

# **JNU TERMINAL RECONSTRUCTION ELECTRICAL SERVICE**

**Contract No. BE19-217**

File No. 1382



**SECTION 00 0005 - TABLE OF CONTENTS**

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

**CONTRACT REQUIREMENTS No. of Pages**

|         |                               |    |
|---------|-------------------------------|----|
| 00 0005 | Table of Contents .....       | 2  |
| 00 0300 | Notice Inviting Bids .....    | 3  |
| 00 2113 | Instructions to Bidders ..... | 11 |

**BIDDING FORMS**

|         |  |   |
|---------|--|---|
| 00 4113 | Bid .....  | 3 |
| 00 4114 | Bid Schedule .....   | 1 |
| 00 4115 | Bid Modification.....                                      | 1 |
| 00 4310 | Contractor’s Financial Responsibility.....                 | 2 |
| 00 4311 | Tax Delinquency and Felony Convictions Certification ..... | 1 |
| 00 4313 | Bid Bond .....   | 1 |
| 00 4410 | Buy American.....  | 3 |

**POST BIDDING FORMS**

|         |                           |   |
|---------|---------------------------|---|
| 00 5100 | Subcontractor Report..... | 2 |
|---------|---------------------------|---|

**CONTRACT FORMS**

|         |   |    |
|---------|---|----|
| 00 5200 | Agreement .....   | 6  |
| 00 5300 | Performance Bond .....  | 2  |
| 00 5400 | Payment Bond .....  | 2  |
| 00 5420 | Disadvantaged Business Enterprise .....                                       | 8  |
| 00 5430 | Federal Vets 4212.....  | 5  |
| 00 5500 | Federal EEO Bid Conditions .....  | 11 |
| 00 5600 | Federal Labor Standards, Reporting, and Prevailing Wage Rate Determination .. | 1  |

**CLOSEOUT FORMS**

|         |  |   |
|---------|--|---|
| 00 6100 | Employment Security Tax Clearance Form ..... | 1 |
| 00 6200 | Compliance Certificate and Release Form..... | 4 |

**CONDITIONS OF THE CONTRACT**

|         |  |    |
|---------|--|----|
| 00 7000 | General Conditions .....               | 46 |
| 00 8000 | Supplementary General Conditions ..... | 14 |

**SECTION 00 0005 - TABLE OF CONTENTS**

**TECHNICAL SPECIFICATIONS**

**No. of Pages**

**DIVISION 01 -- GENERAL REQUIREMENTS**

|         |   |   |
|---------|---|---|
| 01 1000 | Summary.....                                    | 3 |
| 01 2500 | Substitution Procedures .....                   | 2 |
| 01 3100 | Project Management & Coordination .....         | 5 |
| 01 3200 | Construction Progress Documentation.....        | 3 |
| 01 3250 | Schedule of Values .....                        | 1 |
| 01 3300 | Submittal Procedures.....                       | 4 |
| 01 4000 | Quality Requirements .....                      | 6 |
| 01 5000 | Temporary Facilities and Controls.....          | 4 |
| 01 5200 | Security.....                                   | 3 |
| 01 6000 | Product Requirements.....                       | 3 |
| 01 7113 | Mobilization.....                               | 1 |
| 01 7123 | Construction Surveying .....                    | 2 |
| 01 7300 | Execution.....                                  | 4 |
| 01 7419 | Construction Waste Management and Disposal..... | 2 |
| 01 7700 | Closeout Procedures .....                       | 3 |
| 01 7823 | O & M Data.....                                 | 4 |
| 01 7839 | Project Record Documents .....                  | 2 |
| 01 7900 | Demonstration and Training.....                 | 2 |

**DIVISION 26 -- ELECTRICAL**

|            |  |    |
|------------|--|----|
| 26 0519    | Low-Voltage Electrical Power Conductors and Cables ..... | 5  |
| 26 0523    | Control-Voltage Electrical Power Cables .....            | 8  |
| 26 0526    | Grounding and Bonding for Electrical Systems.....        | 6  |
| 26 0529    | Hangers and Supports for Electrical Systems .....        | 5  |
| 26 0533    | Raceways and Boxes for Electrical Systems.....           | 7  |
| 26 0536    | Cable Trays for Electrical Systems .....                 | 6  |
| 26 0548.16 | Seismic Controls for Electrical Systems .....            | 5  |
| 26 0553    | Identification for Electrical Systems .....              | 7  |
| 26 0573.19 | Arc-Flash Hazard Analysis .....                          | 7  |
| 26 2213    | Low-Voltage Distribution Transformers.....               | 7  |
| 26 2413    | Switchboards .....                                       | 12 |
| 26 2416    | Panelboards.....   | 9  |
| 26 2713    | Electricity Metering .....                               | 2  |
| 26 2726    | Wiring Devices .....                                     | 5  |
| 26 3213.13 | Diesel Emergency Engine Generators.....                  | 17 |
| 26 3600    | Transfer Switches .....                                  | 10 |
| 26 5119    | LED Interior Lighting.....                               | 5  |

**DRAWINGS**

As listed on Sheet E0.1 – Sheet Index

**END OF SECTION 00 005**

**SECTION 00 0300 - NOTICE INVITING BIDS**

**OBTAINING CONTRACT DOCUMENTS.** The Contract Documents are entitled:

**JNU Terminal Reconstruction – Electrical Service  
CBJ Contract No. BE19-217**

The Contract Documents may be obtained at the City & Borough of Juneau (CBJ) Engineering Department, 3rd Floor Marine View Center, upon payment of \$35.00 (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](http://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 at 2:00 p.m. on June 27, 2019, in the Alaska Room at the Juneau International Airport, 1873 Shell Simmons Drive, Juneau, Alaska. 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 Caleb Comas in the CBJ Engineering Contracts Division, at (907) 586-0878, or [Caleb.comas@juneau.org](mailto:Caleb.comas@juneau.org) by 4:30 p.m., June 26, 2019.

**DESCRIPTION OF WORK.** This Project will construct new electrical service, generator, and associated electrical systems for JNU Airport terminal.

**COMPLETION OF WORK.** Substantial completion shall be by November 15, 2019. Final completion shall be 30 days following substantial completion.

**DEADLINE FOR BIDDER QUESTIONS:** 4:30 p.m. on July 11, 2019.

**DEADLINE FOR BIDS:** Sealed bids must be received by the Purchasing Division **prior to 2:00 p.m., Alaska Time on July 16, 2019**, 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

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

**SECTION 00 0300 - NOTICE INVITING BIDS**

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

|   |  |                      |
|---|--|----------------------|
| <b>IMPORTANT NOTICE TO BIDDER</b>   |  |                      |
| <b>To submit your Bid:</b>  |  |                      |
| 1. Print your company name and address on the upper left corner of your envelope.     |  |                      |
| 2. <b>Complete this label and place it on the lower left corner of your envelope.</b> |  |                      |
| <b>S<br/>E<br/>A<br/>L<br/>E<br/>D</b>  | <b>BID NUMBER:</b>   | <b>B<br/>I<br/>D</b> |
|   | <b><u>BE19-217</u></b>   |                      |
|   | <b>SUBJECT:</b>  |                      |
|   | <b><u>JNU Terminal Reconstruction –<br/>Electrical Service</u></b> |                      |
|   | <b>DEADLINE DATE:</b>  |                      |
|   | <b><u>PRIOR TO 2:00PM ALASKA<br/>TIME</u></b>                      |                      |

**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 Work will be constructed within and adjacent to the existing terminal building at JNU Airport, 1873 Shell Simmons Drive, in Juneau, Alaska. The site is within the secure boundary of the airport. Close coordination with Owner is required throughout the Work.

**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, 3<sup>rd</sup> Floor, Marine View Center  
greg.smith@juneau.org  
Telephone: (907) 586-0873  
Fax: (907) 586-4530

**DBE GOAL.** The Disadvantaged Business Enterprise goal for this project is 4.22%.

**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. Since this Project has federal funding, however, the Contractor and all Subcontractors will be required to have a current Alaska Contractor's License and a current Alaska Business License prior to Notice of Intent 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.

**SECTION 00 0300 - NOTICE INVITING BIDS**

**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: Janet Sanbei  
Janet Sanbei, Administrative Officer

6.17.19  
Date

**END OF SECTION 00 300**

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

**1.0 DEFINITIONS.** Terms used in these Instructions to Bidders and the Notice Inviting Bids have the meanings assigned to them in the General Conditions, 00 7000. 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 plan holders. Hard copies are available upon request. The Owner will make all reasonable attempts to ensure that all plan holders 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. Failure to submit "evidence of competency" and "evidence of financial responsibility" to the Owner at the time of bid opening, as described in 00 4310.
- B. Evidence of bid rigging or collusion;
- C. Fraud or dishonesty in the performance of previous contracts;
- D. Record of integrity;
- E. More than one bid for the same work from an individual, firm, or corporation under the same or different name;
- F. Unsatisfactory performance on previous or current contracts;
- G. Failure to pay, or satisfactorily settle, all bills due for labor and material on previous contracts;

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

- H. Uncompleted work that, in the judgment of the Owner, might hinder or prevent the bidder's prompt completion of additional work, if awarded;
- I. Failure to reimburse the Owner for monies owed on any previous contracts;
- J. Default under previous contracts;
- K. 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;
- L. 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;
- M. Lack of skill, ability, financial resources, or equipment required to perform the contract;
- N. Lack of legal capacity to contract.
- O. Bidders must be registered as required by law and in good standing for all amounts owed to the Owner per Paragraph 19.0 of this Section.
- P. Failure to submit a complete Subcontractor Report as required in section 005100 – 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 that 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.



## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

- E. If the bid does not contain a Unit Price for each Unit Price 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 Paragraph 13.0 of this section.
- J. If all Bidding Forms are not submitted at time of Bid.

### 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. This includes, but is not limited to :
  - 1. Visiting the site to become familiar with and to satisfy the Bidder as to the local and specific conditions that may affect cost, progress, or performance of the Work,
  - 2. Considering federal, state and local laws and regulations that may affect cost, progress, or performance of the Work,
  - 3. Studying and carefully correlating the Bidder's observations with the Contract Documents, and other related data; and
  - 4. Notifying the Owner of all conflicts, errors, or discrepancies in or between the Contract Documents and such other related data.
- B. To make or obtain any additional examinations, investigations, explorations, tests, and studies and obtain any additional information and data that pertain to the physical conditions (surface, subsurface, and underground utilities) at or contiguous to the site or otherwise that may affect cost, progress, or performance of the Work and that 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.
- C. To request access to the project site for purposes of obtaining additional information as described above at least ten days in advance of the advertised deadline for bids. The Owner will provide access and security escort to the Bidder, who shall pay for all costs associated with such escort. The Bidder's investigations shall be limited to actions that do not require permits or authorizations from the Federal Aviation Administration or similar agencies.

The submission of a bid shall be prima facie evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the Work and as to the requirements of the contract documents. The submission of a bid will constitute an incontrovertible representation by the Bidder that the Bidder has complied with every requirement of this section, "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

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

detail to indicate and convey understanding of all terms and conditions for performance of the Work.

### 7.0 BIDDING FORMS

- A. The Bid (00 4113), Bid Schedule (00 4114), Bid Security (00 4313), and other documents required at the time of bid submission shall be made on forms provided in the yellow bidding packet, or on legible and complete copies thereof. The specific forms and documents required for bidding this project are described in the bidding checklist (00 4100), and included in Bid Form (00 4113).
- B. All blanks on the Bid (00 4113), Bid Schedule (00 4114), Bid Security (00 4313), and other documents required at the time of bid submission must be signed in ink with all names legibly printed or typed below the signature.
- 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 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.
- F. The address to which communications regarding the bid are to be directed must be shown.

**8.0 SUBSTITUTE OR "OR-EQUAL" ITEMS.** Requests for substitution or consideration of "or equal" items is not allowed during the bid period. The procedure for the submittal of substitute or "or-equal" products during execution of the Work is specified in Section 01 2500.

**9.0 SUBMISSION OF BIDS.** The bid shall be delivered by the time and to the place stipulated in Section 00 0300 - 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 00 0300 – Notice Inviting Bids. The bid security shall be enclosed in the same envelope with the bid.

**10.0 BID SECURITY, BONDS, AND INSURANCE.** Each bid shall be accompanied by a certified, or cashier's check, or approved Bid Bond (00 4313) 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 bid items, if any, that total 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

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

Bid Bond form bound herein, or one conforming substantially to it in form. Bid Bonds must be accompanied by a legible Power of Attorney.

**11.0 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.

**12.0 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 pay 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.

### **13.0 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 (00 4115)** 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

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

changes shall be initialed by the person signing the Bid. Alternative Bids will not be considered unless called for.

**14.0 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.

### **15.0 AWARD OF CONTRACT.**

- A. Award of a contract, if it is awarded, will be made to the lowest responsive, responsible Bidder whose bid complies with all the requirements prescribed. Unless otherwise specified, any such award will be made within the period stated in the Notice Inviting Bids that the bids are to remain open. Unless otherwise indicated, a single award will be made for all the bid items in an individual Bid Schedule.
- B. If the Owner has elected to advertise this project with a Base Bid and Alternates, the Owner may elect to award the contract for the Base Bid, or the Base Bid in combination with one or more Alternates selected by the Owner. In either case, award shall be made to the responsive, responsible bidder offering the lowest total Bid for the work to be awarded.
- C. Low Bidder will be determined on the basis of the lowest total of the Base Bid plus combinations of Additive Alternates (when used) in order of priority as listed on the Bid and within the limits of available funding.

### **16.0 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 supplied in these contract documents, collect insurance, and shall furnish all certificates and bonds required by the Contract Documents within 10 calendar days 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.

**17.0 LIQUIDATED DAMAGES.** Provisions for liquidated damages, if any, are set forth in the Agreement.

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

### 18.0 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.

### 19.0 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.

### 20.0 **FEDERAL CONTRACT PROVISIONS.** Bidders shall comply with all applicable federal procurement and contract provisions including requirements in the Supplementary General Conditions and the following:

- A. **BUY AMERICAN PREFERENCES.** The Contractor agrees to comply with 49 USC § 50101, which provides that Federal funds may not be obligated unless all steel and manufactured goods used in AIP funded projects are produced in the United States, unless the FAA has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

A Bidder must complete and submit the Buy American certification included in Section 00 4410 with its bid. The Owner will reject as nonresponsive any bid or offer that does not include a completed Certificate of Buy American Compliance. Additionally, if the apparent low bidder requests a Type 3 Waiver to Buy American Compliance, the applicable documentation must be received in accordance with Section 00 4410. Failure to submit such completed information will result in rejection as a nonresponsive bid.

- B. **CIVIL RIGHTS, TITLE VI NOTICE.** The Juneau International Airport of the City and Borough of Juneau, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

- C. DISADVANTAGED BUSINESS ENTERPRISES (DBE).** The Owner's award of this contract is conditioned upon Bidder satisfying the good faith effort requirements of 49 CFR §26.53. As a condition of bid responsiveness, the Bidder must submit the following information on the forms provided in Section 00 5420:
1. The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract;
  2. A description of the work that each DBE firm will perform;
  3. The dollar amount of the participation of each DBE firm listed under (1.)
  4. Written statement from Bidder that attests their commitment to use the DBE firm(s) listed under (1.) to meet the Owner's project goal;
  5. If Bidder cannot meet the advertised project DBE goal; evidence of good faith efforts undertaken by the Bidder as described in Section 00 5420 and 49 CFR Part 26.

The successful Bidder must provide written confirmation of participation from each of the DBE firms the Bidder lists in their commitment. This Bidder must submit the DBE's written confirmation of participation (Section 00 5420).

- D. TRADE RESTRICTION CERTIFICATION.** By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror -
- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (U.S.T.R.);
  - b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the U.S.T.R; and
  - c. has not entered into any subcontract for any product to be used on the Federal on the project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to an Offeror or subcontractor:

- (1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R. or
- (2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such U.S.T.R. list or

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

- (3) who incorporates in the public works project any product of a foreign country on such U.S.T.R. list;

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings. The Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by U.S.T.R., unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Owner cancellation of the contract or subcontract for default at no cost to the Owner or the FAA.

### **E. NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION to ENSURE EQUAL EMPLOYMENT OPPORTUNITY.**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade: 15.1%

Goals for female participation in each trade: 6.9%

These goals are applicable to all of the contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of

## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

As used in this notice and in the contract resulting from this solicitation, the "covered area" is the state of Alaska.

- F. CERTIFICATION OF BIDDER REGARDING DEBARMENT.** By submitting a bid/proposal under this solicitation, the Bidder or Offeror certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

The successful Bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>.
2. Collecting a certification statement similar to the Certification of Offerer /Bidder Regarding Debarment, above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract.

If the Federal Aviation Administration later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

- G. CERTIFICATION REGARDING LOBBYING.** The Bidder certifies by signing and submitting this bid, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The Contractor shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.



## **SECTION 00 2113 - INSTRUCTIONS TO BIDDERS**

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

**END OF SECTION 00 2113**

**SECTION 00 4113 - 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 00 500 - Agreement) to perform the Work as specified or indicated in said Contract Documents entitled

**JNU Terminal Reconstruction — Electrical Service  
Contract No. BE19-217**

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.**

**SECTION 00 4113 - BID**

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

- Bid, Section 00 4113 (includes addenda receipt statement)
- Completed Bid Schedule, Section 00 4114
- Bid Security (Bid Bond, Section 00 4313, or by a certified or cashier's check as stipulated in the Notice Inviting Bids, Section 00 0300)
- Contractor's Financial Responsibility (00 4310)
- Complete DBE Bidder's Registration Form for Contractor (00 5420 – pg. 3)
- Buy American Certificate (00 4410)
- By submitting bid, Bidder confirms it has reviewed applicable federal regulations (49CFR Part 26).

9. The Bidder has read this Bid and agrees to the conditions as stated herein by signing his/her signature in the space

|  |  |
|--|--|
| Dated: _____   | Bidder: _____<br>(Company Name)        |
| Alaska<br>Contractor's<br>Business License No: _____ | By: _____<br>(Signature)               |
| Alaska<br>Contractor's<br>License No: _____          | Printed Name: _____                    |
| Telephone No: _____                                  | Title: _____                           |
| Fax No: _____  | Address: _____<br>(Street or P.O. Box) |
| Email: _____   | _____<br>(City, State, Zip)            |

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 (00 5100);
- Complete DBE Bidder's Registration Form for Subcontractors and others, Section 00 5420 – pg. 3
- Complete Utilization Report for each DBE, Section 00 5420, if DBE goals are not achieved, the Contact Reports and Summary of Good Faith Efforts are required (forms in Section 00 5420);
- Completed documentation for Type 3 Waiver to Buy American requirements, if a waiver is being requested by the Contractor (00 4410).

The apparent low Bidder who fails to submit a completed Subcontractor Report (00 5100) or complete documentation for Buy American Type 3 Waiver (00 4410) within the time specified above 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.

**SECTION 00 4113 - BID**

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 00 5200
- Performance Bond, Section 00 5300
- Payment Bond, Section 00 5400
- Certificates of Insurance, (Contractor) Section 00 7000 and Section 00 8000
- Vets4212 Federal Contractor Report, Section 00 5430
- EEO - 1 Certification, Section 00 5500
- EEO Estimated Employment Profile, Section 00 5500
- EEO Notice to Labor Unions, Minority/Women Organizations, Section 00 5500
- EEO Signature Page, Section 00 5500

**END OF SECTION 00 4113**

**SECTION 00 4114 - BID SCHEDULE**

Bid Schedule for construction of **BE19-217, named JNU Terminal Reconstruction — Electrical Service**, in accordance with the Contract Documents.

---

**BID** - Furnish all labor, equipment and materials to construct building and station, and perform all Work as described in these Contract Documents.

**TOTAL BID** \$ \_\_\_\_\_  
(Price in Figures)

---

**Date:** \_\_\_\_\_ **Bidder:** \_\_\_\_\_  
(Company Name)

**END OF SECTION 00 4114**

**SECTION 00 4115 - BID MODIFICATION**

**BID MODIFICATION FORM**

SUBMIT TO: CITY AND BOROUGH OF JUNEAU  
PURCHASING DIVISION  
FAX 907-586-4561

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.

| <b>PAY ITEM NO.</b> | <b>PAY ITEM DESCRIPTION</b> | <b>MODIFICATION TO LUMP SUM (indicate +/-)</b> |
|---------------------|-----------------------------|--|
|                     |                             |  |

**Total Increase or Decrease: \$ \_\_\_\_\_**

\_\_\_\_\_  
**Name of Bidder**

\_\_\_\_\_  
**Responsible Party Signature**

\_\_\_\_\_  
**Printed Name (must be an authorized signatory for Bidder)**

## SECTION 00 4310 - CONTRACTOR'S FINANCIAL RESPONSIBILITY

All Bidders must complete this form and submit at the time of the deadline for bids. Attach additional sheets as necessary to respond to questions.

**PROJECT:** JNU Terminal Reconstruction — Electrical Service; Contract BE19-217.

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

### A. EXPERIENCE

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

No  Yes If YES, explain:

---

---

---

---

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

---

---

---

---

3. Have you had previous construction contracts or subcontracts with the City and Borough of Juneau?

Yes  No

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

---

---

---

---

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

---

---

---

---

---

**B. EQUIPMENT**

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

| ITEM | QUANTITY | MAKE | MODEL | SIZE/CAPACITY | PRESENT MARKET VALUE |
|------|----------|------|-------|---------------|----------------------|
|      |          |      |       |               |                      |
|      |          |      |       |               |                      |
|      |          |      |       |               |                      |
|      |          |      |       |               |                      |
|      |          |      |       |               |                      |
|      |          |      |       |               |                      |
|      |          |      |       |               |                      |
|      |          |      |       |               |                      |
|      |          |      |       |               |                      |

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

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

No  Yes If YES, describe type and quantity:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. Is your bid based on firm offers for all materials necessary for this project?

Yes  No If NO, please explain:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_  
Contractor Signature

\_\_\_\_\_  
Name and Title of Person Signing

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



**SECTION 00 4311 – TAX DELINQUENCY AND FELONY CONVICTIONS CERTIFICATION**

CITY AND BOROUGH OF JUNEAU

**CERTIFICATION of BIDDER  
REGARDING TAX DELINQUENCY and FELONY CONVICTIONS**  
US DOT Federal-Aid Contracts

**JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE BE19-217**

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by marking (x) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

**TERM DEFINITIONS**

**Felony Convictions:** Felony conviction means a conviction within the preceding twenty-four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. §3559.

**Tax Delinquency:** A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

**CERTIFICATIONS** (Please check appropriate boxes.)

- 1) The applicant represents that it is  is not  a corporation that has any unpaid Federal Tax Liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- 2) The applicant represents that it is  is not  is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

**NOTE**

If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government’s interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency’s SDO to facilitate completion of the required considerations before award decisions are made.

\_\_\_\_\_  
**Signature of Authorized Company Representative**

\_\_\_\_\_  
**Title**

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

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

(    )

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Phone Number**

**SECTION 00 4313 - 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

**JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE**

**Contract No. BE19-217**

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) \_\_\_\_\_  
(Principal)

(SEAL) \_\_\_\_\_  
(Surety)

By: \_\_\_\_\_  
(Signature)

By: \_\_\_\_\_  
(Signature)

**END OF SECTION 00 4313**

## SECTION 00 4410 - BUY AMERICAN CERTIFICATION

### CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR TOTAL FACILITY

As a matter of bid responsiveness, the bidder must complete, sign, date, and submit this certification statement with their proposal. The bidder must indicate how they intend to comply with 49 USC § 50101 by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e. not both) by inserting a checkmark (✓) or the letter "X".

- Bidder hereby certifies that it will comply with 49 USC. 50101 by:
- Only installing steel and manufactured products produced in the United States; or
  - Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
  - Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
- To faithfully comply with providing US domestic products.
- To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

- The bidder hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder with the apparent low bid agrees:
- To submit to the Owner within 5 calendar days of the bid posting, a formal waiver request and all required documentation that supports the type of waiver being requested.
  - That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination that may result in rejection of the bid.
  - To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
  - To furnish US domestic product for any waiver request that the FAA rejects.
  - To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

### REQUIRED DOCUMENTATION

**Type 3 Waiver** - The cost of components and subcomponents produced in the United States is more than 60% of the cost of all components and subcomponents of the "facility". For this project, the term "facility" includes the Work defined in these bid documents plus the work of the future complete JNU Terminal Reconstruction project. The estimated total construction cost of the future JNU Terminal Reconstruction project is \$16,500,000. The required documentation for a type 3 waiver is:

- Listing of all manufactured products that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and

**SECTION 00 4410 - BUY AMERICAN CERTIFICATION**

products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety)

- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly and installation at project location.
- c) Percentage of non-domestic component and subcomponent cost as compared to total “facility” component and subcomponent costs, excluding labor costs associated with final assembly and installation at project location.
- d) FAA Final Assembly Questionnaire form (page 3 of this section).

**Type 4 Waiver** – Total cost of project using US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

- a) Detailed cost information for total project using US domestic product
- b) Detailed cost information for total project using non-domestic product

**False Statements:** Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

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

\_\_\_\_\_  
Title

## SECTION 00 4410 - BUY AMERICAN CERTIFICATION

### **Buy American Preferences - Final Assembly Questionnaire**

To assist the Federal Aviation Administration (FAA) in making the determination of whether final assembly of the product occurs in the United States, please complete and submit this questionnaire when requesting a Buy American Waiver under 49 U.S.C. 50101(b)(3)(A).

**1. Provide a description of the assembly process occurring at the specified final location in the United States.**

*Describe the final assembly process and its various operations.*

*How long does the final assembly process take to complete?*

**2. Provide a description of the resources used to conduct the assembly of the product at the specified location in the United States.**

*How many employees are involved in the final assembly process and what is the general skill level of those employees?*

*What type of equipment is used during the final assembly process?*

*What is a rough estimate of the associated cost to conduct final assembly of the product at the specified location in the United States?*

**SECTION 00 5100 - 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**

| <u>SUBCONTRACTOR</u>       | <sup>1</sup> AK Contractor<br><u>License No.</u> | <sup>1</sup> <u>Contact Name</u> | <u>Type of</u> | <u>Contract</u> | <input type="checkbox"/>                             |
|----------------------------|--|----------------------------------|----------------|-----------------|--|
| <u>ADDRESS</u>             | <sup>2</sup> AK Business<br><u>License No.</u>   | <sup>2</sup> <u>Phone No.</u>    | <u>Work</u>    | <u>Amount</u>   | <input checked="" type="checkbox"/> if<br><u>DBE</u> |
| 1. _____<br>_____<br>_____ | 1 _____<br>2 _____                               | _____<br>_____                   | _____<br>_____ | \$ _____        | <input type="checkbox"/>                             |
| 2. _____<br>_____<br>_____ | 1 _____<br>2 _____                               | _____<br>_____                   | _____<br>_____ | \$ _____        | <input type="checkbox"/>                             |
| 3. _____<br>_____<br>_____ | 1 _____<br>2 _____                               | _____<br>_____                   | _____<br>_____ | \$ _____        | <input type="checkbox"/>                             |
| 4. _____<br>_____<br>_____ | 1 _____<br>2 _____                               | _____<br>_____                   | _____<br>_____ | \$ _____        | <input type="checkbox"/>                             |

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 005100 - 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 19.0 of Section 00 2113 – 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 00 5100**

## SECTION 00 5200 - AGREEMENT

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

### ARTICLE 1. WORK.

Contractor shall complete the Work as specified or as indicated under the Bid Schedule of the Owner's Contract Documents **Contract BE19-217, named JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE.**

The Work is generally described as follows: Installation of electrical service and associated electrical power to serve the JNU Terminal. Trades will include, but are not limited to: electrical, site work, concrete, and paving repair.

The Work to be paid under this contract shall include the following: Total Bid as shown in Section 00 4114 - Bid Schedule.

### ARTICLE 2. CONTRACT COMPLETION TIME.

Substantial completion shall be by November 15, 2019. Final completion shall be 30 days following substantial completion.

### 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 8 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 **\$1,800** 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: **CBJ Contract BE19-217, named JNU Terminal Reconstruction — Electrical Service,** 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.



## **SECTION 00 5200 - AGREEMENT**

### **ARTICLE 6. PAYMENT PROCEDURES.**

Contractor shall submit Applications for Payment in accordance with Article 9 of the General Conditions. Applications for Payment will be processed by the Owner's Representative as provided in the General Conditions.

Progress payments will be paid in accordance with Article 9 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 withheld in accordance with the General Conditions and applicable Alaska State Statutes until final 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 00 5200-1 to 00 5200-6, inclusive) and the following sections of the Contract Documents:

- Table of Contents (pages 00 0005-1 to 00 0005-2, inclusive).
- Notice Inviting Bids (pages 00 0300-1 to 00 0300-3, inclusive).
- Instructions to Bidders (pages 00 2113-1 to 00 2113-11, inclusive).
- Bid (pages 00 4113-1 to 00 4113-3, inclusive).
- Bid Schedule (pages 00 4114-1, inclusive).
- Bid Modification (pages 00 4115-1, inclusive).
- Contractor's Financial Responsibility (pages 00 4310-1 to 00 4310-2, inclusive).
- Bid Bond (page 00 4313-1, inclusive) or Bid Security.
- Buy American (pages 00 4401-1 to 00 4401-3, inclusive).
- Subcontractor Report (pages 00 5100-1 to 00 5100-2, inclusive).
- Insurance Certificate(s).
- Performance Bond (pages 00 5300-1 to 00 5300-2, inclusive).
- Payment Bond (pages 00 5400-1 to 00 5400-2, inclusive).
- Veteran's Participation – Vets 4212 Form (pages 00 5430-1 to 00 5430-5, inclusive).
- DBE Documents (Sections 00 5420-1 to 00 5420-8, inclusive).
- Federal EEO Bid Conditions (pages 00 5500-1 to 00 5500-11, inclusive).
- Federal Labor Standards, Reporting, and Prevailing Wage Rate Determination (page 00 5600-1, inclusive).
- Employment Security Tax Clearance Form (page 00 6100-1, inclusive).
- Compliance Certificate and Release Form (pages 00 6200-1, to 00 6200-4, inclusive).
- General Conditions (pages 00 7000-1 to 00 7000-46, inclusive).
- Supplementary General Conditions (pages 00 8000-1 to 00 8000-14, inclusive).
- Technical Specifications as listed in the Table of Contents.
- Drawings consisting of 12 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.

**SECTION 00 5200 - AGREEMENT**

**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) (Date)

\_\_\_\_\_  
(Signature) (Date)

By: Patricia K. Wahto, JNU Airport Manager  
(Printed Name)

By: \_\_\_\_\_  
(Printed Name, Authority or Title)

\_\_\_\_\_  
(Signature) (Date)

By: Duncan Rorie Watt, City & Borough Manager  
(Printed Name)

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. \_\_\_\_\_

SECTION 00 5200 - AGREEMENT

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)

SECTION 00 5200 - AGREEMENT

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)

**SECTION 00 5200 - AGREEMENT**

**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 00 5200**

**SECTION 00 5300 - 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:

**JNU Terminal Reconstruction — Electrical Service  
Contract BE19-217**

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.

**SECTION 00 5300 - PERFORMANCE BOND**

**JNU Terminal Reconstruction — Electrical Service  
Contract No. BE19-217**

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: \_\_\_\_\_  
(Signature of Attorney-in-Fact)

Date Issued: \_\_\_\_\_

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Mailing Address)

\_\_\_\_\_  
(City, State, Zip Code)

**(Affix SURETY'S SEAL)**

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

**SECTION 00 5400 - 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:

**JNU Terminal Reconstruction — Electrical Service  
Contract No. BE19-217**

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.



**SECTION 00 5400 - PAYMENT BOND**

**JNU Terminal Reconstruction — Electrical Service  
Contract No. BE19-217**

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: \_\_\_\_\_  
(Signature of Attorney-in-Fact)

Date Issued: \_\_\_\_\_

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Mailing Address)

\_\_\_\_\_  
(City, State, Zip Code)

**(Affix SURETY'S SEAL)**

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

## SECTION 00 5420 - DBE PROGRAM

### 1. GENERAL

- A. Projects receiving federal grant funding require that Contractors comply with the Disadvantaged Business Enterprise Program (DBE) and complete and submit the forms, reports and documentation as described herein. Forms in this section include:
  - 1. Bidder Registration form (00 5420 – 3)
  - 2. DBE Utilization Report (00 5420 – 4)
  - 3. DBE Contact Report (00 5420 – 5 through 6)
  - 4. Summary of Good Faith Effort Documentation (00 5420 – 7)
  - 5. Annual Report: Summary of Progress Payments during Federal Fiscal Year (00 5420 - 8)
- B. Failure to comply with the provisions of this section is a material breach that may result in failure to award a contract, contract termination, or other remedy as CBJ deems appropriate.
- C. For assistance with DBE requirements, contact the DBE Administrator at Juneau International Airport (JNU) at (907)789-7821. The JNU administrative office is located at 1873 Shell Simmons Drive, Ste. 200, Juneau, Alaska 99801.
- D. JNU's race-neutral (aspirational) DBE Utilization Goal for this project is that at least 4.22% of the value of this contract be paid to DBEs. A DBE may act as a prime Contractor, Subcontractor, Service Provider, Material Supplier, Manufacturer, or combination of these.
- E. Subcontracting opportunities for this project include, but are not limited to: electrical, site prep, trucking, paving, concrete, and seeding.

### 2. BIDDING REQUIREMENTS

- A. All Bidders must complete a Bidder Registration form for the Prime Contractor and submit at the time of bid with other required documents as provided in Section 00 4113.
- B. DBEs must be certified by the State of Alaska DOT&PF at the time of the bid opening to be counted toward the project's DBE goal.
- C. Prior to the scheduled pre-bid conference, each Bidder must solicit DBE participation to meet the stated DBE goal and should encourage interested DBEs to attend the pre-bid conference to learn more about the project. Each Bidder must consider DBEs even if its firm is capable of doing all the work. Bidders must meet the DBE goal or prove good faith efforts (GFEs) were taken to meet the goal. GFEs include, but are not limited to, the following:
  - 1. Advertise subcontracting opportunities in newspapers, trade publications and minority - focused media.
  - 2. Review and use the directories of certified DBEs available from the State of Alaska Department of Transportation & Public Facilities Civil Rights Office. (907) 269-0851.
  - 3. Contact specific DBEs in writing, giving enough time for effective participation.
  - 4. Break down contracts into units that allow DBE participation. This may include portions of work normally performed by your firm.
  - 5. Negotiate in good faith with DBEs for specific bids. Do not reject them as unqualified without a thorough investigation of their capabilities.
  - 6. Provide DBEs with information about the plans, specifications and contract requirements including bonding and insurance requirements.
  - 7. Provide DBEs with information about securing equipment, supplies, materials, or related assistance or services for the project.
  - 8. Attend the pre-bid conference to review DBE requirements.
- D. DBE subcontractors' bids that are more than 10 percent higher than an accepted non-DBE subcontractor's bid may be deemed non-competitive, provided they are for the exact same work or

## SECTION 00 5420 - DBE PROGRAM

service. All evidence in support of a DBE's non-competitive bid determination must be provided in the Summary of GFE Documentation and DBE Contact Report. When a Bidder rejects a DBE subcontractor's bid as being non-competitive, the work must be performed by the non-DBE subcontractor whose bid was used to provide the basis of the determination in the amount stated in the DBE Utilization Report, except as modified by terms of the contract.

### 3. CONTRACT AWARD REQUIREMENTS

- A. The apparent low Bidder is required to submit the following completed DBE documents and submit them to the CBJ Contracts Office by 4:30 p.m. on the fifth business day following the Posting Notice date:
1. Bidder Registration form for all subcontractors and service providers, and a Bidder Registration form for each material supplier or manufacturer whose contract exceeds \$50,000.
  2. DBE Utilization Report
  3. DBE Contact Report (if DBE Utilization Goal was not achieved)
  4. Summary of Good Faith Effort Documentation (if DBE Utilization Goal was not achieved)
- B. When a Bidder fails to meet the DBE Utilization Goal, the following criteria will be used to determine whether or not sufficient GFEs have been demonstrated to be eligible for contract award.
1. The Bidder has sought out DBE participation for subcontractable components.
  2. All DBEs listed in the Alaska DOT/PF's current DBE Directory that indicate "Yes" under the specific Work Area (Region) were contacted and logged on a DBE Contact Report at least seven calendar days prior to bid opening. Acceptable methods of initial and follow up notification include:
    - a) By fax, with a confirmation receipt of successful transmission to the DBE's fax number listed in the DBE Directory.
    - b) By email, with confirmation of successful receipt by DBE's email address listed in the DBE Directory.
    - c) By mail to the DBE's address listed in the DBE Directory, with a return receipt requested. Delivery confirmation with evidence of successful delivery is an acceptable substitute for return receipt.
    - d) By telephone solicitation, with a record of the date and time of the telephone call made to the DBE's telephone number listed in the DBE Directory.

### 4. CONTRACT PERFORMANCE

- A. Once a contract is executed, a DBE subcontractor may only be replaced for failure to perform. Contractor must make a good faith effort to use another certified DBE. Contractor must get the DBE Administrator's written approval before replacement.
- B. The DBE must perform a commercially useful function. This means the DBE is responsible for execution of a distinct element of the work of a contract and carrying out its responsibilities by actually performing, managing, and supervising the work involved. The DBE may not subcontract out portions of its work, act as an employee of another Contractor on the project, or allow another Contractor to coordinate its employees, supplies, equipment, or business requirements without written approval from the DBE Administrator.
- C. By October 15<sup>th</sup> of each year, the Contractor shall submit to the DBE Administrator, an Annual Report that summarizes progress payments using the form provided in this section that covers the period of participation between October 1 and September 30 of the preceding federal fiscal year.

SECTION 00 5420 – DBE PROGRAM

CITY AND BOROUGH OF JUNEAU

BIDDER REGISTRATION

FAA-Funded Contracts - Juneau International Airport

JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE

Contract No. BE19-217

All Bidders must complete this form for the Prime Contractor and submit it at the time of bid with other required documents as provided in Section 00 4113. This form must be also completed by each Subcontractor and Service Provider, as well as by each Material Supplier or Manufacturer whose products for the contract exceed \$50,000 and submitted to the CBJ Contracts Office by 4:30 p.m. on the fifth business day following the Posting Notice date.

Name of Firm: \_\_\_\_\_

Street Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax number: \_\_\_\_\_

E-mail Address: \_\_\_\_\_ Date Firm was Established: \_\_\_\_\_

Is this firm a (check all that apply):

Prime Contractor? [ ] Yes [ ] No

Subcontractor? [ ] Yes [ ] No

Service Provider? [ ] Yes [ ] No

Material Supplier? [ ] Yes [ ] No

Manufacturer? [ ] Yes [ ] No

Alaska DOT/PF Certified DBE? [ ] Yes [ ] No

Federally Certified Small Business? [ ] Yes [ ] No

Identify specialty: .....

Identify service: .....

Identify material: .....

Identify product: .....

If yes, please include a copy of the SBA Certificate.

NAICS Code

Table with 5 empty rows for NAICS Code entry.

Firm's gross annual receipts:

[ ] < \$500,000

[ ] \$500,000 - \$999,999

[ ] \$1,000,000 - \$4,999,999

[ ] \$5,000,000 - \$9,999,999

[ ] \$10,000,000 - \$16,999,999

[ ] > \$17,000,000

Signature of Company Representative \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

Questions? Please contact the DBE Administrator at (907) 789-7821.

**SECTION 00 5420 – DBE PROGRAM**

CITY AND BOROUGH OF JUNEAU

**DBE UTILIZATION REPORT**

FAA-Funded Contracts - Juneau International Airport

**JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE**

Contract No. BE19-217

The undersigned hereby certifies on behalf of the Bidder that:

A. It  has  has not met the DBE Utilization Goal for the project. If it has not met the goal, the required documentation of sufficient Good Faith Efforts  is attached hereto.

B. Listed below are the Alaska DOT/PF-certified DBEs to be used in meeting the DBE utilization goal for this project.

To describe "Type of DBE Credit" in the table below, use the following abbreviations: Prime Contractor ("P"); Subcontractor ("SUB"), Service Provider ("SP"), Material Supplier ("MS") or Manufacturer ("MFG"). Identify the creditable dollar amount to be counted toward the goal in the right hand column.

| FIRM NAME | PHONE # | BID ITEM, WORK,<br>OR PRODUCT | TYPE OF<br>DBE<br>CREDIT | CREDITABLE<br>DOLLAR AMOUNT |
|-----------|---------|-------------------------------|--------------------------|-----------------------------|
|           |         |                               |                          | \$                          |
|           |         |                               |                          | \$                          |
|           |         |                               |                          | \$                          |
|           |         |                               |                          | \$                          |
|           |         |                               |                          | \$                          |
|           |         |                               |                          | \$                          |

|   |          |
|---|----------|
| Total creditable DBE Utilization Amount | \$ _____ |
| Base Bid Amount                         | \$ _____ |
| DBE Utilization as % of Base Bid Amount | _____ %  |
| DBE Project Goal                        | _____ %  |

\_\_\_\_\_  
Signature of Authorized Company Representative

\_\_\_\_\_  
Title

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

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

( )

\_\_\_\_\_  
Date

\_\_\_\_\_  
Phone Number

Questions? Please contact the DBE Administrator at (907) 789-7821.

SECTION 00 5420 – DBE PROGRAM

CITY AND BOROUGH OF JUNEAU

DBE CONTACT REPORT

FAA-Funded Contracts - Juneau International Airport

JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE

Contract No. BE19-217

Prime Contractor must submit this form if the DBE Utilization Goal was not met.

