0.05	71.25
						L&M		
A1252	Millwright Welder	47.48	10.35	12.87	1.10	0.40	0.05	72.25
Painters, Region I (North of N63 latitude) *See per diem note on last page								
						L&M		
N1301	Group I, including:	36.08	9.27	15.10	1.08	0.07		61.60
	Brush General Painter Hand Taping Hazardous Material Handler Lead-Based Paint Abatement Roll							
						L&M		
N1302	Group II, including:	36.60	9.27	15.10	1.08	0.07		62.12
	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:	36.60	9.27	15.10	1.08	0.07	62.12
	Machine/Automatic Taping Pot Tender Sandblasting Specialty Painter Spray Structural Steel Painter Wallpaper/Vinyl Hanger						
N1304	Group IV, including:	40.74	9.27	18.21	1.05	0.05	69.32
	Glazier Storefront/Automatic Door Mechanic						
N1305	Group V, including:	39.44	9.27	5.00	1.10	0.10	54.91
	Carpet Installer Floor Coverer Heat Weld/Cove Base Linoleum/Soft Tile Installer						
N1306	Group VI, including:	50.44	10.23	5.00	1.10	0.10	66.87
	Traffic Control Striper						
Painters, Region II (South of N63 latitude) *See per diem note on last page							
						L&M	
S1301	Group I, including :	33.22	9.27	15.95	1.08	0.07	59.59
	Brush General Painter Hand Taping Hazardous Material Handler Lead-Based Paint Abatement Roll Spray						
						L&M	
S1302	Group II, including :	34.47	9.27	15.95	1.08	0.07	60.84
	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								
S1303	Group III, including :	34.57	9.27	15.95	1.08	L&M 0.07		60.94
	Bridge Painter Epoxy Applicator Industrial Coatings Specialist Pot Tender Sandblasting Specialty Painter Structural Steel Painter							
S1304	Group IV, including:	40.95	9.27	17.25	1.08	L&M 0.07		68.62
	Glazier Storefront/Automatic Door Mechanic							
S1305	Group V, including:	39.44	9.27	5.00	1.10	L&M 0.10		54.91
	Carpet Installer Floor Coverer Heat Weld/Cove Base Linoleum/Soft Tile Installer							
S1306	Group VI, including:	50.44	10.23	5.00	1.10	0.10		66.87
	Traffic Control Striper							
Piledrivers *See per diem note on last page								
A1401	Piledriver	43.34	10.35	15.82	1.75	L&M 0.20	IAF 0.20	71.66
	Assistant Dive Tender Carpenter/Piledriver Rigger Sheet Stabber Skiff Operator							
A1402	Piledriver-Welder/Toxic Worker	44.34	10.35	15.82	1.75	L&M 0.20	IAF 0.20	72.66
A1403	Remotely Operated Vehicle Pilot/Technician	47.65	10.35	15.82	1.75	L&M 0.20	IAF 0.20	75.97
	Single Atmosphere Suit, Bell or Submersible Pilot							
A1404	Diver (working) **See note on last page	87.45	10.35	15.82	1.75	L&M 0.20	IAF 0.20	115.77

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
Piledrivers								
	*See per diem note on last page							
						L&M	**IAF**	
A1405	Diver (standby) **See note on last page	47.65	10.35	15.82	1.75	0.20	0.20	75.97
						L&M	**IAF**	
A1406	Dive Tender **See note on last page	46.65	10.35	15.82	1.75	0.20	0.20	74.97
						L&M	**IAF**	
A1407	Welder (American Welding Society, Certified Welding Inspector)	48.90	10.35	15.82	1.75	0.20	0.20	77.22
Plumbers, Region I (North of N63 latitude)								
	*See per diem note on last page							
						L&M	**S&L**	
N1501	Journeyman Pipefitter	45.41	11.75	17.45	1.50	0.65		76.76
	Plumber							
	Welder							
Plumbers, Region II (South of N63 latitude)								
	*See per diem note on last page							
						L&M		
S1501	Journeyman Pipefitter	41.00	11.88	15.27	1.55	0.20		69.90
	Plumber							
	Welder							
Plumbers, Region IIA (1st Judicial District)								
	*See per diem note on last page							
						L&M		
X1501	Journeyman Pipefitter	41.32	13.37	11.75	2.50	0.24		69.18
	Plumber							
	Welder							
Power Equipment Operators								
	*See per diem note on last page							
						L&M		
A1601	Group I, including:	43.53	11.05	13.75	1.00	0.10	0.05	69.48
	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							

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits		THR
						L&M		
A1601	Group I, including:	43.53	11.05	13.75	1.00	0.10	0.05	69.48

Power Equipment Operators

*See per diem note on last page

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								
						L&M		
A1601	Group I, including:	43.53	11.05	13.75	1.00	0.10	0.05	69.48
	Service Oiler/Service Engineer Shot Blast Machine Shovels, Backhoes, Excavators with all attachments, and Gradealls (3 yards & under) Sideboom (under 45 tons) Sub Grader (Gurries & similar types) Tack Tractor Truck Mounted Concrete Pump, Conveyor/Tele-belt, & Creter Wate Kote Machine							
						L&M		
A1602	Group IA, including:	45.29	11.05	13.75	1.00	0.10	0.05	71.24
	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)							
						L&M		
A1603	Group II, including:	42.76	11.05	13.75	1.00	0.10	0.05	68.71
	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							

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
Power Equipment Operators *See per diem note on last page								
						L&M		
A1603	Group II, including:	42.76	11.05	13.75	1.00	0.10	0.05	68.71
	Sideboom (cradling rock drill, regardless of size) Skidder Trenching Machines (under 16 inches) Water/Waste Water Treatment Operator							
						L&M		
A1604	Group III, including:	42.04	11.05	13.75	1.00	0.10	0.05	67.99
	"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:	35.83	11.05	13.75	1.00	0.10	0.05	61.78
	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:	35.83	11.05	13.75	1.00	0.10	0.05	61.78
	Spotter							
	Steam Cleaner							
	Swamper (on trenching machines or shovel type equipment)							
Roofers								
	*See per diem note on last page							
						L&M		
A1701	Roofer & Waterproofer	44.62	13.75	3.91	0.81	0.10	0.06	63.25
						L&M		
A1702	Roofer Material Handler	31.23	13.75	3.91	0.81	0.10	0.06	49.86
Sheet Metal Workers, Region I (North of N63 latitude)								
	*See per diem note on last page							
						L&M		
N1801	Sheet Metal Journeyman	49.04	11.85	14.61	1.80	0.12		77.42
	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	45.35	12.23	14.70	1.83	L&M 0.43	74.54
	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	51.51	10.55	18.15	0.52	L&M 0.25	80.98
Surveyors *See per diem note on last page							
A2001	Chief of Parties	46.16	12.23	13.64	1.15	L&M 0.10	73.28
A2002	Party Chief	44.57	12.23	13.64	1.15	L&M 0.10	71.69
A2003	Line & Grade Technician/Office Technician/GPS, Drones	43.97	12.23	13.64	1.15	L&M 0.10	71.09
A2004	Associate Party Chief (including Instrument Person & Head Chain Person)/Stake Hop/Grademan	41.85	12.23	13.64	1.15	L&M 0.10	68.97

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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)	37.51	12.23	13.64	1.15	0.10	64.63
Truck Drivers	*See per diem note on last page						
						L&M	
A2101	Group I, including:	42.94	12.23	13.64	1.15	0.10	70.06
	Air/Sea Traffic Controllers						
	Ambulance/Fire Truck Driver (EMT certified)						
	Boat Coxswain						
	Captains & Pilots (air & water)						
	Deltas, Commanders, Rollagons, & similar equipment (when pulling sleds, trailers or similar equipment)						
	Dump Trucks (including rockbuggy, side dump, belly dump, & trucks with pups) over 40 yards up to & including 60 yards						
	Helicopter Transporter						
	Liquid Vac Truck/Super Vac Truck						
	Material Coordinator or Purchasing Agent						
	Ready-mix (over 12 yards up to & including 15 yards) (over 15 yards to be negotiated)						
	Semi with Double Box Mixer						
	Tireman, Heavy Duty/Fueler						
	Water Wagon (250 Bbls and above)						
						L&M	
A2102	Group 1A including:	44.21	12.23	13.64	1.15	0.10	71.33
	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)						
						L&M	
A2103	Group II, including:	41.68	12.23	13.64	1.15	0.10	68.80
	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						
	Dump Trucks (including rockbuggy, side dump, belly dump, & trucks with pups) over 20 yards up to & including 40 yards						
	Gin Pole Truck, Winch Truck, Wrecker (truck mounted "A" frame manufactured rating over 5 tons)						

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:	41.68	12.23	13.64	1.15	0.10	68.80
	Mechanics						
	Oil Distributor Driver						
	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:	40.86	12.23	13.64	1.15	0.10	67.98
	Boom Truck/Knuckle Truck (up to & including 5 tons)						
	Dump Trucks (including rockbuggy, side dump, belly dump, & trucks with pups) over 10 yards up to & including 20 yards						
	Expeditor (electrical & pipefitting materials)						
	Gin Pole Truck, Winch Truck, Wrecker (truck mounted "A" frame manufactured rating 5 tons & under)						
	Greaser - Shop						
	Semi or Truck & Trailer						
	Thermal Plastic Layout Technician						
	Traffic Control Technician						
	Trucks/Jeeps (push or pull)						
						L&M	
A2105	Group IV, including:	40.28	12.23	13.64	1.15	0.10	67.40
	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						
	Grease Truck						
	Hydro Seeder, Dual Axle						
	Hyster Operators (handling bulk aggregate)						

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:	40.28	12.23	13.64	1.15	0.10	67.40
	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:	39.52	12.23	13.64	1.15	0.10	66.64
	Buffer Truck						
	Bull Lifts & Fork Lifts, Fork Lifts with Power Boom & Swing Attachments (up to & including 5 tons)						
	Bus Operator (up to 30 passengers)						
	Farm Type Rubber Tired Tractor (when material handling or pulling wagons on a construction project)						
	Flat Beds, Single Rear Axle						
	Foam Distributor Truck Single Axle						
	Fuel Handler (station/bulk attendant)						
	Gear/Supply Truck						
	Gravel Spreader Box Operator on Truck						
	Hydro Seeders, Single axle						
	Pickups (pilot cars & all light-duty vehicles)						
	Rigger/Swamper						
	Tack Truck						
	Team Drivers (horses, mules, & similar equipment)						
Tunnel Workers, Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)							
	*See per diem note on last page						
						L&M	**LEG**
N2201	Group I, including:	36.30	8.95	21.16	1.40	0.20	0.20	68.21
	Brakeman						
	Mucker						
	Nipper						
	Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)						
	Topman & Bull Gang						

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 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:	36.30	8.95	21.16	1.40	0.20	0.20	68.21
	Tunnel Track Laborer							
						L&M	**LEG**	
N2202	Group II, including:	37.40	8.95	21.16	1.40	0.20	0.20	69.31
	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:	38.39	8.95	21.16	1.40	0.20	0.20	70.30
	Miner							
	Retimberman							
						L&M	**LEG**	
N2204	Group IIIA, including:	42.00	8.95	21.16	1.40	0.20	0.20	73.91
	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:	46.17	6.24	21.16	1.40	0.20	0.20	75.37
	Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)(over 5,000 hours)							
	Federal Powderman (Responsible Person in Charge)							
	Grade Checking (setting or transferring of grade marks, line and grade, GPS, drones)							
	Pioneer Drilling & Drilling Off Tugger (all type drills)(over 5,000 hours)							
	Stake Hopper							
	Tunnel Workers, Laborers (The area that is south of N63 latitude and west of W138 longitude) *See per diem note on last page							

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=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**	
S2201	Group I, including:	36.30	8.95	21.16	1.40	0.20	0.20	68.21
	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:	37.40	8.95	21.16	1.40	0.20	0.20	69.31
	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:	38.39	8.95	21.16	1.40	0.20	0.20	70.30
	Miner Retimberman							
						L&M	**LEG**	
S2204	Group IIIA, including:	42.00	8.95	21.16	1.40	0.20	0.20	73.91
	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:	46.17	6.24	21.16	1.40	0.20	0.20	75.37
	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:	46.17	6.24	21.16	1.40	0.20	0.20	75.37
	Stake Hopper							
Tunnel Workers, Power Equipment Operators *See per diem note on last page								
						L&M		
A2207	Group I	47.88	11.05	13.75	1.00	0.10	0.05	73.83
						L&M		
A2208	Group IA	49.82	11.05	13.75	1.00	0.10	0.05	75.77
						L&M		
A2209	Group II	47.04	11.05	13.75	1.00	0.10	0.05	72.99
						L&M		
A2210	Group III	46.24	11.05	13.75	1.00	0.10	0.05	72.19
						L&M		
A2211	Group IV	39.41	11.05	13.75	1.00	0.10	0.05	65.36

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

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

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

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 Building/Repair Boilermaker	47.45
A2305	Ship Building/Repair Carpenter	47.35
A2310	Ship Building/Repair Crane Operator	45.06
A2315	Ship Building/Repair Electrician	48.92
A2320	Ship Building/Repair Heat & Frost Insulator	82.02
A2325	Ship Building/Repair Laborer	47.35
A2330	Ship Building/Repair Mechanist	47.35
A2335	Ship Building/Repair Operating Engineer	45.06
A2340	Ship Building/Repair Painter	47.35
A2345	Ship Building/Repair Pipefitter	47.35
A2350	Ship Building/Repair Rigger	47.45
A2355	Ship Building/Repair Sheet Metal	47.35
A2360	Ship Building/Repair Shipwright	47.35
A2365	Ship Building/Repair 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

SECTION 00852 - PERMITS

PART 1 - GENERAL

1.1 INDEX OF PERMITS

A. Department of the Army, U.S Army Corps of Engineers, Juneau Regulatory Field Office, Regulatory Division, POA-1968-00033 is currently pending approval.

B. The OWNER anticipates receipt of the permit prior to start of construction, to be issued by change order.

C. General requirements for in-water pile driving work may be found in section 02882 – Marine Mammal Work Suspension.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01010 - SUMMARY OF WORK

PART 1 – GENERAL

1.1 GENERAL

A. The WORK to be performed under this contract shall consist of furnishing all plant, tools, equipment, materials, supplies, manufactured articles, labor, transportation and services, including fuel, power, water, and essential communications, and performing all WORK, or other operations required for the fulfillment of the contract in strict accordance with the Contract Documents. The WORK shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the WORK in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The WORK generally consists of various quantities of mobilization, demolition and disposal, salvage and refurbishment, timber moorage float system, steel pipe piles, drilled pile sockets, pile anodes, flotation leveling billets, water, fire utilities, life ring, fire and hose cabinets, electrical power and lighting systems, electrical support assemblies and other miscellaneous related improvements and appurtenances.

1.3 SITE OF THE WORK

A. The site of the WORK is located in Juneau, Alaska at Aurora Harbor.

1.4 BEGINNING AND COMPLETION OF THE WORK

A. Time is the essence of the contract. All WORK shall be completed in accordance with the following schedule:

WORK DESCRIPTION	COMPLETION DATE
Substantial Completion for all other Work	October 1, 2023
All CIVIL WORK under the Contract Documents	October 15, 2023
ELECTRICAL SYSTEM Final Completion	30 days after receipt of materials.

1.5 CONTRACT METHOD

A. The WORK hereunder will be constructed under a unit-price contract.

1.6 WORK BY OTHERS

A. The CONTRACTOR's attention is directed to the fact that work may be conducted at the site by other contractors during the performance of the WORK under this Contract. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the work of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform work under their respective contracts.

B. Interference With Work On Utilities: The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the WORK, and shall schedule the WORK so as to minimize interference

with said relocation, altering, or other rearranging of facilities.

1.7 CONTRACTOR USE OF PROJECT SITE

A. The CONTRACTOR's use of the Project site shall be limited to its construction operations, including on-site storage of materials. The CONTRACTOR shall coordinate with the Harbormaster for confirmation of final staging area limits.

1.8 OWNER USE OF THE PROJECT SITE

A. The OWNER may utilize all or part of the existing site during the entire period of construction for the conduct of the OWNER's normal operations. The CONTRACTOR shall cooperate and coordinate with the ENGINEER to facilitate the OWNER's operations and to minimize interference with the CONTRACTOR's operations at the same time. In any event, the OWNER shall be allowed access to the Project site during the period of construction.

B. To the extent possible and as safety will allow, the project site shall remain active and available to the public. The CONTRACTOR shall conduct operations to minimize interference with use of the facilities at all times. The CONTRACTOR shall erect/install safety barriers and establish exclusion zones as necessary during pile driving operations and other overhead work or miscellaneous crane operations. The CONTRACTOR shall coordinate with the OWNER and the ENGINEER all required moorage restrictions and any other WORK that may affect public use a minimum of 48 hours in advance or longer as specified elsewhere in the Contract Documents.

1.9 PROJECT MEETINGS

A. Pre-Construction Conference

1. Prior to the commencement of WORK at the site, a Pre-Construction Conference will be held at a mutually agreed time and place which shall be attended by the CONTRACTOR's Project manager, its superintendent, and its Subcontractors as the CONTRACTOR deems appropriate. Other attendants will be:

   a. ENGINEER and the Inspector.
   b. Representatives of OWNER.
   c. Governmental representatives as appropriate.
   d. Others as requested by CONTRACTOR, OWNER, or ENGINEER.

2. Unless previously submitted to the ENGINEER, the CONTRACTOR shall bring one copy each of the following:

   a. Plan of Operation.
   b. Project Overview Bar Chart Schedule.
   c. Procurement schedule of major equipment and materials and items requiring long lead time.
   d. Shop Drawing/Sample/Substitute or "Or Equal" submittal schedule.
   e. Name and telephone number of CONTRACTOR's Project Supervisor.

3. The purpose of the Pre-Construction Conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR prior to the meeting date.

The CONTRACTOR should be prepared to discuss all of the items listed below:

a. Status of CONTRACTOR's insurance and bonds.
b. CONTRACTOR's tentative schedules.
c. Transmittal, review, and distribution of CONTRACTOR's submittals.
d. Processing applications for payment.
e. Maintaining record documents.
f. Critical WORK sequencing.
g. Field decisions and Change Orders.
h. Use of Project site, office and storage areas, security, housekeeping, and OWNER's needs.
i. Major equipment deliveries and priorities.
j. CONTRACTOR's assignments for safety and first aid.

4. The OWNER will preside at the Pre-Construction Conference and will arrange for keeping and distributing the minutes to all persons in attendance.

5. The CONTRACTOR and its Subcontractors should plan on the conference taking no less than 2 hours. The items listed in paragraph 3 will be covered as well as reviewing the plans and specifications, in extensive detail, with the ENGINEER and the OWNER.

B. Progress Meetings

1 The CONTRACTOR shall schedule and hold regular on-site progress meetings at least monthly and at other times as requested by the ENGINEER, or as required by progress of the WORK. The CONTRACTOR, ENGINEER, and all subcontractors active on the site must attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its suppliers, manufacturers, and other subcontractors.

2. The ENGINEER shall preside at the meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings will be to review the progress of the WORK, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop. During each meeting, the CONTRACTOR is required to present any issues which may impact its work, with a view to resolve these issues expeditiously.

1.10 DEFINITIONS APPLICABLE TO TECHNICAL SPECIFICATIONS. The following words have the meaning defined in the Technical Portions of the WORK:

Furnish - means to supply and deliver to the site, to unload and unpack ready for assembly, installation, testing, and start-up.

Indicated - is a word used to direct the CONTRACTOR to information contained on the drawings or in the Specifications. Terms such as "shown," "noted," "scheduled," and "specified" also may be used to assist in locating information but no limitation of location is implied or intended.

Install - defines operations at the site including assembly, erection, placing, anchoring, applying, shaping to dimension, finishing, curing, protecting, and cleaning, ready for the OWNER's use.

Installer - a person or firm engaged by the CONTRACTOR or its subcontract or any subcontractor for the performance of installation, erection, or application work at the site. Installers must be expert in the operations they are engaged to perform.

Provide - is defined as furnish and install, ready for the intended use.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SCOPE

A. Payment for the various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of WORK being described, as necessary to complete the various items of the WORK all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of PERMITS and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).

B. No separate payment will be made for any pay item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of WORK.

C. In addition to other incidental items of WORK listed elsewhere in the contract, the following items shall also be considered as incidental to other items of WORK under this contract:

1. Removal and replacement of survey monuments and markers disturbed during construction, whether shown on the Plans or not.
2. Re-vegetating areas disturbed during construction.
3. Trench excavation and bedding as required for all piping, structures and vault installations.
4. Siltation and pollution control.
5. Maintenance of all services through the Project area, including water, storm, garbage pickup, mail delivery, other deliveries and emergency vehicles.
6. All traffic control, including flaggers, safety barriers, etc., and preparation of satisfactory Traffic Control Plans.
7. Minor grading of fill materials as required to match existing grades and maintain positive surface drainage.
8. Minor changes in grades to fit site conditions.
9. Miscellaneous connecting and attachment hardware as required to install new equipment.
10. Excavating, bedding, and backfilling for all electrical equipment including transformers, junction boxes, vaults, and conduit.
11. Pile splices required to make up the pile lengths shown in the pile schedule.
12. Transport, shipping and delivery of all materials to the project site, undamaged and in new condition.
13. Continual coordination with the Harbormaster for safe passage and transit of vessels entering and exiting the facility throughout the construction period.

PART 2 – PAY ITEMS

DIVISION 1 – GENERAL REQUIREMENTS

1.2 MOBILIZATION (Pay Item Nos. 1505.1 and 1505.1A) PRICE BASED ON LUMP SUM

A. Measurement for payment for Mobilization shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.

B. Payment for Mobilization shall be made at the amount shown on the Bid Schedule under Pay Item No. 1505.1, which payment shall constitute full compensation for all WORK described in Section 01505 - Mobilization, as shown on the Plans and as directed by the ENGINEER.

C. Payment for Mobilization shall be made at the amount shown on the Bid Schedule under Pay Item No. 1505.1A, which payment shall constitute full compensation for all WORK described in Section 01505 - Mobilization, as shown on the Plans and as directed by the ENGINEER.

C. Partial payments will be made as the WORK progresses as follows:

1. When 5% of the total original contract amount is earned from other pay items, 50% of the amount bid for Mobilization, or 5% of the original contract amount, whichever is lesser, will be paid.

2. When 10% of the total original contract amount is earned from other pay items, 100% of the amount bid for Mobilization, or 10% of the original contract amount, whichever is lesser, will be paid.

a. Upon completion of all WORK on the Project, payment of any amount bid for Mobilization in excess of 10% of the total original contract amount will be paid.

DIVISION 2 – SITE WORK

2.1 DEMOLITION AND DISPOSAL (Pay Item No. 2060.1) PRICE BASED ON LUMP SUM

A. Measurement for payment for Demolition and Disposal will be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete, and in accordance with the requirements of the Contract Documents.

B. Payment for Demolition and Disposal shall be made at the amount shown on the Bid Schedule under Pay Item No. 2060.1, which payment will constitute full compensation for all WORK described in Section 02060 - Demolition and Disposal, as shown on the Plans and as directed by the ENGINEER.

2.2 DOMESTIC WATER SYSTEM AND APPURTENANCES (Pay Item No. 2601.1) PRICE BASED ON LUMP SUM

A. Measurement for payment for Domestic Water System and appurtenances shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, furnished and installed complete, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Payment for Domestic Water System and appurtenances shall be made at the amount shown on the Bid Schedule under Pay Item No. 2601.1, which payment shall constitute full compensation for all WORK described in Section 02601 – Domestic Water System, as shown on the Plans, and as directed by the ENGINEER.

2.9 DRY FIRE SUPPRESSION SYSTEM (Pay Item No. 2611.1) PRICE BASED ON LUMP SUM

A. Measurement for payment for Dry Fire Suppression System shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, furnished and installed

complete, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Payment for Dry Fire Suppression System shall be made at the amount shown on the Bid Schedule under Pay Item No. 2611.1, which payment shall constitute full compensation for all WORK described in Section 02611 – Dry Fire Line System, as shown on the Plans, and as directed by the ENGINEER.

2.10 CONSTRUCTION SURVEYING (Pay Item No. 2702.1) PRICE BASED ON LUMP SUM

A. Measurement for payment for Construction Surveying will be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Payment for Construction Surveying under the base bid shall be made at the amount shown on the Bid Schedule under Pay Item No. 2702.1, which payment will constitute full compensation for all WORK described in Section 02702 - Construction Surveying, as shown on the Plans and as directed by the ENGINEER.

2.11 SIGNAGE (Pay Item No. 2718.1) PRICED BASED ON LUMP SUM

A. Measurement for payment for Signage shall be based on the completion of the entire WORK as a Lump Sum Pay Unit, furnished and installed, including signs, posts, bases and other appurtenant materials complete, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Payment for Signage shall be made at the amount shown on the Bid Schedule under Pay Item No. 2718.1, which payment shall constitute full compensation for all WORK described in Section 02718 - Signage, as shown on the Plans, and as directed by the ENGINEER.

2.14 CONTINGENT WORK – MARINE MAMMAL WORK SUSPENSION (Pay Item No. 2882.1) PRICE BASED ON QUANTITY, HOUR

A. Measurement for Payment for Contingent Work - Marine Mammal Work Suspension shall be per hour of work suspended by the OWNER based on marine mammal observations, complete, all in accordance with the requirements of the Permits and Contract Documents.

B. CONTRACTOR shall fully comply with all Mitigation Measures outlined in the permit documents to receive compensation under this item.

C. Payment for Contingent Work - Marine Mammal Work Suspension under the Base Bid shall be made at the Unit Price shown on the Bid Schedule under Pay Item No. 2882.1, which payment shall constitute full compensation for all WORK described in Section 02882 – Contingent Work, as shown on the Plans, and as directed by the ENGINEER.

2.15 [ ] FLOAT [ ] (Pay Item Nos. 2895.1, 2895.2, 2895.3, 2895.4, 2895.5, 2895.2A, 2895.4B, 2895.6C) PRICE BASED ON LUMP SUM

A. Measurement for payment for [ ] Float [ ] shall be based on completion of the entire WORK as a Lump Sum Pay Unit, furnished and installed complete, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Payment for **Electrical Utility Float, 16'x25'** shall be made at the amount shown on the Bid Schedule under Pay Item No. **2895.1**, which payment shall constitute full payment for all WORK described in Section 02895 – Moorage Floats, as shown on the Plans and as directed by the ENGINEER.

C. Payment for **Headwalk Float, 10'x126'** shall be made at the amount shown on the Bid Schedule under Pay Item No**. 2895.2**, which payment shall constitute full payment for all WORK described in Section 02895 – Moorage Floats, as shown on the Plans and as directed by the ENGINEER.

D. Payment for **Mainwalk Float H, 10'x268'**, shall be made at the amount shown on the Bid Schedule under Pay Item No**. 2895.3**, which payment shall constitute full payment for all WORK described in Section 02895 – Moorage Floats, as shown on the Plans and as directed by the ENGINEER.

E. Payment for **Finger Float, 6'x48'**, shall be made at the amount shown on the Bid Schedule under Pay Item No**. 2895.4**, which payment shall constitute full payment for all WORK described in Section 02895 – Moorage Floats, as shown on the Plans and as directed by the ENGINEER.

F. Payment for **Finger Float, 8'x60'**, shall be made at the amount shown on the Bid Schedule under Pay Item No**. 2895.5**, which payment shall constitute full payment for all WORK described in Section 02895 – Moorage Floats, as shown on the Plans and as directed by the ENGINEER.

G. Payment for **Headwalk Float H3, 10'x54'**, shall be made at the amount shown on the Bid Schedule under Pay Item No**. 2895.2A**, which payment shall constitute full payment for all WORK described in Section 02895 – Moorage Floats, as shown on the Plans and as directed by the ENGINEER.

H. Payment for **Finger Float, 6'x48'**, shall be made at the amount shown on the Bid Schedule under Pay Item No**. 2895.4B**, which payment shall constitute full payment for all WORK described in Section 02895 – Moorage Floats, as shown on the Plans and as directed by the ENGINEER.

I. Payment for **Tee Float, 10'x118'**, shall be made at the amount shown on the Bid Schedule under Pay Item No**. 2895.6C**, which payment shall constitute full payment for all WORK described in Section 02895 – Moorage Floats, as shown on the Plans and as directed by the ENGINEER.

2.16 FURNISH 12.75" DIA. STEEL PIPE PILE (Pay Item No. 2896.1) PRICE BASED ON QUANTITY, LINEAR FOOT

A. Measurement for Furnish 12.75-Inch dia. Steel Pipe Pile shall be per actual number of linear feet, furnished and supplied, all in accordance with the requirements of the Contract Documents and as shown on the Plans. Steel pipe piles shall be furnished by the CONTRACTOR in the lengths indicated on the Plans.

B. Payment for Furnish 12.75-Inch dia. Steel Pipe Pile shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 2896.1, which payment shall constitute full compensation for all WORK described in Section 02896 - Steel Pipe Piles, as shown on the Plans and as directed by the ENGINEER.

2.17 FURNISH 16-INCH DIA. STEEL PIPE PILE (Pay Item No. 2896.2) PRICE BASED ON QUANTITY, LINEAR FOOT

C. Measurement for Furnish 16-Inch dia. Steel Pipe Pile shall be per actual number of linear feet, furnished and supplied, all in accordance with the requirements of the Contract Documents and as shown on the Plans. Steel pipe piles shall be furnished by the CONTRACTOR in the lengths indicated on the Plans.

D. Payment for Furnish 16-Inch dia. Steel Pipe Pile shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 2896.2, which payment shall constitute full compensation for all WORK described in Section 02896 - Steel Pipe Piles, as shown on the Plans and as directed by the ENGINEER.

2.18 INSTALL [ ] 12.75-INCH DIA. STEEL PIPE PILE (Pay Item Nos. 2896.3) PRICE BASED ON QUANTITY, EACH

A. Measurement for payment for Install [ ] 16-Inch dia. Steel Pipe Pile shall be measured per each, furnished and installed complete in place, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Payment for Install 16-Inch dia. Steel Pipe Pile shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 2896.3, which payment shall constitute full compensation for all WORK described in Section 02896 - Steel Pipe Piles, as shown on the Plans and as directed by the ENGINEER

2.19 INSTALL [ ] 16-INCH DIA. STEEL PIPE PILE (Pay Item Nos. 2896.4) PRICE BASED ON QUANTITY, EACH

B. Measurement for payment for Install [ ] 16-Inch dia. Steel Pipe Pile shall be measured per each, furnished and installed complete in place, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

C. Payment for Install 16-Inch dia. Steel Pipe Pile shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 28964, which payment shall constitute full compensation for all WORK described in Section 02896 - Steel Pipe Piles, as shown on the Plans and as directed by the ENGINEER.

2.20 CONTINGENT WORK - PILE SOCKET (Pay Item No. 2896.5), PRICE BASED ON QUANTITY, EACH

A. Measurement for payment for Contingent Work - Pile Socket shall be measured per each socket, complete in place and suitable for pile installation, all in accordance with the requirements of the Contract Documents.

B. Payment for Contingent Work - Pile Socket shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 2896.5, which payment shall constitute full compensation for all WORK described in Section 02896 - Steel Pipe Piles, as shown on the Plans and as directed by the ENGINEER.

2.20 [ ] FLOTATION BILLET (Pay Item Nos. 2897.1 and 2897.2) PRICED BASED ON QUANTITY, EACH

A. Measurement for payment for [ ] Floatation Billet shall be measured per each, complete, all in accordance with the requirements of the Contract Documents.

B. Payment for Supply Flotation Billet shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 2897.1, which payment shall constitute full compensation for all WORK described in Section 02897 - Floatation Billets, as shown on the Plans and as directed by the ENGINEER.

C. Payment for Install Flotation Billet shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 2897.2, which payment shall constitute full compensation for all WORK described in Section 02897 - Flotation Billets, as shown on the Plans and as directed by the ENGINEER.

2.23 REFURBISH EXISTING [ ] (Pay Item Nos. 2898.1 and 2898.2) PRICE BASED LUMP SUM

A. Measurement for payment for Refurbish Existing [ ] shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete including all hardware, and other appurtenances, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Payment for Refurbish Existing Aluminum Gangway shall be made at the amount shown on the Bid Schedule under Pay Item No. 2898.1, which payment shall constitute full payment for all WORK described in Section 02898 – Refurbished Structures, as shown on the Plans and as directed by the ENGINEER.

C. Payment for Refurbish Existing Gangway Landing Float shall be made at the amount shown on the Bid Schedule under Pay Item No. 2898.2, which payment shall constitute full payment for all WORK described in Section 02898 – Refurbished Structures, as shown on the Plans and as directed by the ENGINEER.

2.24 LIFE RING AND BASE (Pay Item No. 2899.1) PRICE BASED LUMP SUM

D. Measurement for payment for Life Ring and base shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete including all hardware, and other appurtenances, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

E. Payment for Life Ring and base shall be made at the amount shown on the Bid Schedule under Pay Item No. 2899.1, which payment shall constitute full payment for all WORK described in Section 02899 – Float Appurtenances, as shown on the Plans and as directed by the ENGINEER.

2.25 FIRE EXTINGUISHER AND BASE (Pay Item No. 2899.2) PRICE BASED LUMP SUM

F. Measurement for payment for Fire Extinguisher and base shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete including all hardware, and other appurtenances, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

G. Payment for Fire Extinguisher and base shall be made at the amount shown on the Bid Schedule under Pay Item No. 2899.2, which payment shall constitute full payment for all WORK described in Section 02899 – Float Appurtenances, as shown on the Plans and as directed by the ENGINEER.

