AUKE BAY LOADING FACILITY
BOAT YARD BUILDINGS

VOLUME I OF II

Contract No. DH17-008

File No. 1931

SECTION 00005 - TABLE OF CONTENTS

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

Clear Span" fabric structure drawings as supplied by Owner included (Pages 1-15)

END OF SECTION

SECTION 00030 - NOTICE INVITING BIDS

OBTAINING CONTRACT DOCUMENTS. The Contract Documents are entitled:

Auke Bay Loading Facility
Boat Yard Buildings
CBJ Contract No. DH17-008

The Contract Documents may be obtained at the City & Borough of Juneau (CBJ) Engineering Department, 3rd Floor Marine View Center, upon payment of $35 (non-refundable) for each set of Contract Documents (including Technical Specifications and Drawings) or may be downloaded for free at the CBJ Engineering Department webpage at: www.juneau.org/engineering

PRE-BID CONFERENCE. Prospective Bidders are encouraged to attend a Pre-Bid conference of the proposed WORK, which will be conducted by the OWNER and ARCHITECT, at 10:00 a.m. on November 16, 2016, in the City and Borough of Juneau Engineering Conference Room, 3rd Floor, Marine View Center. The object of the conference is to acquaint Bidders with the bid documents and site conditions. Conference call capability will be available for the Pre-Bid meeting. Proposers intending to participate via conference call shall notify Contract Specialist, Tina Brown in the CBJ Engineering Contracts Division, at (907) 586-0878, or Contracts@juneau.org by 4:30 p.m., November 15, 2016.

DESCRIPTION OF WORK. This Project consists of cutting and removing sections of asphalt pavement; excavation for building foundations; placement of cast in place concrete foundations; construction of a wood framed building with wood truss roof structure, a wood frame addition to an existing wood frame building; insulation, siding, and interior finishes; installation of metal roofing system; electrical lighting, power, and data installation; erection of a "Clear Span" fabric structure as supplied by Owner; asphalt pavement patching; and other associated work for a complete project as identified in the contract documents.

COMPLETION OF WORK.

Work Description	**Completion Date**
Earliest Field Start	January 12, 2017
Substantial Completion	May 12, 2017
Final Completion	June 12, 2017

DEADLINE FOR BIDS: Sealed bids must be received by the Purchasing Division **prior to 2:00 p.m., Alaska Time on December 1, 2016,** or such later time as may be announced by addendum at any time prior to the deadline. Bids will be time and date stamped by the Purchasing Division, which will establish the official time of receipt of bids. Bids will be opened immediately thereafter in the Assembly Chambers of the Municipal Building, 155 S. Seward Street, unless otherwise specified.

Bid documents delivered in person or by courier service must be delivered to:

PHYSICAL LOCATION:
City and Borough of Juneau, Purchasing Division
105 Municipal Way, Room 300
Juneau, AK 99801

SECTION 00030 - NOTICE INVITING BIDS

Bid documents delivered by the U.S. Postal Service must be mailed to:

MAILING ADDRESS:
City and Borough of Juneau, Purchasing Division
155 South Seward Street
Juneau, AK 99801

Please affix the label below to outer envelope in the lower left hand corner.

IMPORTANT NOTICE TO BIDDER

To submit your Bid:

1. Print your company name and address on the upper left corner of your envelope.
2. **Complete this label and place it on the lower left corner of your envelope.**

S E A L E D

BID NUMBER: DH17-008

SUBJECT:
Auke Bay Loading Facility
Boat Yard Building

DEADLINE DATE:
_____
PRIOR TO 2:00PM ALASKA TIME

B I D

Mailing/delivery times to Alaska may take longer than other areas of the U.S. Late bids will not be accepted and will be returned.

SITE OF WORK. The site of the WORK is 13575 Glacier Highway, Juneau, Alaska.

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
greg.smith@juneau.org
Telephone: (907) 586-0873
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 enclosed with it.

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 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: Greg Smith _____ Date 11/9/2016
Greg Smith, Contract Administrator

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 owned 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 Purchasing Division 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 ARCHITECT 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 Architect 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 Architect 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 Architect 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 on the yellow Bid packet provided, or on legible and complete copies thereof, and shall contain the following: Sections 00300, 00310, 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. 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.

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 (907-586-4561), provided that such modification is received by the Purchasing Division no later than the deadline for bids. Modifications will be time and date stamped by the Purchasing Division, 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 Purchasing Division 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 Purchasing Division (907-586-5258) 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.

18.0 EXECUTION OF AGREEMENT.

A. All Bids of value greater than $1,000,000 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 Purchasing Officer.

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) 586-5265 for sales tax issues, Assessor's Office at (907)586-0930 for business personal property issues, or Collections Division at (907) 586-5268 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
PURCHASING DIVISION
FAX NO. 907-586-4561

BID MODIFICATION FORM

Modification Number: _____

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.

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

Total Bid 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 in 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 of time 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 his/her 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)
Email: _____	_____ (City, State, Zip)

9. TO BE CONSIDERED, ALL BIDDERS MUST COMPLETE AND INCLUDE THE FOLLOWING AT THE TIME OF THE DEADLINE FOR BIDS:

- Bid, Section 00300 (includes addenda receipt statement)
- Completed Bid Schedule, Section 00310
- Bid Security (Bid Bond, Section 00320, or by a certified or cashier's check as stipulated in the Notice Inviting Bids, Section 00030)

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 will 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.

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

SECTION 00310 - BID SCHEDULE

Bid Schedule for construction of **DH17-008 Auke Bay Loading Facility Boat Yard Buildings**, in accordance with the Contract Documents.

BASE BID - Furnish all labor, equipment and materials for the cutting and removing sections of asphalt pavement; excavation for building foundations; placement of cast in place concrete foundations; construction of a wood framed building with wood truss roof structure, a wood frame addition to an existing wood frame building; insulation, siding, and interior finishes; installation of metal roofing system; electrical lighting, power, and data installation; erection of a "Clear Span" fabric structure as supplied by Owner; asphalt pavement patching; and other associated work for a complete project as identified in the contract documents.

TOTAL BID **$**_____

(Price in Figures)

Date: _____ **Bidder:** _____

(Company Name)

END OF SECTION

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

Auke Bay Loading Facility
Boat Yard Buildings
CBJ Contract No. DH17-008

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

SECTION 00360 - SUBCONTRACTOR REPORT

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 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 OWNERS Contract Documents **Contract DH17-008, Auke Bay Loading Facility Boat Yard Buildings.**

The WORK is generally described as follows: Cutting and removing sections of asphalt pavement; excavation for building foundations; placement of cast in place concrete foundations; construction of a wood framed building with wood truss roof structure, a wood frame addition to an existing wood frame building; insulation, siding, and interior finishes; installation of metal roofing system; electrical lighting, power, and data installation; erection of a "Clear Span" fabric structure as supplied by Owner; asphalt pavement patching; and other associated work for a complete project as identified in the contract documents.

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.

Work Description	**Completion Date**
Earliest Field Start	January 12, 2017
Substantial Completion	May 12, 2017
Final Completion	June 12, 2017

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 **$1,720** for each Day that expires after the completion time(s) 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 current funds 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 DH17-008, Auke Bay Loading Facility Boat Yard Buildings** 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 Contract 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 ARCHITECT 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 00030-1 to 00030-2, inclusive).
- Notice Inviting Bids (pages 00030-1 to 00030-3, inclusive).
- Instructions to Bidders (pages 00100-1 to 00100-9, inclusive).
- Bid (pages 00300-1 to 00300-2, inclusive).
- Bid Schedule (pages 00310-1, 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 00700-44, inclusive).
- Supplementary General Conditions (pages 00800-1 to 00800-6, inclusive).
- Alaska Labor Standards, Reporting, and Prevailing Wage Determination (page 00830-1).
- Permits, (page 00852-1 to 00852-3, inclusive)).
- Technical Specifications as listed in the Table of Contents.
- Drawings consisting of 28 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.

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 signed by OWNER.

OWNER:	**CONTRACTOR:**
City and Borough of Juneau	_____ (Company Name)
_____ (Signature)	_____ (Signature)
By: Duncan Rorie Watt, City & Borough Manager (Printed Name)	By: _____ (Printed Name, Authority or Title)
Date: _____	Date: _____ (CONTRACTOR Signature Date)
OWNER's address for giving notices:	CONTRACTOR's address for giving notices:
155 South Seward Street	_____
Juneau, Alaska 99801	_____
907-586-0873 907-586-4530 (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", for the penal sum
(Owner)` (City and State)
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:

Auke Bay Loading Facility
Boat Yard Buildings
CBJ Contract No. DH17-008

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.

Auke Bay Loading Facility
Boat Yard Buildings
CBJ Contract No. DH17-008

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)

_____
(Mailing Address)

_____
(City, State, Zip Code)

SURETY:

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

_____
(Printed Name)

_____
(Company Name)

_____
(Mailing Address)

_____
(City, State, Zip Code)

(Affix SURETY'S SEAL)

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

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," for the
(Owner) (City and State)

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:

Auke Bay Loading Facility
Boat Yard Buildings
CBJ Contract No. DH17-008

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.

Auke Bay Loading Facility
Boat Yard Buildings
CBJ Contract No. DH17-008

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)

_____
(Mailing Address)

_____
(City, State, Zip Code)

SURETY:

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

_____
(Printed Name)

_____
(Company Name)

_____
(Mailing Address)

_____
(City, State, Zip Code)

(Affix SURETY'S SEAL)

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

SECTION 00700 - GENERAL CONDITIONS

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SECTION 00700 - GENERAL CONDITIONS

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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 a 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 ARCHITECT 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.

ARCHITECT - The ARCHITECT 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 ARCHITECT at or before the Notice to Proceed.

Architect of Record – The individual, partnership, corporation, joint-venture or other legal entity legally responsible for preparation of Design and Construction Documents for the project.

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 - City and Borough of Juneau

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 ARCHITECT, 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, Field Orders 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 or the specific date 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 ARCHITECT'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 Architect of Record 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.

Field Order - A written order issued by the ARCHITECT 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:

A. New Year's Day - January 1
B. Martin Luther King's Birthday - Third Monday in January
C. President's Day - Third Monday in February
D. Seward's Day - Last Monday in March
E. Memorial Day - Last Monday in May
F. Independence Day - July 4
G. Labor Day - First Monday in September
H. Alaska Day - October 18
I. Veteran's Day - November 11
J. Thanksgiving Day - Fourth Thursday and the following Friday in November
K. 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 ARCHITECT 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 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.

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 ARCHITECT 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. 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.

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

Partial Utilization - Use by the OWNER of 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.

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 ARCHITECT, to illustrate some portion of the WORK.

Specifications - Same definition as for "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 Architect of Record, 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 ARCHITECT 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 - The part of the Contract Documents which make additions, deletions, or revisions to these General Conditions.

Supplier - A manufacturer, fabricator, supplier, distributor, material man, 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. If no date is stated, Contract Time shall commence upon the date of the Notice to Proceed is issued.

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 ARCHITECT any conflict, error, or discrepancy which the CONTRACTOR may discover and shall obtain a written interpretation or clarification from the ARCHITECT before proceeding with any WORK affected thereby.

C. The CONTRACTOR shall submit to the ARCHITECT 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 ARCHITECT 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.

2.6 FINALIZING CONTRACTOR SUBMITTALS. At least 7 days before submittal of the first Application for Payment a conference attended by the CONTRACTOR, the ARCHITECT 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 it's 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 ARCHITECT, OWNER, the CONTRACTOR, or the Architect of Record 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 ARCHITECT in writing at once, and the CONTRACTOR shall not proceed with the WORK affected thereby (except in an emergency as authorized by the ARCHITECT) 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 "Permittee" in these permits.
2. Field Orders
3. Change Orders
4. ARCHITECT’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 details

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 ARCHITECT prior to said use; and, neither the OWNER nor the ARCHITECT 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 Architect of Record 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 Architect of Record 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 ARCHITECT, 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 ARCHITECT 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 ARCHITECT 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 Architect of Record 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, the OWNER and the Architect of Record 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 ARCHITECT 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 ARCHITECT 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, contact Alec Venechuk, CBJ Material Source Manager, at (907) 586-0874 for the current material rates.

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 2008-00061. 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) 586-0874.

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 2008-00061 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 Gravel Pit Manager, (907) 586-0874.

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 ARCHITECT.

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 Performance and Payment Bonds, each in the amount set forth in the Supplementary General Conditions as security for the faithful performance and payment of all the CONTRACTOR's obligations under the Contract Documents. These bonds shall remain in effect at least until one year after the date of Substantial Completion except as otherwise provided by Law or Regulation or by the Contract Documents. 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.

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 contract.
4. Subcontractor's Public Liability and Property Damage Insurance and Vehicle 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 ARCHITECT, 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 ARCHITECT. 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 ARCHITECT. 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 ARCHITECT and the ARCHITECT 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 ARCHITECT.

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 ARCHITECT in writing. Additional compensation will be paid the CONTRACTOR for overtime WORK only in the event extra WORK is ordered by the ARCHITECT 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 ARCHITECT 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 ARCHITECT, 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 ARCHITECT, or any of the Architect's of Record 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 properly perform 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 ARCHITECT, does not perform the WORK in a proper and skillful manner, or is intemperate or disorderly shall, at the written request of the ARCHITECT, 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 ARCHITECT. 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 ARCHITECT 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 ARCHITECT 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. The CONTRACTOR shall be responsible to the OWNER and the ARCHITECT of Record 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 ARCHTIECT nor relieve the CONTRACTOR of any liability or obligation under the contract.

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.

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 Architect of Record 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 Architect of Record 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 ARCHITECT. The CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the Architect of Record, 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.

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 Architect of Record 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 Architect of Record harmless from and against all claims, damages, losses, and

expenses (including, but not limited to, fees of Architect's of Records 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 Architect of Record, 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 (MSDS) 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 ARCHITECT if it considers a specified product or its intended usage to be unsafe. This notification must be given to the ARCHITECT 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 ARCHITECT for review, all Shop Drawings in accordance with Section 01300 - CONTRACTOR Submittals in the General Requirements.

B. The CONTRACTOR shall also submit to the ARCHITECT 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 Architect of Record, 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 Architect of Record. 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, or the Architect of Record;
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 ARCHITECT, 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 OWNER and the Architect of Record for all costs and expenses, (including but not limited to fees and charges of Architects of Record, attorneys, and other professionals and court costs including all costs of appeals) incurred by the OWNER, and the Architect of Record 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 ARCHITECT and shall be submitted to the ARCHITECT at the conclusion of each WORK day. 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 ARCHITECT. The 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 ARCHITECT, 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 ARCHITECT for any scheduled operation before operating any valve.

B. The CONTRACTOR shall be responsible for all damages, both direct and consequential, to the OWNER 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 with their WORK. 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 ARCHITECT 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 ARCHITECT 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 ARCHITECT.

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

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 ARCHITECT'S STATUS DURING CONSTRUCTION

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

9.2 VISITS TO SITE. The ARCHITECT 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 ARCHITECT. The ARCHITECT 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 ARCHITECT may furnish an Inspector to assist in observing the performance of the WORK. The duties, responsibilities, and limitations of authority of any such Inspector and assistants will be as provided in the Supplementary General Conditions.

9.4 CLARIFICATIONS AND INTERPRETATIONS. The ARCHITECT 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 ARCHITECT may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

9.5 AUTHORIZED VARIATIONS IN WORK. The ARCHITECT 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 OR ACCEPTING DEFECTIVE WORK. The ARCHITECT will have authority to reject or accept WORK which the ARCHITECT 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 ARCHITECT 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 ARCHITECT'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 ARCHITECT's responsibilities as to Change Orders, see Articles 10, 11, and 12.

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

9.8 DECISIONS ON DISPUTES

A. The ARCHITECT 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 ARCHITECT in writing with a request for formal decision in accordance with this paragraph, which the ARCHITECT 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 ARCHITECT 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 ARCHITECT within 60 days after such occurrence unless the ARCHITECT allows an additional period of time to ascertain more accurate data in support of the claim.

B. The rendering of a decision by the ARCHITECT 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 ARCHITECT'S RESPONSIBILITIES

A. Neither the ARCHITECT's authority to act under this Article or other provisions of the Contract Documents nor any decision made by the ARCHITECT in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ARCHITECT 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 ARCHITECT 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 ARCHITECT 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 ARCHITECT 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 ARCHITECT will not be responsible for the CONTRACTOR's failure to perform the WORK in accordance with the Contract Documents.

D. The ARCHITECT 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 ARCHITECT.

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 ARCHITECT, 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 ARCHITECT can direct the CONTRACTOR to proceed on the basis of Time and Materials so as to minimize the impact on and delays to the 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 Time which embody the substance of any written decision rendered by the ARCHITECT 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 ARCHITECT promptly (but in no event later than 30 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 60 days after such occurrence (unless the ARCHITECT 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 ARCHITECT 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 ARCHITECT, 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 ARCHITECT. 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 ARCHITECT 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 ARCHITECT. The CONTRACTOR may furnish cost data which might assist the ARCHITECT in the establishment of the rental rate.

1. All equipment shall, in the opinion of the ARCHITECT, 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 ARCHITECT, 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. Unless otherwise agreed to 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” available on-line at http://www.equipmentwatch.com/rrbb.htm or contact Equipment Watch at (800) 669-3282.

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 ARCHITECT, 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 ARCHITECT, 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 (1) percent shall be added as compensation for Bonds.

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 five (5) percent of the Subcontractor's total cost for the extra WORK. Regardless of the number of hierarchical tiers of Subcontractors, the five (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.

A. The term "Cost of the WORK" shall not include any of the following:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, architects, 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.
2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.
3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the WORK and charges against CONTRACTOR for delinquent payments.
4. 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).
5. 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.

6. 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 ARCHITECT 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 ARCHITECT 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 ARCHITECT 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. 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 ARCHITECT 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 ARCHITECT in writing of the cause of delay and request an extension of contract time. The ARCHITECT will ascertain the facts and the extent of the delay and extend the time for completing the WORK when, in the ARCHITECT'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 ARCHITECT 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 ARCHITECT 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. The OWNER, ARCHITECT, Architect of Record, 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 INSPECTIONS AND TESTS

A. The CONTRACTOR shall give the ARCHITECT 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 ARCHITECT'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 ARCHITECT will make, or have made, such inspections and tests as the ARCHITECT 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 ARCHITECT, as well as the cost of subsequent re-inspection and retesting. Neither observations by the ARCHITECT 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 ARCHITECT and the CONTRACTOR.

E. If any WORK (including the work of others anticipated under paragraph 7.1) that is to be inspected, tested, or approved is covered without written concurrence of the ARCHITECT, it must, if requested by the ARCHITECT, be uncovered for observation. Such uncovering shall be at the CONTRACTOR's expense unless the CONTRACTOR has given the ARCHITECT timely notice of the CONTRACTOR's intention to perform such test or to cover the same and the ARCHITECT has not acted with reasonable promptness in response to such notice.

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

G. If the ARCHITECT considers it necessary or advisable that covered WORK be observed by the ARCHITECT or inspected or tested by others, the CONTRACTOR, at the ARCHITECT's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as the ARCHITECT 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 Architects of Record, 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 ARCHITECT, 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 ARCHITECT, 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 Architects of Record, 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 Architects of Record, 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 ARCHITECT.

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 ARCHITECT 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 amount has been paid. The remaining 10% of the contract amount shall be retained until:

1. final inspection has been made;
2. completion of the project;
3. acceptance of the project by the OWNER and;
4. the OWNER has received notification from the Alaska Department of Labor that the CONTRACTOR has no outstanding wage/hour violations.

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 Project site or at another location agreed to in writing; provided, each such individual item has a value of more than $5000 and will become a permanent part of the WORK. The Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the CONTRACTOR has received the materials and equipment free and clear of all liens, charges, security interests, and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence 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.

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 ARCHITECT will, within seven (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 ARCHITECT's reasons for refusing to recommend payment. In the later case, the CONTRACTOR may make the necessary corrections and resubmit the Application. If the ARCHITECT still disagrees with a portion of the Application, it will submit the Application recommending the undisputed portion of the Application to the OWNER for review and provide reasons for recommending non-payment of the disputed amount. Thirty days after presentation of the Application for Payment with the ARCHITECT'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 ARCHITECT 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 seven (7) days (with a copy to the ARCHITECT) 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 ARCHITECT 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 ARCHITECT prepare a Notice of Completion. Within a reasonable time thereafter, the OWNER, the CONTRACTOR, and the ARCHITECT shall make an inspection of the WORK to determine the status of completion. If the ARCHITECT does not consider the WORK substantially complete, or the list of remaining WORK items to be comprehensive, the ARCHITECT will notify the CONTRACTOR in writing giving the reasons thereof. If the ARCHITECT considers the WORK substantially complete, the ARCHITECT will prepare and deliver to the OWNER, for its execution and recording, the Notice of Completion signed by the ARCHITECT 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 ARCHITECT 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 ARCHITECT's observation of the WORK during construction and final inspection, and the ARCHITECT's review of the final Application for Payment and accompanying documentation, all as required by the Contract Documents, the ARCHITECT is satisfied that the WORK has been completed and the CONTRACTOR's other obligations under the Contract Documents have been fulfilled, the ARCHITECT will, within 14 days after receipt of the final Application for Payment, indicate in writing the ARCHITECT'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 ARCHITECT, 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 ARCHITECT, 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 ARCHITECT 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 ARCHITECT'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 ARCHITECT 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 to the CONTRACTOR 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 ARCHITECT's approval, such stone, gravel, sand, or other material determined suitable by the ARCHITECT, 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 ARCHITECT.

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 ARCHITECT 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 ARCHITECT.

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 ARCHAEOLOGICAL 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 ARCHITECT. 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 ARCHITECT 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 by 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 every two weeks. Before the second Friday, each CONTRACTOR and Subcontractor must file Certified Payrolls with Statements of Compliance for the previous two weeks. (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. Any 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 CONTRACTORS 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 ARCHITECT 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 2.2 COPIES OF DOCUMENTS. ***Add*** the following:

The OWNER shall furnish to the CONTRACTOR up to ten (10) copies of the Contract Documents which may include bound reduced Drawings. The CBJ Contracts Office shall contact the CONTRACTOR after issuance of Notice of Intent to Award to determine how many copies are needed. Additional quantities of the Contract Documents will be furnished at reproduction cost.

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.

Add the following SGC 4.6**:**

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**.** 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."** The Additional Insured requirement does not apply to Workers Compensation insurance. NOTE: This requirement has changed. The OWNER no longer requires certificates of insurance referencing project names and contract numbers.

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.