DBE FIRM CONTACTED:

Name Address Phone Number

SPECIFIC WORK OR MATERIALS (by Pay Item):

A. INITIAL CONTACT: (See Instructions on next page)

- 1. Date: Method: [ ] Phone [ ] Mail [ ] FAX [ ] Email
2. Person Contacted: Name Title
3. DBE's Response: Date: Method: [ ] Phone [ ] Mail [ ] FAX [ ] Email
[ ] Submitted an acceptable bid. (If bid accepted, skip to Section D)
[ ] Not interested: Indicate Reason(s):
[ ] Needs more information: Date Prime provided requested information:
[ ] Will provide bid by: Date:
[ ] Received unacceptable bid (complete Section C)

B. FOLLOW-UP CONTACT:

- 1. Date: Method: [ ] Phone [ ] Mail [ ] FAX [ ] Email
2. Person Contacted: Name Title
3. DBE's Response: Date: Method: [ ] Phone [ ] Mail [ ] FAX [ ] Email
[ ] Submitted an acceptable bid. (If bid accepted, skip to Section D)
[ ] Received unacceptable bid (complete Section C)
[ ] Other result:

C. EXPLANATION OF FAILURE TO ACHIEVE AN ACCEPTABLE BID:

- 1. Were the following Good Faith Efforts made?
a. [ ] Yes [ ] No Identified specific items of work, products, materials, etc. when asking for bid.
b. [ ] Yes [ ] No Informed DBE about the plans, specifications and contract requirements including bonding and insurance requirements.
2. Was the DBE's bid non-competitive (i.e., more than 10% higher than the accepted bid)? [ ] Yes [ ] No
3. Did the DBE indicate it was unable to perform in some capacity? [ ] Yes [ ] No If "Yes", explain:

D. CERTIFICATION: I certify that the information provided above is accurate and that efforts to solicit bids were made in good faith.

Signature of Prime (General) Contractor Title Date

## INSTRUCTIONS

### FIRM CONTACTED:

Enter name, address, and phone number of firm as it appears in the current Alaska DOT&PF DBE directory.

### SPECIFIC WORK OR MATERIALS:

Identify the specific work item or material that you requested this firm to furnish.

### A. INITIAL CONTACT: (Must be made at least seven calendar days prior to bid opening.)

1. Date and Method of Initial Contact: Indicate the method and date that actual contact was made or the date correspondence was postmarked. Leaving a "please call me" message does not constitute a contact. Attach a copy of dated letter or fax.
2. Name and Title of Person Contacted: Enter name and title of company representative with whom you corresponded or discussed submitting a bid.
3. DBE's Response: Check the appropriate boxes. If a firm bid was received and accepted, skip to section D.

### B. FOLLOW-UP CONTACT:

If no response or an inconclusive response was received from the initial contact, a follow-up contact is required to determine for a certainty that the firm does not intend to submit a bid or to conclude discussions with a bid.

1. Date and Method of Follow-up Contact: Indicate the method and date that actual contact was made or the date correspondence was postmarked. Leaving a "please call me" message does not constitute a contact. Attach a copy of dated letter or fax.
2. Name and Title of Person Contacted: Enter name and title of company representative with whom you corresponded or discussed submitting a bid.
3. DBE's Response: Check the appropriate boxes. If a firm bid was received and accepted, skip to section D.

### C. EXPLANATION OF FAILURE TO ACHIEVE AN ACCEPTABLE BID:

Check the appropriate box and provide explanation.

### D. CERTIFICATION:

This certification of accuracy and Good Faith Effort by the Contractor to solicit bids from DBEs may be verified by contacting the listed firm. Failure to comply with the provisions of this section is a material breach that may result in failure to award a contract, contract termination, or other remedy as CBJ deems appropriate.

Questions? Please contact the DBE Administrator at (907) 789-7821.

CITY AND BOROUGH OF JUNEAU  
**SUMMARY OF GOOD FAITH EFFORT DOCUMENTATION**  
 FAA-Funded Contracts - Juneau International Airport

JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE  
 Contract No. BE19-217

**Prime Contractor must submit this form if the DBE Utilization Goal was not met.**

Prime Contractor: \_\_\_\_\_

In the spaces provided below, list all items considered for DBE utilization. If needed, list additional items and comments on reverse side. Attach completed DBE Contact Reports.

| (A)<br>Material or Specific Item of Work<br>(Specify Pay Item) | (B)<br>Acceptable DBE Bid Received?<br>(Yes/No) | (C)<br>Number of DBEs Contacted in Alaska DOT/PF DBE Directory | (D)<br>Number of DBEs that Responded | (E)<br>Number of DBE Bids Received |
|--|---|--|--------------------------------------|------------------------------------|
| 1.   |   |  |                                      |                                    |
| 2.   |   |  |                                      |                                    |
| 3.   |   |  |                                      |                                    |
| 4.   |   |  |                                      |                                    |
| 5.   |   |  |                                      |                                    |
| 6.   |   |  |                                      |                                    |
| 7.   |   |  |                                      |                                    |
| 8.   |   |  |                                      |                                    |

Questions? Please contact the DBE Administrator at (907) 789-7821.



**SECTION 00 5420 – DBE PROGRAM**

# ANNUAL REPORT: SUMMARY OF PROGRESS PAYMENTS DURING FEDERAL FISCAL YEAR

FAA-Funded Contracts - Juneau International Airport

**JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE**

Contract No. BE19-217

**By October 31<sup>st</sup> of each year**, the Prime Contractor/Consultant must submit this form to the DBE Administrator at the email address below, summarizing the actual progress payments between October 1 and September 30 of the preceding Federal Fiscal Year (FFY). **All payments** should be recorded on this form, including all payments received and retained by the Prime Contractor/Consultant, as well as payments made to Subcontractors, regardless of DBE status.

FFY Reporting Period: from October 1, \_\_\_\_\_ (Year) through September 30, \_\_\_\_\_ (Year)

In the table below, identify Firm Type by one of the following: Prime Contractor (P) or Subcontractor (SUB).

| Firm Name | Alaska*<br>DBE<br>(Yes/No) | Identify<br>Firm<br>Type | Work Performed | Amount Paid in This<br>Reporting Period<br>(FFY) |
|-----------|----------------------------|--------------------------|----------------|--|
|           |                            |                          |                | \$   |
|           |                            |                          |                |  |
|           |                            |                          |                |  |
|           |                            |                          |                |  |
|           |                            |                          |                |  |
|           |                            |                          |                |  |
|           |                            |                          |                |  |
|           |                            |                          |                |  |
|           |                            |                          |                |  |
|           |                            |                          |                |  |
|           |                            |                          |                |  |

\* To be considered an Alaskan DBE for this report, the firm must have achieved Alaska DBE certification prior to execution of this contract.

.....  
The undersigned attests that the information being provided herein is accurate and complete to the best of their knowledge. Further, the undersigned authorizes the City & Borough of Juneau, Juneau International Airport to verify the accuracy of the information provided.

Failure to comply with requirements of the DBE Program is a material breach that may result in contract termination or other remedy as the DBE Administrator deems appropriate.

\_\_\_\_\_  
Signature & Title of Prime Contractor/Consultant Representative

\_\_\_\_\_  
Date

Questions? Please contact the DBE Administrator at (907) 789-7821 or JNU.DBE@jnuairport.com



## SECTION 00 5430 - FEDERAL VETS 4212

### Federal Contractor Veterans' Employment Report (VETS-4212)

**WHO MUST FILE:** This VETS-4212 Report is to be completed by all nonexempt Federal contractors and subcontractors with a contract or subcontract in the amount of \$100,000 or more with any department or agency of the United States for the procurement of personal property or non-personal services. Services include but are not limited to the following services: utility, construction, transportation, research, insurance, and fund depository, irrespective of whether the government is the purchaser or seller. Entering into a covered Federal contract or subcontract during a given calendar year establishes the requirement to file a VETS-4212 Report during the following calendar year.

**WHEN TO FILE:** This annual report must be filed no later than September 30.

**LEGAL BASIS FOR REPORTING REQUIREMENTS:** Title 38, United States Code, Section 4212(d) mandates that Federal contractors and subcontractors subject to the statute's affirmative action provisions in 38 U.S.C. 4212(a) report, at least annually, the number of employees in their workforces by job category and hiring location, and the number of such employees, by job category and hiring location, who are qualified protected veterans. In addition, Federal contractors and subcontractors must report the total number of new hires during the period covered by the report and the number of such new hires who are qualified protected veterans. Further, Federal contractors and subcontractors must report on the maximum and minimum number of employees during the period covered by the report. The Department of Labor's Veterans' Employment and Training Service (VETS) has promulgated regulations found at 41 CFR part 61-300 to implement the reporting requirements of 38 U.S.C. 4212(d). The regulations require contractors and subcontractors to file the VETS-4212 Report to comply with the requirements of 38 U.S.C. 4212(d). The regulations in 41 CFR part 61-300 can be found at [http://www.dol.gov/dol/cfr/Title\\_41/Chapter\\_61.htm](http://www.dol.gov/dol/cfr/Title_41/Chapter_61.htm).

**HOW TO FILE THE VETS-4212 REPORT:** The preferred method for filing VETS-4212 Reports is electronically through the VETS web-based filing system. Instructions for electronically filing the VETS-4212 Report are found on the VETS website at <http://www.dol.gov/vets/vets4212.htm>. Alternative filing methods are described below in these instructions.

**Single Establishment Employers:** Employers doing business at one hiring location may complete and submit a single VETS-4212 Report using the web-based filing system, or submit a single paper version of the VETS-4212 Report, as described below under Alternative Filing Methods.

**Multi-Establishment Employers:** Employers doing business at more than one hiring location, must file: (A) a VETS-4212 Report covering the principal or headquarters office; (B) a separate VETS-4212 Report for each hiring location employing 50 or more persons; and (C) EITHER, (i) a separate VETS-4212 Report for each hiring location employing fewer than 50 persons, OR (ii) consolidated reports that cover hiring locations within one State that have fewer than 50 employees. Multi-establishment employers doing business at more than 10 locations must submit their VETS-4212 Reports in the form of an electronic data file that complies with current Department of Labor specifications for the format of these records, and any other specifications established by the Department for the applicable reporting year. Multi-establishment employers with fewer than 10 hiring locations are strongly encouraged to submit their VETS-4212 Reports in the form of an electronic data file, but are not required to do so. In these cases, state consolidated reports count as one location each. VETS-4212 Reports in the form of electronic data files may be submitted through the web-based filing system. Electronic data files also may be transmitted electronically as an e-mail attachment (if they do not exceed the size stated in the specifications), or submitted on compact discs or other electronic storage media.

## SECTION 00 5430 - FEDERAL VETS 4212

**ALTERNATIVE FILING METHODS:** The VETS-4212 Report may also be filed in paper format. Reporting organizations may download a paper version of the VETS-4212 Report from the VETS website at <http://www.dol.gov/vets/vets4212.htm> or send a written request for the paper version of the VETS-4212 Report to: Office of the Assistant Secretary for Veterans' Employment and Training, U.S. Department of Labor, 200 Constitution Avenue, NW, Room S-1325, Washington, DC 20210, Attn: VETS-4212 Report Form Request.

**WHERE TO FILE:** VETS-4212 Reports in paper format or electronic data files on compact discs or other electronic storage media may be delivered by U.S. mail or courier delivery service to: Veterans' Employment and Training Service, c/o Department of Labor National Contact Center, 15000 Conference Center Drive, Suite B0132, Chantilly, VA 20194. Paper copies of the VETS-4212 Reports and electronic data files (if they do not exceed the size stated in the specifications) also may be sent as e-mail attachments to: [VETS4212-customersupport@dol.gov](mailto:VETS4212-customersupport@dol.gov)

**HOW TO PREPARE THE VETS-4212 REPORT:** All fields and answers to questions in all areas of the VETS-4212 Report are mandatory unless otherwise specified below. If the multi-establishment employer has hiring locations employing fewer than 50 persons, the employer may file separate reports for each hiring location or consolidated reports that cover multiple hiring locations within one state.

**Type of Reporting Organization:** Indicate the type of contractual relationship (prime contractor or subcontractor) that the organization has with the Federal Government. If the organization serves as both a prime contractor and a subcontractor on various federal contracts, check both boxes. If a reporting organization submits only one VETS-4212 Report for a single location, check the Single Establishment box. If the reporting organization submits more than one VETS-4212 Report, one report should be checked as Multiple Establishment-Headquarters. The remaining VETS-4212 Reports should be checked as either Multiple Establishment-Hiring Location or Multiple Establishment-State Consolidated. For state consolidated reports, the number of hiring locations included in that report should be entered in the space provided. For each report, only one box should be checked within this block.

**Company Identification Information:** . Please note: If a Federal Contractor Report has been filed in the past, you need to utilize the company number assigned in previously submitted reports. If a company number is not available please leave the field blank. If there are any questions regarding a Company Number, please call the VETS-4212 Customer Support Center at (866) 237-0275 or e-mail [VETS4212-customersupport@dol.gov](mailto:VETS4212-customersupport@dol.gov).

**Twelve Month Period Ending:** Enter the end date for the twelve month reporting period used as the basis for filing the VETS-4212 Report. To determine this period, select a date in the current year between July 1 and August 31 that represents the end of a payroll period. The selected date will be the basis for reporting the Number of Employees, as described below. The twelve-month period preceding that date is your twelve-month covered period. This period is the basis for reporting New Hires, as described below. Any Federal contractor or subcontractor that has written approval from the Equal Employment Opportunity Commission to use December 31 as the ending date for the EEO-1 Report may also use that date as the ending date for the payroll period selected for the VETS-4212 Report.

**Name and Address for Single Establishment Employers:** Complete the identifying information under the Parent Company name and address section.

**Name and Address for Multi-Establishment Employers:** For parent company headquarters location, complete the name and address for the parent company headquarters and leave blank the name and address of the Hiring Location. For hiring locations of a parent company, complete the address for the Parent Company location, complete the name and address for the Hiring Location.

## SECTION 00 5430 - FEDERAL VETS 4212

**NAICS Code, DUNS Number, and Employer ID Number:** Single Establishment and Multi-Establishment Employers must complete the North American Industry Classification System (NAICS) Code, Dun and Bradstreet I.D. Number (DUNS), and Employer Identification Number (EIN) as described below:

- **NAICS Code:** Enter the six (6) digit NAICS Code applicable to the hiring location for which the report is filed. If there is not a separate NAICS Code for the hiring location, enter the NAICS Code for the Parent Company.
- **DUNS Number:** If there is a specific Dun and Bradstreet Identification applicable to the hiring location for which the report is filed, please enter the nine (9) digit in the space provided. If the hiring location does not have a DUNS Number, enter the DUNS number for the Parent Company. If an appropriate DUNS Number cannot be identified, leave this field blank.
- **Employer I.D. Number (EIN):** Enter the nine (9) digit number assigned by the I.R.S. to the contractor. If there is a specific EIN applicable to the hiring location for which the report is filed, enter that EIN. Otherwise, enter the EIN for the Parent Company.

**Number of Employees:** Report the total number of employees who are protected veterans for each of the 10 occupational categories (Lines 1.1 through 9) in column A. Report the total number of employees, including protected veterans, for each of the 10 occupational categories (Lines 1.1 through 9) in column B. Blank spaces will be considered zeros.

**New Hires (Previous 12 Months):** Report the total number of employees who were hired and included in the payroll for the first time during the 12-month period preceding the ending date of the selected payroll period. Report the total number of new hires who are protected veterans in column C. Report the total number of new hires, including protected veterans, in column D. Providing new hire data for each of the occupational categories (columns C and D, lines 1.1 through 9) is optional. Blank spaces will be considered zeros.

**Maximum/Minimum Employees:** Report the maximum and minimum number of employees on board during the twelve-month period covered by this report, as indicated by 41 CFR 61-300.10(a)(3).

### **DEFINITIONS:**

**'Employee'** – means any individual on the payroll of an employer who is an employee for purposes of the employer's withholding of Social Security taxes except insurance sales agents who are considered to be employees for such purposes solely because of the provisions of 26 U.S.C. 3121 (d)(3)(B) (the Internal Revenue Code). Part-time employees and leased employees are included in the definition of 'employee.' The definition does not include persons hired on a casual basis for a specific job ( e.g., persons at a construction site whose employment relationship is expected to terminate with the end of the employee's work at the site); persons employed temporarily in an industry other than construction who are hired through a hiring hall or some other referral arrangement; or persons on the payroll of an employment agency who are referred by such agency for work to be performed on the premises of another employer under that employer's direction and control, as provided in 41 CFR 61-300.2(b)(5).

**'Hiring location'** – means an establishment as defined at 41 CFR 61-300.2(b)(6).

**'Job Categories'** – means any of the following: Officials and Managers (Executive/Senior Level Officials and Managers and First/Mid-Level Officials and Managers), Professionals, Technicians, Sales Workers, Administrative Support Workers, Craft Workers, Operatives, Laborers and Helpers, and Service Workers and are defined in 41 CFR 61-300.2(b)(7).

**'Protected Veteran'** – means a veteran who is protected under the nondiscrimination and affirmative action provisions of the Vietnam Veterans' Readjustment Assistance Act, 38 U.S.C. 4212; specifically a veteran who may be classified as an active duty wartime or campaign badge veteran, disabled veteran, Armed Forces service medal veteran, or recently separated veteran,

## SECTION 00 5430 - FEDERAL VETS 4212

- **'Active duty wartime or campaign badge Veteran'** – means a veteran who served on active duty in the U.S. military, ground, naval or air service during a war or in a campaign or expedition for which a campaign badge has been authorized under the laws administered by the Department of Defense.
- **'Armed Forces Service Medal Veteran'** – means any veteran who, while serving on active duty in the U.S. military, ground, naval or air service, participated in a United States military operation for which an Armed Forces service medal was awarded pursuant to Executive Order 12985 (61 FR 1209, 3 CFR, 1996 Comp., p. 159).
- **'Disabled Veteran'** – means (1) A veteran of the U.S. military, ground, naval or air service who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Secretary of Veterans Affairs, or (2) A person who was discharged or released from active duty because of a service-connected disability.
- **'Recently Separated Veteran'** – means a veteran during the three-year period beginning on the date of such veteran's discharge or release from active duty in the U.S. military, ground, naval or air service.

**RECORD KEEPING:** Employers must keep a copy of the completed annual VETS-4212 Report(s) submitted to DOL for a period of three years.

**Public Burden Statement:** Public reporting burden for this collection is estimated to average 20 minutes per location to make an electronic filing and 40 minutes per location to make a paper filing, including the time for reviewing instructions, searching existing data source, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to the Department of Labor, Veterans' Employment and Training Service, Office of Information Management, Room N-1316, 200 Constitution Avenue, NW, Washington D.C. 20210 or electronically transmitted to [VETS4212-customersupport@dol.gov](mailto:VETS4212-customersupport@dol.gov) All completed VETS-4212 Reports should be sent to the address indicated on the front of the form. See actual VETS-4212 Report for additional disclosures.

## SECTION 00 5500 – FEDERAL EEO BID CONDITIONS

### PART 1 - GENERAL

#### 1.1 GENERAL

- A. Definitions. As used in these Specifications:
1. “Covered area” means the geographical area described in the solicitation from which this contract resulted;
  2. “Director” means Director, Office of Federal contract Compliance Programs (OFCCP), United States Department of Labor (DOL), or any persons to whom the Director delegates authority;
  3. “Employer” identification number” means the Federal Social Security number used on the Employer’s Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
  4. “Minority” includes:
    - a. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
    - b. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central of South American or other Spanish culture or origin, regardless of race);
    - c. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
    - d. American Indian or Alaska Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
- B. Whenever the Contractor, or any Subcontractor at any tier, subcontract a portion of the Work, involving any construction trade, it shall physically include in each Subcontract in excess of \$10,000 the provisions of these Specification and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
- C. The Contractor shall implement the specific affirmative action standards provided in paragraphs F1 through F16 of these Specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goal in each craft during the period specified.
- Covered construction contractors performing construction Work in geographical areas where they do not have a federal or federally-assisted construction contract shall apply the minority and female goals established for the geographical area where the Work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any OFCCP office or from federal procurement contracting officers.
- D. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor’s obligations under this Specification, Executive Order 11246, or the regulations promulgated pursuant thereto.

## SECTION 00 5500 – FEDERAL EEO BID CONDITIONS

- E. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period of an approved training program and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities.
- F. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this Specification shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative actions steps at least as extensive as the following:
1. Ensure and maintain a working environment free of harassment, intimidation; and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to Work. The Contractor, where possible, shall assign two or more women to each construction project. The Contractor shall specifically ensure that all superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligations to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
  2. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.
  3. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor, by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
  4. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or women sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
  5. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the DOL. The Contractor shall provide notice of these programs to the sources complied under F2 above.
  6. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction Work is performed.



## SECTION 00 5500 – FEDERAL EEO BID CONDITIONS

7. Review, at least annually, the company's EEO policy and affirmative action obligations under these Specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendent, etc., prior to the initiation of construction Work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and dispositions of the subject matter.
  8. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.
  9. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
  10. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.
  11. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR 60-3.
  12. Conduct at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
  13. Ensure that seniority practices, job classifications, Work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel, and employment related activities to ensure that the EEO policy and the Contractor's obligations under these Specifications are being carried out.
  14. Ensure that all facilities and company activities are nonsegregated except that separate or single-used toilet, necessary changing facilities and necessary sleeping facilities shall be provided to assure privacy between the sexes.
  15. Document and maintain a record of all solicitations of offers for Subcontractors from minority and female construction contractors and suppliers, including circulations of solicitations to minority and female contractor associations and other business associations.
  16. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
- G. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations F1 through F16. The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any or more of its obligations under F1 through F16 of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of

## SECTION 00 5500 – FEDERAL EEO BID CONDITIONS

the program are reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

- H. A single goal for minorities and a separate goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally the Contractor may be in violation of the Executive Order if a specific minority group of women is under utilized.)
- I. The Contractor shall not use the goals and timetables of affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
- J. The Contractor shall not enter into any Subcontract with any person or firm debarred from government contracts pursuant to Executive Order 11246.
- K. The Contractor shall carry out such sanctions or penalties for violation of these Specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing Subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these Specifications and Executive Order 11236, as amended.
- L. The Contractor, in fulfilling its obligations under these Specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph F of these Specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunities. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these Specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
- M. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation, if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic apprentice, trainees, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that the existing records satisfy this requirement, contractors shall not be required to maintain separate records.
- N. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish difference standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Programs).

**SECTION 00 5500 – FEDERAL EEO BID CONDITIONS**

- O. The bidder’s attention is called to the “Equal Employment Clause” and the “Standard Federal Equal Employment Opportunity Construction Contract Specifications” set forth herein.
- P. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor’s aggregate work force in each trade on all construction work in the covered area, are as set forth in item S.

These goals as listed in Item S are applicable to all the Contractor’s construction Work (whether or not it is federal or federally-assisted) performed in the covered area.

The Contractor’s compliance with the Executive Order and the regulations in 41 CFR 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the Specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. If the Contractor performs construction Work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the Work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally and non-federally involved construction.

The hours on minority and female employment and training must be substantially uniform throughout the length of the contract and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the Contractor’s goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total WORK hours performed.

- Q. The Contractor shall provide written notification to the Owner, for all subcontract documents as follows: the name, address and telephone number of Subcontractors and their employer identification number; the estimated dollar amount of the subcontracts; estimated starting and completion dates of the subcontracts; and the geographical area in which the contract is to be performed.

This written notification shall be required for all construction subcontracts in excess of \$10,000 at any tier for construction Work under the contract resulting from this Project’s solicitation.

- R. As used in the Bid Notice, and in the contract resulting from this project’s solicitation, the “covered area” is the State of Alaska.

S. Goal and Timetable

- 1. The following goal and timetable for female utilization shall be included in all federal and federally-assisted construction contracts and subcontracts in excess of \$1,000. The goal is applicable to the Contractor’s aggregate on-site construction work force whether or not part of that work force is performing Work on a federal or federally-assisted construction contractor or subcontract.

**ALASKA GOAL AND TIMETABLE FOR WOMEN\***

|                      |                |
|----------------------|----------------|
| <u>Timetable</u>     | <u>Goal</u> ** |
| Until Further Notice | 6.9%           |

**SECTION 00 5500 – FEDERAL EEO BID CONDITIONS**

- 2. The following goals and timetable for minority utilization shall be included in all federal or federally-assisted construction contracts and subcontracts in excess of \$10,000 to be performed in Alaska. The goals are applicable to the Contractor’s aggregate on-site construction work force whether or not part of that work force is performing Work on a federal or federally-assisted construction contract or subcontract.

**ALASKA GOAL AND TIMETABLE FOR MINORITY UTILIZATION**

| <u>Timetable</u>     | <u>Economic Area (ES)***</u> | <u>Goal **</u> |
|----------------------|------------------------------|----------------|
| Until Further Notice | Anchorage SMSA Area          | 8.7%           |
|                      | Remainder of State           | 15.1%          |

\* The goal and timetable for women listed above applies to Alaska as well as nationwide.

\*\* The Director, from time to time, shall issue goals and timetables for minority and female utilization which shall be based on appropriate work force, demographic or other relevant data and which shall cover construction projects, or construction contracts performed in specific geographical areas. The goals shall be applicable to each construction trade in a covered contractor’s or subcontractor’s entire work force which is working in the area covered by the goals and timetables, shall be published as notices in the Federal Register, and shall be inserted by the contracting officers and applicants, as applicable, in the Notice required by 41 CFR 60-4.2. Covered construction contractors performing construction Work in geographical areas where they do not have a federal or federally-assisted construction contract shall apply the minority and female goals established for the geographical area where the Work is being performed.

\*\*\* Refer to the Standard Metropolitan Statistical Areas (SMSA) and Economic Areas (EA), office of Management and Budget, 1975.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION**

- A. Complete the following forms (included as part of this section). Items 1-4 will be due with the Agreement and other information required in the Notice of Intent to Award.
  - 1. EEO-1 Certification Federal Aid contracts
  - 2. EEO Estimated Employment Profile
  - 3. EEO Notice to Labor Unions, Minority/Women Organization
  - 4. EEO Signature Page
  - 5. EEO Weekly Payroll Report

**SECTION 00 5500 – FEDERAL EEO BID CONDITIONS**

CITY AND BOROUGH OF JUNEAU

**EEO-1 CERTIFICATION**

US DOT Federal-Aid Contracts

**JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE  
BE19-217**

This certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor [41 CFR 60-1.7 (b) (1)] and must be completed by the successful Bidder and each proposed Subcontractor participating in this contract.

**PLEASE CHECK APPROPRIATE BOXES**

The  Bidder  Proposed Subcontractor hereby CERTIFIES:

**PART A.** Bidders and proposed Subcontractors with 50 or more year-round employees and a federal contract amounting to \$50,000 or more are required to submit one federal Standard Report Form 100 during each year that the two conditions exist (50 employees and a \$50,000 federal contract).

The company named below (Part C) is exempt from the requirements of submitting the Standard Report Form 100 this year.

NO (go to PART B)  YES (go to PART C)

Instructions and blank Standard Report Form 100's may be obtained from a local U.S. Department of Labor office, or by writing to:

US Department of Labor  
The Joint Reporting Committee  
P.O. Box 19100  
Washington, D.C. 20036-9100

Telephone number: (757) 461-1213

**PART B.** The company named below has submitted the Standard Report Form 100 this year.

NO  YES

**Note:** Bidders and proposed Subcontractors who have not filed the required Standard Report Form 100 and are not exempt from filing requirements will not be awarded this contract or subcontract until Form 100 has been filed for the current year ending June 30.

**PART C.**

|   |   |
|---|---|
| _____<br>Signature of Authorized Company Representative | _____<br>Title  |
| _____<br>Company Name                                   | _____<br>Company Address (Street or PO Box, City, State, Zip) |
| _____<br>Date   | _____<br>Phone Number   |

**JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE**

**Contract BE19-217**

**FEDERAL EEO BID  
CONDITIONS  
00 5500-7**



**SECTION 00 5500 – FEDERAL EEO BID CONDITIONS**

**EQUAL EMPLOYMENT OPPORTUNITY (EEO)**

**Notice to Labor Unions, Minority/Women Organizations**

To be completed by each Contractor and Subcontractor, regardless of the value of their contract. If no union, job service program, or labor organization is involved write and attach a letter stating how employees were recruited.

To: \_\_\_\_\_  
(Name of labor union or other employment organization)

We currently hold a prime contract, or subcontract with the City and Borough of Juneau which involves federal funds. Under the provisions of the contract and all subcontracts, in accordance with Section 202 of Executive Order No. 11246 as amended, we are obliged not to discriminate against any employee or applicant for employment because of race, color, creed, national origin, age, or sex. This obligation not to discriminate in employment includes, but is not limited to: employment, upgrading, transfer, demotion, recruitment, and advertising; rates of pay or other forms of compensation; selection for training including apprenticeship; and layoff or termination.

We will post this notice in conspicuous places available to employees or applicants for employment.

\_\_\_\_\_  
(Firm)

\_\_\_\_\_  
EEO Representative at Job Site                      Date                      EEO Representative at Office                      Date

**↓ To be completed by labor union or other organization ↓**

The \_\_\_\_\_ agrees to comply with all applicable  
(Name of labor union or other labor organization)

federal, state, and local laws\* regarding non-discrimination\*\* in employment.\*\*\* We also agree to provide the Employer with all information necessary to enable it to comply with these laws,\* including the preparation and filing of any necessary reports.

\*Laws include regulations, rules, directives and orders, including those by the Equal Opportunity Commission, the Office of Federal contract Compliance, the United States Department of Labor, and the federal funding agency when applicable to WORK performed on this contract.

\*\* Non-discrimination includes freedom from discrimination because of race, color, national origin, creed, religion, age or sex.

\*\*\* Employment includes acceptance, selection, classification and referral of applicants for membership and/or employment.

\_\_\_\_\_  
Name and Title of Labor Representative                      Signature                      Date

**SECTION 00 5500 – FEDERAL EEO BID CONDITIONS**

**EQUAL EMPLOYMENT OPPORTUNITY (EEO)**

**Signature Page**

In response to the Notice of Intent to Award letter, the Prime Contractor and each Subcontractor **must** complete and return this Signature Page and be current with all EEO\* filing requirements.

\* contracts and Subcontracts which do not exceed \$10,000 are exempt from the requirements of the equal opportunity clause, provided, that where a contractor has contracts or subcontracts containing federal assistance in any 12-month period, which have an aggregate total value (or can reasonably be expected to have an aggregate total value) exceeding \$10,000, this \$10,000 or under exemption does not apply (regardless of whether any single contract exceeds \$10,000.)

I certify that I have met all applicable EEO requirements and all attached documents are complete and correct. I understand that any false statements made to meet any requirement will result in contract termination and/or action under Federal or State law. I swear that neither the firm, nor its owners or principals, is debarred or suspended from contracting with any government agency.

Firm \_\_\_\_\_ Capacity: Prime  Sub

Type of WORK \_\_\_\_\_ Employer ID No. \_\_\_\_\_

Estimated Start Date \_\_\_\_\_ Estimated Finish Date \_\_\_\_\_

contract or Subcontract Amount \$ \_\_\_\_\_ Agreement Date \_\_\_\_\_

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Printed Name \_\_\_\_\_ Title \_\_\_\_\_

Firm's DBE Officer \_\_\_\_\_

Firm's EEO Officer \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

PHONE \_\_\_\_\_ FAX \_\_\_\_\_





**SECTION 00 5600 - FEDERAL LABOR STANDARDS, REPORTING, AND  
PREVAILING WAGE RATE DETERMINATION  
Reporting During Contract**

- A. **Within 15 Days after Notice of Intent to Award**, the Contractor must compile and submit a list of all Subcontractors and material suppliers, showing all tiers. For each company listed include name, address, phone, employer tax number; DBE status if any; estimated subcontract amount; estimated start and finish dates; and copies of bid tabulations with firm name and number. Send the list to *Addresses B and C*.
- B. **Within 30 Days of Notice to Proceed**, the Contractor and each Subcontractor, who are required to file EEO-1 reports (Standard Form 100 [SF-100]), must send it to the Office of Federal Contract Compliance Programs (OFCCP) Area Office - Address C.
- C. Before each Friday, the Contractor and each Subcontractor must file:
1. Weekly Employment Opportunity (EEO) Reports (page 00 5500-11) for the previous week to *Address A*. If the information requested (race and gender) is indicated on the copy of the payroll, then this Weekly EEO Report is hereby waived.
- D. **Certified Payrolls must be submitted every two weeks.** Before the second Friday, the Contractor and each Subcontractor must file:
1. Certified Payrolls with Statements of Compliance for the previous two weeks. If there was no activity for that pay period, indicate "No Activity." Indicate "Start" on your first payroll, and "Final" on your last payroll for this project. Send the original to *Address B* and a complete copy to *Address A, or another CBJ representative, as designated*

Correspondence regarding State of Alaska Department of Labor and Workforce Development (ADOL) 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 Jennifer Mannix, or her designee, at the email address below. If Contractor elects to submit paper copies, they should be submitted to the physical addresses below.

- E. By the 5th of each month, each Contractor and Subcontractor must complete the Monthly Employment Utilization Report (CC257) for the previous month for its aggregate workforce in Alaska (for federal and non-federal projects). Make a list of all projects (federal and non-federal) in Alaska over \$10,000. Include the firm name, name and location of project, project #, % complete, contract amount, and established date of completion. Send both the CC257 and the list of projects to Addresses A and C.
- F. Preparing the final payment request, the Contractor must verify that the subcontractor list is up-to-date and includes all parties submitting certified payrolls (i.e., equipment rental with operator companies, trucking services providing imported materials, surveying firms, etc.). Send a copy of amended lists to Addresses A and B. Submit completed Compliance Certification and Release, Section 006200 of the CBJ Standard Specifications for Civil Engineering Project and Subdivision Improvements, December 2003 Edition, with current Errata, for the Contractor to Address A.

| <i>Address A</i>   | <i>Address B</i>  | <i>Address C</i>          |
|--|---|---------------------------|
| <b>Contract Administrator</b>                                    | <b>Wage and Hour Section</b>  | <b>OFCCP</b>              |
| Engineering Department   | AK Dept of Labor and Workforce Dev/   | Area Office               |
| City and Borough of Juneau                                       | Labor Standards and Safety Division   | 605 W. 4th Ave., Room G68 |
| 155 S. Seward Street   | Wage and Hour Administration  | Anchorage, AK 99501       |
| Juneau, AK 99801   | P O Box 21149   | (907) 271-2864            |
| (907) 586-0873   | Juneau, AK 99802-1149   |                           |
| <a href="mailto:greg.smith@juneau.org">greg.smith@juneau.org</a> | (907) 465-4842  |                           |
|  | <a href="http://labor.state.ak.us/lss/home.htm">http://labor.state.ak.us/lss/home.htm</a> |                           |



### Tax Clearance Request Form for Contractors

Date of request: \_\_\_\_\_

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

Business address: \_\_\_\_\_

Business contact phone number: \_\_\_\_\_

Federal Identification Number: \_\_\_\_\_

Alaska Employer Account Number: \_\_\_\_\_

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

\_\_\_\_\_

Subcontract project name: \_\_\_\_\_

\_\_\_\_\_

Name and address of the person this Tax Clearance is to be returned to: \_\_\_\_\_

\_\_\_\_\_

Comments or additional information: \_\_\_\_\_

\_\_\_\_\_

For agency use only:

- Tax Clearance is granted
- Tax Clearance is not granted (*please have employer contact the department*)
- No account on file, liability unknown (*please have employer contact the department*)
- Employer has stated no employees, Tax Clearance not required.

Agency representative signature: \_\_\_\_\_ Date: \_\_\_\_\_

Agency representative title: \_\_\_\_\_

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

**SECTION 00 6200 – COMPLIANCE CERTIFICATE AND RELEASE FORM**

**COMPLIANCE CERTIFICATE AND RELEASE FORM**

**PROJECT: JNU Terminal Reconstruction — Electrical Service**  
**CONTRACT NO: BE19-217**

The **CONTRACTOR** must complete and submit this form to the Contract Administrator with respect to the entire contract and submit completed Subcontractor Compliance forms for each Subcontractor used on the Contract and listed on the Subcontractor report.

Completed forms shall be submitted upon completion of the Project. All requirements and submittals must be met before final payment will be made to the **CONTRACTOR**.

*I certify that the following and any referenced attachments are true:*

- All **WORK** has been performed, materials supplied, and requirements met in accordance with the applicable Drawings, Specifications, and Contract Documents.
- All payments to Subcontractors and Suppliers have been made in accordance with Alaska Statute 36.90.210. If not, please provide written explanation, for each case, why and the specific mutual payment agreement reached with the Supplier or Subcontractor.
- **CHECK ONE:**
  - All Suppliers and Subcontractors have been paid in full with no claims for labor, materials or other services outstanding.
  - The following Suppliers and Subcontractors are due final payment which will be made upon the release of the final payment by the CBJ. List the Suppliers and Subcontractors and the amount they are due below (attach separate sheet if necessary) :
  -

|    | Supplier or Subcontractor | Amount Owed |
|----|---------------------------|-------------|
| 1. |                           | \$          |
| 2. |                           | \$          |
| 3. |                           | \$          |
| 4. |                           | \$          |
| 5. |                           | \$          |
| 6. |                           | \$          |
| 7. |                           | \$          |

- All employees have been paid not less than the current prevailing wage rates set by the State of Alaska (or U.S. Department of Labor, as applicable).

**SECTION 00 6200 – COMPLIANCE CERTIFICATE AND RELEASE FORM**

- All equal employment opportunity, certified payroll and other reports have been filed in accordance with the prime contract.
- The attached list of Subcontractors is complete (required from CONTRACTOR). The City Engineer was advised and approved of all Subcontractors before WORK was performed and has approved any substitutions of Subcontractors.
- All DBE firms listed as a precondition of the prime contract award must have performed a commercially useful function in order for the WORK to count to a DBE goal. All DBE firms performed the WORK stated and have received at least the amount claimed for credit in the Contract Documents.
- All DBE Subcontractors must attach a signed statement of the payment amount received, the nature of WORK performed, whether any balance is outstanding, and indicate that no rebates are involved.
- If the amount paid is less than the amount originally claimed for DBE credit, the CONTRACTOR has attached approval from the City Engineer for underutilization.

*I understand it is unlawful to misrepresent information in order to receive a payment which would otherwise be withheld if these conditions were not met. I am an authorized agent of this firm and sign this freely and voluntarily. The foregoing statements are true and apply to the following project contractor.*

\_\_\_\_\_  
Firm Name Capacity: CONTRACTOR

\_\_\_\_\_  
Signed Printed Name and Title Date

Return completed form to: Engineering Contracts Division, City and Borough of Juneau, 155 South Seward Street, Juneau, AK 99801 or by email to: [contracts@juneau.org](mailto:contracts@juneau.org)

Call (907) 586-0873 if we can be of further assistance or if you have any questions.

**SECTION 00 6200 – COMPLIANCE CERTIFICATE AND RELEASE FORM**

**SUBCONTRACTOR COMPLIANCE CERTIFICATE AND RELEASE FORM**

**PROJECT: JNU Terminal Reconstruction — Electrical Service**  
**CONTRACT NO: BE19-217**

Each **SUBCONTRACTOR** must complete and submit this form to the Contract Administrator, through the General Contractor, with respect to the entire contract.

Completed forms shall be submitted upon completion of the Project. All requirements and submittals must be met before final payment will be made to the **CONTRACTOR**.

*I certify that the following and any referenced attachments are true:*

- All **WORK** has been performed, materials supplied, and requirements met in accordance with the applicable Drawings, Specifications, and Contract Documents.
  
- \_\_\_\_\_(name of firm) has been paid by the Contractor in accordance with Alaska Statute 36.90.210. (If not, please provide written explanation on an attached sheet, for each case. Provide specific details why payment was not made and the specific mutual payment agreement reached with the Contractor if it is still unresolved.)
  
- **CHECK ONE:**
  - I / WE have been paid in full by the Contractor, with no claims for labor, materials or other services outstanding.
  
  - I / WE are due the following amount from the Contractor which is included in the Contractors Request for Final Payment. WE are due a total of \$\_\_\_\_\_ for the following individual items that have yet to be paid (attach separate sheet if necessary).

|    | Outstanding Payment Item | Outstanding Amount Owed |
|----|--------------------------|-------------------------|
| 1. |                          | \$                      |
| 2. |                          | \$                      |
| 3. |                          | \$                      |
| 4. |                          | \$                      |
| 5. |                          | \$                      |
| 6. |                          | \$                      |
| 7. |                          | \$                      |

- All employees have been paid not less than the current prevailing wage rates set by the State of Alaska (or U.S. Department of Labor, as applicable).

**JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE**

**COMPLIANCE CERTIFICATE  
& RELEASE FORM**

**Contract BE19-217**

**00 6200 - 3**

**SECTION 00 6200 – COMPLIANCE CERTIFICATE AND RELEASE FORM**

- All equal employment opportunity, certified payroll and other reports have been filed in accordance with the prime contract.

*I understand it is unlawful to misrepresent information in order to receive a payment which would otherwise be withheld if these conditions were not met. I am an authorized agent of this firm and sign this freely and voluntarily. The foregoing statements are true and apply to the following project contractor.*

\_\_\_\_\_ Capacity: SUBCONTRACTOR  
Firm Name

\_\_\_\_\_ Printed Name and Title  
\_\_\_\_\_ Sign \_\_\_\_\_ Date

Prime Contractor shall return completed form to: Engineering Contracts Division, City and Borough of Juneau, 155 South Seward Street, Juneau, AK 99801 or email: greg.smith@juneau.org Call (907) 586-0873 if we can be of further assistance or if you have any questions.