2.26 HOSE MOUNT AND BASE (Pay Item No. 2899.3) PRICE BASED LUMP SUM

H. Measurement for payment for hose mount and base shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete including all hardware, and other appurtenances, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

I. Payment for hose mount and base shall be made at the amount shown on the Bid Schedule under Pay Item No. 2899.3, which payment shall constitute full payment for all WORK described in Section 02899 – Float Appurtenances, as shown on the Plans and as directed by the ENGINEER.

2.24 SUPPLY PILE ANODE (Pay Item No. 2996.1) PRICE BASED ON QUANTITY, PER EACH

A. Measurement for payment for Supply Pile Anode shall be measured per each, complete in place, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Payment for Supply Pile Anode shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 2996.1, which payment shall constitute full payment for all WORK described in Section 02996 – Pile Anodes, as shown on the Plans and as directed by the ENGINEER.

2.25 INSTALL PILE ANODE (Pay Item No. 2996.2) PRICE BASED ON QUANTITY, PER EACH

C. Measurement for payment for Install Pile Anode shall be measured per each, complete in place, all in accordance with the requirements of the Contract Documents and as shown on the Plans.

D. Payment for Install Pile Anode shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 2996.2, which payment shall constitute full payment for all WORK described in Section 02996 – Pile Anodes, as shown on the Plans and as directed by the ENGINEER.

2.26 ANODE POTENTIAL READINGS AND CONTINUITY TESTING (Pay Item No. 2996.3) PRICE BASED ON LUMP SUM

A. Measurement for payment for Anode Potential Readings and Continuity Testing shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete in place, all in accordance with the requirements of the Contract Documents.

B. Payment for Anode Potential Readings and Continuity Testing shall be made at the amount shown on the Bid Schedule under Pay Item No. 2996.3, which payment shall constitute full payment for all WORK described in Section 02996 – Pile Anodes, as shown on the Plans and as directed by the ENGINEER.

DIVISION 13 – SPECIAL CONSTRUCTION

13.1 Electrical Utility Building (Pay Item Nos. 13121.1) PRICE BASED ON LUMP SUM

A. Measurement for payment for Electrical Utility Building shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, furnished, constructed and installed complete in place, all in accordance with the requirements of the Contract Documents.

B. Payment for Electrical Utility Building shall be made at the amount shown on the Bid Schedule under Pay Item No. 13121.1, which payment shall constitute full compensation for all WORK described in Section 13121 – Utility Building, as shown on the Plans and as directed by the ENGINEER.

DIVISION 16 – ELECTRICAL

16.1 ELECTRICAL SYSTEM (Pay Item Nos. 16000.1) PRICE BASED ON LUMP SUM

A. Measurement for electrical system shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete, all in accordance with the requirements of the Contract Documents.

B. Payment for electrical system shall be made at the amount shown on the Bid Schedule under Pay Item No. 16000.1, which payment will constitute full payment for all WORK as shown on the Plans and as directed by the ENGINEER.

16.2 ELECTRICAL SUPPORT ASSEMBLIES (Pay Item Nos. 16052.1) PRICE BASED ON LUMP SUM

A. Measurement for Electrical Support Assemblies shall be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete, all in accordance with the requirements of the Contract Documents.

B. Payment for Electrical Support Assemblies shall be made at the amount shown on the Bid Schedule under Pay Item No. 16052.1, which payment will constitute full payment for all WORK as shown on the Plans and as directed by the ENGINEER.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01070 - ACRONYMS OF INSTITUTIONS

PART 1 - GENERAL

1.1 GENERAL

A. Wherever in these Specifications references are made to the standards, specifications, or other published data of the various international, national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these Specifications, the following acronyms which may appear in these Specifications shall have the meanings indicated herein.

1.2 ACRONYMS

AAMA	Architectural Aluminum Manufacturer's Association
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA	American Gas Association
AGMA	American Gear Manufacturer's Association
AHAM	Association of Home Appliance Manufacturers
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANS	American Nuclear Society
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
ASA	Acoustical Society of America
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
ATM	Alaska Test Methods
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BBC	Basic Building Code, Building Officials and Code Administrators International

BHMA	Builders Hardware Manufacturer's Association
CBM	Certified Ballast Manufacturers
CEMA	Conveyors Equipment Manufacturer's Association
CGA	Compressed Gas Association
CLFMI	Chain Link Fence Manufacturer's Institute
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
DCDMA	Diamond Core Drill Manufacturer's Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
FPL	Forest Products Laboratory
HI	Hydronics Institute
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
IOS	International Organization for Standardization
IP	Institute of Petroleum (London)
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ITE	Institute of Traffic Engineers
MBMA	Metal Building Manufacturer's Association
MPTA	Mechanical Power Transmission Association
MTI	Marine Testing Institute
NAAMM	National Association of Architectural Metal Manufacturer's
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NLGI	National Lubricating Grease Institute
NMA	National Microfilm Association
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
RIS	Redwood Inspection Service
RVIA	Recreational Vehicle Industry Association
RWMA	Resistance Welder Manufacturer's Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SMA	Screen Manufacturers Association
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SPIB	Southern Pine Inspection Bureau
SPR	Simplified Practice Recommendation
SSA	Swedish Standards Association
SSBC	Southern Standard Building Code, Southern Building Code Congress
SSPC	Steel Structures Painting Council

SSPWC	Standard Specifications for Public Works Construction
TAPPI	Technical Association of the Pulp and Paper Industry
TFI	The Fertilizer Institute
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WIC	Woodwork Institute of California
WRI	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01090 - REFERENCE STANDARDS

PART 1 - GENERAL

1.1 GENERAL

A. Titles of Sections and Paragraphs: Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.

B. Applicable Publications: Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the WORK is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.

C. Specialists, Assignments: In certain instances, specification text requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the CONTRACTOR has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the WORK; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the CONTRACTOR.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the generality of other requirements of the Specifications, all WORK specified herein shall conform to or exceed the requirements of applicable codes and the applicable requirements of the following documents.

B. References herein to "Building Code" or "Uniform Building Code" shall mean Uniform Building Code of the International Conference of Building Officials (ICBO).

C. Similarly, references to "Mechanical Code" or "Uniform Mechanical Code," "Plumbing Code" or "Uniform Plumbing Code," "Fire Code" or "Uniform Fire Code," shall mean Uniform Mechanical Code, Uniform Plumbing Code and Uniform Fire Code of the International Conference of the Building Officials (ICBO). "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA). The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the WORK is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the WORK herein, including all addenda, modifications, amendments, or other lawful changes thereto.

D. In case of conflict between codes, reference standards, drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought

to the attention of the ENGINEER for clarification and directions prior to ordering or providing any materials or furnishing labor. The CONTRACTOR shall bid for the most stringent requirements.

E. The CONTRACTOR shall construct the WORK specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein.

F. Applicable Standard Specifications: References in Contract Sections 02801 -Asphalt Concrete Pavement to Standard Specifications shall mean the Alaska Department of Transportation and Public Facilities "Standard Specifications for Highway Construction - 1998" and any supplements or amendments thereto.

G. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

H. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01300 - CONTRACTOR SUBMITTALS

PART 1 - GENERAL

1.1 GENERAL

A. Whenever submittals are required hereunder, all such submittals by the CONTRACTOR shall be submitted to the ENGINEER.

B. Within 14 days after the date of commencement as stated in the Notice of Award/Notice to Proceed, the CONTRACTOR shall submit the following items to the ENGINEER for review:

1. A preliminary schedule of Shop Drawing, Sample and proposed Substitutes or "Or-Equal" submittals.
2. A list of all permits and licenses the CONTRACTOR shall obtain indicating the agency required to grant the permit and the expected date of submittal for the permit and the required date for receipt of the permit.
3. A complete progress schedule for all phases of the project.
4. All required Material Safety Data Sheets.
5. A staging and traffic maintenance plan, as required.
6. A plan for temporary erosion control and pollution control, as required.
7. A letter designating the CONTRACTOR's Superintendent, defining that person's responsibility and authority, and providing a specimen of his signature.
8. A letter designating the CONTRACTOR's safety representative and the person's responsibility and authority.

1.2 SHOP DRAWING SUBMITTAL

A. Wherever called for in the Contract Documents, or where required by the ENGINEER, the CONTRACTOR shall furnish to the ENGINEER, for review, 4 copies of each shop drawing submittal unless otherwise indicated. Electronic submittal transmission may be allowed if approved in advance by the ENGINEER. The term " Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication and installation drawings, erection drawings, lists, graphs, operating instructions, catalog sheets, data sheets, and similar items.

B. All Shop Drawing Submittals shall be accompanied by the ENGINEER's standard submittal transmittal form. The form may be obtained in quantity from the ENGINEER. Any submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for resubmittal.

C. Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates review of the group or package as a whole. A multiple-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the ENGINEER.

D. Except as otherwise provided herein, the ENGINEER will return prints of each submittal to the CONTRACTOR with its comments noted thereon, within 30 calendar days following their receipt by the ENGINEER. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the ENGINEER by the second submission of a submittal item. The OWNER reserves the right to withhold monies due to the CONTRACTOR to cover additional costs of the ENGINEER review beyond the second submittal. The ENGINEER's maximum review period for each submittal including all re-submittals will be 30 days per submission. In other words, for a submittal that requires two re-submittals before it is complete, the maximum review period for that submittal could be 90 days.

E. If 3 copies (or a single electronic transmission) of a submittal are returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision and resubmission of said submittal will not be required.

F. If 3 copies (or a single electronic transmission) of a submittal are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED," formal revision and resubmission of said submittal is not required.

G. If one copy (or a single electronic transmission) of the submittal is returned to the CONTRACTOR marked "AMEND-RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the ENGINEER.

H. If one copy (or a single electronic transmission) of the submittal is returned to the CONTRACTOR marked "REJECTED-RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the ENGINEER.

I. Fabrication of an item may be commenced only after the ENGINEER has reviewed the pertinent submittal and returned copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED." Corrections indicated on submittal shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the Contract requirements. Only a change order can alter the contract price, time, or requirements.

J. All CONTRACTOR shop drawing submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR, prior to submission to the ENGINEER. Each submittal shall be dated, signed, and certified by the CONTRACTOR, as being correct and in strict conformance with the Contract Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for review by the ENGINEER of any CONTRACTOR submittal will be made for any items which have not been so certified by the CONTRACTOR. All non-certified submittals will be returned to the CONTRACTOR without action taken by the ENGINEER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

K. The ENGINEER's review of CONTRACTOR shop drawing submittals shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions. The CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in CONTRACTOR submittals. The CONTRACTOR shall be responsible for the dimensions and the design of adequate connections and details.

1.3 SAMPLES SUBMITTAL

A. Whenever in the Specifications samples are required, the CONTRACTOR shall submit not less than 3 samples of each item or material to the ENGINEER for acceptance at no additional cost to the OWNER.

B. Samples, as required herein, shall be submitted for acceptance a minimum of 21 days prior to ordering such material for delivery to the job site, and shall be submitted in an orderly sequence so that dependent materials or equipment can be assembled and reviewed without causing delays in the WORK.

C. All samples shall be individually and indelibly labeled or tagged, indicating thereon all specified physical characteristics and Supplier's names for identification and submitted to the ENGINEER for acceptance. Upon receiving acceptance of the ENGINEER, one set of the samples will be stamped and dated by the ENGINEER and returned to the CONTRACTOR, and one set of samples will be retained by the ENGINEER, and one set of samples shall remain at the job site until completion of the WORK.

D. Unless clearly stated otherwise, it is assumed that all colors and textures of specified items presented in sample submittal are from the manufacturer's standard colors and standard materials, products, or equipment lines. If the samples represent non-standard colors, materials, products or equipment lines, and their selection will require an increase in contract time or price, the CONTRACTOR will clearly indicate this on the transmittal page of the submittal.

1.4 TECHNICAL MANUAL SUBMITTAL

A. Using the outline provided in the Equipment Maintenance Summary Sheet (copy of which may be obtained from the ENGINEER), the CONTRACTOR shall include in the technical manuals for each item of mechanical, electrical, and instrumentation equipment, the following:

1. Complete operating instructions, including location of controls, special tools or other equipment required, related instrumentation, and other equipment needed for operation.
2. Lubrication schedules, including the lubricant SAE grade and type, temperature range of lubricants, and including frequency of required lubrication.
3. Preventive maintenance procedures and schedules.
4. Parts lists, by generic title and identification number, complete, with exploded views of each assembly.
5. Disassembly and reassembly instructions.
6. Name and location of nearest supplier and spare parts warehouse.

7. Recommended troubleshooting and startup procedures.
8. Reproducible prints of the record drawings, including diagrams and schematics, as required under the electrical and instrumentation portions of these Specifications.
9. Tabulation of proper settings for all pressure relief valves, (low/high) pressure switches and other related equipment protection devices.
10. Detailed test procedures to determine performance efficiency of equipment.
11. List of all electrical relay settings including alarm and contact settings.

B. The CONTRACTOR shall furnish to the ENGINEER 5 identical sets of technical manuals. Each set shall consist of one or more volumes, each of which shall be bound in a standard size, 3-ring, loose-leaf vinyl plastic hard cover binder suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches. A table of contents shall be provided which indicates all equipment in the technical manuals.

C. All technical manuals shall be submitted in final form to the ENGINEER not later than the 75 percent of construction completion date. All discrepancies found by the ENGINEER in the technical manuals shall be corrected by the CONTRACTOR within 30 days from the date of written notification by the ENGINEER.

D. Incomplete or unacceptable technical manuals at the 75 percent construction completion point shall constitute sufficient justification to withhold payment for work completed beyond that period in accordance with Paragraph “Technical Manual Submittal” of Section 01700, “Project Closeout.”

1.5 SPARE PARTS LIST SUBMITTAL

A. The CONTRACTOR shall furnish to the ENGINEER 5 identical sets of spare parts information for all mechanical, electrical, and instrumentation equipment. The spare parts list shall include the current list price of each spare part. The spare parts list shall be limited to those spare parts which each manufacturer recommends be maintained by the OWNER in inventory at the plant site. Each manufacturer or supplier shall indicate the name, address, and telephone number of its nearest outlet of spare parts to facilitate the OWNER in ordering. The CONTRACTOR shall cross-reference all spare parts lists to the equipment numbers designated in the Contract Documents. The spare parts lists shall be bound in standard size, 3-ring, loose leaf, vinyl plastic hard cover binders suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches.

1.6 RECORD DRAWINGS SUBMITTALS

A. The CONTRACTOR shall keep and maintain, at the job site, one record set of Drawings. On these, it shall mark all Project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the contract Drawings. Said record drawings shall be supplemented by any detailed sketches as necessary or directed to

indicate, fully, the WORK as actually constructed. These master record drawings, of the CONTRACTOR's representation of as-built conditions, including all revisions made necessary by addenda, change orders, and the like shall be maintained up-to-date during the progress of the WORK.

B. In the case of those drawings which depict the detail requirement for equipment to be assembled and wired in the factory, such as motor control centers and the like, the record drawings shall be updated by indicating those portions which are superseded by Change Order Drawings or final Shop Drawings, and by including appropriate reference information describing the Change Orders by number and the Shop Drawings by manufacturer, drawing, and revision numbers.

C. Record Drawings shall be accessible to the ENGINEER at all times during the construction period and shall be delivered to the ENGINEER on the 20th working day of every third month after the month in which the Notice to Proceed is given as well as upon completion of the WORK.

D. Final payment will not be acted upon until the CONTRACTOR-prepared record drawings have been delivered to the ENGINEER.

1.7 PROGRESS SCHEDULES

A. The progress schedule shall be in Bar Chart or Critical Path Method (CPM) form, as required by the ENGINEER.

B. The progress schedule shall show the order in which the CONTRACTOR proposes to carry out the WORK and the contemplated date on which the CONTRACTOR and their subcontractors will start and finish each of the salient features of the work, including any scheduled periods of shutdown. The schedule shall also indicate any anticipated periods of multiple-shift work.

C. Upon substantial changes to the CONTRACTOR's progress schedule of work or upon request of the ENGINEER, the CONTRACTOR shall submit a revised progress schedule(s) in the form required. Such revised schedule(s) shall conform with the Contract Time and take into account delays which may have been encountered in the performance of the WORK. In submitting a revised schedule, the CONTRACTOR shall state specifically the reason for the revision and the adjustments made in his schedule or methods of operation to ensure the completion of all the WORK within the Contract Time.

1.8 PROPOSED SUBSTITUTES OR "OR-EQUAL" ITEM SUBMITTAL

A. Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the naming of the item is intended to establish the type, function, and quality required. If the name is followed by the words "or-equal" indicating that a substitution is permitted, materials or equipment of other suppliers may be accepted by the ENGINEER if sufficient information is submitted by the CONTRACTOR to allow the ENGINEER to determine

that the material or equipment proposed is equivalent or equal to that named, subject to the following requirements:

1. The burden of proof as to the type, function, and quality of any such substitute material or equipment shall be upon the CONTRACTOR.
2. The ENGINEER will be the sole judge as to the type, function, and quality of any such substitute material or equipment and the ENGINEER's decision shall be final.
3. The ENGINEER may require the CONTRACTOR, to furnish at the CONTRACTOR's expense, additional data about the proposed substitute.
4. The OWNER may require the CONTRACTOR to furnish at the CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.
5. Acceptance by the ENGINEER of a substitute item proposed by the CONTRACTOR shall not relieve the CONTRACTOR of the responsibility for full compliance with the Contract documents and for adequacy of the substitute item.
6. The CONTRACTOR shall be responsible for resultant changes and all additional costs which the accepted substitution requires in the CONTRACTOR's work, the work of its subcontractors and of other contractors, and shall effect such changes without cost to the OWNER. This shall include the cost for redesign and claims of other contractor affected by the resulting change.

B. The procedure for review by the ENGINEER will include the following:

1. If the CONTRACTOR wishes to furnish or use a substitute item of material or equipment, the CONTRACTOR shall make written application to the ENGINEER on the "Substitution Request Form" for acceptance thereof.
2. Unless otherwise provided by law or authorized in writing by the ENGINEER, the "Substitution Request Form(s)" shall be submitted within the 21-day period after Notice of Award.
3. Wherever a proposed substitute material or equipment has not been submitted within said 21-day period, or wherever the submission of a proposed substitute material or equipment has been judged to be unacceptable by the ENGINEER, the CONTRACTOR shall provide material or equipment named in the Contract Documents.
4. The CONTRACTOR shall certify that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified, and be suited to the same use as that specified.
5. The ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. In no case will this reasonable time period be less than 30 days.
6. As applicable, no shop drawing submittals will be made for a substitute item nor will any substitute item be ordered, installed, or utilized without the ENGINEER's prior written acceptance of the CONTRACTOR's "Substitution Request Form" which will be evidenced by a Change Order.

7. The ENGINEER will record the time required by the ENGINEER in evaluating substitutions proposed by the CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not the ENGINEER accepts a proposed substitute, the CONTRACTOR shall reimburse the OWNER for the charges of the ENGINEER for evaluating each proposed substitute.

C. The CONTRACTOR's application using the "Substitution Request Forms" shall contain the following statements and/or information which shall be considered by the ENGINEER in evaluating the proposed substitution:

1. The evaluation and acceptance of the proposed substitute will not prejudice the CONTRACTOR's achievement of substantial completion on time.
2. Whether or not acceptance of the substitute for use in the WORK will require a change in any of the Contract Documents to adopt the design to the proposed substitute.
3. Whether or not incorporation or use of the substitute in connection with the WORK is subject to payment of any license fee or royalty.
4. All variations of the proposed substitute for that specified will be identified.
5. Available maintenance, repair, and replacement service and its estimated cost will be indicated.
6. Itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including cost of redesign and claims of other contractors affected by the resulting change.

1.9 MATERIAL CERTIFICATON SUBMITTAL

A. The ENGINEER may permit the use, prior to sampling, inspection and testing, of certain materials or assemblies when accompanied by manufacturer's material certifications stating that such materials or assemblies fully comply with the requirements of the Contract. The certification shall be signed by the manufacturer, and will specifically reference the material's compliance with the AASHTO, ASTM and/or CBJ Standards specified in the applicable Contract Documents.

B. Material Certifications shall be submitted to the engineer prior to incorporating the item into the WORK.

C. Materials or assemblies used on the basis of material certifications may be sampled, inspected and/or tested at any time, and if found not in conformity with these Specifications, will be subject to rejection whether in place or not.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

(SUBSTITUTION REQUEST FORM – next page)

City and Borough of Juneau

SUBSTITUTION REQUEST FORM

TO: _____ Project: _____
Contract No. _____
OWNER: _____

SPECIFIED ITEM:

_____	_____	_____	_____
Section	Page	Paragraph	Description

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____
Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request. Applicable portions of the data are clearly identified.

The undersigned states that the following paragraphs, unless modified on attachments are correct:

1. The proposed substitution does not affect dimensions shown on Drawings and will not require a change in any of the Contract Documents.

2. The undersigned will pay for changes to the design, including engineering design, detailing, and construction costs caused by the requested substitution which is estimated to be $_____.

3. The proposed substitution will have no adverse affect on other contractors, the construction schedule (specifically the date of substantial completion), or specified warranty requirements.

4. Maintenance and service parts will be locally available for the proposed substitution.

5. The incorporation or use of the substitute in connection with the WORK is not subject to payment of any license fee or royalty.

The undersigned further states that the function, appearance, and quality of the Proposed Substitution are equivalent or superior to the Specified item.

Submitted by CONTRACTOR: _____
Signature _____
Firm: _____
By: _____
Title: _____
Date: _____
Attachments: _____

Reviewed by ARCHITECT/ENGINEER_____
☐ Accepted ☐ Accepted as Noted
☐ Not Accepted ☐ Received Too Late
Date: _____
Telephone: _____

END OF SECTION

SECTION 01400 - QUALITY CONTROL

PART 1 - GENERAL

1.1 DEFINITION

A. Specific quality control requirements for the WORK are indicated throughout the Contract Documents. The requirements of this Section are primarily related to performance of the WORK beyond furnishing of manufactured products. The term "Quality Control" includes inspection, sampling and testing, and associated requirements.

1.2 INSPECTION AT PLACE OF MANUFACTURE

A. Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the ENGINEER at the place of manufacture.

B. The presence of the ENGINEER at the place of manufacturer, however, shall not relieve the CONTRACTOR of the responsibility for furnishing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the CONTRACTOR, and said duty shall not be avoided by any act or omission on the part of the ENGINEER.

1.3 SAMPLING AND TESTING

A. Unless otherwise indicated, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, ATM, and AASHTO as applicable to the class and nature of the article or materials considered; however, the OWNER reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the ENGINEER will insure the OWNER that the quality of the workmanship is in full accord with the Contract Documents.

B. Any waiver by the OWNER of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial WORK, shall not be construed as a waiver of any requirements of the Contract Documents.

C. Notwithstanding the existence of such waiver, the ENGINEER reserves the right to make independent investigations and tests, and failure of any portion of the WORK to meet any of the requirements of the Contract Documents, shall be reasonable cause for the ENGINEER to require the removal or correction and reconstruction of any such work in accordance with the General Conditions.

1.4 INSPECTION AND TESTING LABORATORY SERVICE

A. Inspection and testing laboratory service shall comply with the following:

1. OWNER will appoint, employ, and pay for services of an independent firm to perform inspection and testing or will perform inspection and testing itself unless specific quality control testing is required by the CONTRACTOR under these specifications.

2. The ENGINEER will perform inspections as specified in individual specification sections, unless specified otherwise.
3. Reports will be submitted by the independent firm to the ENGINEER in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
4. The CONTRACTOR shall cooperate with the ENGINEER or independent firm and furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
5. The CONTRACTOR shall notify ENGINEER 24 hours prior to the expected time for operations requiring inspection and laboratory testing services.
6. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the ENGINEER. The CONTRACTOR shall bear all costs from such retesting at no additional cost to the OWNER.
7. For samples and tests required for CONTRACTOR'S use, the CONTRACTOR shall make arrangements with an independent firm for payment and scheduling of testing. The cost of sampling and testing for the CONTRACTOR'S use shall be included in the Contract Price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INSTALLATION

A. Inspection: The CONTRACTOR shall inspect materials or equipment upon the arrival on the job site and immediately prior to installation, and reject damaged and defective items.

B. Measurements: The CONTRACTOR shall verify measurements and dimensions of the WORK, as an integral step of starting each installation.

C. Manufacturer's Instructions: Where installations include manufactured products, the CONTRACTOR shall comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

END OF SECTION

SECTION 01505 - MOBILIZATION

PART 1 - GENERAL

1.1 GENERAL

A. Mobilization shall include obtaining permits; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; and implementing security requirements; all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items:

1. Moving on to the site of all CONTRACTOR's plant and equipment required for operations.
2. Providing all on-site communication facilities, including radios and cellular phones.
3. Obtaining all required permits other than those provided in the Contract Documents.
4. Having all OSHA required notices and establishment of safety programs.
5. Having the CONTRACTOR's superintendent at the job site full time.
6. Submitting initial submittals.

1.2 PAYMENT FOR MOBILIZATION

A. The CONTRACTOR's attention is directed to the condition that no payment for Mobilization, or any part thereof, will be approved for payment under the contract until all Mobilization items listed above have been completed as specified.

B. As soon as practicable after receipt of the Notice to Proceed, the CONTRACTOR shall submit a breakdown to the ENGINEER for approval, which shall show the estimated value of each major component of Mobilization. When approved by the ENGINEER, the breakdown will be the basis for initial progress payments in which Mobilization is included.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01520 - SECURITY

PART 1 - GENERAL

1.1 SECURITY PROGRAM

A. The CONTRACTOR shall:

1. Protect WORK, existing premises and OWNER's operations from theft, vandalism, and unauthorized entry.
2. Coordinate security with OWNER's operations at job mobilization.
3. Maintain program throughout construction period until OWNER's occupancy.

1.2 ENTRY CONTROL

A. The CONTRACTOR shall:

1. Control entry of persons and vehicles onto Project construction site and existing facilities.
2. Allow entry on the construction site only to authorized persons with proper identification.
3. Coordinate access of OWNER's personnel to site in coordination with CONTRACTOR's security forces.

B. OWNER will control entrance of persons and vehicles related to OWNER's operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

PART 1 - GENERAL

1.1 GENERAL

A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.

B. All utility locates shall be the responsibility of the CONTRACTOR. CALL DIAL BEFORE YOU DIG for locates of all underground utilities within the WORK limits prior to any work.

C. The CONTRACTOR shall verify the exact locations and depths of all utilities and the CONTRACTOR shall make exploratory excavations of all utilities that may interfere with the WORK. All such exploratory excavations shall be performed as soon as practicable after award of the contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the CONTRACTOR's WORK. Any utility or service in conflict with the WORK will be reburied by the CONTRACTOR prior beginning the WORK to avoid damage.

D. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

1.2 RIGHTS-OF-WAY

A. The CONTRACTOR shall not do any work that would affect any oil, gas, sewer, or water pipeline; any telephone, cable television, telegraph, or electric transmission line; any fence; or any other structure, nor shall the CONTRACTOR enter upon the rights-of-way involved until notified by the ENGINEER that the OWNER has secured authority therefore from the proper party. After authority has been obtained, the CONTRACTOR shall give said party due notice of its intention to begin work, if required by said party, and shall remove, shore, support or otherwise protect such pipeline, transmission line, ditch, fence, or structure or replace the same. When two or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the OWNER shall determine the sequence and order of the WORK. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the OWNER to the CONTRACTOR so desiring, to the extent, amount, in the manner, and at the times permitted.

B. No such decision as to the method or time of conducting the WORK or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the WORK in Article 15 of the General Conditions of the contract.

1.3 PROTECTION OF SURVEY MONUMENTS, STREET AND/OR ROADWAY MARKERS

A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. All survey monuments, markers or points disturbed by the CONTRACTOR shall be accurately re-established, at the CONTRACTOR's expense unless provided for

elsewhere in the contract, after all street or roadway resurfacing has been completed. Re-establishment of all survey monuments shall be by a Registered Alaskan Land Surveyor.

1.4 RESTORATION OF PAVEMENT

A. General: All paved areas, including asphalt concrete berms, cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. All temporary and permanent pavement shall conform to the requirements of the affected pavement owner. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.

B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the CONTRACTOR shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.

C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.

D. Restoration of Sidewalks or Private Driveways: Wherever sidewalks or private roads have been removed for purposes of construction, the CONTRACTOR shall place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration or, if no such period of times is so fixed, the CONTRACTOR shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

A. General: The CONTRACTOR shall protect all Underground Utilities and other improvements which may be impaired during construction operations. It shall be the CONTRACTOR's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The CONTRACTOR shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

B. Utilities to be Moved: In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the CONTRACTOR, be notified by the OWNER to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the CONTRACTOR shall notify the ENGINEER a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

C. Where the proper completion of the WORK requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, the

CONTRACTOR shall remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the ENGINEER and the owner of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the CONTRACTOR in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.

D. OWNER's Right of Access: The right is reserved to the OWNER and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the WORK of this contract.

E. Underground Utilities Indicated: Existing utility lines that are indicated or the locations of which are made known to the CONTRACTOR prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the CONTRACTOR.

F. Underground Utilities Not Indicated: In the event that the CONTRACTOR damages any existing utility lines that are not indicated or the locations of which are not made known to the CONTRACTOR prior to excavation, a written report thereof shall be made immediately to the ENGINEER. If directed by the ENGINEER, repairs shall be made by the CONTRACTOR under the provisions for changes and extra work contained in Articles 10, 11, and 12 of the General Conditions.

G. All costs of locating, repairing damage not due to failure of the CONTRACTOR to exercise reasonable care, and removing or relocating such utility facilities not shown in the Contract Documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the WORK which was interrupted or idled by removal or relocation of such utility facilities, and which was necessarily idled during such work will be paid for as extra work in accordance with the provisions of Articles 10, 11, and 12 of the General Conditions.

H. Approval of Repairs: All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other work.

I. Maintaining in Service: All oil and gasoline pipelines, power, and telephone, cable television or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the WORK shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the ENGINEER are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The CONTRACTOR shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.6 TREES WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS

A. General: The CONTRACTOR shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the jurisdictional agency or OWNER. All existing

trees and shrubs which are damaged during construction shall be trimmed or replaced by the CONTRACTOR or a certified tree company under permit from the jurisdictional agency and/or the OWNER. Tree trimming and replacement shall be accomplished in accordance with the following paragraphs.

B. Trimming: Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Spikes shall not be used for climbing live trees. All cuts over 1-1/2 inches in diameter shall be coated with an asphaltic emulsion material.

C. Replacement: The CONTRACTOR shall immediately notify the jurisdictional agency and/or the OWNER if any tree is damaged by the CONTRACTOR's operations. If, in the opinion of said agency or the OWNER, the damage is such that replacement is necessary, the CONTRACTOR shall replace the tree at its own expense. The tree shall be of a like size and variety as the tree damaged, or, the CONTRACTOR shall pay to the owner of said tree a compensatory payment acceptable to the tree owner, subject to the approval of the jurisdictional agency or OWNER.

1.7 PROTECTION OF EXISTING STRUCTURES

A. Compaction Equipment and Operations: The CONTRACTOR shall restrict its compaction operations as necessary to assure no damage occurs to adjacent buildings. This may require the use of smaller compaction equipment than is usually employed for trench backfill and roadway embankment compaction operations when in the vicinity of buildings sensitive to vibrating or other impact-type activities. It shall be the CONTRACTOR's responsibility to determine in which areas of the project the compaction operations must be restricted, to avoid damage to existing buildings. The CONTRACTOR is advised that some structures on the project, especially those founded on steep or unstable ground, and are especially sensitive to vibrations caused by heavy construction equipment. The foregoing restrictions on the size of, and magnitude of impact energy exerted by, compaction equipment will in no way relieve the CONTRACTOR from the compaction requirements as specified in other Sections of the contract.

B. The CONTRACTOR shall notify all affected businesses and other residents in advance of any operations that will cause vibrations that may damage belongings within the buildings. All property damage caused by the CONTRACTOR’s operations shall be repaired or replaced at CONTRACTOR’s expense.

PART 2 PRODUCTS – (Not Used)

PART 3 EXECUTION - (Not used)

END OF SECTION

SECTION 01550 - SITE ACCESS AND STORAGE

PART 1 - GENERAL

1.1 HIGHWAY LIMITATIONS. The CONTRACTOR shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the WORK. It shall be the CONTRACTOR's responsibility to construct and maintain any haul roads required for its construction operations.

1.2 TEMPORARY CROSSINGS

A. General: Continuous, unobstructed, safe, and adequate pedestrian access shall be provided to the harbor moorage float system, fire hydrants, commercial and industrial establishments, private residences, churches, schools, parking lots, service stations, motels, fire and police stations, and hospitals. Safe and adequate public transportation stops and pedestrian crossings at intervals not exceeding 200 feet shall be provided. The CONTRACTOR shall cooperate with parties involved in the delivery of mail and removal of trash and garbage so as to maintain existing schedules for such services. Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time, as approved by the ENGINEER.

B. Temporary Bridges: Wherever necessary, the CONTRACTOR shall provide a suitable temporary bridge or other such facility to accommodate public access to the harbor at all times. All such temporary bridges shall be maintained in service until permanent gangway access is provided. The CONTRACTOR shall provide designs for such bridges and shall submit plans for conceptual approval.

1.3 MAINTENANCE OF TRAFFIC

A. General: Unless otherwise provided, the roadway undergoing improvements shall be kept open to all traffic by the CONTRACTOR. Nothing herein shall be construed to entitle the CONTRACTOR to the exclusive use of any public street, alleyway, or parking area during the performance of the WORK hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. The CONTRACTOR shall provide unimpeded access through the Project limits for emergency vehicles and make every effort to provide minimum delay to United States Postal Service vehicles and garbage collection vehicles.