A. Workers' Compensation: Under Paragraph 5.2C.1 of the General Conditions as in accordance with AS 23.30.045: (Additional Insured requirements not necessary for Workers' Compensation coverage.)

1. State: Statutory
2. 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.

3. Employer's Liability

Bodily Injury by Accident:	$100,000.00	Each Accident
Bodily Injury by Disease:	$100,000.00	Each Employee
Bodily Injury by Disease:	$500,000.00	Policy Limit

a. CONTRACTOR agrees to waive all rights of subrogation against the OWNER of Record for work performed under contract.
b. 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.

B. Commercial General Liability: (under Paragraph 5.2C.2 of the General Conditions):

1.	General Policy	$1,000,000.00	Each Occurrence
		$2,000,000.00	Annual Aggregate
2.	Products/Completed Operations	$1,000,000.00	Each Occurrence
		$2,000,000.00	Annual Aggregate
3.	Personal Injury	$1,000,000.00	Each Occurrence

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

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

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.

D. Builders risk does not apply to this Project.

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

F. 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 6.1 SUPERVISION AND SUPERINTENDENCE. ***Add*** the following:

D. The CONTRACTOR's superintendent shall attend a weekly progress meeting at the site with the OWNER and/or the ARCHITECT at a time to be mutually agreed upon. The CONTRACTOR's superintendent shall have an operating cellular phone on hand at all times that WORK is performed.

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

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:

C. The OWNER (CBJ Docks and Harbors) 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.

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 6.8 LAWS AND REGULATIONS. ***Add*** the following:

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.

SGC 6.15 CONTRACTOR'S DAILY REPORTS. ***Add*** the following:

"Weekly summary reports may be completed in lieu of daily reports."

Add the following SCG 6.19:

SGC 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.

SGC 9.3 PROJECT REPRESENTATION. ***Add*** the following:

DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF INSPECTOR

General. The Inspector will act as directed by and under the supervision of the ARCHITECT and will confer with the ARCHITECT regarding its actions. The Inspector's dealings in matters pertaining to the on-site WORK shall, in general, be only with the ARCHITECT 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 ARCHITECT. The ARCHITECT may further delegate the responsibilities and authorities associated with this Project, when such delegation is in writing and notice thereof is provided to the CONTRACTOR.

SGC 11.1 GENERAL. Paragraph B. In the second sentence change the number of days from 30 Days to 7 Days. In the third sentence change the number of days from 60 Days to 14 Days.

SCG 14.3 APPLICATION FOR PROGRESS PAYMENT. ***Delete*** Paragraph C and replace with the following:

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 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.

SCG 14.3 APPLICATION FOR PROGRESS PAYMENT. Paragraph D.

D. The Value of Materials Stored at the site shall be the amount of 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. The following page is a sample form for this purpose. The CONTRACTOR also shall submit a "NOTICE OF COMPLETION OF PUBLIC WORKS" signed by ADOL.

D.

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.

Add the following SGC 17**:**

SGC 17 GENERAL INFORMATION. This Project is currently funded by a State Grant.

Employment Security Tax Clearance

Date: _____

To: Alaska Department of Labor
Juneau Field Tax Office
907-465-2787
FAX 907-465-2374

From: _____

Subject: Auke Bay Loading Facility Boat Yard Buildings
Contract No. DH17-008

Timeframe of Contract _____

Please advise whether or not clearance is granted for the following CONTRACTOR or Subcontractor:
(List only one CONTRACTOR or Subcontractor list per page.)

_____ _____
Name Address

Per AS 23.20.265 of the Alaska Employment Security Act, this request is for tax liability clearance and release to make final payment for WORK performed under the subject contract. Please send your response to:

Greg Smith, Contract Administrator
Contracts Division, Engineering Department
155 S. Seward Street
Juneau, Alaska 99801
FAX 907-586-4530

( ) Tax Clearance is granted.
( ) Tax Clearance is NOT granted.

Remarks: _____

_____ _____
Signature Date

_____
Title

END OF SECTION

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, are made a part of this contract by reference.

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 electronically or paper copies can be submitted by mail. To submit Title 36 documents electronically, go to https://myalaska.state.ak.us/home/app. If filing electronically, submit certified payrolls to ADOL at the website above and email a copy of all certified payrolls to Greg Smith at the email address below. If Contractor elects to submit paper copies, they should be submitted to the physical addresses below.

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

Greg Smith, Contract Administrator
City and Borough of Juneau
155 S. Seward Street
Juneau, AK 99801
(907) 586-0873
Greg.Smith@juneau.org

END OF SECTION

SECTION 00852 - PERMITS

PART 1 - GENERAL

1.1 INDEX OF PERMITS

A. The OWNER is to obtain a CBJ Building Permit.
B. Conditional Use Permit – USE2014 0020

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PLANNING COMMISSION
NOTICE OF DECISION
Date: February 10, 2015
File No.: USE2014 0020

City and Borough of Juneau
Docks & Harbors
Attn.: Gary Gillette
155 S. Seward Street
Juneau, Alaska 99801

Application For:	A Conditional Use Permit to allow boat maintenance and repair, structures and parking at the Auke Bay Loading Facility.
Legal Description:	ATS 357 Lot 1; ATS 1685
Property Address:	13575 Glacier Highway
Parcel Code No.:	4-B31-0-100-002-1; 4-B31-0-100-003-5
Hearing Date:	February 10, 2015

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated January 29, 2015 and approved the Conditional Use Permit to allow boat repair and maintenance, structures and parking at the Auke Bay Loading Facility to be conducted as described in the project description and project drawings submitted with the application.

Attachments: January 29, 2015 memorandum from Teri Camery, Community Development, to the CBJ Planning Commission regarding USE2014 0020 and CSP2014 0025.

This Notice of Decision does not authorize construction activity. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ §01.50.030. Appeals must be filed by 4:30 P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ §01.50.030 (c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ §49.20.120).

Effective Date:	The permit is effective upon approval by the Commission, February 10, 2015
Expiration Date:	The permit will expire 18 months after the effective date, or August 10, 2016, if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the development permit was authorized. Application for permit extension must be submitted thirty days prior to the expiration date.

Project Planner: _____

Teri Camery, Senior Planner
Community Development Department

_____

Michael Satre, Chair
Planning Commission

_____ 2/17/15

Filed With City Clerk Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ-adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.

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, and manufactured articles and furnishing all 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 covered in the Contract Documents involves: Cutting and removing sections of asphalt pavement; excavation for building foundations; placement of cast in place concrete foundations; construction of a wood framed building with wood truss roof structure, a wood frame addition to an existing wood frame building; insulation, siding, and interior finishes; installation of metal roofing system; electrical lighting, power, and data installation; erection of a “Clear Span” fabric structure as supplied by Owner; asphalt pavement patching; and other associated work for a complete project as identified in the contract documents.

B. The site of the WORK is 13575 Glacier Highway, Juneau, Alaska.

1.3 CONTRACT METHOD

A. The WORK, hereunder will be constructed under a LUMP SUM contract.

1.4 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.

1.5 CONTRACTOR USE OF PROJECT SITE

A. The CONTRACTOR's use of the Project site shall be coordinated with the ARCHITECT in consideration of the operating tenant of the facility. Harri Commercial Marine operates a boat repair and storage yard at the site such that construction activities, including on-site storage of materials, on-site fabrication facilities, and field offices will need to be consolidated and in coordination with the activities of the boat yard tenant.

B. Limit use of the site and/or premises to construction activities in areas of the boat yard site to be coordinated with the ARCHITECT.

C. Confine operations to areas within the Project limits as identified by the ARCHITECT. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

D. Keep driveways and entrances serving the premises clear and available to the OWNER and the OWNER's employees at all times. Do not use these areas for parking or storage of materials and equipment on the site.

1.6 OWNER USE OF THE PROJECT SITE

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

1.7 PARTIAL UTILIZATION OF THE WORK BY OWNER

A. No portion of this Project will be considered for partial utilization.

1.8 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 Supervisor, its superintendent, and its Subcontractors as the CONTRACTOR deems appropriate. Other attendants will be:

   a. Architect of Record.
   b. The OWNER and the ARCHITECT.
   c. Governmental representatives as appropriate.
   d. Others as requested by CONTRACTOR, or the OWNER.

2. Unless previously submitted to the ARCHITECT, the CONTRACTOR shall bring to the Pre-Construction Conference 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.

4. 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.

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

B. Progress Meetings

1. The CONTRACTOR shall schedule and hold regular on-site progress meetings at least weekly and at other times as requested by the ARCHITECT, or as required by progress of the WORK. The CONTRACTOR, ARCHITECT, 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 ARCHITECT 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 the WORK, with a view toward resolving these issues expeditiously.

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 item that is not specifically set forth in the Bid Schedule, and all costs therefor 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. Maintenance of all services through Project area, including water, sewer, storm, garbage pickup, mail delivery, other deliveries and emergency vehicles.

1.2 PRICE BASED ON LUMP SUM PAY UNIT

A. Measurement for payment for the Lump Sum Pay Unit 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.

B. Payment will be made at the amount shown on the Bid Schedule, which payment will constitute full compensation for all WORK.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01045 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 DEFINITION

A. "Cutting-and-Patching" is defined to include the cutting and patching of nominally completed and previously existing concrete, steel, wood and miscellaneous metal structures; piping and pavement, in order to accommodate the coordination of WORK, or the installation of other facilities or structures or to uncover other facilities and structures for access or inspection, or to obtain samples for testing, or for similar purposes.

1.2 REQUIREMENTS OF STRUCTURAL WORK

A. Structural WORK shall not be cut and patched in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio.

B. Prior to cutting and patching the following categories of WORK, the CONTRACTOR shall obtain the ARCHITECT's approval to proceed with:

1. Structural steel
2. Miscellaneous structural metals, including equipment supports, stair systems and similar categories of WORK
3. Structural concrete
4. Foundation construction
5. Timber and primary wood framing
6. Bearing and retaining walls
7. Structural decking
8. Exterior curtain wall construction
9. Pressurized piping, vessels and equipment

1.3 OPERATIONAL AND SAFETY LIMITATIONS

A. The CONTRACTOR shall not cut and patch operational elements and safety-related components in a manner resulting in a reduction of capacities to perform in the manner intended or resulting in decreased operational life, increased maintenance, or decreased safety.

B. Prior to cutting and patching the following categories of WORK, the CONTRACTOR shall obtain the ARCHITECT's approval to proceed with:

1. Sheeting, shoring and cross bracing
2. Operating systems and equipment
3. Water, moisture, vapor, air, smoke barriers, membranes and flashings
4. Noise and vibration control elements and systems
5. Control, communication, conveying and electrical wiring systems

1.4 VISUAL REQUIREMENTS

A. The CONTRACTOR shall not cut and patch WORK which is exposed on the exterior or exposed in occupied spaces, in a manner resulting in a reduction of visual qualities or resulting in substantial evidence of the cut and patch WORK, both as judged solely by the ARCHITECT. The CONTRACTOR shall remove and replace WORK judged by the ARCHITECT to have been cut and patched in a visually unsatisfactory manner.

1.5 APPROVALS

A. Where prior approval of cutting and patching is required, the CONTRACTOR shall submit the request well in advance of time WORK will be performed. The request should include a description of why cutting and patching cannot reasonably be avoided, how it will be performed, how structural elements (if any) will be reinforced, products to be used, firms and tradesmen to perform the WORK, approximate dates of the WORK, and anticipated results in terms of structural, operational, and visual variations from the original WORK.

B. The CONTRACTOR shall also request approval to proceed prior to starting WORK of this Section.

PART 2 - PRODUCTS

2.1 MATERIALS USED IN CUTTING AND PATCHING

A. Except as otherwise indicated, the CONTRACTOR shall provide materials for cutting and patching which will result in equal-or-better WORK than the WORK being cut and patched, in terms of performance characteristics and including visual effects where applicable. The CONTRACTOR shall use material identical with the original materials where feasible.

B. Materials shall comply with the requirements of the Technical Specifications wherever applicable.

PART 3 - EXECUTION

3.1 PREPARATION

A. The CONTRACTOR shall provide adequate temporary support for WORK to be cut to prevent failure.

B. The CONTRACTOR shall provide adequate protection of other WORK during cutting and patching.

3.2 INSTALLATION

A. The CONTRACTOR shall employ skilled tradespeople to perform cutting and patching. Except as otherwise indicated, the CONTRACTOR shall proceed with cutting and patching at the earliest feasible time and perform the WORK promptly.

B. The CONTRACTOR shall use methods least likely to damage WORK to be retained and WORK adjoining.

1. In general, where physical cutting action is required, the CONTRACTOR shall cut WORK with sawing and grinding tools, not with hammering and chopping tools. Openings through concrete WORK shall be core-drilled.
2. Comply with the requirements of Technical Specifications wherever applicable.
3. Comply with the requirements of applicable sections of Division 2 where cutting and patching requires excavating and backfilling.

C. The CONTRACTOR shall patch with seams which are as invisible as possible and comply with specified tolerances for the WORK.

D. The CONTRACTOR shall restore exposed seams of patched area; and, where necessary, extend finish restoration onto retained WORK adjoining, in a manner which will eliminate evidence of patching.

END OF SECTION

SECTION 01090 - REFERENCE STANDARDS AND DEFINITIONS

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 ABBREVIATIONS AND NAMES

A. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision.

1.3 PERMITS, LICENSES, AND CERTIFICATES

A. Upon request by the ARCHITECT, the CONTRACTOR shall submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing on performance of the WORK.

1.4 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

B. References herein to "Building Code" or "Uniform Building Code" shall mean International Building Code of the International Code Council (ICC).

C. Similarly, references to "Mechanical Code" or "Uniform Mechanical Code," and "Fire Code" or "Uniform Fire Code," shall mean International Mechanical Code, and International Fire Code of the International Code Council (ICC)). “Plumbing Code” or “Uniform Plumbing Code” shall mean the Uniform Plumbing Code of the International Association of Plumbing and Mechanical Officials (IAPMO). "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 ARCHITECT 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. 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.

G. 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.

1.5 DEFINITIONS

A. The basic contract definitions are included in Section 00700 - General Conditions. The following definitions have the meaning defined in the Technical Portions of the WORK:

Approve - Used in conjunction with action on submittals, applications, and requests, is limited to the ARCHITECT's duties and responsibilities as stated in the Conditions of the Contract.

Directed - Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean "directed by the ARCHITECT," "requested by the ARCHITECT", and similar phrases.

Experienced - Means having a minimum of five previous Projects similar in size to this Project, and being familiar with precautions required and with requirements of the authority having jurisdiction.

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 CONTRACTOR or an entity engaged by the CONTRACTOR, as an employee or Subcontractor for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

Project Site - The space available for construction activities, either exclusively or with others performing other construction on the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land upon which the Project is to be built.

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

Regulation - Includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the WORK.

Testing Laboratories - An independent entity engaged to perform specific inspections or tests at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01300 - CONTRACTOR SUBMITTALS

PART 1 - GENERAL

1.1 GENERAL

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

B. Prior to the Pre-Construction Conference, the CONTRACTOR shall submit the following items to the ARCHITECT for review:

1. A submittal schedule for Shop Drawings, Samples, Product Data, and proposed Substitutes or "Or-Equal" items.
2. A Schedule of Values.
3. A complete progress schedule for all phases of the Project.
4. 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 required date for receipt of the permit. CBJ shall apply for the Building Permit.
5. Material Safety Data Sheets on products used on the Project.
6. A traffic maintenance plan, as required.
7. A letter designating the CONTRACTOR's Superintendent, defining that person's responsibility and authority.
8. A letter designating the CONTRACTOR's safety representative and the EEO Officer and that person's responsibility and authority.
9. Individual Mining Plan shall be submitted and approved, by CBJ Engineering, prior to any materials extraction from the CBJ/State pit at Lemon Creek.

C. No payments shall be made to the CONTRACTOR until the above-listed items are submitted in their entirety, as determined by the ARCHITECT.

D. The CONTRACTOR shall coordinate submittal preparation with performance of construction activities, and with purchasing or fabrication, delivery, other submittals and related activities. Transmit in advance of performance of related activities to avoid delay. Coordinate transmittal of different submittals for related elements so processing will not be delayed by the need to review concurrently for coordination. The ARCHITECT reserves the right to withhold action on a submittal requiring coordination until related submittals are received. No extension of time will be authorized because of failure to transmit submittals sufficiently in advance of the WORK to permit processing.

E. The CONTRACTOR shall distribute copies of the Construction Schedule, Schedule of Values, and the Submittal Schedule to the ARCHITECT, Subcontractors, and other parties required to comply with scheduled dates. Post copies in the temporary field office. When revisions are made, distribute to the same parties and post in the same locations. Revise and update each Schedule after each meeting or activity, where revisions have been made. Issue the updated Schedules concurrently with report of each meeting.

1.2 SUBMITTAL PROCESS

A. Wherever called for in the Contract Documents, or where required by the ARCHITECT, the CONTRACTOR shall furnish to the ARCHITECT, for review, 6 copies of each submittal.

B. All submittals shall be accompanied by the CONTRACTOR's standard submittal transmittal form. 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. 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 ARCHITECT.

D. Except as may otherwise be provided herein, the ARCHITECT will return prints of each submittal to the CONTRACTOR with its comments noted thereon, within 14 calendar days following their receipt by the ARCHITECT. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the ARCHITECT by the second submission of a submittal item. The OWNER reserves the right to withhold monies due the CONTRACTOR to cover additional costs of the ARCHITECT to review beyond the second submittal. The ARCHITECT's maximum review period for each submittal including all re-submittals will be 14 days per submission.

E. If 3 copies 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 of a submittal are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED," formal revision shall be made, and resubmission of said submittal will not be required.

G. If one copy of the submittal is returned to the CONTRACTOR marked "AMEND-RESUBMIT," the CONTRACTOR shall revise said submittal and resubmit the required number of copies of said revised submittal to the ARCHITECT.

H. If one copy of the submittal is returned to the CONTRACTOR marked “REJECTED-RESUBMIT” the CONTRACTOR shall revise said submittal and resubmit the required number of copies of said revised submittal to the ARCHITECT.

I. Fabrication of an item may be commenced only after the ARCHITECT 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 submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR, prior to submission to the ARCHITECT. Each submittal shall be dated, signed, and certified by the CONTRACTOR, as being correct and in strict conformance with the Contract Documents. No consideration for review by the ARCHITECT 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 ARCHITECT, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

K. The ARCHITECT's review of CONTRACTOR 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 SUBMITTAL SCHEDULE

A. The CONTRACTOR shall coordinate the Submittal Schedule with the list of subcontracts, Schedule of Values and list of products as well as the Construction Schedule. Prepare the Submittal Schedule in chronological order. Identify all submittals required for the completion of the Work. Provide the following information in the Submittal Schedule:

1. Scheduled date for the first submittal.
2. Related Section number.
3. Name of Subcontractor.
4. Description of the construction element covered.
5. Anticipated date of the ARCHITECT's final release or approval.

1.4 SHOP DRAWING SUBMITTALS

A. The CONTRACTOR shall submit shop Drawings as required with new information, drawn to accurate scale. Indicate deviations from Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings.

B. The Shop Drawings shall include the following information:

1. Dimensions.
2. Identification of products and materials included.
3. Notation of coordination requirements.
4. Notation of dimensions established by field measurement.
5. Sheet Size: Except for templates, patterns and similar full- size Drawings, submit shop Drawings on sheets at least 8-1/2" x 11" but no larger than 36" x 48".

C. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop Drawings, fabrication, and installation Drawings, section Drawings, lists, graphs, operating instructions, catalog sheets, data sheets, and similar items.

D. Do not use shop Drawings without a final stamp indicating action taken in connection with construction.

1.5 SAMPLE SUBMITTALS

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

B. Samples, as required herein, shall be submitted for acceptance a minimum of 14 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. The CONTRACTOR shall submit full-size samples, cured and finished as specified, and identical to the product proposed. Mount, display, or package samples to facilitate review. Include the following:

1. Generic description.
2. Source.
3. Product name or name of manufacturer.
4. Compliance with recognized standards.
5. Availability and delivery time.
6. Submit samples for review of kind, color, pattern, and texture, for a final check of these characteristics, and a comparison of these characteristics between the final submittal and the component as delivered and installed. Where variations are inherent in the product, submit multiple units that show limits of the variations.
7. Preliminary Submittals. Where samples are for selection of characteristics from a range of choices, submit a full set of choices for the product. Preliminary submittals will be reviewed and returned indicating selection and other action.
8. Submittals. Except for samples illustrating assembly details, quality of WORK, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken. Maintain a sample set at the Project site, for quality comparisons. Sample sets may be used to obtain final acceptance of the construction associated with each set.
9. Prepare additional sets for Subcontractors, manufacturers, fabricators, installers, and others as required for performance. Show distribution on transmittal forms.

D. 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 ARCHITECT for acceptance. Upon receiving acceptance of the ARCHITECT, one set of the samples will be stamped and dated by the ARCHITECT and returned to the CONTRACTOR, and one set of samples will be retained by the ARCHITECT, and one set of samples shall remain at the job site until completion of the WORK.

E. 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.

1.6 PRODUCT DATA SUBMITTALS

A. The CONTRACTOR shall collect all the Product Data into a single submittal for each element or system. Mark each copy to show applicable choices and options. Where Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

1. Manufacturer's printed recommendations.
2. Compliance with recognized trade association standards.
3. Compliance with recognized testing agency standards.
4. Application of testing agency labels and seals.
5. Notation of dimensions verified by field measurement.
6. Notation of coordination requirements.
7. Preliminary Submittal: Submit a preliminary single-copy where selection of options is required.
8. Furnish copies of final submittal to installers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until an approved copy of Product Data is in the installer's possession. Do not permit use of unmarked copies of Product Data in connection with construction.

1.7 PROPOSED SUBSTITUTE OR "OR EQUAL" ITEM SUBMITTALS

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 ARCHITECT if sufficient information is submitted by the CONTRACTOR to allow the ARCHITECT 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 ARCHITECT will be the sole judge as to the type, function, and quality of any such substitute material or equipment and the ARCHITECT's decision shall be final.
3. The ARCHITECT 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 ARCHITECT 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(s) affected by the resulting change.

B. The procedure for review by the ARCHITECT 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 ARCHITECT on the "Substitution Request Form" for acceptance thereof.
2. Unless otherwise provided by law or authorized in writing by the ARCHITECT, the "Substitution Request Form(s)" shall be submitted within the 14-day period after Notice of Award/Notice To Proceed.
3. Wherever a proposed substitute material or equipment has not been submitted within said 14-day period, or wherever the submission of a proposed substitute material or equipment has been judged to be unacceptable by the ARCHITECT, 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 ARCHITECT will be allowed a reasonable time within which to evaluate each proposed substitute. In no case will this reasonable time period be less than14 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 ARCHITECT's prior written acceptance of the CONTRACTOR's "Substitution Request Form" which will be evidenced by a Change Order.