**END OF SECTION 00 6200**

**SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT**

**For the following Project:**            **JNU Terminal Reconstruction — Electrical Service  
Juneau International Airport  
1873 Shell Simmons Drive  
Juneau, Alaska 99801**

**The Owner:**                            **Juneau International Airport  
City and Borough of Juneau**

**TABLE OF CONTENTS**

**1            GENERAL PROVISIONS**

- 1.1        Basic Definitions
- 1.2        Correlation and Intent of the Contract Documents
- 1.3        Capitalization
- 1.4        Interpretation
- 1.5        Execution of Contract Documents
- 1.6        Ownership and Use of Drawings, Specifications and Other Contract Documents
- 1.7        Federal Contract Provisions

**2            OWNER**

- 2.1        General
- 2.2        Information and Services Required of the Owner
- 2.3        Owner's Right to Stop the Work
- 2.4        Owner's Right to Carry Out the Work
- 2.5        Owner's Right to Inspect Records

**3            CONTRACTOR**

- 3.1        General
- 3.2        Review of Contract Documents and Field Conditions by Contractor
- 3.3        Supervision and Construction Procedures
- 3.4        Labor and Materials
- 3.5        Warranty
- 3.6        Taxes
- 3.7        Permits, Fees and Notices
- 3.8        Allowances
- 3.9        Superintendent
- 3.10       Contractor's Construction Schedules
- 3.11       Documents and Samples at the Site
- 3.12       Shop Drawings, Product Data and Samples
- 3.13       Use of Site
- 3.14       Cutting and Patching
- 3.15       Cleaning Up
- 3.16       Access to Work
- 3.17       Royalties, Patents and Copyrights
- 3.18       Indemnification

**4            ADMINISTRATION OF THE CONTRACT**

- 4.1        Owner's Representative and Architect
- 4.2        Owner's Representative's Administration of the Contract
- 4.3        Claims and Disputes
- 4.4        Resolution of Claims and Disputes
- 4.5        Dispute Resolution Board

**5            SUBCONTRACTORS**

- 5.1        Definitions
- 5.2        Award of Subcontracts and Other Contracts for Portions of the Work



## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

- 5.3 Subcontract Relations
- 5.4 Contingent Assignment of Subcontracts
  
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**
  - 6.1 Owner's Right to Perform Construction and to Award Separate Contracts
  - 6.2 Mutual Responsibility
  - 6.3 Owner's Right to Clean Up
  
- 7 CHANGES IN THE WORK**
  - 7.1 General
  - 7.2 Change Orders
  - 7.3 Construction Change Directives
  - 7.4 Minor Changes in the Work
  
- 8 TIME**
  - 8.1 Definitions
  - 8.2 Progress and Completion
  - 8.3 Delays and Extensions of Time
  
- 9 PAYMENTS AND COMPLETION**
  - 9.1 Contract Sum
  - 9.2 Basis of Payment
  - 9.3 Applications for Payment
  - 9.4 Approval of Applications for Payment
  - 9.5 Decisions to Withhold Approval of Applications for Payment
  - 9.6 Progress Payments
  - 9.7 Failure of Payment
  - 9.8 Substantial Completion
  - 9.9 Partial Occupancy or Use
  - 9.10 Final Completion and Final Payment
  
- 10 PROTECTION OF PERSONS AND PROPERTY**
  - 10.1 Safety Precautions and Programs
  - 10.2 Safety of Persons and Property
  - 10.3 Hazardous Materials
  - 10.4 Emergencies
  
- 11 INSURANCE AND BONDS**
  - 11.1 Insurance
  - 11.2 Performance Bond and Payment Bond
  
- 12 UNCOVERING AND CORRECTION OF WORK**
  - 12.1 Uncovering of Work
  - 12.2 Correction of Work
  - 12.3 Acceptance of Nonconforming Work
  
- 13 MISCELLANEOUS PROVISIONS**
  - 13.1 Governing Law
  - 13.2 Successors and Assigns
  - 13.3 Written Notice
  - 13.4 Rights and Remedies
  - 13.5 Tests and Inspections
  - 13.6 Commencement of Statutory Limitation Period
  - 13.7 Retention and Inspection of Records
  - 13.8 Gratuity and Conflict of Interest
  - 13.9 Cost Reduction Incentive

**SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT**

13.10 Use of the CBJ/State Lemon Creek Gravel Pit

**14 TERMINATION OR SUSPENSION OF THE CONTRACT**

- 14.1 Termination by the Contractor
- 14.2 Termination by the Owner for Cause
- 14.3 Suspension by the Owner for Convenience
- 14.4 Termination by the Owner for Convenience

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### ARTICLE 1 GENERAL PROVISIONS

#### § 1.1 BASIC DEFINITIONS

##### § 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General and Supplementary), drawings, specifications, addenda issued prior to execution of the Contract, other documents listed in the Agreement and modifications issued after execution of the Contract. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or portions of addenda relating to bidding requirements).

##### § 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Architect/Engineer and Contractor, (2) between the Owner and a subcontractor (of any tier), (3) between the Owner and Architect/Engineer or (4) between any persons or entities other than the Owner and Contractor.

##### § 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the project.

##### § 1.1.4 THE PROJECT

The project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

##### § 1.1.5 THE DRAWINGS

The drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

##### § 1.1.6 THE SPECIFICATIONS

The specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and work quality for the Work, and performance of related services.

##### § 1.1.7 THE PROJECT MANUAL

The project manual is a volume assembled for the Work that may include the bidding requirements, sample forms, Conditions of the Contract and specifications.

##### § 1.1.8 OTHER DEFINITIONS

Advisory Circulars (ACs) - Informational documents produced by the Federal Aviation Administration to guide institutions, operations, and individuals within the aviation industry, as well as the general public. Advisory Circulars are intended to be informative in nature; however, they may describe actions or advice that the FAA expects to be implemented or followed.

Agreement—The written form, executed by the Contractor and Owner, legally binding the parties and covering the Work to be performed; other documents are attached to the form and made a part thereof as provided therein.

Airport Improvement Program (AIP) - A grant-in-aid program administered by the FAA.

Air operations area (AOA) - For the purpose of these specifications, the term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

Airport - An area of land or water that is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; and airport buildings and facilities located in any of these areas.

Architect - See Article 4.

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 bidder's offer or proposal submitted on the prescribed form setting forth the price or prices for the Work.

Change Order - See Article 7.

Construction Safety and Phasing Plan (CSPP) - The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.

Contract and Contract Documents - Written documents covering the Work to be performed. The awarded contract shall include, but is not limited to the documents identified in the Agreement between Owner and Contractor.

Contractor - See Article 3.

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 Owner's Representative's recommendation of final payment.

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 parties to sign and deliver.

Engineer - See Article 4.

FAA - The Federal Aviation Administration of the U.S. Department of Transportation. When used to designate a person, FAA shall mean the Administrator or its duly authorized representative.

Federal Specifications - The Federal Specifications and Standards, Commercial Item Descriptions, and supplements, amendments, and indices thereto are prepared and issued by the General Services Administration of the Federal Government.

Inspector - A representative of the Owner or Architect/Engineer assigned to make necessary inspections, observations, and/or tests of the Work performed or being performed, or of the materials furnished or being furnished by the Contractor, but without authorization to make changes or interpretations of the Work.

Milestone - A key or critical point in time for reference or measurement.

Modification - (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (2) a Construction Change Directive or (3) a written order for a minor change in the Work issued by the Owner.

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.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

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, and establishing the date of commencement of the Contract time.

Notice of Substantial Completion - A form signed by the Owner and the Contractor identifying that the Work is substantially complete and fixing the date of Substantial Completion.

Notice To Proceed - The written notice issued by the Owner to the Contractor authorizing the Contractor to proceed with the Work.

Orders – Guidance documents published by the FAA that outline procedures and regulatory requirements.

Owner and Owner's Representative – See Article 2.

Runway - The area on the airport prepared for the landing and takeoff of aircraft.

Sponsor - A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.

Sub-Consultant - The individual, partnership, corporation, joint-venture or other legal entity having a direct contract with the Architect/Engineer, or with any of its consultants to furnish services with respect to the project.

Subcontractor - See Article 5.

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

Taxiway - For the purpose of this document, the term taxiway means the portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.

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.

Using Agency - The entity that will occupy or use the completed project.

Working day - A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When Work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.

### § 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the specifications into divisions, sections and articles, and arrangement of drawings shall not control the Contractor in dividing the Work among subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 1.2.4 If any portion of the Contract Documents is in conflict with any other portion, the various documents comprising the Contract Documents shall govern in the following order of precedence:

- Permits from other agencies as may be required by law, excepting the definition of "permittee" in these permits.
- Modifications
- The Owner-Contractor Agreement;
- Addenda;
- Section 008000 – Supplementary General Conditions;
- Section 007000 – General Conditions of the Contract for Construction;
- Specifications – Embodying all other sections of the project manual;
- Drawings: as between schedules and information given on drawings, the schedules shall govern; as between written dimensions given on drawings and scaled measurements, the written dimensions shall govern; as between large-scale drawings and small-scale drawings, the larger scale shall govern;
- Performance Bond, Labor and Material Payment Bond.

All such conflicts shall be reported, in writing to the Owner's Representative. Schedules, lists, indexes, tables, inventories, written instruction, written descriptions, summaries, statements, classifications, specifications, written selections or written designations, although appearing on the drawings, are deemed to be and are specifications as defined by this section. The principles as set forth herein shall not alter the provisions of Section 1.2.1.

In the event there is a conflict between or among any provisions within one of the component parts of the Contract Documents, the higher standard or more stringent requirement shall govern.

§ 1.2.5 Any material or operation specified by reference to published specifications of a manufacturer, published Advisory Circulars, a society, an association, a code or other published standard shall comply with requirements of the listed document and project specifications; as between referenced documents, the more stringent code or performance requirements shall govern. The Contractor, if requested, shall furnish an affidavit from the manufacturer certifying that the materials or products delivered to the Project meet the requirement specified.

### § 1.3 CAPITALIZATION

§ 1.3.1 Terms written with title capitalization in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents.

### § 1.4 INTERPRETATION

§ 1.4.1 In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### § 1.5 EXECUTION OF CONTRACT DOCUMENTS

§ 1.5.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

### § 1.6 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND CONTRACT DOCUMENTS

§ 1.6.1 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.

### § 1.7 FEDERAL CONTRACT PROVISIONS

§ 1.7.1 The Contractor shall comply with and shall incorporate into all subcontracts all applicable federal contract provisions identified in the Supplementary General Conditions throughout the bidding, award, and performance of this Contract.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### ARTICLE 2 OWNER

#### § 2.1 GENERAL

§ 2.1.1 The Owner is the City and Borough of Juneau, acting through its legally constituted officials, officers, or employees and is referred to throughout the Contract Documents as if singular in number. For purposes of this project, the Owner shall be the Juneau International Airport who, through its Manager, shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. This person shall be titled the Owner's Representative and referred to in the Contract Documents as Owner or Owner's Representative.

#### § 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Except for permits and fees, including those required under Section 3.7 that are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.2 Owner shall apply for, and obtain, a building permit for this project and shall pay for any inspection or review fees imposed by jurisdictional authorities under the building permit. In addition, the Owner shall utilize and pay for the services of an inspector for Work requiring "special inspections" as designated by the building permit.

§ 2.2.3 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness. Any other information or services relevant to the Contractor's performance of the Work under the Owner's control shall be furnished by the Owner after receipt from the Contractor of a written request for such information or services.

§ 2.2.4 Unless otherwise provided in the Contract Documents, the Owner shall furnish the Contractor, free of charge, six 11"x17" sets of conformed drawings, and six copies of the conformed project manual.

#### § 2.3 OWNER'S RIGHT TO STOP THE WORK

§ 2.3.1 If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.

#### § 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

§ 2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies within a three-day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

#### § 2.5 OWNER'S RIGHT TO INSPECT RECORDS

§ 2.5.1 The Owner, or any of its duly authorized representatives, shall have the right to examine all project records and documents, including without limitation, all books, correspondence, reports, analyses, instructions, drawings, receipts, vouchers, memoranda, and all financial and accounting books, records, and data, including those related to cost or pricing for this Contract, all related Change Orders and Contract modifications, and all other documents of the Contractor and any tier Subcontractors that are directly pertinent to this specific Contract for the purpose of making an audit, examination, reproduction, excerpts, or transcriptions. All required records, as further described in

## **SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT**

Section 13.8, shall be retained by the Contractor and its Subcontractors after the Owner makes final payments and all other pending matters are closed.

### **ARTICLE 3 CONTRACTOR**

#### **§ 3.1 GENERAL**

**§ 3.1.1** The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative as identified in writing by the Contractor.

**§ 3.1.2** The Contractor shall perform the Work in accordance with the Contract Documents.

**§ 3.1.3** The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect/Engineer or the Owner's Representative in the administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

#### **§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR**

**§ 3.2.1** Before starting each portion of the Work, the Contractor shall carefully study and compare the various drawings and other Contract Documents relative to that portion of the Work, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to Owner as a request for information in such form as the Owner.

**§ 3.2.2** Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Owner, but it is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Owner. This does not release the Contractor from the obligation to perform Work in conformance with all provisions of federal, state, and local laws and regulations.

**§ 3.2.3** If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Owner in response to the Contractor's notices or requests for information pursuant to Sections 3.2.1 and 3.2.2, the Contractor shall make Claims as provided in Sections 4.3. If the Contractor fails to perform the obligations of Sections 3.2.1 and 3.2.2, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. The Contractor shall not be liable to the Owner or Architect/Engineer for damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Owner.

#### **§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

**§ 3.3.1** The Contractor shall supervise and direct the Work, using its best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and shall not proceed with that portion of the Work without further written instructions from the Owner. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any resulting loss or damage.



## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 3.3.2 The Contractor shall control its operations and the operations of its subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

- .1 When the Work requires the Contractor to conduct its operations within an AOA of the airport, the Work shall be coordinated with designated airport operations personnel (through the Owner) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the Owner and until the necessary temporary marking and associated lighting is in place.
- .2 When the Work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until the satisfactory conditions are provided.

§ 3.3.3 The Contractor shall conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction

- .1 All of the Contractor's operations shall be conducted in accordance with the project Construction Safety and Phasing Plan (CSPP) and the provisions set forth within the current version of AC 150/5370-2. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a Safety Plan Compliance Document that details how it proposes to comply with the requirements presented within the CSPP.
- .2 The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.
- .3 The Contractor is responsible for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and that they implement and maintain all necessary measures.
- .4 No deviation or modifications may be made to the approved CSPP unless approved in writing by the Owner.

§ 3.3.4 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, all tiers of Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

§ 3.3.5 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.6 The Contractor shall maintain the Work during construction and until the Work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the Work is maintained in satisfactory condition at all times. In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations. All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items or within the lump sum, and the Contractor will not be paid an additional amount for such work.

### § 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Owner and in accordance with a Change Order.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. Any person employed by the Contractor or by any subcontractor who, in the opinion of the Owner, does not perform the Work in a proper and skillful manner, or is intemperate or disorderly shall, at the written request of the Owner 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 Owner. 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 Owner may suspend the Work by written notice until such orders are complied with.

### § 3.5 WARRANTY

§ 3.5.1 The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### § 3.6 TAXES

§ 3.6.1 The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor which are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### § 3.7 PERMITS, FEES AND NOTICES

§ 3.7.1 Except as provided under Article 2.2, and unless otherwise provided in the Contract Documents, the Contractor shall cooperate with the Owner who will apply for, obtain, and pay for necessary building permits. The Contractor shall schedule and coordinate all necessary inspections and obtain all required certificates required by the building permit, even when such building permit is obtained by the Owner.

§ 3.7.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work. Prior to commencement of construction activities the Contractor shall post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

§ 3.7.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Owner in writing, and necessary changes shall be accomplished by appropriate modification.

§ 3.7.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.5 Certified Payrolls. Any Contractor or Subcontractor who performs Work on a public construction Contract for the Owner shall file a certified payroll with the Alaska Department of Labor before the second Friday of every two weeks that covers the preceding two weeks. (Section 14-2-4 ACLA 1949; am Section 4 ch 142 SLA 1972).

- .1 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.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

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

**§ 3.7.6 Prevailing Wage Rates.** 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 Section 3.7.5.2, 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.

- .1 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's or Subcontractor's 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).
- .2 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).

### § 3.8 ALLOWANCES

**§ 3.8.1** The Contractor shall include in the contract sum all allowances stated in the Contract Documents, if any. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

**§ 3.8.2** Unless otherwise provided in the Contract Documents:

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the contract sum but not in the allowances;
- .3 whenever costs are more than or less than allowances, the contract sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

**§ 3.8.3** Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

### § 3.9 SUPERINTENDENT

**§ 3.9.1** The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Superintendent must have negotiating authority for contract modifications.

### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at intervals as required by the Contract Documents, shall be related to the entire project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 3.10.2 The Contractor shall prepare and keep current, for the Owner's approval, a schedule of submittals that is coordinated with the Contractor's construction schedule and allows the Architect/Engineer and Owner reasonable time to review submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner.

### § 3.11 DOCUMENTS AND SAMPLES AT THE SITE

§ 3.11.1 The Contractor shall maintain at the site for the Owner one record copy of the drawings, specifications, addenda, Change Orders and other modifications, in good order and marked currently to record field changes and selections made during construction, and one record copy of approved shop drawings, product data, samples and similar required submittals. These shall be made available to the Owner at any time and shall be updated and submitted to the Owner as required by the Contract Documents.

### § 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a subcontractor of any tier, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples which illustrate materials, equipment or work quality and establish standards by which the Work will be judged.

§ 3.12.4 Shop drawings, product data, samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way that the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Architect/Engineer is subject to the limitations of Section 4.2.11. Informational submittals upon which the Architect/Engineer and Owner are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the A/E or Owner without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Owner shop drawings, product data, samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals that are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect/Engineer or Owner without action.

§ 3.12.6 By approving and submitting shop drawings, product data, samples and similar submittals, the Contractor represents that it has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of shop drawings, product data, samples or similar submittals until the respective submittal has been approved by the Owner.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Owner's approval of shop drawings, product data, samples or similar submittals unless the Contractor has specifically informed the Owner in writing of such deviation at the time of submittal and (1) the Owner has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in shop drawings, product data, samples or similar submittals by the Owner's approval thereof.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted shop drawings, product data, samples or similar submittals, to revisions other than those requested by the Owner on previous submittals. In the absence of such written notice the Owner's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall provide professional services that constitute the practice of architecture, engineering, or land surveying where such services are specifically required by the Contract Documents for a portion of the Work or where the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect/Engineer will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, shop drawings and other submittals prepared by such professional. Shop drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Owner. The Owner and the A/E shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided the Owner and A/E have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this section, the A/E will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

### § 3.13 USE OF SITE

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. Activities not related to the execution of the Work, unless specifically permitted by the Owner, are prohibited.

§ 3.13.2 It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration.

- .1 The Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to its own operations and the operations of all subcontractors as specified in Article 3 Section 3.3. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in applicable sections of the contract documents.
- .2 The Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport.
- .3 When the contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall be responsible for the repair of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices at [mutcd.fhwa.dot.gov](http://mutcd.fhwa.dot.gov), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

§ 3.13.3 The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work until their removal is directed by the Owner. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated. Unless otherwise specified, barricades, warning signs, and markings for hazards that are in the air operations area (AOAs) shall be a maximum of 18 inches high. Unless otherwise specified, barricades shall be spaced not more than 4 feet apart.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices.

When the Work requires closing an air operations area of the airport or portion of such area, the Contractor shall furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements of advisory circular (AC) 150/5340-1, Standards for Airport Markings.

The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and the Contractor's parked construction equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to AC 150/5370-2, Operational Safety on Airports During Construction.

The Contractor shall identify each motorized vehicle or piece of construction equipment in reasonable conformance to AC 150/5370-2.

### § 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### § 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

### § 3.16 ACCESS TO WORK

§ 3.16.1 The Contractor shall provide the Owner and Architect/Engineer access to the Work in preparation and progress wherever located. The Contractor shall provide safe facilities for such access so the Owner and A/E may perform their functions under the Contract Documents.

### § 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

§ 3.17.1 The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect/Engineer harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in drawings, specifications or other documents prepared by the Owner or A/E. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Owner.

### § 3.18 INDEMNIFICATION

To the fullest extent permitted by Laws and Regulations, the Contractor shall indemnify, defend, and hold harmless the Owner, its Architect/Engineer (A/E), consultants, subconsultants and the officers, directors, employees, and agents of each and either 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 or any performance of the Work by subcontractors, their agents, and their employees, but not from the sole negligence or willful misconduct of the Owner and/or its A/E. Such

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

indemnification by the Contractor and its subcontractors, their agents, and their employees shall include but not be limited to the following:

- .1 Liability or claims resulting directly or indirectly from the negligence or carelessness 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;
- .2 Liability or claims arising directly or indirectly from bodily injury, occupational sickness or disease, or death of the Contractor's or subcontractor's own employees engaged in the Work resulting in actions brought by or on behalf of such employees against the Owner and/or the A/E;
- .3 Liability or claims arising directly or indirectly from or based on the violation of any law, ordinance, regulation, order, or decree;
- .4 Liability or claims arising directly or indirectly from the use or manufacture of any copyrighted or non-copyrighted composition, secret process, patented or non-patented invention, computer software, article, or appliance, unless otherwise specifically stipulated in this contract;
- .5 Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the Owner, its A/E, its consultants, subconsultants and the officers, directors, employees, and agents, or any other parties;
- .6 Liabilities or claims arising directly or indirectly from willful or criminal misconduct; and,
- .7 Liabilities or claims arising directly or indirectly from any breach of the obligations assumed herein by the Contractor.

§ 3.18.2 The Contractor shall reimburse the Owner for all costs and expenses, (including but not limited to fees and charges of Architect/Engineer, attorneys, and other professionals and court costs including all costs of appeals) incurred by the Owner in enforcing the provisions of this section.

§ 3.18.3 The indemnification obligation under this section 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.

### ARTICLE 4 ADMINISTRATION OF THE CONTRACT

#### § 4.1 OWNER'S REPRESENTATIVE, AND ARCHITECT/ENGINEER

§ 4.1.1 The Owner's Representative will be the Owner's agent to the Contractor with respect to the project during construction and until the issuance of the final Certificate for Payment. The Owner's communications with the Contractor will be through the Owner's Representative, who will have full authority to act on behalf of the Owner with regard to all aspects of the construction of the project.

§ 4.1.2 Nothing contained within the Contract Documents shall create any contractual relationship between the Owner's Representative and the Contractor.

#### § 4.1.3 Architect or Engineer

- .1 For purposes of this contract, the Architect or Engineer (A/E) is the person performing services on behalf of the Owner, and lawfully licensed to practice architecture or engineering, or an entity lawfully practicing architecture or engineering identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number.
- .2 For purposes of the Contract Documents, references to the Architect may include sub consultants of multiple tiers who are lawfully licensed to practice disciplines included in the Work including, but not limited to civil, structural, mechanical, and electrical engineering. Similarly, references to the Engineer may include sub consultants of multiple tiers who are lawfully licensed to practice disciplines included in the Work including, but not limited to architecture, civil, structural, mechanical, and electrical engineering.
- .3 Nothing contained within the Contract Documents shall create any contractual relationship between the A/E and the Contractor.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### § 4.2 OWNER'S REPRESENTATIVE'S ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Owner's Representative will provide administration of the Contract as described in the Contract Documents, and will be the Owner's agent (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Section 12.2. The Owner's Representative will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 4.2.2 The office of the Owner's Representative will be located at or near the project site for the duration of construction. The Owner's Representative and associated staff will observe the Work (1) to monitor the progress and quality of the Work, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents, and (4) to keep the Owner informed about the progress and quality of the Work. However, the Owner's Representative will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Owner's Representative will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.

§ 4.2.3 The Owner's Representative will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Owner's Representative will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors of any tier, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications Facilitating Contract Administration. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner, Architect/Engineer, and Contractor shall communicate with each other through the Owner's Representative about matters arising out of, or relating to the Contract. Communications by and with the A/E's consultants shall be through the A/E. Communications by and with subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

§ 4.2.5 Upon presentation of the Contractor's Applications for Payment, the Owner's Representative will review and certify the amounts due the Contractor and will approve the Applications for Payment in such amounts.

§ 4.2.6 The Owner's Representative will have authority to reject Work that does not conform to the Contract Documents. Whenever the Owner's Representative considers it necessary or advisable, the Owner's Representative will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Owner's Representative nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Owner's Representative to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Owner's Representative will prepare Change Orders and Construction Change Directives and may authorize minor changes in the Work as provided in Section 7.4.

§ 4.2.8 The Owner's Representative will conduct inspections to determine the date or dates of Substantial Completion and the date of Final Completion, will receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor, and will approve the final Application for Payment upon compliance with the requirements of the Contract Documents.

§ 4.2.9 The Owner's Representative will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of the Owner or Contractor. The Owner's Representative's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Owner's Representative shall be furnished in compliance with this Section 4.2, then delay shall not be



## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

recognized on account of failure by the Owner's Representative to furnish such interpretations until 15 days after written request is made for them.

§ 4.2.10 Interpretations and decisions of the Owner's Representative will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Owner's Representative will endeavor to secure faithful performance by both Owner and Contractor.

### § 4.2.11 SERVICES OF THE ARCHITECT OR ENGINEER (A/E)

- .1 The Architect or Engineer (A/E) will provide certain contract administration services as hereinafter described.
- .2 Should errors, omissions, or conflicts in the drawings, specifications, or other contract documents provided by the A/E be discovered, the A/E will prepare such amendments or supplementary documents and provide consultation as may be required.
- .3 The A/E and its sub-consultants will visit the site at intervals appropriate to the stage of construction to familiarize themselves generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. Unless otherwise provided in the Owner-A/E Agreement, the A/E and its sub-consultants will not be required to make exhaustive or continuous on-site inspection or observations to check the quality or quantity of the Work, but they shall make as many on-site inspections and observations as may reasonably be required to fulfill their obligations to the Owner. On the basis of such on-site observation, the A/E and its sub-consultants shall endeavor to guard the Owner against defects and deficiencies in the Work of the Contractor.
- .4 The A/E will render written field reports to the Owner in the form required by the Owner relating to the periodic visits and inspections of the Project required by Section 4.2.11.
- .5 The A/E will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and the A/E will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The A/E will not be responsible for or have control or charge over the acts or omissions of the Contractor, Subcontractors, or any of their agents or employees, or any other persons performing any of the Work.
- .6 The A/E shall at all times have access to the Work wherever it is in preparation or progress. The Contractor shall provide safe facilities for such access so the A/E may perform its functions under the Contract Documents.
- .7 As required, the A/E will render to the Owner interpretations necessary for the proper execution or progress of the Work, with reasonable promptness and in accordance with any time limit agreed upon.
- .8 All communications, correspondence, submittals, and documents exchanged between the A/E and the Contractor in connection with the Project shall be through or in the manner prescribed by the Owner.
- .9 All interpretations and decisions of the A/E will be consistent with the intent of and reasonably inferable from the Contract Documents.
- .10 The A/E's decision in matters relating to aesthetic effect will be final if consistent with the intent of the Contract Documents and approved by the Owner.
- .11 If the A/E observes any Work that does not conform to the Contract Documents, the A/E shall promptly report in writing this observation to the Owner. The A/E will prepare and submit to the Owner lists of the Contractor's Work that is not in conformance with the Contract Documents.
- .12 The A/E will review and make a recommendation to the Owner of appropriate action upon the Contractor's submittals such as shop drawings, product data and samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The A/E's review will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor, or separate contractors, while allowing sufficient time in the A/E's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

required by the Contract Documents. The A/E's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The A/E's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the A/E, of any construction means, methods, techniques, sequences or procedures. The A/E's recommendation for approval of a specific item shall not indicate recommendation of approval of an assembly of which the item is a component.

- .13 The Owner will establish procedures to be followed by the A/E for review and processing of all shop drawings, catalog submittals, project reports, test reports, maintenance manuals, and other necessary documentation.
- .14 The A/E may assist the Owner in conducting inspections to determine the dates of Substantial Completion and Final Completion, and the Owner will issue a Certificate of Substantial Completion and a Certificate of Final Completion.
- .15 In case of the termination of the A/E, the Owner may appoint an alternate person who is appropriately licensed to assume all of the services of the A/E thereafter.
- .16 If the Owner and A/E agree, the A/E may provide one or more project representatives to assist in carrying out the A/E's responsibilities at the site. Such responsibilities may include, but are not limited to inspection, testing, and specialized construction observation. The assistant project representative, inspector, or other such assigned personnel shall have no authority to interpret or direct the Work unless authorized in writing by the Owner.

### § 4.3 CLAIMS AND DISPUTES

§ 4.3.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes all other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. All Claims must be initiated by written notice within the time limits provided in Section 4.3.2. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 4.3.2 Time Limits on Claims. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes, or should reasonably have recognized, the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Owner and the other party.

§ 4.3.3 Continuing Contract Performance. Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7. and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 4.3.4 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site that are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than the time limits provided in 4.3.2. The Owner will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the contract sum or contract time, or both. If the Owner determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Owner shall so notify the Contractor in writing, stating the reasons, and the Claim shall be denied.

§ 4.3.5 Claims for Additional Cost. If the Contractor wishes to make Claim for an increase in the contract sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 4.3.6 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Owner, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Owner, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Section .

### § 4.3.7 Claims for Additional Time

- .1 If the Contractor wishes to make Claim for an increase in the contract time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.
- .2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction. The Contractor shall, within 10 days of the beginning of any such delay, notify the Owner in writing of the cause of delay and request an extension of contract time. The Owner will ascertain the facts and the extent of the delay and extend the time for completing the Work when, in the Owner'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.

§ 4.3.8 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 14 days after discovery or when discovery reasonably should have been made. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 4.3.9 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 4.3.10 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business or reputation, attorney's fees and costs, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this section shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

## § 4.4 RESOLUTION OF CLAIMS AND DISPUTES

§ 4.4.1 Decision of Owner. All Claims of this Contract shall be promptly brought to the Owner's Representative for analysis and consideration. The Contractor shall strictly follow the process outlined by the Owner for resolving claims and disputes, and shall not initiate or respond to alternative resolution processes, unless agreed to by both the Owner and the Contractor and incorporated into a Change Order. Once the Contractor has delivered a Claim, the Owner shall promptly analyze the Claim, fairly considering all aspects of the Claim in terms of the Contract Documents. The Owner shall then render an opinion in writing. The Owner will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 4.4.2 The Owner's Representative will review Claims and within fifteen days of the receipt of the Claim and take one or more of the following actions: (1) request additional supporting data from the Contractor or a response with

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, or (4) suggest a compromise.

§ 4.4.3 In evaluating Claims, the Owner may, but shall not be obligated to, consult with or seek information from either party, from the Architect/Engineer or from persons with special knowledge or expertise who may assist the Owner in rendering a decision. The Owner may authorize retention of such persons at the Owner's expense.

§ 4.4.4 If the Owner requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within fifteen days after receipt of such request, and shall either provide a response on the requested supporting data, advise the Owner when the response or supporting data will be furnished or advise the Owner that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Owner will either reject or approve the Claim in whole or in part.

§ 4.4.5 The Owner will approve or reject Claims by written decision that shall state the reasons therefor and which shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Owner shall be final and binding on the parties.

§ 4.4.6 Upon receipt of a Claim against the Contractor or at any time thereafter, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

### § 4.5 DISPUTE RESOLUTION BOARD

§ 4.5.1 If provided in Supplementary General Conditions, this contract shall be subject to Dispute Resolution Board procedures in accordance with the terms and conditions stated in the Supplementary General Conditions.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 DEFINITIONS

§ 5.1.1 A subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "subcontractor" is referred to throughout the Contract Documents as if singular in number and means a subcontractor or an authorized representative of the subcontractor at any tier. The term "subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

### § 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 As stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Owner will promptly reply to the Contractor in writing stating whether or not the Owner, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner to reply promptly shall constitute notice of no reasonable objection. Periodic submittals of the list of Subcontractors to the Owner are required. A final list of subcontractors and subcontract amounts will be required prior to Final Payment.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the contract sum and contract time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute subcontractor's Work. However, no increase in the contract sum or contract time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 5.2.4 The Contractor shall not change a subcontractor, person or entity previously selected if the Owner makes reasonable objection to such substitute.

### § 5.3 SUBCONTRACT RELATIONS

§ 5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each subcontractor, to the extent of the Work to be performed by the subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the subcontractor's Work, that the Contractor, by these documents, assumes toward the Owner and Architect/Engineer. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect/Engineer under the Contract Documents with respect to the Work to be performed by the subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each subcontractor to enter into similar agreements with subcontractors of all tiers. The Contractor shall make available to each proposed subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the subcontractor will be bound, and, upon written request of the subcontractor, identify to the subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed subcontractors at all tiers.

### § 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

### § 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the project with the Owner's own forces, and to award separate contracts in connection with other portions of the project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation.

§ 6.1.2 The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA facility, or a utility service of another government agency at any time during the progress of the Work.

Should the Owner of public or private utility service, FAA, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the Work, the Contractor shall cooperate with such Owners by arranging and performing the Work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such Work by others is listed above. When ordered as extra Work by the Owner, the Contractor shall make all necessary repairs to the Work that are due to such authorized Work by others, unless otherwise provided for in the contract. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized Work by others or for any delay to the Work resulting from such authorized Work.

§ 6.1.3 When separate contracts are awarded for different portions of the project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

## **SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT**

§ 6.1.4 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.5 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

### **§ 6.2 MUTUAL RESPONSIBILITY**

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Owner apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner that are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work or defective construction of a separate contractor.

§ 6.2.4 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

### **§ 6.3 OWNER'S RIGHT TO CLEAN UP**

§ 6.3.1 If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and allocate the cost among those responsible.

## **ARTICLE 7 CHANGES IN THE WORK**

### **§ 7.1 GENERAL**

§ 7.1.1 Without invalidating the Contract 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 Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement between the Owner and the Contractor; a Construction Change Directive may be issued by the Owner and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Owner.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### § 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Owner and signed by the Owner and Contractor, stating their agreement upon all of the following:

- .1 change in the Work;
- .2 the amount of the adjustment in the contract sum including unit price quantities; and
- .3 the extent of the adjustment, if any, in the contract time.

§ 7.2.2 Methods used in determining adjustments to the contract sum may include those listed in Section 7.3.

### § 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Owner directing a change in the Work prior to agreement on adjustment, if any, in the contract sum or contract time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the contract sum and contract time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 application of adjusted unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 as provided in Section 7.3.6.

§ 7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Owner of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the contract sum or contract time.

§ 7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in contract sum and contract time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.6 If prior to the commencement of the Work the Contractor has not provided a lump sum price, or the Contractor and the Owner have not agreed on a lump sum price as described in Section 7.3.3, the price shall be established in one of the following ways, as determined by the Owner.

- .1 on a lump sum basis following completion of the Work. The lump sum price shall be properly itemized in accordance with Sections 7.3.7 and 7.3.8 and supported by sufficient data to permit evaluation;
- .2 on a time and material basis, with or without a maximum not-to-exceed price, at the discretion of the Owner. Costs will be accumulated on a time and material basis as described in Sections 7.3.7 and 7.3.9 and presented daily (the day after the Work is performed) for approval by the Owner on the forms provided by the Owner. The daily report will be signed by the Contractor and the Owner.

§ 7.3.7 Cost substantiation for Work proceeding on a lump sum or time and material basis. In accordance with Section 7.3.6, the Contractor shall provide a detailed breakdown of the costs as described in this section and submit the costs and substantiating data in a proposal to the Owner:

- .1 Excluded Costs. The following shall not be considered by the Owner for compensation to the Contractor:
  - A. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnership and sole proprietorships), general managers, architects, estimators, attorneys,

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

- 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 this section, all of which are to be considered administrative costs covered by the Contractor's fee.
- B. Expenses of Contractor's principal and branch offices other than Contractor's office at the site.
  - C. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
  - D. Cost of premiums for all Bonds and for all insurance whether or not Contractor is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered this section).
  - E. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of Defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.
  - F. Other overhead or general expense costs of any kind and the cost of any item not specifically and expressly included in this section.
- .2 Direct costs. These shall be limited to 1) cost of materials, as described below under "Materials," 2) cost of labor as described below under "Labor Rates," 3) rental rate including fuel and maintenance for any power tools valued at over \$3,000 and equipment as described below under "Equipment Rates," and 4) bond premiums and additional cost of Builder's Risk Insurance, at rates equal to the amount billed for the base contract or the actual rate as supported by an invoice.
- .3 Equipment Rates. The Contractor will be paid for the use of equipment at the rental rates listed for such equipment in the "Rental Rate Blue Book". 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 "Rental Rate Blue Book", an equitable rental rate for the equipment will be established by the Owner. The Contractor may furnish cost data which might assist the Owner in the establishment of the rental rate.
- A. All equipment shall, in the opinion of the Owner, be in good working condition and suitable for the purpose for which the equipment is to be used.
  - B. 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 Owner a description of the equipment and its identifying number.
  - C. Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment that has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.
  - D. 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.
  - E. Rental time will not be allowed while equipment is inoperative due to breakdowns.
  - F. 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 "Rental Rate Blue Book" available at [www3.equipmentwatch.com](http://www3.equipmentwatch.com) or contact Equipment Watch at (800) 669-3282. Rental rates for equipment not covered under this reference shall be comparable to the lowest, commercially available rental rate for similar equipment in the area of the Project
- .4 Equipment on the Project 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



## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

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.

- A. 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.
  - B. 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.
  - C. 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, set forth as follows:
    - i. Payment for the equipment will be made in accordance with the provisions in Section 7.3.
    - ii. 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 Section 7.3.7.5, 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.
    - iii. 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 Sections 7.3.8 and 7.3.9.
- .5 Labor Rates. 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, workers' 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 Sections 7.3.8 and 7.3.9.
- .6 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:
- A. 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.
  - B. 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 Owner. Mark-up except for actual costs incurred in the handling of such materials will not be allowed.
  - C. 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.
  - D. If in the opinion of the Owner 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.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

- .7** 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:
- A.** 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 Owner, 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.
  - B.** 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.
  - C.** 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 Sections 7.3.8 and 7.3.9, herein, an allowance of 5 percent will be added to invoices for specialty Work.
- .8** 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.

**§ 7.3.8** Contractor's Fee for Work proceeding on a lump sum basis. The Contractor shall apply a combined percentage rate to the direct costs to compensate the Contractor for additional overhead and profit associated with a Change in the Work. The combined rate to the Owner of any change shall not exceed the rates set forth in the following schedule:

- .1** For the Contractor, for Work performed by the Contractor's own forces, up to fifteen percent (15%) of direct costs.
- .2** For each subcontractor, for Work performed by the subcontractor's forces, up to fifteen percent (15%) of direct costs.
- .3** For the Contractor, for work performed by subcontractors, up to ten percent (10%) of the Subcontractors direct costs.
- .4** For the subcontractor, for Work performed by subcontractors of all tiers, up to ten percent (10%) of the sub-subcontractor's direct costs.
- .5** The total Contractor and all subcontractors' overhead and profit allowance shall not exceed twenty-five percent (25%) of direct costs.
- .6** To the sum of the costs and Contractor fees provided for in this section, one percent (1%) shall be added as compensation for bonds.

**§ 7.3.9** Contractor's Fee for Work proceeding on a time and materials basis. The Contractor shall apply a combined percentage rate to the direct costs to compensate the Contractor for additional overhead and profit associated with a Change in the Work. The combined rate to the Owner of any change shall not exceed the rates set forth in the following schedule:

- .1** For the Contractor, for Work performed by the Contractor's own forces, up to ten percent (10%) of direct costs.
- .2** For each subcontractor, for Work performed by the subcontractor's forces, up to ten percent (10%) of direct costs.
- .3** For the Contractor, for work performed by subcontractors, up to five percent (5%) of the subcontractors direct costs.
- .4** For the subcontractor, for Work performed by subcontractors of all tiers, up to five percent (5%) of the sub-subcontractor's direct costs.
- .5** The total Contractor and all subcontractors' overhead and profit allowance shall not exceed twenty percent (20%) of direct costs.
- .6** To the sum of the costs and Contractor fees provided for in this section, one percent (1%) shall be added as compensation for bonds.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 7.3.10 Adjustment of Quantities. The Owner is authorized to make such adjustments in the Work as may increase or decrease the originally awarded contract quantities of unit price components, provided that the aggregate of such adjustments does not change the total contract cost or the total cost of any major contract item by more than 25% (total cost being based on the unit prices and estimated quantities in the awarded contract). Alterations that do not exceed the 25% limitation shall not invalidate the contract nor release the surety, and the Contractor agrees to accept payment for such alterations in accordance with the unit price offered in the bid.

§ 7.3.11 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Owner. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.12 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in applications for payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Owner will make an interim determination for purposes of monthly approval of payment for those costs. That determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a claim in accordance with Article 4.

§ 7.3.13 When the Owner and Contractor agree with the adjustments in the contract sum and contract time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

### § 7.4 MINOR CHANGES IN THE WORK

§ 7.4.1 The Owner may order minor changes in the Work not involving adjustment in the contract sum or extension of the contract time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

## ARTICLE 8 TIME

### § 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Owner in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.1.5 The term non-working day as may be used in the Contract Documents shall mean Sunday, a recognized holiday, a day on which the Contractor is specifically required to suspend construction operations or a day on which a suspension order is in effect. The legal holidays of the City & Borough of Juneau occur on:

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

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### .11 Christmas Day - December 25

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

### § 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the contract time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the contract time.

### § 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect/Engineer, or of an employee of either, or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner dispute resolution, or by other causes that the Owner determines may justify delay, then the contract time shall be extended by Change Order for such reasonable time as the Owner may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Section 4.3.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

### § 9.2 BASIS OF PAYMENT

§ 9.2.1 Prior to the Preconstruction Conference, as required by the Contract Documents, the Contractor shall submit to the Owner a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Owner may require, and in accordance with other provisions of the Contract Documents. This schedule, unless objected to by the Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

- .1 Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows: (a) with first pay request, 25%; (b) when 25% or more of the original contract is earned, an additional 25%; (c) when 50% or more of the original contract is earned, an additional 40%; (d) after Final Inspection, staging area clean-up and delivery of all Project Closeout materials, the final 10%.