B. The CONTRACTOR shall submit three (3) copies of a traffic control plan to the ENGINEER for approval a minimum of two (2) weeks prior to construction. The ENGINEER reserves the right to observe these traffic control plans in use and to make any changes as field conditions warrant. Any changes shall supersede these plans and be done solely at the CONTRACTOR's expense.

C. No street shall be closed to the public without first obtaining permission of the ENGINEER and proper governmental authority. Where so provided on the plans or otherwise approved by the ENGINEER, the CONTRACTOR may by-pass traffic over a detour route. When no longer required, the detour shall be removed and the approached obliterated.

D. Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the ENGINEER or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the

WORK shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the CONTRACTOR to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets, and other drainage facilities.

E. The CONTRACTOR's equipment shall stop at all points of intersection with the traveling public unless satisfactory traffic control measures, approved in writing by the ENGINEER, are installed and maintained at CONTRACTOR's expense.

F. When the CONTRACTOR is required to maintain traffic through grading, roadway excavation and embankment areas, the construction shall be conducted in such a manner as to provide a reasonably smooth and even surface satisfactory for use by public traffic at all times. The surface of the roadbed shall be properly crowned for drainage. In advance of other grading operations, sufficient fill shall be placed at culverts and bridges to permit traffic to cross unimpeded. Part width construction techniques shall be employed when the traffic is routed through roadway cuts or over embankments under construction. The material shall be excavated or placed in layers and the construction activities shall be alternated from one side to the other, with traffic routed over the side opposite the one under construction.

G. During the removal and laying of culvert pipe, a maximum time of one hour of road closure may be permitted, providing the removal and laying of the culvert pipe cannot be completed for one-half width of the roadway and provided that a detour cannot be constructed around the culvert being laid. Closure shall be scheduled so as not to delay buses and peak hour traffic. The CONTRACTOR shall post, at the site of the closure within view of the waiting public traffic, the time the closure started and the time the road will again be open to traffic. The CONTRACTOR shall notify the Fire and Police Departments of such closures prior to commencement of work.

H. At intervals of 48 hours and 24 hours prior to start up of construction operations, and at weekly intervals during the construction period, the CONTRACTOR shall advertise at City Hall the precise location, time of commencement, and proposed completion date of the WORK scheduled for the following week which will require detouring or otherwise effect public traffic. Detours shall be described in sufficient detail to efficiently inform the traveling public of the modified traffic pattern. The cost of these advertisements shall be considered incidental to other contract bid items. The CONTRACTOR will notify the property owners 24 hours prior to commencement of WORK.

I. When, in the opinion of the ENGINEER, conditions are such that the safety and/or convenience of the traveling public is adversely affected, the CONTRACTOR will be immediately notified in writing. The notice will state the defect(s) and the corrective action(s) required. In the event that the CONTRACTOR neglects to take immediate corrective action, the ENGINEER may suspend all work on the project until satisfactory corrective action is performed. In the event the CONTRACTOR does not take corrective action within 24 hours, the ENGINEER may order such work as deemed necessary for public convince and safety accomplished by outside forces. The cost of this work shall be deducted from any monies due or that may become due under the terms or the contract.

J. The CONTRACTOR shall bear all expense of maintaining the traffic over the section of road undergoing improvement, including dust control and snow plowing, and of constructing and maintaining such approaches, crossings, intersections, and other features as may be necessary, without direct compensation, except as provided below:

1. Special Detours. When the proposal contains a bid item for detours, the payment for such item shall cover all cost of constructing and maintaining such detour or

detours, including the construction of any and all temporary bridges and accessory features and the removal of the same, and obliteration of the detour road. Right-of-way for temporary highways or bridges will be furnished by the OWNER.

2. Maintenance of Traffic During Suspension of WORK. The CONTRACTOR shall make passable and shall open to traffic such portions of the Project and temporary roadways as may be agreed upon between the CONTRACTOR and the ENGINEER for the temporary accommodation of necessary traffic during the anticipated period of suspension. If the suspension is seasonal (winter shutdown), thereafter, and until an issuance of an order for the resumption of construction operations, the maintenance of the temporary route of line of travel agreed upon will be the responsibility of the OWNER. Prior to the OWNER accepting the Project for winter shutdown, the CONTRACTOR shall do all work necessary to provide a roadway surface and subgrade that will not require the OWER to perform additional maintenance work during the shutdown period, except for purpose of snow removal. If the WORK is suspended due to unfavorable weather, failure of the CONTRACTOR to correct conditions unsafe for the workers or the general public, failure to carry out provisions of the contract, or for failure to carry out orders of the ENGINEER, all costs for maintenance of traffic during the suspended period shall be borne by the CONTRACTOR. When WORK is resumed, the CONTRACTOR shall replace or renew any WORK or materials lost or damaged because of temporary use of the project; shall remove, to the extent directed by the ENGINEER, any WORK or materials used in the temporary maintenance; and shall complete the Project as though its prosecution had been continuous and without interference.

K. Traffic Control: All locations requiring redirection or stopping of the traveling public shall be properly signed and/or flagged by the CONTRACTOR. For the protection of traffic in public or private streets and ways, the CONTRACTOR shall provide, flaggers and provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of the "Manual of Uniform Traffic Control Devices, Part VI - Traffic Controls for Street and Highway Construction and Maintenance Operations," (MUTCD) published by U.S. Department of Transportation, Federal Highway Administration (ANSI D6.1) with the current State of Alaska supplements.

L. The CONTRACTOR shall take all necessary precautions for the protection of the WORK and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. The CONTRACTOR shall station such guards or flaggers and shall conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.

M. Special pedestrian detours are often necessary in areas adjacent to new construction or demolition of existing structures. The ENGINEER shall determine when walkways are required. Plans for walkways must be approved by the ENGINEER.

N. The CONTRACTOR shall remove traffic control devices when no longer needed, repair all damage caused by installation of the devices, and shall remove post settings and backfill the resulting holes to match grade.

O. Temporary Street Closure: If closure of any street is required during construction, the

CONTRACTOR shall apply in writing to the City Administrator and any other jurisdictional agency at least 30 days in advance of the required closure and again at 48 hours. A Detour and Traffic Control Plan shall accompany the application.

P. The CONTRACTOR shall notify the Police and Fire Departments and any other affected agency of all planned street closures. Notification shall consist of giving the time of commencement and proposed date of completion of work and names of street, schedule of operations, and routes of detours. Such notification shall be given at least 48 hours before such closure is to take effect.

Q. Temporary Driveway Closure: The CONTRACTOR shall maintain access to all residential, commercial and street approaches. Any temporary closures shall require prior approval by the ENGINEER. The CONTRACTOR shall notify the owner or occupant (if not owner-occupied) of the closure of the driveways to be closed more than one (1) eight-hour work day at least three (3) working days prior to the closure. The CONTRACTOR shall minimize the inconvenience and minimize the time period that the driveways will be closed. The CONTRACTOR shall fully explain to the owner/occupant how long the work will take and when closure is to start.

R. On-Site Cellular Phones: The CONTRACTOR shall maintain one active cellular phone at the project site at all times with the phone number provided to the City and Borough of Juneau Fire, Police and Public Works Departments. The cellular phone shall be carried by the person in charge of the field operations. The CONTRACTOR shall provide and allow the use of the CONTRACTOR's radio frequency to facilitate communication between the CONTRACTOR and the ENGINEER.

1.4 CONTRACTOR'S WORK AND STORAGE AREA

A. The CONTRACTOR shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the WORK.

B. Should the CONTRACTOR find it necessary to use any additional land for its camp or for other purposes during the construction of the WORK, it shall provide for the use of such lands at its own expense.

C. The CONTRACTOR shall construct and use a separate storage area for hazardous materials used in constructing the WORK.

1. For the purpose of this paragraph, hazardous materials to be stored in the separate area are all products labeled with any of the following terms: **Warning, Caution, Poisonous, Toxic, Flammable, Corrosive, Reactive, or Explosive**. In addition, whether or not so labeled, the following materials shall be stored in the separate area: diesel fuel, gasoline, new and used motor oil, hydraulic fluid, cement, paints and paint thinners, two-part epoxy coatings, sealants, asphaltic products, glues, solvents, wood preservatives, sand blast materials, and spill absorbent.
2. The CONTRACTOR shall develop and submit to the ENGINEER a plan for storing and disposing of the materials above.
3. The CONTRACTOR shall obtain and submit to the ENGINEER a single EPA number for wastes generated at the site.
4. The separate storage area shall meet all the requirements of all authorities having jurisdiction over the storage of hazardous materials.
5. The separate storage area shall be inspected by the ENGINEER prior to construction of the area, upon completion of construction of the area, and upon cleanup and removal of the area.

6. All hazardous materials which are delivered in containers shall be stored in the original containers until use. Hazardous materials which are delivered in bulk shall be stored in containers which meet the requirements of authorities having jurisdiction.

1.5 PARKING

A. The CONTRACTOR shall direct its employees to park in areas as directed by the ENGINEER.

B. Traffic and parking areas shall be maintained in a sound condition, free of excavated material, construction equipment, mud, and construction materials. The CONTRACTOR shall repair breaks, potholes, low areas which collect standing water, and other deficiencies.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 DUST ABATEMENT. The CONTRACTOR shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. The CONTRACTOR shall be responsible for any damage resulting from any dust originating from its operations. The dust abatement measures shall be continued until the CONTRACTOR is relieved of further responsibility by the ENGINEER.

1.2 RUBBISH CONTROL. During the progress of the WORK, the CONTRACTOR shall keep the site of the WORK and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The CONTRACTOR shall dispose of all rubbish and waste materials of any nature occurring at the WORK site, and shall establish regular intervals of collection and disposal of such materials and waste. The CONTRACTOR shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the site of construction in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

1.3 SANITATION

A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.

B. Sanitary and Other Organic Wastes: The CONTRACTOR shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the CONTRACTOR or organic material wastes from any other source related to the CONTRACTOR's operations shall be disposed of away from the site in a manner satisfactory to the ENGINEER and in accordance with all laws and regulations pertaining thereto.

1.4 CHEMICALS. All chemicals used during project construction or furnished for project operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer. In addition, see the requirements set forth in paragraph 6.11 of the General Conditions.

1.5 CULTURAL RESOURCES

A. The CONTRACTOR's attention is directed to the National Historic Preservation Act of 1966 (16 U.S.C. 470) and 36 CFR 800 which provides for the preservation of potential historical architectural, archaeological, or cultural resources (hereinafter called "cultural resources").

B. The CONTRACTOR shall conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources.

C. In the event potential cultural resources are discovered during subsurface excavations at the site of construction, stop work immediately and notify the ENGINEER.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01600 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 GENERAL

A. The word "Products," as used herein, is defined to include purchased items for incorporation into the WORK, regardless of whether specifically purchased for project or taken from CONTRACTOR's stock of previously purchased products. The word "Materials," is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, and other like items). Definitions in this paragraph are not intended to negate the meaning of other terms used in Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.

B. Neither "Products" nor "Materials" nor "Equipment" includes machinery and equipment used for preparation, fabrication, conveying and erection of the WORK.

1.2 QUALITY ASSURANCE

A. Source Limitations: To the greatest extent possible for each unit of WORK, the CONTRACTOR shall provide products, materials, or equipment of a singular generic kind from a single source.

B. Compatibility of Options: Where more than one choice is available as options for CONTRACTOR's selection of a product, material, or equipment, the CONTRACTOR shall select an option which is compatible with other products, materials, or equipment already selected. Compatibility is a basic general requirement of product/material selections.

1.3 PRODUCT DELIVERY/STORAGE/HANDLING. The CONTRACTOR shall deliver, handle, and store products in accordance with manufacturer's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at site and overcrowding of construction spaces. In particular, the CONTRACTOR shall ensure minimum holding or storage times for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.

1.4 TRANSPORTATION AND HANDLING

A. Products shall be transported by methods to avoid product damage and shall be delivered in undamaged condition in manufacturer's unopened containers or packaging.

B. The CONTRACTOR shall provide equipment and personnel to handle products, materials, and equipment by methods to prevent soiling and damage.

C. The CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

1.5 STORAGE AND PROTECTION

A. Products shall be stored in accordance with manufacturer's written instructions, with seals and labels intact and legible. Sensitive products shall be stored in weather-tight climate controlled enclosures and temperature and humidity ranges shall be maintained within tolerances required by manufacturer's written instructions.

B. For exterior storage of fabricated products, they shall be placed on sloped supports above ground. Products subject to deterioration shall be covered with impervious sheet covering; ventilation shall be provided to avoid condensation.

C. Loose granular materials shall be stored on solid surfaces in a well-drained area and shall be prevented from mixing with foreign matter.

D. Storage shall be arranged in a manner to provide access for maintenance and inspection. The CONTRACTOR shall periodically inspect to assure products are undamaged and are maintained under required conditions.

1.6 MAINTENANCE OF STORAGE

A. Stored products shall be periodically inspected on a scheduled basis. The CONTRACTOR shall maintain a log of inspections and shall make said log available to the ENGINEER on request.

B. The CONTRACTOR shall verify that storage facilities comply with manufacturer's product storage requirements.

C. The CONTRACTOR shall verify that manufacturer-required environmental conditions are maintained continually.

D. The CONTRACTOR shall verify that surfaces of products exposed to the elements are not adversely affected and that any weathering of finishes does not occur.

E. For mechanical and electrical equipment, the CONTRACTOR shall provide a copy of the manufacturer's service instructions with each item and the exterior of the package shall contain notice that instructions are included.

F. Products shall be serviced on a regularly scheduled basis, and a log of services shall be maintained and submitted as a record document prior to acceptance by the OWNER in accordance with the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 00 01700 - COMPLIANCE CERTIFICATE AND RELEASE FORM

PROJECT: ___Aurora Harbor Rebuild Phase III_____
CONTRACT NO: _DH23-015_

The **CONTRACTOR** must complete and submit this form to the Contract Administrator with respect to the entire contract and submit completed Subcontractor Compliance forms for each Subcontractor used on the Contract and listed on the Subcontractor report.

Completed forms shall be submitted upon completion of the Project. All requirements and submittals must be met before final payment will be made to the CONTRACTOR.

I certify that the following and any referenced attachments are true:

- All WORK has been performed, materials supplied, and requirements met in accordance with the applicable Drawings, Specifications, and Contract Documents.

- All payments to Subcontractors and Suppliers have been made in accordance with Alaska Statute 36.90.210. If not, please provide written explanation, for each case, why and the specific mutual payment agreement reached with the Supplier or Subcontractor.

- CHECK ONE:
  - ☐ All Suppliers and Subcontractors have been paid in full with no claims for labor, materials or other services outstanding.

  - ☐ The following Suppliers and Subcontractors are due final payment which will be made upon the release of the final payment by the CBJ. List the Suppliers and Subcontractors and the amount they are due below (attach separate sheet if necessary) :

  ☐

	Supplier or Subcontractor	Amount Owed
1.		$
2.		$
3.		$
4.		$
5.		$
6.		$
7.		$

- All employees have been paid not less than the current prevailing wage rates set by the State of Alaska (or U.S. Department of Labor, as applicable).

- All equal employment opportunity, certified payroll and other reports have been filed in accordance with the prime contract.
- The attached list of Subcontractors is complete (required from CONTRACTOR). The City Engineer was advised and approved of all Subcontractors before WORK was performed and has approved any substitutions of Subcontractors.
- All DBE firms listed as a precondition of the prime contract award must have performed a commercially useful function in order for the WORK to count to a DBE goal. All DBE firms performed the WORK stated and have received at least the amount claimed for credit in the Contract Documents.
- All DBE Subcontractors must attach a signed statement of the payment amount received, the nature of WORK performed, whether any balance is outstanding, and indicate that no rebates are involved.
- If the amount paid is less than the amount originally claimed for DBE credit, the CONTRACTOR has attached approval from the City Engineer for underutilization.

I understand it is unlawful to misrepresent information in order to receive a payment which would otherwise be withheld if these conditions were not met. I am an authorized agent of this firm and sign this freely and voluntarily. The foregoing statements are true and apply to the following project contractor.

_____ Capacity: CONTRACTOR

Firm Name

_____ _____ _____

Signed Printed Name and Title Date

Return completed form to: Engineering Contracts Division, City and Borough of Juneau, 155 South Seward Street, Juneau, AK 99801 or by email to: contracts@juneau.org

Call (907) 586-0800 ext. 4196 if we can be of further assistance or if you have any questions.

SUBCONTRACTOR COMPLIANCE CERTIFICATE AND RELEASE FORM

PROJECT: ___Aurora Harbor Rebuild Phase III_____
CONTRACT NO: _DH23-015_

Each **SUBCONTRACTOR** must complete and submit this form to the Contract Administrator, through the General Contractor, with respect to the entire contract.

Completed forms shall be submitted upon completion of the Project. All requirements and submittals must be met before final payment will be made to the CONTRACTOR.

I certify that the following and any referenced attachments are true:

- All WORK has been performed, materials supplied, and requirements met in accordance with the applicable Drawings, Specifications, and Contract Documents.

- _____(name of firm) has been paid by the Contractor in accordance with Alaska Statute 36.90.210 (Prompt Pay Requirement). (If not, please provide written explanation on an attached sheet, for each case. Provide specific details why payment was not made and the specific mutual payment agreement reached with the Contractor if it is still unresolved.)

- CHECK ONE:
  - ☐ I / WE have been paid in full by the Contractor, with no claims for labor, materials or other services outstanding.

  - ☐ I / WE are due the following amount from the Contractor which is included in the Contractors Request for Final Payment. WE are due a total of $_____ for the following individual items that have yet to be paid (attach separate sheet if necessary).

	Outstanding Payment Item	Outstanding Amount Owed
1.		$
2.		$
3.		$
4.		$
5.		$
6.		$
7.		$

- All employees have been paid not less than the current prevailing wage rates set by the State of Alaska (or U.S. Department of Labor, as applicable).

- All equal employment opportunity, certified payroll and other reports have been filed in accordance with the prime contract.

I understand it is unlawful to misrepresent information in order to receive a payment which would otherwise be withheld if these conditions were not met. I am an authorized agent of this firm and sign this freely and voluntarily. The foregoing statements are true and apply to the following project contractor.

_____ Capacity: SUBCONTRACTOR

Firm Name

_____ _____ _____

Sign Printed Name and Title Date

Prime Contractor shall return completed form to: Engineering Contracts Division, City and Borough of Juneau, 155 South Seward Street, Juneau, AK 99801 or email: caleb.comas@juneau.org Call (907) 586-0800 ext. 4196 if we can be of further assistance or if you have any questions.

SECTION 01704 - FINAL CLEAN-UP AND SITE RESTORATION

PART 1 - GENERAL

1.1 DESCRIPTION. The WORK under this Section includes providing all supervision, labor, materials, tools and equipment necessary for final clean-up and restoration of all areas disturbed by construction activities, to a condition equal to, or better than, before construction started. This does not include clean-up or restoration incidental to, or directly provided for by, other construction items.

PART 2 - PRODUCTS

2.1 MATERIALS. Any materials required shall conform to the appropriate Section of these Specifications.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. The CONTRACTOR shall clean up all sites disturbed during construction of the project. This includes removal of all construction equipment, disposal of all excess materials, disposal of all rubbish and debris, removal of all temporary structures, and grading of the sites so that no standing water is evident.

END OF SECTION

SECTION 02060 – DEMOLITION AND DISPOSAL

PART 1 - GENERAL

1.1 DESCRIPTION. WORK under this Section shall include all labor, materials, tools and equipment necessary for the demolition, salvage and proper offsite disposal or storage of all items as designated herein and as shown on the plans. The CONTRACTOR shall provide an appropriate disposal site for all items designated to be disposed. Demolition and disposal methods shall meet all local, state and federal regulations.

PART 2 - PRODUCTS (Not Used).

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Examine conditions on site with ENGINEER and OWNER prior to commencement of WORK.

B. Conduct demolition to minimize interference with adjacent structures and interruption to public services.

C. Cease operations immediately if adjacent structures appear to be in danger and notify ENGINEER. Do not resume operations until directed by ENGINEER.

3.2 DEMOLITION AND DISPOSAL

A. All items designated for salvage shall be delivered to an OWNER provided nearby uplands location.

B. Demolish and dispose all other incidental and miscellaneous items as required to complete the project.

C. Place construction signs and barricades as required to prevent public entry into WORK area.

D. Repair any damage to existing facilities designated to remain.

END OF SECTION

02601 – DOMESTIC WATER SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK under this Section requires providing all labor, materials, tools and equipment necessary for the construction of the water system in its entirety, including furnishing and installing; all pipe, flexible hose assemblies with connections, fittings, clamps, hanger assemblies, water service assemblies and pedestals, transitions, flanges, valves, steel stands, hardware, miscellaneous steel shapes and weldments, spare parts, as well as performing all flushing, testing, disinfection and other associated items, complete as shown in the Plans to the satisfaction of the ENGINEER and in accordance with the requirements of the Contract Documents.

1.2 GENERAL REQUIREMENTS

A. The CONTRACTOR shall install the water pipe and fittings to the horizontal and vertical alignment shown on the Plans and shall complete all associated WORK described in this Section.

B. The CONTRACTOR is responsible for knowledge of all permits as well as local, state, and federal codes, standards, or statutes related to the WORK he performs. The CONTRACTOR shall install the system in compliance with such regulations and shall notify the ENGINEER immediately of any discrepancies.

1. The CONTRACTOR shall employ a Mechanical Administrator licensed in accordance with AS 08.40.

2. The water system installer shall possess a Certificate of Fitness for the WORK he performs issued by the Alaska Department of Labor.

C. All water system components shall have NSF 61 and NSF 372 certification unless otherwise approved by the ENGINEER.

D. All water system components shall have a minimum pressure rating of 150 p.s.i. unless otherwise specified.

1.3 REFERENCES

A.	ASME	American Society of Mechanical Engineers
B.	ASSE	American Society of Sanitary Engineering
C.	ASTM	American Society for Testing and Materials
D.	AWWA	American Water Works Association
E.	DIPRA	Ductile Iron Pipe Research Association
F.	NSF	National Sanitation Foundation
G.	PPI	Plastic Pipe Institute
H.	NFPA	National Fire Protection Agency
I.	UL	Underwriter’s Laboratory
J.	FM	Factory Mutual

1.4 SUBMITTALS

A. The Contractor shall review the Specification in its entirety and provide all required submittals to the ENGINEER prior to performing the associated WORK.

B. Submittals shall be compiled by the CONTRACTOR and submitted in accordance with Section 01300 Submittals.

C. On catalogue sheets with more than one item, clearly indicate which item shall be utilized.

D. Submittals for this Section shall include, but may not be limited to the following.

1.	Licenses, permits and certifications for administrators and installers.	
2.	Water pipe and fittings:	Material certifications and catalogue cut sheets.
3.	Flexible Hose and fittings:	Material certifications and catalogue cut sheets.
4.	Waterline appurtenances:	Catalogue cut sheets.
5.	HDPE fusion technician:	Certificate of fitness issued in accordance with 49 CFR 192.285 by an appropriate agency.
6.	Water Pedestals	Shop drawings and all material cut sheets.
7.	Flanges and backup rings:	Cut sheets and material certifications.
8.	Fabricated Steel Components:	Fabricated Steel Submittals per Section 05120-Metal Fabrication
9.	Flushing, testing and disinfection plan.	

1.5 SPARE PARTS

A. The CONTRACTOR shall provide the OWNER with spare parts listed herein prior to completion of the WORK.

1. (12) Shaft zinc anodes for valve risers.

2. (2) Water Pedestals completely assembled with heat trace and electrical cable to disconnect, coordinate with electrical as required.

a. Spare Water Pedestals consist of all components downstream of the 1-inch service connection including hose, fittings and steel ball valve.

PART 2 - PRODUCTS

2.1 HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS

A. High Density Polyethylene Pipe (HDPE) and fittings shall be manufactured in accordance with AWWA C906. HDPE shall be manufactured from PE4710 polyethylene compounds that meet or exceed the following:

1. ASTM D3350 Cell Classification 445574.

2. Pressure Rating – Compounds shall have a PPI recommended Design Basis (HDB of 1,600 psi at 68°F (20°C).

3. Slow Crack Growth Resistance – Shall be measured in accordance with ASTM F1473(PENT). The minimum required time to failure shall be a minimum of 4,000 hours.

4. HDPE pipe and fitting material compound shall contain color and ultraviolet (UV) stabilizer meeting or exceeding the requirements of Code C per ASTM D3350.

B. All HDPE pipe and fittings shall be certified by the NSF for potable water service.

C. HDPE pipe shall be SDR 11 unless otherwise noted.

D. HDPE fittings shall be PE4710 with the cell classification noted above. Fittings shall be molded unless otherwise approved by the ENGINEER with pressure ratings at a minimum equal to that of the pipe. Fittings shall be butt fusion type unless otherwise noted on the plans or approved by the ENGINEER. Electro-fusion connections are allowed where shown on the Plans and elsewhere on a limited basis upon ENGINEER approval. Fittings and connections shall conform to the following:

1. Butt fusion fittings shall meet ASTM D3261
2. Electro-fusion fittings shall meet ASTM F1055
3. Socket fittings are not permitted.

E. Flanged pipe connections are allowed where shown on the Plans and elsewhere on a limited basis upon ENGINEER approval. Flanges shall be PE 4710, with a minimum Cell Classification as noted above. Flanges shall conform to ASTM D 3261 or ASTM F 2206 as applicable. Flanges shall have a pressure rating equal to the pipe unless otherwise specified on the plans. Markings for molded or machined flanges shall be per ASTM D 3261. Fabricated flange adapters shall be per ASTM F 2206.

1. Back-up rings, shall be 316 stainless steel or polypropylene encapsulated where submerged and hot dip galvanized elsewhere unless otherwise noted in the Plans. Bolt-holes and bolt-circles shall conform to one of these standards: ASME B-16.5 Class 150, ASME B-16.47 Series A Class 150, ASME B-16.1 Class 125, or AWWA C207 Class 150 Series B, D, or E. The back-up ring shall provide a long-term pressure rating equal to the pressure class of the pipe or 250 psi, whichever is greater. The pressure rating shall be clearly marked on the back-up ring.

2. Bolts and associated hardware shall be 316 stainless steel where submerged and hot dip galvanized elsewhere unless otherwise noted in the Plans and provided in accordance with Section 05120-Metal Fabrication.

F. Service connections shall be electro-fusion saddles, sidewall fusion branch saddles, or manufactured tapping tees made from materials specified herein unless otherwise noted on the Plans or approved by the ENGINEER. When service connections require a change in pipe material, transitions shall be made with a 316 stainless steel threaded outlet unless otherwise noted in the Plans. Mechanical strap-on saddles shall only be permitted upon ENGINEER approval, and must be approved by the manufacturer for use on HDPE pipe. Mechanical strap-on saddles shall be entirely constructed of 316 stainless steel unless otherwise noted or approved by the ENGINEER. All service connections shall be installed per manufacturer's recommendations.

1. Service connection outlet shall be threaded IPS of the size noted in the Plans.
2. The size of a sidewall fusion saddle shall be as indicated on the plans. The saddle shall be made in accordance with ASTM D 3261 or ASTM F 2206. After installation, approximately ¼" of the PE pipe shall be visible beyond the saddle

to confirm that proper surface preparation occurred. Saddle faces that do not provided ¼ inch of area beyond the saddle are not acceptable.

3. Tapping tees shall conform to ASTM D3261.

G. Transition fittings shall be full bore, butt fusion type IPS transitions of the size and material noted on the Plans.

1. Where transitioning to steel pipe transition shall be 316 stainless steel unless otherwise noted.

2. Where transitioning to copper, brass or bronze pipe transitions shall be red brass or silicon bronze.

H. HDPE ball valves shall be PE 4710 full bore type with a minimum pressure rating greater than or equal to that of the pipe and a 2" operation nut.

1. HDPE ball valves shall be butt fusion type unless otherwise noted in the Plans.

2. CONTRACTOR to confirm compatibility with valve operation riser assembly prior to material order.

I. HDPE lateral motion restraints shall be *GF Piping Systems Electrofusion Flex Restraints*, or HDPE wall anchors conforming to the same pressure material and integrity standards as the HDPE pipe.

2.2 HOT DIP GALVANIZED STEEL PIPE AND FITTINGS

A. Steel pipe and fittings shall be provided in accordance with Section 05120-Metal Fabrication and shall be NSF-61 listed. Steel fittings shall conform to AWWA C208 and shall be NSF 61 listed.

B. Steel flanges shall conform to AWWA C228 and C207 as applicable and shall be factory welded or onto pipe as noted in the plans per AWS recommendations. Flanges shall be provided in accordance with Section 05120-Metal Fabrication.

C. Bolts, nuts, and other miscellaneous hardware shall be hot dip galvanized unless otherwise noted in the Plans and shall be provided according to Section 05120-Metal Fabrication.

2.3 STAINLESS STEEL PIPE AND FITTINGS

A. Stainless steel pipe and fittings shall be 316 stainless steel welded seamless pipe and shall be factory welded unless otherwise approved by the ENGINEER. Pipe and Fittings shall conform to AWWA C220, C226 and Section 05120-Metal Fabrication. Stainless steel pipe and fittings shall be NSF 61 listed.

B. Stainless steel flanges shall be class 150 or greater, 316 stainless steel, conform to AWWA C228 and C207 as applicable and shall be factory welded onto pipe with 316 stainless steel rod as noted in the plans per AWS recommendations. Flanges shall be provided in accordance with Section 05120-Metal Fabrication.

1. CF8M will not be accepted as a suitable substitute for 316 stainless steel welded flanges

C. Where stainless steel pipe and flanges are submerged the pipe and flanges shall be factory welded to a complete assembly. Field welding of stainless steel pipe and fittings shall not be permitted.

D. Bolts, nuts, and other miscellaneous hardware shall be 316 stainless steel unless otherwise noted in the Plans and shall be provided according to Section 05120-Metal Fabrication.

2.4 BRASS AND BRONZE PIPE AND FITTINGS

A. All brass pipe and fittings shall be rated for 150 psi minimum.

B. The terms brass and bronze pipe are used interchangeably and shall be taken to mean threaded schedule 40 "red brass," or bronze of any industry standard type unless otherwise noted.

C. Fittings shall be threaded or flanged where noted.

D. Flanges shall be of similar construction and performance standards as the flanged components to which they are connecting.

E. Pipe and fittings shall be NSF 61 listed.

2.5 INSULATED PIPE AND FITTINGS

A. The contractor shall supply insulated pipe and fittings as shown in the Plans. The minimum service temperature range of all individual components and final products shall be -30° to 90°F. The pipe and fittings shall consist of an HDPE carrier pipe insulated with polyurethane insulation and protected with an HDPE outer jacket.

B. Carrier pipe shall be HDPE as specified in the drawings and conform to the requirements of High Density Polyethylene Pipe and Fittings herein.

C. Insulation between the carrier pipe and outer jacket of all pipe and fittings shall be low-density rigid closed-cell urethane foam. Foam shall be either spray applied or monolithically injected into the annular space between the carrier pipe and jacket such that the resulting insulation completely fills the annular space and is free of defects affecting its intended purpose. Urethane foam shall be bonded to the carrier pipe and conform to the specifications as follows:

Maximum Thermal Conductivity	0.17 $\frac{btu \times in}{hr \times ft^2 \times °F}$	ASTM C518
Core Density Range	1.75 to 4.0 pcf	ASTM D1622
Minimum Compressive Strength (Parallel and perpendicular to pipe axis)	20 psi	ASTM D1621
Maximum Water Absorption	3.5% by volume	ASTM D2842
Dimensional Stability (Maximum Linear Change)	1% at -20°F 3% at +100°F	ASTM D2126

D. The outer jacket shall have a nominal outer diameter of 6" maximum greater than the nominal outer diameter of the carrier pipe, be a minimum of 150 mils thick and be constructed of HDPE with a minimum cell classification 335460C per ASTM D3350.

E. The carrier pipe shall be centered in the HDPE jacket. Centerline offsets shall be no more than ⅜" throughout the length of the pipe and ¼" at the ends. Heat trace channel offset shall be no more than ⅜". Jacket/insulation cutbacks shall be determined by the manufacturer to optimize ease of installation and joint connections.

F. Heat trace channels shall be required where shown in the Plans. Channels shall be fully enclosed and in direct contact with the carrier pipe for its entire length. The inner surface shall be smooth and free of burrs or protrusions. Channel shall extend past the insulation a min. of 2" or as required to adequately make joints with no gaps in channel. Transition pieces shall be provided as required to connect heat trace channel through joints and fittings to maintain channel continuity.

G. Heat trace cable shall be provided and installed as shown in the drawings in accordance with Division 16000 Electrical.

H. Insulated pipe joints, fittings and valves shall be capable of field installation and meet the same thermal insulation and integrity requirements as the pipe. Pipe joints shall be waterproof and shall be installed per the manufacturer's printed instructions.

I. *Canusa Superstop* heat shrink end caps as manufactured by *Canusa CPS* shall be provided for all insulated pipe ends in appropriate sizes.

2.6 FLEXIBLE HOSE AND FITTINGS

A. Flexible hose and fittings shall meet the same pressure and integrity standards as the rigid pipe and shall be manufactured to endure conditions involved with the intended use.

B. Hose materials are known to have extraordinary lead times, coordinate as required.

C. Hoses shall be equipped with threaded or flanged connections compatible with the pipe connections as designated herein and shown in the Plans. Hose end connections shall be one of the following types:

1. *PT Coupling Pro Grip C50* External Crimp System with *PT C50HD Heavy Duty Ferrules* or approved equal.

2. 316 stainless steel pull mandrel internal expansion body with 316 stainless steel pull mandrel ferrule.

3. 316 stainless steel build-in nipples.