C. The CONTRACTOR's application using the "Substitution Request Forms" shall contain the following statements and/or information which shall be considered by the ARCHITECT in evaluating the proposed substitution when one or more of the following conditions are satisfied, as determined by the ARCHITECT; otherwise, requests will be returned without action except to record non-compliance with these requirements.

1. Extensive revisions to the Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of the Contract Documents.
3. The request is timely, fully documented, and properly submitted.
4. The request is directly related to an “or equal” clause or similar language in the Contract Documents.
5. The specified product or method of construction cannot be provided within the contract time. The request will not be considered if the product or method cannot be provided as a result of the CONTRACTOR’s failure to pursue the WORK promptly, or to coordinate activities properly.
6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
7. A substantial advantage is offered to the OWNER, in terms of cost, time, energy conservation, or other considerations of merit, after deducting off-setting responsibilities the OWNER may be required to bear. Additional responsibilities for the OWNER may include additional compensation to the Architect of Record for redesign and evaluation services, increased cost of other construction by the OWNER, or separate contractors, and similar considerations.
8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the CONTRACTOR certifies that the substitution will overcome the incompatibility.
9. The specified product or method of construction cannot be coordinated with other materials, and where the CONTRACTOR certifies that the proposed substitution can be coordinated.

10. The specified product or method of construction cannot provide a warranty required by the contract documents and where the CONTRACTOR certifies that the proposed substitution provide the required warranty.
11. The evaluation and acceptance of the proposed substitute will not prejudice the CONTRACTOR's achievement of substantial completion on time.
12. Available maintenance, repair, and replacement service and its estimated cost will be indicated.
13. Whether or not incorporation or use of the substitute in connection with the WORK is subject to payment of any license fee or royalty.
14. 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.

D. The CONTRACTOR’s submittal and ARCHITECT’s acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the contract documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

1.8 SCHEDULE OF VALUES

A. For Lump Sum Pay Unit contracts, the CONTRACTOR shall submit a Schedule of Values to the ARCHITECT. The Schedule of Values shall list the cost breakdown of the Lump Sum Pay Unit contract and shall be coordinated with the construction schedule.

1. Correlate line items in the Schedule of Values with other schedules and forms.
2. Use the Contract Document's Table of Contents as a guide to establish the format for the Schedule of Values.
3. Include Record Drawings as a line item.

1.9 PROGRESS SCHEDULE

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

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 its 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 ARCHITECT, 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 the schedule or methods of operation to ensure the completion of all the WORK within the Contract Time.

1.10 RECORD DRAWING SUBMITTAL

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. Copies of the record Drawings shall be submitted to the ARCHITECT prior to the Notice of Substantial Completion by the ARCHITECT.

C. Final payment will not be acted upon until the CONTRACTOR prepared record Drawings have been delivered to the ARCHITECT.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

(Substitution Request Form – Next Page)

CBJ Engineering Department
SUBSTITUTION REQUEST FORM

TO: _____ Project: Auke Bay Loading Facility Boat Yard Buildings

CBJ Contract No. DH17-008

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 (date): _____	ARCHITECT Review (date): _____
Signature: _____	By: _____
Print Name: _____	Decision by CBJ:
Firm: _____	____Accepted ____Accepted as Noted
Title: _____	____Not Accepted ____Received Too Late
Telephone: _____	
Attachments: _____	Signature: _____

The use of this substitution is not authorized until accepted by the ARCHITECT.

END OF SECTION

SECTION 01310 - PROGRESS SCHEDULES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED.

A. Procedures for preparation and submittal of construction progress schedules and periodic schedule updating.

1.2 RELATED REQUIREMENTS

A. Section 01010 - Summary of WORK.

B. Section 01300 - CONTRACTOR Submittals.

C. Section 01301 - Schedule of Values.

1.3 FORMAT

A. Prepare schedules as a horizontal bar chart with separate bar for each major portion of WORK or operations, identifying first work day of each week.

B. Sequence of listings shall reflect the chronological order of the start of each item of WORK and encompass those items as noted in the table of contents of this Project manual.

C. Scale and spacing shall be such as to provide for notations and revisions.

D. Minimum sheet size of 22 x 34 inches, unless approved otherwise by the ARCHITECT.

1.4 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

B. Identify each item by Specification section number.

C. Identify WORK of separate stages and other logically grouped activities.

D. Provide sub-schedules to define critical portions of entire schedule.

E. Show accumulated percentage of completion of each item, and total percentage of WORK completed, as of the mid and final days of each month.

F. Provide separate schedules of submittal dates for Shop Drawings, product data, and samples, including products specified under alternate bids, and dates reviewed submittals will be required from the Project ARCHITECT. Show decision dates for selection of finishes and options, where appropriate.

G. Show delivery dates for materials and products.

H. Coordinate and display cost allocation requirements of Section 01301 - Schedule of Values, prior to the CONTRACTOR's initial application for payment.

1.5 REVISIONS TO SCHEDULES

A. Indicate progress of each activity to date of submittal, and projected completion date of each activity.

B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.

C. Provide narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken, or proposed, and its effect including the effect of changes on schedules of separate Subcontractors.

D. When submitting a revised schedule, CONTRACTOR shall state specifically the reason for the revision and the adjustments made in the schedule or methods of operation to ensure the completion of all the WORK within the Contract time.

1.6 SUBMITTALS

A. Prior to the Pre-Construction Meeting submit two sets of initial schedules in accordance with Section 01300 - CONTRACTOR Submittals. After review, resubmit required revised data within ten days, modified to accommodate revisions recommended by the Project ARCHITECT.

B. Submit progress schedules reflecting the progress to date and anticipated in the future with each Application for Payment. Upon substantial changes to the CONTRACTOR's progress schedule of WORK, or upon request of the Project ARCHITECT, the CONTRACTOR shall submit the revised progress schedule(s) in the form required.

C. Submit under transmittal letter specified in Section 01300 - CONTRACTOR Submittals.

1.7 DISTRIBUTION

A. Distribute copies of reviewed schedules to job site file, Subcontractors, suppliers, and other concerned entities.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

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 ARCHITECT at the place of manufacture.

B. The presence of the ARCHITECT 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 ARCHITECT.

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 ARCHITECT will insure the OWNER that the quality of the WORK 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 ARCHITECT 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 ARCHITECT 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. The OWNER will appoint, employ, and pay for services of an independent firm to perform inspection and testing or will perform inspection and testing itself.
2. The ARCHITECT will perform inspections as specified in individual Specification sections.
3. Reports will be submitted by the independent firm to the ARCHITECT in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
4. The CONTRACTOR shall cooperate with the ARCHITECT or independent firm and furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
5. The CONTRACTOR shall notify ARCHITECT 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 ARCHITECT. The CONTRACTOR shall bear all costs from such re-testing 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 all permits; moving all plant and equipment onto the site; furnishing and erecting plants, temporary buildings, and other construction facilities; implementing security requirements, all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items:

1. Moving all the CONTRACTOR's plant and equipment required for operations onto the site.
2. Providing all on-site communication facilities, including radios and cellular phones.
3. Providing on-site sanitary facilities.
4. Obtaining all required permits.
5. Having all OSHA required notices and establishment of safety programs.
6. Having the CONTRACTOR's superintendent at the jobsite full time.
7. Submitting initial submittals.
8. Arranging for, and erection of, CONTRACTOR's work and storage yard.

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 Notice to Proceed, the CONTRACTOR shall submit a breakdown showing the estimated value of each major component of Mobilization to the ARCHITECT for approval. When approved by the ARCHITECT, 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 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. The CONTRACTOR shall verify the exact locations and depths of all utilities shown 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. When such exploratory excavations show the utility location as shown to be in error, the CONTRACTOR shall so notify the ARCHITECT.

C. 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, 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 ARCHITECT that the OWNER has secured authority therefor 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 asphaltic 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 ARCHITECT 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 ARCHITECT 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 ARCHITECT. If directed by the ARCHITECT, 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 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 ARCHITECT 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:

1. 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.
2. 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01550 - SITE ACCESS AND STORAGE

PART 1 - GENERAL

1.1 CONTRACTOR'S WORK AND STORAGE AREA

A. The CONTRACTOR shall be allowed limited areas for non-hazardous on-site storage necessary for the proper execution of the WORK. Such areas will be authorized by the OWNER at the Pre-Construction conference.

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 not store materials, tools, or equipment in areas to be occupied by the public unless specifically authorized by the ARCHITECT.

D. The CONTRACTOR shall construct and use a separate storage area for hazardous materials used in constructing the WORK.

1.2 PARKING

A. The CONTRACTOR shall direct its employees to park in areas at the site as directed by the ARCHITECT.

B. Traffic and parking areas available to the public 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 that are the result of the CONTRACTOR's WORK.

PART - 2 PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 RUBBISH CONTROL

A. 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.

1.2 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 ARCHITECT and in accordance with all laws and regulations pertaining thereto.

1.3 CHEMICALS

A. 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.

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

A. 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 to provide access for inspection. The CONTRACTOR shall periodically inspect to assure products are undamaged and are maintained under required conditions.

E. Storage shall be arranged in a manner to provide access for maintenance of stored items and for inspection.

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 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.

1.7 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 ARCHITECT if sufficient information is submitted by the CONTRACTOR to allow the ARCHITECT 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 ARCHITECT will be the sole judge as to the type, function, and quality of any such substitute material or equipment and the ARCHITECT's decision shall be final.
3. The ARCHITECT 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 ARCHITECT 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.

B. The procedure for review by the ARCHITECT 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 ARCHITECT on the "Substitution Request Form" for acceptance thereof.
2. Unless otherwise provided by law or authorized in writing by the ARCHITECT, the "Substitution Request Form(s)" shall be submitted within the 35-day period after award of the contract.
3. Wherever a proposed substitute material or equipment has not been submitted within said 35-day period, or wherever the submission of a proposed substitute material or equipment has been judged to be unacceptable by the ARCHITECT, 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 ARCHITECT 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 ARCHITECT's prior written acceptance of the CONTRACTOR's "Substitution Request Form" which will be evidenced by a Change Order.

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01700 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 CLOSEOUT TIMETABLE

A. The CONTRACTOR shall establish dates for equipment testing, acceptance periods, and on-site instructional periods (as required under the contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the OWNER, the ARCHITECT, and their authorized representatives sufficient time to schedule attendance at such activities.

1.2 SUBSTANTIAL COMPLETION

A. Before requesting inspection for certification of Substantial Completion, complete the following:

1. In the Application for Payment that coincides with the date Substantial Completion is claimed, show 100 percent completion for the portion of the WORK claimed substantially complete.
2. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
3. Submit record Drawings, maintenance manuals, damage or settlement survey, property survey, and similar record information.
4. Changeover permanent locks and transmit keys to the ARCHITECT.
5. Complete start-up testing of systems, and instruction of CBJ Maintenance personnel. Remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
6. Complete final clean-up. Touch-up and repair and restore marred exposed finishes.

1.3 INSPECTION PROCEDURES

A. Upon receipt of a request for inspection for Substantial Completion, the ARCHITECT will proceed and advise the CONTRACTOR of unfilled requirements. The ARCHITECT will prepare the Certificate of Substantial Completion following inspection, or advise the CONTRACTOR of construction that must be completed or corrected before the certificate will be issued.

B. The ARCHITECT will reinspect the WORK upon receipt of notice by the CONTRACTOR that the WORK has been completed, except items whose completion has been delayed because of circumstances acceptable to the ARCHITECT. If reinspection is requested and the CONTRACTOR has not completed all punch list items, the cost of that inspection will be paid by the CONTRACTOR. Upon completion of reinspection, the ARCHITECT will prepare a certificate of final acceptance, or advise the CONTRACTOR of WORK that is incomplete or of obligations that have not been fulfilled but are required for final acceptance. If necessary, reinspection will be repeated.

C. The ARCHITECT will repeat inspection when requested and assured by the CONTRACTOR that the WORK has been substantially completed.

D. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

A. Before requesting inspection for certification of final acceptance and final payment, complete and submit the following:

1. Submit final payment request.
2. Submit a final Change Order request.
3. Submit a copy of the final inspection list stating that each item has been completed or otherwise resolved for acceptance.
4. Submit final meter readings for utilities, a record of stored fuel, and similar data as of Substantial Completion.
5. Submit consent of surety to final payment.
6. Submit evidence of continuing insurance coverage complying with insurance requirements.
7. Submit those items listed under Article 1.5 of this section as they apply.
8. Written guarantees, where required.
9. Maintenance stock items; spare parts; special tools, where required.
10. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
11. Releases from all parties who are entitled to claims against the subject Project, property, or improvement pursuant to the provisions of law.
12. Completed Certificate of Compliance and Release for the CONTRACTOR involved in the WORK. This form is included at the end of this section.
13. Before final payment can be made, the CONTRACTOR shall supply a copy of the "Notice of Completion of Public Works" form approved by Wage and Hour Administration of the Labor Standards and Safety Division of the Alaska Department of Labor and Workforce Development.
14. Alaska Department of Labor Employment Security Tax Clearance letter for the Prime CONTRACTOR and all Subcontractors, a copy of which is located at the end of Section 00800 – Supplementary General Conditions.
15. Submit original Items 12, 13 and 14 to Engineering Contracts Division, CBJ- Engineering.
16. Keys, labeled to location and use.
17. List of extra materials required by contract documents and information of where items are stored.

1.5 FINAL SUBMITTALS

A. Record Document Submittals: Do not use Record Documents for construction purposes; protect from loss in a secure location; provide access to Record Documents for the ARCHITECT's reference.

B. Record Drawings: Maintain a clean, undamaged set of blue or blackline prints of Contract Drawings and Shop Drawings (this includes Architectural, Structural/Civil, Mechanical and Electrical). Mark-up these Drawings to show the actual installation. Mark whichever Drawing is most capable of showing conditions accurately. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Organize record Drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover. Record Drawings shall be kept current with the WORK's progress and will be checked prior to each payment.

C. Record Specifications: Maintain one copy of the Contract Documents, including Addenda. Mark to show variations in actual WORK performed in comparison with the specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot be readily discerned later by direct observation. Note related record Drawing information and product data. Upon completion of the WORK, submit record Specifications to the ARCHITECT for the OWNER's records.

D. Maintenance Manuals: Organize maintenance data into sets of manageable size. Bind in individual heavy-duty 2-inch (maximum), 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following information:

1. Emergency instructions.
2. Spare parts list.
3. Copies of warranties.
4. Recommended "turn around" cycles.
5. Inspection procedures.
6. Shop Drawings and product data.

D. Operating and Maintenance Instructions: Arrange for the installer of equipment that requires regular maintenance to meet with CBJ personnel to provide instruction in proper operation and maintenance. Include a detailed review of maintenance manuals, agreements, warranties and bonds. As part of instruction for operating equipment, demonstrate all necessary safety procedures.

E. Before final payment can be made, the CONTRACTOR shall supply a copy of the “Notice of Completion of Public Works” form approved by Wage and Hour Administration of the Labor Standards and Safety Division of the Alaska Department of Labor and Workforce Development.

F. Before final payment the CONTRACTOR shall provide the OWNER with clearance from the Alaska Department of Labor and Workforce Development for the CONRACTOR 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 section 00800 – Supplementary General Conditions.

1.6 MAINTENANCE AND GUARANTEE

A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in Article 13 of the General Conditions.

B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the CONTRACTOR shall have obtained a statement in writing from the affected private owner or public agency releasing the OWNER from further responsibility in connection with such repair or resurfacing.

C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the WORK and the CONTRACTOR and its surety shall be liable to the OWNER for the cost thereof.

PART 2 - MATERIALS (Not Used)

PART 3 - EXECUTION (Not Used)

SECTION 01700 - PROJECT CLOSEOUT

COMPLIANCE CERTIFICATE AND RELEASE FORM

PROJECT: Auke Bay Loading Facility Boat Yard Buildings
CONTRACT NO: DH17-008

The CONTRACTOR must complete and submit this to the Contract Administrator. The CONTRACTOR shall complete this form with respect to the entire contract.

Completed forms must 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 plans, specifications, and Contract Documents.
- All suppliers and Subcontractors have been paid in full with no claims for labor, materials, or other services outstanding. If all Subcontractors and suppliers are not paid in full, please explain on a separate sheet.
- 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 Contract Administrator was advised and approved of all Subcontractors before WORK was performed and has approved any substitutions, additions or deletions 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 Contract Administrator 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: Greg Smith, Contract Administrator, Engineering Contracts Division, City and Borough of Juneau, 155 South Seward Street, Juneau, AK 99801. Call (907) 586-0873 if we can be of further assistance or if you have any questions.

END OF SECTION

SECTION 01704 - FINAL CLEAN-UP AND SITE RESTORATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. 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

A. Any materials required shall conform to the appropriate Section of these Specifications.

PART 3 - EXECUTION

3.1 GENERAL

A. The CONTRACTOR shall promptly remove from the vicinity of the completed WORK and all sites disturbed by the construction, all rubbish and debris, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction and shall grade the sites so that no standing water is evident. Final acceptance of the WORK by the OWNER will be withheld until the CONTRACTOR has satisfactorily complied with the foregoing requirements for final clean-up of the Project site.

B. If the CONTRACTOR has obtained material from the CBJ/State pit, the excavated area shall be cleaned up and any stipulations required by the Individual Mining Plan shall be completed. The gravel pit overhead charge shall be paid to CBJ within 60 days after removal of material from the pit.

3.2 FINAL CLEANING OF BUILDINGS

A. The CONTRACTOR shall employ experienced workers for final cleaning. Clean each surface to the condition expected in a commercial building cleaning and maintenance program. Complete the following before requesting inspection for certification of Substantial Completion:

1. Remove labels that are not permanent labels.
2. Clean transparent materials. Remove glazing compound. Replace chipped or broken glass.
3. Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

4. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
5. Clean the site of rubbish, litter and other foreign substances. Sweep paved areas, remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
6. Remove temporary protection and facilities.
7. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION

PART 2 PRODUCTS

1.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.

1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.

2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

B. Lumber fabricated from old growth timber is not permitted.

END OF SECTION

SECTION 06-2000 FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Finish carpentry items.

B. Wood door frames, glazed frames.

1.02 RELATED REQUIREMENTS

A. Section 06-1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.

B. Section 09-9000 – Exterior Paint and Coating: Painting and finishing of finish carpentry items.

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2009.

B. AWI (QCP) - Quality Certification Program, www.awiqcp.org; current edition at www.awiqcp.org.

C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2009.

D. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood-Preservers' Association; 2012.

E. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; Hardwood Plywood & Veneer Association; 2004.

F. NEMA LD 3 - High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.

G. PS 1 - Structural Plywood; 2007.

H. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2010.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with electrical rough-in, and installation of associated and adjacent components.

1.05 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements for submittal procedures.

1.06 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect work from moisture damage.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI Architectural Woodwork Standards for Premium Grade.

B. Interior Woodwork Items:

1. Hardwood standing and running Trim: Solid hardwood for opaque finish. Conforming to AWI Section 300, unless otherwise noted.

2.02 LUMBER MATERIALS

A. Hardwood Lumber: Paint grade, maximum moisture content of 6 percent; of quality suitable for opaque finish.

2.03 SHEET MATERIALS

A. Softwood Plywood Not Exposed to View: Any face species, veneer core; PS 1 Grade A-B; glue type as recommended for application.

B. Hardwood Plywood: Face species as indicated, plain sawn, book matched, medium density fiberboard core; HPVA HP-1 glue type as recommended for application.

C. Particleboard: ANSI A208.1; composed of wood chips, sawdust, or flakes of medium density, made with waterproof resin binders; of grade to suit application; sanded faces.

2.04 FASTENINGS

A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.

2.05 WOOD TREATMENT

A. Factory-Treated Lumber: Comply with requirements of AWPA U1 - Use Category System for pressure impregnated wood treatments determined by use categories, expected service conditions, and specific applications.

2.06 FABRICATION

A. Shop assemble work for delivery to site, permitting passage through building openings.

B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards requirements for grade indicated.

B. Set and secure materials and components in place, plumb and level.

C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim to conceal larger gaps.

D. Hardwood Standing and Running Trim
   1. Backout or groove backs of flat trim members and kerf backs of other wide flat members, except for members with ends exposed in finish work.
   2. Install in single, un-joointed lengths for openings and for runs less than than 10 feet. For longer runs, use only one piece less than 10 feet in any straight run. Scarf running joints and stagger joints in adjacent members. At retruns and corners, cope or miter for accurate fit.
   3. Attach securely in in place with uniform joints provding for thermal and building movemment.
   4. Nailing: blind nail where possible. Us fine finishing nails where exposed. Set exposed nail heads for filling.
   5. Anchoring: secure woodwork to anchors to blocking built-in or directly attched to substrates.
   6. Preparation for finish: clean woodwork and fill nail holes in preparation for finishes specified under paint section of these specifications. where woodwork shall receive a transparant finish, use matching wood filler.

3.02 SITE APPLIED WOOD TREATMENT

A. Apply preservative treatment in accordance with manufacturer's instructions.

B. Brush apply one coats of preservative treatment on wood in contact with cementitious materials. Treat site-sawn cuts.

C. Allow preservative to dry prior to erecting members.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch (1.5 mm).

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch (0.7 mm).

END OF SECTION

SECTION 07-2100 THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Rigid board insulation at perimeter foundation wall, underside of floor slabs, and exterior wall behind exterior wall finish.

B. Batt insulation and vapor retarder in exterior wall and roof construction.

C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

D. Vapor Retarders

1.02 RELATED REQUIREMENTS

A. Reinforced Concrete: for vapor retarder under slabs-on-grade.

B. Section 06-1000 - Rough Carpentry: Supporting construction for insulation.

D. Section 07-2500 - Weather Barriers: Separate air barrier and vapor retarder materials.

E. Section 07 9200 - Joint Sealers: For expanding foam insulation

F. Section 09-2500 - Gypsum Board Assemblies: For GWB.

1.03 REFERENCE STANDARDS

A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2012.

B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.

C. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2012.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2012.

E. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2010.

F. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.

G. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.

1.04 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations for each type of product listed.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for insulation purposes.