§ 9.2.2 For Unit Price contracts, all work completed under the contract will be measured by the Owner using United States Customary Units of Measurement or the International System of Units. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

- .1 Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

- 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the Owner.
- .2 Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
  - .3 Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.
  - .4 In computing volumes of excavation the average end area method or other acceptable methods will be used.
  - .5 The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
  - .6 The term "ton" will mean the short ton consisting of 2,000 lb avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, approved scales by competent, qualified personnel at locations designed by the Owner. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Owner directs.
  - .7 Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.
  - .8 When requested by the Contractor and approved by the Owner in writing, material specified to be measured by the cubic yard may be weighed, and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Owner and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.
  - .9 Bituminous materials will be measured by the gallon or ton. When measured by volume, such volumes will be measured at 60°F or will be corrected to the volume at 60°F using ASTM D1250 for asphalts or ASTM D633 for tars.
  - .10 When bituminous materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, may be used for computing quantities.
  - .11 Cement will be measured by the ton or hundredweight.
  - .12 Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
  - .13 The term "lump sum" when used as an item of payment will mean complete payment for the Work described in the contract. When a complete structure or structural unit (in effect, "lump sum" Work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.
  - .14 Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the Work.
  - .15 When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
  - .16 Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Scales shall be accurate within 1/2% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the inspector before beginning Work and at such other times as requested by the Owner. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of 1% of the nominal rated capacity of the scale, but not less than 1 pound. The use of spring balances will not be permitted. Scales must be tested for accuracy and serviced before use at a new site. All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.

**§ 9.2.3** When the estimated quantities for a specific portion of the Work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the Work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the Owner. If revised dimensions result in an increase or decrease in the quantities of such Work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

### **§ 9.3 APPLICATIONS FOR PAYMENT**

**§ 9.3.1** On a monthly basis, the Contractor shall submit to the Owner an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be supported by such data substantiating the Contractor's right to payment as the Owner may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

- .1** As provided in Section 7.3.12, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determinations of the Owner, but not yet included in Change Orders.
- .2** Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.
- .3** The Contractor may be required, through other provisions of the Contract Documents, to submit additional reports or documents with the application.

**§ 9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, partial payment may similarly be made for materials and equipment suitably stored off the site at a location in Juneau agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

**§ 9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

### **§ 9.4 APPROVAL OF APPLICATIONS FOR PAYMENT**

**§ 9.4.1** The Owner will, within seven days after receipt of an acceptable Application for Payment from the Contractor, either issue approval of such amount as properly due, or notify the Contractor in writing of the reasons for withholding approval in whole or in part as provided in Section 9.5.

**§ 9.4.2** The approval of an Application for Payment will constitute a representation by the Owner, based on the Owner's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Owner's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Owner. The approval of an Application for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the approval of an Application for Payment will not be a representation that the Owner has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 9.4.3 The Owner may refuse to make payment of the full amount because claims have been made against the Owner or the Using Agency 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 or the Using Agency, acting through the Owner's Representative, must give the Contractor written notice within 7 days stating the reasons for such action.

### § 9.5 DECISIONS TO WITHHOLD APPROVAL OF APPLICATIONS FOR PAYMENT

§ 9.5.1 The Owner may withhold approval of Applications for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Owner's opinion the representations required by Section 9.4.2 cannot be made. If the Owner is unable to approve payment in the amount of the Application, the Owner will notify the Contractor as provided in Section 9.4.1. If the Contractor and Owner cannot agree on a revised amount, the Owner will promptly issue an approval for the amount for which the Owner is able to make such representations. The Owner may also withhold approval of an Application for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of an approval previously issued, to such extent as may be necessary in the Owner's opinion to protect from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of:

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or another contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;  
or
- .7 persistent failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding approval are removed, approval will be made for amounts previously withheld.

### § 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Owner has approved an application for payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents.

§ 9.6.2 The Contractor shall promptly pay each subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such subcontractor's portion of the Work, the amount to which said subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each subcontractor, require each subcontractor to make payments to subcontractors at all tiers in a similar manner.

§ 9.6.3 The Owner will, on request, furnish to a subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Owner on account of portions of the Work done by such subcontractor.

§ 9.6.4 The Owner shall not have an obligation to pay or to see to the payment of money to a subcontractor except as may otherwise be required by law.

§ 9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 Approval of an application for payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the contract sum, payments received by the Contractor for Work properly performed by subcontractors and suppliers shall be held by

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

the Contractor for those subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

### § 9.7 FAILURE OF PAYMENT

§ 9.7.1 If the Owner does not approve an application for payment or notify the Contractor that such approval will be withheld, through no fault of the Contractor, within seven days after receipt of the Contractor's application for payment, or if the Owner does not pay the Contractor within thirty days after the date established in the Contract Documents the amount approved, then the Contractor may, upon seven additional days' written notice to the Owner, stop the Work until payment of the amount owing has been received. The contract time shall be extended appropriately and the contract sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

### § 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use and an official Certificate of Occupancy has been issued by the authority having jurisdiction.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof that the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Owner a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Owner will make an inspection to determine whether the Work or designated portion thereof is substantially complete. The Contractor shall allow a minimum of two working days for this inspection. If the Owner's inspection discloses any item, whether or not included on the Contractor's list that is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Owner. In such case, the Contractor shall then submit a request for another inspection by the Owner to determine Substantial Completion. In the event that a third or subsequent inspection is required, the Owner reserves the right to charge the Contractor for the cost of such inspections.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Owner will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

### § 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the applicable insurer and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the



## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Owner as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Owner.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. No portion of the Work may be opened by the Contractor for public use until ordered by the Owner in writing. Should it become necessary to open a portion of the Work to public traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the Owner, such portion of the Work is in an acceptable condition to support the intended traffic or activity. Temporary or intermittent openings for airfield traffic (aircraft and vehicles) are considered to be inherent in the work and shall not constitute either acceptance of the portion of the Work so opened or a waiver of any provision of the contract. Any damage to the portion of the Work so opened that is not attributable to traffic or activity that is permitted by the Owner shall be repaired by the Contractor at its own expense.

The Contractor shall make its own estimate of the inherent difficulties involved in completing the Work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract Work.

**§ 9.9.3** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

### **§ 9.10 FINAL COMPLETION AND FINAL PAYMENT**

**§ 9.10.1** Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Owner, the Architect/Engineer, and the Using Agency will promptly make such inspection and, when the Owner finds the Work acceptable under the Contract Documents and the Contract fully performed, the Owner will promptly approve the final Application for Payment stating that to the best of the Owner's knowledge, information and belief, and on the basis of the aforementioned on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents. After acceptance of the Work by the Owner, 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, and described within the Agreement.
- .2** If items of Work are determined by the Owner to have been left uncompleted or uncorrected between the date of Substantial Completion and the date of Final Completion, and the Owner decides to issue a Certificate of Final Completion leaving those Work items incomplete or uncorrected, the following deduction may be made from the final payment: Two times the value of outstanding items of correction Work or Substantial Completion list items yet uncompleted or uncorrected, as applicable. 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.

The Owner's approval of the final Application for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project, and (6) if required by the Owner, other data establishing payment or satisfaction of

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Owner so confirms, the Owner shall, upon application by the Contractor and approval by the Owner and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Owner prior to approval of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final application for payment.

§ 9.10.6 Release Of Retainage And Other Deductions. 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 Contract, less any deductions to cover pending claims against the Owner or Using Agency pursuant to Section 9.4.3.

- .1 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 Final Completion. Upon expiration of the 45 days, referred to in Section 9.10.6, the amounts withheld pursuant to the provisions of Section 9.10.1 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 two times the value of such remaining uncompleted or uncorrected items.

### ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

#### § 10.1 SAFETY PRECAUTIONS AND PROGRAMS

§ 10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

#### § 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off site, under care, custody or control of the Contractor or the Contractor's subcontractors of all tiers; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

- .1 Unless otherwise specified in this subsection, the Contractor is advised that the site of the Work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior. Should the Contractor encounter, during its operations, any part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the Owner. The Owner will immediately investigate the Contractor's finding and direct the Contractor to either resume operations or to suspend operations as directed. Should the Owner 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 shall be covered by an appropriate contract change order.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions, performance of the Contract, and regulatory agencies, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

- .1 All Contractors' operations shall be conducted in accordance with the project Construction Safety and Phasing Plan (CSPP) and the provisions set forth within the current version of AC 150/5370-2. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a Safety Plan Compliance Document that details how it proposes to comply with the requirements presented within the CSPP.
- .2 The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures. No deviation or modifications may be made to the approved CSPP unless approved in writing by the Owner.

§ 10.2.4 When use or storage of hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. A Material Safety Data Sheet shall be requested by the Contractor from the manufacturer of any hazardous product used, and 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. 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.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a subcontractor of any tier, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect/Engineer or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a qualified and responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be approved by the Owner.

§ 10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

### § 10.3 HAZARDOUS MATERIALS

§ 10.3.1 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB),

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner in writing.

§ 10.3.2 The Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor will promptly reply to the Owner in writing stating whether or not the Contractor has reasonable objection to the persons or entities proposed by the Owner. If the Contractor has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor has no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up, which adjustments shall be accomplished as provided in Article 7.

§ 10.3.3 The Owner shall not be responsible under Section 10.3 for materials and substances brought to the site by the Contractor unless such materials or substances were required by the Contract Documents.

§ 10.3.4 If, without negligence on the part of the Contractor, the Contractor is held liable for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

### § 10.4 ENVIRONMENTAL PROTECTION

§ 10.4.1 The Contractor shall comply with all Federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

§ 10.4.2 The Contractor shall control storm water in accordance with current Alaska Department of Environmental Conservation Construction General Permit requirements for storm water control, and as described elsewhere in the contract documents.

### § 10.5 EMERGENCIES

§ 10.5.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Section 4.3 and Article 7.

## ARTICLE 11 INSURANCE AND BONDS

### § 11.1 INSURANCE

§ 11.1.1 The Contractor shall purchase and maintain the insurance required under this section. 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 Section 12.2, but the Contractor's liabilities under this Contract shall not be deemed limited in any way to the insurance coverage required. Policies shall also specify insurance provided by Contractor will be considered primary and not contributory to any other insurance available to the Owner. Failure by the Contractor to keep such insurance in effect for the time period specified shall be deemed defective Work and resolved in accordance with the Contract Documents.

§ 11.1.2 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

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

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.

§ 11.1.3 The Contractor shall furnish the Owner with certificates and amendatory endorsements or copies of the applicable policy language affecting coverage required in this agreement showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. At least 30 days prior to the cancellation, non-renewal or reduction in the amount of coverage, Contractor shall provide written notice to the Owner. All such insurance required herein (except for Workers' Compensation and Employer's Liability) shall name the Owner, Using Agency, their 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. Contractor agrees to waive all rights of subrogation against the Owner for work performed under Contract.

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.

- .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 Insurance. The Contractor shall require and verify that each of its subcontractors maintain insurance meeting all of the requirements stated herein, unless specifically exempted from a required coverage. Subcontractor insurance coverage shall be of the type and in the amounts specified in the Supplementary General Conditions or Contractor shall insure the activities of its Subcontractors under the Contractor's own policy, in like amount.
- .5 Builder's Risk. This insurance shall be of the "all risks" type and shall be written in completed value form, and shall protect the Contractor, the Owner, and the Using Agency 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, the Owner, and the Using Agency, 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 Using Agency. The Builder's Risk policy shall insure against risks of direct physical loss or damage to property from any external cause. Allowable exclusions, if any, shall be as specified in the Supplementary General Conditions.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### § 11.2 PERFORMANCE BOND AND PAYMENT BOND

§ 11.2.1 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 for twelve months after the date of final payment and until all obligations and liens under this contract have been satisfied. The Contractor shall also furnish such other Bonds as are required by the Supplementary General Conditions. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by laws or regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

§ 11.2.2 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 that must be acceptable to the Owner.

§ 11.2.3 All Bonds required by the Contract Documents to be purchased and maintained by Contractor shall be obtained from surety companies that are duly licensed or authorized in the State of Alaska to issue bonds for the limits so required. Such surety companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions. The CBJ may notify the surety of any potential default or liability.

## ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

### § 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Owner's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Owner, be uncovered for the Owner's examination and be replaced at the Contractor's expense without change in the contract time.

§ 12.1.2 If a portion of the Work has been covered that the Owner has not specifically requested to examine prior to its being covered, the Owner may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

### § 12.2 CORRECTION OF WORK

§ 12.2.1 Before or after Substantial Completion. The Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections and compensation for the Owner's and Architect's/Engineer's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, work quality, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier. If, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, the Owner may correct it in accordance with Section 2.4.

§ 12.2.3 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work.

§ 12.2.4 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.5 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.6 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

§ 12.2.7 Nothing contained in this section shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### § 12.3 ACCEPTANCE OF NONCONFORMING WORK

§ 12.3.1 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the contract sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 GOVERNING LAW

§ 13.1.1 The Contract shall be governed by the law of the State of Alaska. 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 Owner. The Contractor shall indemnify, defend, and hold harmless the Owner, the Using Agency, and their officers, agents, and employees against all claims or liability arising from violation of any such law, ordinance, code, 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.

### § 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

### § 13.3 WRITTEN NOTICE

§ 13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### § 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect/Engineer or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

### § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Owner timely notice of when and where tests and inspections are to be made so that the Owner may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded.

§ 13.5.2 If the Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Owner will instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Owner of when and where tests and inspections are to be made so that the Owner may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Owner's and Architect's/Engineer's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Owner.

§ 13.5.5 If the Owner is to observe tests, inspections or approvals required by the Contract Documents, the Owner will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5.7 For Airport Improvement Program (AIP) contracts, the United States Government has agreed to reimburse the Owner for some portion of the Contract costs. Such reimbursement is made from time to time upon the Owner's request to the FAA. In consideration of the United States Government's (FAA's) agreement with the Owner, the Owner has included provisions in this contract pursuant to the requirements of Title 49 of the USC and the Rules and Regulations of the FAA that pertain to the work.

As required by the USC, the contract Work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator, and is further subject to those provisions of the rules and regulations that are cited in the Contract, plans, or specifications.

No requirement of the USC, the rules and regulations implementing the USC, or this Contract shall be construed as making the Federal Government a party to the Contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.



## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### § 13.6 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

#### § 13.6.1 As between the Owner and Contractor:

- .1 Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;
- .2 Between Substantial Completion and Final Completion. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to the date of Final Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of Final Completion; and
- .3 After Final Completion. As to acts or failures to act occurring after the relevant date of Final Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Section 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Section 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

### § 13.7 RETENTION AND INSPECTION OF RECORDS

§ 13.7.1 Record Retention and Maintenance. The Contractor shall keep and maintain in safe condition full and accurate records of all costs incurred and items billed and all other project records and documents relating to performance, communications, and correspondence in connection with the performance of the Work under this Contract, which records and documents shall be open to review, examination, reproduction or audit by the Owner or its authorized representatives during performance of the Work and until three years after final payment and all other pending matters are closed.

§ 13.7.2 Subcontractor Records. The Contractor shall make it a condition of all subcontracts of all tiers relating to the Work under this Contract that any and all subcontractors of all tiers will keep accurate records of costs incurred and items billed in connection with their Work and that such records shall be open to review, examination, reproduction or audit by the Owner or its authorized representatives during performance of the Work and until three years after final payment under the subcontract and all other pending matters are closed.

§ 13.7.3 Availability. The Contractor shall make available at its business office upon request at all reasonable times the materials described in Sections 2.5 including materials of both the Contractor and its subcontractors, for review, examination, reproduction, or audit for a period of three years after final payment under this Contract and all other pending matters are closed.

§ 13.7.4 Termination. If this Contract is completely or partially terminated, the records relating to the Work terminated shall be made available for three years after any resulting final termination settlement.

§ 13.7.5 Claims and Appeals. Records pertaining to any Claims or appeals submitted pursuant to Sections 4.3, 4.4 and 4.5 or otherwise arising from or relating to the performance of Work under this Contract shall be made available until such appeals are finally concluded. Such documents or records shall be made available to the Owner or its duly authorized representatives within thirty days of the Owner's request.

§ 13.7.6 Subcontracts. The Contractor shall include the provisions of Section 13.8 in all subcontracts so as to be binding on all subcontractors.

§ 13.7.7 Cost or Pricing Data. If the Contractor has submitted cost or pricing data in connection with the pricing of any Change Order or modification to this Contract, unless pricing was based on (1) adequate price competition, (2) established catalog or market price of commercial items sold in substantial quantities to the general public, or (3) prices set by law or regulation, the Owner shall have the right to audit all books, records, documents and other data of the Contractor, including computations and projections, related to negotiating, pricing or performing the Change Order or modification, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

### § 13.8 GRATUITY AND CONFLICT OF INTEREST

§ 13.8.1 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 City and Borough of Juneau or the Using Agency, nor will the Contractor rent or purchase any equipment or materials from any employee or elected official of the City and Borough of Juneau or the Using Agency, or to the best of the Contractor's knowledge, from any agent of any employee or elected official of the City and Borough of Juneau or the Using Agency. 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.

### § 13.9 COST REDUCTION INCENTIVE

§ 13.9.1 At any time within 30 days after the date of the Notice of Award, the Contractor may submit to the Owner in writing, proposals for modifying the drawings, 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.

§ 13.9.2 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 affected 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.

§ 13.9.3 The provisions of this section shall not be construed to require the Owner to consider any cost reduction proposal that 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.

§ 13.9.4 If a cost reduction proposal is similar to a change in the drawings 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.

§ 13.9.5 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.

§ 13.9.6 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.

§ 13.9.7 If the Contractor's cost reduction proposal is accepted in whole or in part, such acceptance will be made by a Contract Change Order that specifically states that the change is executed pursuant to this cost reduction proposal section. Such Change Order shall incorporate the changes in the drawings and specifications that 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.

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

§ 13.9.8 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 may be reduced by an amount equal to the time savings realized.

§ 13.9.9 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.

§ 13.9.10 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.

§ 13.9.11 The Contractor shall bear the costs, if any, to revise all bonds and insurance requirements for the project, to include the cost reduction Work.

### § 13.10 USE OF THE CBJ GRAVEL PIT

§ 13.10.1 The City and Borough of Juneau (CBJ) may make unclassified material available to Contractor, from the CBJ gravel pit, at a rate less than that charged to other customers. Contractor is not required to use material from the CBJ gravel pit and the CBJ makes no guarantee as to the quantity or quality of the available material.

§ 13.10.2 If Contractor proposes to use material from the CBJ gravel pit, Contractor must meet all requirements for use of the CBJ gravel pit as determined by the CBJ Engineering Department, Gravel Pit Management. Additional information is available at (907) 586-0883.

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a subcontractor, sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 an act of government, such as a declaration of national emergency that requires all Work to be stopped; or
- .3 because the Owner has not approved an application for payment and has not notified the Contractor of the reason for withholding approval as provided in Section 9.4, or
- .4 because the Owner has not made payment on an approved application for payment within the time stated in the Contract Documents.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a subcontractor of any tier, or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages.

§ 14.1.4 If the Work is stopped for a period of 90 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract

## SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT

with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

### § 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor:

- .1 persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 accept assignment of subcontracts pursuant to Section 5.4; and
- .3 finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's/Engineer's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner shall be certified by the Owner upon application, and this obligation for payment shall survive termination of the Contract.

### § 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

### § 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or directed by the Owner, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

**SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT**

**§ 14.4.3** In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

**END OF SECTION 00 7000**

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### SGC 1: ADD the following to § 1.7 FEDERAL CONTRACT PROVISIONS

§ 1.7.1 ACCESS TO RECORDS AND REPORTS. (2 CFR § 200.326, 2 CFR § 200.333) The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Sponsor, the Federal Aviation Administration, and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

§ 1.7.2 BUY AMERICAN PREFERENCES. (49 USC § 50101) The Contractor agrees to comply with 49 USC § 50101, which provides that Federal funds may not be obligated unless all steel and manufactured goods used in AIP-funded projects are produced in the United States, unless the FAA has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list. The appropriate Buy American Certification presented with the Bid shall be fulfilled through the execution of the Work.

§ 1.7.3 CIVIL RIGHTS – GENERAL. (49 USC § 47123) The Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

#### § 1.7.4 TITLE VI CLAUSES FOR COMPLIANCE WITH NONDISCRIMINATION REQUIREMENTS. (49 USC § 47123)

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “Contractor”) agrees as follows:

1. Compliance with Regulations: The Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Statutes and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. Non-discrimination: The Contractor, with regard to the Work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the Contractor for Work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the Contractor’s obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. Information and Reports: The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the sponsor of the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. Sanctions for Noncompliance: In the event of a Contractor’s noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
  - a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

- b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. Incorporation of Provisions: The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

§ 1.7.5 TITLE VI LIST OF PERTINENT NONDISCRIMINATION ACTS AND AUTHORITIES. (49 USC § 47123) During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation - Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

§ 1.7.6 DISADVANTAGED BUSINESS ENTERPRISE. (49 CFR part 26) The requirements of 49 CFR part 26 apply to this contract. It is the policy of the Juneau International Airport to practice nondiscrimination based on race, color, sex or national origin in the award or performance of this contract. The Owner encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

- .1 Contract Assurance (§ 26.13) – The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Owner deems appropriate, which may include, but is not limited to:
  - a. Withholding monthly progress payments;
  - b. Assessing sanctions;
  - c. Liquidated damages; and/or
  - d. Disqualifying the Contractor from future bidding as non-responsible.
- .2 Prompt Payment (§26.29) - The prime Contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than 30 days from the receipt of each payment the prime contractor receives from the City and Borough of Juneau. The prime Contractor agrees further to return retainage payments to each subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the City and Borough of Juneau. This clause applies to both DBE and non-DBE subcontractors.

§ 1.7.7 ENERGY CONSERVATION REQUIREMENTS. (2 CFR § 200, Appendix II(H) ) Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201*et seq.*).

§ 1.7.8 FEDERAL FAIR LABOR STANDARDS ACT. (29 U.S.C. § 201, *et seq.*) All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers. The Contractor has full responsibility to monitor compliance to the referenced statute or regulation. The Contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

§ 1.7.9 OCCUPATIONAL SAFETY AND HEALTH ACT. (20 CFR part 1910) All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

§ 1.7.10 VETERAN'S PREFERENCE. (49 USC § 47112(c) In the employment of labor (excluding executive, administrative, and supervisory positions), the Contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 U.S.C. 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

§ 1.7.11 COPELAND ANTI – KICKBACK ACT. (2 CFR § 200, Appendix II(D), 29 CFR Parts 3 & 5) Contractor must comply with the requirements of the Copeland “Anti-Kickback” Act (18 U.S.C. 874 and 40 U.S.C. 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled. The Contractor and each subcontractor must submit to the Owner, a weekly statement on the wages paid to each employee performing on covered Work during the prior week. Owner must report any violations of the Act to the Federal Aviation Administration.

§ 1.7.12 DAVIS-BACON REQUIREMENTS. (2 CFR § 200, Appendix II(D), 29 CFR Part 5)

- .1 Minimum Wages



## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

(i) All laborers and mechanics employed or working upon the site of the Work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing Work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, that the employer's payroll records accurately set forth the time spent in each classification in which Work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the Work in a prominent and accessible place where it can easily be seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The Work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii) (B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

- (iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *provided*, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- 2 Withholding. The Federal Aviation Administration or the sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
- .3 Payrolls and basic records.
- (i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the Work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the Work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- (ii)(A) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (*e.g.*, the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a subcontractor to provide addresses and

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

social security numbers to the prime Contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or Owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i) and that such information is correct and complete;

(2) That each laborer and mechanic (including each helper, apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of Work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

- (iii) The Contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying or transcription by authorized representatives of the sponsor, the Federal Aviation Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and Trainees.

- (i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

- apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (iii) Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR Part 30.
- .5 Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.
- .6 Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.
- .7 Contract Termination: Debarment. A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.
- .8 Compliance With Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- .9 Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
- .10 Certification of Eligibility.
- (i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

§ 1.7.13 DISTRACTED DRIVING. (Executive Order 13513, DOT Order 3902.10) In accordance with Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving" (10/1/2009) and DOT Order 3902.10 "Text Messaging While Driving" (12/30/2009), the FAA encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or sub-grant.

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding \$3,500 and involve driving a motor vehicle in performance of work activities associated with the project.

§ 1.7.14 EQUAL OPPORTUNITY. (2 CFR 200, Appendix II(C), 41 CFR § 60-1.4, 41 CFR § 60-4.3, part 60-4, Executive Order 11246) During the performance of this contract, the contractor agrees as follows:

- .1 The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identify or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- .2 The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- .3 The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- .4 The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- .5 The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- .6 In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- .7 The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *provided, however*, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

§ 1.7.15 EQUAL OPPORTUNITY SPECIFICATIONS. (2 CFR 200, Appendix II(C), 41 CFR § 60-1.4, 41 CFR § 60-4.3, part 60-4, Executive Order 11246)

1. As used in these specifications:

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

- a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
  - b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
  - c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
  - d. "Minority" includes:
    - (1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);
    - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);
    - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
    - (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the Work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.
6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:
- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The Contractor, where

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or female sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such a superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

to ensure that the EEO policy and Contractor's obligations under these specifications are being carried out.  
n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

.9 A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

.10 The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

.11 The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

.12 The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

.13 The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

.14 The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.

.15 Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

§ 1.7.16 PROHIBITION AGAINST SEGREGATED FACILITIES. (41 CFR 60)

JNU TERMINAL RECONSTRUCTION — ELECTRICAL SERVICE

Contract BE 19-217

SUPPLEMENTARY GENERAL  
CONDITIONS  
00 8000 - 11



## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

(a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user restrooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

§ 1.7.17 **PROCUREMENT OF RECOVERED MATERIALS.** (2 CFR § 200.322, 40 CFR part 247) Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use of products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- a) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or,
- b) The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at [www.epa.gov/epawaste/consERVE/tools/cpg/products/](http://www.epa.gov/epawaste/consERVE/tools/cpg/products/).

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the Contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

§ 1.7.18 **TAX DELINQUENCY & FELONY CONVICTIONS.** (2014 Consolidated Appropriations Act, Title IV, Division L, Sections 415 & 416) Bidders must complete two certification statements regarding its current status as it relates to tax delinquency and felony conviction. The certification statements are located in Section 00 4311 of the Bidding Requirements section of the contract documents.

§ 1.7.19 **TERMINATION OF CONTRACT FOR CONVENIENCE.** (2 CFR § 200 Appendix II(B), FAA Advisory Circular 150/5370-10, Section 80-09) The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

- .1 Contractor must immediately discontinue Work as specified in the written notice.
- .2 Terminate all subcontracts to the extent they relate to the Work terminated under the notice.
- .3 Discontinue orders for materials and services except as directed by the written notice.
- .4 Deliver to the Owner all fabricated and partially fabricated parts, completed and partially completed Work, supplies, equipment and materials acquired prior to termination of the Work and as directed in the written notice.
- .5 Complete performance of the Work not terminated by the notice.
- .6 Take action as directed by the Owner to protect and preserve property and Work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

- a) completed and acceptable Work executed in accordance with the contract documents prior to the effective date of termination;

## SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

- b) documented expenses sustained prior to the effective date of termination in performing Work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;
- c) reasonable and substantiated claims, costs and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
- d) reasonable and substantiated expenses to the Contractor directly attributable to Owner's termination action.

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action. The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

§ 1.7.20 TERMINATION OF CONTRACT FOR DEFAULT. Section 80-09 of FAA Advisory Circular 150/5370-10 establishes conditions, rights and remedies associated with Owner termination of this contract due default of the Contractor.

§ 1.7.21 DEBARMENT AND SUSPENSION. (2 CFR part 180 (Subpart C), 2 CFR part 1200, DOT Order 4200.5 The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

- .1 Checking the System for Award Management at website: [www.sam.gov](http://www.sam.gov)
- .2 Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension (Bidder or Offeror), above.
- .3 Inserting a clause or condition in the covered transaction with the lower tier contract. If the FAA later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

§ 1.7.22 CONTRACT WORKHOURS AND SAFETY STANDARDS ACT. (2 CFR § 200, Appendix II(E))

- .1 Overtime Requirements. No Contractor or subcontractor contracting for any part of the contract Work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such Work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- .2 Violation; Liability for Unpaid Wages; Liquidated Damages. In the event of any violation of the clause set forth in paragraph (1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this clause.
- .3 Withholding for Unpaid Wages and Liquidated Damages. The Federal Aviation Administration (FAA) or the Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this clause.
- .4 Subcontractors. The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or

**SECTION 00 8000 - SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT**

lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this clause.

§ 1.7.23 BREACH OF CONTRACT. 2 CFR part 200, Appendix II(A)) Any violation or breach of terms of this contract on the part of the Contractor or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement. Owner will provide Contractor written notice that describes the nature of the breach and corrective actions the Contractor must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner’s notice will identify a specific date by which the Contractor must correct the breach. Owner may proceed with termination of the contract if the Contractor fails to correct the breach by deadline indicated in the Owner’s notice. The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

§ 1.7.24 CLEAN AIR/WATER POLLUTION CONTROL. (2 CFR § 200, Appendix II(G) Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 U.S.C. § 740-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration. Contractor must include this requirement in all subcontracts that exceeds \$150,000.

**SGC 2: Add the following to § 11.1 INSURANCE**

The limits of liability for the insurance required by Article 11 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations.

Insurance requirements apply as follows:

- A. Workers’ Compensation: As in accordance with AS 23.30.045:
  - 1. State: Statutory
  - 2. 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  |
- B. Commercial General Liability (Primary Limits):
  - 1. a. General Policy
 

|  |                |                  |
|--|----------------|------------------|
|  | \$1,000,000.00 | Each Occurrence  |
|  | \$2,000,000.00 | Annual Aggregate |
  - b. Products/Completed Operations
 

|  |                |                  |
|--|----------------|------------------|
|  | \$1,000,000.00 | Each Occurrence  |
|  | \$2,000,000.00 | Annual Aggregate |
  - c. Personal Injury
 

|  |                |                 |
|--|----------------|-----------------|
|  | \$1,000,000.00 | Each Occurrence |
|--|----------------|-----------------|
- C. Comprehensive Automobile Liability: including Owned, Hired, and Non-Owned Vehicles:
  - 1. Combined Single Limit, Bodily Injury and Property Damage
 

|  |                |  |
|--|----------------|--|
|  | \$1,000,000.00 |  |
|--|----------------|--|
- D. Builder’s Risk insurance, as described in Article 11 of the General Conditions is not required for this project.

**SGC 3: Add the following to § 11.2 PERFORMANCE AND PAYMENT BOND**

**§11.2.1 PERFORMANCE AND PAYMENT BOND AMOUNTS**

.1 The Contractor shall furnish Performance and Payment Bonds on forms provided by the CBJ for the penal sums of 100% of the amount of the Bid award. The surety on each bond may be any corporation or partnership authorized to do business in the State of Alaska as an insurer under AS 21.09.

**END OF SECTION 00 8000**

## SECTION 01 1000 - SUMMARY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this section.

#### 1.2 SUMMARY

##### A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.
7. Miscellaneous provisions.

##### B. Related Requirements:

1. Section 01 5000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### 1.3 PROJECT INFORMATION

##### A. Project Identification: JNU Terminal Reconstruction – Electrical Service.

1. Project Location: Juneau International Airport, 1873 Shell Simmons Drive, Juneau, AK
2. Owner's Representative: to be designated by Patricia Wahto, Airport Manager

##### B. Engineer: Haight & Associates, 526 Main Street, Juneau, AK 99801, (907) 586-9788

##### C. Project team members: The engineer is collaborating with the following design professionals who have prepared designated portions of the Contract Documents:

1. McCool Carlson Green, 421 West 1<sup>st</sup> Ave, Ste 300, Anchorage, Alaska 99501, (907) 563-8474
2. PDC Engineers, 1028 Aurora Drive, Fairbanks, AK 99709, (907) 452-1414

#### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

##### A. The Work of project is defined by the Contract Documents and generally consists of the following:

1. Construction of new electrical service, generator, and associated electrical systems for JNU Airport terminal.

##### B. Type of Contract:

1. Project will be constructed under a single prime contract.

#### 1.5 ACCESS TO SITE

##### A. General: Contractor shall have limited use of Project site for construction operations as indicated on drawings by the contract limits and as indicated by requirements of this section.

##### B. Use of Site: Limit use of Project site to areas indicated. Do not disturb portions of project site beyond areas in which the Work is indicated.

1. Limits of the Site: Limit use of the site for staging, storage, handling of debris and construction materials, deliveries, etc. to the areas indicated on the drawings.
2. Parking: Employee private vehicles are to be parked in specified areas only.
3. Driveways, Gates, and Building Entrances: Keep driveways, gates and entrances serving premises clear and available to Owner's employees, Airport users, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
  - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

##### C. Security: Maintain airport security requirements (Section 01 5200) throughout the Work.

## SECTION 01 1000 - SUMMARY

### 1.6 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy or utilize areas of the terminal building and adjacent exterior areas of the project site throughout the construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations.
  - 1. Maintain access to existing roadways, walkways and other adjacent occupied or used facilities. Do not close or obstruct walkways or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
  - 2. Notify Owner not less than 48 hours in advance of activities that will affect Owner's operations.
  - 3. Provide a schedule of all necessary service shut-offs to the Owner at least 7 days ahead of the first needed outage. Update the schedule throughout the progress of the Work.

### 1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
  - 2. Work on site shall not commence until Owner has provided written approval of the Contractor's Safety Plan Compliance Document in accordance with FAA AC 150/5370-2G.
- B. On-Site Work Hours:
  - 1. There are no limits to work hours within applicable noise ordinances of the City and Borough of Juneau.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
  - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. No Smoking and Controlled Substances: Use of tobacco products and controlled substances within the project area is not permitted.
- E. Employee Identification: Provide identification tags for Contractor personnel working in secure areas of Project site. Require such personnel to use identification tags at all times. See Section 01 5200, Security for additional requirements.
- F. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working in secure areas of project site.

### 1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 Requirements: Requirements of Sections in Division 01 apply to the Work of all sections in the specifications.
- C. Drawing Coordination: Requirements for materials and products identified on drawings are described in detail in the specifications. One or more of the following are used on drawings to identify materials and products:

## **SECTION 01 1000 - SUMMARY**

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 01 1000**

## SECTION 01 2500 - SUBSTITUTION PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
  - 1. Section 01 6000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

#### 1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other project requirements but may offer advantage to Contractor or Owner.

#### 1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit requests in a format required by the Owner. Identify product, fabrication, or installation method to be replaced. Include Specification Section number and title and drawing numbers and titles.
  - 1. Substitution Request Form: Use form approved by the Owner.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - e. Samples, where applicable or requested.
    - f. Certificates and qualification data, where applicable or requested.
    - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - i. Research reports evidencing compliance with building code in effect for project.
    - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall contract time. If specified product or method of construction cannot be provided within the contract time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
    - k. Cost information, including a proposal of change, if any, in the contract sum.
    - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.

## SECTION 01 2500 - SUBSTITUTION PROCEDURES

- m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
  - 3. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Owner will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
    - a. Forms of Acceptance: Construction Change Directive and Change Order in accordance with the General Conditions.
    - b. Use product specified if Owner does not issue a decision on use of a proposed substitution within time allocated.
- 1.5 QUALITY ASSURANCE
- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.
- 1.6 PROCEDURES
- A. Coordination: Revise or adjust affected Work as necessary to integrate work of the approved substitutions.

### PART 2 - PRODUCTS

#### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Substitution request is fully documented and properly submitted.
    - c. Requested substitution will not adversely affect Contractor's construction schedule.
    - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - e. Requested substitution is compatible with other portions of the Work.
    - f. Requested substitution has been coordinated with other portions of the Work.
    - g. Requested substitution provides specified warranty.
    - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Submit requests for substitution not later than 15 days following the Notice to Proceed.

### PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2500



## SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  1. General coordination procedures.
  2. RFIs.
  3. ASIs.
  4. Project meetings.

#### 1.3 DEFINITIONS

- A. RFI: Request for Information. Request from Contractor seeking information required by, or clarifications of the Contract Documents.
- B. ASI: Architect's Supplemental Information. Issued by Owner or Architect to provide information or clarification of the Contract Documents.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Key Personnel Names: Prior to the Pre-Construction conference, submit a list of key personnel assignments, including superintendent and other personnel in attendance at project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to project.
  1. Post copies of list in project meeting room, in temporary field office and in prominent location in built facility. Keep list current at all times.

#### 1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different sections of the specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different sections that depend on each other for proper installation, connection, and operation.
  1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components before or after its own installation.
  2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to Owner and each party involved, outlining special procedures required for coordination. Include required notices, reports, and list of attendees at meetings.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to:
  1. Preparation of Contractor's construction schedule.
  2. Preparation of the schedule of values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Preinstallation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.

## SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

### 1.6 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified by the Owner.
  - 1. Owner will return without response those RFIs submitted to Architect/Engineer by other entities controlled by Contractor.
  - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's Work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation including the specification section, drawing number and detail references, and field dimensions and conditions, as appropriate. Provide Contractor's suggested resolution.
- C. Owner's Action: Owner and Architect/Engineer (as needed) will review each RFI, determine action required, and respond. Allow seven working days for Owner's response for each RFI.
  - 1. Owner's action may include a request for additional information, in which case the time for response will date from time of receipt by Owner of additional information.
  - 2. Action on RFIs that may result in a change to the contract time or the contract sum may be eligible for Contractor to submit a cost/time proposal.
- D. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number and submit to Owner periodically or as requested by Owner.
- E. On receipt of Owner's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Owner within seven days if Contractor disagrees with response.

### 1.7 ARCHITECT'S SUPPLEMENTAL INFORMATION (ASI)

- A. General: Immediately on discovery of the need to provide additional information, clarification, or interpretation of the Contract Documents, Architect/Engineer shall prepare and submit an ASI to the Contractor in the form specified by the Owner.
  - 1. Contractor shall coordinate and integrate ASIs promptly so as to avoid delays in the Work.
  - 2. If the Contractor believes that the ASI may result in a change to the contract time or the contract sum, it must immediately indicate so to the Owner. Owner will evaluate, and may request that the Contractor submit a cost/time proposal.

### 1.8 PROJECT MEETINGS

- A. General: Attend and participate in project meetings at project site unless otherwise indicated.
  - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
  - 2. Agenda: Owner will prepare and distribute the meeting agenda. Contractor may request agenda items to the Owner.
  - 3. Minutes: Owner record significant discussions and agreements achieved. Distribute the meeting minutes to applicable parties within three days of receipt the meeting minutes.
- B. Preconstruction Conference: Owner will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Contractor, but no later than 15 days after execution of the Agreement.
  - 1. Attendees: Authorized representatives of Owner, Architect/Engineer and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Security and safety, including first aid.
    - b. Responsibilities and personnel assignments.
    - c. Tentative construction schedule including critical work sequencing and long lead items.
    - d. Designation of key personnel and their duties, and lines of communication.

## SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

- e. Procedures for processing field decisions and Change Orders.
  - f. Procedures for RFIs and ASIs.
  - g. Procedures for testing and inspecting.
  - h. Procedures for processing Applications for Payment.
  - i. Submittal procedures.
  - j. Preparation of Record Documents.
  - k. Use of the premises including office, work areas, and storage areas.
  - l. Work restrictions and working hours.
  - m. Owner's occupancy requirements.
  - n. Responsibility for temporary facilities and controls, including moisture control.
  - o. Procedures for disruptions and shutdowns.
  - p. Construction waste management and recycling.
  - q. Parking availability.
  - r. Equipment deliveries and priorities.
  - s. Progress cleaning.
3. Minutes: Owner will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at project site before each construction activity when required by other sections and when required for coordination with other construction.
- 1. Attendees: Owner, Architect/Engineer, Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Contract Documents.
    - b. Related RFIs and ASIs.
    - c. Related Change Orders.
    - d. Deliveries.
    - e. Submittals.
    - f. Review of mockups.
    - g. Possible conflicts.
    - h. Time schedules.
    - i. Weather limitations.
    - j. Manufacturer's written instructions including warranty requirements.
    - k. Compatibility of materials and components.
    - l. Acceptability of substrates.
    - m. Temporary facilities and controls.
    - n. Space and access limitations.
    - o. Regulations of authorities having jurisdiction.
    - p. Testing and inspecting requirements.
    - q. Installation procedures.
    - r. Coordination with other work.
    - s. Required performance results.
    - t. Protection of adjacent work.
    - u. Protection of construction and personnel.
  - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Reporting: Distribute minutes of the meeting to parties in attendance and/or requiring information.
  - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than seven days prior to the scheduled date of Substantial Completion.
- 1. Conduct the conference to review requirements and responsibilities related to Project closeout.

## SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

2. Attendees: Authorized representatives of Owner, Architect/Engineer and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect Project closeout, including the following:
    - a. Preparation of Record Documents.
    - b. Procedures required prior to inspections leading up to Substantial Completion and final inspection for acceptance.
    - c. Submittal of written warranties.
    - d. Requirements for preparing operations and maintenance data.
    - e. Requirements for delivery of material samples, attic stock, and spare parts.
    - f. Requirements for demonstration and training.
    - g. Preparation of Contractor's punch list.
    - h. Procedures for processing Applications for final payment.
    - i. Responsibility for removing temporary facilities and controls.
  4. Minutes: Owner will record and distribute meeting minutes.
- E. Progress Meetings: Owner will conduct progress meetings at regular intervals.
1. Attendees: In addition to representatives of Owner, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings.
  2. Agenda: Review and correct/approve minutes of previous progress meeting. Review other items of significance that could affect progress.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the contract time.
      - 1) Review schedule for activities expected to be accomplished during the coming two week period.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Coordination and interface requirements.
      - 2) Status of submittals.
      - 3) Deliveries and site utilization.
      - 4) Off-site fabrication.
      - 5) Airport security and safety issues.
      - 6) Progress cleaning.
      - 7) Quality and work standards.
      - 8) Status of correction of deficient items.
      - 9) Field observations.
      - 10) Status of RFIs/ASIs
      - 11) Status of Proposal Requests.
      - 12) Status of Change Orders.
      - 13) Pending claims and disputes.
  3. Minutes: Owner will record and distribute the meeting minutes to each party present and to parties requiring information.
    - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 01 3100**

## SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Start-up construction schedule.
  - 2. Contractor's construction schedule.
  - 3. Construction reports.
- B. Related Sections:
  - 1. General Conditions and Supplementary General Conditions of the Contract.
  - 2. Division 1 and technical specification sections, as applicable.