D. Nipples, ferrules, and all other associated steel hardware shall be constructed entirely of 316 stainless steel.

E. 3-inch and smaller flexible water hoses shall be *Good Year Vintner* equipped with an FDA compliant white chlorobutyl tube or approved equal.

1. 1-inch hose shall be equipped with 316 stainless steel threaded connections.

2. 3-inch hose shall be equipped with fixed flanges compatible with pipe flanges to which they shall be connected as shown in the plans and as specified herein.

F. Flanges for hose assemblies both fixed and floating with all associated steel fittings and hardware shall be 150 lb. and shall be constructed entirely of 316 stainless steel.

1. All welds shall be completed with 316 stainless steel rod.

2. No more than one floating flange assembly shall be allowed per hose.

3. Threaded on flange assemblies shall not be permitted.

4. All flange connection hardware shall be 316 stainless steel provided in accordance with Section 05120-Metal Fabrication.

5. Flange gasket material shall be NSF-61 listed or FDA compliant and shall be compatible with both potable and salt water as stated by the manufacturer.

G. On hoses with internal steel wire reinforcement the CONTRACTOR shall apply *3M 5200 Marine Grade Sealant* to the cut ends of the hose as required to completely seal the exposed cut section.

1. Sealant shall be field applied in the presence of the ENGINEER unless otherwise approved in writing by the ENGINEER.

2. Sealant shall be applied in a manner that ensures sealant does not intrude into carrier tube of hose or connected pipe.

H. Hose construction, fittings installation and hose assembly installation shall be completed per manufacturer's recommendations to meet pressure and integrity standards as specified herein.

I. The ENGINEER may perform, on a randomly selected hose assembly, metallurgical testing of steel fittings, flanges, ferrules or miscellaneous steel hardware to verify compliance with this specification. The first test shall be paid for by the OWNER. Should the test reveal non-compliance with this specification, **all** of the hose assemblies shall be tested at the CONTRACTOR's expense. Non-compliant hose assemblies shall be replaced, in their entirety, at no cost to the OWNER. Replacement hoses shall also be tested at the CONTRACTOR's expense. Any metallurgical testing required after the first test shall be paid for by the CONTRACTOR and shall be at the sole discretion of the ENGINEER.

2.7 PIPE LUBRICANT

A. The lubricant shall be suitable, and acceptable by the manufacturer and the City and Borough of Juneau Water Utility for lubricating the parts of the joint for assembly. The lubricant shall be non-toxic, "industrial food grade", shall not support the growth of bacteria, and shall have no deteriorating effects on the gasket material. It shall not impart taste or odor to the water in a pipe that has been flushed in accordance with AWWA C601, "Standard for Disinfecting Water Mains". The lubricant containers shall be labeled with the trade name or trademark and the pipe manufacturer's name where applicable."

2.8 CONCRETE

A. Concrete shall conform to Section 03301 – Structural Concrete unless otherwise indicated.

2.9 STEEL COMPONENTS

A. All steel components, hangers, supports, steel stands, mounting brackets, plates, other miscellaneous steel shapes and all hardware shall be 316 stainless steel or hot dip

galvanized unless otherwise noted and provided in accordance with the provisions of Section 05120-Metal Fabrication.

B. Pipe clamps and straps shall be shall be *Cooper B2400 or Cooper B318FL* as applicable or approved equal manufactured in 316 stainless steel or hot dip galvanized.

C. Channel Nuts shall be Cooper model N225SS6 with springs and ½" attachment bolts or approved equal provided in 316 stainless steel.

2.10 UHMW PE

A. Ultra High Molecular Weight (UHMW) Polyethylene components shall be manufactured from virgin polyethylene material, be U.V. stabilized and shall be partially cross-linked. UHMW components shall be black in color, unless otherwise noted, and edges chamfered as shown on Plans.

2.11 EPOXY ANCHORS

A. Epoxy anchors shall be 316 stainless steel threaded rod of the size specified in the drawings anchored with *Hilti HIT-RE500-SD Epoxy Adhesive* unless otherwise noted.

2.12 ANODES

A. Anodes shall be provided and installed on water system components in the locations and to the approximate dimensions shown in the Plans.

B. Shaft zinc to be installed on the valve operation assembly riser shall be *Harbor Island Supply Donut Collar Anode # C-1* or approved equal.

2.13 FLOAT WATER SYSTEM COMPONENTS

A. The outer shell of the Water and Fire Pedestals shall be constructed of SDR 17 HDPE fittings and pipe provided in accordance with section 2.4 herein except pedestal shell does not require pressure rating.

1. Shell fittings and pipe shall be joined by butt-fusion as specified herein.

B. Hose bibs for water pedestals shall be ARROWHEAD BRASS ICEBREAKER FROST PROOF WALL HYDRANT MODEL 608-08LF.

1. Extension valve shall be the maximum length practicable to ensure valve is well heated and insulated.

C. 1" ball valves shall be constructed of 316 stainless steel as designated in the plans with FPT outlets.

1. Handles and operating nuts shall be 316 stainless steel or shall be removed prior to putting pedestals into service.

D. Exterior shrink wrap located at the pedestal bases shall be *Canusa SuperStop CSS-60*

1. *Canusa ECS-B 30-15* additional end cap sealant shall be utilized on the 1" HDPE transition fitting end.

2. Install heat shrink sealants and caps per manufacturer's written instructions to fully waterproof the pedestals.

E. Pedestal insulating materials shall be of sufficient thermal resistance to maintain water temperatures above freezing under all local weather conditions. Install per manufacturer's recommendations.

1. Lower pedestal insulation between the carrier pipe and shell shall be low-density rigid closed-cell urethane foam. Foam shall be either spray applied or monolithically injected into the annular space between the carrier pipe and shell such that the resulting insulation completely fills the annular space and is free of defects affecting its intended purpose. Urethane foam shall conform to the specifications as follows:

Maximum Thermal Conductivity	0.17 $\frac{btu \times in}{hr \times ft^2 \times °F}$	ASTM C518
Core Density Range	1.75 to 4.0 pcf	ASTM D1622
Minimum Compressive Strength (Parallel and perpendicular to pipe axis)	20 psi	ASTM D1621
Maximum Water Absorption	2.5% by volume	ASTM D2842
Dimensional Stability (Maximum Linear Change)	1% at -20°F 3% at +100°F	ASTM D2126

2. A physical barrier or non-hydrocarbon based releasing agent shall be applied to the carrier pipe prior to installing the foam insulation to ensure pipe does not bond to insulation.

a. Barrier or agent shall not negatively affect the insulation's chemical or structural properties and shall not diminish the thermal resistance of the unit.

3. Upper pedestal insulation shall be *Thermafiber Granulated Wool, Packing Wool* or approved equal water resistant fibrous insulation.

F. Heat trace shall be per Electrical Plans and Specifications.

PART 3 - EXECUTION

3.1 GENERAL

A. The CONTRACTOR shall preserve and protect all existing utilities and other facilities including but not limited to: telephone, television, electrical, water and sewer utilities, surface or storm drainage, highway or street signs, mail boxes, and survey monuments.

B. The CONTRACTOR shall immediately notify the City and Borough of Juneau of utilities or other facilities damaged during construction and shall immediately repair or replace that which was damaged. The CONTRACTOR shall support and protect any underground utility conduits, pipes, or service lines where they cross the trench.

C. Where CBJ waterlines are specified to be "Hot Tapped" taps shall be performed by the CBJ Water Utility with their tools unless otherwise indicated in the Plans or directed by the ENGINEER. The CONTRACTOR shall coordinate his work as required to provide 48 hours minimum notice to the Utility.

1. The Contractor shall have tapping sleeve and valve installed per design prior to the arrival of the CBJ Water Utility.

2. The Utility shall have the authority to reject the installation of the tapping sleeve and valve should it deem the CONTRACTOR's work unsatisfactory. Should the Utility reject the installation the CONTRACTOR shall immediately take corrective action to the satisfaction of the Utility and the ENGINEER. The CONTRACTOR shall reschedule the WORK as required.

D. The CONTRACTOR shall comply with the current policy on "Water and Sewer Line Locates" of the City and Borough of Juneau Public Works Department, Water and Wastewater Utilities Divisions.

E. The CONTRACTOR shall give at least 48 hours notice to the affected utility division, the Fire Department and the City and Borough of Juneau Harbors Department prior to:

1. Needing water or sewer main line locates;

2. Interruption of water service in any area; or

3. Use of water from any fire hydrant.

F. The CONTRACTOR shall review product cut sheets and installation instructions for all products and shall handle, install, test and operate all products per the manufacturer's recommendations to the extent required to perform the WORK. Unless otherwise approved in writing by the ENGINEER the CONTRACTOR shall not deviate from manufacturer's instructions or recommendations.

3.2 SERVICE INTERRUPTIONS AND TEMPORARY SERVICE

A. The CONTRACTOR is responsible for maintaining continuous water service at existing volume and pressure to all structures, with; existing, temporary or new piping, except as provided in this Section.

B. All costs associated with notifications, and authorizations for services interruptions as well as the costs for providing temporary water service shall be borne by the CONTRACTOR.

C. Any water service disruption shall approved in advance by the ENGINEER and services be restored as soon as possible.

1. The ENGINEER will not approve a planned service interruption if in the opinion of the ENGINEER a suitable alternative is available.

D. The CONTRACTOR shall notify all local radio stations and any major customers who will be affected by a planned water service disruption a minimum of 48 hours in advance of the planned interruption.

3.3 PIPE INSTALLATION

A. All water pipe and fittings shall be inspected for defects. Damaged pipe will be rejected and the CONTRACTOR shall immediately place all damaged pipe apart from the undamaged and shall remove the damaged pipe from the site within 24 hours.

B. Whenever it becomes necessary to cut a length of water pipe, the cut shall be made by abrasive saw or by special pipe cutter.

C. The water pipe shall be laid to the horizontal and vertical alignment shown on the Plans. When buried the minimum cover as shown in the Plans shall be maintained from finish grade to top of water pipe, unless otherwise noted. Fittings shall be installed at the location shown on the Plans and elsewhere upon ENGINEER approval.

D. To prevent dirt, fluids, or other foreign material from entering the pipe and fittings during handling and installation, the open end of the pipe shall be protected by a water-tight plug at all times except when joining the next section of pipe.

E. Under no circumstances shall pipe deflections, either horizontal or vertical, exceed the manufacturer's printed recommendations. Where deflections would exceed the manufacturer's recommendations, fittings shall be used.

F. Existing water pipe and appurtenances to be removed or abandoned shall be as designated on the Plans or directed by the ENGINEER. Abandoned water pipes shall be removed as shown on the Plans, or mechanically plugged if not required to be removed.

G. Suspended pipe shall be installed in a manner that adequately supports the pipe at all times per manufacturer's recommendations.

3.4 HDPE PIPE INSTALLATION

A. HDPE water pipe and fittings shall be joined using butt fusion unless otherwise specified in the Plans or approved by the ENGINEER. The pipe shall be joined by the butt fusion procedure outlined in ASTM F 2620. All fusion joints shall be made in compliance with the pipe or fitting manufacturer's recommendations by certified technicians. The CONTRACTOR shall submit a certificate of fitness issued by the pipe manufacturer for each technician prior to beginning fusion operations.

B. Saddle fusion shall be done in accordance with the manufacturer's recommendations and ASTM F 2620. Saddle fusion joints shall be made by qualified fusion technicians. If the CONTRACTOR intends to use saddle fusion joints testing of sample joints may be required per the direction of the ENGINEER in accordance with ASTM F905.

C. Electro-fusion joining shall be done in accordance with the manufacturer's recommended procedure and ASTM F 1290. The electro-fusion transformer unit shall be the type capable of reading the electronic barcode associated each fitting and storing the fuse input and result information electronically. The CONTRACTOR shall maintain the data recorded by the electro-fusion unit throughout the warranty period of the WORK. This information shall be provided to the ENGINEER upon request. Electro-fusion joints shall be made by a qualified technician.

D. Flange installation shall follow the guidelines of Plastic Pipe Institute Technical Note # 38.

E. Socket fusion joints are not permitted.

3.5 EPOXY ANCHORS

A. Epoxy anchors shall be installed per the manufacturers explicit instructions to the depths specified in the drawings or to the manufacturer's recommended minimum anchor effective embedment if no depth is specified.

3.6 FLUSHING, TESTING AND DISINFECTION

A. Prior to flushing, testing, disinfection or placement of any section of the water system into service, the procedures outlined by the manufacturers of the various system

components shall be reviewed and followed as they apply unless otherwise approved in writing by the ENGINEER. Should any of the work items listed in **Part 3-Execution** jeopardize the integrity or warranty of the various components according to the manufacturers printed literature the CONTRACTOR shall consult with the ENGINEER prior to proceeding. Any damage incurred due to the failure to comply with this provision shall be repaired in a manner satisfactory to the ENGINEER at the CONTRACTOR's expense.

B. Prior to acceptance, the CONTRACTOR shall "Open-Bore" flush the water pipe then perform hydrostatic tests, disinfection and coliform tests. Testing shall be done in the following sequence.

1. Open-bore flushing
2. Hydrostatic testing
3. Disinfection

C. CONTRACTOR shall submit, in writing, for the ENGINEER to review and approve a schedule and procedure for the flushing, pressure testing, chlorination and bacteriological testing of all newly installed pipe. When, in the opinion of the ENGINEER, the testing and flushing schedule or procedures are deficient, inadequate, improper, or conditions are such that the existing water service areas are adversely affected by service interruptions, the CONTRACTOR will be notified in writing by the ENGINEER. Such notification shall be accompanied by a statement of the corrective action to be taken. CONTRACTOR shall adhere to the testing and flushing schedule and comply with such instruction as directed by the ENGINEER.

3.7 OPEN-BORE FLUSHING

A. All newly installed water facilities shall be "Open-Bore" flushed to remove any foreign matter. "Open-Bore" flushing shall be accomplished prior to hydrostatic testing and disinfection at each extremity of the main, including all fire lines, services, stub-outs and dead-ends. The Contractor shall furnish, install and remove all fittings and pipes necessary to perform the flushing, at no additional cost to the OWNER. Open-bore flushing through hydrants, meters, backflow preventers, and pressure reducing valves or reduced outlets shall not be permitted unless specifically authorized in writing by the ENGINEER. All flushing water shall be controlled as to not damage OWNER or neighboring properties.

B. The CONTRACTOR shall notify the ENGINEER and the City and Borough of Juneau Water Utility, in writing, 48 hours in advance of any flushing operation. The CONTRACTOR shall be responsible for obtaining any permits necessary for flushing operations.

3.8 HYDROSTATIC TESTING

A. The CONTRACTOR shall hydrostatically test all newly installed water pipe as well any as affected existing pipe as determined by the ENGINEER.

B. The ENGINEER shall be present for all hydrostatic and leakage tests.

1. The CONTRACTOR shall notify the ENGINEER forty-eight (48) hours, (two (2) working days) prior to any test and shall notify the ENGINEER two (2) hours in advance of the scheduled time if the test is to be cancelled. In the event the ENGINEER has not been notified of cancellation and the CONTRACTOR is not prepared for the test as scheduled, the CONTRACTOR shall reimburse the

ENGINEER for all expenses incurred. These will include, but not be limited to, salaries, transportation and administrative costs.

C. Sections to be tested shall be limited to 1,500 feet, unless otherwise approved in writing by the ENGINEER.

D. Hydrostatic testing shall be conducted after "Open-Bore" flushing, in accordance with the requirements of AWWA C600 or C901 and as stated herein. The CONTRACTOR shall furnish all assistance, equipment, labor, materials, and supplies necessary to complete the test to the satisfaction of the ENGINEER.

E. The CONTRACTOR shall suitably valve-off or plug the outlet to existing or previously tested water pipe prior to perform the required hydrostatic test.

F. The CONTRACTOR may install saddles, corporation stops or test ports on a limited basis to perform testing as required herein.

1. Test connections shall be identified in the CONTRACTOR's Flushing, Testing and Disinfection Plan.

G. Prior to testing, all air shall be expelled from the water pipe. If permanent air vents are not available to accommodate testing, the CONTRACTOR shall install corporation stops and blow-off lines so the air can be expelled as the line is filled with water as approved by the ENGINEER.

H. Systems comprised of multiple pipe materials may be tested together as approved by the ENGINEER.

I. Defective materials or poor quality of WORK, discovered as a result of the hydrostatic tests, shall be replaced by the CONTRACTOR. Whenever it is necessary to replace defective material or correct the workmanship, the hydrostatic test shall be repeated until a satisfactory test is obtained.

J. After completion of testing, all test and air pipes fittings, valves and other miscellaneous appurtenances installed for testing shall be removed unless otherwise approved by the ENGINEER. Corporation stops installed for testing shall remain and shall be closed in the presence of the ENGINEER.

3.9 HDPE HYDROSTATIC TESTING PROCEDURE

A. Testing shall be performed with water only. Compressed gas will not be accepted as a suitable test medium.

B. The hydrostatic test pressure shall be a minimum of 150 psi or 1½ times the operating pressure of the water pipe (measured at the highest elevation of the newly-installed water pipe), whichever is greater, unless otherwise directed by the ENGINEER.

C. Acceptance pressure testing shall be done with all service lines installed, corporation stops open, and pressure against the closed curb stops and outlet valves. If appurtenances in the system have a maximum pressure rating lower than that specified above they will be isolated from the system by the CONTRACTOR and tested separately per manufacturer's recommendations as approved by the ENGINEER. If isolation cannot reasonably be performed as determined by the ENGINEER the test pressure for the system shall be equal to 95% of the maximum operating pressure of the lowest pressure rated component in the system.

D. Testing shall be performed with all parts of the system within the test section installed in their design location to the extent possible and reasonable as determined by the ENGINEER. All parts of the section to be tested shall be restrained from movement in case of failure.

E. HDPE hydrostatic testing shall be performed using the "pressure drop" method. The "make up water" test method will not be accepted. Testing shall be performed in accordance with ASTM F-2164 and the procedure described herein:

1. Fill the test section slowly with water ensuring all air is purged from the system. Filling should be performed from the point in the system lowest in elevation. If this point is inaccessible the CONTRACTOR shall take reasonable measures to ensure the system is purged of air prior to testing.

2. Allow the test section temperature to equalize throughout.

3. Slowly pressurize the test section to the test pressure as indicated in part B.

4. Add make-up water as necessary to maintain the test pressure for a minimum of 4 hours.

5. Reduce the pressure by 10 psi; this will be the test phase pressure.

6. Without increasing the pressure or adding make-up water monitor the system and visually inspect for leakage. A passing test is indicated if no visual leakage is observed and the pressure remains within 5% of the test phase pressure for a minimum of 1 hour.

F. All valves shall be tested unless otherwise approved by the ENGINEER.

1. Valves shall be tested by closing the valve with the system pressurized then relieving downstream pressure. If line pressure is maintained the valve is acceptable.

G. If the test section fails, depressurize the system and repair defective areas.

1. The system must be allowed to "relax" for a minimum of 8 hours prior to retesting.

3.10 DISINFECTION

A. Disinfection by chlorination of all new water pipe shall be completed and a satisfactory bacteriological report obtained prior to placing the pipe in service. "Open-bore" flushing shall be completed before chlorination is begun.

B. Chlorine shall be applied by one of the following methods:

1. Liquid chlorine gas-water mixture;

2. Direct chlorine gas feed; or

3. Hypochlorite commercial products such as HTH, Perchloren, Macho-chlor, or approved equal.

The chlorinating agent shall be applied at the beginning of the section adjacent to the feeder connection, insuring treatment of the entire water pipe. Water shall be fed slowly into the new water pipe with chlorine applied in amounts to produce a dosage of

50 ppm. Application of the chlorine solution shall continue until the required residual of not less than 50 ppm free chlorine is evident at all extremities of the newly constructed line.

C. The chlorine gas-water mixture shall be applied by means of a solution-feed chlorinating device. Chlorine gas shall be fed directly from a chlorine cylinder equipped with a suitable device for regulating the rate of flow and the effective diffusion of gas within the water pipe. Hypochlorite products shall be placed or injected into the water pipe. During the chlorination process, all intermediate valves and accessories shall be operated. Valves shall be manipulated so that the strong chlorine solution in the water pipe being treated will not flow back into the pipe supplying the water.

D. The following table is to be used as a guide for chlorinating pipes by the calcium hypochlorite and water mixture method. The given dosage per 100 feet results in a chlorine solution of 40 to 50 ppm. This dosage takes into account that CONTRACTORs most frequently use granular HTH, which is 65% pure. If another chlorinating agent is used, the dosage must be adjusted.

PIPE DIAMETER	DOSAGE PER 100 FEET
4”	.60 oz.
6”	1.35 oz.
8”	2.75 oz.
10”	4.30 oz.
12”	6.19 oz.
16”	11.00 oz.
20”	17.00 oz.

E. A residual of not less than 50 ppm free chlorine shall be produced in all parts of the water pipe. After 24 hours detention there shall be a minimum free chlorine residual of 25 ppm in all parts of the water pipe. This residual shall then be neutralized in the pipe by injecting an approved reducing agent such as sulfur dioxide, sodium bisulfate, sodium sulfite or sodium thiosulfate.

F. After the water pipe system has been thoroughly flushed, samples will be taken at representative locations in the system by the ENGINEER, placed in sterile bottles, and submitted to an approved laboratory for bacteriological examination. The presence of bacteria in any sample shall be verified with a second sample at the same location. If verified, the pipe disinfection procedure shall be repeated and additional samples taken for bacteriological examination. Pipe disinfection shall be repeated, at the CONTRACTOR’s expense, until satisfactory results are obtained. The first testing sequence will be paid for by the OWNER. Any further testing and sampling required due to insufficient disinfection (positive coliform tests) will be paid for by the CONTRACTOR.

G. The water shall be flushed from the water pipe at its extremities, including all curb stops, until the replacement water chlorine residuals are equal to those of the permanent source of supply. The de-chlorinated water and water used for flushing shall be disposed of in a manner approved by the ENGINEER and in conformance with current requirements of the Alaska Department of Fish and Game, and the Alaska Department of Environmental Conservation.

PART 4 - ACCEPTANCE

4.1 CITY AND BOROUGH OF JUNEAU

A. Prior to acceptance the Contractor shall contact the City and Borough of Juneau Water Utility and have the meter enclosure, meter, and meter reading device inspected and tested by a City and Borough of Juneau Official.

B. Prior to acceptance the Contractor shall contact the City and Borough of Juneau Community Development Department and have all backflow prevention devices, pressure relief valves and other components as required per municipal code inspected by a CBJ building inspector.

C. Acceptance of the system shall be contingent upon the satisfaction of the CBJ officials with the installation and testing of their respective systems and components to the extent required by the Contract Documents.

END OF SECTION

SECTION 02611 –FIRE SUPPRESSION SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK under this Section requires providing all labor, materials, tools and equipment necessary for the installation of the fire suppression standpipe system in its entirety, including furnishing and installing; all pipe, fittings, clamps, hangers, standpipes, transitions, flanges, valves, steel stands, hardware, and miscellaneous steel shapes, as well as performing all flushing, testing, coordination with the Fire Department and other associated items, complete as shown in the Plans to the satisfaction of the ENGINEER and in accordance with the requirements of the Contract Documents.

B. Signage required for the fire suppression system as shown in the plans shall be provided as a requirement of Section 02718 – Signage.

1.2 GENERAL REQUIREMENTS

A. The CONTRACTOR shall install the fire suppression system pipe and fittings to the horizontal and vertical alignment shown on the Plans and shall complete all associated WORK described in this Section.

B. The CONTRACTOR is responsible for knowledge of all permits as well as local, state, and federal codes, standards, or statutes related to the WORK he performs. The CONTRACTOR shall install the system in compliance with such regulations and shall notify the ENGINEER immediately of any discrepancies.

1. The CONTRACTOR shall employ a Mechanical Administrator licensed in accordance with AS 08.40.

2. The fire suppression system installer shall possess a Certificate of Fitness for the WORK he performs issued by the Alaska Department of Labor.

3. Fire Suppression System shall be a Class II manual wet standpipe system as indicated on the drawings and in accordance with NFPA #303 and NFPA #14. Installer shall possess a Class IIB Alaska Fire System Permit. All piping, materials and design items specifically indicated that do not comply with NFPA #14 have been approved by the Authority Having Jurisdiction as acceptable for this standpipe system installation.

C. All fire system components shall be listed as defined by the NFPA except as otherwise specified and approved by the ENGINER and the Authority Having Jurisdiction.

D. All fire system components shall have a minimum pressure rating of 175 psi.

1.3 SUBMITTALS

A. All dry fire line system component catalogue cut sheets, indicate application location. On manufacturer data sheets with several items, clearly identify items intended for use.

B.	Pipe and fittings:	Material certifications and catalogue cut sheets.
C.	Fire System appurtenances:	Catalogue cut sheets.
D.	HDPE fusion technician:	Certificate of fitness issued in accordance with 49 CFR 192.285 by an appropriate agency.

E.	Flanges and backup rings:	Material certifications and shop drawings
F.	Steel Component:	Shop drawings per Section 05120-Metal Fabrication

G. Flushing and testing plan.

H. On catalogue sheets with more than one item clearly indicate which item shall be utilized.

1.4 SPARE PARTS

A. The CONTRACTOR shall provide a fire suppression system pump assembly to the Owner. Pump assembly shall consist the following.

1. (1) 120-volt, non-submersible, self-priming portable pump. 20 GPM minimum.

2. (1) ¾-inch minimum 18-foot long suction hose assembly compatible with the specified pump with appropriate connection fittings.

a. Suction hose shall be rated for 20 inmg minimum vacuum.

b. Suction hose and fittings shall be rated for 80 psi minimum.

3. (1) ¾ -inch minimum, 10-foot long discharge hose assembly compatible with the specified pump with appropriate connection fittings.

a. Discharge hose and fittings shall be rated for 80 psi minimum.

4. Appropriate brass fittings to connect both the suction and discharge lines to standard ¾-inch garden hose.

5. Submit manufacturer's catalogue sheets, warranty information and operation and maintenance manuals to the ENGINEER prior to order.

PART 2 - PRODUCTS

2.1 PIPE AND FITTINGS

A. HDPE pipe and fittings shall be PE4710 with a minimum pressure rating of 200 p.s.i. provided in accordance with 02601-Domestic Water System; Article 2.1-High Density Polyethylene Pipe and Fittings.

B. HDPE pipe shall be SDR 11 unless otherwise noted.

C. Hot dip galvanized steel pipe shall be schedule 40 ASTM A53 grade B type E or S.

D. Stainless steel pipe and fittings shall have a min. pressure rating of 200 psi and shall be provided in accordance with the following:

1. Stainless steel pipe shall conform to AWWA C220 and Section 05120-Metal Fabrication.

2. Stainless steel flanges shall conform to AWWA C228 and C207 as applicable and shall be factory welded onto pipe per AWS recommendations. Flanges shall be provided in accordance with Section 05120-Metal Fabrication.

3. Bolts, nuts, and other miscellaneous hardware shall be 316 stainless steel unless otherwise noted in the Plans and shall be provided according to section 05120-Metal Fabrication.

E. Flanged pipe connections are allowed where shown on the Plans and elsewhere on a limited basis upon Engineer approval. All flanged connections shall have 316 stainless steel convoluted flange backup rings and 316 stainless steel connecting hardware and provided in accordance with Section 02601 – Domestic Water System and Section 05120 – Metal Fabrication.

2.2 FIRE SUPPRESSION SYSTEM COMPONENTS

A. The fire department inlet connection shall be brass 4”x2½”x2½” single clapper FDC inlet rated for a minimum of 175 psi.

1. Fire department inlet connection shall be indexed “STANDPIPE”. The indexing shall be cast in by the manufacturer.

2. The fire department connection shall be complete with interior independent self-closing clappers, and shall have threads to meet the local fire department requirements.

3. Inlet lateral motion restraint shall be *GF Piping Systems Electrofusion Flex Restraint* or approved equal. Install per manufacturer’s recommendations.

B. The fire department standpipe connection shall be 2½” brass as shown in the Plans with fire department compatible threads and rated for a minimum of 200 psi.

1. Standpipes shall have threaded brass caps to protect the threads with brass chain.

C. Fire standpipe and pump out gate valves shall conform to AWWA C515 and shall be listed. Valves shall be equipped with a hand wheel and rated for a minimum of 200 psi.

1. Pump out shall have a brass plug with chain installed.

2.3 BRACKETS AND MOUNTING HARDWARE

A. All galvanized steel brackets and associated mounting hardware shall be as shown in the Plans and provided in accordance with Section 05120 – Metal Fabrication.

B. Pipe straps shall be *Cooper B318FL* or approved.

PART 3 - EXECUTION

3.1 GENERAL

A. CONTRACTOR and Fabricator to verify all fit-ups prior to order.

3.2 INSTALLATION

A. Dry fire line installation shall be in accordance with Section 02601 – Domestic Water System, as applicable.

3.3 OPEN-BORE FLUSHING

A. Fire suppression system pipe shall be flushed in the presence of the CBJ Fire Department with their pumper truck. Coordinate with the CBJ Fire Department to complete flushing as required.

B. Flush line per Section 02601 – Domestic Water System, provided appropriate notices and scheduling with the CBJ water utility.

3.4 HYDROSTATIC TESTING

A. Provide dry fire line hydrostatic testing per Section 02601 – Domestic Water System, except the hydrostatic test pressure shall be 200 p.s.i. and the test period shall be a minimum of 2 hours.

B. Hydrostatic testing of the fire suppression system shall be performed in the presence of a representative of the CBJ Fire Department. Provide 48 hours notice prior to testing.

C. Perform hydrostatic testing in accordance with the manufacturer's recommended procedures.

3.5 SYSTEM ACCPETANCE

A. Prior to acceptance the CONTRACTOR shall pump out the system to ensure fluid level in the standpipe system is a minimum of 4" below the seawater level.

B. Prior to acceptance the Contractor shall confirm all fire line valves are left in the open position.

END OF SECTION

SECTION 02702 – CONSTRUCTION SURVEYING

PART 1 – GENERAL

1.1 DESCRIPTION

A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary to perform all surveying and staking necessary for the completion of the Project in conformance with the Drawings and Specifications and standard engineering and surveying practices, including all calculations required to accomplish the WORK.

B. The WORK shall include the staking, referencing and all other actions as may be required to preserve and restore land monuments and property corners which are situated within the Project area, and to establish monuments as shown on the Drawings.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 CONSTRUCTION

A. All surveying involving property lines or monuments shall be done by, or under the direction of, a Registered Land Surveyor licensed in the State of Alaska.

B. The OWNER will supply information relative to the approximate locations of monuments and corners, but final responsibility for locations, referencing, and restoration shall rest with the CONTRACTOR.

C. In the event the CONTRACTOR does not replace the survey monuments and property corners disturbed by the CONTRACTOR's operations, the OWNER may, after first notifying the CONTRACTOR, replace the monuments in question. The cost of such replacements shall be deducted from payments to the CONTRACTOR.

D. The CONTRACTOR shall provide the OWNER with a copy of all surveyors' notes, if requested by the ENGINEER, prior to each Pay Request payment for which payment for Pay Item No. 2702.1, Construction Surveying, is increased from the previous Pay Request payment.

E. The CONTRACTOR shall provide the OWNER with a copy of all surveyors' notes, prior to the request for final payment, and include the information on the record drawings.

F. The CONTRACTOR shall obtain all information necessary for as-built plan production, from actual measurements and observations made by its own personnel, including Subcontractors, and submit this information to the ENGINEER.

G. The CONTRACTOR shall use competent, qualified personnel and suitable equipment for the layout work required and shall furnish all stakes, templates, straightedges and other devices necessary for establishing, checking and maintaining the required points, lines and grades.

H. The CONTRACTOR shall perform all staking necessary to delineate clearing and/or grubbing limits; all cross sections necessary for determination of excavation and

embankment quantities, including intermediate and/or remeasure cross sections as may be required; all slope staking; all staking of culverts and drainage structures, including the necessary checking to establish the proper location and grade to best fit the conditions on site; the setting of such finishing stakes as may be required; the staking of right-of-way; the staking and layout of all structures including foundations, floats, retaining walls, piles, pile caps, deck and sub deck assemblies, railings, and gangways; referencing and other actions as may be required to preserve or restore land monuments and property corners; and all other staking necessary to complete the project.

I. Field notes shall be kept in standard bound notebooks in a clear, orderly and neat manner, consistent with standard engineering and surveying practices. The CONTRACTOR's field books shall be available for inspection by the ENGINEER at any time.

J. All field survey notes, including those which become source documentations from which quantities for payment are computed, shall be recorded by a notekeeper furnished by the CONTRACTOR. The notekeeper shall be thoroughly familiar with generally accepted standards of good survey notekeeping practice.

K. The ENGINEER may randomly spot-check the CONTRACTOR's surveys, staking and computations at the ENGINEER's discretion. After the survey or staking has been completed, the CONTRACTOR shall provide the ENGINEER with a minimum of 72 hours notice prior to performing any WORK, and shall furnish the appropriate data as required, to allow for such random spot-checking; however, the OWNER assumes no responsibility for the accuracy of the WORK.

L. The ENGINEER may make minor adjustments in grades and locations of improvements based on the staking information provided by the CONTRACTOR. The CONTRACTOR shall adjust the grade stakes as required to accommodate minor changes at no additional cost to the OWNER.

END OF SECTION

SECTION 02718 – SIGNAGE

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK under this Section includes providing all labor, materials, tools, and equipment necessary for furnishing and installing signs and support assemblies for the fire suppression system, gangways, approach dock, including attachment assemblies, hardware and all other miscellaneous appurtenances, complete as shown in the Plans to the satisfaction of the ENGINEER and in accordance with the requirements of the Contract Documents.