D. Research/Evaluation Reports: For foam-plastic insulation

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.05 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

B. Protect plastic insulation as follows:
   1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.

2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 PRODUCTS

2.01 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. Glass-Fiber Thermal and Acoustical Insulation:
      a. CertainTeed Corporation
      b. Johns Manville Corporation
      c. Knauf Fiberglass
      d. Owens Corning
   2. Rigid Insulation:
      a. DiversaFoam Products
      b. Dow Chemical Company
      c. Owens Corning
      d. Insulfoam by Carlisle
   3. Vapor Retarders:
      a. Viper VaporCheck 10 by Insulation Solutions, Inc.
   4. Substitutions: See Section 01-6000 - Product Requirements.

2.02 RIGID INSULATION MATERIALS

A. Rigid Insulation (Below Grade and Wall applications): (XPS) Extruded-Polystyrene or (EPS) Polymeric-Faced Molded-Polystyrene Board Insulation (Basis of Design: "R-Tech" by Insulfoam), Type IV: ASTM C 578; with the following characteristics:
   1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
   2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
   3. Board Size: 48 x 96 inch (1220 x 2440 mm).
   4. Board Edges: Square.
   5. Board Density: XPS: 1.55 lb/cu ft (25 (kg/cu m). EPS: 1.8 lb/cu ft (29 kg/cu m). ASTM C303.
   6. Compressive Resistance: 25 psi (173 kPa).
   7. Substitutions: See Section 01-6000 - Product Requirements.

2.03 BATT INSULATION MATERIALS

A. Mineral Fiber Batt Insulation, Type I: Flexible preformed batt or blanket, complying with ASTM C 665; friction fit; foil-faced flame spread index of 0 (zero) when tested in accordance with ASTM E 84; combustion characteristics in accordance with ASTM E 136.
   1. Smoke Developed Index: of 25 for flame-spread and 50 for smoke, when tested in accordance with ASTM E84.
   2. Formaldehyde Content: Zero.
   3. Facing: Foil.

2.04 ACCESSORIES

A. Sheet Vapor Retarder, Below Slab: Viper VaporCheck 10 polyethylene film for below slab application, 10 mil (0.25 mm) thick. Triple-ply, extrusion coated, virgin polyethylene membrane, reinforced with woven high density fibers, with maximum permeance rating of .1 perm. By Insulation Solutions Inc, or approved equal.

B. Sheet Vapor Retarder: Polyethylene film for wall and ceiling applications, 6 mil thick. extrusion coated, virgin polyethylene membrane, with maximum permeance rating of .1 perm.

B. Tape: Polyethylene self-adhering type by Sheet Vapor Retarder manufacturer, 4 inch (100 mm) wide.

C. Protection Board for Below Grade Insulation: Pre-Finished metal wall panels (3/4" corrugated galvanized metal panel siding, 22-gauge, painted.). See drawings for height and location.

D. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrates of substances harmful to insulations or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

3.03 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice and snow.

C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Water-Piping Coordination: If water piping is located on inside of insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.

E. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.

F. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

3.04 BOARD INSTALLATION AT FOUNDATION PERIMETER

A. Install boards horizontally on foundation perimeter to depth indicated.
   1. Place boards to maximize adhesive contact.
   2. Butt edges and ends tightly to adjacent boards and to protrusions.

B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

C. Coordinate application with waterproofing membrane application

3.05 BOARD INSTALLATION AT EXTERIOR WALLS

A. Install boards horizontally on walls.
   1. Place boards to maximize adhesive contact.
   2. Butt edges and ends tightly to adjacent boards and to protrusions.
   3. Stagger joints in adjacent rows.

B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

C. Coordinate with details for thickness and and extent.

D. Coordinate with waterproofing membrane installation

3.06 BOARD INSTALLATION UNDER CONCRETE SLABS

A. Place insulation in a flat, continuous layer under slabs on grade after base for slab has been compacted and over the vapor retarder.

B. Cut and fit insulation tightly to protrusions, interruptions to the insulation plane, against foundation walls, piping, and adjacent panels with less than 1/8" spaces.

C. Prevent insulation from being displaced or damaged while placing slab.

D. Stagger joints in adjacent rows of installed insulation.

3.07 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Install in wall spaces without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

E. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

F. Use blanket widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends

G. For wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically.

3.08 INSTALLATION OF VAPOR RETARDERS

A. General: Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure place with adhesives or other anchorage system as indicated. Extend vapor retarder to cover miscellaneous voids in insulated substrates.

B. Seal overlapping joints in vapor retarders with adhesives or vapor retarder tape according to vapor retarder manufacturer's instructions. Seal fastener penetrations with vapor retarder tape. Locate all joints over framing members or other solid substrates.

C. Firmly attach vapor retarders to substrates with mechanical fasteners or adhesives as recommended by vapor retarder manufacturer.

D. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor retarder tape to create an airtight seal between penetrating objects and vapor retarder.

E. Repair any tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor retarder tape or another layer of vapor retarder.

3.09 PROTECTION

A. Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTION 07-2500 WEATHER BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water-Resistive Barrier: Under exterior wall cladding, over sheathing or other substrate; not air tight or vapor retardant.

B. Vapor Retarders: Materials to make exterior walls water vapor-resistant and air tight.

1.02 RELATED REQUIREMENTS

A. Reinforced Concrete: Vapor retarder under concrete slabs on grade.

C. Section 07-2100 - Thermal Insulation: Vapor retarder installed below slab-on-grade.

D. Section 07-6200 - Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with weather barriers.

1.03 DEFINITIONS

A. Weather Barrier: Assemblies that form either water-resistive barriers, air barriers, or vapor retarders.

B. Air Barrier: Air-tight barrier made of material that is relatively air impermeable but water vapor permeable, both to the degree specified, with sealed seams and with sealed joints to adjacent surfaces. Note: For the purposes of this specification, vapor impermeable air barriers are classified as vapor retarders.

C. Vapor Retarder: Air tight barrier made of material that is relatively water vapor impermeable, to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.
   1. Water Vapor Permeance: For purposes of conversion, 57.2 ng/(Pa s sq m) = 1 perm.

D. Water-Resistive Barrier: Water-shedding barrier made of material that is moisture-resistant, to the degree specified, intended to be installed to shed water without sealed seams.

1.04 REFERENCE STANDARDS

A. AATCC Test Method 127 - Water Resistance: Hydrostatic Pressure Test; 2008.

B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2011.

C. ASTM D4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications; 2010.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2012.

1.05 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on material characteristics.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

A. Air Barrier (Building Wrap):
   1. On exterior walls under exterior cladding. See details for installation.

B. Exterior Vapor Retarder (Self-Adhered Waterproof Membrane):
   1. On outside surface of foundations or rigid insulation. See details for installation.

2.02 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)

A. Air Barrier (Building Wrap) Sheet, Mechanically Fastened: Spun-bonded polypropylene breathable membrane
   1. Air Permeance: 0.004 cubic feet per square foot (0.02 liters per second per square meter), maximum, when tested in accordance with ASTM E2178.
   2. Water Vapor Permeance: 10 perms (574 ng/(Pa s sq m)), minimum, when tested in accordance with ASTM E96/E96M Procedure A (desiccant method).

3. Water Penetration Resistance: Withstand a water head of 21 inches (55 cm), minimum, for minimum of 5 hours, when tested in accordance with AATCC 127.
4. Ultraviolet and Weathering Resistance: Approved in writing by manufacturer for minimum of 12 months weather exposure.
5. Ultraviolet and Weathering Resistance: Approved in writing by manufacturer for minimum of 9 months weather exposure.
6. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 50 or less, when tested in accordance with ASTM E84.
7. Products:
   a. VaproShield, LLC; WrapShield: www.vaproshield.com.
   b. Substitutions: See Section 01-6000 - Product Requirements.

2.03 EXTERIOR VAPOR RETARDER MATERIALS (SELF-ADHERED WATERPROOF MEMBRANE)

A. Self-Adhesive HDPE Sheet Waterproofing for Vertical Applications: 40 mil (1.02mm) thick, uniform, flexible sheets consisting of a pre-formed waterproof membrane combining a high performance, cross laminated, HDPE carrier film coated with a super tacky, rubberized asphalt compound.
   1. Physical Properties: As follows, measured per standard test methods referenced:
      a. Tensile Strength, Film: 250 psi minimum; ASTM D 412.
      b. Low-Temperature Flexibility: Unaffected at minus 20 deg F (minus 29 deg C); ASTM D 1970.
      c. Peel Adhesion to plywood: 3 lbf/in. (1576 N/m); ASTM D 903, modified.
      d. Vapor Permeance: 0.05 perms (2.9 ng/Pa x s x sq. m); ASTM E 96, Water Method.
   2. Products:
      a. W. R. Grace & Co.; Grace Ice/Water Shield
      b. Substitutions: See Section 01-6000 - Product Requirements.

2.04 SEALANTS

A. Butyl Sealant: as specified in Section 07-9200.

B. Silicone Sealant: as specified in Section 07-9200.

C. Primers, Cleaners, and Other Sealant Materials: As recommended by sealant manufacturer, appropriate to application, and compatible with adjacent materials.

2.05 ADHESIVES

A. Mastic Adhesive : Compatible with sheet seal and substrate, thick mastic of uniform knife grade consistency .

B. Non-Curing Adhesive : Compatible with sheet seal and substrate, permanently non-curing.

2.06 ACCESSORIES

A. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970, except slip resistance requirement is waived if not installed on a roof. “Vycor Plus” by W.R. Grace & Co. or approved equal.

B. "Vapro-Tape": As recommended by air barrier sheet manufacturer.

C. Thinners and Cleaners: As recommended by material manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and conditions are ready to accept the work of this section.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

B. Clean and prime substrate surfaces to receive adhesives in accordance with manufacturer's instructions.

3.03 INSTALLATION

A. Install materials in accordance with manufacturer's instructions.

B. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

C. Vapor Retarders: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

D. Apply sealants and adhesives within recommended application temperature ranges. Consult manufacturer if temperature is out of this range.

E. Mechanically Fastened Sheets - On Exterior:
   1. Install sheets shingle-fashion to shed water, with seams generally horizontal.
   2. Overlap seams as recommended by manufacturer but at least 6 inches.
   3. Overlap at outside and inside corners as recommended by manufacturer but at least 12 inches (305 mm).
   4. For applications specified to be air tight, seal seams, laps, penetrations, tears, and cuts with self-adhesive tape; use only large-headed, gasketed fasteners recommended by the manufacturer.
   5. Install air barrier and vapor retarder UNDER jamb flashings.
   6. Install head flashings under weather barrier.
   7. At openings to be filled with frames having nailing flanges, wrap excess sheet into opening; at head, seal sheet over flange and flashing.

F. Self-Adhesive Sheets:
   1. Prepare substrate in manner recommended by sheet manufacturer; fill and tape joints in substrate and between dissimilar materials.
   2. Lap sheets shingle-fashion to shed water and seal laps air tight.
   3. Once sheets are in place, press firmly into substrate with resilient hand roller; ensure that all laps are firmly adhered with no gaps or fishmouths.
   4. Use same material, or other material approved by sheet manufacturer for the purpose, to seal to adjacent construction and as flashing.
   5. At wide joints, provide extra flexible membrane allowing joint movement.

G. Openings and Penetrations in Exterior Weather Barriers:
   1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches (125 mm) onto weather barrier and at least 6 inches (150 mm) up jambs; mechanically fasten stretched edges.
   2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with at least 4 inches (100 mm) wide; do not seal sill flange.
   3. At openings to be filled with non-flanged frames, seal weather barrier to all sides of opening framing, using flashing at least 9 inches (230 mm) wide, covering entire depth of framing.
   4. At head of openings, install flashing under weather barrier extending at least 2 inches (50 mm) beyond face of jambs; seal weather barrier to flashing.
   5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
   6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.04 FIELD QUALITY CONTROL

A. Do not cover installed weather barriers until required inspections have been completed.

3.05 PROTECTION

A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 07-4113 METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Architectural roofing system of preformed steel panels.

B. Fastening system.

C. Factory finishing.

D. Accessories and miscellaneous components.

1.02 RELATED REQUIREMENTS

A. Section 06-1000 - Rough Carpentry: Roof sheathing.

B. Section 07-2100 - Batt Insulation: Roof insulation.

C. Section 07 6200 - Sheet Metal Flashing and Trim

D. Section 07-9200 - Joint Sealers: Field-installed sealants.

1.03 REFERENCE STANDARDS

A. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2010.

B. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2009.

1.04 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Storage and handling requirements and recommendations.
   2. Installation methods.
   3. Specimen warranty.

C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.

D. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.

E. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in the manufacture of roofing systems similar to those required for this project, with not less than 5 years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.07 WARRANTY

A. See Section 01-7800 - Closeout Submittals, for additional warranty requirements.

B. Finish Warranty: Provide manufacturer’s special warranty covering failure of factory-applied exterior finish on metal roof panels and agreeing to repair or replace panels that show evidence of finish degradation, including significant fading, chalking, cracking, or peeling within specified warranty period of 5 year period from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Design is based on 24 ga Magna-Loc 180, 16" Kynar 500 finish, manufactured by Metal Sales.

B. Acceptable manufacturers are:
   1. Knudson Roof panels with Nu-Ray Metlas sheet.

2. Metal Sales Manufacturing Corporation : www.metalsales.us.com.
3. Alaska Metal Product. Palmer, Alaska (907) 631-4144
4. AEP Span. www.aepspan.com
5. Or approved equal.

2.02 ARCHITECTURAL METAL ROOF PANELS

A. Architectural Metal Roofing: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.

B. Metal Roofing: Factory or Field-formed panels with factory-applied finish.
   1. Steel Panels:
      a. Aluminum-zinc alloy-coated steel conforming to ASTM A792/A792M; minimum AZ50 (AZM150) coating.
      b. Steel Thickness: Minimum 0.023 inch (0.584 mm).(24 gauge).
   2. Profile: Standing seam, with minimum 2.0 inch (51 mm) seam height; concealed fastener system for field seaming with special tool.
   3. Texture: Smooth.
   4. Length: Maximum possible length to minimize lapped joints. Where lapped joints are unavoidable, space laps so that each sheet spans over three or more supports.
   5. Width: Maximum panel coverage of 16 inches (406 mm).

2.03 ATTACHMENT SYSTEM

A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.04 PANEL FINISH

A. Fluoropolymer Coating System: Kynar 500 Manufacturer’s standard multi-coat thermocured coating system, including minimum 70 percent fluoropolymer color topcoat with minimum total dry film thickness of 0.9 mil (0.023 mm); color and gloss to match sample.

2.05 ACCESSORIES AND MISCELLANEOUS ITEMS

A. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish, closed-cell synthetic rubber, neoprene, or PVC, or combination steel and closed-cell foam.

B. Sealants: As specified in Section 07-9200.
   1. Exposed sealant must cure to rubber-like consistency.
   2. Concealed sealant must be non-hardening type.

C. Underlayment for Wood Substrate: 30 lb roofing felt, non-perforated type.

D. Self-Adhering Waterproofing Underlayment: “Ice and Water Shield HT” by W.R. Grace & Co. or approved equal.

E. Ridge Vent (Slope to Slope): Factory formed, metal ridge vent system. 22-ga. pre-finished galvanized steel snap-on cover and end caps. 20-ga. galvanized support brackets with .050" expanded metal support/insect screen. System to have pre-drilled slotted fastening holes and pre-fabricated miters. "Hi-Perf Ridge Vent System, Slope to Slope Shingled Version" by Metal-Era, Inc., Waukesah, WI or approved equal.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.

3.02 PREPARATION

A. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed roof will be free of leaks.

B. Coordinate installation of waterproof membrane over roof sheathing with 07 2500.

C. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by roof panel manufacturer.

D. Where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound.

3.03 INSTALLATION

A. Overall: Install roofing system in accordance with approved shop drawings and panel manufacturer's instructions and recommendations, as applicable to specific project conditions. Anchor all components of roofing system securely in place while allowing for thermal and structural movement.
   1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.

B. Accessories: Install all components required for a complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, ridge closures, and snow guards.

C. Install roofing felt and Self-Adhering Waterproofing Membrane on roof deck before installing preformed metal roof panels. Secure by methods acceptable to roof panel manufacturer, minimizing use of metal fasteners. Apply from eaves to ridge in shingle fashion, overlapping horizontal joints a minimum of 2 inches (50 mm) and side and end laps a minimum of 3 inches (75 mm). Offset seams seams in roofing felt and Self-Adhering Waterprofing Membrane.

D. Roof Panels: Install panels in strict accordance with manufacturer’s instructions, minimizing transverse joints except at junction with penetrations.

3.04 CLEANING

A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.

B. Touch-up, repair, or replace damaged roof panels or accessories before date of Substantial Completion.

END OF SECTION

SECTION 07-4646 FIBER CEMENT SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wood-fiber cement siding.

1.02 RELATED REQUIREMENTS

A. Section 06-1000 - Rough Carpentry: Substrate for siding attachment.

B. Section 07 2100 - Thermal Insulation: Insulation under siding.

D. Section 07-2500 - Weather Barriers: Weather barriers under siding.

E. Section 07-9200 - Joint Sealers.

1.03 REFERENCE STANDARDS

A. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets; 2008 (Reapproved 2012).

1.04 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Manufacturer's requirements for related materials to be installed by others.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Installation methods, including nail patterns.

C. Warranty: Submit copy of manufacturer’s warranty, made out in Owner’s name, showing that it has been registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this section with minimum 3 years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products under waterproof cover and elevated above grade, on a flat surface.

PART 2 PRODUCTS

2.01 SIDING

A. Lap Siding (A): Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C 1186 Type A Grade II; with machined edges, for nail attachment.
   1. Style: Standard lap style.
   2. Texture: Smooth.
   3. Length: 12 ft (3.7 m), nominal.
   4. Width (Height): 5-1/4 inches (133 mm).
   5. Thickness: 5/8 inch (16 mm), nominal.
   6. Finish: Factory applied primer.
   7. Warranty: 50 year limited; transferable.
   8. Lap Siding Manufacturers:
      a. Allura “Smooth Lap”.
      b. Substitutions: See Section 01-6000 - Product Requirements.

B. Soffit Panels: Panels made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with machined edges, for nail attachment.
   1. Texture: Simulated cedar grain.
   2. Length: 96 inches (2400 mm), nominal.
   3. Width: 48 inches (1220 mm).
   4. Thickness: 1/2 inch (13 mm), nominal.
   5. Finish: Factory applied primer.

6. Manufacturer: Same as siding. Product: “Non-Ventilated Soffit”.

2.02 ACCESSORIES

A. Furring Strips: 3/4" preservative-treated plywood.

B. Trim: Preservative-treated dimensional lumber. See details for lengths and widths.

C. Fasteners: Stainless Steel; length as required to penetrate minimum 1-1/4 inch (32 mm).

D. Exterior Soffit Vents: Stainless steel hardware cloth, 1/8" holes, 26 GA. Provide continuous vent. See details for size and extent.

E. Joint Sealer: As specified in Section 07-9200.

PART 3 EXECUTION

3.01 PREPARATION

A. Examine substrate and clean and repair as required to eliminate conditions that would be detrimental to proper installation.

B. Verify that water-resistive barrier has been installed over substrate completely and correctly.

C. Do not begin until unacceptable conditions have been corrected.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Install sheet metal flashing:
1. Above door and window trim and casings.
2. Above horizontal trim in field of siding.
3. All other locations indicated on drawings.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions and recommendations.
1. Read warranty and comply with all terms necessary to maintain warranty coverage.
2. Use trim details indicated on drawings.
3. Touch up all field cut edges before installing.
4. Pre-drill nail holes if necessary to prevent breakage.

B. Allow space between ends of siding panels that butt against trim for thermal movement; seal joint between panel and trim with exterior grade sealant.

C. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.

D. Do not install siding less than 6 inches (150 mm) from surface of ground nor closer than 1 inch (25 mm) to roofs, patios, porches, and other surfaces where water may collect. See details for siding installation clearances.

E. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations shown on the drawings. Provide vent area specified.

F. Install soffit panels to ensure an even, uniform finished appearance without visual variation to soffit plane. Butt edges tightly, with edges flush to surrounding panels.

G. After installation, seal all joints except lap joints of lap siding. Seal around all penetrations. Paint all exposed cut edges.

3.04 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. Remove all dust from installed fiber cement products before Final Completion.

END OF SECTION

SECTION 07-6200 SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, and counterflashings.

1.02 RELATED REQUIREMENTS

A. Section 06-1000 - Rough Carpentry: Wood nailers.

B. Section 06-1000 - Rough Carpentry: Wood blocking for batten seams.

C. Section 07 2100 - Thermal Insulation: Flashing protecting insulation at grade.

D. Section 07-4113 – Metal Roof Panels: Flashings associated with roofing.

F. Section 07-9200 - Joint Sealers.

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.

B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2010.

C. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2009.

D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2012)e1.

E. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.
   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.06 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

C. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:
   1. Identification of material, thickness, weight, and finish for each item and location in Project.
   2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
   3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
   4. Details of connections to adjoining work.
   5. Detail formed flashing and trim at a scale of not less than 1-1/2 inches per 12 inches.

D. Samples for Initial Selection: For each type of sheet metal flashing, trim, and accessory indicated with factory-applied color finishes involving color selection in the form of manufacturer's color charts.

E. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
   1. Sheet Metal Flashing: 6 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
   2. Trim, Metal Closures, Joint Intersections, and Miscellaneous Fabrications: 6 inches long and in required profile. Include fasteners and other exposed accessories.

F. Qualification Data: For qualified fabricator.

G. Warranty: Sample of special warranty.

1.07 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.

B. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1.
   1. Meet with Owner, Architect, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, and roof-mounted equipment.
   2. Review methods and procedures related to sheet metal flashing and trim.
   3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
   4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry. Slope metal sheets to ensure drainage.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.09 WARRANTY

A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
      a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
      b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
      c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
   2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.

B. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum.028 inch (____ mm) thick base metal.

C. Metallic-Coated Steel Sheet: Restricted flatness steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
   1. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40; structural quality.
   2. Surface: Smooth, flat.
   3. Exposed Coil-Coated Finish: Two-Coat Fluoropolymer: AAMA 621. Fluropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
   4. Color: As selected by the Architect from the manufacturer's full range. 24 color minimum. 3 colors total will be selected.

2.02 ACCESSORIES

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
   1. Exposed Fasteners: Stainless Steel, with soft neoprene washers. Heads matching color of sheet metal using plastic caps or factory-applied coating.
   2. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

C. Underlayment: ASTM D226, organic roofing felt, Type II ("No. 30").

D. Slip Sheet: Rosin sized building paper.

E. Primer: Zinc chromate type.

F. Protective Backing Paint: Zinc molybdate alkyd.

G. Sealants: Types as specified in Section 07-9005.

H. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

I. Plastic Cement: ASTM D4586, Type I.

2.03 FABRICATION

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
   1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
   2. Obtain field measurements for accurate fit before shop fabrication.
   3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
   4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

C. Form sections true to shape, accurate in size, square, and free from distortion or defects.

D. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured.