#### 1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of the project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring project resource available to both parties as needed to meet schedule milestones and Contract completion date.
  - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
  - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned project completion date.
- F. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit schedules in electronic format using Microsoft Project or other software approved by the Owner.
- B. Start-up construction schedule.
  - 1. Approval of cost-loaded start-up construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Start-up Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

## SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

- D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
  - E. Construction Reports: Submit at monthly intervals using Microsoft Word for narrative and Microsoft Project for schedules, or other format approved by the Owner.
  - F. Special Reports: Submit at time of unusual event in format approved by the Owner.
- 1.5 COORDINATION
- A. Coordinate Contractor's construction schedule with the schedule of values, subcontracts, submittal schedule, progress reports, payment requests, and other schedules and reports.
    - 1. Secure time commitments for performing critical elements of the Work from entities involved; monitor and maintain commitments throughout the Work.
    - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

### PART 2 - PRODUCTS

- 2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL
- A. Time Frame: Extend schedule from Notice to Proceed to the date of final completion.
  - B. Activities: Treat each phase or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
    - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Owner.
    - 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 30 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to shop drawing development, submittals, approvals, purchasing, fabrication, and delivery.
    - 3. Submittal Review Time: Include review and resubmittal times.
    - 4. Startup and Testing Time: Include not less than 5 days for startup and testing.
    - 5. Substantial Completion: Indicate completion in at least 5 days in advance of date established for Substantial Completion, and allow time for Owner's administrative procedures necessary for certification of Substantial Completion.
    - 6. Punch List and Final Completion: Include not more than 30 days for punch list and final completion (combined).
  - C. Milestones: Include milestones indicated in the contract documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completions, and Final Completion.
  - D. Recovery Schedule: When periodic update indicates the Work is 5 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and indicate date by which recovery will be accomplished.
- 2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)
- A. Gantt-Chart Schedule: Submit a preliminary Gantt-Chart Schedule at the Preconstruction conference, and a subsequent comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's construction schedule within 7 days of the Notice to Proceed that includes materials or components that require more than 30 days from order to be received on site.
- 2.3 REPORTS
- A. Monthly Construction Reports: Prepare a monthly construction report recording the following information concerning events at project site:
    - 1. List of subcontractors at project site.

## **SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION**

2. Approximate count of personnel at project site, recorded daily.
3. Equipment at project site.
4. Material deliveries.
5. Accidents and emergency procedures initiated.
6. Meetings and significant decisions.
7. Unusual events such as stoppages, delays, shortages, and losses.
8. Orders and requests of authorities having jurisdiction.
9. Request for Proposals accepted and implemented.
10. Construction Change Directives received and implemented.
11. Services connected and disconnected.
12. Equipment or system tests and startups.

### **PART 3 - EXECUTION**

#### **3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE**

- A. Contractor's Construction Schedule Updating: At monthly intervals in conjunction with Request for Payment, or at other times as requested by the Owner, update schedule to reflect actual construction progress and activities.
  1. Revise schedule immediately after each progress meeting or other activity where revisions have been recognized or made.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect/Engineer, Owner, sub-contractors, and other parties identified by Contractor with schedule responsibility.
  1. Post copies in Project meeting room.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

**END OF SECTION 01 3200**

## **SECTION 01 3250 - SCHEDULE OF VALUES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 PREPARATION OF SCHEDULE OF VALUES**

- A. The Schedule of Values shall be developed in close association with the Construction Schedule activities and logic.
  - 1. The Contractor shall submit a preliminary Schedule of Values for the major components of the Work prior to the Preconstruction Conference. The listing shall include, at a minimum, the proposed value for the major Work components within each phase of the Work.
  - 2. The Contractor and Owner shall meet and jointly review the preliminary Schedule of Values and make any adjustments in value allocations necessary, if in the opinion of the Owner, allocation adjustments are necessary to establish fair and reasonable allocation of values for the major Work components. Front end loading will not be permitted. The Owner may require inclusion of other major Work components not included in the above listing, if, in the opinion of the Owner, such additional components are appropriate. This review and any necessary revisions shall be completed prior to the Pre-Construction Conference.
  - 3. Once agreed upon, the Schedule of Values shall become the basis for Progress Payments throughout the project. The Progress Payments shall be submitted on a form acceptable to the Owner.

#### **1.3 CHANGES TO THE SCHEDULE OF VALUES**

- 1. The Contractor and Owner may agree to make adjustments to the original Schedule of Values because of inequities discovered in the original detailed Schedule of Values or because of additional Work added to the contract via Change Order.
- 2. The Schedule of Values shall be updated with each request for Payment.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION (Not Used)**

**END OF SECTION 01 3250**



## SECTION 01 3300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 specification sections, apply to this Section.
- B. Submittal requirements may be included in technical specification sections.

#### 1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting shop drawings, product data, samples, and other submittals.

#### 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect/Engineer's responsive action. Action submittals are those submittals indicated in individual specification sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect/Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual specification sections as "informational submittals."

#### 1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect/Engineer and additional time for handling and reviewing submittals required by those corrections.
  - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
  - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 30 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
  - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
  - 4. Submit revised submittal schedule to reflect submittal status and timing.

#### 1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Digital Data Files: Owner will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing shop drawings.
  - 1. Architect/Engineer makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Submit all submittal items required for each specification section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  - 3. Submit action submittals and informational submittals required by the same specification section as separate packages under separate transmittals.
  - 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

## SECTION 01 3300 - SUBMITTAL PROCEDURES

- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Electronic Submittals: Identify and incorporate the following information in each submittal file:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect/Engineer.
  4. Transmittal Form for Electronic Submittals: Use form acceptable to Owner, containing the following information:
    - a. Project name.
    - b. Date of submission.
    - c. Name of Contractor.
    - d. Names of subcontractor, manufacturer, and supplier.
    - e. Submittal purpose and description.
    - f. Specification section number and title.
    - g. Drawing number and detail references, as appropriate.
    - h. Location(s) where product is to be installed, as appropriate.
    - i. Related physical samples submitted directly.
    - j. Indication of full or partial submittal.
    - k. Transmittal number.
    - l. Other necessary identification.
- E. Options: Identify options requiring selection by Owner.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect/Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  3. Resubmit submittals until they are marked with approval notation from Architect/Engineer's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on project site. Use only final action submittals that are marked with approval notation from Architect/Engineer's action stamp.

## SECTION 01 3300 - SUBMITTAL PROCEDURES

### PART 2 - PRODUCTS

#### 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual specification sections. Types of submittals are indicated in individual specification sections.
  - 1. Submit electronic submittals via email as PDF electronic files.
    - a. Owner will return annotated file. Annotate and retain one copy of file as an electronic project record document file.
  
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as shop drawings, not as product data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's product specifications.
    - b. Color charts.
    - c. Statement of compliance with specified referenced standards.
    - d. Testing by recognized testing agency, with labels and seals noted.
    - e. Notation of coordination requirements.
    - f. Availability and delivery time information.
  - 4. Submit Product Data before or concurrent with samples.
  
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
  - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit shop drawings on sheets at least 8.5x11.
  - 3. Submit shop drawings in PDF electronic file.
  
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  - 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  - 2. Identification: Attach label on unexposed side of samples that includes the following:
    - a. Generic description of sample.
    - b. Product name and name of manufacturer.
    - c. Number and title of applicable specification section.
    - d. Specification paragraph number and generic name of each item.
  
- E. Application for Payment and Schedule of Values: Comply with requirements specified in the General Conditions and other Division 1 sections.
  
- F. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 7700 "Closeout Procedures."

## SECTION 01 3300 - SUBMITTAL PROCEDURES

### PART 3 - EXECUTION

#### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 7700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include project name and location, submittal number, specification section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

#### 3.2 OWNER'S ACTION

- A. Action Submittals: Owner will review each submittal, make marks to indicate corrections or revisions required, and return it. Owner may forward submittal to Architect/Engineer who will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- C. Submittals not required by the Contract Documents may be returned by the Owner without action.

**END OF SECTION 01 3300**

## SECTION 01 4000 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 specification sections, apply to this section.
- B. Divisions 2 through 41 for specific test and inspection requirements.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the contract document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the sections that specify those activities. Requirements in those sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the contract document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Owner or authorities having jurisdiction are not limited by provisions of this section.

#### 1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by the Owner.
- C. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- D. Product Testing: Tests and inspections that are performed by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee or subcontractor to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.
- I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this project; being

## SECTION 01 4000 - QUALITY REQUIREMENTS

familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

### 1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Owner for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. Refer uncertainties to Owner for a decision before proceeding.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and -control activities and responsibilities.
- B. Contractor's Quality-Control Manager Qualifications: For supervisory personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the applicable systems or components.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications acceptable to the Owner.

### 1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: The Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.
- B. Submit quality-control plan in a form acceptable to the Owner within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule. The Contractor shall discuss and present, at the preconstruction conference, its understanding of the quality control requirements.
- C. In accordance with FAA General Provisions, paving projects over \$500,000 in value shall have a Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Contractor, subcontractors, testing laboratories, and Owner's representative at start of construction. The workshop shall address QC and QA requirements of the project specifications. The Contractor shall coordinate with the Owner and the Engineer on time and location of the QC/QA workshop.
- D. Quality-Control Program Administrator: The Contractor shall appoint a Quality Control Program Administrator who shall have a minimum of five (5) years of experience in airport construction and shall have had prior quality control experience on a project of comparable size and scope as the contract. The Program Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract documents and technical specifications. The Program Administrator shall report directly to a responsible officer of the construction firm.

## SECTION 01 4000 - QUALITY REQUIREMENTS

- E. Quality-Control Technicians: A sufficient number of quality control technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be registered engineers, registered architects, engineering/construction management technicians, or experienced craftsman with qualifications in the appropriate trade and field or work, and shall have a minimum of two years of experience in their area of expertise as quality control technicians. The quality control technicians shall report directly to the Program Administrator.
- F. Testing and Inspection: Include in quality-control plan a comprehensive schedule of Work requiring testing or inspection, including the following:
  - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
  - 2. Special inspections required by authorities having jurisdiction and as indicated by the Owner.
  - 3. Owner-performed tests and inspections indicated in the contract documents.
- G. Continuous Inspection of Work quality: Describe process for continuous inspection during construction to identify and correct deficiencies in work quality in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of quality established by contract requirements.
- H. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Owner has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

### 1.7 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections in a format acceptable to the Owner. Include the following:
  - 1. Date of issue.
  - 2. Name, email address, and telephone number of testing agency and/or persons making tests and inspections.
  - 3. Dates and locations of samples and tests or inspections.
  - 4. Description of the Work and test and inspection method.
  - 5. Identification of product and specification section.
  - 6. Complete test or inspection data, results, and interpretation thereof.
  - 7. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 8. Name and signature of laboratory inspector.
  - 9. Recommendations on retesting and re-inspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other sections in a format acceptable to the Owner. Include the following:
  - 1. Name, address, email, and telephone number of technical representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Statement that products at project site comply with requirements.
  - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 6. Statement whether conditions, products, and installation will affect warranty.
  - 7. Other required items indicated in individual specification sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections in a format acceptable to the Owner. Include the following:
  - 1. Name, address, email, and telephone number of factory-authorized service representative making report.

## SECTION 01 4000 - QUALITY REQUIREMENTS

2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual specification sections.

- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

### 1.8 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual specification sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project for at least five years and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project for at least five years and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project for at least five years and whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where project is located and who possesses at least five years' experience in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this project in material, design, and extent.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated for a period of at least five years prior to the project.
- G. Manufacturer's Technical Representative and Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products and has at least five years' experience in projects similar in material, design, and extent to those indicated for this project.

### 1.9 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency or inspector to perform these services.
1. Owner will furnish Contractor with names, addresses, email, and telephone numbers of testing agencies or inspectors engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the contract documents, or that the Contractor requested to proceed on a partial basis to accommodate construction sequencing will be charged to Contractor, and the contract sum will be adjusted by Change Order.



## SECTION 01 4000 - QUALITY REQUIREMENTS

- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
  - 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction.
  - 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
  - 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  - 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report of each quality-control service.
  - 5. Testing and inspecting requested by Contractor and not required by the contract documents are Contractor's responsibility.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections, and submittal written reports.
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

### 1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as described in the contract documents, and as follows:
  - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
  - 2. Notifying Owner and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  - 3. Submitting a written report of each test, inspection, and similar quality-control service to Owner with copy to Contractor and to authorities having jurisdiction, when applicable.
  - 4. Submitting a final report of special tests and inspections at Substantial Completion that includes a list of unresolved deficiencies.
  - 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the contract documents.
  - 6. Retesting and reinspecting corrected work.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 FREQUENCY

- A. Contractor shall implement the Quality Control Program throughout the Work. Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of work.
- B. During field operations, quality control test results and periodic inspections shall be used to ensure the quality of all materials and work quality. All equipment used in placing, finishing, assembling, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified.

## SECTION 01 4000 - QUALITY REQUIREMENTS

### 3.2 TEST AND INSPECTION LOG

- A. Prepare a record of tests and daily inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Owner.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Owner's reference during normal working hours.

### 3.3 DOCUMENTATION

- A. Daily Inspection Reports. Each of the Contractor's quality control technicians shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following:
  - 1. Technical specification item number and description
  - 2. Compliance with approved submittals
  - 3. Proper storage of materials and equipment
  - 4. Proper operation of all equipment
  - 5. Adherence to plans and technical specifications
  - 6. Review of quality control tests
  - 7. Safety inspection, including Airport safety/security.

The daily inspection reports shall identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed. The daily inspection reports shall be signed by the responsible quality control technician and the Program Administrator. The Owner shall be provided at least one copy of each daily inspection report on the work day following the day of record.

### 3.4 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes in accordance with the contract document requirements for cutting and patching.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

**END OF SECTION 01 4000**

## **SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes requirements for temporary utilities, support facilities, security, and protection facilities.
- B. Related Requirements:
  - 1. Section 01 5200 "Security"

#### **1.3 USE CHARGES**

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the contract sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to Owner's construction forces, Architect/Engineer, testing agencies, and authorities having jurisdiction.

- B. Water from Existing System: Water from Owner's existing water system is available for Contractor's use without metering and without payment of use charges, as long as Contractor demonstrates responsible use, coordinates closely with Owner, and uses conservation measures. Provide connections and extensions of services as required for construction operations and in compliance with the authorities having jurisdiction.

Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges, as long as Contractor demonstrates responsible use, coordinates closely with Owner, and uses conservation measures. Contractor shall provide temporary connections of service as required for construction operations and in compliance with the authorities having jurisdiction.

- C. Toilets: Contractor's construction personnel may use airport terminal toilet facilities without payment of use charges, as long as Contractor demonstrates responsible use, including cleaning.

#### **1.4 INFORMATIONAL SUBMITTALS**

- A. Site Plan: Show temporary facilities, utility hookups, and staging areas.
- B. Erosion and Sedimentation-Control Plan: Show compliance with requirements of JNU Airport's multi-sector permit for storm water discharge for Work that affects existing surface drainage.
- C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
  - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
  - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.

#### **1.5 QUALITY ASSURANCE**

- A. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits, except that Owner will obtain and pay for the necessary building permit.
- B. Accessible Temporary Egress: Comply with applicable codes and airport regulations to maintain access to building and vehicular routes around the building.

#### **1.6 PROJECT CONDITIONS**

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

## SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

### PART 2 - PRODUCTS

#### 2.1 TEMPORARY FACILITIES

- A. Field Office: Contractor may establish a mobile field office in the designated project staging and storage area on airport property, or in another location agreed to by the Owner.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

#### 2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

- A. Obtain written approval of temporary facility locations by the Owner and locate where they will serve project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Promptly remove facilities when they are no longer needed.

#### 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary services or connect to existing services.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
  - 2. At Substantial Completion, remove or restore all temporary facilities to condition existing before initial use.
- B. Electric Power Service: Connect temporary services in accordance with applicable code and utility company regulations.
- C. Lighting: Utilize existing lighting to provide adequate illumination for construction operations, observations, inspections, and traffic conditions.
  - 1. Maintain conservation practices to shut off lighting when work is not underway

#### 3.3 SUPPORT FACILITIES INSTALLATION

- A. Temporary Use of Permanent Roads and Paved Areas: Contractor may utilize existing roads and paved areas, within construction limits indicated, as necessary for construction operations and in accordance with Airport safety and security regulations.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
  - 3. Maintain established vehicular and aircraft traffic routes in and around the Work area.
- C. Parking: Use designated parking areas for construction personnel.
- D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain project site, excavations, and construction free of water.
  - 1. Dispose of rainwater in a lawful manner that will not result in flooding project or adjoining properties or endanger permanent Work or temporary facilities.
  - 2. Juneau International Airport holds a multi-sector permit issued by the Alaska Department of Environmental Conservation for storm water discharge. Contractor shall comply with all applicable permit conditions through completion of the Work.

## SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

- E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Airport safety requirements regarding Flying Object Debris (FOD).
- 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
  - B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
  - C. Security Enclosure: Install temporary enclosure around partially completed areas of construction to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
  - D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
  - E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
    - 1. Prohibit smoking in construction areas.
    - 2. Supervise welding operations and similar sources of fire ignition according to requirements of authorities having jurisdiction.
    - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures.
- 3.5 MOISTURE AND MOLD CONTROL
- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished Work. Document visible signs of mold that may appear during construction.
  - B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
    - 1. Protect porous materials from water damage.
    - 2. Protect stored and installed material from flowing or standing water.
  - C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
    - 1. Discard or replace water-damaged material.
    - 2. Do not install material that is wet.
    - 3. Discard, replace, or clean stored or installed material that begins to grow mold.
- 3.6 OPERATION, TERMINATION, AND REMOVAL
- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
  - B. Maintenance: Maintain facilities in good operating condition until removal.

## **SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS**

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor.
  2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period.

**END OF SECTION 01 5000**

## SECTION 01 5200 - SECURITY AND SAFETY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this section.

#### 1.2 SECURITY PROGRAM

- A. The Contractor shall:
  - 1. Ensure that all personnel working on-site are Security Identification Display Area (SIDA) badged or escorted in accordance with JNU badging policies.
  - 2. Protect Work area and existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
  - 3. Prepare a Safety Plan Compliance Document per FAA Advisory Circular 150/5370(G).
  - 4. Initiate a security program that has been approved by Owner prior to start of Work that includes installation of all temporary fencing, gates, and access controls to meet Transportation Security Administration (TSA) and JNU Security requirements.
  - 5. Maintain security program throughout construction period until Owner's occupancy.
- B. All security changes necessary for construction activities to the perimeter gates, doors, and/or fence must be requested 60 days in advance. Temporary changes (changes less than 30 days) may be requested within 72 hours.
- C. Vehicles, equipment, and stockpiled material may not be parked or staged within 6 feet of the outside perimeter fence, gate, and/or doorfaces, or within 3 feet of the inside perimeter fence, gate, and/or door faces.

#### 1.3 SECURE AREAS AND ACCESS

- A. The Contractor shall:
  - 1. Provide a secure Work area in accordance with the drawings and other provisions relating to Airport Security.
  - 2. Restrict entry of persons and vehicles into the project site and the airport restricted area (airport property inside the fence).
  - 3. Allow entry only to authorized persons with proper identification to access the area of Work.
  - 4. Construct all temporary fencing, gates and controls in accordance with applicable security requirements.
  - 5. Utilize Gate K or passage door between Baggage Claim and Baggage Handling in accordance with JNU security to access the Work site.
- B. Owner shall control entrance of persons and vehicles to the Work area that are related to Owner's operations.
- C. The Contractor shall be responsible for any fines levied against the Airport by the TSA resulting from actions of the Contractor, or those for whom the Contractor is responsible, that cause a breach of security in the area of construction, to include any points of entry into the Air Operations Area (AOA), also known as the restricted area of the Airport, that are utilized for the construction project. Failure to maintain security will also include failure to abide by the Airport badge identification program or other requirements pertaining to the security of the Airport.

#### 1.4 SECURITY IDENTIFICATION DISPLAY AREA (SIDA) BADGE REQUIREMENTS

- A. All workers for this project must obtain SIDA badges, except that Escort Authority may be authorized by the Owner for no more than three specific badge holders when the Work is limited in duration. In such cases, the badge holder is fully responsible for the escorted worker.
- B. Only JNU identification badge, law enforcement credentials, federal inspector credentials and airline crew credentials are recognized as authority to enter or be present in the restricted area of the airport without escort.

## SECTION 01 5200 - SECURITY AND SAFETY

- C. Workers shall stay within the designated Work area and access route(s) to such area at all times.

### 1.5 AUTHORIZED SIGNATORY (AS)

- A. When multiple workers from the same company require badges to perform the Work, a designated individual from the company shall be named the Authorized Signatory (AS) of the company. The AS shall identify the workers from its company that may apply for badges. The AS shall coordinate the badges of all workers of their company and ensure that badges remain current during the course of the Work, and that all badges are returned to the Airport when the employee is no longer working on the project. The following information shall be provided on company letterhead or other approved form to request AS:
  - 1. Name, telephone number, and email address of the AS.
  - 2. The badge security level being applied for.
  - 3. The AS may request that up to 3 individuals be authorized for Escort Authority. The names, telephone numbers, and email addresses of such individuals must be provided.
- B. If the Contractor has subcontractors performing Work, it shall specify the subcontracting companies on the AS letter and may serve as the AS for named subcontractors, or may identify subcontractors that will request AS for their company. The following information shall be provided on company letterhead or other approved form to request AS:
  - 1. Name, telephone number, and email address of each subcontractor AS.
  - 2. The badge security level being applied for.
  - 3. Each subcontractor AS may request that up to 2 individuals be authorized for Escort Authority. The names, telephone numbers, and email addresses of such individuals must be provided.
- C. Prior to starting the badging process, the AS must complete Authorized Signatory training (materials are located on the JNU Badging Office website), and provide evidence of completed training to the Badging Office. The AS must complete the badging process for him/herself for the highest security level badge requested in the AS letter before being allowed to sign badge applications for individuals for whom they have accepted AS responsibility.
- D. The AS is responsible for collecting and returning to the Airport all outstanding badges no longer used for the construction project including those badges carried by persons no longer working on the project. The Airport shall issue receipt of returned badges.
- E. When a badge holder terminates employment or completes Work, the AS shall immediately notify the Airport so that the badge can be deactivated. If termination is outside of the normal working hours, the AS shall immediately notify Airport Police at 586-0899 or 321-3802 of the termination.
- F. A non-refundable fine of \$300.00 will be levied against the Contractor for each badge not returned within five (5) days of badge expiration, employee termination or completion of the project, whichever is sooner.
- G. Should a badge holder lose his/her badge, he/she shall immediately notify the AS who shall then immediately notify the Airport to deactivate the badge. If lost after normal business hours, the lost badge shall be reported to Airport Police.
- H. If the lost badge is found after reporting the loss, the AS must notify the Airport to request reactivation of the badge.
- I. If the lost badge needs to be replaced, the badge holder must contact the badging office to complete the replacement badge form and pay the lost badge fee.

### 1.6 GENERAL BADGING REQUIREMENTS

- A. The Airport badge application is an agreement between the Airport and the badge holder. The badge application documents, including study materials, state applicable rules and procedures that the badge holder must comply with while in the restricted and secure areas of the airport.
- B. Any falsification may result in revocation of the badge for the individual in question, and any fines incurred from the violations will be passed to the responsible party.



## SECTION 01 5200 - SECURITY AND SAFETY

- C. Requirements for each badge applicant include completing an Identification Badge/Media Application, photographic proof of identity, either proof of US citizenship or work authorization, completion of a Federal Security Threat Assessment, completion of a fingerprint criminal history record check, and Restricted Area training. Ramp driver training may also be required if ramp driving is necessary to perform the Work. Schedule a minimum of two weeks for the clearance process; the clearance process may exceed two weeks.
- D. When JNU Badging office receives notification that clearance has been obtained, the applicant will be notified to schedule an appointment to pick up their badge. The applicant must indicate the specific JNU construction project and applicable AS, and meet all other requirements before receiving a badge.
- E. Initial badging and recurrent fees are waived for this project.
- F. Badge holders are subject to random checks for compliance with badging regulations.
- G. Final payment to the Contractor will not be authorized until all badges are returned to the Airport.

### 1.7 VEHICLES IN THE AIRPORT OPERATIONS AREA (AOA)

- A. JNU Airport has established procedures to authorize or deny access to the AOA and to identify and control vehicles while within the AOA. Access is authorized through an Airport Identification Badge.
- B. Contractor vehicles are only authorized in designated areas where Work is being performed and on the access routes to and from the Work area, during contract working hours only.
- C. A Contractor vehicle is authorized in the AOA only when traveling within specific authorized areas, properly displaying a safety flag, and with all occupants having required Airport Identification Badges.
- D. When a vehicle must travel over any portion of an area used by aircraft moving under its own power, the 135-AOA ramp, or SIDA ramps, it will be properly identified by company name/logo on both sides of the vehicle and have an amber colored rotating beacon.
- E. AOA Ingress/egress shall be scheduled with the Airport and may be limited to specific operation times.

### 1.8 PERSONNEL REQUIREMENTS

- A. Contractor's personnel shall park personal vehicles in the Airport employee lot and shall walk to the project site. Access to the employee lot will be authorized by Airport Identification Badges.
- B. Tools shall be used and stored in accordance with Airport security rules in restricted areas.

### 1.7 SAFETY PLAN

- A. The Airport will prepare a Construction Safety and Phasing Plan (CSPP) in accordance with FAA Advisory Circular 150/5370-G.
- B. The Contractor shall prepare a written Safety Plan Compliance Document (SPCD) in accordance with FAA Advisory Circular 150/5370-G that details how the Contractor will comply with the Airport CSPP for Work in the SIDA. The Contractor may supplement the Airport CSPP with specific construction plan information to produce their SPCD. The Safety Plan shall address the following:
  - 1. Maintaining safe airport operations in the vicinity of the Work, including separating pedestrian, vehicles, equipment, and aircraft.
  - 2. Maintaining clean and safe construction operations including controlling Foreign Object Debris (FOD).
  - 3. Controlling access to the Work area through the use of temporary fencing and barricades and restricting access by unauthorized persons.
  - 4. Understanding the safety problems and hazards described in AC 150/5370(G), Operational Safety on Airports During Construction.

## SECTION 01 5200 - SECURITY AND SAFETY

5. Conducting activities so as not to violate any safety standards contained in AC 150/5370 (G) or any of the references therein.
  6. Promptly taking all actions necessary to prevent or remedy any unsafe or potentially unsafe conditions as soon as they are discovered.
  7. Identifying locations for stockpiled materials, equipment operations, delivery access, and construction personnel parking.
  8. Marking the area of Work as a hazardous area on the aircraft ramp area with barricades, traffic cones, flags, or flashers. These markings restrict access and make hazards obvious to aircraft, personnel, and vehicles. During periods of low visibility and at night, identify hazardous areas with red flashing or steady-burning light.
  9. Measure to ensure that all trash, debris, and bird attractants are stored in proper areas and that all vehicles/equipment are clean of bird attractants.
- C. Contractor's SPCD shall be reviewed and updated at construction progress meetings and at other times as required by the Owner.

### 1.8 RESTRICTIONS

- A. The Contractor shall not allow cameras on site or photographs to be taken by persons under the control of the Contractor except by written approval of the Owner.
- B. Contractor shall, at all times, give way to all aircraft and follow directions from aircraft ground crews.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION (Not Used)

**END OF SECTION 01 5200**

## SECTION 01 6000 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 specification sections apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
  - 1. Section 01 2500 "Substitution Procedures" for requests for substitutions.

#### 1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

#### 1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced.
  - 1. Include data to indicate compliance with the contract documents requirements.
  - 2. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Owner will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
    - a. Use product specified if Owner does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 01 3300 "Submittal Procedures." Show compliance with requirements.

#### 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on project, select product compatible with products previously selected, even if previously selected products were also options.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

## SECTION 01 6000 - PRODUCT REQUIREMENTS

- B. Delivery and Handling:
1. Schedule delivery to minimize storage at project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration or theft.
  3. Deliver products to project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
  2. Store materials in a manner that will not endanger project structure.
  3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  6. Protect stored products from damage and liquids from freezing.
  7. Provide a secure location and enclosure at project site for storage of materials and equipment. Coordinate location with Owner.

### 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other sections shall be in addition to, and run concurrent with, other warranties required by the contract documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations of the contract documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
  3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 01 7700 "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete roofing system installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Owner will make selection.

## SECTION 01 6000 - PRODUCT REQUIREMENTS

5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

### B. Product Selection Procedures:

1. Products:
  - a. Restricted List: Where specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
2. Manufacturers:
  - a. Restricted List: Where specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

### 2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Owner will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Owner may return requests without action, except to record noncompliance with these requirements:
  1. Evidence that the proposed product does not require revisions to the contract documents, is consistent with the contract documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  5. Samples, if requested.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6000

## SECTION 01 7113 - 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 temporary construction facilities; implementing security requirements, and providing all required start up documentation to the Owner, 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. Obtaining all required permits, except building permit that will be obtained by Owner.
  4. Having all OSHA-required notices and establishment of safety programs.
  5. Having the Contractor's superintendent at the jobsite full time.
  6. Submitting initial submittals.
  7. Installing perimeter construction fence.

#### 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 Documents 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 on the Schedule of Values a breakdown showing the estimated value of each major component of Mobilization. When approved by the Owner, 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 01 7113

## SECTION 01 7300 - EXECUTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 specification sections apply to this section.

#### 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Installation of the Work.
- B. Related Requirements:
  - 1. Section 01 1000 "Summary" for limits on use of Project site.
  - 2. Section 01 3300 "Submittal Procedures."
  - 3. Section 01 7700 "Closeout Procedures" for submitting final documents, recording of Owner-accepted deviations during construction, and final cleaning.

#### 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

#### 1.4 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Structural Elements: When cutting and patching structural elements, notify Owner of locations and details of cutting and await directions from Owner before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
  - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or in increased maintenance or decreased operational life or safety.
  - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety
  - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect/Engineer's opinion, reduce aesthetic qualities of the Work. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Cutting and Patching Conference: Before proceeding, meet at project site with parties involved in cutting and patching, including related trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Owner for the visual and functional performance of in-place materials.

## SECTION 01 7300 - EXECUTION

### PART 3 - EXECUTION

#### 3.1 EXAMINATION AND LAYOUT

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with installer or applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  - 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to the Owner according to requirements in Section 01 3100 "Project Management and Coordination."
- D. Surface and Substrate Preparation: Comply with manufacturer's written recommendations for preparation of substrates to receive subsequent work.

#### 3.3 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.



## SECTION 01 7300 - EXECUTION

- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
    - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect/Engineer.
    - 2. Allow for building movement, including thermal expansion and contraction.
    - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
  - I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
  - J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- 3.4 CUTTING AND PATCHING
- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
    - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
  - B. Temporary Support: Provide temporary support of work to be cut.
  - C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of project that might be exposed during cutting and patching operations.
  - D. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
    - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
    - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
    - 3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
    - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
    - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
    - 6. Proceed with patching after construction operations requiring cutting are complete.
  - E. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
    - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
    - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

## SECTION 01 7300 - EXECUTION

- a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- F. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.
- 3.5 PROTECTION OF INSTALLED CONSTRUCTION
- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

**END OF SECTION 01 7300**

## SECTION 01 7419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 specification sections apply to this section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Disposing of nonhazardous demolition and construction waste.

#### 1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Foreign Object Debris (FOD): A substance, debris or article alien to aircraft that would potentially cause damage to aircraft or flight control mechanisms. FOD includes, but is not limited to, loose hardware, tools, pavement fragments, trash, building materials, rocks, pens, coins, hats, soda cans, paper clips, rags, and wildlife.
- E. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- F. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- G. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

#### 3.1 PLAN IMPLEMENTATION

- A. General: Provide handling, containers, storage, signage, transportation, and other items as required to handle waste during the entire duration of the contract.
  - 1. Comply with operation, termination, and removal requirements in Section 01 5000 "Temporary Facilities and Controls."
- B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Designate and label specific areas on project site necessary for waste management.
  - 2. Comply with Section 01 5000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.
- C. Comply with Airport safety requirements regarding Foreign Object Debris (FOD). Release of uncontrolled debris or materials of any kind is prohibited any place on or over airport property.
- D. Demolition debris is to be collected and containerized.
- E. Contractor to inspect the entire work area, including the grounds immediately around the building on a daily basis and ensure that FOD is not being released. If FOD is found, notify Owner and collect FOD

## **SECTION 01 7419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

immediately, identify the origin of the material found and describe modifications to work process or procedures necessary to prevent additional FOD release.

### **3.2 DISPOSAL OF WASTE**

- A. General: Remove waste materials from project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
  - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.
- D. Containers: All debris is to be collected, stored and transported in an enclosed container.

**END OF SECTION 01 7419**

## SECTION 01 7700 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 specification sections apply to this section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
  - 4. Final cleaning.
  - 5. Repair of the Work.
- B. Related Requirements:
  - 1. Section 01 7300 "Execution" for progress cleaning of Project site.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release from authorities having jurisdiction.
- B. Certificate of Insurance for continuing coverage.

#### 1.4 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 5 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
  - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 2. Submit closeout submittals specified in other Division 00 and 01 sections, including project record documents, operation and maintenance manuals, final completion construction photos, damage or settlement surveys, and similar final record information.
  - 3. Submit closeout submittals specified in individual Sections, including specific warranties, bonds, maintenance service agreements, final certifications, and similar documents.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 5 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
  - 1. Advise Owner of pending insurance changeover requirements.
  - 2. Complete final cleaning requirements, including touchup painting.
  - 3. Repair and restore marred exposed finishes to eliminate visual defects.
  - 4. Complete Owner training.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 5 days prior to date the work will be completed and ready for inspection. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner's Representative will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect/Engineer that must be completed or corrected before certificate will be issued.
  - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

## SECTION 01 7700 - CLOSEOUT PROCEDURES

2. Results of completed inspection will form the basis of requirements for final completion.

### 1.5 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
  1. Submit a final Application for Payment according the General Conditions.
  2. Certified List of Incomplete Items: Submit certified copy of Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect/Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Other forms and certificates required by the Contract Documents.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Owner's Representative will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

### 1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

### 1.7 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Owner for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Utilize professional cleaning service with personnel qualified and experienced in cleaning building components and systems used in the project. Clean each surface or unit to condition expected for new commercial building standard.
  1. Remove labels that are not permanent
  2. Wipe surfaces of mechanical and electrical equipment.
  3. Clean light fixtures, lamps, and reflectors to function with full efficiency.
- C. Clean project site, yard, and grounds, in all areas disturbed by construction activities.
- D. Sweep paved and concrete slab areas broom clean. Remove spills, stains, and other foreign deposits.

### 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

## **SECTION 01 7700 - CLOSEOUT PROCEDURES**

- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
1. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
  2. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

**END OF SECTION 01 7700**

## SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation manuals for systems and equipment.
  - 2. Product maintenance manuals.
  - 3. Systems and equipment maintenance manuals.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual specification sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
  - 1. Where applicable, clarify and update reviewed manual content to correspond to modifications, field conditions, and record drawings and specifications.
- B. Format: Submit operations and maintenance manuals in the following formats:
  - 1. PDF electronic file. Assemble into a single composite manual with electronically-indexed file. Submit on digital media acceptable to the Owner.
    - a. Name each indexed document file in composite electronic index with applicable item name.
    - b. Enable inserted reviewer comments on draft submittals.
  - 2. Two paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.
- C. Initial Manual Submittal: Submit draft copy of each manual at least 7 days before commencing demonstration and training. Prior to demonstration and testing, Owner will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 7 days before commencing demonstration and training.
  - 1. Correct or modify each manual to comply with Owner's comments and submit corrected manuals prior to commencing demonstration and training.

### PART 2 - PRODUCTS

#### 2.1 REQUIREMENTS FOR OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system or piece of equipment not part of a system. Each manual shall contain the following materials:
  - 1. Title page.
  - 2. Table of contents.
  - 3. Manual contents.
- B. Title Page: Include the following information:
  - 1. Subject matter included in manual.
  - 2. Name and address of Project.
  - 3. Date of submittal.
  - 4. Name and contact information for applicable Contractor and subcontractors.
  - 5. Names and contact information for Architect/Engineer and consultants to the Architect/Engineer that designed the systems contained in the manuals.
  - 6. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to specification section number.



## SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system and equipment.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
  - 1. Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
  - 2. Enable bookmarking of individual documents based upon file names and configure electronic manual to display bookmark panel upon opening file.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
  - 1. Binders: Heavy-duty, 3-ring, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
  - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
  - 3. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
  - 4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
    - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

### 2.2 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
  - 1. System and equipment descriptions.
  - 2. Performance and design criteria if Contractor is delegated design responsibility.
  - 3. Operating standards and procedures.
  - 4. Operating logs.
  - 5. Wiring and control diagrams.
  - 6. Piped system diagrams.
  - 7. Precautions against improper use.
  - 8. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
  - 1. Product name and model number as indicated on Contract Documents.
  - 2. Manufacturer's name.
  - 3. Equipment identification with serial number of each component.
  - 4. Equipment function and operating characteristics.
  - 5. Performance curves and limiting conditions.
  - 6. Engineering data and tests.
  - 7. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
  - 1. Startup procedures.
  - 2. Equipment or system break-in procedures.
  - 3. Routine and normal operating instructions.

## SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

4. Regulation and control procedures.
5. Instructions on stopping including normal shutdown instructions.
6. Seasonal operating instructions.
7. Required sequences for electric or electronic systems.
8. Special operating instructions and procedures.

- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

### 2.3 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following, as applicable:
1. Product name, model number, color, and similar identifying information.
  2. Manufacturer's name.
  3. Material and chemical composition.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
  2. Types of cleaning agents to be used and methods of cleaning.
  3. List of cleaning agents and methods of cleaning detrimental to product.
  4. Schedule for routine cleaning and maintenance.
  5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and sources of materials.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds. Include procedures to follow and required notifications for warranty claims.

### 2.4 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins.
  2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  3. Identification and nomenclature of parts and components.

## SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
  1. Test and inspection instructions.
  2. Troubleshooting guide.
  3. Precautions against improper maintenance.
  4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  5. Aligning, adjusting, and checking instructions.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds. Include procedures to follow and required notifications for warranty claims.

### PART 3 - EXECUTION

#### 3.1 MANUAL PREPARATION

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the contract documents. Identify data applicable to the Work and delete references to information not applicable.
  1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- D. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record drawings to ensure correct illustration of completed installation.
  1. Do not use original project record documents as part of operation and maintenance manuals.
  2. Comply with requirements of newly prepared record Drawings in Division 1 Section "Project Record Documents."
- E. Comply with Division 1 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

**END OF SECTION 01 7823**

## SECTION 01 7839 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
- B. Related Sections:
  - 1. Division 1 Sections as applicable.
  - 2. Divisions 2 through 41 Sections for specific requirements for project record documents of the Work in those Sections.

#### 1.3 SUBMITTALS

- A. Record Documents: Maintain one paper copy set of marked-up record prints and specifications for interim and final submittals.

### PART 2 - PRODUCTS

#### 2.1 RECORD DRAWINGS

- A. Maintain one set of marked-up paper copies of the Contract Drawings including Shop Drawings at a location on-site approved by the Owner.
  - 1. Neatly mark record prints in red font to show the actual installation where installation varies from that shown originally.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in neat, straight lines acceptable to the Owner.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding photographic documentation.
  - 2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations.
    - d. Revisions to routing of piping and conduits.
    - e. Revisions to electrical circuitry.
    - f. Actual equipment locations.
    - g. Locations of concealed internal utilities.
    - h. Changes made through Request for Proposal or Construction Change Directive.
    - i. Changes made following Request for Information or Owner's written directive.
    - j. Details not on the original Contract Drawings.
  - 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up prints.
  - 4. Mark record sets with red-colored ink or pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  - 6. Note Construction Change Directive numbers, Request for Proposal numbers, and similar identification, where applicable.

## **SECTION 01 7839 - PROJECT RECORD DOCUMENTS**

### **2.2 RECORD SPECIFICATIONS**

- A. Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  - 4. For each principal product, indicate whether record product data has been submitted in operation and maintenance manuals.
  - 5. Note related Change Orders and record drawings where applicable.

### **PART 3 - EXECUTION**

#### **3.1 RECORDING AND MAINTENANCE**

- A. Store record documents at a location approved by the Owner and apart from the Contract Documents used for construction. Do not use record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition. Provide access to project record documents for Owner's reference during normal working hours. Owner may require updated record documents as a condition of authorizing Progress Payments.

**END OF SECTION 01 7839**

## SECTION 01 7900 - DEMONSTRATION AND TRAINING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of systems and equipment.
  - 2. Training in operation and maintenance of systems and equipment.
- B. Related Sections:
  - 1. Divisions 2 through 41 sections for specific requirements for demonstration and training for products in those Sections.

#### 1.3 SUBMITTALS

- A. Submit outline of instructional program for demonstration and training, including a list of training modules and manufacturer-produced video recordings and a schedule of proposed dates, times, length of instruction time, and instructors' names and qualifications for each training module. Include learning objective and outline for each training module.

#### 1.4 QUALITY ASSURANCE

- A. Trainer Qualifications: An individual experienced in training maintenance personnel in a training program similar in content and extent to that indicated for this project, and whose work has resulted in training or education with a record of successful learning performance.

#### 1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved operation and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by the Owner.