1.2 SUBMITTALS

A. Fabrication Shop Drawings for all signage and stands.

B. Attachment method details for CONTRACTOR devised attachments as specified in the Plans.

PART 2 - PRODUCTS

2.1 SIGNS

A. All sign panels shall be constructed of Engineer Grade sheeting, or better.

B. All sign background color shall be white reflective unless otherwise noted.

C. All sign material, thickness and reflective paint shall conform to Alaska DOT&PF Standard Specifications for Highway Construction, Section 615 – Standard Signs and to be provided in accordance with the Plans.

2.2 SUPPORT ASSEMBLIES

A. Support assemblies for signs shall be hot dip galvanized steel provided in accordance with Section 05120 Metal Fabrication unless otherwise noted.

1. Where not specifically identified in the plans support assembly or sign mounting details shall be developed by the CONTRACTOR and approved by the ENGINEER prior to the installation of the signage.

B. Strut shall be *Cooper B22SH Channel* or approved equal 12 gauge hot dip galvanized strut provided in accordance with Section 05120 Metal Fabrication.

C. All Hardware shall be 316 SS or hot dip galvanized unless otherwise noted in the plans and shall be provided in accordance with Section 05120 Metal Fabrication

PART 3 - EXECUTION

3.1 SIGNS

A. Sign assemblies shall be installed at locations shown on the Drawings. The exact location will be marked in the field by the ENGINEER. The CONTRACTOR shall notify the ENGINEER a minimum of seven days prior to installation of the signs.

END OF SECTION

SECTION 02882 – MARINE MAMMAL WORK SUSPENSION

PART 1- GENERAL

1.1 DESCRIPTION

A. The WORK under this Section shall be performed on a contingency basis and shall be field directed by the ENGINEER during construction. The contingent work includes providing all labor, materials, tools, and equipment necessary for delays to WORK suspended by the OWNER as a result of conditions/requirements detailed in the permit Special Conditions and NMFS Mitigation Measures. All WORK shall be in accordance with the Contract Documents and field directives provided by the ENGINEER and OWNER.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 MARINE MAMMAL OBSERVATION AND WORK SUSPENSION

A. The CONTRACTOR shall follow the National Marine Fisheries Service (NMFS) Section 101(a)(5)(D) Marine Mammal Protection Act (MMPA) Incidental Harassment Authorization (IHA) under Section 00852 Permits.

B. The CONTRACTOR shall follow the National Marine Fisheries Service (NMFS) Section 7(a)(2) Endangered Species Act (ESA) Formal Consultation Mitigation Measures, as outlined in the USACE DA Permit and Permit Modifications, as well as the (2) NMFS Biological Opinions under Section 00852 Permits.

C. The OWNER will provide all required marine mammal observers as outlined in the USACE permits, the NMFS Mitigation Measures and IHA referenced above. The OWNER shall have stop work authority if marine mammals enter the described shutdown zones.

D. The CONTRACTOR shall suspend and resume WORK at the direction of the OWNER and shall log all such activities on a daily report provided to the ENGINEER.

E. Compensation for Marine Mammal Work Suspension shall be at the contract bid unit price, provided the CONTRACTOR operations are in full compliance with all permit requirements and NMFS Mitigation Measures.

END OF SECTION

SECTION 02895 - MOORAGE FLOATS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK in this Section shall include all labor, materials, tools and equipment necessary for fabrication, handling, transport, and installation of the complete moorage float system, consisting of the headwalk float mainwalk and finger floats, the utility float, including all below deck electrical equipment base weldments, all miscellaneous appurtenances and associated connecting hardware, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Plans.

1.2 REFERENCES

A. AWPA (American Wood Preservers Association), 2002 Standards

B. WWPA (Western Wood Products Association) Western Lumber Grading Rules, 1998

C. AISC (American Institute of Steel Construction) Code of Standard Practice - Manual of Steel Construction (ASD).

D. ASTM (American Society of Testing Materials) Specifications

E. AITC (American Institute of Timber Construction), 2010 Standards

1.3 SUBMITTALS

A. Timber Fabrication Shop Drawings for all fabricated timber items.

B. Structural Steel Submittals per Section 05120 – Metal Fabrication. Steel fabrication drawings must be approved by the ENGINEER prior to cutting, drilling and treatment of timbers. CONTRACTOR shall coordinate shop drawing submittals between float fabricator and steel fabricator so as to submit both timber and steel fabrication shop drawings simultaneously.

C. Structural Aluminum Submittals per Section 05120 – Metal Fabrication.

D. Float Fabrication/Assembly Drawings - Float Fabrication/Assembly Drawings shall illustrate and coordinate all elements (timbers, steel weldments, assemblies, HDPE floatation, ballast tanks, hardware and foam billets) that make up each typical type of float module, including the location and position of the elements on the individual float and/or complete float system.

E. Timber Grading and Pressure Treatment Certification for all timbers utilized for fabrication of float components.

F. Timber Treatment product for field treatment of float timbers. Submit product specifications from the manufacturer for field treating of both ACZA treated timbers and creosote treated timbers.

G. Coated Polystyrene Flotation Billet Shop Drawings. Submit complete shop drawings illustrating geometry, chamfers, and any required notches for each billet type. Provide technical data on billet coating product. Data shall include product description, color, performance characteristics, and limitations.

H. UHMW (Ultra High Molecular Weight) Polyethylene - Submit product specific material specifications and Fabrication Shop Drawings for all fabricated UHMW components.

I. Steel Pipe Hinge Assembly – Submit rubber bushing material specifications and a completely assembled hinge assembly sample consisting of a rubber bushing with UHMW sleeve and a galvanized steel pipe hinge segment. Critical fit up tolerances will be verified with this sample.

J. Polyethylene Floatation Tubs – Submit manufacturer's published literature for specific product including material specifications, drawings illustrating overall dimensions, typical sections and wall thickness, and fabrication and dimensional tolerances.

K. Polyethylene Ballast Drums – Submit manufacturer's published literature for specific product including material specifications, drawings illustrating overall dimensions, typical sections and wall thickness, and fabrication and dimensional tolerances. Necessary modifications to a manufactured product shall be detailed with corresponding shop fabrication drawings.

L. Fiberglass Grating – Submit shop drawings of all required gratings which clearly indicates material sizes, type, part or catalog number; complete details for the fabrication and installation including location, lengths, widths, type and sizes of fasteners, hold-down clips and connection details. Submit (2) product samples for ENGINEER evaluation of quality and color, along with manufacturer's published literature for specific product and accessories, as applicable, including manufacturer's specifications, physical characteristics, fabrication and dimensional tolerance data, structural properties data, load/deflection tables, and product warranty.

M. Fiberglass Cable Tray – Submit manufacturer's published literature for specific product, accessories and associated attachment hardware along with shop fabrication drawings illustrating cable tray segment lengths used for each type of float unit.

N. Float Corner Bumpers. Submit manufacturer information which shall include product description, product illustration, model number, dimensions, and proposed attachment method.

O. Non-Skid Coating - Submit for ENGINEER approval the manufacturer's published literature, for the specific product, along with samples of coated, galvanized steel plate which demonstrate the level of coarseness which the product provides.

P. Float Handling Plan - CONTRACTOR shall coordinate with the float fabricator and all transport companies to submit a float handling plan for review and approval, by the ENGINEER, prior to handling and transporting of any float units. Plan shall describe all lifting equipment and devices as well as proposed transport configuration of multiple float units.

Q. Polyester Strapping – Submit manufacturer information which shall include product description, model number, dimensions and hardware required to tighten and fasten strapping.

R. Float Cleats. Submit manufacturer information which shall include material specifications, product illustration, model number, dimensions, and proposed attachment method.

S. Float Fabricator's Quality Assurance Program - Submit copy of quality assurance program float fabricator proposes to use during the float fabrication process.

PART 2 - PRODUCTS

2.1 MATERIALS - All materials shall conform to the Contract Documents and as shown on the Plans. Purchase orders shall contain all necessary information to ensure that materials purchased will comply with the Contract Documents. The Fabricator shall inspect all materials, upon arrival, for conformance with the purchase orders as well as the requirements described in the Delivery, Storage and Protection Section herein. The Fabricator shall also confirm that mill certificates and test reports are provided, and that they correctly identify the materials delivered. If a supplier proposes a substitute for any material, the proposed substitution shall be submitted to the ENGINEER for approval prior to commencing any work involving use of the proposed substitute material. Supplier shall supply specified materials if the proposed substitution is not approved by the ENGINEER.

All materials incorporated into this project shall be new, unless otherwise noted on the Plans. Material not specifically noted in the Contract Documents or on the Plans shall be submitted by the CONTRACTOR for approval by the ENGINEER. Approval will be based on conformance to current standards utilized by the OWNER.

All materials shall conform to good workmanship, acceptable industry standards and manufacturer's recommendations.

A. All glued-laminated members shall be manufactured with Coast Region Douglas Fir that conforms to AITC Standard No. 117-2010 specifications and shall be manufactured in balanced combinations having equal design values for both the positive and negative bending. The glulam members shall have an industrial finish, unless otherwise noted herein, shall be for exterior use and have design values equal to or exceeding the following when loaded perpendicular to the widest faces of the laminations.

Bending (Fb) = 2,400 psi
Horizontal Shear (Fv) = 265 psi
Modulus of Elasticity (E) = 1,800,000 psi

Unless otherwise noted, all glued-laminated timbers shall be pressure treated with creosote per AWPA C-28 to a minimum retention of 12 pounds per cubic foot. Fabrication and drilling of timber shall be completed as much as possible before pressure treatment. Glued-laminated timber ends that have been field cut after treatment shall be

scatter nailed with 3-inch copper nails at 2 inches on-center each way in addition to field treatment. Bolt holes shall be 1/8 inch oversized. Glued-laminated bullrail, walers and rubstrips shall be pressure treated with ACZA per AWPA C-2 to a net dry salt retention of not less than 0.6 pounds per cubic foot.

Exposed glulam timbers shall have knots in top faces filled by manufacturer or by manufacturer approved method, in accordance with AITC 110-2001, Standard Appearance grades for Structural Glued Laminated Timber.

Aesthetics and function are important for bullrail timbers; large knot holes may lead to frayed or otherwise damaged vessel mooring lines. Consequently, fabricator shall select bullrail material that exhibits minimal number and size of knots as well as minimal wane.

B. All sawn timber shall be surfaced four sides (S4S), and conform to No. 1 and better Coastal Region Douglas Fir, according to WCLIB Grading Rules, unless otherwise noted herein. No individual timber shall fall outside the specified grade. Each piece of lumber shall be stamped with a grade mark, which identifies the grading and certification, and shall be so marked as to be legible after pressure treatment. All sawn timber shall be pressure treated. Sawn timber located above waterline shall be pressure treated with ACZA per AWPA C-2 to a net dry salt retention of not less than 0.6 pounds per cubic foot. Sawn timber located below waterline shall be pressure treated with creosote per AWPA C-28 to a minimum retention of 12 pounds per cubic foot. Fabrication and drilling of timber shall be done as much as possible before pressure treatment. Bolt holes shall be 1/8 inch oversized.

Deck timbers shall be of Coastal Region Douglas Fir, S1S2E with chamfered top edges, and shall conform to Select Structural with additional "Appearance" limitations, according to WCLIB Grading Rules. Only whole, full-width and full length deck timbers shall be installed on any float unit. Upon arrival to project site, gap widths between installed deck timbers shall be a minimum of 1/8-inch and a maximum of 3/8-inch. As much as possible, deck timbers shall be evenly spaced along entire length of float unit. CONTRACTOR shall determine total number of deck boards required to achieve the spacing requirements indicated above, and shall layout deck boards along entire length of each float unit prior to nailing of timbers. Aesthetics are important for deck timbers; consequently, fabricator shall ensure deck material has minimal amount of wane. Deck timbers containing wane shall be installed with wane facing down and top face rough cut per specifications.

Deck timbers shall be in conformance with these specifications and grading requirements at project final completion. Deck timbers which fail to meet the specifications and grading requirements at final completion shall be replaced at no additional cost to the OWNER.

C. Field Treatment Compounds:

1. Treatment compound for holes, cuts and minor damage to treated timber shall be Copper napthenate solution in concentration as specified by AWPA M-4. In addition, Mastic shall be applied to field drilled bolt holes after treatment with

copper napthenate per manufacturer's instructions.

2. Mastic shall be coal tar mastic complying with ASTM D450.

D. Flotation billets shall be closed-cell, expanded polystyrene, in accordance with ASTM C578. Minimum requirements shall be as follows:

1. Density – between 0.9 and 1.0 pounds per cubic foot
2. Contain not greater than 5% regrind material
3. Compressive Strength - 10 psi minimum at 10% deformation
4. Flexural Strength - 25 psi minimum
5. 4% maximum water absorption by volume as tested by ASTM C-272
6. All floatation billets shall be coated on all sides with "Polyshield SS-100", or approved equal, coating of sixty-five (65) mils in thickness, minimum. All utility trenches shall be coated on all sides to a thickness of seventy-five (75) mils, minimum. Coating shall be spray applied and cured per manufacturer recommendations. Alternative coatings shall either meet or exceed the characteristics of this material and be acceptable to the governing agencies for construction in the marine environment.

All floatation billets shall be of one piece, as shown on the Plans, without laminations or glued joints. Billet dimensional tolerances shall be as follows: (Submit billet geometry for ENGINEER review)

1. Width – Shall be +/- 1/8"
2. Length – Shall be +/- 1/8"
3. Depth – Shall be +/-1/8"

E. Miscellaneous steel plates and shapes shall be ASTM A36, galvanized per ASTM A123 or A153, and comply with Section 05120 - Metal Fabrication.

F. All fabricated metal weldments and assemblies including float connections, pipe hinges, transition plates, pile hoops, etc. shall comply with Section 05120 - Metal Fabrication.

G. Metal Grating shall be type W19-4 with serrated 2½" x 3/16"t bearing bars as manufactured by *Grating Pacific, LLC*, or approved equal. All grating shall be edge banded at all panel edges and grating openings. All grating shall be hot-dip galvanized after fabrication. Attach grating as shown on the Plans.

H. Piano hinge pins shall be ASTM F1554 bolts. All float-to-float connection hardware shall be hot-dip galvanized.

I. Bolts, piano hinge connection rods, and miscellaneous hardware shall comply with Section 05120 – Metal Fabrication.

J. All Ultra High Molecular Weight (UHMW) Polyethylene components shall be manufactured from virgin polyethylene material, be U.V. stabilized and shall be partially cross-linked. UHMW components shall be black in color, unless otherwise noted, and

edges chamfered as shown on Plans.

I. Pipe Hinge Rubber Bushings shall comply with the following requirements:

Property	Requirement	ASTM Test
Min. Tensile Strength	2500 psi Min.	ASTM D412
Hardness-Shore A Durometer	70 +/- 5	ASTM D2240
Ultimate Elongation	300%	ASTM D412
Compression Set	25% max.	ASTM D395, Method B
Ozone Resistance	No Cracks	ASTM D1171, Method B
Water Resistance	10% Max. Swell	ASTM D471
Low Temp. Resistance	Non-Brittle	ASTM D2137, Method A
Tear Resistance	200 ppi Min.	ASTM D624
Heat Resistance		ASTM D573
Max. Change in Hardness	+10 pts.	
Max. Change in Tensile Strg	-25%	
Max. Change in Ult. Elong.	-25%	

Physical Constraints. – The fit-up of each bushing into the piano hinge connection is critical for the proper function of the float-to-float connection. Bushings must have a "snug-tight" fit within the piano hinge pipe segments, prior to bolt tightening and/or hinge bolt placement, so as not to have appreciable movement within the pocket at an ambient temperature of 40°F. Examine all pipe segments to ensure they are free of burrs, slag or other potential conflicts. An ice-bath or other acceptable methods, along with the use of non-petroleum lubricant, may be utilized to aid in placement of the bushing. Minor sanding/grinding of bushings in the field may need to occur, as approved by the ENGINEER. Contractor shall coordinate with rubber block/bushing manufacturer(s) and metal fabricator(s) to produce sample blocks/bushings that shall be used to determine final dimensions required to achieve a fit that is snug-tight (Fit Classification – Class 4) within the pipe segments. Due to rubber fabrication tolerances, initially fabricated bushings will need to be fabricated larger and then machined, to achieve the final fit-up requirements. In addition, fabricator shall take into consideration that piano hinge steel pipe inside dimensions may vary, particularly if the pipe has different heat numbers and/or is supplied from different mill runs. Fabricator shall order materials and/or fabricate rubber bushings accordingly to achieve the required fit-up. CONTRACTOR shall coordinate with the ENGINEER to observe fit-up of the sample bushings prior to fabrication of the final product.

K. Float Corner Bumpers shall be 5/8"x10" "Flexi-Fend" UHMW-PE, as manufactured by Polymer Industries, or approved equal. Color shall be black. Attachment of corner bumpers shall use Type 316 stainless steel or hot-dip galvanized fasteners. Size, location, and number of attachment fasteners per corner bumper shall be as shown on the Plans.

L. Polyethylene floatation tubs shall be *Eagle Floats* as manufactured by *Hendren Plastics* or approved equal, shall be one-piece rotational molded, with UV inhibitors, and be rectangular in shape with the dimensions and minimum wall thickness as shown on the Plans. Float fabricator shall install vent plugs in float tubs per manufacturer

recommendations prior to delivery on site. Where conflicts between vent plugs and float members do not allow the installation of the vent plug, float fabricator shall submittal for engineer approval an alternate method of sealing the tubs. Submit tub manufacturer's material specifications and drawings to illustrate tub configuration, for ENGINEER approval. Contractor shall not drill, nail, or otherwise compromise the integrity of the tub polyethylene shell.

M. Polyethylene ballast drums shall be Eagle Floats as manufactured by *Hendren Plastics* or approved equal, shall be one-piece rotational molded, with UV inhibitors, and be rectangular in shape with the dimensions and minimum wall thickness as shown on the Plans. Rectangular polyethylene float drums may be manufactured without foam and subsequently modified by the timber float Fabricator to achieve the configuration shown on the Plans. Submit drum manufacturer's material specifications and drawings to illustrate drum configuration, for ENGINEER approval. In addition, submit modified drum fabrication drawings to illustrate both original and modified drum configuration, for ENGINEER approval.

N. Fiberglass Reinforced Plastic (FRP) grating shall be ADA compliant, "*Micro-Mesh*" with integral quartz anti-slip surface, as produced by *Fibergrate/Composite Structures International, Inc*., or approved equal. Depth of grating shall be 1 ½ inches +/- 1/16". Mesh configuration shall be 1 ½" square mesh bottom with ¾" square mesh top meeting ADA requirements. Color of grating shall be gray. Attachment of grating shall use Type 316 stainless steel hardware and fasteners. All shop fabricated grating cuts shall be sealed in accordance with the manufacturer's recommendations.

Fiberglass Reinforced Plastic (FRP) grating shall be furnished only by manufacturers having a minimum of ten (10) years experience in the design and manufacture of this product. Manufacturer shall offer a 3 year limited warranty on all FRP products against defects in materials and workmanship.

O. Fiberglass cable tray shall be as manufactured by *MPHUSKY Corporation*, or approved equal. Cable tray shall be "ladder-type" 12 or 18-inches in width with 4-inch side rails, 3-inch loading depth, and 9-inch rung spacing (i.e. *MPHUSKY* Series 4). Submit cable tray and mounting hardware specifications, along with any necessary drawings to illustrate cable tray segment lengths and proposed mounting method, for ENGINEER approval.

P. Non-Skid Coating. The top, walking surfaces of all connection assemblies (i.e. pipe piano hinges) shall be coated per Section 09900 - Coatings.

Q. Polyester strapping shall be as manufactured by ULine, or approved equal. Polyester strapping shall be ¾"wide x 0.04" thick, with a break strength of 1900 pounds. Tighten and fasten strapping utilizing a manufacture-recommended sealer which utilizes friction welding to secure strapping.

R. Structural Screws shall be Spax Washer Head HCR Powerlags or approved equal. Structural screws shall be provided with washer heads and a corrosion resistant coating rated for installation in pressure-treated timber. Structural screws shall be self-drilling so as not to require a pre-drilled hole.

S. All materials shall conform to good workmanship, acceptable industry standards and manufacturer's recommendations.

2.2 DELIVERY, STORAGE, AND PROTECTION

A. All timber shall be protected during transportation to and from treatment facilities. There shall be no mechanical damage to timbers from steel banding, handling, etc. Timber shall be stored above ground on pallets, platforms or other supports.

B. Polyethylene floatation tubs, ballast tanks, and coated polystyrene billets shall be protected as necessary during handling and transport to jobsite.

C. All Fiberglass Reinforced Plastic (FRP) grating shall be delivered in original, unbroken pallets, packages, containers or bundles bearing the label of the manufacturer. Adhesives, resins and their catalysts and hardeners shall be crated or boxed separately and noted as such to facilitate their movement to a dry, indoor storage facility. All materials shall be handled to prevent abrasion, cracking, chipping, twisting, other deformations, and other types of damage. Adhesives, resins and their catalysts and hardeners are to be stored in dry indoor storage facilities between 70 and 85 degrees Fahrenheit until they are to be used.

D. All other float materials shall be protected during shipping and handling. Materials shall be stored above ground on pallets, platforms or other supports, and be protected from excessive exposure to moisture prior to fabrication.

PART 3 – EXECUTION

3.1 FABRICATION

A. Quality Assurance. The float Fabricator must have an ongoing quality assurance program approved by a qualified, independent source. At the option of the ENGINEER, the Fabricator shall submit a copy of their operational quality assurance program, and shall not fabricate any floats until the ENGINEER has approved this quality assurance program. The objectives of the quality assurance program are as follows:

1. Completed products shall conform completely to all governing codes and specifications stipulated in the Design Contract Documents, and Plans.
2. Quality Assurance Program is an integral part of the ongoing manufacturing activities of the Fabricator.

Although periodic inspections will be carried out by the ENGINEER, the purpose of these inspections is to note general conformance to the design documents. It is still the responsibility of the Fabricator to produce a quality product, in complete conformance with the design documents, and to document and correct any non-conformance. All

documentation, including that submitted, shall be kept on file by the Fabricator, for review, if requested by the OWNER or ENGINEER.

Fabricator shall provide, to the ENGINEER, suitable documentation showing a minimum of three (3) previously successful float fabrication projects of similar scope, timeline, value and complexity, including current names, addresses and contact numbers of the corresponding float owners. Fabricator shall also provide ENGINEER with experience history of key personnel overseeing daily float fabrication operations.

B. Fabrication Facility. The fabrication facility shall provide the proper environment and physical conditions necessary for construction of high quality timber float units. The facility shall provide adequate work space, equipment, level working surfaces, and protection from direct sunlight, wind, and moisture. The Fabricator shall have the capability to carry out the following work in-house or on a contract basis:

- Design of lifting and erection devices not shown on the Drawings.
- Preparation of Shop Fabrication Drawings.
- Receiving, checking and storing of materials for the floats.
- Dimensional checking and verification.
- Resolution of non-conformities.
- Documentation of all stages of work with capability of tracing all major components.
- Handling, storing, shipping and delivery.

C. The float units shall be assembled as shown on the Plans. All float units shall be clearly identified with the date of manufacture, and specific float designation per Plans. Float identification must be visible from both ends of float, before and after installation, and be capable of removal upon project completion. Any float materials damaged during transport and delivery and/or during handling and fabrication operations shall be repaired or replaced by the Fabricator, at the discretion of the ENGINEER, and at no additional cost to the OWNER.

D. Walking surfaces of installed float units shall be level and flush with adjoining float units. Maximum height variation between adjoining surfaces shall be 1/8-inch.

E. Deck of overall float unit shall be within the following level tolerances under design dead load:

1. Maximum transverse freeboard differential for float units shall be one-half (0.5) inch.
2. Maximum longitudinal freeboard differential for float units shall be one-half (0.5) inch.

F. The ENGINEER will randomly cut a 2-inch-by-2-inch sample of approximately 5 to 10 percent of the coated flotation billets to check for adequate thickness of coating. If thickness is insufficient, the float Fabricator shall be prepared to apply more layers as necessary to obtain the required minimum thickness. The float Fabricator is responsible for repairing the coating after samples have been taken. Repairs shall be accomplished by reapplication of coating to the exposed area.

G. The float Fabricator shall be required to perform quality control of the coated flotation billets, checking for adequate coating thickness and for the presence of any holes in the coating which expose the polystyrene. Application of the coating shall be accomplished with multiple layers or in such a manner as to minimize holes caused from trapped gases within the polystyrene.

3.2 TRANSPORT AND DELIVERY

A. The CONTRACTOR shall assume full responsibility for any damages or losses resulting from the handling or transporting of float units and/or any float components during loading, shipping, transport and delivery to the fabrication and/or project site as well as the subsequent handling required on site for installation.

B. Any float unit and/or float components damaged during transport and delivery and/or during any other handling operations prior to final acceptance shall be repaired or replaced by the CONTRACTOR at the discretion of the ENGINEER and at no additional cost to the OWNER.

C. Any Coatings damaged during transport and delivery and/or during any other handling operations prior to final acceptance shall be repaired or replaced by the CONTRACTOR at the discretion of the ENGINEER and at no additional cost to the OWNER. CONTRACTOR shall be prepared to repair coatings in the field with a coating system compatible with the system originally applied.

3.3 INSTALLATION

A. All new float units shall be installed as shown in the Plans and/or to the highest industry standards if not fully shown on the Plans. All float connections are designed to accommodate the required vessel loads only when installed as a complete float system, as shown on the Plans. Damage to the float connection hardware and float structure will occur if floats are installed and left in place without the proper support and support structures around them. CONTRACTOR shall take full responsibility for the safety, effectiveness and any potential damage incurred by any and all means and methods employed during construction and installation of the project. The CONTRACTOR shall repair and/or replace, at the OWNER’s preference, and at no additional cost to the OWNER, any float unit and/or float components damaged due to improper support during installation.

B. Steel mooring/anchor piles shall be installed through assembled float unit pile hoops as specified under SECTION 02896 – Steel Pipe Piles and as shown on the Plans. Float units shall be secured in a true, straight alignment prior to pile installations. CONTRACTOR shall confirm float alignment and position with ENGINEER prior to final pile installation.

C. Construction methods and products not specifically mentioned in these Contract Documents shall be utilized using reasonable care and the highest quality construction practices. Final inspection and acceptance of all work and products not specifically mentioned in these Contract Documents shall be made by the ENGINEER. Approval shall be based upon conformance to the Contract Documents, quality of workmanship,

applicable industry standards, and pertinent manufacturer's recommendations.

END OF SECTION

SECTION 02896 - STEEL PIPE PILES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK in this Section shall include all labor, materials, tools and equipment necessary to furnish and install all float mooring piles, pile splices, fiberglass caps, pile driving shoes, all miscellaneous steel plates, appurtenances and hardware, and all other related WORK in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. The CONTINGENT WORK – PILE SOCKET shall be field directed by the ENGINEER during construction. The contingent work includes providing all labor, materials, tools, and equipment necessary to remove piles (if necessary) encountering bedrock conditions above the design tip elevation, drilling a pile socket, and re-driving the pile to the tip elevation shown on the Plans. All Contingent Work shall be in accordance with the Contract Documents and field directives provided by the ENGINEER.

Contingent Work described above shall be addressed under Contingent Work – Pile Socket (Pay Item No. 2896.5). If a CONTRACTOR's proposed drilling equipment and methods require pile tips and pile splice methods that differ from those shown on the Plans, CONTRACTOR shall fabricate all float mooring piles, at no additional expense to the OWNER, with driving shoes as necessary to suit their specific means/methods in order to avoid delays during construction.

Mobilization of drilling equipment shall be included in Pay Item No. 1505.1 as pile sockets are anticipated for the 12.75" dia. float mooring piles.

1.2 REFERENCES

A. ASTM A252 - Welded and Seamless Steel Pipe Piles

B. ASTM A139 – Electric-Fusion (Arc)-Welded Steel Pipe

C. AWS D1.1 - Structural Welding Code - Steel

1.3 SUBMITTALS

A. Manufacturer's Mill Certificate: Steel Certification including chemistry, yield strength, and mill numbers.

B. Shop Drawings for all fabricated items per Section 05120 – Metal Fabrication.

C. Welding Procedures and Welder Certification per Section 05120 – Metal Fabrication.

D. Pile Splice Design: Preapproved pile splices for ASTM A252, Grade 3 material shall meet AWS D1.1 requirements and shall be submitted for ENGINEER review.

E. Pile Installation Plan: Provide written narrative and illustrations as necessary to fully describe the complete pile installation plan. The plan shall address, as a minimum, all

equipment, labor, temporary pile support and template systems, methods/means to align and maintain pile alignment, survey control, work sequence, and method of installation. The plan shall include pile hammer types and sizes, as well as manufacturers' recommendations and information on hammer cushion, and a written description of means and methods for all pile installation work. The CONTRACTOR shall not mobilize hammers, drill equipment, or any other pile installation related equipment prior to receiving written approval, from the ENGINEER, for the pile installation plan. The CONTRACTOR should allow one week for review of the plans by the ENGINEER. All pile driving means and methods shall meet the requirements of the permits issued for this project.

F. Rock Socket Superintendent (Individual): Provide a list of at least three previous, successfully completed marine projects within the past 5 years, of similar scope and considerations with direct involvement in the suitable selection and use of all required gear and equipment for installation of rock socketed steel pipe piles for the size, configuration, installation tolerances, tidal range, and water depth specified for this project, and for similar subsurface conditions, on which the proposed Rock Socket Superintendent has worked in a responsible position. For each project, provide the project name, brief project description, position on project, year(s) in which work was performed, owner, and name and phone number of owner's representative who has knowledge of the proposed Rock Socket Superintendent's work.

G. Contingent Pile Socket Work Plan: Provide written narrative and illustrations as necessary to fully describe the complete pile socketing system and pile installation plans, including any alternate pile installation methods, proposed to be utilized for this project. The plans shall address, as a minimum, all related pile driving and socket drilling equipment, materials, tools and labor, marine support vessels, temporary pile support, template systems, means/methods to align and maintain pile alignment, means/methods for pile extraction, means/methods for pile and drilled socket clean-out and to stabilize sidewalls of drilled socket, drill discharge containment system for drill cuttings and wastewater, and work sequence. The CONTRACTOR shall not mobilize hammers, drill equipment, or any other pile installation related items prior to receiving written approval, from the ENGINEER. All pile driving and pile socketing means, methods and associated operations shall adhere to the requirements of all permits issued for this project. All means and methods shall meet the requirements of the permits issued for this project.

H. Manufacturer's information on all pile hammers and drill equipment intended for use, complete with satisfactory data to ensure properly suited for installation of pipe piles.

I. Galvanizing certificates verifying that coated material conforms to Specifications.

J. Fiberglass Pile Caps: Submit manufacturer's product data sheet along with proposed attachment method.

K. Pile Driving Shoes: Submit manufacturer's published literature for specific product, including specifications, and installation requirements for driving shoe pile tips as shown on the Plans or as required by CONTRACTOR's drilling equipment, and means/methods.

1.4 TRANSPORTATION, STORAGE AND HANDLING

A. All piles shall be configured and positioned during transportation and storage such that each pile location is maintained, is in a straight alignment, is supported in an adequate manner and interval along its length, and is stacked in a limited number of tiers so as to prevent distortion, deflection and not exceed allowable stresses for the piles. Piles shall not be allowed to be in contact with each other in such a manner that the pile coatings are damaged.

B. The CONTRACTOR shall be responsible for all lifting and handling means/methods and shall ensure allowable stresses are not exceeded and coatings are not damaged.

PART 2 - PRODUCTS

2.1 GENERAL

A. All materials shall conform to the Contract Documents and as shown on the Plans. Purchase orders shall contain all necessary information to ensure that materials purchased will comply with the Contract Documents. The fabricator shall inspect all materials, upon arrival, for conformance with the purchase orders, and the fabricator shall confirm that mill certificates and test reports are provided and that they correctly identify the materials delivered. If a supplier proposes a substitute for any material, the proposed substitution shall be submitted to the ENGINEER for approval prior to commencing any work involving use of the proposed substitute material. Supplier must be prepared to supply materials as identified in the Contract Documents if the proposal for a substitution is not approved by the ENGINEER.

B. All materials incorporated into this project shall be new, unless otherwise noted on the Plans. Material not specifically noted in the Contract Documents or on the Plans shall be submitted by the CONTRACTOR for approval by the ENGINEER. Approval will be based on conformance to current standards utilized by the OWNER.

C. All materials shall conform to good workmanship, acceptable industry standards and manufacturer's recommendations.

2.2 PILES

A. Unless otherwise noted herein, all steel pipe piles shall be seamless or straight seam pipe conforming to ASTM A252, Grade 3, with ASTM A36 chemistry. Carbon Equivalency shall not exceed 0.45 based on the following formula:

$$CE = \frac{(C+Mn+Si)}{6} + \frac{(Cr+Mo+V)}{5} + \frac{(Ni+Cu)}{15}$$

Spiral weld pipe may be used provided it conforms to ASTM A252, Grade 3, modified to include testing of production weld test specimens in accordance with ASTM A-139, Section 14.2. In lieu of acceptable quality assurance pertaining to coil butt splices, coil butt splices shall be removed. Carbon Equivalency shall not exceed 0.45.

B. All mooring float piles shall conform to ASTM A252, Grade 3. Carbon Equivalency shall not exceed 0.45.

C. All steel pipe piles shall be hot-dip galvanized, full length, in accordance with ASTM A123, unless otherwise noted on the Plans.

D. All steel pipe piles shall be furnished, complete with pile tips, in the lengths indicated on the Plans. Piles shall be delivered full length or field spliced in accordance with approved welding and galvanizing repair procedures. No additional compensation shall be made for splicing piles to make up the pile lengths shown on the Plans.

E. Pile driving shoes shall have no dimension exceeding the outside diameter of the piles and shall be compatible with all socketing equipment and means/methods used by the CONTRACTOR.