G. Form pieces in longest possible lengths.

H. Hem exposed edges on underside 1/2 inch (13 mm); miter and seam corners.

I. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

J. Fabricate corners from one piece with minimum 18 inch (450 mm) long legs; seam for rigidity, seal with sealant.

K. Do not use graphite pencils to mark metal surfaces.

2.04 MISCELLANEOUS SHEET METAL FABRICATIONS

A. Exposed Fabrications: fabricate from the following materials:
   1. Prepainted Aluminum-Zinc Alloy-Coated Steel: Base metal 0.028 inch thick unless otherwise noted.

B. Concealed Fabrications: Fabricate from the following materials:
   1. Aluminum-Zinc Alloy-Coated Steel: Base metal 0.0367 inch thick unless otherwise noted.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

C. Verify compliance with requirements for installation tolerances of substrates.

D. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

E. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.

F. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil (0.4 mm).

3.03 INSTALLATION

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
   1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
   2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
   3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.

4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
5. Install sealant tape where indicated.
6. Torch cutting of sheet metal flashing and trim is not permitted.
7. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
1. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.

C. Fastener Sizes: Use fasteners of sizes that will penetrate wood sheathing not less than 3/4 inch for wood screws metal decking not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

D. Seal joints as shown and as required for watertight construction.
1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."

E. Rivets: Rivet joints in uncoated aluminum where indicated and where necessary for strength.

F. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.

G. Apply plastic cement compound between metal flashings and felt flashings.

H. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

3.04 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.05 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean off excess sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 07-9200 JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes joint sealants for the applications indicated in Part 2 articles.

B. Related Sections include the following:
   1. Section 07 2500 - Weather Barriers: Sealants required in conjunction with installation of air barriers and vapor retarders
   2. Section 07 6200 - Sheet Metal Flashing: Sealants required in conjunction with flashing installation
   3. Section 09 2500 - Gypsum Wall Board: Acoustic sealants

1.03 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.04 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Preconstruction Field Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in "Quality Assurance" Article.

D. Warranties: Special warranties specified in this Section.

1.05 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

B. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:
   1. Locate test joints where indicated on Project or, if not indicated, as directed by Owner’s Representative.
   2. Conduct field tests for each application indicated below:
      a. Revise list below to suit Project.
      b. Each type of elastomeric sealant and joint substrate indicated.
      c. Each type of nonelastomeric sealant and joint substrate indicated.
   3. Notify Owner’s Representative seven days in advance of dates and times when test joints will be erected.
      a. Method below is the first of four test methods recommended in Appendix X1.1 in ASTM C 1193. Revise if one of the other three test methods is more appropriate for Project joint conditions.
      b. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
      c. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
   4. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of

product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.

5. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section.

1.06 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
   2. When joint substrates are wet.
   3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
   4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.07 WARRANTY

A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.

C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
   1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
   2. Disintegration of joint substrates from natural causes exceeding design specifications.
   3. Mechanical damage caused by individuals, tools, or other outside agents.
   4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.02 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Owner’s Representative from manufacturer's full range.

2.03 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

C. Multicomponent Nonsag Immersible Polysulfide Sealant:
   1. Products:
      a. Products listed below are classified by manufacturers as suitable for Use I (immersible).
      b. Pecora Corporation; GC-2+.
      c. PolySpec Corp.; T-2235-M.
   2. Type and Grade: M (multicomponent) and NS (nonsag).
   3. Class: 25.
   4. Uses Related to Exposure: T (traffic), NT (nontraffic), and I (immersible), Class 1.
   5. Applications:
      a. Exterior horizontal joint between concrete apron and base of concrete wall portions.

D. Single-Component Neutral-Curing Silicone Sealant:
   1. Products:
      a. Products listed below are Class 50 neutral-curing sealants. Their respective manufacturers characterize them as medium-modulus sealants.
      b. Dow Corning Corporation; 791.
      c. Dow Corning Corporation; 795
      d. GE Silicones; SilPruf NB SCS9000.
      e. GE Silicones; UltraPruf II SCS2900.
      f. Pecora Corporation; 865.
      g. Pecora Corporation; 895.
      h. Pecora Corporation; 898.
   2. Type and Grade: S (single component) and NS (nonsag).
   3. Class: 50.
   4. Use Related to Exposure: NT (nontraffic).
   6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.
   7. Applications:
      a. Joints between metal wall panels/flashings and other materials.
      b. Joints in sheet metal flashing and trim.
      c. Exterior perimeter joints between metal wall panels or sheet metal flashing and the frames of doors and louvers.
      d. Other exterior joints not specified in individual sections and indicated on the drawings to receive “sealant.”

2.04 SOLVENT-RELEASE JOINT SEALANTS

A. Butyl-Rubber-Based Solvent-Release Joint Sealant: Comply with ASTM C 1085.
   1. Products:
      a. Bostik Findley; Bostik 300.
      b. Fuller, H. B. Company; SC-0296.
      c. Fuller, H. B. Company; SC-0288.
      d. Pecora Corporation; BC-158.
      e. Polymeric Systems Inc.; PSI-301
      f. Sonneborn, Division of ChemRex Inc.; Sonneborn Multi-Purpose Sealant.
      g. Tremco; Tremco Butyl Sealant.
   2. Applications:
      a. Concealed joints at exterior metal flashings where recommended by the manufacturer and not specified in other sections.

2.05 LATEX JOINT SEALANTS

A. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.

B. Products:
   1. Bostik Findley; Chem-Calk 600.
   2. Pecora Corporation; AC-20+.
   3. Schnee-Morehead, Inc.; SM 8200.
   4. Sonneborn, Division of ChemRex Inc.; Sonolac.
   5. Tremco; Tremflex 834.
   6. Applications:
      a. Joints between interior wall surfaces and components of interior architectural woodwork including trim, plywood wall surfaces, etc..
      b. Perimeter joints between interior wall surfaces and frames of doors and windows.
      c. Other interior non-moving joints indicated on the drawings to receive “sealant.”

2.06 ACOUSTICAL JOINT SEALANTS

A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:
   1. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
   2. Products:
      a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
      b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.
   3. Applications:
      a. Interior locations at exposed or concealed joints at sound-rated construction or conditions not specified in other sections.

B. Acoustical Sealant for Concealed Joints: Manufacturer's standard, nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce airborne sound transmission.
   1. Products:
      a. Pecora Corporation; BA-98.
      b. Tremco; Tremco Acoustical Sealant.
   2. Applications:
      a. Interior locations at concealed joints at sound-rated construction or conditions not specified in other sections.

2.07 EXPANDING FOAM SEALANTS

A. Expanding Foam Sealant: Manufacturer’s standard one-component polyurethane foam in a gun grade or tube grade aerosol can used for filling, bonding, and sealing to reduce air infiltration and heat loss.
   1. Products: Provide Universal Foam Sealant as manufactured by illbruck Sealant Systems, Inc., or approved equal.
   2. Properties:
      a. Basis: Polyurethane pre-polymer.
      b. Curing System: Moisture curing.
      c. Density: 0.94 to 1.6 lb/ft.3.
      d. Thermal Conductivity (R Value): 3.8 to 4.5 per ASTM C-518.
      e. Compressive Resistance: 8.7 psi. at 10% deformation.
      f. Air Infiltration: Less than 0.1 cfm/ft.3 at 6.24 psf.
      g. Foaming: Plus 30% (not premoistened), Plus 40% (premoistened).
      h. Water Absorption: 0.3% per DIN 53428.
      i. Fire Testing: ASTM E-84, Flame Spread 5, Smoke Developed 20.
   3. Applications:
      a. Joints at top of walls and underside of metal roof decking.
      b. Exterior locations to fill gaps in rigid insulation.

2.09 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.10 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
   a. Concrete.
   b. Masonry.
   c. Unglazed surfaces of ceramic tile.
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
   a. Metal.
   b. Glass.
   c. Porcelain enamel.
   d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.03 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Do not leave gaps between ends of sealant backings.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Place sealants so they directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
   1. Remove excess sealant from surfaces adjacent to joints.
   2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
   3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
      a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

H. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, producing seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant in compliance with sealant manufacturer's written instructions.

I. Installation of Expanding Foam Sealant: Moisten porous surfaces with a fine mist of water unless otherwise recommended. Fill joints and cavities only to 50% for tube grade and up to 70% with gun grade. When filling deep holes and joints, apply foam at short intervals of 1 to 2 hours.

3.04 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.05 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION

SECTION 08 1113 HOLLOW METAL DOORS AND FRAMES

PART 1 – GENERAL

1.01 SUMMARY

A. Thermally insulated steel doors.

B. Steel glazing frames.

1.02 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2009.

B. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.

C. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998 (R2011).

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Steel Doors and Frames:

1. Assa Abloy Ceco, Curries, or Fleming: www.assaabloydss.com.
2. Steelcraft; www.steelcraft.com.
3. Amweld Building Products Division, Niles, Ohio
4. Substitutions: See Section 01-6000 - Product Requirements.

2.02 MATERIALS

A. Cold Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A366 or ASTM A620, Drawing Steel, Type B; stretcher-leveled standard of flatness.

B. Metallic Coated Steel Sheets: ASTM A653, Commercial Steel (CS), Type B, with an A60 zinc-iron-alloy coating; stretcher-leveled standard of flatness.

C. Supports and Anchors: Fabricate of not less than 0.042 inch thick, electrolytic zinc coated Or galvanized sheet steel.

D. Inserts, Bolts, and Fasteners: Manufacturer's standard units, except hot dip zinc coated Items to be built into exterior walls, complying with ASTM A153, Class C or D as applicable.

E. Shop-Applied Paint: For steel surfaces, use rust inhibitive enamel or paint, either air drying or baking, suitable as a base for specified finish paints.

1. Comply with ANSI 250.10 for acceptance criteria.

F. Glazing: Comply with requirements in Section 088000 – Glazing.

2.03 DOORS AND FRAMES

A. Requirements for All Doors and Frames:

1. Accessibility: Comply with ANSI/ICC A117.1.
2. Door Edge Profile: Beveled on both edges.
3. Door Texture: Smooth faces.
4. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations As indicated on drawings.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with More than one type of requirement, comply with all the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.04 STEEL DOORS

A. Exterior Doors:

1. Grade: ANSI A250.8 Level 3, physical performance Level A, Model 2, seamless. 1 3/4" extra heavy-duty. 16 gauge galvanized, A60.
2. Core: Polyurethane. Foamed in place, closed cell, chemically bonded to the door Face sheets.
    a. Thermal Rating: U-value of 0.41 BTU/sq.ft. x H x deg. F or better.
3. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness.
4. Door Face Sheets: One sheet of metal with no visible seams.
5. Lock and Hinge Edge: Continuously or spot welded full height of door, with welds filled and ground smooth.
6. Top: Closed with flush steel end closure treatment
7. Bottom: Closed with a recessed channel end closure
8. Thermal rating: U-value of 0.41 BTU/sq.ft. x H x deg. F or better.
9. Weatherstripping: Separate, see Section 08-7100.
10. Finish: Factory primed, for field finishing.
11. Where full-mortise continuous gear hinges are scheduled, provide minimum (17 gauge) 0.053-inch thick hinge edge, and adjust width of doors as required.
12. Coordinate with Section 08710 – Door Hardware: verify the undercut requirements for exterior doors with thresholds. Standard undercut may not close \ properly to low profile handicap thresholds.

2.05 STEEL FRAMES

A. General:

1. Comply with the requirements of grade specified for corresponding door. Fabricated with 2 inch face at jambs, heads and mullions, unless otherwise indicated. 14 gauge, 0.067 inch thick steel, galvanized, A60, steel with factory-applied backed-on primer, for Level 3 steel doors.
    a. ANSI A250.8 Level 3 Doors: 14 gage frames.
2. Finish: Factory primed, for field finishing.

B. Exterior Door Frames: Face welded, seamless with joints filled.

1. Finish: Factory primed, for field finishing.
2. Weatherstripping: Separate, see Section 08-7100.

2.06 ACCESSORY MATERIALS

A. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on Center mullion of pairs, and 2 on head of pairs without center mullions.

2.07 FINISH MATERIALS

A. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.

B. Touch up damaged factory finishes.

2.08 DOOR HARDWARE

A. Except as noted, the following scheduled hardware and equipment names and numbers were taken from the catalogs of:

Item	Manufacturer	Acceptable Substitutes
Butt Hinges	McKinney	Bommer, Hager, Ives, PBB, Stanley
Cylinders	Best.	No subsitution
Locksets	Best	No substitution
Closers	Norton 7500	LCN 4041
Metal Kickplates		Hager, Burns, Rockwood, Brookline, Trimco
Stop & Holders	Trimco	Burns, Hager, Ives, Rockwood
Thresholds, Cover Plates, & Dropseals	National Guard	Hager, Pemko, Reese, Zero
Gasketing	DHSI	No substitution

2.08 HARDWARE SCHEDULE

A. Provide the following at each door:

3 Butt hinges	CB1960R- 4.5 x 4.5	626
1 Lockset	45H 7 R 14H	626
1 Closer	PR7500	689
1 Kick plate	24” x 2LDW	630
1 Wall stop	1254	626
1 Threshold	896SS	AL
1 set Gasketing	105	BR
1 set Weatherstripping	By Frame Manufacturer.	----

2.09 KEYING

A. Key lock to Owner’s master-key system.

1. Contact CBJ Project Manager to coordinate master-key system.
2. Cylinders with seven-pin tumblers and removable cores, with ‘E’ key way.

B. Keying:

1. Provide Construction Core and Keys during the construction period.
2. The Permanent Cores and Keys (prepared to the accepted keying schedule) shall be transmitted directly to the Owner, prior to occupancy. The General Contractor shall remove the construction cores and install the permanent cores. All Construction Cores shall be returned to the Factory Representative.
3. All Permanent Cores, Keys shall be sent via Registered mail, Return Request to the Owner.
4. Furnish: Six (6) Building Grand Master Keys, Six (6) sets of keys for each lock.

END OF SECTION

SECTION 08-3300 INSULATED ROLLING SERVICE DOORS

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes electric-operated overhead insulated rolling doors.

B. Related Sections include the following:
1. Section 06 1000 – Rough Carpentry: Door opening jamb and head members.
2. Section 07 6200 - Sheet Metal Flashing:
3. Division 26: Electrical wiring and conduit, fuses, disconnect switches, connection of operator to power supply, and installation of control station and wiring.

1.02 SYSTEM DESCRIPTION

A. Design Requirements:

1. Air infiltration to comply with 2012 IECC® (International Energy Conservation Code) requirements of less than 1.0 CFM/FT2

2. Wind Loading: Supply doors to withstand maximum wind load as specified on Structural Drawings.

3. Cycle Life:

a. Design doors of standard construction for normal use of up to 20 cycle per day maximum.

4. Insulated Door Slat Material Requirements:

a. Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84.

b. Minimum Sound Transmission Class (STC) rating of 27 as tested per ASTM E90.

c. Minimum R-value of 8.0 (U-factor of 0.125) as calculated using the ASHRAE Handbook of Fundamentals.

d. Insulation to be CFC Free with an Ozone Depletion Potential (ODP) rating of zero. 1.3

1.03 SUBMITTALS

A. Submittals: submit the following items:

1. Product Data.

2. Shop Drawings: Include special conditions not detailed in Product Data. Show interface with adjacent work.

3. Quality Assurance/Control Submittals:

a. Provide proof of manufacturer ISO 9001:2008 registration.

b. Provide proof of manufacturer and installer qualifications - see 1.04 below.

c. Provide manufacturer's installation instructions.

d. Provide independent testing lab results proving 1.0 CFM/SF2 or less air infiltration

4. Closeout Submittals:

a. Operation and Maintenance Manual.

b. Certificate stating that installed materials comply with this specification.

1.04 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: ISO 9001:2008 registered and a minimum of five years experience in producing doors of the type specified.

2. Installer Qualifications: Manufacturer's approval.

1.05 DELIVERY STORAGE AND HANDLING

A. Follow manufacturer's instructions.

1.06 WARRANTY

A. Standard Warranty: Two years from date of shipment against defects in material and workmanship.

B. Maintenance: Submit for owner's consideration and acceptance of a maintenance service agreement for installed products.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Manufacturer: Cornell Iron Works, Inc., Crestwood Industrial Park, Mountaintop, PA 18707. Telephone: (800) 233-8366, Fax: (800) 526-0841. Underwriters Laboratories, Inc. (UL), ISO 9001:2008 Registered.

B. Alternates:

1. The Cookson Company, Inc.
2. Amarr
3. Clopay

2.02 BASIS-OF-DESIGN PRODUCT

A. Thermiser Model ESD30

2.03 MATERIALS

A. Curtain:

1. Air infiltration rate of .66 CFM/FT2 validated by an independent testing agency. Test report required.

2. Slat Material: No. 6F, (Listed Exterior/Interior):

a. Galvanized Steel/Galvanized Steel: [24/24] [22/24] [20/24] [22/22] [18/24] gauge, Grade 40, ASTM A 653 galvanized steel zinc coating.

b. Insulation: 7/8 inch (22 mm) foamed-in-place, closed cell urethane.

c. Total Slat Thickness: 15/16 inch (24 mm).

d. Slats have a Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84.

e. Slat has an R-value of 8.0 and an STC rating of 27.

3. Bottom Bar: Reinforced extruded aluminum interior face with full depth insulation and exterior skin slat to match curtain material and gauge.

4. Fabricate interlocking sections with high strength [nylon] [cast iron] endlocks on alternate slats each secured with two ¼" (6.35 mm) rivets. Provide windlocks as required to meet specified wind load.

5. Exterior Slat Finish:

a. GalvaNex™ Coating System to include an ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation of a chemical bonding, light gray baked-on polyester base coat and a light gray baked-on polyester finish coat. The scientific organic material composition and chemical bonding process of GalvaNex™ produces a superior finish against corrosion and abrasion. GalvaNex™ components include a limited two year finish warranty.

6. Interior Slat Finish:

a. GalvaNex™ Coating System to include an ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation of a chemical bonding, light gray baked-on polyester base coat and a light gray baked-on polyester finish coat. The scientific organic material composition and chemical bonding process of GalvaNex™ produces a superior finish against corrosion and abrasion. GalvaNex™ components include a limited two year finish warranty.

7. Curtain Configuration

a. Standard Curtain configuration.

8. Bottom Bar Finish:

a. Exterior Face: Match slats.

b. Interior Face: Clear anodized.

9. Bottom Bar Configuration:

a. Standard Bottom Bar Configuration.

B. Guides: Thermal break required. Fabricate with minimum 3/16 inch (4.76 mm) [structural steel] [stainless steel] [aluminum] angles. Provide windlock bars of same material when windlocks are required to meet specified wind load. Top of inner and outer guide angles to be flared outwards to form bellmouth for smooth entry of curtain into guides. Provide removable guide stoppers to prevent over travel of curtain and bottom bar. Top 16 ½" (419.10 mm) of coil side guide angles to be removable for ease of curtain installation and as needed for future curtain service.

1. Finish:

a. Steel: Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

2. Configuration:

a. Standard Guide Configuration.

C. Counterbalance Shaft Assembly:

1. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width.

2. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.

D. Brackets: Fabricate from minimum 3/16 inch (5 mm) steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.

1. Finish:

A. ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.

E. Hood: 24 gauge galvanized steel with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets as required to prevent excessive sag.

1. Finish:

a. GalvaNex™mark Coating System to include an ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation of a chemical bonding, light gray baked-on polyester base coat and a light gray baked-on polyester finish coat. The scientific organic material composition and chemical bonding process of GalvaNex™mark produces a superior finish against corrosion and abrasion. GalvaNex™mark components include a limited two year finish warranty.

F. Weatherstripping:

1. Bottom Bar: Replaceable, bulb-style, compressible EDPM gasket extending into guides.

2. Guides: Replaceable vinyl strip on guides sealing against fascia side of curtain.

3. Lintel Seal: Nylon brush seal fitted at door header to impede air flow.

4. Hood: Neoprene/rayon baffle to impede air flow above coil.

2.04 ACCESSORIES

A. Locking:

1. Padlockable slide bolt on fascia side of bottom bar at each jamb extending into slots in guides. Provide interlock switches on motor operated units.

2.05 OPERATION

A. Supply Cornell Model MG Electric Motor Operator, industrial duty - rated for a maximum of 20 cycles per hour, cULus listed, Totally Enclosed Non Ventilated gear head operator rated 3/4 hp as recommended by door manufacture for size and type of door. Provide complete with electric motor and factory pre-wired motor control terminals, maintenance free solenoid actuated brake, emergency manual chain hoist and control station. Motor shall be high starting torque, industrial type, protected against overload with an auto-reset thermal sensing device. Primary speed reduction shall be heavy-duty, lubricated gears with mechanical braking to hold the door in any position. Operator shall be equipped with an emergency manual chain hoist assembly that safely cuts operator power when engaged. A disconnect chain shall not be required to engage or release the manual chain hoist. Operator drive and door driven sprockets shall be provided with #50 roller chain. Provide an integral Motor Mounted Interlock system to prevent damage to door and operator when mechanical door locking devices are provided. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec). Fully adjustable, driven linear screw type cam limit switch mechanism shall synchronize the operator with the door. The electrical contractor shall mount the control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions.

1. Control Station: Surface mounted, "Open/Close" key switch with "Stop" push button; NEMA 3R.

B. Entrapment Protection: Provide the following primary entrapment protection device to enable momentary contact close operation.

1. Provide a 2-wire, E.L.R. electric sensing/weather edge seal extending full width of door bottom bar. Contact before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Provide a retracting safety cord and reel connection to control circuit.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings.

B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.

C. Commencement of work by installer is acceptance of substrate.

3.02 INSTALLATION

A. General: Install door and operating equipment with necessary hardware, anchors, inserts, hangers and supports.

B. Follow manufacturer's installation instructions.

3.03 ADJUSTING

A. Following completion of installation, including related work by others, lubricate, test, and adjust doors for ease of operation, free from warp, twist, or distortion.

3.04 CLEANING

A. Clean surfaces soiled by work as recommended by manufacturer.

B. Remove surplus materials and debris from the site.

3.05 DEMONSTRATION

A. Demonstrate proper operation to Owner's Representative.

B. Instruct Owner's Representative in maintenance procedures.

END OF SECTION

SECTION 08-5610 VINYL WINDOWS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes fixed and operable vinyl-framed windows.