### PART 2 - PRODUCTS

#### 2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and piece of equipment as required by individual specification sections.
- B. Training Modules: Develop a teaching outline for each module that includes objectives and specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
  - 1. Documentation: Review the following items in detail:
    - a. Operations and Maintenance manuals.
    - b. Project record documents.
    - c. Warranties and bonds.
    - d. Maintenance service agreements and similar continuing commitments.
  - 2. Emergencies: Include the following, as applicable:
    - a. Instructions on meaning of warnings, trouble indications, and error messages.
    - b. Instructions on stopping or shutdown for each type of emergency.
    - c. Operating instructions for conditions outside of normal operating limits.

## SECTION 01 7900 - DEMONSTRATION AND TRAINING

- d. Sequences for electric or electronic systems.
- e. Special operating instructions and procedures.
- 3. Operations: Include the following, as applicable:
  - a. Startup procedures.
  - b. Equipment or system break-in procedures.
  - c. Routine and normal operating instructions.
  - d. Regulation and control procedures.
  - e. Control sequences.
  - f. Normal shutdown instructions.
  - g. Special operating instructions including seasonal operations.
- 4. Adjustments: Include the following:
  - a. Alignments and checking adjustments.
  - b. Noise and vibration adjustments.
  - c. Economy and efficiency adjustments.
- 5. Troubleshooting: Include the following:
  - a. Diagnostic instructions.
  - b. Test and inspection procedures.
- 6. Maintenance: Include the following:
  - a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to product.
  - d. Procedures for routine cleaning
  - e. Procedures for preventive and routine maintenance.
  - f. Instruction on use of special tools.
- 7. Repairs: Include the following:
  - a. Diagnosis and repair instructions.
  - b. Disassembly; component removal, repair, and reassembly instructions.
  - c. Instructions for identifying parts and components.
  - d. Review of spare parts needed for operation and maintenance.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Division 1 Section "Operations and Maintenance Data."
- B. Set up instructional equipment at instruction location approved by Owner.

#### 3.2 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems and equipment.
  - 1. Owner will furnish Contractor with names and positions of participants.

**END OF SECTION 01 7900**

## **SECTION 26 0519 - LOW-VOLTAGE ELECTRICAL POWER 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 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

##### A. Section Includes:

1. Copper building wire rated 600 V or less.
2. Tray cable, Type TC, rated 600 V or less.
3. Connectors, splices, and terminations rated 600 V and less.

##### B. Related Requirements:

1. Section 260523 "Control-Voltage Electrical Power Cables" for control systems communications cables and Classes 1, 2, and 3 control cables.

#### 1.3 DEFINITIONS

- A. RoHS: Restriction of Hazardous Substances.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

### **PART 2 - PRODUCTS**

#### 2.1 COPPER BUILDING WIRE

- A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.



B. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. RoHS compliant.
3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

C. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

D. Conductor Insulation:

1. Type TC-ER: Comply with NEMA WC 70/ICEA S-95-658 and UL 1277.
2. Type XHHW-2: Comply with UL 44.

## 2.2 TRAY CABLE, TYPE TC

A. Description: A factory assembly of insulated current-carrying conductors with or without an equipment grounding conductor in a nonmetallic jacket.

B. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. RoHS compliant.
3. Comply with UL 1277.
4. Comply with ICEA S-73-532/NEMA WC 57 for Type TC cables used for control, and instrumentation.
5. Comply with ICEA S-95-658/NEMA WC 70 for Type TC cables used for power distribution.
6. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

C. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

D. Ground Conductor: Insulated.

E. Conductor Insulation: Type XHHW-2. Comply with UL 44.

F. Shield: None.

## 2.3 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

- B. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.
  - 1. Material: Copper.
  - 2. Type: Two hole with standard barrels.
  - 3. Termination: Crimp.

### **PART 3 - EXECUTION**

#### **3.1 CONDUCTOR MATERIAL APPLICATIONS**

- A. Feeders: Stranded copper.
- B. Branch Circuits: Stranded copper.

#### **3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS**

- A. Service Entrance: Type XHHW-2, single conductors in raceway.
- B. Exposed Feeders: Type XHHW-2, single conductors in raceway.
- C. Feeders in Cable Tray: Type XHHW-2.
- D. Exposed Branch Circuits: Type THHN/THWN-2, single conductors in raceway.
- E. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type XHHW-2, single conductors in raceway.

#### **3.3 INSTALLATION OF CONDUCTORS AND CABLES**

- A. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- B. 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.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- D. Complete cable tray systems installation according to Section 260536 "Cable Trays for Electrical Systems" prior to installing conductors and cables.

### 3.4 CONNECTIONS

- A. 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-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
  - 1. Use oxide inhibitor in each splice, termination, and tap.
- C. Wiring at Outlets: Install conductor at each outlet, with at least **6 inches (150 mm)** of slack.

### 3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

### 3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
  - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
  - 2. Perform each of the following visual and electrical tests:
    - a. Inspect exposed sections of conductor and cable for physical damage and correct connection according to the single-line diagram.
    - b. Test bolted connections for high resistance using one of the following:
      - 1) A low-resistance ohmmeter.
      - 2) Calibrated torque wrench.
      - 3) Thermographic survey.
    - c. Inspect compression-applied connectors for correct cable match and indentation.
    - d. Inspect for correct identification.
    - e. Inspect cable jacket and condition.
    - f. Insulation-resistance test on each conductor for ground and adjacent conductors. Apply a potential of 500-V dc for 300-V rated cable and 1000-V dc for 600-V rated cable for a one-minute duration.
    - g. Continuity test on each conductor and cable.
    - h. Uniform resistance of parallel conductors.

3. **Initial Infrared Scanning:** After Substantial Completion, but before Final Acceptance, perform an infrared scan of each splice in conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner. Correct deficiencies determined during the scan.
    - a. **Instrument:** Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
    - b. **Record of Infrared Scanning:** Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
  4. **Follow-up Infrared Scanning:** Perform an additional follow-up infrared scan of each switch 11 months after date of Substantial Completion.
- B. Cables will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports to record the following:
1. Procedures used.
  2. Results that comply with requirements.
  3. Results that do not comply with requirements, and corrective action taken to achieve compliance with requirements.

**END OF SECTION 260519**

## SECTION 26 0523 - CONTROL-VOLTAGE ELECTRICAL POWER CABLES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Category 5e balanced twisted pair cable.
  - 2. Balanced twisted pair cabling hardware.
  - 3. RS-485 cabling.
  - 4. Low-voltage control cabling.
  - 5. Control-circuit conductors.
  - 6. Identification products.

#### 1.3 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control and signaling power-limited circuits.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Source quality-control reports.
- B. Field quality-control reports.

## **PART 2 - PRODUCTS**

### **2.1 PERFORMANCE REQUIREMENTS**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Flame Travel and Smoke Density for Cables in Non-Riser Applications and Non-Plenum Building Spaces: As determined by testing identical products according to UL 1685.
- C. RoHS compliant.

### **2.2 CATEGORY 5e BALANCED TWISTED PAIR CABLE**

- A. Description: Four-pair, balanced-twisted pair cable, certified to meet transmission characteristics of Category 5e cable at frequencies up to 100 MHz.
- B. Standard: Comply with ICEA S-90-661, NEMA WC 63.1, and TIA-568-C.2 for Category 5e cables.
- C. Conductors: 100-ohm, 24 AWG solid copper.
- D. Shielding/Screening: Unshielded twisted pairs (UTP).
- E. Jacket: White thermoplastic.

### **2.3 BALANCED TWISTED PAIR CABLE HARDWARE**

- A. Description: Hardware designed to connect, splice, and terminate balanced twisted pair copper communications cable.
- B. General Requirements for Balanced Twisted Pair Cable Hardware:
  - 1. Comply with the performance requirements of Category 5e.
  - 2. Comply with TIA-568-C.2, IDC type, with modules designed for punch-down caps or tools.
  - 3. Cables shall be terminated with connecting hardware of same category or higher.
- C. Source Limitations: Obtain balanced twisted pair cable hardware from single source from single manufacturer.
- D. Connecting Blocks: 110-style IDC for Category 5e. Provide blocks for the number of cables terminated on the block, plus 25 percent spare, integral with connector bodies, including plugs and jacks where indicated.

E. Plugs and Plug Assemblies:

1. Male; eight position; color-coded modular telecommunications connector designed for termination of a single four-pair 100-ohm unshielded or shielded balanced twisted pair cable.
2. Comply with IEC 60603-7-1, IEC 60603-7-2, IEC 60603-7-3, IEC 60603-7-4, and IEC 60603-7.5.
3. Marked to indicate transmission performance.

F. Jacks and Jack Assemblies:

1. Female; eight position; modular; fixed telecommunications connector designed for termination of a single four-pair 100-ohm unshielded or shielded balanced twisted pair cable.
2. Designed to snap-in to a patch panel or faceplate.
3. Standards:
  - a. Category 5e, unshielded balanced twisted pair cable shall comply with IEC 60603-7-2.
4. Marked to indicate transmission performance.

G. Faceplate:

1. Two port, vertical single-gang faceplates designed to mount to single-gang wall boxes.
2. Plastic Faceplate: High-impact plastic. Coordinate color with Section 262726 "Wiring Devices."
3. Metal Faceplate: Stainless steel, complying with requirements in Section 262726 "Wiring Devices."

## 2.4 RS-232 CABLE

A. PVC-Jacketed, TIA 232-F:

1. No. 22 AWG, stranded (7x30) tinned copper conductors.
2. Polypropylene insulation.
3. Aluminum foil-polyester tape shield with 100 percent shield coverage.
4. PVC jacket.
5. Conductors are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
6. NFPA 70 Type: Type CM.
7. Flame Resistance: Comply with UL 1581.

## 2.5 RS-485 CABLE

A. Standard Cable: NFPA 70, Type CMG.

1. Paired, twisted, No. 22 AWG, stranded (7x30) tinned-copper conductors.

2. PVC insulation.
3. Unshielded.
4. PVC jacket.
5. Flame Resistance: Comply with UL 1685.

## 2.6 LOW-VOLTAGE CONTROL CABLE

### A. Paired Cable: NFPA 70, Type CMG.

1. Multi-pair, twisted, No. 16 AWG, stranded (19x29) tinned-copper conductors.
2. PVC insulation.
3. Unshielded.
4. PVC jacket.
5. Flame Resistance: Comply with UL 1685.

## 2.7 CONTROL-CIRCUIT CONDUCTORS

- A. Class 1 Control Circuits: Stranded copper, Type THHN/THWN-2, complying with UL 83 in raceway and Type XHHW-2, complying with UL 44 in raceway.
- B. Class 2 Control Circuits: Stranded copper, Type THHN/THWN-2, complying with UL 83 in raceway and Type XHHW-2, complying with UL 44 in raceway.
- C. Class 3 Remote-Control and Signal Circuits: Stranded copper, Type THHN/THWN-2, complying with UL 83 in raceway and Type XHHW-2, complying with UL 44 in raceway.

## 2.8 SOURCE QUALITY CONTROL

- A. Factory test twisted pair cables according to TIA-568-C.2.
- B. Cable will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A. Test cables on receipt at Project site.
  1. Test each pair of twisted pair cable for open and short circuits.



### 3.2 INSTALLATION OF RACEWAYS AND BOXES

- A. Comply with requirements in Section 260533 "Raceways and Boxes for Electrical Systems" for raceway selection and installation requirements for boxes, conduits, and wireways as supplemented or modified in this Section.
  - 1. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.
- B. Comply with TIA-569-D for pull-box sizing and length of conduit and number of bends between pull points.

### 3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Comply with NECA 1.
- B. General Requirements for Cabling:
  - 1. Comply with TIA-568-C Series of standards.
  - 2. Comply with BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems."
  - 3. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets and terminals.
  - 4. Cables may not be spliced and shall be continuous from terminal to terminal. Do not splice cable between termination, tap, or junction points.
  - 5. Cables serving a common system may be grouped in a common raceway. Install network cabling and control wiring and cable in separate raceway from power wiring. Do not group conductors from different systems or different voltages.
  - 6. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
  - 7. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems." Install lacing bars and distribution spools.
  - 8. Do not install bruised, kinked, scored, deformed, or abraded cable. Remove and discard cable if damaged during installation and replace it with new cable.
  - 9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Do not use heat lamps for heating.
  - 10. Pulling Cable: Comply with BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems." Monitor cable pull tensions.
  - 11. Secure: Fasten securely in place with hardware specifically designed and installed so as to not damage cables.
  - 12. Provide strain relief.
  - 13. Keep runs short. Allow extra length for connecting to terminals. Do not bend cables in a radius less than 10 times the cable OD. Use sleeves or grommets to protect cables from vibration at points where they pass around sharp corners and through penetrations.
  - 14. Ground wire shall be copper, and grounding methods shall comply with IEEE C2. Demonstrate ground resistance.

C. Balanced Twisted Pair Cable Installation:

1. Comply with TIA-568-C.2.
2. Do not untwist balanced twisted pair cables more than 1/2 inch (12 mm) at the point of termination to maintain cable geometry.

D. Installation of Control-Circuit Conductors:

1. Install wiring in raceways.
2. Use insulated spade lugs for wire and cable connection to screw terminals.
3. Comply with requirements specified in Section 260533 "Raceways and Boxes for Electrical Systems."

E. Separation from EMI Sources:

1. Comply with BICSI TDMM and TIA-569-D recommendations for separating unshielded copper voice and data communications cable from potential EMI sources including electrical power lines and equipment.
2. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
  - a. Electrical Equipment or Circuit Rating Less Than 2 kVA: A minimum of 2-1/2 inches (64 mm).
  - b. Electrical Equipment or Circuit Rating between 2 and 5 kVA: A minimum of 6 inches (150 mm).
  - c. Electrical Equipment or Circuit Rating More Than 5 kVA: A minimum of 12 inches (305 mm).
3. Separation between communications cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
  - a. Electrical Equipment or Circuit Rating Less Than 2 kVA: No requirement.
  - b. Electrical Equipment or Circuit Rating between 2 and 5 kVA: A minimum of 3 inches (75 mm).
  - c. Electrical Equipment or Circuit Rating More Than 5 kVA: A minimum of 6 inches (150 mm).
4. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or 5 HP and Larger: A minimum of 48 inches (1200 mm).
5. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches (127 mm).

### 3.4 CONTROL-CIRCUIT CONDUCTORS

A. Minimum Conductor Sizes:

1. Class 1 remote-control and signal circuits; No 14 AWG.
2. Class 2 low-energy, remote-control, and signal circuits; No. 16 AWG.

3. Class 3 low-energy, remote-control, alarm, and signal circuits; No 12 AWG.

### 3.5 GROUNDING

- A. For data communication wiring, comply with TIA-607-B and with BICSI TDMM, "Bonding and Grounding (Earthing)" Chapter.
- B. For low-voltage control wiring and cabling, comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

### 3.6 IDENTIFICATION

- A. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- B. Identify data and communications system components, wiring, and cabling according to TIA-606-B; label printers shall use label stocks, laminating adhesives, and inks complying with UL 969.
- C. Identify each wire on each end and at each terminal with a number-coded identification tag. Each wire shall have a unique tag.

### 3.7 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
  1. Visually inspect cable jacket materials for UL or third-party certification markings. Inspect cabling terminations to confirm color-coding for pin assignments, and inspect cabling connections to confirm compliance with TIA-568-C.1.
  2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
  3. Test cabling for direct-current loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination.
    - a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in its "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in its "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.
- C. Document data for each measurement. Print data for submittals in a summary report that is formatted using Table 10.1 in BICSI TDMM as a guide, or transfer the data from the instrument to the computer, save as text files, print, and submit.

- D. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

**END OF SECTION 260523**



## 2.2 CONDUCTORS

- A. Insulated Conductors: Copper or tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
  - 1. Solid Conductors: ASTM B3.
  - 2. Stranded Conductors: ASTM B8.
  - 3. Tinned Conductors: ASTM B33.
  - 4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
  - 5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
  - 6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
  - 7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

## 2.3 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.
- C. Cable-to-Cable Connectors: Compression type, copper or copper alloy.
- D. Cable Tray Ground Clamp: Mechanical type, zinc-plated malleable iron.
- E. Conduit Hubs: Mechanical type, terminal with threaded hub.
- F. Ground Rod Clamps: Mechanical type, copper or copper alloy, terminal with hex head bolt.
- G. Signal Reference Grid Clamp: Mechanical type, stamped-steel terminal with hex head screw.
- H. Straps: Solid copper, cast-bronze clamp. Rated for 600 A.
- I. Water Pipe Clamps:
  - 1. Mechanical type, two pieces with stainless-steel bolts.
    - a. Material: Die-cast zinc alloy.
    - b. Listed for direct burial.
  - 2. U-bolt type with malleable-iron clamp and copper ground connector.

## 2.4 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet (19 mm by 3 m).

## PART 3 - EXECUTION

### 3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Underground Grounding Conductors: Install bare tinned-copper conductor, No. 2/0 AWG minimum.
  - 1. Bury at least 30 inches (750 mm) below grade, unless otherwise noted.
- C. Grounding Conductors: Green-colored insulation with continuous yellow stripe.
- D. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Underground Connections: High compression connectors except as otherwise indicated.
  - 3. Connections to Structural Steel: High compression connectors.

### 3.2 GROUNDING AT THE SERVICE

- A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

### 3.3 GROUNDING SEPARATELY DERIVED SYSTEMS

- A. Generator: Install grounding electrode(s) at the generator location. The electrode shall be connected to the equipment grounding conductor and to the frame of the generator.
- B. Transformer: Install grounding electrode(s) at the transformer location. The electrode shall be connected to the equipment grounding conductor and to the frame of the transformer.

### 3.4 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.

### 3.5 FENCE GROUNDING

- A. Fence Grounding: Install at maximum intervals of 1500 feet (450 m) except as follows:

1. Fences within 100 Feet (30 m) of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet (225 m).
  - a. Gates and Other Fence Openings: Ground fence on each side of opening.
    - 1) Bond metal gates to gate posts.
    - 2) Bond across openings, with and without gates, except at openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches (460 mm) below finished grade.
  - B. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches (150 mm) below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location.
  - C. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.

### 3.6 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade unless otherwise indicated.
  1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
  2. Use high compression connectors for all below-grade connections.
  3. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.
- C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
  1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
  2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
  3. Use high compression connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.
- D. Grounding and Bonding for Piping:
  1. Metal Water Service Pipe: Install insulated copper grounding conductors, 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; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect





each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

- C. Grounding system will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.
- E. Report measured ground resistances that exceed the following values:
  - 1. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
- F. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

**END OF SECTION 260526**

## SECTION 26 0529 - HANGERS AND SUPPORTS 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 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Steel slotted support systems.
2. Conduit and cable support devices.
3. Structural steel for fabricated supports and restraints.
4. Mounting, anchoring, and attachment components, including powder-actuated fasteners, mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.
5. Fabricated metal equipment support assemblies.

- B. Related Requirements:

1. Section 260548.16 "Seismic Controls for Electrical Systems" for products and installation requirements necessary for compliance with seismic criteria.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
  - a. Slotted support systems, hardware, and accessories.
  - b. Clamps.
  - c. Hangers.
  - d. Sockets.
  - e. Eye nuts.
  - f. Fasteners.
  - g. Anchors.
  - h. Saddles.
  - i. Brackets.
2. Include rated capacities and furnished specialties and accessories.

## 1.4 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M.
  - 2. AWS D1.2/D1.2M.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Hangers and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "the supported equipment and systems will remain in place without separation of any parts when subjected to the seismic forces specified and the supported equipment and systems will be fully operational after the seismic event."
  - 2. Component Importance Factor: 1.0.
- B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame Rating: Class 1.
  - 2. Self-extinguishing according to ASTM D635.

### 2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32-inch- (10-mm-) diameter holes at a maximum of 8 inches (200 mm) o.c. in at least one surface.
  - 1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
  - 2. Material for Channel, Fittings, and Accessories: Galvanized steel and Stainless Steel.
  - 3. Channel Width: 1-5/8 inches (41.25 mm).
  - 4. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
  - 5. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- C. Structural Steel for Fabricated Supports and Restraints: ASTM A36/A36M steel plates, shapes, and bars; black and galvanized.

- D. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
  2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
  3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
  4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
  5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325 (Grade A325M).
  6. Toggle Bolts: Stainless-steel springhead type.
  7. Hanger Rods: Threaded steel.

### 2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

## PART 3 - EXECUTION

### 3.1 APPLICATION

- A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:
1. NECA 1.
  2. NECA 101
  3. NECA 105.
- B. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- C. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
- D. Multiple Raceways: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
1. Secure raceways and cables to these supports with two-bolt conduit clamps.

### 3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, according to NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lag screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Expansion anchor fasteners.
  - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
  - 6. To Steel: Beam clamps (MSS SP-58, Type 19, 21, 23, 25, or 27), complying with MSS SP-69.
  - 7. To Light Steel: Sheet metal screws.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

### 3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M.

### 3.4 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete.

- C. Anchor equipment to concrete base as follows:
1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  2. Install anchor bolts to elevations required for proper attachment to supported equipment.
  3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

### 3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
1. Apply paint by brush or spray to provide minimum dry film thickness of **2.0 mils (0.05 mm)**.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

**END OF SECTION 260529**

## **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 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Metal conduits and fittings.
  - 2. Nonmetallic conduits and fittings.
  - 3. Metal wireways and auxiliary gutters.
  - 4. Boxes, enclosures, and cabinets.
  - 5. Handholes and boxes for exterior underground cabling.

#### 1.3 DEFINITIONS

- A. GRC: Galvanized rigid steel conduit.
- B. IMC: Intermediate metal conduit.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For all materials

### **PART 2 - PRODUCTS**

#### 2.1 METAL CONDUITS AND FITTINGS

- A. Metal Conduit:
  - 1. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
  - 2. GRC: Comply with ANSI C80.1 and UL 6.
  - 3. IMC: Comply with ANSI C80.6 and UL 1242.
  - 4. EMT: Comply with ANSI C80.3 and UL 797.
  - 5. FMC: Comply with UL 1; zinc-coated steel.
  - 6. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.



B. Metal Fittings:

1. Comply with NEMA FB 1 and UL 514B.
2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. Fittings, General: Listed and labeled for type of conduit, location, and use.
4. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 1203 and NFPA 70.
5. Fittings for EMT:
  - a. Material: Steel.
  - b. Type: Setscrew or compression.

- C. Joint Compound for IMC and GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

## 2.2 NONMETALLIC CONDUITS AND FITTINGS

A. Nonmetallic Conduit:

1. Listing and Labeling: Nonmetallic conduit shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
3. LFNC: Comply with UL 1660.

B. Nonmetallic Fittings:

1. Fittings, General: Listed and labeled for type of conduit, location, and use.
2. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
  - a. Fittings for LFNC: Comply with UL 514B.
3. Solvents and Adhesives: As recommended by conduit manufacturer.

## 2.3 METAL WIREWAYS AND AUXILIARY GUTTERS

- A. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 3R unless otherwise indicated, and sized according to NFPA 70.

1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- B. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- C. Wireway Covers: Flanged-and-gasketed type, unless otherwise indicated.
- D. Finish: Manufacturer's standard enamel finish.

#### 2.4 BOXES, ENCLOSURES, AND CABINETS

- A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- E. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, galvanized, cast iron with gasketed cover.
- F. Device Box Dimensions: 4 inches by 2-1/8 inches by 2-1/8 inches deep (100 mm by 60 mm by 60 mm deep).
- G. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1 with continuous-hinge cover unless otherwise indicated.
  - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
  - 2. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.
- H. Cabinets:
  - 1. NEMA 250, Type 1 galvanized-steel box finished inside and out with manufacturer's standard enamel.
  - 2. Metal barriers to separate wiring of different systems and voltage.

#### 2.5 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

- A. General Requirements for Handholes and Boxes:
  - 1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
  - 2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.
1. Standard: Comply with SCTE 77.
  2. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
  3. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
  4. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
  5. Cover Legend: Molded lettering, "ELECTRIC."
  6. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.

## 2.6 SOURCE QUALITY CONTROL FOR UNDERGROUND ENCLOSURES

- A. Handhole and Pull-Box Prototype Test: Test prototypes of handholes and boxes for compliance with SCTE 77. Strength tests shall be for specified tier ratings of products supplied.
1. Tests of materials shall be performed by an independent testing agency.
  2. Strength tests of complete boxes and covers shall be by either an independent testing agency or manufacturer. A qualified registered professional engineer shall certify tests by manufacturer.
  3. Testing machine pressure gages shall have current calibration certification complying with ISO 9000 and ISO 10012 and traceable to NIST standards.

## PART 3 - EXECUTION

### 3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
1. Exposed Conduit: GRC or IMC.
  2. Underground Conduit: RNC, Type EPC-40-PVC, direct buried, unless otherwise noted.
  3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
  4. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R and Type 4.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated:
1. Exposed, Not Subject to Physical Damage: EMT.
  2. Exposed, Not Subject to Severe Physical Damage: EMT.
  3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFNC in damp or wet locations.
  4. Damp or Wet Locations: GRC or IMC.
  5. Boxes and Enclosures: NEMA 250, Type 1.

- C. Minimum Raceway Size: 3/4-inch (21-mm) trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
  - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
  - 2. EMT: Use setscrew or compression, steel fittings. Comply with NEMA FB 2.10.
  - 3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

### 3.2 INSTALLATION

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- B. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- C. Complete raceway installation before starting conductor installation.
- D. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- E. Install no more than the equivalent of four 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches (300 mm) of changes in direction.
- F. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.
- G. Support conduit within 12 inches (300 mm) of enclosures to which attached.
- H. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- J. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- K. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- L. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

- M. Cut conduit perpendicular to the length. For conduits 2-inch (53-mm) trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- N. Install pull wires in empty raceways. Use polypropylene 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 pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- O. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
  - 1. Where an underground service raceway enters a building or structure.
  - 2. Conduit extending from interior to exterior of building.
  - 3. Where otherwise required by NFPA 70.
- P. Comply with manufacturer's written instructions for solvent welding RNC and fittings.
- Q. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of **36 inches (915 mm)** of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
  - 1. Use LFMC in damp or wet locations subject to severe physical damage.
  - 2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.
- R. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

### 3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
  - 1. Excavate trench bottom to provide firm and uniform support for conduit.
  - 2. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.
  - 3. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through floor.
    - a. Couple steel conduits to ducts with adapters designed for this purpose.
    - b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches (1500 mm) from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.
  - 4. Underground Warning Tape: Comply with requirements in Section 260553 "Identification for Electrical Systems."

### 3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch (12.5-mm) sieve to No. 4 (4.75-mm) sieve and compacted to same density as adjacent undisturbed earth.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch (25 mm) above finished grade.
- D. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

### 3.5 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
  - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

**END OF SECTION 26 0533**

## SECTION 26 0536 - CABLE TRAYS 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 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Ladder cable tray.
2. Cable tray accessories.
3. Warning signs.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include data indicating dimensions and finishes for each type of cable tray indicated.

- B. Shop Drawings: For each type of cable tray.

1. Show fabrication and installation details of cable trays, including plans, elevations, and sections of components and attachments to other construction elements. Designate components and accessories, including clamps, brackets, hanger rods, splice-plate connectors, expansion-joint assemblies, straight lengths, and fittings.
2. Cable tray layout, showing cable tray route to scale, with relationship between the tray and adjacent structural, electrical, and mechanical elements. Include the following:
  - a. Vertical and horizontal offsets and transitions.
  - b. Clearances for access above and to sides of cable trays.
  - c. Vertical elevation of cable trays above the floor or bottom of ceiling structure.
  - d. Load calculations to show dead and live loads as not exceeding manufacturer's rating for tray and its support elements.

## **PART 2 - PRODUCTS**

### **2.1 PERFORMANCE REQUIREMENTS**

- A. Seismic Performance: Cable trays and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "cable trays will remain in place without separation of any parts when subjected to the seismic forces specified."
  - 2. Component Importance Factor: 1.0.

### **2.2 GENERAL REQUIREMENTS FOR CABLE TRAY**

- A. Cable Trays and Accessories: Identified as defined in NFPA 70 and marked for intended location, application, and grounding.
  - 1. Source Limitations: Obtain cable trays and components from single manufacturer.
- B. Sizes and Configurations: See the Drawings for specific requirements for types, materials, sizes, and configurations.
- C. Structural Performance: See articles on individual cable tray types for specific values for the following parameters:
  - 1. Uniform Load Distribution: Capable of supporting a uniformly distributed load on the indicated support span when supported as a simple span and tested according to NEMA VE 1.
  - 2. Concentrated Load: A load applied at midpoint of span and centerline of tray.
  - 3. Load and Safety Factors: Applicable to both side rails and rung capacities.

### **2.3 LADDER CABLE TRAY**

- A. Description:
  - 1. Configuration: Two longitudinal side rails with transverse rungs swaged or welded to side rails, complying with NEMA VE 1.
  - 2. Width: 36 inches (900 mm) unless otherwise indicated on Drawings.
  - 3. Minimum Usable Load Depth: 3 inches (75 mm).
  - 4. Straight Section Lengths: 10 feet (3.0 m) or longer, except where shorter lengths are required to facilitate tray assembly.
  - 5. Rung Spacing: 9 inches (225 mm) o.c.
  - 6. Radius-Fitting Rung Spacing: 9 inches (225 mm) at center of tray's width.
  - 7. Minimum Cable-Bearing Surface for Rungs: 7/8-inch (22-mm) width with radius edges.
  - 8. No portion of the rungs shall protrude below the bottom plane of side rails.
  - 9. Structural Performance of Each Rung: Capable of supporting a maximum cable load, with a safety factor of 1.5, plus a 200-lb (90-kg) concentrated load, when tested according to NEMA VE 1.



10. Fitting Minimum Radius: 12 inches (300 mm).
11. Class Designation: Comply with NEMA VE 1, Class 8C or greater corresponding to straight section lengths.
12. Splicing Assemblies: Bolted type using serrated flange locknuts.
13. Splice-Plate Capacity: Splices located within support span shall not diminish rated loading capacity of cable tray.
14. Covers: Solid type made of same materials and with same finishes as cable tray.

B. Materials and Finishes:

1. Steel:
  - a. Straight Section and Fitting Side Rails and Rungs: Steel complies with the minimum mechanical properties of ASTM A1008/A1008M, Grade 33, Type 2.
  - b. Steel Tray Splice Plates: ASTM A1011/A1011M, HSLAS, Grade 50, Class 1.
  - c. Fasteners: Steel complies with the minimum mechanical properties of ASTM A510/A510M, Grade 1008.
  - d. Finish: Hot-dipped galvanized, complying with ASTM A653/A653M, G90 (Z275).
    - 1) Hardware: Galvanized, ASTM B633.

2.4 CABLE TRAY ACCESSORIES

- A. Fittings: Tees, crosses, risers, elbows, and other fittings as indicated, of same materials and finishes as cable tray.
- B. Barrier Strips: Same materials and finishes as for cable tray.
- C. Cable tray supports and connectors, including bonding jumpers, as recommended by cable tray manufacturer.

2.5 WARNING SIGNS

- A. Lettering: 1-1/2-inch- (40-mm-) high, black letters on yellow background, with legend "WARNING! NOT TO BE USED AS WALKWAY, LADDER, OR SUPPORT FOR LADDERS OR PERSONNEL."
- B. Comply with Section 260553 "Identification for Electrical Systems."

2.6 SOURCE QUALITY CONTROL

- A. Testing: Test and inspect cable trays according to NEMA VE 1.

## **PART 3 - EXECUTION**

### **3.1 CABLE TRAY INSTALLATION**

- A. Install cable tray and support systems according to NEMA VE 2.
- B. Install cable tray as a complete system, including fasteners, hold-down clips, support systems, barrier strips, adjustable horizontal and vertical splice plates, elbows, reducers, tees, crosses, cable dropouts, adapters, covers, and bonding.
- C. Install cable tray, so that the tray is accessible for cable installation and all splices are accessible for inspection and adjustment.
- D. Remove burrs and sharp edges from cable trays.
- E. Fasten cable tray supports to building structure and install seismic restraints.
- F. Design fasteners and supports to carry cable tray, cables, and a concentrated load of 200 lb (90 kg). Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems." Comply with seismic-restraint details according to Section 260548.16 "Seismic Controls for Electrical Systems."
- G. Place supports, so that spans do not exceed maximum spans. Install intermediate supports when cable weight exceeds the load-carrying capacity of tray rungs.
- H. Construct supports from channel members, threaded rods, and other appurtenances furnished by cable tray manufacturer. Arrange supports in trapeze or wall-bracket form as required by application.
- I. Support assembly to prevent twisting from eccentric loading.
- J. Do not install more than one cable tray splice between supports.
- K. Install expansion connectors where cable trays cross building expansion joints and in cable tray runs that exceed recommended dimensions. Space connectors and set gaps according to applicable standard.
- L. Make changes in direction and elevation using manufacturer's recommended fittings.
- M. Make cable tray connections using manufacturer's recommended fittings.
- N. Install cable trays with enough workspace to permit access for installing cables.
- O. Install barriers to separate cables of different systems, such as power, communications, and data processing.
- P. Install permanent covers after installing cable.
- Q. Install warning signs in visible locations on or near cable trays after cable tray installation.

### 3.2 CABLE TRAY GROUNDING

- A. Ground cable trays according to NFPA 70 unless additional grounding is specified. Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Cable trays with single-conductor power conductors shall be bonded together with a grounding conductor run in the tray along with the power conductors and bonded to the tray at 72-inch (1800-mm) intervals. The grounding conductor shall be sized according to NFPA 70, Article 250.122, "Size of Equipment Grounding Conductors," and Article 392, "Cable Trays."
- C. Bond cable trays to power source ground for cables contained within with bonding conductors sized according to NFPA 70, Article 250.122, "Size of Equipment Grounding Conductors."

### 3.3 CABLE INSTALLATION

- A. Install cables only when each cable tray run has been completed and inspected.
- B. Fasten cables on horizontal runs with cable clamps or cable ties. Tighten clamps only enough to secure the cable, without indenting the cable jacket. Install cable ties with a tool that includes an automatic pressure-limiting device.
- C. Fasten cables on vertical runs to cable trays every 18 inches (450 mm).
- D. Fasten and support cables that pass from one cable tray to another or drop from cable trays to equipment enclosures. Fasten cables to the cable tray at the point of exit and support cables independent of the enclosure. The cable length between cable trays or between cable tray and enclosure shall be no more than 36 inches (900 mm).

### 3.4 CONNECTIONS

- A. Remove paint from all connection points before making connections. Repair paint after the connections are completed.
- B. Connect raceways to cable trays according to requirements in NEMA VE 2.

### 3.5 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
  - 1. After installing cable trays and after electrical circuitry has been energized, survey for compliance with requirements.
  - 2. Visually inspect cable insulation for damage. Correct sharp corners, protuberances in cable trays, vibrations, and thermal expansion and contraction conditions, which may cause or have caused damage.
  - 3. Verify that the number, size, and voltage of cables in cable trays do not exceed that permitted by NFPA 70. Verify that communications or data-processing circuits are separated from power circuits by barriers or are installed in separate cable trays.

4. Verify that there are no intruding items, such as pipes, hangers, or other equipment, in the cable tray.
5. Remove dust deposits, industrial process materials, trash of any description, and any blockage of tray ventilation.
6. Visually inspect each cable tray joint and each ground connection for mechanical continuity. Check bolted connections between sections for corrosion. Clean and retorqued in suspect areas.
7. Check for improperly sized or installed bonding jumpers.
8. Check for missing, incorrect, or damaged bolts, bolt heads, or nuts. When found, replace with specified hardware.
9. Perform visual and mechanical checks for adequacy of cable tray grounding; verify that all takeoff raceways are bonded to cable trays. Test entire cable tray system for continuity. Maximum allowable resistance is 1 ohm.

B. Prepare test and inspection reports.

### 3.6 PROTECTION

A. Protect installed cable trays and cables.

1. Install temporary protection for cables in open trays to safeguard exposed cables against falling objects or debris during construction. Temporary protection for cables and cable tray can be constructed of wood or metal materials and shall remain in place until the risk of damage is over.
2. Repair damage to galvanized finishes with zinc-rich paint recommended by cable tray manufacturer.

**END OF SECTION 260536**

## SECTION 26 0548.16 - SEISMIC CONTROLS 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 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Restraint channel bracings.
- 2. Restraint cables.
- 3. Seismic-restraint accessories.
- 4. Mechanical anchor bolts.
- 5. Adhesive anchor bolts.

- B. Related Requirements:

- 1. Section 260529 "Hangers and Supports for Electrical Systems" for commonly used electrical supports and installation requirements.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Illustrate and indicate style, material, strength, fastening provision, and finish for each type and size of seismic-restraint component used.
  - a. Tabulate types and sizes of seismic restraints, complete with report numbers and rated strength in tension and shear as evaluated by an agency acceptable to authorities having jurisdiction.
  - b. Annotate to indicate application of each product submitted and compliance with requirements.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

## 1.5 QUALITY ASSURANCE

- A. Comply with seismic-restraint requirements in the IBC unless requirements in this Section are more stringent.
- B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- C. Seismic-restraint devices shall have horizontal and vertical load testing and analysis. They shall bear anchorage preapproval from OSHPD in addition to preapproval, showing maximum seismic-restraint ratings, by ICC-ES or another agency acceptable to authorities having jurisdiction. Ratings based on independent testing are preferred to ratings based on calculations. If preapproved ratings are not available, submittals based on independent testing are preferred.
- D. Comply with NFPA 70.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic-Restraint Loading:
  - 1. Site Class as Defined in the IBC: C.
  - 2. Assigned Seismic Use Group or Building Category as Defined in the IBC: II.
    - a. Component Importance Factor: 1.0.

### 2.2 RESTRAINT CHANNEL BRACINGS

- A. Description: MFMA-4, shop- or field-fabricated bracing assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end, with other matching components, and with corrosion-resistant coating; rated in tension, compression, and torsion forces.

### 2.3 RESTRAINT CABLES

- A. Restraint Cables: ASTM A603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service; with a minimum of two clamping bolts for cable engagement.

### 2.4 SEISMIC-RESTRAINT ACCESSORIES

- A. Hanger-Rod Stiffener: Steel tube or steel slotted-support-system sleeve with internally bolted connections to hanger rod.

- B. Hinged and Swivel Brace Attachments: Multifunctional steel connectors for attaching hangers to rigid channel bracings and restraint cables.
- C. Bushings for Floor-Mounted Equipment Anchor Bolts: Neoprene bushings designed for rigid equipment mountings and matched to type and size of anchor bolts and studs.
- D. Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for rigid equipment mountings and matched to type and size of attachment devices used.
- E. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.

## 2.5 MECHANICAL ANCHOR BOLTS

- A. Mechanical Anchor Bolts: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E488.

## 2.6 ADHESIVE ANCHOR BOLTS

- A. Adhesive Anchor Bolts: Drilled-in and capsule anchor system containing PVC or urethane methacrylate-based resin and accelerator, or injected polymer or hybrid mortar adhesive. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E488.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine areas and equipment to receive vibration isolation and seismic-control devices for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for reinforcement and cast-in-place anchors to verify actual locations before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 APPLICATIONS

- A. Multiple Raceways or Cables: Secure raceways and cables to trapeze member with clamps approved for application by an agency acceptable to authorities having jurisdiction.

- B. Hanger-Rod Stiffeners: Install hanger-rod stiffeners where indicated on Drawings to receive them and where required to prevent buckling of hanger rods caused by seismic forces.
- C. Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static and seismic loads within specified loading limits.

### 3.3 SEISMIC-RESTRAINT DEVICE INSTALLATION

- A. Coordinate the location of embedded connection hardware with supported equipment attachment and mounting points.
- B. Equipment and Hanger Restraints:
  - 1. Install resilient, bolt-isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inch (3.2 mm).
  - 2. Install seismic-restraint devices using methods approved by an agency acceptable to authorities having jurisdiction providing required submittals for component.
- C. Install cables so they do not bend across edges of adjacent equipment or building structure.
- D. Install bushing assemblies for mounting bolts for wall-mounted equipment, arranged to provide resilient media where equipment or equipment-mounting channels are attached to wall.
- E. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.
- F. Drilled-in Anchors:
  - 1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
  - 2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
  - 3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
  - 4. Adhesive Anchors: Clean holes to remove loose material and drilling dust prior to installation of adhesive. Place adhesive in holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introduction of air pockets in the adhesive.
  - 5. Set anchors to manufacturer's recommended torque using a torque wrench.
  - 6. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.



3.4 ACCOMMODATION OF DIFFERENTIAL SEISMIC MOTION

- A. Install flexible connections in runs of raceways, cables, wireways, cable trays, and busways where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where connection is terminated to equipment that is anchored to a different structural element from the one supporting them as they approach equipment.

3.5 ADJUSTING

- A. Adjust restraints to permit free movement of equipment within normal mode of operation.

**END OF SECTION 260548.16**

## **SECTION 26 0553 - IDENTIFICATION 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 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Color and legend requirements for conductors, and warning labels and signs.
  - 2. Labels.
  - 3. Tapes.
  - 4. Tags.
  - 5. Signs.
  - 6. Cable ties.
  - 7. Fasteners for labels and signs.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

### **PART 2 - PRODUCTS**

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Comply with ASME A13.1.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Comply with NFPA 70E and Section 260573.19 "Arc-Flash Hazard Analysis" requirements for arc-flash warning labels.
- F. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

- G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

## 2.2 COLOR AND LEGEND REQUIREMENTS

- A. Color-Coding for Phase- and Voltage-Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.

- 1. Color shall be factory applied or field applied for sizes larger than No. 8 AWG if authorities having jurisdiction permit.
- 2. Colors for 208/120-V Circuits:
  - a. Phase A: Black.
  - b. Phase B: Red.
  - c. Phase C: Blue.
- 3. Colors for 480/277-V Circuits:
  - a. Phase A: Brown.
  - b. Phase B: Orange.
  - c. Phase C: Yellow.
- 4. Color for Neutral: White (208Y/120-V) or gray (480Y/277-V).
- 5. Color for Equipment Grounds: Green.

- B. Warning Label Colors:

- 1. Identify system voltage with black letters on an orange background.