F. Miscellaneous steel plates, shapes and fabricated metal weldments shall be ASTM A36, hot-dip galvanized per ASTM A123 or A153, and comply with Section 05120 – Metal Fabrication.

2.3 MISCELLANEOUS

A. Miscellaneous steel plates, shapes and fabricated weldments shall comply with Section 05120 – Metal Fabrication.

B. Fiberglass pile caps shall be as manufactured by *Cheyenne Manufacturing Inc.* or approved equal. Color shall be black. Attachments shall be per manufacture's recommendations to resists 100 mph wind speed.

PART 3 - EXECUTION

3.1 PREPARATION AND PROTECTION OF COATINGS

A. The CONTRACTOR is responsible to become familiar with the site conditions and any available geotechnical information, prior to bid, so as to make their own assessment of pile installation means and methods. It is recommended that the CONTRACTOR visit the site, prior to bid, to assess the site conditions, particularly during a minus tide.

B. Galvanized coatings damaged due to fabrication, welding, material handling or occurring during installation shall be repaired per Section 09900 – Coatings.

3.3 INSTALLATION

A. The CONTRACTOR shall submit a detailed work plan including technical narrative and illustrations, as necessary for all pile socketing and installation methods. The CONTRACTOR shall not mobilize hammers and related equipment prior to receiving written approval of the plan. All driving methods shall meet the requirements of the PERMITS issued for this project.

B. An impact hammer of suitable size shall be utilized for final driving and acceptance of all socketed piles, unless otherwise approved by the ENGINEER. Bearing piles shall be driven full length and/or to the minimum required pile capacities indicated on the Plans. Acceptance of a driven pile and determination of pile refusal shall be made solely by the

ENGINEER.

C. Impact hammers shall be selected by the CONTRACTOR, subject to review by the ENGINEER, prior to mobilizing to the project site. The impact hammer shall be single-acting, and adequately sized to achieve the ultimate bearing capacities identified on the Plans. Pile ultimate bearing capacities shall be determined by the following equation:

$$P_{ult} = \left[\frac{12 * E}{S + 0.1}\right]\left[\frac{R}{R+C+P}\right]$$

P ult = Ultimate Capacity (lbs)
E = Hammer Energy (ft-lbs)
S = Set (inches per blow)
R = Weight of Ram (lbs)
C = Weight of Cap Block (lbs)
P = Weight of Pile (lbs)

Any hammer that causes damage to the piles during driving operations shall be substituted with an acceptable alternative hammer at no additional expense to the OWNER. Impact hammer shall be supplied with new cap block cushions, which shall be changed at the manufacturer's recommended interval. The CONTRACTOR's submitted driving plan shall include manufacturer's recommendations and information on hammer cushion.

D. Piles encountering bedrock conditions above design tip elevation shall be extracted (as determined necessary by the ENGINEER), a suitable socket shall be drilled, and the pile shall be re-driven to the design tip elevation. This work shall be performed on a contingency basis and shall be field directed by the ENGINEER during construction. Drilled pile socket diameter shall be a maximum of 17 inches for a 16-inch diameter pile. Pile shall be driven to the bottom of the socket with a suitably sized impact hammer or an ENGINEER approved, suitably sized vibratory hammer, prior to final acceptance.

E. The diameter of the drilled rock socket and the installation process shall provide for a tight and/or secure fit of the pile within the socket. It is the responsibility of the CONTRACTOR to determine the amount of cuttings or material that may or may not need to be removed from the drilled socket hole so that the piles are driven to full required embedment of the socket. Pile shall fit tightly into the socket so as to prevent lateral displacement.

F. Pile sockets shall be drilled to the required depth as shown on the Plans. If the socket is not cased full length during drilling operations, CONTRACTOR shall be responsible for cleaning/clearing the socketed hole, at no additional cost to the OWNER, to allow pile to be seated at the bottom of the socket.

G. Silt boom must be used during pile installation operations when soil from within the pile is removed (i.e. during pile socket installation). Silt boom shall be of adequate depth and length, and be adequately positioned and anchored/secured to achieve complete containment within perimeter of boom system.

H. Obstructions may be encountered at or below mudline during pile driving. Any obstructions encountered within five feet of the existing mudline shall be removed at no additional cost to the OWNER. Obstructions extending below five feet from mudline elevation that require removal shall be removed in accordance with General Conditions, Article 10 – Changes in the Work. The CONTRACTOR shall be prepared to immediately remove obstructions in the event they are encountered, or shall alternatively move to other contract Work to prevent delays.

I. Bearing piles shall be installed within 1% of specified vertical alignment and within 2 inches of specified location at cutoff, unless otherwise noted.

J. Batter piles shall be driven using a fixed template, firmly secured to a substantial support. The template, or suitable temporary bracing, shall remain in place until the pile is welded into its final, permanent location. Damaged coatings shall be repaired in accordance with Section 05120-Metal Fabrication.

K. All float mooring piles shall be installed at planned locations, through the pile hoops to assure that the floats move freely along the piles throughout all tide levels. Any pile installed in a manner that causes binding or excessive rubbing between the pile and pile hoop shall be extracted and re-driven at no additional cost to the OWNER. Forcing of piles to achieve required alignment will not be allowed. Minimum pile lengths and embedment requirements shall be as specified on the Plans. If a vibratory hammer is utilized for driving and refusal occurs prior to complete embedment being achieved, the CONTRACTOR shall drive the remaining pile to the desired embedment with a suitable sized impact hammer.

L. All float mooring piles shall be installed within 0.5% of specified vertical alignment. Misaligned or mislocated piles shall be extracted by the CONTRACTOR and shall be reinstalled at no additional cost to the OWNER. The CONTRACTOR shall have suitable equipment on site to extract piles that do not meet the location tolerances specified.

M. All pile installations shall be conducted with the ENGINEER present. The CONTRACTOR shall assist the ENGINEER in monitoring the pile driving. Unless otherwise directed by the ENGINEER, the CONTRACTOR shall mark each pile with one-foot increments, with every five-foot increment numbered. The marks shall be visible and readable from all sides of the pile above local extreme low tide level. CONTRACTOR shall provide notification to ENGINEER a minimum of 24 hours prior to any pile installation.

N. Pile driving and socket drilling/installation methods shall not cause damage to the existing float or any other nearby structures. CONTRACTOR shall utilize all means necessary to protect the existing float and nearby structures from damage.

O. A Drill Discharge Containment System shall be used during all pile installation operations when soil, rock and/or slurry from within the pile is removed (i.e. during pile socketing). The Drill Discharge Containment System may consist of a floating boom and shall be of adequate dimensions and design to achieve containment of discharged materials within the perimeter of the containment system, and shall comply with all relevant environmental regulations and permits. Supply, installation, maintenance, use and removal of the Drill Discharge Containment System shall be considered incidental to the Work and shall not be measured directly for payment.

P. Pile driving and socket drilling/installation methods shall not deposit debris onto the new float system nor cause damage in any fashion to any element of the new float system or any other nearby new/existing structures. CONTRACTOR shall utilize any/all means necessary to cover and/or protect all float system elements and nearby structures from damage.

Q. The CONTRACTOR shall furnish and install new fiberglass caps in accordance with the manufacturer's recommendations for each float mooring pile as indicated on the Plans.

R. Piles shall be cut off at the elevations indicated on the Plans and by a method approved by the ENGINEER. All cutting shall be done in a neat manner and be of quality workmanship. All steel pipe pile cutoffs shall become the property of the CONTRACTOR and shall be removed in their entirety from the project site.

S. Construction methods and products not specified in these Contract Documents shall be utilized using reasonable care and the highest quality industry standard construction practices. Final inspection and acceptance of all Work and products not specified in these Contract Documents shall be made by the ENGINEER. Approval shall be based upon conformance to the Contract Documents, quality of workmanship, applicable industry standards, and pertinent manufacturer's recommendations.

T. The project permits place some restrictions on pile driving operations. Please review the mitigation measures located within Section 00852 Permits.

END OF SECTION

SECTION 02897 – FLOTATION BILLETS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK in this Section shall include all labor, materials, tools and equipment necessary to furnish and install coated expanded polystyrene (EPS) flotation billets, and all other associated WORK in accordance with the requirements of the Contract Documents and as indicated on the Plans.

1.2 REFERENCES

A. ASTM (American Society of Testing Materials) Specifications

1.3 SUBMITTALS

A. Manufacturer's Certificates: Certify that products supplied meet or exceed specified requirements.

B. Coating Product Data: Provide technical data on coating product. Data shall include product description, color, recommended uses, performance characteristics, limitations, and application instructions.

C. Billet Installation Plan: The CONTRACTOR shall submit a plan detailing means/methods for installation of flotation billets. Provide a narrative and any drawings as necessary to thoroughly describe the installation procedure of coated flotation billets beneath floats at locations determined by the ENGINEER for leveling moorage floats in the field, after float and utility installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All flotation billets shall be configured as shown on the Plans, without laminations or glued joints; billets shall be closed-cell, expanded polystyrene, in accordance with ASTM C578. Minimum requirements shall be as follows:

1. Density – between 0.9 and 1.0 pounds per cubic foot
2. Contain not greater than 5% regrind material
3. Compressive Strength - 10 psi minimum at 10% deformation
4. Flexural Strength - 25 psi minimum
5. 4% maximum water absorption by volume as tested by ASTM C-272
6. All flotation billets shall be coated on all sides with "Polyshield SS-100", or approved equal, coating of sixty-five (65) mils in thickness, minimum. Coating shall be spray applied and cured per manufacturer recommendations. Alternative coatings shall either meet or exceed the characteristics of this material and be acceptable to the governing agencies for construction in the marine environment.
7. Unless otherwise noted herein or indicated on the Plans, dimensions of coated billets to be supplied under Bid Item 2897.1 – Supply Flotation Billet, shall be a standard 10"x20"x8'-0".

8. Billets shall have a maximum variation from design dimensions of 1/8-inch, unless otherwise noted.

PART 3 – EXECUTION

3.1 FABRICATION

A. The ENGINEER will randomly cut a 2-inch-by-2-inch sample of approximately 5 to 10 percent of the coated flotation billets to check for adequate thickness of coating. If thickness is insufficient, the manufacturer shall be prepared to apply more layers as necessary to obtain the required minimum thickness. The manufacturer is responsible for repairing the coating after samples have been taken. Repairs shall be accomplished by reapplication of coating to the exposed area.

B. The manufacturer shall be required to perform quality control of the coated flotation billets, checking for adequate coating thickness and for the presence of any holes in the coating which expose the polystyrene. Application of the coating shall be accomplished with multiple layers or in such a manner as to minimize holes caused from trapped gases within the polystyrene.

3.2 TRANSPORT AND DELIVERY

A. The CONTRACTOR shall assume full responsibility for any damages or losses resulting from the handling or transporting of all flotation billets during loading, shipping, transport and delivery to the project site as well as the subsequent handling required on site for installation.

B. Damage that occurs during transport and delivery and/or during any other handling operations prior to final acceptance shall be repaired or replaced by the CONTRACTOR at the discretion of the ENGINEER and at no additional cost to the OWNER.

3.3 INSTALLATION

A. The CONTRACTOR shall supply coated flotation billets per Specifications, in dimensions and quantities indicated in the Contract Documents and as shown on the Plans.

B. The CONTRACTOR shall submit a plan for installation of flotation billets. The plan shall include methods for removal of marine growth as necessary to achieve a uniform bearing surface, as well as placement methodology for flotation billets. Marine growth may be removed mechanically or hydraulically, without damaging existing float components, to achieve stable, secure positioning of flotation billets. Billets shall be be fastened to the floats using nylon or polypropylene straps.

C. The CONTRACTOR shall install the coated flotation billets, as necessary, to achieve desired leveling of the floats. Installation locations for the flotation billets shall be determined by the ENGINEER, in the field, after all electrical equipment, transition plates, gangways, water, power and lighting elements have been installed.

D. All remaining flotation billets not installed shall remain the property of the OWNER. The CONTRACTOR shall deliver and neatly stack all surplus flotation billets to a location to be chosen by the OWNER within five miles of the project site.

3.2 INSTALLATION SEQUENCE

A. Leveling flotation billet installation shall not begin until all float elements are permanently installed on the floats, including water utilities, electrical and lighting components and all other permanent float appurtenances.

B. The CONTRACTOR shall notify the ENGINEER that all float elements are permanently installed on the floats so that detailed freeboard measurements may be recorded.

C. The ENGINEER will analyze the freeboard measurements and provide direction to the CONTRACTOR regarding the sizes and locations of leveling billets to be installed.

D. The floats will be observed for no less than 24 hours to allow the modules to settle and adjust to the newly installed leveling billets. After this time period, the ENGINEER will record the new freeboard measurements.

E. The new freeboard measurements will be analyzed by the ENGINEER. If the floats meet the leveling requirements of the Contract Documents, the ENGINEER will notify the CONTRACTOR that no additional billet installations are required. Otherwise, the ENGINEER will direct the CONTRACTOR regarding the size and location of the leveling billets to be installed. This process will continue until the floats meet the leveling requirements of the Contract Documents.

END OF SECTION

SECTION 02898 – REFURBISHED STRUCTURES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK in this Section shall include all labor, materials, tools and equipment necessary for the complete removal, refurbishment, relocation and reinstallation of the existing gangway, including grating, traction plate and fasteners, and all other miscellaneous appurtenances and hardware in accordance with the requirements of the Contract Documents and as indicated on the Plans.

B. The WORK in this Section shall include all labor, materials, tools and equipment necessary for the complete removal, refurbishment, relocation and reinstallation of the existing gangway landing float, including flotation billets, decking and timber modifications, and all other miscellaneous appurtenances and hardware in accordance with the requirements of the Contract Documents and as indicated on the Plans.

1.2 REFERENCES

A. Section 02895 – Moorage Floats
B. Section 05120 – Metal Fabrication

PART 2 - PRODUCTS

2.1 MATERIALS - All materials for gangway components shall conform to the Contract Documents and Plans. Purchase orders shall contain all necessary information to verify that materials purchased comply with the fore mentioned documents. The Fabricator shall inspect all materials, upon arrival, for conformance with the purchase orders. The Fabricator shall confirm that mill certificates and test reports are provided, and that they correctly identify the materials delivered. If a supplier proposes a substitute for any material, the proposed substitution shall be submitted to the ENGINEER for approval prior to commencing any WORK involving use of the proposed substitute material. Supplier must be prepared to supply materials as identified on the design documents if the proposal for a substitution is not approved by the ENGINEER.

A. Miscellaneous steel plates and shapes shall be ASTM A36, galvanized per ASTM A123 or A153, and comply with Section 05120 – Metal Fabrication.

B. All aluminum plate and shapes shall comply with Section 05120 – Metal Fabrication.

C. All bolts, piano hinge connection rods, and miscellaneous hardware shall comply with Section 05120 – Metal Fabrication

D. All Ultra High Molecular Weight (UHMW) Polyethylene components shall be manufactured from virgin polyethylene material, be U.V. stabilized and shall be partially cross-linked. UHMW components shall be black in color, unless otherwise noted. Transition plate nosings shall be yellow in color.

E. Fiberglass grating shall be high-strength, Pultruded type with anti-skid, extra coarse and durable grit surface such as *Fibergrate 1" inch deep I4010* ADA Compliant pultruded grating or approved equal. Color of grating shall be gray. Attachment of grating shall use Type 316 Stainless Steel fasteners per manufacturer's recommendations. All cuts,

holes or otherwise exposed fiberglass grating shall be sealed with resin seal kit per manufacturer's recommendations. *"Fibergrate"* is produced by *Fibergrate Composite Structures International, Inc*. All finished surfaces of FRP items and fabrications shall be smooth, resin-rich, free of voids and without dry spots, cracks, crazes or unreinforced areas. All glass fibers shall be well covered with resin to protect against their exposure due to wear or weathering.

F. Traction Plate shall be fiberglass reinforced plate with extra-coarse, non-slip grit surface. Acceptable product shall be "Safplate" or approved equal. Color of traction plate shall be yellow. Plate shall be installed only after coordination with the manufacturer's representative to verify fabrication and fit-up dimensional tolerances. Variance in adjacent plate thickness shall not exceed 1/16". Placement of plate and repairs of cuts or holes shall be per manufacturer's recommendations. "Safplate" Fiberglass Gritted Plate is produced by *Strongwell Corporation*. Installed plate that does not match the same grit surface texture as approved by the submittal process shall be removed and replaced by the CONTRACTOR at no additional cost.

G. All materials shall conform to good workmanship, acceptable industry standards and manufacturer's recommendations.

2.2 DELIVERY, STORAGE, AND PROTECTION

A. Delivery, Storage, and Protection shall be per Section 05120 – Metal Fabrication.

PART 3 – EXECUTION

3.1 TRANSPORT AND DELIVERY

A. The CONTRACTOR shall assume full responsibility for any damage or losses resulting from the handling or transporting of the existing structures, materials and all associated components during loading, shipping, transport and delivery to the project site as well as the subsequent handling required on site for installation.

B. Damage that occurs during transport and delivery and/or during other handling operations prior to final acceptance shall be repaired or replaced by the CONTRACTOR at the discretion of the ENGINEER, and at no additional cost to the OWNER.

3.2 INSTALLATION

A. The complete existing aluminum gangway assembly shall be removed, salvaged and reinstalled as indicated on the Plans and/or to the highest industry standards if not fully shown on the Plans.

B. The complete existing gangway landing float shall be removed, salvaged and reinstalled as indicated on the Plans and/or to the highest industry standards if not fully shown on the Plans.

C. Construction methods and products not specifically mentioned in these Contract Documents shall be utilized using reasonable care and the highest quality construction practices. Final inspection and acceptance of all WORK and products not specifically mentioned in these Contract Documents shall be made by the ENGINEER. Approval shall be based upon conformance to the Contract Documents, quality of workmanship, applicable industry standards, and pertinent manufacturer's recommendations.

END OF SECTION

SECTION 02899 –FLOAT APPURTENANCES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and installing all fire extinguisher cabinets, life ring cabinets, hose mounts and all associated bases, connecting hardware and appurtenances.

1.2 SUBMITTALS

A. Fire Extinguisher Cabinets, Life Ring Cabinets and Hose Mounts – Submit manufacturer's published literature for specific product and associated attachment hardware.

B. Portable Fire Extinguisher, Catalogue Cut sheet and Material Safety Data Sheet.

C. Fabrication Shop Drawings for all fabricated steel items, prior to fabrication, per Section 05120 – Metal Fabrication.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHER CABINETS

A. Fire extinguisher cabinets shall be as manufactured by *Cheyenne,* or approved equal, with a 20 lb. ABC fire extinguisher. All attachment hardware shall be hot-dipped galvanized.

2.2 LIFE RINGS

A. Life ring cabinets shall be a standard size and color as manufactured by *Cheyenne*, or approved equal. All attachment hardware shall be hot-dipped galvanized.

B. Each cabinet shall be equipped with a life ring and attached rope.

2.3 HOSE MOUNTS

A. Hose mounts shall be "Tough Guy" hose hanger shall be as manufactured by *Cheyenne,* or approved equal. All attachment hardware shall be hot-dipped galvanized.

2.4 STEEL PRODUCTS

A. Steel stands for cabinets, hose mounts, and all attachment hardware shall be hot dip galvanized unless otherwise noted and provided in accordance with the provisions of Section 05120-Metal Fabrication.

PART 3 - EXECUTION

3.1 GENERAL

A. Base plates and support posts shall be constructed according to the Plans and in compliance with Section 05120 – Metal Fabrication.

3.2 INSTALLATION

A. Fire extinguisher and life ring cabinets shall be installed in the approximate locations shown on the Plans per ENGINEER Direction.

B. Hose mounts shall be installed as shown in the Plans nearby water pedestals per ENGINEER direction.

END OF SECTION

SECTION 02996 – PILE ANODES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK in this Section shall include all labor, materials, tools and equipment necessary to supply and install anodes onto steel piles and all other related WORK in accordance with the requirements of the Contract Documents and as shown on the Plans.

1.2 DESIGN CRITERIA

A. Anode Design Life: 15 Years

1.3 SUBMITTALS

A. Manufacturer's Anode Specifications: Details including physical and electrochemical properties.

B. Anode Installation Plan including equipment and personnel.

C. Weld Repair Product Data: Provide product data and/or technical specifications including manufacturer's instructions for surface preparation, required environmental conditions, etc., for anode-to-pile weld coating product.

D. Welding-Diver Qualifications and Qualified Welding Procedures in accordance with AWS D3.6 for any welding performed under water.

E. Documentation for proposed welder-diver personnel showing experience of similar underwater anode installation projects. Include current names and contact numbers of corresponding project owners.

F. Continuity Testing Plan: Documentation of personnel with records of experience/qualifications for this work; equipment list; calibration process; work description of process to obtain readings; site map of piles identified to be tested.

PART 2 - PRODUCTS

2.1 ANODES

A. Anodes shall be "*Harbalum MIL-A-24779"*, as manufactured by *Harbor Island Supply*, or "*MIL-A-24779"* and/or "*MA-3 Alloy*" as manufactured by *M&M Industries, Inc.*, or approved equal. Anodes shall be of the specified weight and dimensions as indicated on the Plans; Actual Ampere-Hours Per Pound shall be a minimum of 1,150 amp-hrs and a minimum Current Efficiency of 85%.

B. Offset mounting tabs shall be fabricated from weldable structural steel plate or flat bar (or rod for anode Type 4A only) that complies with ASTM A36.

C. A single sample from each batch shall be taken for chemical analysis. The sample shall be taken in the beginning of the first batch and at the end of the second batch; then at the beginning of the third batch and so on. Samples shall be assayed to verify required

chemical composition. All anodes from batches whose chemical composition do not meet the requirements above shall be rejected.

D. Individual anodes shall have a weight within +/- 3% of the nominal weight for anodes. A minimum of 10% of the number of each anode type shall be weighed by the CONTRACTOR or anode manufacturer in the presence of the ENGINEER to confirm compliance.

PART 3 - EXECUTION

3.1 ANODE INSTALLATION

A. All anodes shall be field welded to piles in vertical position, at both ends, as shown on the plans, per current AWS D3.6 Specification for Underwater Welding, by welder-diver certified in the particular position and process.

B. Welding Process: Shield Metal Arc. Prior to anode welding, pile surface shall be cleaned to sound metal using grinders, wire brushes, or other suitable means. All contaminants, such as petroleum products and rust, must be removed from the area to be welded.

C. Welding Position and Direction: Direction shall be down for vertical welding.

D. Welding Consumables: 1/8", 5/32", or 3/16" BROCO "SofTouch" mild steel electrodes (CS-1, CS-2, or CS-3) shall be used. Care shall be taken to insure waterproof coating is not damaged.

E. Electrical Characteristics: Welding shall be accomplished using direct current. The electrode shall be negative for mild steel electrodes.

F. All anode-to-pile welds/weld area (damaged coatings from weld process) shall have "*Kop-Coat A788 Splash Zone Mastic*", or ENGINEER approved equal, applied per manufacturer's recommendations.

3.2 CONTINUITY TESTING AND POTENTIAL READINGS

A. After installation of anodes, a random 40% of all anodes shall be digitally photographed and tested by the CONTRACTOR to verify electrical continuity. Using a Silver/Silver Chloride reference electrode and a high impedance voltmeter, measure the pile to electrolyte potential. Potential readings shall be measured with the probe in contact with the pile and not in contact with the anode mounting tab. Diver shall remove coatings, rust or marine growth as necessary from the test point before taking a reading to ensure good electrical contact. Anode installation is acceptable if the test reading is -0.80 volts or more negative. Readings of -0.79 or less negative indicate a deficient installation and shall be remedied as necessary to achieve acceptable test reading. Test readings and corresponding photographs shall be documented and submitted to ENGINEER for records. Each anode tested and photographed shall be uniquely numbered and identified on a plan drawing with corresponding test reading data.

B. Personnel performing this work shall have appropriate level of training and/or experience. Qualification records for this personnel shall be included in the submittals for this work.

C. All equipment used for this work shall be properly maintained and calibrated prior to being used for this work. Calibration process shall be included in submittals for this work.

END OF SECTION

SECTION 05120 – METAL FABRICATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK in this Section shall include all labor, materials, tools and equipment necessary for fabrication, handling, transport and installation of all structural steel and aluminum items in accordance with the requirements of the Contract Documents and as shown on the Plans.

1.2 REFERENCES

A. AISC (American Institute of Steel Construction) Code of Standard Practice - Manual of Steel Construction - Allowable Stress Design (ASD).

B. ASTM (American Society of Testing Materials) Specifications

C. ASTM A36/A36M - Structural Steel.

D. ASTM A6 – General Requirements for Rolled Steel Plates, Shapes, Sheet piling, and Bars for Structural Use.

E. ASTM A108 – Steel Bars, Carbon Cold-Finished, Standard Quality.

F. ASTM A123 - Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products.

G. ASTM A153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware.

H. ASTM A325 - High Strength Bolts for Structural Steel Joints.

I. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.

J. ASTM A53 – Steel Pipe.

K. ASTM F593 – Stainless Steel Bolts, Hex Cap Screws, and Studs.

L. ASTM F594 – Stainless Steel Nuts.

M. AWS D1.1 - Structural Welding Code - Steel.

N. The Aluminum Association – Aluminum Design Manual: Specifications and Guidelines for Aluminum Structures.

O. ASTM B209 – Standard Specifications for Aluminum and Aluminum-Alloy Sheet and Plate.

P. ASTM B210 – Standard Specifications for Aluminum and Aluminum-Alloy Drawn Seamless Tube.

Q. ASTM B221 – Standard Specifications for Aluminum and Aluminum-Alloy Bar, Rod, Wire, Profiles and Tubes.

R. ASTM B241 – Standard Specifications for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Tube.

S. ASTM B308 – Standard Specifications for Aluminum and Aluminum-Alloy 6061-T6 Standard Structural Profiles.

T. AWS D1.2 - Structural Welding Code - Aluminum.

1.3 SUBMITTALS

A. Fabrication Shop Drawings of all fabricated steel and aluminum items prior to fabrication.

1. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length and type of each weld.
2. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
3. Indicate type, size and length of bolts, distinguishing between shop and field bolts. Identify high-strength bolted slip-critical, direct-tension, or tensioned shear/bearing connections.

B. Manufacturer's Mill Certificate: Steel certification for all steel used shall include chemistry, yield strength, and mill numbers.

C. Galvanizing Certifications

D. Galvanizing Repair Method and Materials

E. Welding Procedures

F. Welders Certificates: Certify welders employed in the work, verifying AWS qualification.

G. Product data, samples, preparation, application, QA/QC Plan, and field repair of metal coatings per Section 09000 – Coatings.

H. Provide fabrication shop QA/QC Plan for review by ENGINEER. Provide qualification data for firms and/or persons to demonstrate their capabilities and experience. Include lists of projects with project names and addresses, and names and addresses of engineers, architects and owners.

1.4 QUALITY ASSURANCE

A. Fabricate and install structural steel in accordance with AISC Code of Standard Practice.

B. Fabricate and install aluminum in accordance with Aluminum Association Aluminum Design Manual.

C. Quality Assurance. The metal fabricator must have an ongoing quality assurance program approved by a qualified, independent source. At the option of the ENGINEER, the fabricator shall submit a copy of their operational quality assurance program, and

shall not begin fabrication until the ENGINEER has approved this quality assurance program. The objectives of the quality assurance program are as follows:

1. Completed products shall conform completely to all governing codes and specifications stipulated in the Design Contract Documents, and Plans.

2. Quality Assurance Program is an integral part of the ongoing manufacturing activities of the Fabricator.

Although periodic inspections will be carried out by the ENGINEER, the purpose of these inspections is to note general conformance to the design documents. It is still the responsibility of the fabricator to produce a quality product, in complete conformance with the design documents, and to document and correct any non-conformance. All documentation, including that submitted, shall be kept on file by the fabricator, for review, if requested by the OWNER or ENGINEER.

D. Fabrication Facility. The fabrication facility shall provide the proper environment and physical conditions necessary for welding, cutting, and general metal fabrication. The facility shall provide adequate work space, equipment, level surfaces, and protection from wind, moisture and freezing. The fabricator shall have the capability to carry out the following work in-house or on a contract basis:

- Design of lifting and erection devices not shown on the drawings.
- Preparation of shop fabrication drawings.
- Receiving, checking and storing of materials for metal fabrication.
- Dimensional checking and verification.
- Resolution of non-conformities.
- Documentation of all stages of work with capability of tracing all major components.
- Finishing, repairing, storing and shipping.

E. Fabricator Qualifications: Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the WORK. Shop welding procedures and qualifications shall be submitted for review by the ENGINEER.

F. Welding Standards: Comply with applicable provisions of AWS D1.1 Structural Welding Code - Steel, current edition, and AWS D1.2 Structural Welding Code – Aluminum, current edition.

1. Present evidence that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

2. Submit welding procedures in accordance with AWS Structural Welding Codes.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to Fabricator’s shop in such quantities and at such times to ensure continuity of installation.

B. Store materials to permit easy access for inspection and identification. Materials shall be protected during shipping and handling. Materials shall be stored above ground on

pallets, platforms or other supports. Materials shall be kept clean and properly drained. Girders and beams shall be placed upright and shored. Long members shall be adequately supported on skids to prevent damage from deflection.

C. Store fasteners in a protected place. Clean and re-lubricate bolts and nuts that become dry or rusty before use.

D. Do not store materials or assembled structures in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 - PRODUCTS

2.1 MATERIALS - All materials for metal fabrication shall conform to the Contract Documents and as shown on the Plans. Purchase orders shall contain all necessary information to verify that materials purchased comply with the fore mentioned documents. The Fabricator shall inspect all materials, upon arrival, for conformance with the purchase orders. The Fabricator shall confirm that mill certificates and test reports are provided and that they correctly identify the materials delivered. If a supplier proposes a substitute for any material, the proposed substitution shall be submitted to the ENGINEER for approval prior to commencing any WORK involving use of the proposed substitute material. Supplier must be prepared to supply materials as identified on the design documents if the proposal for a substitution is not approved by the ENGINEER.

A. All miscellaneous steel shapes and plate steel shall be ASTM A36, hot-dip galvanized, unless otherwise noted.

B. Square and rectangular HSS shall be ASTM A500, Grade B, hot-dip galvanized, unless otherwise noted.

C. Pipe less than 12-inch diameter shall be ASTM A53, Grade B, Type E or S, hot-dip galvanized, unless otherwise noted. Pipe greater than 12-inch diameter shall conform to Section 02896 - Steel Pipe Piles.

D. Bolts and Miscellaneous Hardware: Unless otherwise noted, all bolts shall be ASTM A307, hot-dip galvanized. Washers are required under both the head and nut of all bolts, unless otherwise noted. All nuts and washers shall be hot-dip galvanized. Plate washers, with a diameter equivalent to a malleable iron washer, shall be used in all areas where the bolt head or nut bear against wood, except under economy head bolts. All bolts called out as ASTM A325 shall be hot-dip galvanized. A325 bolts shall be installed per AISC turn-of-nut method, or other ENGINEER approved method, unless otherwise indicated on the Plans.

All bolts, nuts, washers, screws, and miscellaneous hardware called out as Stainless Steel shall be Type 316 Stainless Steel conforming to ASTM F593 and F594 as applicable.

All nails shall be hot-dip galvanized.

E. Aluminum shall conform to 6061-T6, unless otherwise noted. Aluminum pipe and round bar shall be 6063-T6.

2.2 METAL COATINGS

A. Unless otherwise noted, all steel shall be hot-dip galvanized in accordance with ASTM A123 or A153 as appropriate.

B. All other metal coatings shall be per Section 09900 – Coatings.

PART 3 - EXECUTION

3.1 METAL FABRICATION

A. Shop Inspection: The CONTRACTOR shall furnish the ENGINEER with 30 days notice of the beginning of WORK at the mill or in the shop so that special fabrication inspections may be scheduled by the ENGINEER.

B. Fabricate and assemble components in a shop, to greatest extent possible. Workmanship and finish shall be equal to the best industry standards and in accordance with the requirements of AWS, AISC, and The Aluminum Association, as applicable.

1. Mark and match-mark materials for field assembly.
2. Materials shall be sourced with matching heat numbers and/or from the same mill runs as necessary for fabricated project elements that require consistent, critical dimensions and fit-up in order to function as intended by design.
3. Fabricate for delivery in a sequence that will expedite erection and minimize field handling.
4. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
5. Holes: Drill holes perpendicular to metal surfaces; do not flame-cut holes or enlarge holes by burning.
6. Aluminum Fabrication: Edges shall be cut true, smooth and free of burrs. Flame cutting is not permitted. Corner edges shall be ground smooth. Holes shall be drilled or punched. Weld spatter and flash marks shall be removed and ground smooth. Mill stamps and markings shall be removed from all exposed surfaces.

C. Structural material, either plain or fabricated, shall be stored at the fabricating shop above ground, on platforms, skids or other supports. It shall be kept free from dirt, grease or other foreign matter, and shall be protected, as far as practical, from corrosion.

D. All holes required for steel hot-dip galvanizing shall be clearly identified on the Shop Fabrication Drawings for ENGINEER review and approval. Fabricator shall coordinate with Galvanizer to determine size and quantity of holes required. Some, or all of the holes, may be required to be fully repaired per AWS D 1.1, at the discretion of the ENGINEER.

3.2 METAL ERECTION

A. General: The CONTRACTOR shall provide and later remove all falsework, temporary shoring, and bracing necessary for erection and to complete assembly. All such devices

shall be properly designed and constructed by the CONTRACTOR to meet anticipated construction and handling loads.

B. Handling and Storing of Materials: Material to be stored shall be placed on skids above the ground. It shall be kept clean and properly drained. Girders and beams shall be placed upright and shored. Handling and erection procedures shall be conducted in a manner to avoid over stressing any structural element. Stress and deflection calculations shall be provided by the CONTRACTOR, as deemed necessary by the ENGINEER, for any erection procedure.