1.03 DEFINITIONS

A. Performance class designations according to AAMA/WDMA 101/I.S.2/NAFS:
   1. C: Commercial.

B. Performance grade number according to AAMA/WDMA 101/I.S.2/NAFS:
   1. Design pressure number in pounds force per square foot used to determine the structural test pressure and water test pressure.

C. Structural Test Pressure: For uniform load structural test, is equivalent to 150 percent of the design pressure.

D. Minimum Test Size: Smallest size permitted for performance class (gateway test size). Products must be tested at minimum test size or at a size larger than minimum test size to comply with requirements for performance class.

1.04 PERFORMANCE REQUIREMENTS

A. General: Provide vinyl windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified, and that are of test size indicated below:
   1. Size indicated on Drawings.

B. Structural Requirements:
   1. Basic Wind Speed: 105 mph.
   2. Importance Factor: 1.0.
   3. Exposure Category: B.

1.05 SUBMITTALS

A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of vinyl window indicated.

B. Shop Drawings: Include plans, elevations, sections, details, hardware, attachments to other work, operational clearances, installation details, and the following:
   1. Mullion details, including reinforcement and stiffeners.
   2. Flashing and drainage details.
   3. Weather-stripping details.
   4. Glazing details.

C. Samples for Initial Selection: For units with factory-applied color finishes.
   1. Main Framing Member: 12-inch- long, full-size sections of window frame.

D. Product Test Reports: Based on evaluation of comprehensive tests performed within the last four years by a qualified testing agency for each type, class, grade, and size of vinyl window. Test results based on use of downsized test units will not be accepted.

E. Maintenance Data: For operable window sash operating hardware weather stripping and finishes to include in maintenance manuals.

F. Warranty: Provide special warranty specified in this Section.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating vinyl windows that meet or exceed performance requirements indicated.

B. Source Limitations: Obtain vinyl windows through one source from a single manufacturer.

C. Glazing Publications: Comply with published recommendations of glass manufacturers and with GANA's "Glazing Manual" unless more stringent requirements are indicated.

D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to vinyl windows including, but not limited to, the following:
   1. Review, discuss, and coordinate the interrelationship of vinyl windows with other exterior wall components. Include provisions for structural anchorage, glazing, flashing, weeping, sealants, and protection of finishes.
   2. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
   3. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.07 SPECIAL WARRANTY

A. Special Warranty: Provide signed warranty on Manufacturer's standard form in which manufacturer agrees to repair or replace vinyl windows that fail in materials or workmanship within specified warranty period. Warranty shall cover all costs, including installation, and shall not be reduced as a percentage of warranty time period.
   1. Failures include, but are not limited to, the following:
      a. Failure to meet performance requirements.
      b. Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
      c. Faulty operation of movable sash and hardware.
      d. Deterioration of vinyl, other materials, and finishes beyond normal weathering.
      e. Failure of insulating glass.
   2. Warranty Period:
      a. Window: 10 years from date of Substantial Completion.
      b. Glazing: 5 years from date of Substantial Completion.
      c. Vinyl Finish: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Ply Gem "Pro Series" vinyl windows, approved equal.

2.02 MATERIALS

A. Vinyl Extrusions: Rigid (unplasticized) hollow PVC extrusions, formulated and extruded for exterior applications, complying with AAMA/WDMA 101/I.S.2/NAFS and the following:
   1. PVC Formulation: High impact, low heat buildup, lead free, nonchalking, and color and UV stabilized.
   2. Multichamber Extrusions: Profile designed with separate chambers between interior and exterior faces of the extrusions.

B. Vinyl Trim and Glazing Stops: Material and finish to match frame members.

C. Fasteners: Stainless steel, epoxy adhesive, and other materials warranted by manufacturer to be noncorrosive and compatible with vinyl window members, cladding, trim, hardware, anchors, and other components.
   1. Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.

D. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

E. Reinforcing Members: Aluminum, or stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

F. Compression-Type Weather Stripping: Provide compressible weather stripping designed for permanently resilient sealing under bumper or wiper action, and for complete concealment when vinyl window is closed.
   1. Weather-Stripping Material: Manufacturer's standard system and materials complying with AAMA/WDMA 101/I.S.2/NAFS.

2.03 WINDOW

A. Window Type: Fixed.

B. AAMA/WDMA Performance Requirements: Provide vinyl windows of performance indicated that comply with AAMA/WDMA 101/I.S.2/NAFS unless more stringent performance requirements are indicated.

C. Condensation-Resistance Factor (CRF): Provide vinyl windows tested for thermal performance according to NFRC, showing a CRF of 65.

D. Thermal Transmittance: Provide vinyl windows with a whole-window, U-factor maximum indicated at 15-mph exterior wind velocity and winter condition temperatures when tested according to NFRC.
   1. U-Factor: 0.21 Btu/sq. ft. x h x deg F for fixed units and 0.23 Btu/sq. ft. x h x deg F for operable casement units.

E. Water Resistance: No water leakage as defined in AAMA/WDMA referenced test methods at a water test pressure equaling that indicated, when tested according to AAMA/WDMA 101/I.S.2/NAFS, Water Resistance Test.
   1. Test Pressure: 20 percent of positive design pressure, but not more than 12 lbf/sq. ft..

F. Operating Force and Auxiliary (Durability) Tests: Comply with AAMA/WDMA 101/I.S.2/NAFS for operating window types indicated.

2.04 GLAZING

A. Glass: Clear, double-glazed insulating-glass units, argon gas filled, with low-E pyrolytic coatings.

B. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

2.05 FABRICATION

A. Fabricate vinyl windows in sizes indicated. Include a complete system for assembling components and anchoring windows.
   1. Welded Frame and Sash/Ventilator Corners: Miter-cut and fusion welded.

B. Fabricate vinyl windows that are reglazable without dismantling sash or ventilator framing.

C. Weather Stripping: Provide full-perimeter weather stripping for each operable sash and ventilator, unless otherwise indicated.

D. Mullions: Provide mullions and cover plates as shown, compatible with window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units. Provide manufacturer's standard finish to match window units.

E. Factory-Glazed Fabrication: Except for light sizes in excess of 100 united inches, glaze vinyl windows in the factory where practical and possible for applications indicated. Comply with requirements in Division 8 Section "Glazing" and with AAMA/WDMA 101/I.S.2/NAFS.

F. Glazing Stops: Provide nailed or snap-on glazing stops coordinated with Division 8 Section "Glazing" and glazing system indicated. Provide glazing stops to match sash and ventilator frames.

G. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

2.07 ACCESSORIES

A. Provide integral attachment flange at window perimeter using welded miter corners.

B. Interior finish clips: provide integral vinyl clips on interior of window frames to receive 3/4" hardwood trim at head, jamb, and sill.

2.08 VINYL FINISHES

A. Provide integral color white.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate, and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weathertight window installation.
   1. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of opening.
   2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing windows, hardware, accessories, and other components.

B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

C. Set sill members in bed of sealant or with gaskets, as indicated, for weathertight construction.

3.03 ADJUSTING, CLEANING, AND PROTECTION

A. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

B. Clean factory-glazed glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.

END OF SECTION

SECTION 09-2500 GYPSUM WALL BOARD

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.02 SUMMARY

A. Provide labor, materials, and equipment necessary for complete installation of gypsum board (GWB), metal support systems, metal accessories, fasteners, and related items necessary as indicated.
   1. Gypsum board types, sizes, and thickness indicated.
      a. Unless indicated otherwise, walls, ceilings, soffits, and bulkheads that are indicated as GWB shall be 5/8 inch thick, Type X.
      b. Reinforcement, both metal and wood, within framing systems to support wall and ceiling mounted furnishings or equipment provided by other trades and by the Owner.

B. Related Work Specified Elsewhere
   1. Section 06 1000 - Rough Carpentry: For wood framing and blocking.
   2. Section 07 2100 - Thermal Insulation: For thermal insulation.
   3. Section 07 9200 - Joint Sealants: For joint sealants and acoustical sealants.
   5. Section 09 9120 - Interior Painting

1.03 DEFINITIONS

A. Gypsum Board Construction Terminology: Refer to ASTM C11 and GA-505 for definitions of terms related to gypsum board assemblies not defined in this Section or in other referenced standards.

1.04 SUBMITTALS

A. Informational Submittal
   1. Product Data: Include manufacturer's product data and installation instructions for each gypsum drywall component, including other data as may be required to show compliance with these requirements.

1.05 QUALITY ASSURANCE

A. Refer to "Recommended Specification on Levels of Gypsum Board Finish" as published by the Gypsum Association (and AWCI/CISCA/PDCA) for finish levels required herein.

B. Fire-Test-Response Characteristics: Where fire rated gypsum board assemblies are indicated, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
   1. Fire-Resistance-Rated Assemblies: Indicated by design designations from UL's "Fire Resistance Directory" or GA-600, "Fire Resistance Design Manual" where accepted by local authorities.

C. Single Source Responsibility for Finishing Materials: Obtain finishing materials from either the same manufacturer that supplies gypsum board and other panel products or from a manufacturer acceptable to the gypsum board manufacturer.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials under cover and keep them dry and protected from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.

C. Handle gypsum board to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.07 PROJECT CONDITIONS

A. Environmental Conditions, General: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C840 and with gypsum board manufacturer's recommendations.

B. Room Temperatures: For nonadhesive attachment of gypsum board to framing, maintain not less than 40 degrees F. For adhesive attachment and finishing of gypsum board, maintain not less than 55 degrees F. for 48 hours prior to application and continuously after until dry. Do not exceed 80 degrees F. when using temporary heat sources.

C. Ventilation: Ventilate building spaces, as required, for dry joint treatment materials. Avoid drafts during hot dry weather to prevent finishing materials from drying too rapidly.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Gypsum Products
      a. National Gypsum Company, Buffalo, New York
      b. United States Gypsum Company, Chicago, Illinois
      c. Georgia Pacific, Portland, Oregon
      d. Lafarge Gypsum, Herndon, Virginia
      e. BPB Celotex, Tampa, Florida
      f. Temple-Inland Forest Products Corp., Diboll, Texas
      g. Or approved equal.

2.02 GYPSUM BOARD PRODUCTS

A. Gypsum board panels (GWB) shall be 5/8 inch thick and meet ASTM C36. Panels shall be 4 feet wide with tapered edges. Use Use Type "X" gypsum board at all locations.

2.03 MISCELLANEOUS MATERIALS

A. General: Comply with ASTM C475.

B. Joint Tape: Paper, unless otherwise noted.

C. Sheathing Tape: 2-1/2 inch wide, 10 by 10 self-adhering fiberglass reinforced joint tape.

D. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
   1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
   2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting type taping compound.
   3. Fill Coat: For second coat, use setting-type, sandable topping compound.
   4. Finish Coat: For third and fourth coat, use setting type, sandable topping compound or drying type, all-purpose compound.

E. Joint Compound for Cementitious Backer Board: Material recommended by cementitious backer unit manufacturer.

F. Screws for Gypsum Board (ASTM C1002): Phillips head galvanized steel Type "S" or "S-12" self-drilling screws, length and type as required and recommended by gypsum board manufacturer.

G. Accessories for Interior Installation: Corner bead, edge trim, and control joints complying with ASTM C1047 and requirements indicated below:
   1. Material: Formed metal with metal complying with the following requirements:
      a. Steel sheet zinc coated by hot-dip or electrolytic process, or steel sheet coated with aluminum or rolled zinc, unless otherwise noted.
      b. Do not use plastic accessories.
      c. Shapes indicated below by reference Figure 1 designations in ASTM C1047:
         1) Corner Bead: Use at outside corners, unless otherwise indicated.

2) L-bead with face flange only; face flanged formed to receive joint compound. Use L-beads for edge trim (perimeter relief).
3) LC-bead (J-shaped): Exposed long flange receives joint compound; use at exposed panel edges.
4) One-piece control joint formed with V-shaped slot and removable strip covering slot opening.

H. Spot Grout: ASTM C475, setting type joint compound recommended for spot grouting hollow metal door frames.

I. Foam Gaskets: Closed cell vinyl foam adhesive backed strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit metal stud size indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates to which gypsum board assemblies attach or abut, installed hollow metal frames, and structural framing with Installer present for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Temporary climate control shall be used to maintain dry bulb temperatures between 55 and 80 degrees F and relative humidity at less than 50 percent during taping and curing of joint compound.

3.02 SOUND AND ACOUSTICAL INSULATION

1. Acoustical sealant shall be used to seal the entire perimeter of walls, to seal cutouts in these partitions, and to seal under control joints. Sealant shall be installed in strict accordance with manufacturer's written instructions.
   a. Cutouts include electrical boxes, recessed cabinets, heating ducts, and cold air returns. (Apply sealant on sides and backs of electrical boxes.)
   b. Sound and acoustical insulation shall be inserted between studs and extend full height of soundproof partition.
   c. Utilize foam gaskets at sill plates.

3.03 GYPSUM BOARD APPLICATION METHODS

A. Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ASTM C840 and GA-216.

B. Work shall be provided in accordance with manufacturer's printed instructions and as specified herein. Where fire-rating requirements for systems are indicated on Drawings or in schedules, install components in accordance with manufacturer's instructions to comply with indicated fire rating requirements.

C. Wallboard joints shall be butted tightly together. Maximum allowable gap at end joints shall be 1/8 inch. Support end joints on framing members.
   1. On partitions/walls apply gypsum panels vertically, unless parallel application is required for fire-resistive-rated assemblies. Use maximum length panels to minimize end joints.
   2. Install ceiling boards in direction, either parallel or perpendicular to framing members, which results in least number of joints. Install in maximum practical lengths to span with minimum number of end (butt) joints. Stagger end joints of adjoining boards.
   3. Where ceiling or walls consist of 2 layers, face layer shall be installed perpendicular to base layer. Base layer to be screw attached and face layer to be strip laminated per manufacturers instructions and screw attached to base layer in accordance with gypsum board application and finishing standards. Lay out joints so that tapered edges do not align with edges of openings.
   4. Do not attach wallboard to head track.
   5. Provide a minimum of 1/4-inch perimeter relief where board abuts different materials. Trim edges with U-bead edge trim, where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

6. Install gypsum panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
7. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

D. Openings cut in gypsum board to fit electrical outlets, plumbing, and piping shall fit snugly and shall be small enough to be covered by plates and escutcheons. Both face and back paper shall be cut for cutouts that are not made by use of a saw.

E. Fasteners: Install fasteners no closer than 3/8 inch to end or edge. Space fasteners approximately 7 inches o.c., opposite each other on adjacent ends or edges. Begin fastening from center of wallboard and proceed toward outer end or edges.

F. Apply pressure on gypsum board, adjacent to fasteners being driven, to ensure that gypsum board will be secured tightly to framing member. Check for looseness at fasteners. Drive fastener with shank reasonably perpendicular to face of board.

G. Drive screws with power screwdriver as recommended by gypsum board manufacturer. Surface of head shall be below surface of paper without cutting paper.

H. Joint and corner treatment shall be in accordance with manufacturer's printed instructions to provide a finished surface, ready for painting. Surface shall be free of dimples, excess finishing compound, ridges, or untrue corners.
1. Install edge trim where edge of gypsum panels would otherwise be exposed or semi-exposed. Provide edge trim type with face flange formed to receive joint compound except where other types are indicated.

I. Provide control joints in gypsum board partitions, bulkheads, ceilings, and soffits as follows:
1. Partition or furring abuts a structural element (except floor) or dissimilar wall or ceiling.
2. Ceiling abuts a structural element, dissimilar wall or partition or other vertical penetration.
3. Construction changes within plane of partition or ceiling.
4. Partition or furring run exceeds 30 feet, unless noted otherwise.
5. Ceiling dimensions exceed 40 feet in either direction.

3.04 FINISHING GYPSUM BOARD ASSEMBLIES

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
1. Prefill open joints and damaged surface areas.
2. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

B. Levels of Finish: Following levels of finish are established as a guide for specific final finishes in accordance with GA-214 and ASTM C840, for typical finished spaces.
1. Level 4: Joints and interior angles shall have tape embedded in joint compound, and three separate coats of joint compound applied over joints, angles, fastener heads, and accessories. Joint compound shall be smooth and free of tool marks and ridges. Coat surface with specified primer/sealer prior to application of final finish. This finish level shall be used where finishes shall be applied.

3.05 FIELD QUALITY CONTROL

A. Above Ceiling Observation: Before Contractor installs gypsum board ceilings, Owner's Representative will conduct an above ceiling observation and report deficiencies in the work observed. Do not proceed with installation of gypsum board to ceiling support framing until deficiencies have been corrected.
1. Notify Owner's Representative 7 days in advance of date and time when Project, or part of Project, will be ready for above ceiling observation.

2. Before notifying Owner's Representative, complete following in areas to receive gypsum board ceilings:
   a. Installation, insulation.
   b. Installation of ceiling support framing.

END OF SECTION

SECTION 09-9000 EXTERIOR PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints and other coatings.

C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

D. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze, terne, and lead items.
   6. Floors, unless specifically so indicated.
   7. Glass.
   8. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

A. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2012.

B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.

C. SSPC (PM1) - Good Painting Practice: SSPC Painting Manual, Vol. 1; Society for Protective Coatings; Fourth Edition.

1.04 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on all finishing products, including VOC content.

C. Samples for Initial Selection: For each type of topcoat product indicated.

D. Samples for Verification: For each type of paint system and each color and gloss of topcoat indicated.
   1. Submit Samples on rigid backing, 8 inches square.
   2. Step coats on Samples to show each coat required for system.
   3. Label each coat of each Sample.
   4. Label each Sample for location and application area.

E. Product List: For each product indicated, include the following:
   1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. MPI Standards:
   1. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

1.06 MOCK-UP

A. See Section 01-4000 - Quality Requirements, for general requirements for mock-up.

B. Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
      a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft.
      b. Other Items: Architect will designate items or areas required.
   2. Final approval of color selections will be based on benchmark samples.
      a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

C. Mock-up may remain as part of the work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.
   1. Maintain containers in clean condition, free of foreign materials and residue.
   2. Remove rags and waste from storage areas daily.

1.08 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

C. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

D. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
   1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

E. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

1.09 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
   1. Quantity: Furnish an additional 1 percent, but not less than 1 gallon of each material and color applied.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.

B. Available Manufacturers: Products by PPG and Benjamin-Moore are used as the basis of design. Subject to compliance with requirements, manufacturers offering equivalent products will be evaluated for approval.

C. Substitutions: See Section 01-6000 - Product Requirements.

2.02 PAINTS AND COATINGS - GENERAL

A. Material Compatibility:
   1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
   2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
   1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Supply each coating material in quantity required to complete entire project's work from a single production run.
   3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

D. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

E. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.
   2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
   3. Extend colors to surface edges; colors may change at any edge as directed by Architect.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of coatings until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Test shop-applied primer for compatibility with subsequent cover materials.

E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

F. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
   1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

G. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

D. Correct or repair defects in substrate prior to coating application.

E. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

F. Remove or repair existing coatings that exhibit surface defects.

G. Seal surfaces that might cause bleed through or staining of topcoat.

H. Exterior Wood to Receive Transparent Finish:
1. Remove dust, grit, and foreign matter
2. Sand surfaces that will be exposed to view, dust off.
3. Seal knots, pitch streaks, and sappy sections with sealer.
4. Fill nail holes with tinted exterior calking compound after sealer has been applied
5. Prime edges, ends, faces, undersides, concealed surfaces, and backsides of wood.

I. Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions.
1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance.

D. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

E. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

G. Sand wood and metal surfaces lightly between coats to achieve required finish.

H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

I. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

J. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

K. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

A. See Section 01-4000 - Quality Requirements, for general requirements for field inspection.

B. Owner will provide field inspection.

3.05 CLEANING

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.06 PROTECTION

A. Protect finished coatings until completion of project.

B. Touch-up damaged coatings after Substantial Completion.

3.07 SCHEDULE - PAINT SYSTEMS

A. Cement Board Siding, Soffits, and Wood Trim: Acrylic Latex Low Lustre System.
   1. Prime Coat: Shop-apply prime coat on all surfaces prior to installation. Field-apply on all exposed cut surfaces during installation.
      a. Benjamin Moore Moorwood Exterior Primer 094.
   2. Intermediate Coat: Shop-applied on all surfaces exposed to view.
      a. Benjamin Moore ben Low Lustre Finish 542.
   3. Finish Coat: Field-applied on all surfaces exposed to view.
      a. Benjamin Moore ben Low Lustre Finish 542.

END OF SECTION

SECTION 09-9120 INTERIOR PAINT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes surface preparation and the application of paint systems on the following interior substrates:
   1. Gypsum board.
   2. Plywood
   3. Wood trim.

B. Related Sections include the following:

C. Factory- or shop-applied primers applied as Work of other Sections must be coordinated with field-applied finish coats. Review other Sections for factory- or shop-primed products and reference this Section for product requirements.
   1. Division 6 Sections for shop priming carpentry with primers specified in this Section.
   2. Division 9 Section "Exterior Paint" for surface preparation and the application of paint systems on exterior substrates.

1.03 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of topcoat product indicated.

C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.
   1. Submit Samples on rigid backing, 4 inches square.
   2. Step coats on Samples to show each coat required for system.
   3. Label each coat of each Sample.
   4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:
   1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.

1.04 QUALITY ASSURANCE

A. MPI Standards:
   1. Products: Complying with MPI standards.
   2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

B. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
      a. Wall and Ceiling Surfaces: Provide samples of at least 100 sq. ft.
      b. Other Items: Architect will designate items or areas required.
   2. Apply benchmark samples after permanent lighting and other environmental services have been activated.
   3. Final approval of color selections will be based on benchmark samples.
      a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.06 PROJECT CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.07 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
   1. Quantity: Furnish an additional 3%, but not less than 1 gallon of each material and color applied.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Products by Benjamin Moore & Co. are used as the basis for design.

2.02 PAINT, GENERAL

A. Plywood, Gypsum Board substrates, Wood Trim:
   1. Latex System - Satin
      a. Prime Coat: Interior latex primer/sealer.
      b. Basis of Design Product: UltraSpec 500 Latex Primer N534, by Benjamin Moore.
      c. Intermediate Coat: Interior Waterborne Alkyd matching topcoat.
      d. Topcoat: Interior Waterborne Alkyd.
      e. Basis of Design Product: Advance 792, by Benjamin Moore.

D. Substitutions: See Section 01 6000 - Product Requirements
   1. Colors: As selected by Owner's Representative from manufacturer's full range. For bidding, assume a total of three different paint colors will be selected: wall, ceiling and trim.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

C. Percentages in five subparagraphs below are based on "MPI Architectural Painting Specification Manual."
   1. Wood: 15 percent.
   2. Gypsum Board: 12 percent.
   3. Plaster: 12 percent.