- C. Warning labels and signs shall include, but are not limited to, the following legends:

- 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
- 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."

- D. Equipment Identification Labels:

- 1. White letters on a dark field.

## 2.3 LABELS

- A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

- B. Self-Adhesive Wraparound Labels: Preprinted, 3-mil- (0.08-mm-) thick, vinyl flexible label with acrylic pressure-sensitive adhesive.
  - 1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
  - 2. Marker for Labels: Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

## 2.4 TAPES

- A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
- B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mils (0.08 mm) thick by 1 to 2 inches (25 to 50 mm) wide; compounded for outdoor use.
- C. Floor Marking Tape: 2-inch- (50-mm-) wide, 5-mil (0.125-mm) pressure-sensitive vinyl tape, with yellow and black stripes and clear vinyl overlay.
- D. Underground-Line Warning Tape:
  - 1. Tape:
    - a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical utility lines.
    - b. Printing on tape shall be permanent and shall not be damaged by burial operations.
    - c. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.
  - 2. Color and Printing:
    - a. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4, and ANSI Z535.5.
    - b. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE".

## 2.5 TAGS

- A. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch (50 by 50 by 1.3 mm), with stamped legend, punched for use with self-locking cable tie fastener.

## 2.6 SIGNS

### A. Baked-Enamel Signs:

1. Preprinted aluminum signs, high-intensity reflective, punched or drilled for fasteners, with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal Size: 7 by 10 inches (180 by 250 mm).

### B. Metal-Backed Butyrate Signs:

1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs, with 0.0396-inch (1-mm) galvanized-steel backing, punched and drilled for fasteners, and with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal Size: 10 by 14 inches (250 by 360 mm).

## 2.7 CABLE TIES

### A. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 Deg F (23 Deg C) according to ASTM D638: 12,000 psi (82.7 MPa).
3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
4. Color: Black.

## 2.8 MISCELLANEOUS IDENTIFICATION PRODUCTS

### A. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

## **PART 3 - EXECUTION**

### 3.1 PREPARATION

- #### A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

### 3.2 INSTALLATION

- #### A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings,

manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

- B. Verify identity of each item before installing identification products.
- C. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- D. Apply identification devices to surfaces that require finish after completing finish work.
- E. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch- (10-mm-) high letters for emergency instructions at equipment used for power transfer.
- F. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.
- G. Self-Adhesive Wraparound Labels: Secure tight to surface at a location with high visibility and accessibility.
- H. Self-Adhesive Labels:
  - 1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
  - 2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
- I. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.
  - 1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.
- J. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's written instructions.
- K. Underground Line Warning Tape:
  - 1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches (400 mm) overall.
  - 2. Install underground-line warning tape for direct-buried cables in raceways.
- L. Metal Tags:
  - 1. Place in a location with high visibility and accessibility.
  - 2. Secure using UV-stabilized cable ties.

M. Baked-Enamel Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on minimum 1-1/2-inch- (38-mm-) high sign; where two lines of text are required, use signs minimum 2 inches (50 mm) high.

N. Metal-Backed Butyrate Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high sign; where two lines of text are required, use labels 2 inches (50 mm) high.

O. Laminated Acrylic or Melamine Plastic Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

P. Cable Ties: General purpose, for attaching tags, except as listed below:

1. Outdoors: UV-stabilized nylon.

### 3.3 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
- C. Power-Circuit Conductor Identification, 600 V or Less: For conductors in pull and junction boxes, and handholes, use self-adhesive vinyl tape to identify the phase.
- D. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use self-adhesive labels with the conductor or cable designation, origin, and destination.
- E. Control-Circuit Conductor Termination Identification: For identification at terminations, provide self-adhesive labels with the conductor designation.
- F. Locations of Underground Lines: Underground-line warning tape for power and control wiring.
- G. Workspace Indication: Apply floor marking tape to finished surfaces. Show working clearances in the direction of access to live parts. Workspace shall comply with NFPA 70 and 29 CFR 1926.403 unless otherwise indicated.

- H. Instructional Signs: Self-adhesive labels, including the color code for grounded and ungrounded conductors.
- I. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Baked-enamel warning signs or Metal-backed, butyrate warning signs.
  - 1. Apply to exterior of door, cover, or other access.
  - 2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:
    - a. Power-transfer switches.
    - b. Controls with external control power connections.
- J. Arc Flash Warning Labeling: Self-adhesive labels.
- K. Operating Instruction Signs: Baked-enamel warning sign or Metal-backed, butyrate warning signs.
- L. Emergency Operating Instruction Signs: Laminated acrylic or melamine plastic signs with white legend on a red background with minimum 3/8-inch- (10-mm-) high letters for emergency instructions at equipment used for power transfer.
- M. Equipment Identification Labels:
  - 1. Indoor Equipment: Laminated acrylic or melamine plastic sign.
  - 2. Outdoor Equipment: Laminated acrylic or melamine sign.
  - 3. Equipment to Be Labeled:
    - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be in the form of an engraved, laminated acrylic or melamine label.
    - b. Enclosures and electrical cabinets.
    - c. Switchboards.
    - d. Transformers: Label that includes tag designation indicated on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
    - e. Push-button stations.
    - f. Power-transfer equipment.
    - g. Contactors.

**END OF SECTION 260553**



## SECTION 26 0573.19 - ARC-FLASH HAZARD ANALYSIS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes a computer-based, arc-flash study to determine the arc-flash hazard distance and the incident energy to which personnel could be exposed during work on or near electrical equipment.

#### 1.3 DEFINITIONS

- A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.
- B. Field Adjusting Agency: An independent electrical testing agency with full-time employees and the capability to adjust devices and conduct testing indicated and that is a member company of NETA.
- C. One-Line Diagram: A diagram that shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.
- D. Power System Analysis Software Developer: An entity that commercially develops, maintains, and distributes computer software used for power system studies.
- E. Power Systems Analysis Specialist: Professional engineer in charge of performing the study and documenting recommendations, licensed in the state where Project is located.
- F. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion from the system.
- G. SCCR: Short-circuit current rating.
- H. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.
- I. Single-Line Diagram: See "One-Line Diagram."

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For computer software program to be used for studies.
- B. Study Submittals: Submit the following submittals after the approval of system protective devices submittals. Submittals may be in digital form:
  - 1. Arc-flash study input data, including completed computer program input data sheets.
  - 2. Arc-flash study report; signed, dated, and sealed by Power Systems Analysis Specialist.
  - 3. Submit study report for action prior to receiving final approval of distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure that selection of devices and associated characteristics is satisfactory.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data:
  - 1. For Power System Analysis Specialist.
- B. Product Certificates: For arc-flash hazard analysis software, certifying compliance with IEEE 1584 and NFPA 70E.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data:
  - 1. Provide maintenance procedures in equipment manuals according to requirements in NFPA 70E.
  - 2. Operation and Maintenance Procedures: Provide maintenance procedures for use by Owner's personnel that comply with requirements in NFPA 70E.

#### 1.7 QUALITY ASSURANCE

- A. Study shall be performed using commercially developed and distributed software designed specifically for power system analysis.
- B. Software algorithms shall comply with requirements of standards and guides specified in this Section.
- C. Manual calculations are unacceptable.
- D. Power System Analysis Software Qualifications: An entity that owns and markets computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices.
  - 1. Computer program shall be designed to perform arc-flash analysis or have a function, component, or add-on module designed to perform arc-flash analysis.

2. Computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.
- E. Power Systems Analysis Specialist Qualifications: Professional engineer in charge of performing the arc-flash study, analyzing the arc flash, and documenting recommendations, licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.
- F. Arc-Flash Study Certification: Arc-Flash Study Report shall be signed and sealed by Power Systems Analysis Specialist.

## **PART 2 - PRODUCTS**

### 2.1 COMPUTER SOFTWARE DEVELOPERS

- A. Comply with IEEE 1584 and NFPA 70E.
- B. Analytical features of device coordination study computer software program shall have the capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

### 2.2 ARC-FLASH STUDY REPORT CONTENT

- A. Executive summary of study findings.
- B. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of results.
- C. One-line diagram, showing the following:
  1. Protective device designations and ampere ratings.
  2. Conductor types, sizes, and lengths.
  3. Transformer kilovolt ampere (kVA) and voltage ratings, including derating factors and environmental conditions.
  4. Motor and generator designations and kVA ratings.
  5. Switchgear, switchboard, motor-control center, panelboard designations, and ratings.
- D. Study Input Data: As described in "Power System Data" Article.
- E. Arc-Flash Study Output Reports:
  1. Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each equipment location included in the report:
    - a. Voltage.
    - b. Calculated symmetrical fault-current magnitude and angle.
    - c. Fault-point X/R ratio.
    - d. No AC Decrement (NACD) ratio.

- e. Equivalent impedance.
- f. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a symmetrical basis.
- g. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a total basis.

F. Incident Energy and Flash Protection Boundary Calculations:

- 1. Arcing fault magnitude.
- 2. Protective device clearing time.
- 3. Duration of arc.
- 4. Arc-flash boundary.
- 5. Restricted approach boundary.
- 6. Limited approach boundary.
- 7. Working distance.
- 8. Incident energy.
- 9. Hazard risk category.
- 10. Recommendations for arc-flash energy reduction.

G. Fault study input data, case descriptions, and fault-current calculations including a definition of terms and guide for interpretation of computer printout.

## 2.3 ARC-FLASH WARNING LABELS

A. Comply with requirements in Section 260553 "Identification for Electrical Systems" for self-adhesive equipment labels. Produce a 3.5-by-5-inch (76-by-127-mm) self-adhesive equipment label for each work location included in the analysis.

B. Label shall have an orange header with the wording, "WARNING, ARC-FLASH HAZARD," and shall include the following information taken directly from the arc-flash hazard analysis:

- 1. Location designation.
- 2. Nominal voltage.
- 3. Protection boundaries.
  - a. Arc-flash boundary.
  - b. Restricted approach boundary.
  - c. Limited approach boundary.
- 4. Arc flash PPE category.
- 5. Required minimum arc rating of PPE in Cal/cm squared.
- 6. Available incident energy.
- 7. Working distance.
- 8. Engineering report number, revision number, and issue date.

C. Labels shall be machine printed, with no field-applied markings.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine Project overcurrent protective device submittals. Proceed with arc-flash study only after relevant equipment submittals have been assembled. Overcurrent protective devices that have not been submitted and approved prior to arc-flash study may not be used in study.

### **3.2 ARC-FLASH HAZARD ANALYSIS**

- A. Comply with NFPA 70E and its Annex D for hazard analysis study.
- B. Preparatory Studies: Perform the Short-Circuit study prior to starting the Arc-Flash Hazard Analysis or obtain results from another source.
- C. Calculate maximum and minimum contributions of fault-current size.
  - 1. Maximum calculation shall assume a maximum contribution from the utility and shall assume motors to be operating under full-load conditions.
  - 2. Calculate arc-flash energy at 85 percent of maximum short-circuit current according to IEEE 1584 recommendations.
  - 3. Calculate arc-flash energy at 38 percent of maximum short-circuit current according to NFPA 70E recommendations.
  - 4. Calculate arc-flash energy with the utility contribution at a minimum and assume no motor contribution.
- D. Calculate the arc-flash protection boundary and incident energy at locations in electrical distribution system where personnel could perform work on energized parts.
- E. Include medium- and low-voltage equipment locations, except equipment rated 240 V ac or less fed from transformers less than 125 kVA.
- F. Calculate the limited, restricted, and prohibited approach boundaries for each location.
- G. Incident energy calculations shall consider the accumulation of energy over time when performing arc-flash calculations on buses with multiple sources. Iterative calculations shall take into account the changing current contributions, as the sources are interrupted or decremented with time. Fault contribution from motors and generators shall be decremented as follows:
  - 1. Fault contribution from induction motors shall not be considered beyond three to five cycles.
  - 2. Fault contribution from synchronous motors and generators shall be decayed to match the actual decrement of each as closely as possible (for example, contributions from permanent magnet generators will typically decay from 10 per unit to three per unit after 10 cycles).

- H. Arc-flash energy shall generally be reported for the maximum of line or load side of a circuit breaker. However, arc-flash computation shall be performed and reported for both line and load side of a circuit breaker as follows:
  - 1. When the circuit breaker is in a separate enclosure.
  - 2. When the line terminals of the circuit breaker are separate from the work location.
- I. Base arc-flash calculations on actual overcurrent protective device clearing time. Cap maximum clearing time at two seconds based on IEEE 1584, Section B.1.2.

### 3.3 POWER SYSTEM DATA

- A. Obtain all data necessary for conduct of the arc-flash hazard analysis.
  - 1. Verify completeness of data supplied on one-line diagram on Drawings. Call discrepancies to Architect's attention.
  - 2. For new equipment, use characteristics from approved submittals under provisions of action submittals and information submittals for this Project.

### 3.4 LABELING

- A. Apply one arc-flash label on the front cover for each equipment included in the study. Base arc-flash label data on highest values calculated at each location.
- B. Each piece of equipment listed below shall have an arc-flash label applied to it:
  - 1. Low-voltage switchboard.
  - 2. Low voltage transformers. Exclude transformers with high voltage side 240 V or less and less than 125 kVA.
- C. Note on record Drawings the location of equipment where the personnel could be exposed to arc-flash hazard during their work.
  - 1. Indicate arc-flash energy.
  - 2. Indicate protection level required.

### 3.5 APPLICATION OF WARNING LABELS

- A. Install arc-flash warning labels under the direct supervision and control of Power System Analysis Specialist.

3.6 DEMONSTRATION

- A. Engage Power Systems Analysis Specialist to train Owner's maintenance personnel in potential arc-flash hazards associated with working on energized equipment and the significance of arc-flash warning labels.

**END OF SECTION 260573.19**

## SECTION 26 2213 - LOW-VOLTAGE DISTRIBUTION TRANSFORMERS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes distribution, dry-type transformers with a nominal primary and secondary rating of 600 V and less, with capacities up to 1500 kVA.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type and size of transformer.
  - 2. Include rated nameplate data, capacities, weights, dimensions, minimum clearances, installed devices and features, and performance for each type and size of transformer.
- B. Shop Drawings:
  - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 2. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment.
  - 3. Include diagrams for power, signal, and control wiring.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Data: Certificates, for transformers, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
  - 4. Certification: Indicate that equipment meets equipment seismic requirements.



- B. Source quality-control reports.
- C. Field quality-control reports.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For transformers to include in emergency, operation, and maintenance manuals.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Inspection: On receipt, inspect for and note any shipping damage to packaging and transformer.
  - 1. If manufacturer packaging is removed for inspection, and transformer will be stored after inspection, re-package transformer using original or new packaging materials that provide protection equivalent to manufacturer's packaging.
- B. Storage: Store in a warm, dry, and temperature-stable location in original shipping packaging.
- C. Temporary Heating: Apply temporary heat according to manufacturer's written instructions within the enclosure of each ventilated-type unit, throughout periods during which equipment is not energized and when transformer is not in a space that is continuously under normal control of temperature and humidity.
- D. Handling: Follow manufacturer's instructions for lifting and transporting transformers.

### **PART 2 - PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain each transformer type from single source from single manufacturer.

#### 2.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Transformers shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "the transformer will remain in place without separation of any parts when subjected to the seismic forces specified and the transformer will be fully operational after the seismic event."

#### 2.3 GENERAL TRANSFORMER REQUIREMENTS

- A. Description: Factory-assembled and -tested, air-cooled units for 60-Hz service.

- B. Comply with NFPA 70.
  - 1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- C. Transformers Rated 15 kVA and Larger:
  - 1. Comply with 10 CFR 431 (DOE 2016) efficiency levels.
  - 2. Marked as compliant with DOE 2016 efficiency levels by an NRTL.
- D. Shipping Restraints: Paint or otherwise color-code bolts, wedges, blocks, and other restraints that are to be removed after installation and before energizing. Use fluorescent colors that are easily identifiable inside the transformer enclosure.

## 2.4 DISTRIBUTION TRANSFORMERS

- A. Comply with NFPA 70, and list and label as complying with UL 1561.
- B. Provide transformers that are constructed to withstand seismic forces specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- C. Cores: Electrical grade, non-aging silicon steel with high permeability and low hysteresis losses.
  - 1. One leg per phase.
  - 2. Core volume shall allow efficient transformer operation at 10 percent above the nominal tap voltage.
  - 3. Grounded to enclosure.
- D. Coils: Continuous windings without splices except for taps.
  - 1. Coil Material: Copper.
  - 2. Internal Coil Connections: Brazed or pressure type.
  - 3. Terminal Connections: Bolted.
- E. Encapsulation: Transformers smaller than 30 kVA shall have core and coils completely resin encapsulated.
- F. Enclosure: Ventilated.
  - 1. NEMA 250, Type 3R, Stainless Steel.
  - 2. KVA Ratings: Based on convection cooling only and not relying on auxiliary fans.
  - 3. Wiring Compartment: Sized for conduit entry and wiring installation.
- G. Taps for Transformers 3 kVA and Smaller: None.
- H. Taps for Transformers 7.5 to 24 kVA: One 5 percent tap above and one 5 percent tap below normal full capacity.

- I. Taps for Transformers 25 kVA and Larger: Two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.
- J. Insulation Class, Smaller Than 30 kVA: 180 deg C, UL-component-recognized insulation system with a maximum of 115 deg C rise above 40 deg C ambient temperature.
- K. Insulation Class, 30 kVA and Larger: 220 deg C, UL-component-recognized insulation system with a maximum of 80 deg C rise above 40 deg C ambient temperature.
- L. Grounding: Provide ground-bar kit or a ground bar installed on the inside of the transformer enclosure.
- M. Low-Sound-Level Requirements: Maximum sound levels when factory tested according to IEEE C57.12.91, as follows:
  - 1. 9.00 kVA and Less: 40 dBA.
  - 2. 9.01 to 30.00 kVA: 45 dBA.
  - 3. 150.01 to 300.00 kVA: 55 dBA for K-factors of 1, 4, and 9.
  - 4. 300.01 to 500.00 kVA: 60 dBA for K-factors of 1, 4, and 9.

## 2.5 IDENTIFICATION

- A. Nameplates: Engraved, laminated-acrylic or melamine plastic signs for each distribution transformer, mounted with corrosion-resistant screws. Nameplates and label products are specified in Section 260553 "Identification for Electrical Systems."

## 2.6 SOURCE QUALITY CONTROL

- A. Test and inspect transformers according to IEEE C57.12.01 and IEEE C57.12.91.
  - 1. Resistance measurements of all windings at rated voltage connections and at all tap connections.
  - 2. Ratio tests at rated voltage connections and at all tap connections.
  - 3. Phase relation and polarity tests at rated voltage connections.
  - 4. No load losses, and excitation current and rated voltage at rated voltage connections.
  - 5. Impedance and load losses at rated current and rated frequency at rated voltage connections.
  - 6. Applied and induced tensile tests.
  - 7. Regulation and efficiency at rated load and voltage.
  - 8. Insulation-Resistance Tests:
    - a. High-voltage to ground.
    - b. Low-voltage to ground.
    - c. High-voltage to low-voltage.
  - 9. Temperature tests.
- B. Factory Sound-Level Tests: Conduct prototype sound-level tests on production-line products.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine conditions for compliance with enclosure- and ambient-temperature requirements for each transformer.
- B. Verify that field measurements are as needed to maintain working clearances required by NFPA 70 and manufacturer's written instructions.
- C. Examine walls, floors, roofs, and concrete bases for suitable mounting conditions where transformers will be installed.
- D. Verify that ground connections are in place and requirements in Section 260526 "Grounding and Bonding for Electrical Systems" have been met. Maximum ground resistance shall be 5 ohms at location of transformer.
- E. Environment: Enclosures shall be rated for the environment in which they are located. Covers for NEMA 250, Type 4X enclosures shall not cause accessibility problems.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2 INSTALLATION**

- A. Install transformers level and plumb on a concrete base with vibration-dampening supports. Locate transformers away from corners and not parallel to adjacent wall surface.
- B. Construct concrete bases and anchor floor-mounted transformers according to manufacturer's written instructions, seismic codes applicable to Project, and requirements in Section 260529 "Hangers and Supports for Electrical Systems."
  - 1. Coordinate size and location of concrete bases with actual transformer provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.
- C. Secure transformer to concrete base according to manufacturer's written instructions.
- D. Secure covers to enclosure and tighten all bolts to manufacturer-recommended torques to reduce noise generation.
- E. Remove shipping bolts, blocking, and wedges.

### **3.3 CONNECTIONS**

- A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

- B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- C. 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-486B.
- D. Provide flexible connections at all conduit and conductor terminations and supports to eliminate sound and vibration transmission to the building structure.

### 3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections with the assistance of a factory-authorized service representative.
- B. Small (Up to 167-kVA Single-Phase or 500-kVA Three-Phase) Dry-Type Transformer Field Tests:
  - 1. Visual and Mechanical Inspection.
    - a. Inspect physical and mechanical condition.
    - b. Inspect anchorage, alignment, and grounding.
    - c. Verify that resilient mounts are free and that any shipping brackets have been removed.
    - d. Verify the unit is clean.
    - e. Perform specific inspections and mechanical tests recommended by manufacturer.
    - f. Verify that as-left tap connections are as specified.
    - g. Verify the presence of surge arresters and that their ratings are as specified.
  - 2. Electrical Tests:
    - a. Measure resistance at each winding, tap, and bolted connection.
    - b. Perform insulation-resistance tests winding-to-winding and each winding-to-ground. Apply voltage according to manufacturer's published data. In the absence of manufacturer's published data, comply with NETA ATS, Table 100.5. Calculate polarization index: the value of the index shall not be less than 1.0.
    - c. Perform turns-ratio tests at all tap positions. Test results shall not deviate by more than one-half percent from either the adjacent coils or the calculated ratio. If test fails, replace the transformer.
    - d. Verify correct secondary voltage, phase-to-phase and phase-to-neutral, after energization and prior to loading.
- C. Remove and replace units that do not pass tests or inspections and retest as specified above.
- D. Infrared Scanning: Two months after Substantial Completion, perform an infrared scan of transformer connections.
  - 1. Use an infrared-scanning device designed to measure temperature or detect significant deviations from normal values. Provide documentation of device calibration.
  - 2. Perform two follow-up infrared scans of transformers, one at four months and the other at 11 months after Substantial Completion.

3. Prepare a certified report identifying transformer checked and describing results of scanning. Include notation of deficiencies detected, remedial action taken, and scanning observations after remedial action.
- E. Test Labeling: On completion of satisfactory testing of each unit, attach a dated and signed "Satisfactory Test" label to tested component.

### 3.5 ADJUSTING

- A. Record transformer secondary voltage at each unit for at least 48 hours of typical occupancy period. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 5 percent and not being lower than nameplate voltage minus 3 percent at maximum load conditions. Submit recording and tap settings as test results.
- B. Output Settings Report: Prepare a written report recording output voltages and tap settings.

### 3.6 CLEANING

- A. Vacuum dirt and debris; do not use compressed air to assist in cleaning.

**END OF SECTION 262213**

## SECTION 26 2413 - SWITCHBOARDS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Service and distribution switchboards rated 600 V and less.
2. Surge protection devices.
3. Disconnecting and overcurrent protective devices.
4. Instrumentation.
5. Control power.
6. Accessory components and features.
7. Identification.

- B. Related Requirements

1. Section 260573.19 "Arc-Flash Hazard Analysis" for arc-flash analysis and arc-flash label requirements.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each switchboard, overcurrent protective device, surge protection device, ground-fault protector, accessory, and component.

1. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.

- B. Shop Drawings: For each switchboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details, including required clearances and service space around equipment. Show tabulations of installed devices, equipment features, and ratings.
2. Detail enclosure types for types other than NEMA 250, Type 1.
3. Detail bus configuration, current, and voltage ratings.
4. Detail short-circuit current rating of switchboards and overcurrent protective devices.
5. Include descriptive documentation of optional barriers specified for electrical insulation and isolation.
6. Detail utility company's metering provisions with indication of approval by utility company.
7. Include evidence of NRTL listing for series rating of installed devices.

8. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
9. Include time-current coordination curves for each type and rating of overcurrent protective device included in switchboards.
10. Include schematic and wiring diagrams for power, signal, and control wiring.

C. Delegated Design Submittal:

1. For arc-flash hazard analysis.
2. For arc-flash labels.

#### 1.4 INFORMATIONAL SUBMITTALS

A. Seismic Qualification Data: Certificates, for switchboards, overcurrent protective devices, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

B. Field Quality-Control Reports:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

#### 1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For switchboards and components to include in emergency, operation, and maintenance manuals.

1. Include the following:
  - a. Routine maintenance requirements for switchboards and all installed components.
  - b. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
  - c. Time-current coordination curves for each type and rating of overcurrent protective device included in switchboards.

#### 1.6 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers qualified as defined in NEMA PB 2.1 and trained in electrical safety as required by NFPA 70E.



## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver switchboards in sections or lengths that can be moved past obstructions in delivery path.
- B. Remove loose packing and flammable materials from inside switchboards connect factory-installed space heaters to temporary electrical service to prevent condensation.
- C. Handle and prepare switchboards for installation according to NECA 400.

## 1.8 FIELD CONDITIONS

- A. Installation Pathway: Remove and replace access fencing, doors, and structures to provide pathway for moving switchboards into place.
- B. Environmental Limitations:
  - 1. Rate equipment for continuous operation under the following conditions unless otherwise indicated:
    - a. Ambient Temperature: Not exceeding 104 deg F (40 deg C).
    - b. Altitude: Not exceeding 6600 feet (2000 m).
- C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
  - 1. Notify Owner no fewer than seven days in advance of proposed interruption of electric service.
  - 2. Indicate method of providing temporary electric service.
  - 3. Do not proceed with interruption of electric service without Owner's written permission.
  - 4. Comply with NFPA 70E.

## 1.9 COORDINATION

- A. Coordinate layout and installation of switchboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- B. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.

## 1.10 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace switchboard enclosures, buswork, overcurrent protective devices, accessories, and factory installed interconnection wiring that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Three years from date of Substantial Completion.
- B. Manufacturer's Warranty: Manufacturer's agrees to repair or replace surge protection devices that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Switchboards shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation. Shake-table testing shall comply with ICC-ES AC156.
  - 2. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

### 2.2 SWITCHBOARDS

- A. Source Limitations: Obtain switchboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.
- B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for switchboards including clearances between switchboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Comply with NEMA PB 2.
- E. Comply with NFPA 70.
- F. Comply with UL 891.

- G. Front-Connected, Front-Accessible Switchboards:
  - 1. Main Devices: Panel and fixed, individually mounted.
  - 2. Branch Devices: Panel mounted.
  - 3. Sections front and rear aligned.
- H. Nominal System Voltage: 480Y/277 V.
- I. Main-Bus Continuous: Ampere rating per Drawings.
- J. Seismic Requirements: Fabricate and test switchboards according to IEEE 344 to withstand seismic forces defined in Section 260548.16 "Seismic Controls for Electrical Systems."
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation. Shake-table testing shall comply with ICC-ES AC156.
    - a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
- K. Outdoor Enclosures: Gasketed Type 3R.
  - 1. Finish: Factory-applied finish in manufacturer's standard color; undersurfaces treated with corrosion-resistant undercoating.
  - 2. Enclosure: Downward, rearward sloping roof.
  - 3. Accessories: LED luminaires with emergency battery packs, ceiling mounted; wired to a light switch; and ground-fault circuit interrupter (GFCI) duplex receptacle.
  - 4. Power for Space Heaters, Lighting, and Receptacle: Include a control-power transformer, with spare capacity of 25 percent, within the switchboard. Supply voltage shall be 120 V ac.
- L. Barriers: Between adjacent switchboard sections.
- M. Insulation and isolation for main bus of main section and main and vertical buses of feeder sections.
- N. Space Heaters: Factory-installed electric space heaters of sufficient wattage in each vertical section to maintain enclosure temperature above expected dew point.
  - 1. Space-Heater Control: Thermostats to maintain temperature of each section above expected dew point.
- O. Service Entrance Rating: Switchboards intended for use as service entrance equipment shall contain from one to six service disconnecting means with overcurrent protection, a neutral bus with disconnecting link, a grounding electrode conductor terminal, and a main bonding jumper.
- P. Utility Metering Compartment: Barrier compartment and section complying with utility company's requirements; hinged sealable door; buses provisioned for mounting utility company's current transformers and potential transformers or potential taps as required by utility

company. If separate vertical section is required for utility metering, match and align with basic switchboard. Provide service entrance label and necessary applicable service entrance features.

- Q. Customer Metering Compartment: A separate customer metering compartment and section with front hinged door, and section with front hinged door, for indicated metering, and current transformers for each meter. Current transformer secondary wiring shall be terminated on shorting-type terminal blocks.
- R. Bus Transition and Incoming Pull Sections: Matched and aligned with basic switchboard.
- S. Hinged Front Panels: Allow access to circuit breaker, metering, accessory, and blank compartments.
- T. Pull Box on Top of Switchboard:
  - 1. Adequate ventilation to maintain temperature in pull box within same limits as switchboard.
  - 2. Removable covers shall form top, front, and sides. Top covers at rear shall be easily removable for drilling and cutting.
  - 3. Cable supports shall be arranged to facilitate cabling and adequate to support cables indicated, including those for future installation.
- U. Buses and Connections: Three phase, four wire unless otherwise indicated.
  - 1. Provide phase bus arrangement A, B, C from front to back, top to bottom, and left to right when viewed from the front of the switchboard.
  - 2. Phase- and Neutral-Bus Material: Tin-plated, high-strength, electrical-grade aluminum alloy with tin-plated aluminum circuit-breaker line connections.
  - 3. Copper feeder circuit-breaker line connections.
  - 4. Load Terminals: Insulated, rigidly braced, runback bus extensions, of same material as through buses, equipped with mechanical connectors for outgoing circuit conductors. Provide load terminals for future circuit-breaker positions at full-ampere rating of circuit-breaker position.
  - 5. Ground Bus: Minimum-size required by UL 891, hard-drawn copper of 98 percent conductivity, equipped with compression connectors for feeder and branch-circuit ground conductors.
  - 6. Main-Phase Buses and Equipment-Ground Buses: Uniform capacity for entire length of switchboard's main and distribution sections. Provide for future extensions from both ends.
  - 7. Disconnect Links:
    - a. Isolate neutral bus from incoming neutral conductors.
    - b. Bond neutral bus to equipment-ground bus for switchboards utilized as service equipment or separately derived systems.
  - 8. Neutral Buses: 50 percent of the ampacity of phase buses unless otherwise indicated, equipped with compression connectors for outgoing circuit neutral cables. Brace bus extensions for busway feeder neutral bus.
  - 9. Isolation Barrier Access Provisions: Permit checking of bus-bolt tightness.

- V. Future Devices: Equip compartments with mounting brackets, supports, bus connections, and appurtenances at full rating of circuit-breaker compartment.
- W. Bus-Bar Insulation: Factory-applied, flame-retardant, tape wrapping of individual bus bars or flame-retardant, spray-applied insulation. Minimum insulation temperature rating of 105 deg C.

## 2.3 SURGE PROTECTION DEVICES

- A. SPDs: Comply with UL 1449, Type 2.
- B. Features and Accessories:
  - 1. Integral disconnect switch.
  - 2. Internal thermal protection that disconnects the SPD before damaging internal suppressor components.
  - 3. Indicator light display for protection status.
  - 4. Form-C contacts rated at 5 A and 250-V ac, one normally open and one normally closed, for remote monitoring of protection status.
  - 5. Surge counter.
- C. Peak Surge Current Rating: The minimum single-pulse surge current withstand rating per phase shall not be less than 250kA. The peak surge current rating shall be the arithmetic sum of the ratings of the individual MOVs in a given mode.
- D. Protection modes and UL 1449 VPR for grounded wye circuits with 480Y/277 V and 208Y/120 V, three-phase, four-wire circuits shall not exceed the following:
  - 1. Line to Neutral: 1200 V for 480Y/277 V and 700 V for 208Y/120 V.
  - 2. Line to Ground: 1200 V for 480Y/277 V and 1200 V for 208Y/120 V.
  - 3. Line to Line: 2000 V for 480Y/277 V and 1000 V for 208Y/120 V.
- E. SCCR: Equal or exceed 200 kA.
- F. Nominal Rating: 20 kA.

## 2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with series-connected rating to meet available fault currents.
  - 1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
  - 2. Electronic trip circuit breakers with rms sensing; field-replaceable rating plug or field-replaceable electronic trip; and the following field-adjustable settings:
    - a. Instantaneous trip.
    - b. Long- and short-time pickup levels.
    - c. Long and short time adjustments.
    - d. Ground-fault pickup level, time delay, and I squared t response.

3. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6-mA trip).
4. Ground-Fault Equipment Protection (GFEP) Circuit Breakers: Class B ground-fault protection (30-mA trip).
5. MCCB Features and Accessories:
  - a. Standard frame sizes, trip ratings, and number of poles.
  - b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor material.
  - c. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.

## 2.5 INSTRUMENTATION

- A. Instrument Transformers: NEMA EI 21.1, and the following:
  1. Potential Transformers: NEMA EI 21.1; 120 V, 60 Hz, tapped secondary; disconnecting type with integral fuse mountings. Burden and accuracy shall be consistent with connected metering and relay devices.
  2. Current Transformers: NEMA EI 21.1; 5 A, 60 Hz, secondary; wound, bar or window type; single secondary winding and secondary shorting device. Burden and accuracy shall be consistent with connected metering and relay devices.
  3. Control-Power Transformers: Dry type, mounted in separate compartments for units larger than 3 kVA.
  4. Current Transformers for Neutral and Ground-Fault Current Sensing: Connect secondary wiring to ground overcurrent relays, via shorting terminals, to provide selective tripping of main and tie circuit breaker. Coordinate with feeder circuit-breaker, ground-fault protection.
- B. Multifunction Digital-Metering Monitor: Microprocessor-based unit suitable for three- or four-wire systems and with the following features:
  1. Switch-selectable digital display of the following values with maximum accuracy tolerances as indicated:
    - a. Phase Currents, Each Phase: Plus or minus 0.5 percent.
    - b. Phase-to-Phase Voltages, Three Phase: Plus or minus 0.5 percent.
    - c. Phase-to-Neutral Voltages, Three Phase: Plus or minus 0.5 percent.
    - d. Megawatts: Plus or minus 1 percent.
    - e. Megavars: Plus or minus 1 percent.
    - f. Power Factor: Plus or minus 1 percent.
    - g. Frequency: Plus or minus 0.1 percent.
    - h. Accumulated Energy, Megawatt Hours: Plus or minus 1 percent; accumulated values unaffected by power outages up to 72 hours.
    - i. Megawatt Demand: Plus or minus 1 percent; demand interval programmable from five to 60 minutes.
    - j. Contact devices to operate remote impulse-totalizing demand meter.
  2. Mounting: Display and control unit flush or semiflush mounted in instrument compartment door.

## 2.6 CONTROL POWER

- A. Control Circuits: 120-V ac, supplied through secondary disconnecting devices from control-power transformer.
- B. Control-Power Fuses: Primary and secondary fuses for current-limiting and overload protection of transformer and fuses for protection of control circuits.
- C. Control Wiring: Factory installed, with bundling, lacing, and protection included. Provide flexible conductors for No. 8 AWG and smaller, for conductors across hinges, and for conductors for interconnections between shipping units.

## 2.7 ACCESSORY COMPONENTS AND FEATURES

- A. Accessory Set: Include tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.
- B. Mounting Accessories: For anchors, mounting channels, bolts, washers, and other mounting accessories, comply with requirements in Section 260548.16 "Seismic Controls for Electrical Systems" or manufacturer's instructions.

## 2.8 IDENTIFICATION

- A. Service Equipment Label: NRTL labeled for use as service equipment for switchboards with one or more service disconnecting and overcurrent protective devices.

# **PART 3 - EXECUTION**

## 3.1 EXAMINATION

- A. Receive, inspect, handle, and store switchboards according to NECA 400.
  - 1. Lift or move panelboards with spreader bars and manufacturer-supplied lifting straps following manufacturer's instructions.
  - 2. Use rollers, slings, or other manufacturer-approved methods if lifting straps are not furnished.
  - 3. Protect from moisture, dust, dirt, and debris during storage and installation.
  - 4. Install temporary heating during storage per manufacturer's instructions.
- B. Examine switchboards before installation. Reject switchboards that are moisture damaged or physically damaged.
- C. Examine elements and surfaces to receive switchboards for compliance with installation tolerances and other conditions affecting performance of the Work or that affect the performance of the equipment.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install switchboards and accessories according to NECA 400.
- B. Equipment Mounting: Install switchboards on concrete base, 4-inch (100-mm) nominal thickness.
  - 1. Install conduits entering underneath the switchboard, entering under the vertical section where the conductors will terminate. Install with couplings flush with the concrete base. Extend 2 inches (50-mm) above concrete base after switchboard is anchored in place.
  - 2. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 3. Install anchor bolts to elevations required for proper attachment to switchboards.
  - 4. Anchor switchboard to building structure at the top of the switchboard if required or recommended by the manufacturer.
- C. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, straps and brackets, and temporary blocking of moving parts from switchboard units and components.
- D. Comply with mounting and anchoring requirements specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- E. Operating Instructions: Frame and mount the printed basic operating instructions for switchboards, including control and key interlocking sequences and emergency procedures. Fabricate frame of finished wood or metal and cover instructions with clear acrylic plastic. Mount on front of switchboards.
- F. Install filler plates in unused spaces of panel-mounted sections.
- G. Install overcurrent protective devices, surge protection devices, and instrumentation.
  - 1. Set field-adjustable switches and circuit-breaker trip ranges.
- H. Comply with NECA 1.

### 3.3 CONNECTIONS

- A. Bond conduits entering underneath the switchboard to the equipment ground bus with a bonding conductor sized per NFPA 70.
- B. Support and secure conductors within the switchboard according to NFPA 70.

### 3.4 IDENTIFICATION

- A. Switchboard Nameplates: Label each switchboard compartment with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- B. Device Nameplates: Label each disconnecting and overcurrent protective device and each meter and control device mounted in compartment doors with a nameplate complying with



requirements for identification specified in Section 260553 "Identification for Electrical Systems."

### 3.5 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections.
- C. Tests and Inspections:
  - 1. Acceptance Testing:
    - a. Test insulation resistance for each switchboard bus, component, connecting supply, feeder, and control circuit. Open control and metering circuits within the switchboard, and remove neutral connection to surge protection and other electronic devices prior to insulation test. Reconnect after test.
    - b. Test continuity of each circuit.
  - 2. Test ground-fault protection of equipment for service equipment per NFPA 70.
  - 3. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
  - 4. Correct malfunctioning units on-site where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
  - 5. Perform the following infrared scan tests and inspections, and prepare reports:
    - a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each switchboard. Remove front panels so joints and connections are accessible to portable scanner.
    - b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switchboard 11 months after date of Substantial Completion.
    - c. Instruments and Equipment:
      - 1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
  - 6. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Switchboard will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports, including a certified report that identifies switchboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.6 ADJUSTING

- A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.
- B. Set field-adjustable circuit-breaker trip ranges as indicated.

3.7 PROTECTION

- A. Temporary Heating: Apply temporary heat, to maintain temperature according to manufacturer's written instructions, until switchboard is ready to be energized and placed into service.

3.8 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain switchboards, overcurrent protective devices, instrumentation, and accessories.

**END OF SECTION 262413**

## 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 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Distribution panelboards.
  - 2. Lighting and appliance branch-circuit panelboards.

#### 1.3 DEFINITIONS

- A. ATS: Acceptance testing specification.
- B. GFCI: Ground-fault circuit interrupter.
- C. GFEP: Ground-fault equipment protection.
- D. HID: High-intensity discharge.
- E. MCCB: Molded-case circuit breaker.
- F. SPD: Surge protective device.
- G. VPR: Voltage protection rating.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of panelboard.
  - 1. Include materials, switching and overcurrent protective devices, SPDs, accessories, and components indicated.
  - 2. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
  - 1. Include dimensioned plans, elevations, sections, and details.
  - 2. Show tabulations of installed devices with nameplates, conductor termination sizes, equipment features, and ratings.

3. Detail enclosure types including mounting and anchorage, environmental protection, knockouts, corner treatments, covers and doors, gaskets, hinges, and locks.
4. Detail bus configuration, current, and voltage ratings.
5. Short-circuit current rating of panelboards and overcurrent protective devices.
6. Include evidence of NRTL listing for SPD as installed in panelboard.
7. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
8. Include wiring diagrams for power, signal, and control wiring.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. Include the following:
  1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: ISO 9001 or 9002 certified.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.
- B. Handle and prepare panelboards for installation according to NECA 407.

#### 1.8 FIELD CONDITIONS

- A. Environmental Limitations:
  1. Rate equipment for continuous operation under the following conditions unless otherwise indicated:
    - a. Ambient Temperature: Not exceeding minus 22 deg F (minus 30 deg C) to plus 104 deg F (plus 40 deg C).
    - b. Altitude: Not exceeding 6600 feet (2000 m).
- B. Service Conditions: NEMA PB 1, usual service conditions, as follows:
  1. Ambient temperatures within limits specified.
  2. Altitude not exceeding 6600 feet (2000 m).

- C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
  - 1. Notify Owner no fewer than seven days in advance of proposed interruption of electric service.
  - 2. Do not proceed with interruption of electric service without Owner's written permission.
  - 3. Comply with NFPA 70E.

## 1.9 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace panelboards that fail in materials or workmanship within specified warranty period.
  - 1. Panelboard Warranty Period: Three years from date of Substantial Completion.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace SPD that fails in materials or workmanship within specified warranty period.
  - 1. SPD Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PANELBOARDS COMMON REQUIREMENTS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Section 260548.16 "Seismic Controls for Electrical Systems."
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with NEMA PB 1.
- D. Comply with NFPA 70.
- E. Enclosures: Surface-mounted, dead-front cabinets.
  - 1. Rated for environmental conditions at installed location.
    - a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
    - b. Outdoor Locations: NEMA 250, Gasketed Type 3R.
  - 2. Height: 84 inches (2.13 m) maximum, unless otherwise noted.
  - 3. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions. Trims shall cover all live parts and shall have no exposed hardware.
  - 4. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Trims shall cover all live parts and shall have no exposed hardware.