C. Method and Equipment: Before starting the WORK of erection, the CONTRACTOR shall inform the ENGINEER fully as to the method of erection proposed, and the amount and character of equipment proposed to be used. Approval by the ENGINEER shall not be considered as relieving the CONTRACTOR of the responsibility for the safety of his method and equipment, or from carrying out the WORK in full accordance with the Plans and Specifications.

D. Assembling: Metal parts shall be accurately assembled as shown on the Plans, following applicable Industry Standards, Codes, erection drawings and fabricators' match-marks. Excessive force or manipulation of parts shall not be allowed as determined by the ENGINEER. The material shall be carefully handled so that no parts will be bent, broken, or otherwise damaged. Hammering, which will injure or distort the members will not be permitted. Bearing surfaces shall be cleaned before the members are assembled.

E. Bolt Holes and Bolting: Bolt holes and bolting shall follow the requirements as stated on the Plans and as indicated by applicable Industry Standards and Codes. Any steel to steel connections noted to be considered "slip-critical" shall be installed by the "turn-of-nut" tightening method per AISC. In addition to the requirements of AISC, bolting of slip-critical joints shall proceed in the following manner:

1. The joint shall be fitted up and aligned with drift pins.
2. Sufficient force shall be applied so as to bring the faying surfaces of steel into close contact. If high strength bolts are used for this purpose (i.e. used to pull steel into position), they shall be clearly marked for identification, and not used in the final connection.
3. High strength bolts shall be installed and brought up to snug-tight condition, such as can be produced by a few blows of an impact wrench, or by an ordinary spud wrench.
4. High strength bolts shall then be tightened by turn-of-nut method, progressing from the most rigid part of the joint toward the free edges.
5. Bolts used to pull steel into position (mentioned above) shall then be removed, replaced with high strength bolts, and tightened as described above.
6. The impact wrench used for bolt tightening shall be of adequate capacity so as to provide the required tightening in approximately 10 seconds.
7. Bolt lengths shall be such that 0" to ¼" of the bolt shall extend past the end of the nut after tightening.

F. Welding: All welding shall be in accordance with AWS D1.1 or AWS D1.2, current edition, as applicable. All welders shall be qualified per AWS for the type of welding anticipated. Welds will be spot tested by the ENGINEER by VT, MT, or UT and any welds which fail shall be repaired at the CONTRACTOR's expense, which will also include all costs for retesting. No welding through galvanized coatings will be permitted. The galvanizing within one inch of the weld shall be removed and repaired, after welding, according to these Specifications. All weld filler metal shall have chemistry similar to the base metal and shall have a minimum Charpy Impact Test Value of 20 ft-lbs. at –20 degrees F and have chemistry similar to the base metal. Filler metals shall only be used in welding positions recommended by the manufacturer. Welding materials shall be stored, and the condition maintained, according to AWS.

G. Galvanize Repair: Galvanized coatings damaged due to fabrication, welding, material handling or occurring during installation shall be repaired per Section 09900 – Coatings, Sub-Section 3.2.

H. Thermal Spray Metalizing (TSM) Repair: TSM coatings damaged due to fabrication, welding, material handling or occurring during installation shall be repaired per Section 09900 – Coatings, Sub-Section 3.2.

END OF SECTION

SECTION 13121 – UTILITY BUILDING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK under this Section shall include all labor, materials, tools and equipment necessary for fabrication, construction and installation of the complete utility building, all associate connection hardware and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Plans.

1.2 REFERENCES

A. AWPA (American Wood Preservers Association), 2002 Standards

B. WWPA (Western Wood Products Association) Western Lumber Grading Rules, 1998

C. AITC (American Institute of Timber Construction) Standard No. 117-87.

C. ASTM (American Society of Testing Materials) Specifications

D. IBC (International Building Code) 2006

E. SMACNA (Sheet Metal and Air Conditioning Contractor's National Association) – Architectural Sheet Metal Manual, 7th Edition.

1.3 SUBMITTALS

A. Sawn lumber grading and pressure treatment certification.

B. Structural-use wood sheathing information.

C. Wood-framing fastener product information, including product data for framing hold downs.

D. Metal roofing, siding, flashing, and fastener product data. Provide color sample for OWNER approval.

E. Weather barrier product information.

F. Wall and roof insulation product information.

G. Interior vapor barrier product information.

H. Exterior wall wrap product information.

I. Entry door product information.

J. Interior paint and primer product information and color samples for OWNER approval.

K. Adhesive sealant product information.

L. Caulking compound product information.

M. Rubber threshold ramp and HDPE threshold product information.

PART 2 - MATERIALS

2.1 MATERIALS - All materials shall conform to the Contract Documents and as shown on the Plans. Purchase orders shall contain all necessary information to ensure that materials purchased will comply with the fore mentioned documents. The CONTRACTOR shall inspect all materials, upon arrival, for conformance with the purchase orders, and shall confirm that mill certificates and test reports are provided and that they correctly identify the materials delivered. If a supplier proposes a substitute for any material, the proposed substitution shall be submitted to the ENGINEER for approval prior to commencing any work involving use of the proposed substitute material. Supplier shall supply specified materials if the proposed substitution is not approved by the ENGINEER.

A. All sawn lumber shall be surfaced four sides (S4S), Douglas Fir or Hem Fir No. 1 grade or better, as graded in accordance with Standard Number 17 "Grading Rules for West Coast Lumber" as published by the West Coast Lumber Inspection Bureau.

All sill plates bearing on the timber float shall be pressure treated with ACZA per AWPA C-2 to a net dry salt retention of not less than 0.6 pounds per cubic foot.

Unless noted otherwise, conform to nailing schedule (IBC table 2304.9.1).

Washers shall be used under all bolt heads and nuts in contact with wood.

B. Wood sheathing panels shall conform to U.S. Product Standard PS 1. Roof, wall, and floor sheathing shall be APA rated exposure 1 with a span rating of 32/16, grade CD for exterior and grade AC for interior.

C. Framing nails shall be hot-dipped galvanized 16d common nails conforming to Federal Specification FF-N-105B, unless otherwise specified. Wall sheathing, roof sheathing, and flooring shall be nailed with hot-dipped galvanized 10d common nails.

Wood connectors shall be Simpson Strong-Tie and galvanized to a "medium" level of corrosion resistance (Zmax coating or better) (www.strongtie.com), or ENGINEER approved equal. All fasteners shall also be hot-dipped galvanized.

D. Metal Roofing shall be 26 gage *Skyline Roofing* standing seam type metal panels (hidden fasteners) as manufactured by *ASC Building Products* (www.ascbp.com) or ENGINEER approved equal. Color shall be Old Zinc Gray. Provide all components required for a complete metal roof panel assembly including flashings, ridge closures, sealants, gaskets, fillers, closure strips, and similar items. All flashing and trim shall be of the same material, gauge, finish and color as the roof material and shall be fabricated in accordance with standard SMACNA procedures and details (Architectural Sheet Metal Manual, 7th Edition) and/or the metal roofing manufacturer's handbook of construction and installation details.

E. Weather barrier material shall be *Ice and Water Shield* membrane as manufactured by *Grace Construction Products* (www.na.graceconstruction.com), or ENGINEER approved equal. Material shall be self-adhering, rubberized asphalt, backed with high density cross laminated polyethylene. Material thickness shall be 40 mils minimum. Install per manufacturer's instructions.

F. Wall, floor and roof insulation shall be a closed-cell, polyisocyanurate foam core with a minimum thermal value of R13 per 2-inch thick sheet, similar to *Thermasheath -3* rigid foam plastic thermal insulation board, as manufactured by *RMAX* (www.rmaxinc.com) or ENGINEER approved equal. Rigid board insulation shall be snug-fit in the wall and roof cavities. Install per manufacturer's instructions. Any gaps shall be filled with a low-expanding spray foam as manufactured by the *Touch 'N Foam* Company (www.touch-n-seal.com), or ENGINEER approved equal.

G. Vapor barrier shall be made of a polyethylene sheet material, 10mil thickness, or ENGINEER approved equal material, and shall have a maximum permeance rating of 0.13 perm. All interior walls and ceilings shall be sealed with a continuous layer of the vapor barrier. The vapor barrier shall be installed per manufacturer's instructions and sealed at all terminations, lapped joints, and penetration points.

H. Drain wrap shall be *Tyvek DrainWrap* as manufacture by *Dupont* (www.tyvek.com), or ENGINEER approved equal. Install per manufacturer's instructions.

I. Furring strips shall be "*Sturdi-Strips"* plastic furring strips with "*COR-A-VENT SV-3 Siding Vent System"* as manufactured by *COR-A-VENT, Inc*. at top and bottom of walls, or ENGINEER approved equal.

J. Siding shall be 26 gauge "*Trilap Steel Siding"* cedar-lap style, as manufactured by ASC Building products (www.ascbp.com), or ENGINEER approved equal. Color shall be "*Tahoe Blue"*. Submit color sample for OWNER approval. Siding shall be installed per manufacturer's instructions. Provide components required for a complete siding assembly including trim, copings, fasciae, corner units, flashings, sealants, gaskets, fillers, and similar items. Trim components shall match material of metal siding. Trim components shall be "*Old Zinc Gray*" color. Submit color sample for OWNER approval.

Soffit material shall be "*ASC Building products Ventilated/ Perforated Soffit panel"*, colored "*Old Zinc Grey"*, as manufactured by ASC Building products (www.ascbp.com), or ENGINEER approved equal. Submit color sample for OWNER approval. Provide components required for a complete soffit assembly including trim, copings, fasciae, corner units, flashings, sealants, gaskets, fillers, and similar items. Trim components shall match material and finish of fiber cement soffit.

K. Exterior Door shall be a primed fiberglass, pre-hung door manufactured by *Jeld-Wen*, or ENGINEER approved equal. Install per the manufacturer's instruction and shall have single cylinder stainless steel hardware and hinges. Submit final paint coat color samples for door to Owner for approval.

L. Interior paint shall be 100% acrylic interior semi-gloss enamel as supplied by *Benjamin Moore Paints*, or ENGINEER approved equal. The color shall be "Off-White". (2) coats of paint shall be applied to both the walls and ceiling. (1) coat of interior primer shall be

utilized prior to the painting. CONTRACTOR to submit product specifications for ENGINEER approval.

M. Adhesive sealant shall be a fast-cure, high performance, low modulus, one component, moisture curing, mold and UV resistant, polyurethane construction sealant such as *Protecto Sealant 25XL*, or ENGINEER approved equal. Apply per manufacturer's instructions.

N. Caulking shall be *Spectrum* 2-high-performance marine grade silicone sealant as manufactured by *Tremco* (www.tremcosealants.com), or ENGINEER approved equal. Apply per manufacturer's instructions.

O. Butyl tape shall be *MB-10A Sealant Tape* as manufactured by *GSSI Sealants* (www.gssisealants.com), or ENGINEER approved equal. Apply per manufacturer's instructions.

P. Rubber threshold ramp shall be ADA approved, *Transitions™ Modular Entry Mat*, model THRBE 250-1 as manufactured by *EZ Access* (www.ezaccess.com) or ENGINEER approved equal. Usable dimensions shall be 48"x24"x2.5". Secure as indicated on the Plans.

PART 3 – EXECUTION

1.1 INSTALLATION, GENERAL

A. The complete utility building shall be accurately assembled and installed as shown on the Plans, and/or to the highest industry standards if not fully shown on the Plans.

B. Coordinate construction of the utility building the electrical installation contractor.

C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

D. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

E. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

F. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions.

G. Insulation: Install rigid insulation at locations shown on plans. Seal all gaps between rigid foam insulation and framing with approved spray foam.

H. Do not splice structural members between supports unless otherwise indicated.

I. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

J. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

K. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use copper naphthenate for items not continuously protected from liquid water.
2. Use asphaltic mastic as indicated and/or necessary.
3. Field treat all bolt holes through the timber float decking and treated sill with asphaltic mastic.

L. Securely attach rough carpentry work to substrate by anchoring and fastening. Install Simpson hold down anchors per manufacturer's instructions.

M. Use steel box nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

N. For exposed Work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

O. CONTRACTOR is responsible to ensure that all necessary means and methods are properly designed, constructed and maintained for the loads they are intended to support and the work they are intended to accomplish.

P. Construction methods and products not specified in these Contract Documents shall be utilized using reasonable care and the highest quality of construction practices. Final inspection and acceptance of all Work and products not specified in these Contract Documents shall be made by the Engineer. Approval shall be based upon conformance to the Contract Documents, quality of workmanship, applicable industry standards, and pertinent manufacturer's recommendations.

1.2 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

1.3 FURRING INSTALLATION

A. Install level and plumb with closure strips at edges and openings. Shim as required for tolerance of finish Work.

1.4 WALL AND PARTITION FRAMING INSTALLATION

A. General: Provide single bottom plate and double top plates using members of 2-inch nominal thickness whose widths equal that of studs. Fasten plates to supporting construction unless otherwise indicated.

1. Provide continuous horizontal blocking as shown in the drawings along exterior walls, using members of 2-inch nominal thickness and of same width as wall or partitions.

1.5 METAL FABRICATION

A. Refer to Section 05120-METAL FABRICATION for all structural steel fabrication not referred to in this section.

B. Metal roofing and all associated flashing and trim shall be fabricated in accordance with standard SMACNA procedures and details (Architectural Sheet Metal Manual, 7th Edition) and/or the metal roofing manufacturer's handbook of construction and installation details

END OF SECTION

SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following electrical materials and methods:

1. Supporting devices for electrical components.
2. Electrical identification.
3. Electrical demolition.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of Section 01300 – CONTRACTOR Submittals.

B. Provide catalog cut sheets providing product data for each product used. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to.

C. Provide Shop Drawings detailing fabrication and installation of supports and anchorage for electrical items. Show all components of a system and how they relate to each other during installation. Include details of mounting brackets, wiring interconnections, single line diagrams, component layout diagrams for enclosures, materials lists for components in enclosures, wiring schematic diagrams with each wire numbered and each terminal numbered for wiring in enclosures. Provide Shop drawings for the power centers, power heads, light poles, cable support brackets, pedestal mounting plates, power center mounting plates, light pole base support structures, main circuit breaker support rack, panel support racks, and any other structural support brackets for electrical equipment.

1.4 QUALITY ASSURANCE

A. Comply with NFPA 70 for components and installation.

B. All work shall be done to a high level of craftsmanship. All work of any type shall be done to any and all applicable industry standards. This also applies to all manufacturering and fabrication work on materials by the manufacturer and fabricator. All materials shall be free from defects, sharp edges, poor quality paint, etc. All stainless steel products including power centers, panel boards, enclosures, power heads, etc. shall have a finish that is free from defects, blemishes, burn marks from welding, and other discoloration from the natural color of stainless steel.

B. Listing and Labeling: Provide products specified in this Section that are listed and labeled.

1. The Terms "Listed and Labeled": As defined in the National Electrical Code, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.

C. All expose hardware on this project shall be 316 stainless steel. Other types of non-magnetic stainless steel is acceptable for bolts and washers. All steel components of all electrical equipment and their support brackets and associated equipment, plates, etc. shall be 316L stainless steel. All junction boxes and enclosures shall be 316L stainless steel. Size all junction boxes and enclosures as required. All dimensions of enclosures, junction boxes shown are a minimum unless specifically stated as a maximum. Increase dimensions as required.

D. Provide all work required to provide the electrical systems shown on the drawings and included in the specifications. Nothing on the drawings shall be construed to be a bill of materials. It is the contractor's responsibility to determine all equipment required to provide the electrical systems shown on the drawings and specifications. It is the contractor's responsibility to provide all necessary parts to perform the work including accessories. This includes other parts required by a manufacturer to mount their equipment.

E. Demolition all of the electrical systems as shown on plans. Coordinate with City and Borough of Juneau Docks and Harbor Department and other trades to provide electrical services as shown on drawings. Coordinate with utitliy for connection to new services. Instatation of new utitlity transformer will be provide by AEL&P.

1.5 SEQUENCING AND SCHEDULING

A. Coordinate electrical equipment installation with other trades.

B. Arrange for chases, slots, and openings in float structure during progress of construction to allow for electrical installations.

C. Coordinate installing required supporting devices and cut slots and holes as required in structural components as they are constructed. Obtain permission from CIVIL ENGINEER prior to cutting structural members. Field treat all hot dipped galvanized structure and components per civil after cutting.

PART 2 - PRODUCTS

2.1 SUPPORTING DEVICES

A. Channel and angle support systems, hangers, anchors, sleeves, brackets, fabricated items, and fasteners are designed to provide secure support from the structure for electrical components.

1. Material: Type 316L stainless steel, except as otherwise indicated.

B. Steel channel supports have 9/16-inch diameter holes at a maximum of 8 inches o.c., in at least one surface.

1. Fittings and accessories mate and match with channels and are from the same manufacturer.

C. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring steel clamps or "click"-type hangers per NEC for application. Use cushion type with NM portion against cable when securing cable to strut channel.

D. Expansion Anchors: Red Head, Hilti, or equal. Stainless steel.

2.2 ELECTRICAL IDENTIFICATION

A. Manufacturer's Standard Products: Where more than one type is listed for a specified application, selection is Installer's option, but provide single type for each application category. Use colors prescribed by ANSI A13.1, NFPA 70, and these Specifications.

B. Raceway and Cable Labels: Conform to ANSI A13.1, Table 3, for minimum size of letters for legend and minimum length of color field for each raceway or cable size.

1. Type: Preprinted, flexible, self-adhesive, vinyl. Legend is overlaminated with a clear, weather- and chemical-resistant coating.
2. Color: Black legend on orange field.
3. Legend: Indicates voltage, panel, and circuit number. Locate every 100 feet in utilidor.

C. Engraved, Plastic-Laminated Labels, Signs, and Instruction Plates: Engraving stock, melamine plastic laminate punched for mechanical fasteners 1/16-inch minimum thick for signs up to 20 sq. in., 1/8 inch thick for larger sizes. Engraved legend in black letters on white face.

H. Fasteners for Plastic-Laminated and Metal Signs: Self-tapping stainless-steel screws or No. 10/32 stainless-steel machine screws with nuts and flat and lock washers.

2.3 TOUCHUP PAINT

A. For Equipment: Provided by equipment manufacturer and selected to match equipment finish.

B. For Nonequipment Surfaces: Matching type and color of undamaged, existing adjacent finish.

C. For Galvanized Surfaces: Zinc-rich paint recommended by item manufacturer. Field treat hot dipped galvanized materials that are cut, drilled, scratched or otherwise disturbed in the field per Civil.

2.4 CONCRETE, STEEL, WELDING, GALVANIZING, ASPHALT

A. All concrete, steel, welding, galvanizing, and asphalt shall be in compliance with the applicable civil and structural specifications and requirements shown on the civil and structural plans. The steel, welding, and galvanizing of light poles is covered in the specifications for the light poles.

2.5 ELECTRICAL CONNECTIONS & TERMINATIONS

A. Provide de-oxidation compound on all electrical connections and terminations. This includes inside all listed components such as meter bases, powerheads, panelboards, grounding devices etc.

B. Provide heat shrink on all cables and conductors where they are terminated into a ring terminal or other terminal including all locations where they are crimped. The heat shrink shall be color

coded to the phase (red, black, blue, white, green for a,b,c phase, neutral, and ground). This applies to all conductor sizes. The heat shrink shall extend a minimum of two inches over the conductor insulation and at least an inch over the terminal device.

C. Where conductor sizes do not meet the sizes allowed for a device, crimp on the end of the conductor a terminal device UL listed for such use to reduce the diameter without reducing the current rating.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION REQUIREMENTS

A. Store all materials in dry heated storage prior to installing them on the project. Make arrangements for ENGINEER to inspect all power centers, power heads, pedestals, panels, etc. prior to being installed. None of this equipment may be installed without being inspected by the ENGINEER first. All electrical panels, contactors, power heads, luminaires, and power center interiors shall be kept dry at all times including during and after installation.

B. Install items level, plumb, and parallel and perpendicular to other structures and components, except where otherwise indicated.

C. Install equipment to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.

3.2 ELECTRICAL SUPPORTING METHODS

A. 316 Stainless steel. All locations on this Project are considered outdoors.
B. Conform to manufacturer's recommendations for selecting supports.

C. Strength of Supports: Adequate to carry all present and future loads, times a safety factor of at least 4; 200-lb- minimum design load.

3.3 INSTALLATION

A. Install devices to securely and permanently fasten and support electrical components.

B. Raceway Supports: Comply with NFPA 70 and the following requirements:

1. Conform to manufacturer's recommendations for selecting and installing supports.
2. Install individual and multiple raceway hangers and riser clamps to support raceways. Provide U bolts, clamps, attachments, and other hardware necessary for hanger assembly and for securing hanger rods and conduits.
3. Provide supports for cables as shown on the drawings. Use nylon cable ties to secure cable to all supports at every support and as shown on the drawing. Only high quality Thomas & Betts, Burndy or equivalent cable ties may be used with a minimum 250 lb tensile strength. All nails shall be hot dipped galvanized. All screws shall be stainless steel.

C. Install identification devices where required and on all circuit breakers, panels, power centers, pedestals, etc. Provide voltage and phase on labels. Submit labels for approval prior to making them.

1. Install labels where indicated and at locations for best convenience of viewing without interference with operation and maintenance of equipment.
2. Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated on the Contract Documents or required by codes and standards. Use consistent designations throughout the Project.
3. Tag or label power circuits for future connection and circuits in raceways and enclosures with other circuits. Identify source and circuit numbers in each cabinet, pull box, junction box, and outlet box. Color coding may be used for voltage and phase indication.
4. For panelboards, provide framed, typed circuit schedules with explicit description and identification of items controlled by each individual breaker.

D. Store all material and equipment in a dry, heated area until it is installed. Keep all material dry and if it has printed circuit boards or any other electronic components, keep it in a dry heated location after it is installed.

3.4 DEMOLITION

A. Where electrical WORK to remain is damaged or disturbed in the course of the WORK, remove damaged portions and install new products of equal capacity, quality, and functionality.

3.5 CUTTING AND PATCHING

A. Cut, channel, chase, and drill surfaces necessary for electrical installations. Perform cutting by skilled mechanics of the trades involved. All cutting, chases, and drilling shall be per structural drawings. If no specific instruction is given on the structural drawings the cutting, chases, and drilling shall be approved by the ENGINEER as to size, location, method, etc. If a float structure or member is cut, drilled, or a chase made through it without the permission of the ENGINEER or in violation with the structural drawings, it shall be replaced at the cost of the CONTRACTOR.

B. Repair disturbed surfaces to match adjacent undisturbed surfaces. Field repair galvanized surfaces per Civil.

3.6 TOUCH-UP PAINTING

A. Thoroughly clean damaged areas and provide primer, intermediate, and finish coats to suit the degree of damage at each location.

B. Follow paint manufacturer's written instructions for surface preparation and for timing and application of successive coats.

END OF SECTION

SECTION 16052 – ELECTRICAL SUPPORT ASSEMBLIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and installing all above deck steel, steel weldments and assemblies, UHMW, and fiberglass electrical support items and assemblies for all float bound electrical equipment including light poles with pedestal bases, light poles without pedestal bases, heat trace junction box stands, electrical enclosure/power center mounting base, UHMW base plates, UHMW spacer plates, UHMW cable guards, bird wire, all associated connecting hardware and appurtenances, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Below deck electrical support assemblies shall be provided by the float fabricator as a requirement of Section 02895-Moorage Floats.

C. Upland or other electrical support assemblies not on the float system shall be provided as a requirement or incidental item to other sections of the specifications and/or as shown on the Plans.

1.2 SUBMITTALS

A. Fabricated steel assemblies and weldments: All fabricated steel submittals shall be as required by and submitted in accordance with Section 05120 – Metal Fabrication.

B. UHMW PE: Shop Drawings, samples, material certifications and other submittals as required by and submitted in accordance with Section 02895 – Moorage Floats.

C. Bird Wire: Installation procedure and bird wire layout on top of all items noted on the Plans as being protected by bird wire.

PART 2 - PRODUCTS

2.1 STEEL PRODUCTS

A. Steel products, weldments and all associated hardware shall be hot dip galvanized unless otherwise noted, and provided in accordance with the provisions of Section 05120-Metal Fabrication and Section 09900 – Coatings, as appropriate.

B. Bird Wire shall be Premium Nixalite stainless steel bird spikes. Bird spikes shall be provided with Nixalite glue clips and E6800 adhesive.

2.2 UHMW PE PRODUCTS

A. UHMW PE products shall be provided in accordance with Section 02895 – Moorage Floats.

PART 3 - EXECUTION

3.1 FABRICATION

A. All steel products shall be fabricated according to the Plans and in compliance with Section 05120 – Metal Fabrication.

B. All UHMW PE products shall be fabricated in accordance with the Plans and in compliance with Section 02895 – Moorage Floats

3.2 INSTALLATION

A. Install all Electrical Support Assemblies in accordance with the requirements of the Contract Documents and as shown on the Plans.

B. Cuts or holes drilled in timber shall be of the size designated in the Plans or of the smallest dimension allowable to serve the design intent.

1. All cuts or holes shall be treated with field preservative in accordance with Section 02895 – Moorage Floats.

C. Holes for lag bolts shall be pilot-hole drilled per AITC guidelines.

D. Bird wire shall be shop-installed (i.e. temperature controlled environment) using manufacturer-furnished glue clips and E6800 adhesive and in accordance with bird wire manufacturer guidelines.

END OF SECTION

SECTION 16120 - CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes wires and cables and associated connectors, splices, and terminations for wiring systems rated 600 V and less.

1.3 SUBMITTALS

A. Provide catalog cut sheets providing product data for all product used. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: In addition to requirements specified in Division 1 Section "Quality Control," an independent testing agency shall meet OSHA criteria for accreditation of testing laboratories, Title 29, Part 1907; or shall be a full-member company of the InterNational Electrical Testing Association.

1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Architecting Technologies, to supervise on-site testing specified in Part 3.

B. Listing and Labeling: Provide wires and cables specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

C. Comply with NFPA 70.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver wires and cables according to NEMA WC 26.

1.6 COORDINATION

A. Coordinate layout and installation of cables with other installations.

B. Revise locations and elevations from those indicated, as required to suit field conditions and as approved by ENGINEER.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the WORK include, but are not limited to, the following:

1. Wires and Cables:

a. American Insulated Wire Corp.; Leviton Manufacturing Co.
b. Carol Cable Co., Inc.
c. Southwire Company.
d. Priority Wire & Cable.

2. Connectors for Wires and Cables:

a. AMP Incorporated.
b. General Signal; O-Z/Gedney Unit.
c. Monogram Co.; AFC.
d. Square D Co.; Anderson.
e. 3M Company; Electrical Products Division.

2.2 WIRES AND CABLES

A. UL-listed wires and cables with conductor material, insulation type, cable construction, and rating as specified in Part 3 "Wire and Insulation Applications" Article.

B. Rubber Insulation Material: Comply with NEMA WC 3.

C. Thermoplastic Insulation Material: Comply with NEMA WC 5.

D. Cross-Linked Polyethylene Insulation Material: Comply with NEMA WC 7.

E. Ethylene Propylene Rubber Insulation Material: Comply with NEMA WC 8.

F. Conductor Material: Copper. Provide tinned copper in the pedestals and with type G or G-GC cable as shown on the drawings.

G. Stranding: Solid conductor for No. 10 AWG and smaller; stranded conductor for larger than No. 10 AWG.

H. All cables shall be type G or G-GC as shown on the drawings. All type G and G-GC cable shall be UL listed and labeled including approved use for constant submersion in water. Not all type G and G-GC cables have the approved use for constant submersion in water. Cables that do not have the approved use for constant submersion in water shall not acceptable. All type G cable shall have ground conductors of sufficient size to comply with the NEC table 250.122 for equipment grounding conductors for the ampacity of the cable, i.e. a cable rated at 75 degrees for 230 amps shall have a min. no. 4 AWG ground or multiple grounds of equivalent total size. All cables shall have a date of manufacture no earlier than within 18 months of installation.

2.3 CONNECTORS AND SPLICES

A. UL-listed, factory-fabricated wiring connectors of size, ampacity rating, material, type, and class for application and service indicated. Comply with Project's installation requirements and as specified in Part 3 "Wire and Insulation Applications" Article.

END OF SECTION

SECTION 16130 - RACEWAYS AND BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1. Raceways include the following:

a. RMC.
b. RNC.

2. Boxes, enclosures, and cabinets include the following:

a. Device boxes.
b. Outlet boxes.
c. Pull and junction boxes.
d. Cabinets and hinged-cover enclosures.

B. Related Sections include the following:

1. Division 16 Section 16050 - Basic Electrical Materials And Methods for raceways and box supports.
2. Division 16 Section 16140 – Wiring Devices for devices installed in boxes.

1.3 DEFINITIONS

A. RMC: Rigid metal conduit.
B. RNC: Rigid non-metallic conduit.

1.4 SUBMITTALS

A. Provide catalog cut sheets providing product data for all product used including raceways and fittings, boxes, hinged-cover enclosures, and cabinets. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to.

1.5 QUALITY ASSURANCE

A. Listing and Labeling: Provide raceways and boxes specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

B. Comply with NECA's "Standard of Installation."

C. Comply with NFPA 70.

1.6 COORDINATION

A. Coordinate layout and installation of raceways and boxes with other construction elements to ensure adequate headroom, working clearance, and access.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the WORK include, but are not limited to, the following:

1. Metal Conduit and Tubing:

a. Carol Cable Co., Inc.
b. Grinnell Co.; Allied Tube and Conduit Div.
c. Monogram Co.; AFC.
d. Triangle PWC, Inc.

2. Conduit Bodies and Fittings:

a. American Electric; Construction Materials Group.
b. Crouse-Hinds; Div. of Cooper Industries.
c. Emerson Electric Co.; Appleton Electric Co.
d. Hubbell, Inc.; Killark Electric Manufacturing Co.
e. Lamson & Sessions; Carlon Electrical Products.
f. O-Z/Gedney; Unit of General Signal.
g. ETCO Speciality Products, Inc.

3. Boxes, Enclosures, and Cabinets:

a. Butler Manufacturing Co.; Walker Division.
b. Crouse-Hinds; Div. of Cooper Industries.
c. Hoffman Engineering Co.; Federal-Hoffman, Inc.
d. O-Z/Gedney; Unit of General Signal.
e. Robroy Industries, Inc.; Electrical Division.
f. Thomas & Betts Corp.

2.2 METAL CONDUIT AND TUBING

A. Rigid Steel Conduit: ANSI C80.1.

B. Fittings: NEMA FB 1; compatible with conduit/tubing materials.

2.3 NONMETALLIC CONDUIT AND TUBING

A. RNC: Schedule 80 PVC or Standard wall fiberglass conduit (Reinforced Thermosetting Resin Conduit).

B. General: Fiberglass Conduit Specifications
The conduit shall be fiberglass conduit, also known as Reinforced Thermosetting Resin Conduit (RTRC), manufactured using the single circuit filament winding process. Multi circuit windings are not allowed. The conduit shall have a winding angle as close as possible to 54.75 degrees.

The resin system shall be epoxy based, with no fillers, using an anhydride curing agent. The fiberglass shall consist of continuous E-glass roving. The conduit shall not contain any halogen compounds containing chlorine, bromine, flourine and iodine in more than trace amounts when burning.

Conduit and elbows shall be manufactured from the same resin/hardener/glass systems manufactured by the same filament wound system.

Fiberglass conduit fittings and accessories shall be manufactured using one of two manufacturing procedures. The first method shall use the same process, methods, and components as used to manufacture the fiberglass conduit. The second method shall use the compression molding process, Sheet Molding Compound (SMC), for the manufacture of the finished component. The SMC material shall be a vinyl ester resin with +30% reinforcement of glass. The glass fibers should be approximately 1" in length. The SMC material shall be fire resistant to UL 2515.

Conduit shall be integral bell and spigot or bonded coupling and spigot.

Conduit, elbows and fittings are specified for use throughout a temperature range of -60°F (-51°C) to 250°F (121°C).

Manufacturer shall have a current Certificate of Compliance, issued by an independent and accredited company, with an ISO 9001:2008 Quality Management System.

C. Electrical Properties:

1. Volume Resistivity: 3.8×10^{14} ohm-cm, ASTM D 257
2. Surface Resistivity: 1.1×10^{14} ohms, ASTM D 257
3. Dielectric Constant: 3.5 (at 10^3 cps), ASTM D 150
4. Dissipation Factor: 0.005 (at 10^3 cps), ASTM D 150
5. Dielectric Strength: 500 volts/mil. (19.7 kv/mm), ASTM D 149

D. Physical and Mechanical Properties:

1. Tensile Strength (Axial): 11,000 psi (76 MPa), ASTM D 2105
2. Compressive Strength (Axial): 12,000 psi (83 MPa), ASTM D 695
3. Ultimate Elongation: 2% psi (9.6 GPa), ASTM D 2105
4. Modulus of Elasticity (4" conduit): $1.4 \times 10^{+6}$ psi (9.6 GPa), ASTM D 2105
5. Thermal Conductivity: 2.0 BTU/(ft^2)(hr.)(°F/in) (0.3mk), ASTM D 5930-01
6. Specific Gravity: 1.9, ASTM D 792
7. Glass Content: 70% ± 5%, API SPEC 15 LR

8. Water Absorption: Less than 1%, ASTM D 570
9. Barcol Hardness: 54 ± 2, ASTM D2583
10. Flammability:
    a. Above Ground Conduit: Conform to UL 2515 & CSA C22.2, No. 211.3-96
    b. Below Ground Conduit: HB Rating, UL 94
11. Coefficient of Thermal Expansion: 1.2 x 10^{-5} in/in/°F (2.2 10^{-5} m/m/°C), ASTM D 696

2.4 OUTLET AND DEVICE BOXES

A. Stainless Steel, 316L.

2.5 PULL AND JUNCTION BOXES

A. Stainless Steel, type 316L.

2.6 ENCLOSURES AND CABINETS

A. All enclosures and cabinets: Stainless Steel type 316L unless noted otherwise.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive raceways, boxes, enclosures, and cabinets for compliance with installation tolerances and other conditions affecting performance of raceway installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 WIRING METHODS

A. Outdoors: Use the following wiring methods:

1. Exposed: Schedule 80 PVC or Fiberglass conduit. Only use GRS where noted.
2. Underground: Schedule 80 PVC or Fiberglass conduit. Only use GRS where noted.
3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): Liquid tight non-metallic conduit.
4. Boxes and Enclosures: NEMA 4X, stainless steel, type 316L unless noted otherwise.