D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

E. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
   1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.02 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" and “MPI Maintenance Repainting Manual” applicable to substrates indicated.

B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
   1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
   2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
   1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

D. Wood Substrates:
   1. Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral agents, and sandpaper, as required to provide proper surface.
   2. Prime edges, ends, faces, undersides, and backsides of wood.
   3. Prep and spot prime as needed on existing painted wood using compatible materials.
   4. Prime, stain, or seal wood required to be job painted immediately upon delivery to job.

E. Gypsum Board Substrates:
   1. Do not begin paint application until finishing compound is dry and sanded smooth.
   2. For existing gypsum walls with removed fabric wall covering, remove residual adhesive and smooth wall substrate surface to receive new paint system or new fabric wall covering.

3.03 APPLICATION

A. Apply paints according to manufacturer's written instructions.
   1. Use applicators and techniques suited for paint and substrate indicated.
   2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
   3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.04 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

END OF SECTION

SECTION 26-0510 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.
4. Cutting and patching for electrical construction.
5. Touchup painting.
6. Meter sockets.

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 type of product specified. 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.

1.4 QUALITY ASSURANCE

A. Comply with NFPA 70 for components and installation.

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.

1.5 SEQUENCING AND SCHEDULING

A. Coordinate electrical equipment installation with other trades.

B. Arrange for chases, slots, and openings in building structure during progress of construction to allow for electrical installations.

C. Coordinate installing required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.

B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work.

E. Coordinate connecting electrical systems with exterior underground utilities and services. Comply with requirements of governing regulations, utility requirements, and controlling agencies.

F. Coordinate installing electrical identification after completion of finishing where identification is applied to field-finished surfaces.

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 building structure for electrical components.

1. Material: Steel, except as otherwise indicated, protected from corrosion with zinc coating or with treatment of equivalent corrosion resistance using approved alternative finish or inherent material characteristics.
2. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel, or type 316L stainless steel, except as otherwise indicated.

B. Steel channel supports have 9/16-inch (14-mm) diameter holes at a maximum of 8 inches (203 mm) o.c., in at least 1 surface.

1. Fittings and accessories mate and match with channels and are from the same manufacturer.

C. Nonmetallic Channel and Angle Systems: Structural-grade, factory-formed, fiberglass-resin channels and angles with 9/16-inch (14-mm) diameter holes at a maximum of 8 inches (203 mm) o.c., in at least 1 surface.

1. Fittings and accessories mate and match with channels or angles and are from the same manufacturer.
2. Fitting and Accessory Material: Same as channels and angles, except metal items may be stainless steel.

D. 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.

E. Sheet-Metal Sleeves: 0.0276-inch (0.7-mm) or heavier galvanized sheet steel, round tube, closed with welded longitudinal joint.

F. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.

G. Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for non-armored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable iron casting with hot-dip galvanized finish.

H. Expansion Anchors: Red Head, Hilti, or equal. Stainless steel.

I. Toggle Bolts: All-steel springhead type.

J. Powder-Driven Threaded Studs: Heat-treated 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 over-laminated with a clear, weather- and chemical-resistant coating.
2. Color: Black legend on orange field.
3. Legend: Indicates voltage.

C. Colored Adhesive Marking Tape for Raceways, Wires, and Cables: Self-adhesive vinyl tape not less than 3 mils thick by 1 inch wide (0.08 mm thick by 25 mm wide).

D. Underground Line Warning Tape: Permanent, bright-colored, detectable, continuous-printed, vinyl tape with the following features:

1. Size: Not less than 4 mils thick by 6 inches wide.
2. Compounded for permanent direct-burial service.
3. Embedded continuous metallic strip or core.
4. Printed legend that indicates type of underground line.

E. Tape Markers: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.

F. Color-Coding Cable Ties: Type 6/6 nylon, self-locking type. Colors to suit coding scheme.

G. Engraved, Plastic-Laminated Labels, Signs, and Instruction Plates: Engraving stock, melamine plastic laminate punched for mechanical fasteners 1/16-inch (1.6-mm) minimum thick for signs up to 20 sq. in. (129 sq. cm), 1/8 inch (3.2 mm) 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 METER SOCKETS

A. Meter sockets comply with serving utility company requirements.

2.4 TOUCHUP PAINT

A. For Equipment: Provided by equipment manufacturer and selected to match equipment finish.

B. For Non-equipment Surfaces: Matching type and color of undamaged, existing adjacent finish.

C. For Galvanized Surfaces: Zinc-rich paint recommended by item manufacturer.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION REQUIREMENTS

A. Install components and equipment to provide the maximum possible headroom where mounting heights or other location criteria are not indicated.

B. Install items level, plumb, and parallel and perpendicular to other building systems 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.

D. Give right of way to raceways and piping systems installed at a required slope.

E. Coordinate with all other trades to install electrical equipment without being in conflict with other work. Where devices or equipment is in conflict, work out a solution that accommodates both trades and coordinate solution with owner’s representative. Do not change the design without the engineer’s approval.

F. Keep all equipment in a dry, heated, secure storage area prior to installation. After installation, all equipment shall be kept dry and above 55 degrees Fahrenheit. If the building cannot be kept that warm, do not install any equipment with microprocessors, any fire alarm equipment, any video equipment, or any telephone/data/television equipment.

G. Label the cover of all interior junction boxes with the circuit numbers of the wiring, they contain. Label all conductors and cables in exterior junction boxes with the circuit number and description of the circuit, i.e. DOCK LTG.

3.2 ELECTRICAL SUPPORTING METHODS

A. Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, U-channel system components. Consider the exterior of the building, the existing bus storage, new bus storage, bus wash, and bus wash mechanical a damp location.

B. Support Clamps for PVC Raceways: Click-type clamp system.

C. Conform to manufacturer's recommendations for selecting supports.

D. Strength of Supports: Adequate to carry all present and future loads, times a safety factor of at least 4; 200-lb- (90-kg-) 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. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.
4. Spare Capacity: Size supports for multiple conduits so capacity can be increased by a 25 percent minimum in the future.
5. Support individual horizontal raceways with separate, malleable iron pipe hangers or clamps.
6. Hanger Rods: 1/4-inch (6-mm) diameter or larger threaded steel, except as otherwise indicated.
7. Spring Steel Fasteners: Specifically designed for supporting single conduits or tubing. May be used in lieu of malleable iron hangers for 1-1/2-inch (38-mm) and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings and for fastening raceways to channel and slotted angle supports.
8. In vertical runs, arrange support so the load produced by the weight of the raceway and the enclosed conductors is carried entirely by the conduit supports, with no weight load on raceway terminals.

C. Vertical Conductor Supports: Install simultaneously with conductors.

D. Miscellaneous Supports: Install metal channel racks for mounting cabinets, panelboards, disconnects, control enclosures, pull boxes, junction boxes, transformers, and other devices except where components are mounted directly to structural features of adequate strength.

E. Sleeves: Install for cable and raceway penetrations of concrete slabs and walls, except where core-drilled holes are used. Install for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.

F. Fastening: Unless otherwise indicated, securely fasten electrical items and their supporting hardware to the building structure. Perform fastening according to the following:

1. Fasten by means of wood screws or screw-type nails on wood; toggle bolts on hollow masonry units; concrete inserts or expansion bolts on concrete or solid masonry; and by machine screws, welded threaded studs, or spring-tension clamps on steel.
2. Threaded studs driven by a powder charge and provided with lock washers and nuts may be used instead of expansion bolts, machine screws, or wood screws.
3. Drill holes in concrete beams so holes more than 1-1/2 inches (38 mm) deep do not cut main reinforcing bars.
4. Drill holes in concrete so holes more than 3/4 inch (19 mm) deep do not cut main reinforcing bars.
5. Fill and seal holes drilled in concrete and not used.
6. Select fasteners so the load applied to any fastener does not exceed 25 percent of the proof-test load.

G. Install identification devices where required.

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. Self-Adhesive Identification Products: Clean surfaces of dust, loose material, and oily films before applying.
4. 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.
5. Identify Paths of Underground Electrical Lines: During trench backfilling, for exterior underground power, control, signal, and communication lines, install continuous underground plastic line marker located directly above power and communication lines. Locate 6 to 8 inches (150 to 200 mm) below finished grade. Where multiple lines installed in a common trench or concrete envelope do not exceed an overall width of 16 inches (400 mm), use a single line marker.
6. For panelboards, provide framed, typed circuit schedules with explicit description and identification of items controlled by each individual breaker.

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.

B. Keep all existing electrical systems on the project site fully operational during the course of the Work.

3.5 CUTTING AND PATCHING

A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces necessary for electrical installations. Perform cutting by skilled mechanics of the trades involved.

B. Repair disturbed surfaces to match adjacent undisturbed surfaces.

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 26-0519 LOW VOLTAGE 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 building wires and cables and associated connectors, splices, and terminations for wiring systems rated 600 V and less.

1.3 SUBMITTALS

A. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.

B. Catalog Cut Sheets: Provide product data on all equipment including installation instructions.

C. Shop Drawings: Provide numbering scheme on a set of floor plans with all devices shown and on elevation drawings showing the patch panels with appropriate numbering at each jack in panel.

D. Field Test Reports.

1.4 QUALITY ASSURANCE

A. 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.

B. Comply with NFPA 70, IBC, NESC, and all local, state, and federal regulations.

C. All telephone and data communications cabling, materials and installation practices shall comply with the applicable sections of the following Telecommunications Industry Standards:

1. ANSI/TIA/EIA-568-B.1-2001, Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements.
2. ANSI/TIA/EIA-568-B.2-2001, Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted-Pair Cabling Components.
3. ANSI/TIA/EIA-568-B.2-2002, Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted-Pair Cabling Components.
4. ANSI/TIA/EIA-568-B.3-2000, Commercial Building Telecommunications Cabling Standard, Part 3: Optical Fiber Cabling Components Standard.
5. ANSI/TIA/EIA-569-A-2001, (Including 5 addendums), Commercial Building Standards for Telecommunications Pathways and Spaces.

6. ANSI/TIA/EIA-570-1991, Residential and Light Commercial Telecommunications Wiring Standard.
7. ANSI/TIA/EIA-606-1993, The Administration Standard for the Telecommunications Infrastructure of Commercial Building.
8. ANSI/TIA/EIA-607-1994, Commercial Building Grounding and Bonding Requirements for Telecommunications.

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. Leviton Manufacturing Co.
e. Superior Essex (communications)

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.
f. Leviton (communications)

2.2 BUILDING WIRES AND CABLES

A. UL-listed building 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.

- Type MC Cable shall be allowed to be used where shown on the drawings.

G. Stranding: Solid conductor for No. 10 AWG and smaller; stranded conductor for larger than No. 10 AWG.

H. Portable Cord: UL listed, sunlight, water and weather resistant cord with oil-resistant thermoset jacket. 600V rated. See plans for conductor quantities per cable. Designed for hard usage with portable tools, small motors and power extensions. Suitable for outdoor applications.

I. Telephone and data low voltage circuits: Category 6, unshielded twisted pair(UTP) or shielded twisted pair(see plans), with low smoke, flame retardant PVC outer jacket. Plenum rated when not in conduit in ceiling spaces. All products herein must be Category 6 compliant and shall be installed following manufacturers' recommendations for installation and application.

J. Telecommunications patch cords: All patch cords shall be factory assembled patch cords with factory made ends. All patch cords shall meet the performance characteristics of the telephone and data low voltage circuits described herein. The quantity of patch cords shall be per the plans. Patch cord length shall be per the plans.

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.

B. Telephone and data communications cable connectors: Category 6 rated connectors that comply with all TIA/EIA-568-8 requirements. Assorted colors. Provide models and colors for connectors as specified in plans.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine raceways and building finishes to receive wires and cables for compliance with requirements for installation tolerances and other conditions affecting performance of wires and cables. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 WIRE AND INSULATION APPLICATIONS

A. Service Entrance: Type RHW or XHHW, in raceway.

B. Exterior and underground: Type RHW or XHHW, in raceway.

C. Feeders: Type XHHW or THWN, in raceway.

D. Branch Circuits: Type XHHW or THWN, in raceway or type MC cable.

E. Class 1 Control Circuits: Type XHHW or THWN, in raceway.

F. Class 2 Control Circuits: Type XHHW or THWN, in raceway.

G. Telephone and data low voltage circuits: Category 6, plenum rated, unshielded twisted pair (UTP) cable in low smoke, flame retardant PVC outer jacket, in raceway.

H. Additional cables shall be provided as specified on the drawings.

3.3 INSTALLATION

A. Install wires and cables as indicated, according to manufacturer's written instructions and NECA's "Standard of Installation." All conductors and cables shall be continuous from source to the device they feed. There shall be no splices in the conductor or cable unless shown otherwise. Do not exceed the bending radius of any conductor or cable, replace the conductors and or cables whose bending radius has been exceeded. Do not bend large feeders past their bending radius to install them in the feeder circuit breaker. If you do, replace the entire feeder.

B. Remove existing wires from raceway before pulling in new wires and cables.

C. Pull Conductors: Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

E. Support cables according to Division 26 Section 260510 - Basic Electrical Materials And Methods. Any cable that has a vertical drop exceeding six feet shall be supported by a stainless steel grip.

F. Identify wires and cables according to Division 26 Section 260510 - Basic Electrical Materials And Methods.

G. All telecommunications cabling shall be run continuous from the specified work area jacks at the peripheral (drop) end to the specified patch panel. In accordance with the ANSI/TIA/EIA-568-A-5 standard, no UTP run shall exceed ninety (90) meters in length from the specified jack on the peripheral end to the specified patch panel. A minimum of 5’ slack shall be left loosely wound (1’-2’ diameter) above each specified work area jack to facilitate future termination changes. Coil the cable above the suspended ceiling on a j-hook, before cable enters conduit in wall. Where jack is not located below a suspend ceiling, provide slack at the patch panel.

H. All telecommunications installed cables, jacks, and connectors will be clearly labeled and documented to identify each cable connection. Each jack in each wall plate shall have a unique identifier that matches identifiers at the patch panel. Wall mounted jacks shall utilize a neat, long lasting computer generated stick-on label such as those printed on the Brady SC plus printer system. Computer generated tags shall be installed on all of the cables serving the work area in order to provide ready identification of all cables in the event that the surface markings are lost or mutilated. The labeling scheme shall be per the owner’s requirements. Coordinate with CBJ MIS department and obtain labeling numbering scheme before starting project. Provide numbering scheme on a set of floor plans with all devices shown and on elevations drawings showing the patch panels with appropriate numbering at each jack in panel. Provide these shop drawings prior to ordering materials.

I. Run all cabling parallel and perpendicular to all walls, floors, and ceilings. When bringing cabling into equipment racks or onto mounting boards, train cables in groups, routing it parallel and perpendicular to equipment racks and mounting boards. Use cable management equipment to bundle all cables. There shall be no loose or dangling cables. Use cable ties every 12 inches to bundle cables where it is not possible to use cable management equipment.

3.4 CONNECTIONS

A. Conductor Splices: No splices in feeders. No splices in branch circuits except at device locations. In underground circuits, the only splices shall be in the electrical enclosures on the light poles or in the electrical service equipment, panels, or wall/post mounted enclosures. Do not splice in exterior in-ground junction boxes. If this happens the conductors shall be replaced and the splices mad in a light pole or service equipment, panel, or above ground enclosures.

B. Install splices and tapes that possess equivalent or better mechanical strength and insulation ratings than conductors being spliced.

C. Use splice and tap connectors compatible with conductor material.

D. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches (300 mm) of slack.

E. Connect outlets and components to wiring and to ground as indicated and instructed by manufacturer.

F. 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.

3.5 FIELD QUALITY CONTROL

A. Testing: On installation of wires and cables and before electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

1. Procedures: Perform each visual and mechanical inspection and electrical test stated in NETA ATS, Section 7.3.1. Certify compliance with test parameters.

B. Correct malfunctioning conductors and cables at Project site, where possible, and retest to demonstrate compliance; otherwise, remove and replace with new units and retest.

C. Telephone and data communications cable testing: All UTP cabling will be certified to meet or exceed Category 6 specifications as set forth in TIA/EIA-568-B.1 Section 11, using a level II-E field tester pre-approved by the Agency's contract administrator. Certifications shall include the following parameters for each pair of each cable installed:

1. Wire map (pin to pin connectivity)
2. Length(in feet)
3. Attenuation
4. Near End Crosstalk(NEXT)
5. Far End Crosstalk(FEXT
6. ELFEXT
7. Attenuation/Crosstalk Ratio (ACR)
8. Return Loss
9. Propagation Delay

10. Delay Skew
11. Test equipment shall provide an electronic and printed record of these tests.

Owner reserves the right to hire an independent testing company to spot check the test results. If the results vary more than 10% from the results provided by the Contractor, the Contractor will be required to prove his results are correct or retest the entire system.

END OF SECTION

SECTION 26-0526 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

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 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 26 Section 260519 – Low Voltage 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. Product Data for grounding rods, connectors and connection materials, and grounding fittings.

C. Field Test Reports.

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 26 Section 260519 – Low Voltage 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.

2.6 GROUNDING ELECTRODES AND TEST WELLS

A. Grounding Rods: Sectional type; copper-clad steel.

1. Size: 3/4 inch by 120 inches (19 by 3000 mm).

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.
d. Single-phase motor or appliance branch circuits.
e. Flexible raceway runs.
f. Armored and metal-clad cable runs.
g. All circuits in conduit including low voltage.

2. Nonmetallic Raceways: Install an equipment grounding conductor in nonmetallic raceways unless they are designated for telephone or data cables.

B. Signal and Communication Systems: For telephone, alarm, voice and data, and other communication systems, provide a No. 4 AWG minimum insulated grounding conductor in raceway from grounding-electrode system to each service location, terminal cabinet, wiring closet (telephone terminal board), and central equipment location.

1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a grounding bus.
2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.
3. Other System Requirements: Furnish ground terminal block for each rack and cabinet section. Rack shall be grounded using No. 6 AWG stranded, insulated copper conductor. Furnish all required bonding material (racks and runway) and hardware. Refer to ANSI/TIA/EIA-607-1994, Commercial Building Grounding and Bonding Requirements for Telecommunications, for details.

C. Separately Derived Systems: Where NEC requires grounding, ground according to NEC Paragraph 250-26.

3.2 INSTALLATION

A. General: Ground electrical systems and equipment according to NEC requirements, except where Drawings or Specifications exceed NEC requirements.

B. Grounding Rods: Locate a minimum of 1-rod length from each other and at least the same distance from any other grounding electrode.

1. Drive until tops are 2 inches (50 mm) below finished floor or final grade, except as otherwise indicated.
2. Interconnect with grounding-electrode conductors. Use exothermic welds, except at test wells and as otherwise indicated. Make these connections without damaging copper coating or exposing steel.

C. 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.

D. Underground Grounding Conductors: Use bare copper wire. Bury at least 24 inches (600 mm) below grade.

E. Metal Water Service Pipe: Provide insulated copper grounding conductors, sized as indicated, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes by grounding-clamp connectors. Where a dielectric main water fitting is installed, connect grounding conductor to street side of fitting. Do not install a grounding jumper across dielectric fittings. Bond grounding-conductor conduit to conductor at each end.

F. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with grounding-clamp connectors.

G. Bond interior metal piping systems and metal air ducts to equipment grounding conductors of associated pumps, fans, blowers, electric heaters, and air cleaners. Use braided-type bonding straps.

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. 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.

C. 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 non-continuous conduits at both entrances and exits with grounding bushings and bare grounding conductors, except as otherwise indicated.

D. 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.

E. 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.

F. 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.

3.4 FIELD QUALITY CONTROL

A. Tests: Subject the completed grounding system to a megger test at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells. Measure ground resistance not less than 2 full days after the last trace of precipitation, and without the soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform tests by the 2-point method according to IEEE 81.

B. Maximum grounding to resistance values are as follows:

1. Equipment Rated 500 kVA and Less: 10 ohms.

C. Excessive Ground Resistance: Where resistance to ground exceeds specified values, notify Owner promptly and include recommendations to reduce ground resistance and to accomplish recommended work.

D. Report: Prepare test reports of ground resistance at each test location. Include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

3.5 ADJUSTING AND CLEANING

A. Restore surface features, including vegetation, at areas disturbed by work of this Section. Reestablish original grades, except as otherwise indicated. Where sod has been removed, replace it as soon as possible after backfilling is completed. Restore areas disturbed by trenching, storing of dirt, cable laying, and other activities to their original condition. Include top soiling, fertilizing, liming, seeding, sodding, sprigging, and mulching. Maintain restored surfaces. Restore disturbed paving as indicated.

END OF SECTION

SECTION 26-0533 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

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. IMC.
c. EMT.
d. FMC.
e. LFNC.
f. 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 26 Section 260510 - Basic Electrical Materials And Methods for raceways and box supports.
2. Division 26 Section 262726 – Wiring Devices for devices installed in boxes.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. FMC: Flexible metal conduit.

C. IMC: Intermediate metal conduit.

D. LFNC: Liquidtight flexible nonmetallic conduit.

E. RMC: Rigid metal conduit.

F. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

A. Product Data: For raceways and fittings, boxes, hinged-cover enclosures, and cabinets. Product data to include, but not limited to, materials, finishes, approvals, load ratings, and dimensional information.

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.

D. Comply with ANSI/TIA/EIA 568A – Commercial Building Telecommunications Cabling Standard, and ANSI/TIA/EIA 569 – Commercial Building Standard for Telecommunications Pathways and Spaces.

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. Nonmetallic Conduit and Tubing:

a. Duraline.
b. STI Firestopper.

3. 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.

4. 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.

5. Cable Hook Systems:

a. Cooper B-Line
b. Other

2.2 METAL CONDUIT AND TUBING

A. Rigid Steel Conduit: ANSI C80.1.

B. IMC: ANSI C80.6.

C. EMT and Fittings: ANSI C80.3.

1. Fittings: Set-screw or compression type.

D. FMC: Zinc-coated steel.

E. Fittings: NEMA FB 1; compatible with conduit/tubing materials.

F. Fittings for Rigid Steel Conduit: Hot Dipped Galvanized Steel.

2.3 NONMETALLIC CONDUIT AND TUBING

A. RNC: Schedule 40 PVC per NEMA TC 2 or HDPE Conduit per ASTM D2447-95. The HDPE conduit shall have a wall thickness of at least 0.154 inches + 0.020 inches. The conduit shall be cooled to room temperature after manufacture and prior to being rolled on a spool. Provide a conduit straightening mechanism to remove the “reel memory” from the conduit prior to installation. Instead of using a conduit straightening mechanism, the conduit shall be spooled out on the ground and allowed to “relax” for at least 24 hours prior to being placed in the trench. If the conduit still has peaks and valleys, it shall be straightened.

B. RNC Fittings: Double E-Loc Couplings. The couplings shall be friction-fit, water-tight with an elastomeric seal inside a Schedule 80 PVC shell. The seal shall be grooved to enhance the friction fit. The couplings shall have a gripper ring and lock nut on each end. The couplings shall provide an air tight, water tight splice. All other fittings for HDPE conduit such as elbows, threaded connectors and adapters to flexible conduit, etc. shall be rigid steel conduit.

Transitions from HDPE to rigid steel conduit fittings shall be performed using rigid steel conduit and Double E-Loc couplings. Provide Double E-Loc couplings by ETCO Speciality Products, Inc. or an approved equal. Use rigid steel elbows when using PVC conduit.

C. Fire-rated pathway fittings: UL Listed for use in rated fire walls of ratings and construction as specified in the architectural plans. See architectural plans for locations of fire rated walls. Provide material data sheet in submittal package. Pathway shall be tested and approved for cable capacities ranging from 0 to 100% visual fill. The fire-rated pathway shall contain a built-in fire sealing system sufficient to maintain the hourly fire rating of the barrier being penetrated. The seal-contained sealing system shall automatically adjust to the installed cable loading and shall permit cables to be installed, removed, or retrofitted without the need to remove or reinstall the firestop materials.

2.4 OUTLET AND DEVICE BOXES

A. Sheet Metal Boxes: NEMA OS 1.

B. Cast-Metal Boxes: NEMA FB 1, Type FSC, cast box with gasketed cover. Hot Dipped Galvanized Steel.

C. Nonmetallic Boxes: NEMA OS 2.

2.5 PULL AND JUNCTION BOXES

A. Small Sheet Metal Boxes: NEMA OS 1.

B. Cast-Metal Boxes: NEMA FB 1, cast aluminum with gasketed cover.

C. All boxes installed outside of the building interior shall be hot-dipped galvanized cast steel boxes.

D. All conduit bodies shall be malleable iron.

2.6 ENCLOSURES AND CABINETS

A. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous hinge cover and flush latch.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

B. Cabinets: Inside building. NEMA 250, Type 1, galvanized steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel. Hinged door in front cover with flush latch and concealed hinge. Key latch to match panelboards. Include metal barriers to separate wiring of different systems and voltage, and include accessory feet where required for freestanding equipment.

C. Exterior, Bus Wash and Bus Storage: NEMA 4X. All enclosures and cabinets shall be NEMA 4X type 316L stainless steel.

2.6 CABLE HOOK SYSTEMS

A. Cable hooks shall have a flat bottom and provide a minimum of 1-5/8 inch cable bearing surface.

B. Cable hooks shall have 90-degree radius edges to prevent damage while installing cables.

C. Cable hooks shall be designed so the mounting hardware is recessed to prevent cable damage.

D. Cable hooks shall have a stainless steel cable latch retainer to provide containment of cables within the hook. The retainer shall be removable and reusable.

E. Cable hooks shall be factory assembled for direct attachment to walls, hanger rods, beam flanges, purlins, strut, floor posts, etc. to meet project site conditions.

F. Factory assembled multi-tiered cable hooks shall be used where required to provide separate cabling compartments, or where additional capacity is needed.

G. Cable hooks for non-corrosive areas shall be pre-galvanized steel, ASTM A653.

H. Cable hooks for corrosive areas shall be stainless steel, AISI Type 304.

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: Rigid steel or RNC Schedule 80.
2. Concealed: Rigid steel or RNC Schedule 80.
3. Underground, Single Run: RNC or Rigid Steel. Rigid Steel when within 20’ of building or other structure including equipment foundations.
4. Underground, Grouped: RNC or Rigid Steel. Rigid Steel when within 20’ of building or other structure including equipment foundations.
5. Underground, spare conduit: Rigid Steel.
6. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
7. Boxes and Enclosures: NEMA 4X, unless noted otherwise.
8. Under concrete slab: RNC or Rigid Steel.

B. Indoors: Use the following wiring methods:

1. Exposed: EMT or IMC.
2. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC; except in wet or damp locations, use LFNC.

3. Damp or Wet Locations (This includes exterior, existing and new Bus Storage, Bus Wash, & Bus Wash Mechanical): Schedule 40 PVC conduit except where below 8' use Schedule 80 PVC conduit.
4. Boxes and Enclosures: NEMA 250, Type 1, except as follows:

    a. Damp or Wet Locations(This includes exterior, existing and new Bus Storage, Bus Wash, & Bus Wash Mechanical): NEMA 250, Type 4, stainless steel or hot-dipped galvanized steel. Type NM boxes may also be used with Schedule 40 and Schedule 80 PVC conduit.

3.3 INSTALLATION

A. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.

B. Minimum Raceway Size: 1/2-inch trade size (DN16).

C. Conceal conduit where possible by routing it below building or inside walls. All conduit may be surface mounted if necessary.

D. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

E. Install raceways level and square and at proper elevations. Provide adequate headroom.

F. Complete raceway installation before starting conductor installation.

G. Support raceways as specified in Division 26 Section 260510 Basic Electrical Materials And Methods.

H. Use temporary closures to prevent foreign matter from entering raceways.

I. Protect stub-ups from damage where conduits rise through floor slabs. Arrange so curved portion of bends is not visible above the finished slab.

J. 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.

K. 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.

L. Raceways underground beneath Slabs: Do not install conduit in the slab. Conduit may be installed under the slab. This is preferable to installing it in the walls. Install all home runs from the panel, TTB, and Computer Network Equipment Rack under the slab if practical. This shall be done so that additional wiring can be easily pulled in the future.

    1. Locate conduit at least 4 inches below slab. Cover conduit with pit run, D-1, sand, or pea gravel.
    2. Locate the conduit 2 inches apart laterally and 2 inches apart vertically under the slab.
    3. Run conduit parallel and perpendicular to the stem walls.
    4. Transition from nonmetallic tubing to rigid steel conduit before rising above floor.

M. Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical.

1. Run parallel or banked raceways together, on common supports where practical.
2. Make bends in parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.

N. 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.

O. Tighten set screws of threadless fittings with suitable tools.

P. 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.

Q. 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.

R. 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.

S. Telephone and Signal System Raceways, 2-Inch Trade Size (DN53) and Smaller: In addition to the above requirements, install raceways in maximum lengths of 150 feet (45 m) and with a maximum of two 90-degree bends or equivalent. Separate lengths with pull or junction boxes where necessary to comply with these requirements.

T. Install raceway sealing fittings according to manufacturer's written instructions. Locate fittings at suitable, approved, and accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as the boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

U. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment. Install with an adjustable top or coupling threaded inside for plugs set flush with the finished floor. Extend conductors to equipment with rigid steel conduit; FMC may be used 6 inches (150 mm) above the floor. Install screwdriver-operated, threaded flush plugs flush with floor for future equipment connections.

V. Flexible Connections: Use maximum of 6 feet (1830 mm) of flexible conduit for recessed and semirecessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Use liquidtight flexible conduit in wet or damp locations. Install separate ground conductor across flexible connections.

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 26-2416 PANELBOARDS

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 lighting and power panelboards and associated auxiliary equipment rated 600 V and less.

B. Related Sections include the following:

1. Division 26 SECTION 260510 - BASIC ELECTRICAL MATERIALS AND METHODS for general materials, installation, and labeling methods.

1.3 SUBMITTALS

A. Product Data: For each type of panelboard, accessory item, and component specified.

B. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

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.

D. Field Test Reports.

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.

1.5 EXTRA MATERIALS

A. Keys: 6 spares of each type for panelboard cabinet lock.

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. Eaton Corp.; Westinghouse & Cutler-Hammer Products.
2. General Electric Co.; Electrical Distribution & Control Div.
3. Siemens Energy & Automation, Inc.
4. Square D Co.

2.2 PANELBOARD FABRICATION

A. Enclosures: Flush- or surface-mounted cabinets as indicated. NEMA PB 1, Type 1, unless otherwise indicated to meet environmental conditions at installed location.

1. Outdoor Locations: NEMA 250, Type 4X stainless steel.
2. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.

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.

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: Adequate for feeder and branch-circuit equipment ground conductors. Bonded to box.

G. Service Equipment Approval: Listed for use as service equipment for MDP panelboard.

H. Future Devices: Equip with mounting brackets, bus connections, and necessary appurtenances, for the overcurrent protective device ampere ratings indicated for future installation of devices.

2.3 BRANCH-CIRCUIT PANELBOARDS

A. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

B. Doors: In panelboard front, with concealed hinges. Secure with flush catch and tumbler lock, all keyed alike.

2.4 DISTRIBUTION PANELBOARDS

A. Doors: In panelboard front, except omit in fusible-switch panelboard, unless otherwise indicated. Secure door with vault-type latch with tumbler lock, all keyed alike.

B. Branch-Circuit Breakers: Where overcurrent protective devices are indicated to be circuit breakers, use 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, including Type SWD for switching fluorescent lighting loads and Type HACR for heating, air-conditioning, and refrigerating equipment.
3. Circuit Breakers, 200 A and Larger: Trip units interchangeable within frame size.
4. Circuit Breakers, 400 A and Larger: Field-adjustable short-time and continuous current settings.
5. Current-Limiting Trips: Where indicated, let-through ratings less than NEMA FU 1, Class RK-5.
6. Current Limiters: Where indicated, integral fuse listed for circuit breaker.
7. Lugs: Mechanical lugs and power-distribution connectors for number, size, and material of conductors indicated.
8. Shunt Trip: Where indicated.

2.6 TRANSIENT VOLTAGE SURGE SUPPRESSORS

A. Description: IEEE C62.41, selected to meet requirements for category indicated.

1. Exposure: Medium.

B. Impulse sparkover voltage coordinated with system circuit voltage.

C. Factory mounted with UL-recognized mounting device.

D. Feed with circuit breaker mounted in panel, sized accordingly.

E. Provide protection for all modes (L-L, L-N, L-G, G-N). Provide with failed protection indicators for each mode.

F. Provide where shown on drawings.

2.7 ACCESSORY COMPONENTS AND FEATURES

A. Accessory Set: Include tools and miscellaneous items as required for overcurrent protective device test, inspection, maintenance, and operation.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panelboards and accessory items according to NEMA PB 1.1.

B. Mounting Heights: Top of trim 74 inches (1880 mm) above finished floor, unless otherwise indicated.

C. Mounting: Plumb and rigid without distortion of box. Mount flush panelboards uniformly flush with wall finish.

D. Circuit Directory: Type directory to indicate installed circuit loads after balancing panelboard loads. Obtain approval before installing.

E. Install filler plates in unused spaces.

F. Wiring in Panelboard Gutters: Arrange conductors into groups, and bundle and wrap with wire ties after completing load balancing.

G. Neatly train wiring in switchboard. Bend conductors per their manufacturer's recommendations and listing requirements. Feeder conductors that are bent at a hard ninety degree angle shall be replaced.

3.2 IDENTIFICATION

A. Identify field-installed wiring and components and provide warning signs as specified in Division 26 SECTION 260510 – BASIC ELECTRICAL MATERIALS AND METHODS.

B. Panelboard Nameplates: Label each panelboard with engraved laminated-plastic or metal nameplates mounted with corrosion-resistant screws.

3.3 GROUNDING

A. Make equipment grounding connections for panelboards as indicated.

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals, including grounding connections, 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.

3.5 FIELD QUALITY CONTROL

A. Prepare for acceptance tests as follows:

1. Make insulation-resistance tests of each panelboard bus, component, and connecting supply, feeder, and control circuits.
2. Make continuity tests of each circuit.

B. Testing: After installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

1. Procedures: Perform each visual and mechanical inspection and electrical test stated in NETA ATS, Section 7.5 for switches and Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, remove and replace with new units, and retest.

3.6 ADJUSTING

A. Set field-adjustable switches and circuit-breaker trip ranges as indicated.

3.7 CLEANING

A. On completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots, dirt, and debris. Touch up scratches and mars of finish to match original finish.

END OF SECTION

SECTION 26-2726 WIRING DEVICE

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, connectors, switches, and finish plates.

1.3 SUBMITTALS

A. Product Data: For each product specified.

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.

2.2 RECEPTACLES

A. Straight-Blade and Locking Receptacles: Heavy-Duty grade. 120 volt, 20 amp rated, min. Ivory.

B. GFI Receptacles: Provide receptacles with UL listed 5mA ground fault interrupting protection with test and reset buttons. Provide receptacle with green LED indicating light that is illuminated when power is available to receptacle. LED shall go off when receptacle has tripped due to a ground fault current.

2.3 SWITCHES

A. Snap Switches: Heavy-duty, quiet type. 120 volt, 20 amp rated, min. Ivory.

2.4 WALL PLATES

A. Single and combination types match corresponding wiring devices.

1. Material for mechanical rooms: Galvanized steel.
2. Material for all other spaces: Stainless steel.
3. Provide weatherproof covers for all devices in existing and new bus storage areas, bus wash, bus wash mechanical, and exterior of building.

B. Telephone and data receptacles

1. Category 6 modular jack devices, 8-position, 8-conductor modular jacks, terminated to 110 type IDC connections for the installation of UTP cable.
2. Units shall be labeled in accordance with both wiring designations of T568A/B. See details for cable connections and labeling.
3. Provide and install faceplates for mounting telecommunication outlet connector modules described elsewhere in the specifications. Four-gang faceplate, as required and as indicated on the plans.
4. Provide and install blank inserts as needed.
5. Label communication faceplates in accordance with both wiring designations T68A/B.
6. Ivory receptacles with stainless cover plates.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install devices and assemblies plumb and secure.

B. Install wall plates when painting is complete.

C. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical, and grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

D. Protect devices and assemblies during painting.

E. Provide weatherproof covers for all devices in existing and new bus storage areas, bus wash, bus wash mechanical, and exterior of building.

3.2 IDENTIFICATION

A. Comply with Division 26 Section 260510 – Basic Electrical Material And Methods.

1. Switches: Where three or more switches are ganged, and elsewhere as indicated, identify each switch with approved legend engraved on wall plate.
2. Receptacles: Identify panelboard and circuit number from which served. Use machine-printed, pressure-sensitive, abrasion-resistant label tape on face of plate and durable wire markers or tags within outlet boxes.

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 26-2816 ENCLOSED 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 26 Section 262726 - 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. Product Data for disconnect switches, circuit breakers, and accessories specified in this Section.

C. Maintenance data for tripping devices to include in the operation and maintenance manual specified in Division 1.

D. Field Test Reports.

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. American Circuit Breaker Corp.
b. Eaton Corp.; Cutler-Hammer Products.
c. General Electric Co.; Electrical Distribution and Control Division.
d. Klockner-Moeller.
e. Siemens Energy & Automation, Inc.
f. Square D Co.
g. Westinghouse Electric Corp.; Distribution & Control Business Unit.

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, Stainless Steel, 316L.
2. Other Wet or Damp Indoor Locations (this includes existing and new Bus Storage, Bus Wash, & Bus Wash Mechanical): Type 4, 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. See single line diagram for required fault current rating. Meet rating of device feeding circuit breaker.

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. Circuit Breakers, 400 A and Larger: Field-adjustable, short-time and continuous-current settings.

F. Current-Limiting Trips: Where indicated, let-through ratings less than NEMA FU 1, Class RK-5.

G. Current Limiters: Where indicated, integral fuse listed for circuit breaker.

H. Molded-Case Switch: Where indicated, molded-case circuit breaker without trip units.

I. Lugs: Mechanical lugs and power-distribution connectors for number, size, and material of conductors indicated.

J. Shunt Trip: Where indicated.

K. Accessories: As indicated.

L. Enclosure: NEMA AB 1, Type 1, unless otherwise specified or required to meet environmental conditions of installed location.

1. Outdoor Locations: Type 4X, 316L Stainless Steel.
2. Other Wet or Damp Indoor Locations: Type 4, 316L Stainless Steel.

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 260510 - Basic Electrical Materials And Methods.

3.2 FIELD QUALITY CONTROL

A. Testing: After installing disconnect switches and circuit breakers and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

1. Procedures: Perform each visual and mechanical inspection and electrical test stated in NETA ATS, Section 7.5 for disconnect switches and Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.

B. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, remove and replace with new units and retest.

3.3 ADJUSTING

A. Set field-adjustable disconnect switches and circuit-breaker trip ranges as indicated.

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 26-5100 iNTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings applicable sections of the specifications, apply to this Section.

1.2 SUMMARY

A. This Section includes interior lighting fixtures, lighting fixtures mounted on exterior building surfaces, lamps, ballasts, emergency lighting units, and accessories.

1.3 SUBMITTALS

A. Product Data: For each type of lighting fixture indicated, arranged in order of fixture designation. Include data on features, accessories, and the following:

1. Dimensions of fixtures.
2. Certified results of independent laboratory tests for fixtures and lamps for electrical ratings and photometric data.
3. Certified results of laboratory tests for fixtures and lamps for photometric performance.
4. Emergency lighting unit battery and charger.
5. Fluorescent and high-intensity-discharge ballasts.
6. Types of lamps.

B. Field Test Reports.

1.4 QUALITY ASSURANCE

A. Fixtures, Emergency Lighting Units, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.

B. Comply with NFPA 70.

C. FM Compliance: Fixtures for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM.

1.5 COORDINATION

A. Fixtures, Mounting Hardware, and Trim: Coordinate layout and installation of lighting fixtures with ceiling system and other construction.

1.6 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.

B. Replace all luminaires, or associated equipment that fails to operate properly within one year from date of final completion.

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 in the Interior Lighting Fixture Schedule at the end of Part 3.

B. Products: Subject to compliance with requirements, provide one of the products indicated for each designation in the Luminaire Schedule shown on the drawings.

2.2 FIXTURES AND FIXTURE COMPONENTS, GENERAL

A. Metal Parts: Free from burrs, sharp corners, and edges.

B. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.

C. 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.

D. 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.
4. Laminated Silver Metalized Film: 90 percent.

E. Lenses, Diffusers, Covers, and Globes: 100 percent virgin acrylic plastic or annealed crystal glass, unless otherwise indicated.

1. Plastic: High resistance to yellowing and other changes due to aging, exposure to heat, and ultraviolet radiation.
2. Lens Thickness: 0.125 inch (3 mm) minimum, unless greater thickness is indicated.

F. Electromagnetic Interference Filters: Integral to fixture assembly. Provide one filter for each ballast. Suppress conducted electromagnetic interference filters as required by MIL-STD-461.

2.3 LED LUMINAIRES

A. Provide luminaires with features shown on the luminaire schedule. The color temp of luminaires shall be 4000K unless otherwise noted. All lumen values shown in the luminaire schedule are minimums. Provide luminaires with 0-10V dimming where dimmer switches are shown on the plans. Provide luminaires with photometric performance of the specified luminaires.

2.4 FIXTURE SUPPORT COMPONENTS

A. Comply with Division 26 Section 260510 Basic Electrical Materials and Methods, for channel- and angle-iron supports and nonmetallic channel and angle supports.

2.5 FINISHES

A. Fixtures: Manufacturer's standard, unless otherwise indicated.

1. Paint Finish: Applied over corrosion-resistant treatment or primer, free of defects.
2. Metallic Finish: Corrosion resistant.

2.6 EMERGENCY LIGHTING UNIT BATTERY AND CHARGER

A. Provide emergency power units where shown on the plans. Emergency power units shall be integral with the luminaires.

B. Provide emergency exit signs with red LED lamps, integral nickel-cadmium battery with self diagnostics and charger. Provide unit with UL listing that meets UL924.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fixtures: Set level, plumb, and square with ceiling and walls, and secure according to manufacturer's written instructions and approved submittal materials. Install lamps in each fixture.

B. Provide electronic ballasts on all fluorescent luminaries.

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.

3.3 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Advance Notice: Give dates and times for field tests.

C. Provide instruments to make and record test results.

D. Tests: As follows:

1. Verify normal operation of each fixture after installation.
2. Emergency Lighting: Interrupt electrical supply to demonstrate proper operation.
3. Verify normal transfer to battery source and retransfer to normal.
4. Report results in writing.

E. Malfunctioning Fixtures and Components: Replace or repair, then retest. Repeat procedure until units operate properly.

F. Corrosive Fixtures: Replace during warranty period.

3.4 CLEANING AND ADJUSTING

A. Clean fixtures internally and externally after installation. Use methods and materials recommended by manufacturer.

B. Adjust aimable fixtures to provide required light intensities.

END OF SECTION

SECTION 26-5600 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. Product Data: For each type of lighting unit indicated, arranged in order of lighting unit designation. 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. High-intensity-discharge luminaire ballasts.
4. Provide information on the candela output along the vertical axis for each luminaire to show compliance with the requirements on the drawings.

B. Product Certificates: Signed by manufacturers of lighting units certifying that products comply with requirements.

C. Maintenance Data: For lighting units to include in maintenance manuals specified in Division 1.

D. Field Test Reports.

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.

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.

B. Store luminaires in warm, dry, and heated space, protected from damage, prior to installation.

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.

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 luminaires with the features shown and with the photometric performance of the specified luminaires.

L. Lamps: Comply with the standard of the ANSI C78 series that is applicable to each type of lamp. Provide luminaires with indicated lamps of designated type, characteristics, and wattage. Where a lamp is not indicated for a luminaire, provide medium wattage lamp recommended by manufacturer for luminaire.

1. Metal-Halide Color Temperature and Minimum Color-Rendering Index: 3600 K and 70 CRI, unless otherwise indicated.

M. Additional Requirements: As shown on the 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 UBC-1997.

B. Wind-Load Strength of Total Support Assembly: Adequate to carry support assembly plus luminaires at indicated heights above grade without failure, permanent deflection, or whipping with a basic wind speed of 90 mph and with the application of the relevant height, exposure, gust factor, and pressure coefficients. 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.

2.4 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Aluminum: Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

1. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.
2. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.
3. Class I, Color Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolyticly deposited color coating 0.018 mm or thicker) complying with AAMA 606.1 or AAMA 608.1.

a. Color: Light bronze.
b. Color: Medium bronze.
c. Color: Dark bronze.
d. Color: Black.

4. Gold Anodic Finish: AA-M32C22A43 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, impregnated color coating 0.018 mm or thicker) complying with AAMA 611; gold color.

C. Steel: Grind welds and polish surfaces to a smooth, even finish.

1. Galvanized Finish: Hot-dip galvanize after fabrication to comply with ASTM A 123.
2. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
3. Interior: Apply one coat of bituminous paint on interior of pole, or otherwise treat to prevent corrosion.

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.

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