3.3 INSTALLATION

A. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.

B. Complete raceway installation before starting conductor installation.

C. Support raceways as specified in Division 16 Section 16050 Basic Electrical Material And Methods.

D. Use temporary closures to prevent foreign matter from entering raceways.

E. Protect conduit from filling with water during construction.

F. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.

G. Use raceway fittings compatible with raceways and suitable for use and location. For intermediate steel conduit, use threaded rigid steel conduit fittings, unless otherwise indicated.

H. Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical.

I. Join raceways with fittings designed and approved for the purpose and make joints tight.

1. Make raceway terminations tight. Use bonding bushings or wedges at connections subject to vibration. Use bonding jumpers where joints cannot be made tight.
2. Use insulating bushings to protect conductors.

J. Tighten set screws of threadless fittings with suitable tools.

K. Terminations: Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against the box. Where terminations are not secure with 1 locknut, use 2 locknuts: 1 inside and 1 outside the box.

L. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align raceways so the coupling is square to the box and tighten the chase nipple so no threads are exposed.

M. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of the pull wire.

N. The purpose of a lot of the conduit in this project is to provide physical damage protection to the type G-GC aand type G cable. Minimum conduit sizes are shown. Size the conduit so the cable can be easily installed and so good air flow can be maintained in the conduit to allow the cable to dissipate heat. Increase conduit sizes as required.

3.4 PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure coatings, finishes, and cabinets are without damage or deterioration at the time of Substantial Completion.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to paint finishes with matching touchup coating recommended by manufacturer.

3.5 CLEANING

A. On completion of installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finish, including chips, scratches, and abrasions.

END OF SECTION

SECTION 16140 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes receptacles and finish plates.

1.3 SUBMITTALS

A. Provide catalog cut sheets providing product data for all product used including all equipment and materials used in the pedestals. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to.

B. Shop Drawings: For each power head and pedestal base electrical buss bars with their stainless steel mounting plate. Provide fabrication shop drawings with dimensions, details of hinges, welds, etc.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.

B. Comply with NEMA WD 1.

C. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the WORK include, but are not limited to, the following:

1. Wiring Devices:

    a. Bryant Electric, Inc.
    b. GE Company; GE Wiring Devices.
    c. Hubbell, Inc.; Wiring Devices Div.
    d. Leviton Manufacturing Co., Inc.
    e. Pass & Seymour/Legrand; Wiring Devices Div.

2. Pedestals: Foxfab, Marine Electrical Equipment or equal.

2.2 RECEPTACLES

A. Provide commercial specification grade receptacles and switches 20A, 120V rated, in the vault.

2.3 PEDESTALS

A. Provide pedestals made of the materials and with the features and functions shown on the contract drawings. The powerheads shall be UL listed as a marine pedestal assembly. The power center shall be UL listed as a marine electrical assembly All pedestals shall have the features and functions as the pedestals shown on the drawings. The welding and powder coating shall comply with the same specifications as for the light poles.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install devices and assemblies plumb and secure.

B. Install as shown on the drawings and per the manufacturer's instructions.

3.2 IDENTIFICATION

A. Comply with Division 16 Section 16050 – Basic Electrical Material And Methods.

1. Receptacles: Identify as shown on the drawings.
2. Label receptacles and circuit breakers with voltage and amperage rating with engraved phenolic labels screwed into the pedestal under the door.

3.3 CONNECTIONS

A. Connect wiring device grounding terminal to branch-circuit equipment grounding conductor.

B. Tighten electrical connectors and terminals according to manufacturers published torque-tightening values. If manufacturers torque values are not indicated, use those specified in UL 486A and UL 486B.

3.4 FIELD QUALITY CONTROL

A. Test wiring devices for proper polarity and ground continuity. Operate each device at least six times.

B. Replace damaged or defective components.

3.5 CLEANING

A. Internally clean devices, device outlet boxes, and enclosures. Replace stained or improperly painted wall plates or devices.

END OF SECTION

SECTION 16452 - GROUNDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. NFPA 70 section 555 requires extensive ground fault protection for personal as well as equipment. Provide ground fault protection per drawings and as required per code.

1.2 SUMMARY

A. This Section includes grounding of electrical systems and equipment and basic requirements for grounding for protection of life, equipment, circuits, and systems. Grounding requirements specified in this Section may be supplemented in other Sections of these Specifications.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 16 Section 16120 – Conductors And Cables.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the contract and Division 1 Specification Sections.

B. Provide catalog cut sheets providing product data for all product used including grounding rods, connectors and connection materials, and grounding fittings. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to.

1.4 QUALITY ASSURANCE

A. Comply with NFPA 70.

B. Comply with UL 467.

C. Listing and Labeling: Provide products specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the WORK include, but are not limited to, the following:

1. Ideal Industries, Inc.
2. Burndy
3. O-Z/Gedney Co.
4. Thomas & Betts, Electrical.

2.2 GROUNDING AND BONDING PRODUCTS

A. Governing Requirements: Where types, sizes, ratings, and quantities indicated are in excess of National Electrical Code (NEC) requirements, the more stringent requirements and the greater size, rating, and quantity indications govern.

2.3 WIRE AND CABLE GROUNDING CONDUCTORS

A. Comply with Division 16 Section 16120 – Conductors And Cables. Conform to NEC Table 8, except as otherwise indicated, for conductor properties, including stranding.

1. Material: copper. Use only copper wire.

B. Equipment Grounding Conductors: Insulated with green color insulation.

C. Grounding-Electrode Conductors: Stranded cable.

D. Underground Conductors: Bare, tinned, stranded, except as otherwise indicated.

E. Bare Copper Conductors: Conform to the following:

1. Solid Conductors: ASTM B 3.

2.4 MISCELLANEOUS CONDUCTORS

A. Grounding Bus: Bare, annealed-copper bars of rectangular cross section.

B. Braided Bonding Jumpers: Copper tape, braided No. 30 AWG bare copper wire, terminated with copper ferrules.

C. Bonding Straps: Soft copper, 0.05 inch (1 mm) thick and 2 inches (50 mm) wide, except as indicated.

2.5 CONNECTOR PRODUCTS

A. Pressure Connectors: High-conductivity-plated units.

B. Bolted Clamps: Heavy-duty type.

C. Exothermic-Welded Connections: Provided in kit form and selected per manufacturer's written instructions for specific types, sizes, and combinations of conductors and connected items.

D. Use Burndy type high compression connectors for connections to ground rods and rebar in abutment, etc.

2.6 GROUND RODS

A. Use stainless steel ground rods in salt water. Provide ¾"x10' ground rods. Use copper clad steel rods in earth.

PART 3 - EXECUTION

3.1 APPLICATION

A. Equipment Grounding Conductors: Comply with NEC Article 250 for types, sizes, and quantities of equipment grounding conductors, except where specific types, larger sizes, or more conductors than required by NEC are indicated.

1. Install equipment grounding conductor with circuit conductors for the items below in addition to those required by Code:

   a. Feeders and branch circuits.
   b. Lighting circuits.
   c. Receptacle circuits.

2. Nonmetallic Raceways: Install an equipment grounding conductor in nonmetallic raceways unless they are designated for telephone or data cables.

B. Separately Derived Systems: Where NEC requires grounding, ground according to NEC Paragraph 250-26.

C. Metal Poles Supporting Outdoor Lighting Fixtures: Ground pole to a grounding electrode in addition to separate equipment grounding conductor run with supply branch circuit.

D. Ground neutral of all transformers. Provide a ground rod into the salt water at each transformer and ground per NEC. Connect ground at transformer to enclosure, mounting brackets, grounding conductors in all cables entering power center and ground rod. Note, UHMW is used as an insulating means in this project. Make sure all metallic components including brackets and mounting equipment is grounded.

3.2 INSTALLATION

A. General: Ground electrical systems and equipment according to NEC requirements, except where Drawings or Specifications exceed NEC requirements.

B. Grounding Conductors: Route along the shortest and straightest paths possible, except as otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

C. Float Stucture: Ground all steel float structures to electrical grounding system. This includes the new gangways, and other steel on the marine structures and floats. Install lugs on the steel when grounding or Burndy high compression connectors. Repair connections with galvanizing per the ENGINEER.

3.3 CONNECTIONS

A. General: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

1. Use electroplated or hot-tin-coated materials to assure high conductivity and to make contact points closer in order of galvanic series.
2. Make connections with clean, bare metal at points of contact.
3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
4. Make aluminum-to-galvanized steel connections with tin-plated copper jumpers and mechanical clamps.
5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

B. Exothermic-Welded Connections: Use for connections to structural steel where noted or by Engineer's written permission. Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.

C. Equipment Grounding-Wire Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.

D. Noncontact Metal Raceway Terminations: Where metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically noncontinuous conduits at both entrances and exits with grounding bushings and bare grounding conductors, except as otherwise indicated.

E. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values. Where these requirements are not available, use those specified in UL 486A and UL 486B.

F. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by manufacturer of connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.

G. Moisture Protection: Where insulated grounding conductors are connected to grounding rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

H. Coordinate with float fabricator to install longer bolts to allow a ground lug to be installed in order to bond to structural steel. Use a Burndy compression lug to make the connection.

END OF SECTION

SECTION 16461 - DRY-TYPE TRANSFORMERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes dry-type distribution and specialty transformers rated 1000 V and less.

1.2 SUBMITTALS

A. Provide catalog cut sheets providing product data for all product used including data on features, components, ratings, and performance for each type of transformer specified. Include dimensioned plans, sections, and elevation views. Show minimum clearances and installed devices and features. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to.

B. Submit manufacturer's technical product data including KVA rating, frequency, primary and secondary voltages, percent taps, % impedance, insulation class, sound level data, and certification of transformer performance per DOE 2016 Efficiency Standards at indicated loads, no load and full load losses in watts, hot spot and average temperature rise above 40 degrees C ambient, sound level in decibels, and standard published data.

C. Factory Test Reports: Certified copies of manufacturer's design and routine factory tests required by referenced standards.

D. Sound-Level Test Reports: Certified copies of manufacturer's sound-level tests applicable to equipment for this Project.

E. Maintenance Data: For transformers to include in the maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: In addition to requirements specified in Division 1 Section "Quality Control," an independent testing agency shall meet OSHA criteria for accreditation of testing laboratories, Title 29, Part 1907; or shall be a full-member company of the InterNational Electrical Testing Association.

1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies, to supervise on-site testing specified in Part 3.

B. Listing and Labeling: Provide transformers specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

C. Comply with IEEE C2.

D. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering transformers that may be incorporated into the Work include, but are not limited to, the following:

1. Cutler-Hammer/Eaton Corp.
2. GE Electrical Distribution & Control.(Hitachi Power Division)
3. Siemens Energy & Automation, Inc.
4. Square D./Schneider Electric NA.

2.2 TRANSFORMERS, GENERAL

A. Description: Factory-assembled and -tested, air-cooled units of types specified, designed for 60-Hz service.

B. Cores: Shall be constructed of high grade, grain-oriented, non-aging silicon steel with high magnetic permeability, and low hysteresis and eddy current losses. Magnetic flux densities shall be kept well below the saturation point. The transformer core volume shall allow efficient transformer operation at 10% above the nominal tap voltage.

C. Coils: Continuous copper windings without splices, except for taps.

D. Internal Coil Connections: Brazed or pressure type.

E. All transformers shall be supplied with clamp-type solderless connectors suitable for use with copper connecting cables.

F. Transformers shall operate at 100% nameplate KVA rating continuously, with normal life expectancy as defined in ANSI C57.96, while in a 40 degrees C ambient environment without exceeding the rated average winding temperature rise of the ANSI insulated system used. Specific KVA and voltage ratings required shall be as shown on the drawings.

G. Sound levels must fall within ANSI-NEMA Standard levels according to KVA size. Expected ANSI and NEMA sound levels for self-cooled units as follows:

1. 0 to 50KVA - 45 dB or less
2. 51 to 150KVA - 50 dB or less
3. 151 to 300KVA - 55 dB or less
4. 301 to 500KVA - 60 dB or less
5. 501KVA or greater - 65 dB or less

H. Dry-type transformers shall have metallic enclosures designed to provide for air cooling and to prevent accidental contact with live conductors. The materials and final performance of the product must conform to applicable IEEE and NEMA standards.

Transformer wiring compartment shall be located below the core and coil, and shall be cooled by air circulation, or the wiring compartment shall be insulated from the core and coil by means of a suitable thermal insulation barrier. The maximum temperature of the enclosure shall not exceed 50 degrees C rise above a 40 degree C maximum ambient (90 degrees C).

I. Transformers shall meet or exceed the efficiency levels specified in the NEMA Premium® Efficiency Transformers Program. Efficiencies are measured at 35% loading and 75 degrees C.

J. On three-phase units the core and coil assembly shall be impregnated with non-hydroscopic, thermosetting varnish and cured to reduce hot spots and seal out moisture. Enameled conductors may also be used.

K. Terminal boards shall be provided on all transformers. High-voltage and low-voltage terminals must be held in a fixed position, thus removing any need for taping of cable-terminal connections.

L. The core of all transformers shall be grounded to the enclosure with a flexible copper strap that is fully rated as a grounding electrode conductor.

2.3 GENERAL-PURPOSE DISTRIBUTION AND POWER TRANSFORMERS

A. Comply with NEMA ST 20 and list and label as complying with UL 1561.

B. Cores: One leg per phase.

C. Windings: One coil per phase in primary and secondary.

D. Enclosure: NEMA 2 steel, ANSI 61 color, weather-resistant enamel, ventilated, dripproof. Class complies with NEMA 250 for the environment in which installed. Transformer will be well ventilated to prevent excess humidity and moisture entering enclosure. Include drip-proof construction, with lifting provisions. All ventilation openings shall be protected against falling dirt.

E. Insulation Class: 185 or 220 deg C class for transformers 15 kVA or smaller; 220 deg C class for transformers larger than 15 kVA. J. All insulation materials shall be flame-retardant and shall not support combustion as defined in ASTM Standard Test Method D635

1. Rated Temperature Rise: 150 deg C maximum rise above 40 deg C.

F. Taps: For transformers 3 kVA and larger, full-capacity taps in high-voltage windings are as follows:

1. Taps, 15 through 500 kVA: Six 2.5-percent taps, 2 above and 4 below rated high voltage.

G. Floor mount brackets: Manufacturer's standard brackets. M. All transformers shall have neoprene rubber pads between the high-grade core and coil assembly and the transformer

enclosure to isolate sound and vibration and prevent metal-to-metal contact between the core and the mounting base. Flexible conduit connections to the transformer may be used.

2.6 FINISHES

A. Indoor Units: Manufacturer's standard paint over corrosion-resistant pretreatment and primer.

2.7 SOURCE QUALITY CONTROL

A. Factory Tests: Design and routine tests comply with referenced standards.

B. Factory Sound-Level Tests: Conduct sound-level tests on equipment for this Project if specified sound levels are below standard ratings.

END OF SECTION

SECTION 16470 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. See Specification 16476 ‘Disconnect Switches and Circuit Breakers’.

1.2 SUMMARY

A. This Section includes power panelboards, switchboards, surge protection devices, and associated auxiliary equipment rated 600 V and less. Note: the terms ‘panelboard’ and ‘switchboard’ are used interchangeably in this specification. All requirements stated herein apply to all panelboards and switchboards and named associated auxiliary components

1.3 SUBMITTALS

A. Provide catalog cut sheets providing product data for all product used. For each type of panelboard and switchboard, accessory item, and component specified. Shop drawings for all switchboards and panelboards including dimensional information, circuit breaker information, general arrangements, etc. Includes surge protection devices. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to.

B. Panelboard Schedules: For installation in panelboards.

C. Maintenance Data: For panelboard components to include in the maintenance manuals specified in Division 1. Include manufacturer's written instructions for testing circuit breakers.

1.4 QUALITY ASSURANCE

A. Listing and Labeling: Provide products specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

C. Comply with NFPA 70.

D. Comply with NEMA PB 1.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering transformers that may be incorporated into the Work include, but are not limited to, the following:

1. Cutler-Hammer/Eaton Corp.
2. GE Electrical Distribution & Control.(Hitachi Power Division)
3. Siemens Energy & Automation, Inc.
4. Square D./Schneider Electric NA.

Note: the panelboards and switchboards have been designed based upon equipment manufactured by Square D Co. See drawings for specific make and model numbers. Mounting details and equipment layout are based upon the Square D Co. equipment. If another manufacturer's equipment is used, make all changes necessary to the mounting and layout as required.

2.2 PANELBOARDS AND SWITCHBOARDS

A. Enclosures: surface-mounted cabinets as indicated. NEMA 1, unless otherwise indicated to meet environmental conditions at installed location.

B. Front: Secured to box with concealed trim clamps, unless otherwise indicated. Front for surface-mounted panelboards shall be same dimensions as box. Fronts for flush panelboards shall overlap box, unless otherwise indicated. Provide dead front behind door. Removal of deadfront shall expose terminals etc. Only the circuit breaker handles shall be exposed through openings of dead front. No live parts shall be exposed when deadfront is installed. Doors provided for all units in front, with concealed hinges. Secure with flush catch and tumbler lock, all keyed alike.

C. Directory Frame: Metal, mounted inside each panelboard door.

D. Bus: Hard drawn copper of 98 percent conductivity.

E. Main and Neutral Lugs: Compression type.

F. Equipment Ground Bus: Provide copper ground bar with copper or bronze studs and bronze wahsers and nuts. Terminate all ground conductors with ring terminals and heat shrink over the conductor to connector area overlapping two inches on conductor side, one inch min on connector side.

G. Neutral Bus: Provide as required per the drawing notes and model numbers specified.

H. Service Equipment Approval: Listed for use as service equipment for main switchboard and panel L.

I. Future Devices: Equip with mounting brackets, bus connections, and necessary appurtenances, for the overcurrent protective device ampere ratings indicated for future installation of devices.

A. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, except circuit breakers 225-A frame size and greater may be plug-in type where individual positive-locking device requires mechanical release for removal.

2.5 OVERCURRENT PROTECTIVE DEVICES

A. Molded-Case Circuit Breaker: NEMA AB 1, handle lockable.

1. Characteristics: Frame size, trip rating, number of poles, and auxiliary devices as indicated and interrupting capacity rating to meet available fault current.
2. Application Listing: Appropriate for application.
3. Lugs: Mechanical lugs and power-distribution connectors for number, size, and material of conductors indicated.

2.7 SURGE PROTECTION DEVICES

A. External units meeting specifications shown on the drawings. Coordinate size and rating with maximum continuous operating voltage (MCOV) and voltage protection rating (VPR) based on drawing information provided.

B. Units shall be UL Type I & IEEE Category A appropriate for installation location.

C. All SPDs shall be provided with sufficient AIC or SCCR rating noted on the drawings.

D. SPDs to include all optional features noted on the drawings including surge counters, aux contacts, LED indicator lights.

2.6 ACCESSORY COMPONENTS AND FEATURES

A. Accessory Set: Include tools and miscellaneous items as required for overcurrent protective device test, inspection, maintenance, and operation.

END OF SECTION

SECTION 16476 - DISCONNECT SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes individually mounted switches and circuit breakers used for the following:

1. Service disconnect switches.
2. Feeder and equipment disconnect switches.
3. Feeder branch-circuit protection.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 16 Section 16140 - Wiring Devices for attachment plugs and receptacles, and snap switches used for disconnect switches.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the contract and Division 1 Specification Sections.

B. Provide catalog cut sheets providing product data for each product used including disconnect switches, circuit breakers, and accessories specified in this Section. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to.

C. Include all common technical information required in submittals. Includes: frame size, plug size, KAIC rating, TCC curves, electronic trip unit info as applicable, GFI, GFPE, AFR technology information and settings, etc. Include physical dimensions of all products.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain disconnect switches and circuit breakers from one source and by a single manufacturer.

B. Comply with NFPA 70 for components and installation.

C. Listing and Labeling: Provide disconnect switches and circuit breakers specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering disconnect switches and circuit breakers that may be incorporated into the WORK include, but are not limited to, the following:

1. Molded-Case Circuit Breakers:
   a. Square D Co.

2.2 DISCONNECT SWITCHES

A. Enclosed, Nonfusible Switch: NEMA KS 1, Type HD, with lockable handle.

B. Enclosed, Fusible Switch, 800 A and Smaller: NEMA KS 1, Type HD, clips to accommodate specified fuses, enclosure consistent with environment where located, handle lockable with 2 padlocks, and interlocked with cover in CLOSED position.

C. Enclosure: NEMA KS 1, Type 1, unless otherwise specified or required to meet environmental conditions of installed location.

1. Outdoor Locations: Type 4X, type 316L stainless steel.

2.3 ENCLOSED CIRCUIT BREAKERS

A. Enclosed, Molded-Case Circuit Breaker: NEMA AB 1, with lockable handle.

B. Characteristics: Frame size, trip rating, number of poles, and auxiliary devices as indicated and interrupting rating to meet available fault current.

C. Application Listing: Appropriate for application, including switching fluorescent lighting loads or heating, air-conditioning, and refrigerating equipment.

D. Circuit Breakers, 200 A and Larger: Trip units interchangeable within frame size.

E. Lugs: Mechanical lugs and power-distribution connectors for number, size, and material of conductors indicated.

F. Enclosure: NEMA AB 1, Type 1, unless otherwise specified or required to meet environmental conditions of installed location.

1. Outdoor Locations: Type 4X, type 316L stainless steel.

G. AIC Rating: Meet minimum requirement noted on the drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install disconnect switches and circuit breakers in locations as indicated, according to manufacturer's written instructions.

B. Install disconnect switches and circuit breakers level and plumb.

C. Install wiring between disconnect switches, circuit breakers, control, and indication devices.

D. Connect disconnect switches and circuit breakers and components to wiring system and to ground as indicated and instructed by manufacturer.

1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. Where manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

E. Identify each disconnect switch and circuit breaker according to requirements specified in Division 16 Section 16050 – Basic Electrical Materials And Methods.

3.4 CLEANING

A. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finish including chips, scratches, and abrasions.

END OF SECTION

SECTION 16521 – EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes exterior lighting units with luminaires, lamps, ballasts, poles/support structures, and accessories.

1.3 DEFINITIONS

A. Lighting Unit: A luminaire or an assembly of luminaires complete with a common support, including pole, post, foundation, or other structure, and mounting and support accessories.

B. Luminaire (Light Fixture): A complete lighting device consisting of lamp(s) and ballast(s), when applicable, together with parts designed to distribute light, to position and protect lamps, and to connect lamps to power supply.

1.4 SUBMITTALS

A. Provide catalog cut sheets providing product data for all product used. For each type of lighting unit indicated, arranged in order of lighting unit designation. Note specifically what component is being submitted when more than one model or version is shown on the cut sheet. Where there is more than one of each type of component (circuit breaker), label the top of each cut sheet with the specific component that the cut sheet applies to. Include data on features, accessories, finishes, and the following:

1. Materials and dimensions of luminaires and poles.
2. Certified results of independent laboratory tests for fixtures and lamps for electrical ratings and photometric data.
3. LED drivers and LEDs.
4. Provide information on the candela output along the vertical axis for each luminaire to show compliance with the requirements on the drawings.
5. Show glare control features on each luminaire.
6. Mill cert sheets certifying type of steel, source of steel, etc.
7. Welder Certifications for personnel who are welding the poles.
8. Pole reactions and calculations showing compliance with requirements including wind rating. These shall be stamped by Alaska Registered Engineer as the engineer of record for the pole as submitted.
9. Certificate of compliance by pole fabricator stating the pole meets contract requirements and was fabricated per the submitted shop drawings, welding plan, coating submittals, mill cert sheets, etc.
10. Coating catalog cut sheets showing compliance with contract requirements.

B. Shop Drawings: Anchor-bolt templates keyed to specific poles and certified by manufacturer. Shop Drawings of the poles for use by the pole fabricator and stamped by Alaska Registered Engineer.

C. If an alternate foundation system is proposed by the CONTRACTOR, submit shop drawings and design calculations for the foundation system.

D. Product Certificates: Signed by manufacturers of lighting units certifying that products comply with requirements.

F. Maintenance Data: For lighting units to include in maintenance manuals specified in Division 1.

1.5 QUALITY ASSURANCE

A. Luminaires and Accessories: Listed and labeled as defined in NFPA 70, Article 100, for their indicated use, location, and installation conditions by a testing agency acceptable to authorities having jurisdiction

B. Comply with ANSI C2.

C. Comply with NFPA 70.

D. FM Compliance: Units for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM.

E. Pole fabricator shall provide certificate of compliance showing

1.6 DELIVERY, STORAGE, AND HANDLING OF POLES

A. Retain factory-applied pole wrappings on metal poles until just before pole installation. For all poles, handle with web fabric straps.

1.7 WARRANTY

A. General Warranty: Special warranty specified in this Article shall not deprive OWNER of other rights OWNER may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by CONTRACTOR under requirements of the Contract Documents. Provide a general warranty for all materials and workmanship for a period of three years from the date of Substantial Completion.

B. Special Warranty: Written warranty, signed by manufacturer and Installer agreeing to replace external parts of luminaires and poles exhibiting a failure of finish as specified below. This warranty is in addition to, and not a limitation of, other rights and remedies OWNER may have under requirements of the Contract Documents.

1. Protection of Metal from Corrosion: Warranty against perforation or erosion of finish due to weathering.
2. Color Retention: Warranty against fading, staining, and chalking due to effects of weather and solar radiation.
3. Warranty Period: Manufacturer's standard, but not less than five years from date of Substantial Completion.

1.8 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least one of each type.
2. Glass and Plastic Lenses, Covers, and Other Optical Parts: 1 for every 100 of each type and rating installed. Furnish at least one of each type.
3. Drivers: 1 for every 100 of each type and rating installed. Furnish at least one of each type.
4. Reflectors, Glare Shields, Globes and Guards: 1 for every 20 of each type and rating installed. Furnish at least one of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products indicated on the drawings.

2.2 LUMINAIRES

A. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

B. Metal Parts: Free from burrs, sharp corners, and edges.

C. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.

D. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

E. Doors, Frames, and Other Internal Access: Smooth operating, free from light leakage under operating conditions, and arranged to permit relamping without use of tools. Arrange doors, frames, lenses, diffusers, and other pieces to prevent accidental falling during relamping and when secured in operating position. Provide for door removal for cleaning or replacing lens. Arrange to disconnect ballast when door opens.

F. Exposed Hardware Material: Stainless steel.

G. Plastic Parts: No plastic parts.

H. Reflecting Surfaces: Minimum reflectance as follows, unless otherwise indicated:

1. White Surfaces: 85 percent.
2. Specular Surfaces: 83 percent.
3. Diffusing Specular Surfaces: 75 percent.

I. Lenses and Refractors: Materials as indicated. Use heat- and aging-resistant, resilient gaskets to seal and cushion lens and refractor in luminaire doors.

J. Photoelectric Relays: As follows:

1. Contact Relays: Single throw, arranged to fail in the on position and factory set to turn light unit on at 1.5 to 3 fc (16 to 32 lx) and off at 4.5 to 10 fc (48 to 108 lx) with 15-second minimum time delay.
2. Relay Mounting: In electrical enclosures.

K. LED luminaires. Provide per description on drawings.

2.3 LUMINAIRE SUPPORT COMPONENTS

A. Description: Comply with AASHTO LTS-3 for pole or other support structures, brackets, arms, appurtenances, base, and anchorage and foundation. Wind loads shall be in accordance with what is shown on the drawings.

B. Wind-Load Strength of Total Support Assembly: Adequate to carry support assembly plus luminaires at indicated heights above grade with all equipment shown to be mounted to the pole at the wind loads shown on the drawings. Support assembly includes pole or other support structures, brackets, arms, appurtenances, base, and anchorage and foundation.

1. Strength Analysis: For each pole type and luminaire combination, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.

C. Finish: Match finish of pole/support structure for arm, bracket, and tenon mount materials.

D. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Will not cause galvanic action at contact points.
2. Mountings: Correctly position luminaire to provide indicated light distribution.
3. Anchor Bolts, Nuts, and Washers: Hot-dip galvanized after fabrication unless stainless-steel items are indicated.
4. Anchor-Bolt Template: Plywood or steel.

E. Shafts and base plates for light poles shall conform to ASTM A572 Grade 50. Connecting bolts shall conform to ASTM F3125 Grade A325. Fasteners for handhole covers, bands on lighting brackets, and connector attachment brackets shall conform to ASTM F593. Steel used for light poles shall have a controlled silicon content of either 0.00 to 0.04 percent or 0.15 to 0.25 percent. Mill test certificates verifying the silicon content of the steel shall be submitted to both the galvanizer and the Engineer prior to beginning galvanizing operations.

F. Welding of poles and associated parts shall be in accordance with AWS D1.1/D1.1M, latest edition Structural Welding Code. No welding, including tack and temporary welds

shall be done in the shop or field unless the location of the welds is shown on the approved shop drawings reviewed and accepted by the Engineer. Welding procedures shall accompany the shop drawings submittal for the light pole. The procedures shall specifiy the type of equipment to be used, electrode selection, preheat requirements, base materials, and joint details. When the procedures are not prequalified by AWS or AASHTO, evidence of qualification tests shall be submitted. Welding shall not begin until the submittals have been approved. Nondestructive testing in addition to visual inspection shall be performed by the Contractor. Testing and inspection shall apply to welding performed in the shop and in the field. An independent firm shall perform the nondestructive testing and shall certify the poles are fabricated per the shop drawings and submittals, as well as contract requirements. All welds shall be 100% visually inspected. Visual inspection shall be performed before, during, and after the completion of welding. Grind welds and polish all surfaces to a smooth, even finish prior to galvanizing.

G. Anchor bolts shall meet the requirements of ASTM F1554 and unless otherwise specified, shall be grade 105 and shall conform to supplemental requirements S2, S3, and S4. Anchor bolts shall be hot dipped galvanized. Nuts for anchor bolts shall either conform to ASTM A563, Grade DH or AASHTO M292, Grade 2H. The bolts shall be tested by the manufacturer and inspected prior to shipping to the project site. The manufacturer shall provide a certificate of compliance for the anchor bolts, nuts, and washers with mill sheets stating the bolts, nuts, and washers have been manufactured per the applicable contract requirements including stating the requirements they have been manufacturered to.

H. Light poles and associated parts including anchor bolts and anchor plates shall be hot-dipp galvanized in accordance with AASHTO M111 and ASSHTOM232. The hot dip galvanize shop shall provide a report of random samples of the readings of the mil thickness of the zinc. It shall be at least (3) mils. Each pole shaft end and base as well as base plate shall also be tested with readings provided in the report.

I. Powder coating shall be Polyester TGIC Powder coating, semi gloss smooth FS No. 27038 Black.

The coating shall conform to the following requirements:

Property	Specification	Range
Gloss @ 60 deg	ASTM D523	20% +/- 5%
Direct Impact (inch lbs)	ASTM D2794	120 in. lbs.
Indirect Impact (inch lbs)	ASTM D2794	120 in. lbs.
Pencil Hardness	ASTM D3363	2H
Cross Hatch Adhesion	ASTM D3359B	4B
Flexibility (Conical Mandrel)	D1737/D522	100%
Specific Gravity	ASTM D792	1.2 minimum

The galvanized steel shall go through a 5 to 7 stage pretreatment per the powder coating manufacturer and shall be degassed at 5 degrees above cure temperature to minimize gassing. All powder coating shall be preformed by a company with at least five years experience powder coating and shall provide a certification of completion stating the powder coating was performed per manufacturer's requirements and above ASTM specifications with the required results.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Luminaire Attachment: Fasten to indicated structural supports.

B. Luminaire Attachment with Adjustable Features or Aiming: Attach luminaires and supports to allow aiming for indicated light distribution.

C. Lamp luminaires with indicated lamps according to manufacturer's written instructions. Replace malfunctioning lamps.

D. Provide hot dipped galvanized poles and mast arms. All luminaires shall be light gray, unless otherwise noted.

3.2 CONNECTIONS

A. Ground equipment.

1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Ground metal poles/support structures according to Division 16 Section 16452 – Grounding.

3.3 FIELD QUALITY CONTROL

A. Inspect each installed unit for damage. Replace damaged units.

B. Advance Notice: Give dates and times for field tests.

C. Provide instruments to make and record test results.

D. Tests and Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source, and as follows:
1. Measure light intensities at night if specific illumination performance is indicated. Use photometers with calibration referenced to NIST standards.
2. Check intensity and uniformity of illumination.
3. Check excessively noisy ballasts.

E. Prepare a written report of tests, inspections, observations and verifications indicating and interpreting results.

F. Malfunctioning Fixtures and Components: Replace or repair, then retest. Repeat procedure until units operate properly.

3.4 CLEANING AND ADJUSTING

A. Clean units after installation. Use methods and materials recommended by manufacturer.

B. Adjust luminaires and luminaires with adjustable lamp position to provide required light distributions and intensities.

END OF SECTION