5. Finishes:
  - a. Panels and Trim: galvanized steel factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
  - b. Back Boxes: Same finish as panels and trim.
  
- F. Phase, Neutral, and Ground Buses:
  1. Material: Tin-plated aluminum.
    - a. Plating shall run entire length of bus.
    - b. Bus shall be fully rated the entire length.
  2. Interiors shall be factory assembled into a unit. Replacing switching and protective devices shall not disturb adjacent units or require removing the main bus connectors.
  3. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
  4. Full-Sized Neutral: Mount electrically isolated from enclosure. Do not mount neutral bus in gutter.
  
- G. Conductor Connectors: Suitable for use with conductor material and sizes.
  1. Material: Tin-plated aluminum.
  2. Terminations shall allow use of 75 deg C rated conductors without derating.
  3. Size: Lugs suitable for indicated conductor sizes, with additional gutter space, if required, for larger conductors.
  4. Main and Neutral Lugs: Mechanical type, with a lug on the neutral bar for each pole in the panelboard.
  5. Ground Lugs and Bus-Configured Terminators: Mechanical type, with a lug on the bar for each pole in the panelboard.
  
- H. Future Devices: Panelboards shall have mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
  
- I. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Assembly listed by an NRTL for 100 percent interrupting capacity.
  1. Panelboards and overcurrent protective devices rated 240 V or less shall have short-circuit ratings as shown on Drawings, but not less than 10,000 A rms symmetrical.
  2. Panelboards and overcurrent protective devices rated above 240 V and less than 600 V shall have short-circuit ratings as shown on Drawings, but not less than 14,000 A rms symmetrical.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Panelboards shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."
- B. Surge Suppression: Factory installed as an integral part of indicated panelboards, complying with UL 1449 SPD Type 2.

## 2.3 POWER PANELBOARDS

- A. Panelboards: NEMA PB 1, distribution type.
- B. Doors: Secured with vault-type latch with tumbler lock; keyed alike.
  - 1. For doors more than 36 inches (914 mm) high, provide two latches, keyed alike.
- C. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.
- D. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers.

## 2.4 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- B. Mains: lugs only.
- C. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- D. Doors: Door-in-door construction with concealed hinges; secured with multipoint latch with tumbler lock; keyed alike. Outer door shall permit full access to the panel interior. Inner door shall permit access to breaker operating handles and labeling, but current carrying terminals and bus shall remain concealed.

## 2.5 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. MCCB: Comply with UL 489, with interrupting capacity to meet available fault currents.
  - 1. Thermal-Magnetic Circuit Breakers:
    - a. Inverse time-current element for low-level overloads.
    - b. Instantaneous magnetic trip element for short circuits.

- c. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- 2. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6-mA trip).
- 3. GFEP Circuit Breakers: Class B ground-fault protection (30-mA trip).
- 4. MCCB Features and Accessories:
  - a. Standard frame sizes, trip ratings, and number of poles.
  - b. Breaker handle indicates tripped status.
  - c. UL listed for reverse connection without restrictive line or load ratings.
  - d. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
  - e. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and HID lighting circuits.
  - f. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
  - g. Multipole units enclosed in a single housing with a single handle.

## 2.6 IDENTIFICATION

- A. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles shall be located on the interior of the panelboard door.
- B. Breaker Labels: Faceplate shall list current rating, UL and IEC certification standards, and AIC rating.
- C. Circuit Directory: Typed directory card inside panelboard door, mounted in metal frame with transparent protective cover.
  - 1. Circuit directory shall identify specific purpose with detail sufficient to distinguish it from all other circuits.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify actual conditions with field measurements prior to ordering panelboards to verify that equipment fits in allocated space in, and comply with, minimum required clearances specified in NFPA 70.
- B. Receive, inspect, handle, and store panelboards according to NECA 407.
- C. Examine panelboards before installation. Reject panelboards that are damaged, rusted, or have been subjected to water saturation.
- D. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.



- E. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- B. Comply with NECA 1.
- C. Install panelboards and accessories according to NECA 407.
- D. Equipment Mounting:
  - 1. Attach panelboard to the vertical finished or structural surface behind the panelboard.
  - 2. Comply with requirements for seismic control devices specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- E. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.
- F. Comply with mounting and anchoring requirements specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- G. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.
- H. Mount panelboard cabinet plumb and rigid without distortion of box.
- I. Install overcurrent protective devices and controllers not already factory installed.
  - 1. Set field-adjustable, circuit-breaker trip ranges.
  - 2. Tighten bolted connections and circuit breaker connections using calibrated torque wrench or torque screwdriver per manufacturer's written instructions.
- J. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.
- K. Install filler plates in unused spaces.
- L. Arrange conductors in gutters into groups and bundle and wrap with wire ties.

### 3.3 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems."

- B. Create a directory to indicate installed circuit loads. Obtain approval before installing. Handwritten directories are not acceptable. Install directory inside panelboard door.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- D. Device Nameplates: Label each branch circuit device in power panelboards with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- E. Install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems" identifying source of remote circuit.

### 3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:
  - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
  - 2. Test continuity of each circuit.
- C. Tests and Inspections:
  - 1. Perform each visual and mechanical inspection and electrical test for low-voltage air circuit breakers stated in NETA ATS, Paragraph 7.6 Circuit Breakers. Certify compliance with test parameters.
  - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
  - 3. Perform the following infrared scan tests and inspections and prepare reports:
    - a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each panelboard. Remove front panels so joints and connections are accessible to portable scanner.
    - b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each panelboard 11 months after date of Substantial Completion.
    - c. Instruments and Equipment:
      - 1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
- D. Panelboards will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results, with comparisons of the two scans. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

- A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.
- B. Set field-adjustable circuit-breaker trip ranges as indicated.

3.6 PROTECTION

- A. Temporary Heating: Prior to energizing panelboards, apply temporary heat to maintain temperature according to manufacturer's written instructions.

**END OF SECTION 262416**

## SECTION 26 2713 - ELECTRICITY METERING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes work to accommodate utility company revenue meters.

#### 1.3 DEFINITIONS

- A. KY or KYZ Pulse: Term used by the metering industry to describe a method of measuring consumption of electricity (kWh) that is based on a relay opening and closing in response to the rotation of the disk in the meter. Electronic meters generate pulses electronically.

#### 1.4 ACTION SUBMITTALS

- A. Product Data:
  - 1. For metering infrastructure components.

#### 1.5 COORDINATION

- A. Electrical Service Connections:
  - 1. Coordinate with utility companies and utility-furnished components.
    - a. Comply with requirements of utility providing electrical power services.
    - b. Coordinate installation and connection of utilities and services, including provision for electricity-metering components.

### PART 2 - PRODUCTS

#### 2.1 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 916.

## 2.2 UTILITY METERING INFRASTRUCTURE

- A. Install metering accessories furnished by the utility company, complying with its requirements.
- B. Current-Transformer Cabinets: Comply with requirements of electrical-power utility company.
- C. Meter Sockets:
  - 1. Comply with requirements of electrical-power utility company.
  - 2. Meter Sockets: Steady-state and short-circuit current ratings shall meet indicated circuit ratings.
- D. Arc-Flash Warning Labels;
  - 1. Labels: Comply with requirements for "Self-Adhesive Equipment Labels" and "Signs" in Section 260553 "Identification for Electrical Systems." Apply a 3-1/2-by-5-inch (76-by-127-mm) thermal transfer label of high-adhesion polyester for each work location included in the analysis. Labels shall be machine printed, with no field-applied markings.
    - a. The label shall have an orange header with the wording, "WARNING, ARC-FLASH HAZARD," and shall include the following information taken directly from the arc-flash hazard analysis:
      - 1) Location designation.
      - 2) Nominal voltage.
      - 3) Flash protection boundary.
      - 4) Hazard risk category.
      - 5) Incident energy.
      - 6) Working distance.
      - 7) Engineering report number, revision number, and issue date.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with equipment installation requirements in NECA 1.
- B. Install meters furnished by utility company.
- C. Install arc-flash labels as required by NFPA 70.

**END OF SECTION 262713**

## SECTION 26 2726 - WIRING DEVICES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. GFCI receptacles, 125 V, 20 A.
  - 2. Toggle switches, 120/277 V, 20 A.
  - 3. Occupancy sensors.
  - 4. Wall plates.

#### 1.3 DEFINITIONS

- A. GFCI: Ground-fault circuit interrupter.
- B. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

### PART 2 - PRODUCTS

#### 2.1 GENERAL WIRING-DEVICE REQUIREMENTS

- A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- B. Comply with NFPA 70.
- C. RoHS compliant.

- D. Comply with NEMA WD 1.
- E. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
  - 1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
  - 2. Devices shall comply with requirements in this Section.
- F. Device Color:
  - 1. Wiring Devices Connected to Normal Power System: Gray unless otherwise indicated or required by NFPA 70 or device listing.
- G. Wall Plate Color: For plastic covers, match device color.
- H. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

## 2.2 GFCI RECEPTACLES, 125 V, 20 A

- A. Duplex GFCI Receptacles, 125 V, 20 A:
  - 1. Description: Integral GFCI with "Test" and "Reset" buttons and LED indicator light. Two pole, three wire, and self-grounding.
  - 2. Configuration: NEMA WD 6, Configuration 5-20R.
  - 3. Type: Non-feed through.
  - 4. Standards: Comply with UL 498, UL 943 Class A, and FS W-C-596.

## 2.3 TOGGLE SWITCHES, 120/277 V, 20 A

- A. Single-Pole Switches, 120/277 V, 20 A:
  - 1. Standards: Comply with UL 20 and FS W-S-896.

## 2.4 OCCUPANCY SENSORS

- A. Wall Switch Sensor Light Switch, Dual Technology:
  - 1. Description: Switchbox-mounted, combination lighting-control sensor and conventional switch lighting-control unit using dual (ultrasonic and passive infrared) technology.
  - 2. Standards: Comply with UL 20.
  - 3. Rated 960 W at 120 V ac for tungsten lighting, 10 A at 120 V ac or 10 A at 277 V ac for fluorescent or LED lighting, and 1/4 hp at 120 V ac.
  - 4. Adjustable time delay of 10 minutes.
  - 5. Able to be locked to Automatic-On mode.
- B. Ceiling-mounted, solid-state indoor occupancy switches.
  - 1. Dual technology.

2. Integrated power pack.
3. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
4. Operation:
  - a. Occupancy Sensor: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn them off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
5. Power: Line voltage.
6. Mounting:
  - a. Sensor: Suitable for mounting in any position on a standard outlet box.
  - b. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.
7. Indicator: Digital display, to show when motion is detected during testing and normal operation of sensor.

## 2.5 WALL PLATES

- A. Single Source: Obtain wall plates from same manufacturer of wiring devices.
- B. Single and combination types shall match corresponding wiring devices.
  1. Plate-Securing Screws: Metal with head color to match plate finish.
  2. Material for Finished Spaces: Smooth, high-impact thermoplastic.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
- B. Conductors:
  1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
  2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
  3. The length of free conductors at outlets for devices shall comply with NFPA 70, Article 300, without pigtails.
- C. Device Installation:
  1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.



2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

D. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the left.

### 3.2 GFCI RECEPTACLES

- A. Install non-feed-through GFCI receptacles where protection of downstream receptacles is not required.

### 3.3 FIELD QUALITY CONTROL

- A. Test Instruments: Use instruments that comply with UL 1436.
- B. Test Instrument for Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.
- C. Perform the following tests and inspections:
1. Test Instruments: Use instruments that comply with UL 1436.
  2. Test Instrument for Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.
- D. Tests for Receptacles:
1. Line Voltage: Acceptable range is 105 to 132 V.
  2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
  3. Ground Impedance: Values of up to 2 ohms are acceptable.
  4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
  5. Using the test plug, verify that the device and its outlet box are securely mounted.
  6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault-current path, defective devices, or similar

problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

- E. Wiring device will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.

**END OF SECTION 26 2726**

## SECTION 26 3213.13 - DIESEL EMERGENCY ENGINE GENERATORS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes packaged diesel engine generators for emergency use with the following features:
  - 1. Diesel engine.
  - 2. Diesel fuel-oil system.
  - 3. Control and monitoring.
  - 4. Generator overcurrent and fault protection.
  - 5. Generator, exciter, and voltage regulator.
  - 6. Load banks.
  - 7. Outdoor engine generator enclosure.
  - 8. Vibration isolation devices.
  - 9. Finishes.
- B. Related Requirements:
  - 1. Section 263600 "Transfer Switches" for transfer switches, including sensors and relays to initiate automatic-starting and -stopping signals for engine generators.

#### 1.3 DEFINITIONS

- A. EPS: Emergency power supply.
- B. EPSS: Emergency power supply system.
- C. Operational Bandwidth: The total variation, from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

2. Include thermal damage curve for generator.
3. Include time-current characteristic curves for generator protective device.
4. Include fuel consumption in gallons per hour (liters per hour) at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
5. Include generator efficiency at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
6. Include generator characteristics, including, but not limited to, kilowatt rating, efficiency, reactances, and short-circuit current capability.

B. Shop Drawings:

1. Include plans and elevations for engine generator and other components specified. Indicate access requirements affected by height of subbase fuel tank.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Identify fluid drain ports and clearance requirements for proper fluid drain.
4. Design calculations for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
5. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and supported equipment. Include base weights.
6. Include diagrams for power, signal, and control wiring. Complete schematic, wiring, and interconnection diagrams showing terminal markings for EPS equipment and functional relationship between all electrical components.

## 1.5 INFORMATIONAL SUBMITTALS

A. Seismic Qualification Data: Certificates for engine generator, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
2. Dimensioned Outline Drawings of Equipment Unit: With engine and generator mounted on rails, identify center of gravity and total weight, including, supplied enclosure, external silencer, subbase-mounted fuel tank, and each piece of equipment not integral to the engine generator, and locate and describe mounting and anchorage provisions.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

B. Source Quality-Control Reports: Including, but not limited to, the following:

1. Certified summary of prototype-unit test report.
2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
3. Certified Summary of Performance Tests: Certify compliance with specified requirement to meet performance criteria for sensitive loads.
4. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
5. Report of sound generation.
6. Report of exhaust emissions showing compliance with applicable regulations.

- 7. Certified Torsional Vibration Compatibility: Comply with NFPA 110.
- C. Field quality-control reports.
- D. Warranty: For special warranty.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For engine generators to include in emergency, operation, and maintenance manuals.
  - 1. Include the following:
    - a. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
    - b. Operating instructions laminated and mounted adjacent to generator location.
    - c. Training plan.

#### 1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Fuses: One for every 10 of each type and rating, but no fewer than one of each.
  - 2. Indicator Lamps: Two for every six of each type used, but no fewer than two of each.
  - 3. Filters: One set each of lubricating oil, fuel, and combustion-air filters.
  - 4. Tools: Each tool listed by part number in operations and maintenance manual.

#### 1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

#### 1.9 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Source Limitations: Obtain packaged engine generators and auxiliary components from single source from single manufacturer.

### **2.2 PERFORMANCE REQUIREMENTS**

- A. Seismic Performance: Engine generator housing, subbase fuel tank, engine generator, batteries, battery racks, silencers, load banks, sound attenuating equipment, accessories, and components shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
  - 2. Shake-table testing shall comply with ICC-ES AC156. Testing shall be performed with all fluids at worst-case normal levels.
  - 3. Component Importance Factor: 1.0.
- B. B11 Compliance: Comply with B11.19.
- C. NFPA Compliance:
  - 1. Comply with NFPA 37.
  - 2. Comply with NFPA 70.
  - 3. Comply with NFPA 110 requirements for Level 1 EPSS.
- D. UL Compliance: Comply with UL 2200.
- E. Engine Exhaust Emissions: Comply with EPA Tier 3 requirements and applicable state and local government requirements.
- F. Noise Emission: Comply with applicable local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by engine generator, including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.
- G. Environmental Conditions: Engine generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
  - 1. Ambient Temperature: 5 to 104 deg F (Minus 15 to plus 40 deg C).
  - 2. Relative Humidity: Zero to 95 percent.
  - 3. Altitude: Sea level to 1000 feet (300 m).

## 2.3 ENGINE GENERATOR ASSEMBLY DESCRIPTION

- A. Factory-assembled and -tested, water-cooled engine, with brushless generator and accessories.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. EPSS Class: Engine generator shall be classified as a Class 48 according to NFPA 110.
- D. Service Load: Per Drawing.
- E. Power Factor: 0.8, lagging.
- F. Frequency: 60 Hz
- G. Voltage: 480 V ac.
- H. Phase: Three-phase, four-wire wye.
- I. Induction Method: Turbocharged.
- J. Governor: Adjustable isochronous, with speed sensing.
- K. Mounting Frame: Structural steel framework to maintain alignment of mounted components without depending on concrete foundation. Provide lifting attachments sized and spaced to prevent deflection of base during lifting and moving.
  - 1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and engine generator center of gravity.
- L. Capacities and Characteristics:
  - 1. Power Output Ratings: Nominal ratings as indicated at 0.8 power factor excluding power required for the continued and repeated operation of the unit and auxiliaries.
  - 2. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.
- M. Engine Generator Performance:
  - 1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage, from no load to full load.
  - 2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
  - 3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency, from no load to full load.
  - 4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.

5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
7. Sustained Short-Circuit Current: For a three-phase, bolted short circuit at system output terminals, system shall supply a minimum of 250 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
8. Start Time: Comply with NFPA 110, Type 10 system requirements.

## 2.4 DIESEL ENGINE

- A. Fuel: ASTM D975 diesel fuel oil, Grade 2-D S15.
- B. Rated Engine Speed: 1800 rpm.
- C. Lubrication System: Engine or skid mounted.
  1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
  2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
  3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- D. Jacket Coolant Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity and with UL 499.
- E. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine generator mounting frame and integral engine-driven coolant pump.
  1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
  2. Size of Radiator: Adequate to contain expansion of total system coolant, from cold start to 110 percent load condition.
  3. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant-system pressure for engine used. Equip with gage glass and petcock.
  4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
  5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, UV-, and abrasion-resistant fabric.
    - a. Rating: 50-psig (345-kPa) maximum working pressure with coolant at 180 deg F (82 deg C), and noncollapsible under vacuum.



- b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.
- F. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.
- 1. Minimum sound attenuation of 25 dB at 500 Hz.
  - 2. Sound level measured at a distance of 25 feet (8 m) from exhaust discharge after installation is complete shall be 78 dBA or less.
- G. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.
- H. Starting System: 24 V electric, with negative ground.
- 1. Components: Sized so they are not damaged during a full engine-cranking cycle, with ambient temperature at maximum specified in "Performance Requirements" Article.
  - 2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
  - 3. Cranking Cycle: As required by NFPA 110 for system level specified.
  - 4. Battery: Lead acid, with capacity within ambient temperature range specified in "Performance Requirements" Article to provide specified cranking cycle at least three times without recharging.
  - 5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
  - 6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 50 deg F (10 deg C) regardless of external ambient temperature within range specified in "Performance Requirements" Article. Include accessories required to support and fasten batteries in place. Provide ventilation to exhaust battery gases.
  - 7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
  - 8. Battery Charger: Current-limiting, automatic-equalizing, and float-charging type designed for lead-acid batteries. Unit shall comply with UL 1236 and include the following features:
    - a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
    - b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg F (minus 40 deg C) to 140 deg F (plus 60 deg C) to prevent overcharging at high temperatures and undercharging at low temperatures.
    - c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
    - d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.

- e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
- f. Enclosure and Mounting: NEMA 250, Type 1 wall-mounted cabinet.

## 2.5 DIESEL FUEL-OIL SYSTEM

- A. Comply with NFPA 30.
- B. Main Fuel Pump: Mounted on engine to provide primary fuel flow under starting and load conditions.
- C. Fuel Filtering: Remove water and contaminants larger than 1 micron.
- D. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.
- E. Subbase-Mounted, Double-Wall, Fuel-Oil Tank: Factory installed and piped, complying with UL 142 fuel-oil tank. Features include the following:
  - 1. Tank level indicator.
  - 2. Fuel-Tank Capacity: Minimum 133 percent of total fuel required for periodic maintenance operations between fuel refills, plus fuel for the hours of continuous operation for indicated EPSS class.
  - 3. Leak detection in interstitial space.
  - 4. Vandal-resistant fill cap.
  - 5. Containment Provisions: Comply with requirements of authorities having jurisdiction.

## 2.6 CONTROL AND MONITORING

- A. Automatic-Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of engine generator. When mode-selector switch is switched to the on position, engine generator starts. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.
- B. Provide minimum run time control set for 15 minutes, with override only by operation of a remote emergency-stop switch.
- C. Comply with UL 508A.
- D. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the engine generator. Mounting method shall isolate the control panel from engine generator vibration. Panel shall be powered from the engine generator battery.

E. Control and Monitoring Panel:

1. Digital controller with integrated LCD display, controls, and microprocessor, capable of local and remote control, monitoring, and programming, with battery backup.
2. Instruments: Located on the control and monitoring panel and viewable during operation.
  - a. Engine lubricating-oil pressure gage.
  - b. Engine-coolant temperature gage.
  - c. DC voltmeter (alternator battery charging).
  - d. Running-time meter.
  - e. AC voltmeter, for each phase connected to a phase selector switch.
  - f. AC ammeter, for each phase connected to a phase selector switch.
  - g. AC frequency meter.
  - h. Generator-voltage-adjusting rheostat.
3. Controls and Protective Devices: Controls, shutdown devices, and common visual alarm indication as required by NFPA 110 for Level 1 system, including the following:
  - a. Cranking control equipment.
  - b. Run-Off-Auto switch.
  - c. Control switch not in automatic position alarm.
  - d. Overcrank alarm.
  - e. Overcrank shutdown device.
  - f. Low water temperature alarm.
  - g. High engine temperature pre-alarm.
  - h. High engine temperature.
  - i. High engine temperature shutdown device.
  - j. Overspeed alarm.
  - k. Overspeed shutdown device.
  - l. Low-fuel main tank.
    - 1) Low-fuel-level alarm shall be initiated when the level falls below that required for operation for the duration required for the indicated EPSS class.
  - m. Coolant low-level alarm.
  - n. Coolant low-level shutdown device.
  - o. Coolant high-temperature prealarm.
  - p. Coolant high-temperature alarm.
  - q. Coolant low-temperature alarm.
  - r. Coolant high-temperature shutdown device.
  - s. EPS load indicator.
  - t. Battery high-voltage alarm.
  - u. Low-cranking voltage alarm.
  - v. Battery-charger malfunction alarm.
  - w. Battery low-voltage alarm.
  - x. Lamp test.
  - y. Contacts for local and remote common alarm.
  - z. Remote manual-stop shutdown device.
  - aa. Generator overcurrent-protective-device not-closed alarm.

- F. Connection to Datalink:
  - 1. A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication.
  - 2. Provide connections for datalink transmission of indications to remote data terminals via Ethernet Data system.
- G. Common Remote Panel with Common Audible Alarm: Comply with NFPA 110 requirements for Level 1 systems. Include necessary contacts and terminals in control and monitoring panel. Remote panel shall be powered from the engine generator battery.
- H. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator unless otherwise indicated.
- I. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

## 2.7 GENERATOR OVERCURRENT AND FAULT PROTECTION

- A. Overcurrent protective devices for the entire EPSS shall be coordinated to optimize selective tripping when a short circuit occurs. Coordination of protective devices shall consider both utility and EPSS as the voltage source.
  - 1. Overcurrent protective devices for the EPSS shall be accessible only to authorized personnel.
- B. Generator Circuit Breaker: Molded-case, thermal-magnetic type; 100 percent rated; complying with UL 489.
  - 1. Tripping Characteristic: Designed specifically for generator protection.
  - 2. Trip Rating: Matched to generator output rating.
  - 3. Shunt Trip: Connected to trip breaker when engine generator is shut down by other protective devices.
  - 4. Mounting: Adjacent to or integrated with control and monitoring panel.
- C. Ground-Fault Indication: Comply with NFPA 70, "Emergency System" signals for ground fault.
  - 1. Indicate ground fault with other engine generator alarm indications.
  - 2. Trip generator protective device on ground fault.

## 2.8 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H or Class F.

- D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required. Provide 12-lead alternator.
- E. Range: Provide broad range of output voltage by adjusting the excitation level.
- F. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.
- G. Enclosure: Dripproof.
- H. Instrument Transformers: Mounted within generator enclosure.
- I. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified and as required by NFPA 110.
  - 1. Adjusting Rheostat on Control and Monitoring Panel: Provide plus or minus 5 percent adjustment of output-voltage operating band.
  - 2. Maintain voltage within 20 percent on one step, full load.
  - 3. Provide anti-hunt provision to stabilize voltage.
  - 4. Maintain frequency within 10 percent and stabilize at rated frequency within two seconds.
- J. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.
- K. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- L. Subtransient Reactance: 12 percent, maximum.

## 2.9 LOAD BANK

- A. Description: Permanent, outdoor, weatherproof, remote-controlled, forced-air-cooled, resistive unit capable of providing a balanced three-phase, delta-connected load to engine generator at 50 percent rated-system capacity, at 100 percent power factor. Unit shall be capable of selective control of load in 25 percent steps and with minimum step changes of approximately 5 and 10 percent available.
- B. Resistive Load Elements: Corrosion-resistant chromium alloy with ceramic and stainless-steel supports. Elements shall be double insulated and designed for repetitive on-off cycling. Elements shall be mounted in removable aluminized-steel heater cases. Galvanized steel is prohibited. Element's maximum resistance shall be between 100 and 105 percent of rated resistance.
- C. Load-Bank Heat Dissipation: Integral fan with totally enclosed motor shall provide uniform cooling airflow through load elements. Airflow and coil operating current shall be such that, at maximum load, with ambient temperature at the upper end of specified range, load-bank elements operate at not more than 50 percent of maximum continuous temperature rating of resistance elements.

- D. Load-Element Switching: Remote-controlled contactors switch groups of load elements. Contactor coils are rated 120 V. Contactors shall be located in a separate NEMA 250, Type 3R enclosure within load-bank enclosure, accessible from exterior through hinged doors with tumbler locks.
- E. Contactor Enclosures: Heated by thermostatically controlled strip heaters to prevent condensation.
- F. Load-Bank Enclosures: NEMA 250, Type 3R aluminized steel complying with NEMA ICS 6. Louvers at cooling-air intake and discharge openings shall prevent entry of rain and snow. Openings for airflow shall be screened with 1/2-inch- (13-mm-) square, galvanized-steel mesh. Components other than resistive elements shall receive exterior epoxy coating with compatible primer.
- G. Protective Devices: Power input circuits to load banks shall be fused, and fuses shall be selected to coordinate with generator circuit breaker. Fuse blocks shall be located in contactor enclosure. Cooling airflow and overtemperature sensors shall automatically shut down and lock out load bank until manually reset. Safety interlocks on access panels and doors shall disconnect load power, control, and heater circuits. Fan motor shall be separately protected by overload and short-circuit devices. Short-circuit devices shall be noninterchangeable fuses with 200,000-A interrupting capacity.
- H. Load-Bank Remote-Control Panel: Separate from load bank in NEMA 250, Type 1 enclosure with a control power switch and pilot light, and switches controlling groups of load elements.
- I. Control Sequence: In the local mode, the control panel may be preset for adjustable single-step loading of generator during automatic exercising. In the automatic mode, the control panel shall adjust the load to maintain a preset load on the generator (50%, nominal).

## 2.10 OUTDOOR ENGINE GENERATOR ENCLOSURE

- A. Description: Vandal-resistant, sound-attenuating, weatherproof steel housing, wind resistant up to 100 mph (160 km/h). Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.
- B. Structural Design and Anchorage: Comply with ASCE/SEI 7 for wind loads of up to 100 mph (160 km/h).
- C. Seismic Design: Comply with seismic requirements in Section 260548.16 "Seismic Controls for Electrical Systems."
- D. Hinged Doors: With locking provisions.
- E. Lighting: Provide weather-resistant LED lighting with 30-fc (330-lx) average maintained.
- F. Thermal Insulation: Manufacturer's standard materials and thickness selected to maintain winter interior temperature within operating limits required by engine generator components.
- G. Muffler Location: External to enclosure.

- H. Engine-Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for two hours with ambient temperature at top of range specified in system service conditions.
  - 1. Louvers: Fixed-engine, cooling-air inlet and discharge. Storm-proof and drainable louvers prevent entry of rain and snow.
  - 2. Automatic Dampers: At engine cooling-air inlet and discharge. Dampers shall be closed to reduce enclosure heat loss in cold weather when unit is not operating.
  - 3. Ventilation: Provide temperature-controlled exhaust fan interlocked to prevent operation when engine is running.
- I. Convenience Outlets: Factory-wired GFCI. Arrange for external electrical connection.

## 2.11 VIBRATION ISOLATION DEVICES

- A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.
  - 1. Material: Bridge-bearing neoprene, complying with AASHTO M 251 separated by steel shims.
- B. Vibration isolation devices shall not be used to accommodate misalignments or to make bends.

## 2.12 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

## 2.13 SOURCE QUALITY CONTROL

- A. Prototype Testing: Factory test engine generator using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
  - 1. Tests: Comply with NFPA 110, Level 1 Energy Converters and with IEEE 115.
- B. Project-Specific Equipment Tests: Before shipment, factory test engine generator and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
  - 1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
  - 2. Test generator, exciter, and voltage regulator as a unit.
  - 3. Full-load run.
  - 4. Maximum power.
  - 5. Voltage regulation.
  - 6. Transient and steady-state governing.

7. Single-step load pickup.
8. Safety shutdown.
9. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.
10. Report factory test results within 10 days of completion of test.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine generator performance.
- B. Examine roughing-in for electrical connections. Verify actual locations of connections before packaged engine generator installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### **3.2 INSTALLATION**

- A. Comply with NECA 1 and NECA 404.
- B. Comply with packaged engine generator manufacturers' written installation and alignment instructions and with NFPA 110.
- C. Equipment Mounting:
  1. Install packaged engine generators on cast-in-place concrete equipment bases.
  2. Coordinate size and location of concrete bases for packaged engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.
  3. Install packaged engine generator with elastomeric isolator pads on 4-inch- (100-mm-) high concrete base. Secure set to anchor bolts installed in concrete bases.
- D. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.
- E. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

#### **3.3 CONNECTIONS**

- A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."



- B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables." Provide a minimum of one 90-degree bend in flexible conduit routed to the engine generator from a stationary element.

### 3.4 IDENTIFICATION

- A. Identify system components according to Section 260553 "Identification for Electrical Systems."
- B. Install a sign indicating the generator neutral is bonded to the main service neutral at the main service location.

### 3.5 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections.
- C. Tests and Inspections:
  - 1. Perform tests recommended by manufacturer and in "Visual and Mechanical Inspection" and "Electrical and Mechanical Tests" subparagraphs below, as specified in the NETA ATS. Certify compliance with test parameters.
    - a. Visual and Mechanical Inspection:
      - 1) Compare equipment nameplate data with Drawings and the Specifications.
      - 2) Inspect physical and mechanical condition.
      - 3) Inspect anchorage, alignment, and grounding.
      - 4) Verify that the unit is clean.
    - b. Electrical and Mechanical Tests:
      - 1) Perform insulation-resistance tests according to IEEE 43.
        - a) Machines Larger Than 200 hp (150 kW): Test duration shall be 10 minutes. Calculate polarization index.
        - b) Machines 200 hp (150 kW) or Less: Test duration shall be one minute. Calculate the dielectric-absorption ratio.
      - 2) Test protective relay devices.
      - 3) Verify phase rotation, phasing, and synchronized operation as required by the application.
      - 4) Functionally test engine shutdown for low oil pressure, overtemperature, overspeed, and other protection features as applicable.
      - 5) Perform vibration test for each main bearing cap.
      - 6) Conduct performance test according to NFPA 110.
      - 7) Verify correct functioning of the governor and regulator.

2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here, including, but not limited to, single-step full-load pickup test.
  3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
    - a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
    - b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
    - c. Verify acceptance of charge for each element of the battery after discharge.
    - d. Verify that measurements are within manufacturer's specifications.
  4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
  5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine generator system before and during system operation. Check for air, exhaust, and fluid leaks.
  6. Noise-Level Tests: Measure A-weighted level of noise emanating from engine generator installation, including engine exhaust and cooling-air intake and discharge, at four locations **25 feet (8 m)** from edge of the generator enclosure, and compare measured levels with required values.
- D. Coordinate tests with tests for transfer switches, and run them concurrently.
- E. Test instruments shall have been calibrated within the past 12 months, traceable to NIST Calibration Services, and adequate for making positive observation of test results. Make calibration records available for examination on request.
- F. Leak Test: After installation, charge exhaust, coolant, and fuel systems and test for leaks. Repair leaks and retest until no leaks exist.
- G. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation for generator and associated equipment.
- H. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- I. Remove and replace malfunctioning units and retest as specified above.
- J. Retest: Correct deficiencies identified by tests and observations, and retest until specified requirements are met.
- K. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component, indicating satisfactory completion of tests.

- L. Infrared Scanning: After Substantial Completion, but not more than 60 days after final acceptance, perform an infrared scan of each power wiring termination and each bus connection while running with maximum load. Remove all access panels, so terminations and connections are accessible to portable scanner.
  - 1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan 11 months after date of Substantial Completion.
  - 2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
  - 3. Record of Infrared Scanning: Prepare a certified report that identifies terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

### 3.6 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of manufacturer's authorized service representative. Include quarterly preventive maintenance and exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Parts shall be manufacturer's authorized replacement parts and supplies.

### 3.7 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators.

**END OF SECTION 26 3213.13**

## SECTION 26 3600 - TRANSFER SWITCHES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes automatic transfer switches rated 600 V and less, including the following:
  - 1. Remote annunciator system.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for transfer switches.
  - 2. Include rated capacities, operating characteristics, electrical characteristics, and accessories.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, details showing minimum clearances, conductor entry provisions, gutter space, and installed features and devices.
  - 2. Include material lists for each switch specified.
  - 3. Single-Line Diagram: Show connections between transfer switch, power sources, and load.
  - 4. Riser Diagram: Show interconnection wiring between transfer switches, annunciators, and control panels.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer-authorized service representative.
- B. Seismic Qualification Data: Certificates, for transfer switches, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.

3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

C. Field quality-control reports.

## 1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals.

1. Include the following:

- a. Features and operating sequences, both automatic and manual.
- b. List of all factory settings of relays; provide relay-setting and calibration instructions, including software, where applicable.

## 1.6 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of transfer switch or transfer switch components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### 2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NEMA ICS 1.

C. Comply with NFPA 110.

D. Comply with UL 1008 unless requirements of these Specifications are stricter.

E. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer, including tungsten filament lamp loads not exceeding 30 percent of switch ampere rating, unless otherwise indicated.

F. Tested Fault-Current Closing and Short-Circuit Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.

1. Where transfer switch includes internal fault-current protection, rating of switch and trip unit combination shall exceed indicated fault-current value at installation location.
2. Short-time withstand capability for 30 cycles.

- G. Repetitive Accuracy of Solid-State Controls: All settings shall be plus or minus 2 percent or better over an operating temperature range of minus 20 to plus 70 deg C.
- H. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.62. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.
- I. Electrical Operation: Accomplish by a nonfused, momentarily energized solenoid or electric-motor-operated mechanism. Switches for emergency or standby purposes shall be mechanically and electrically interlocked in both directions to prevent simultaneous connection to both power sources unless closed transition.
- J. Neutral Terminal: Solid and fully rated unless otherwise indicated.
- K. Heater: Equip switches exposed to outdoor temperatures and humidity, and other units indicated, with an internal heater. Provide thermostat within enclosure to control heater.
- L. Annunciation, Control, and Programming Interface Components: Devices at transfer switches for communicating with remote programming devices, annunciators, or annunciator and control panels shall have communication capability matched with remote device.
- M. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, by color-code or by numbered or lettered wire and cable with printed tape markers at terminations. Color-coding and wire and cable markers are specified in Section 260553 "Identification for Electrical Systems."
  - 1. Designated Terminals: Pressure type, suitable for types and sizes of field wiring indicated.
  - 2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.
  - 3. Control Wiring: Equipped with lugs suitable for connection to terminal strips.
  - 4. Accessible via front access.

## 2.2 CONTACTOR-TYPE AUTOMATIC TRANSFER SWITCHES

- A. Comply with Level 1 equipment according to NFPA 110.
- B. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
  - 1. Limitation: Switches using molded-case switches or circuit breakers or insulated-case circuit-breaker components are unacceptable.
  - 2. Switch Action: Double throw; mechanically held in both directions.
  - 3. Contacts: Silver composition or silver alloy for load-current switching. Contactor-style automatic transfer-switch units, rated 600 A and higher, shall have separate arcing contacts.
  - 4. Conductor Connectors: Suitable for use with conductor material and sizes.
  - 5. Material: Tin-plated aluminum.
  - 6. Main and Neutral Lugs: Mechanical type.
  - 7. Ground Lugs and Bus-Configured Terminators: Mechanical type.

8. Ground bar.
  9. Connectors shall be marked for conductor size and type according to UL 1008.
- C. Automatic Closed-Transition Transfer Switches: Connect both sources to load momentarily. Transition is controlled by programming in the automatic transfer-switch controller.
1. Fully automatic make-before-break operation when transferring between two available power sources.
  2. Load transfer without interruption, through momentary interconnection of both power sources not exceeding 100 ms.
  3. Initiation of No-Interruption Transfer: Controlled by in-phase monitor and sensors confirming both sources are present and acceptable.
    - a. Initiation occurs without active control of generator.
    - b. Automatic transfer-switch controller takes active control of generator to match frequency, phase angle, and voltage.
    - c. Controls ensure that closed-transition load transfer closure occurs only when the two sources are within plus or minus 5 electrical degrees maximum, and plus or minus 5 percent maximum voltage difference.
  4. Failure of power source serving load initiates automatic break-before-make transfer.
- D. Signal-Before-Transfer Contacts: A set of normally open/normally closed dry contacts operates in advance of retransfer to normal source. Interval shall be adjustable from 1 to 30 seconds.
- E. Digital Communication Interface: Matched to capability of remote annunciator or annunciator and control panel.
- F. Automatic Transfer-Switch Controller Features:
1. Controller operates through a period of loss of control power.
  2. Undervoltage Sensing for Each Phase of Normal and Alternate Source: Sense low phase-to-ground voltage on each phase. Pickup voltage shall be adjustable from 85 to 100 percent of nominal, and dropout voltage shall be adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.
  3. Voltage/Frequency Lockout Relay: Prevent premature transfer to generator. Pickup voltage shall be adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency shall be adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.
  4. Time Delay for Retransfer to Normal Source: Adjustable from zero to 30 minutes, and factory set for 10 minutes. Override shall automatically defeat delay on loss of voltage or sustained undervoltage of emergency source, provided normal supply has been restored.
  5. Test Switch: Simulate normal-source failure.
  6. Switch-Position Pilot Lights: Indicate source to which load is connected.
  7. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.
    - a. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
    - b. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."

8. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.
9. Transfer Override Switch: Overrides automatic retransfer control so transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.
10. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.
11. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.
12. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset intervals adjustable from 7 to 30 days. Running periods shall be adjustable from 10 to 30 minutes. Factory settings shall be for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:
  - a. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.
  - b. Push-button programming control with digital display of settings.
  - c. Integral battery operation of time switch when normal control power is unavailable.

## 2.3 TRANSFER SWITCH ACCESSORIES

### A. Remote Annunciator System:

1. Source Limitations: Same manufacturer as transfer switch in which installed.
2. Functional Description: Remote annunciator panel shall annunciate conditions for indicated transfer switches.
3. Annunciation panel display shall include the following indicators:
  - a. Sources available, as defined by actual pickup and dropout settings of transfer-switch controls.
  - b. Switch position.
  - c. Switch in test mode.
  - d. Failure of communication link.
4. Annunciator Panel: LED-lamp type with audible signal and silencing switch.
  - a. Indicating Lights: Grouped for each transfer switch monitored.
  - b. Label each group, indicating transfer switch it monitors, location of switch, and identity of load it serves.
  - c. Mounting: Flush, modular, steel cabinet unless otherwise indicated.
  - d. Lamp Test: Push-to-test or lamp-test switch on front panel.



## 2.4 SOURCE QUALITY CONTROL

- A. Factory Tests: Test and inspect components, assembled switches, and associated equipment according to UL 1008. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.
- B. Prepare test and inspection reports.
  - 1. For each of the tests required by UL 1008, performed on representative devices, for emergency systems. Include results of test for the following conditions:
    - a. Overvoltage.
    - b. Undervoltage.
    - c. Loss of supply voltage.
    - d. Reduction of supply voltage.
    - e. Alternative supply voltage or frequency is at minimum acceptable values.
    - f. Temperature rise.
    - g. Dielectric voltage-withstand; before and after short-circuit test.
    - h. Overload.
    - i. Contact opening.
    - j. Endurance.
    - k. Short circuit.
    - l. Short-time current capability.
    - m. Receptacle withstand capability.
    - n. Insulating base and supports damage.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install the transfer switch in the 480 V switchboard enclosure.
- B. Annunciator and Control Panel Mounting: Flush in wall unless otherwise indicated.
- C. Identify components according to Section 260553 "Identification for Electrical Systems."
- D. Set field-adjustable intervals and delays, relays, and engine exerciser clock.
- E. Comply with NECA 1.

### 3.2 CONNECTIONS

- A. Wiring to Remote Components: Match type and number of cables and conductors to generator sets, control, and communication requirements of transfer switches as recommended by manufacturer. Increase raceway sizes at no additional cost to Owner if necessary to accommodate required wiring.

- B. Wiring Method: Install cables in raceways and cable trays except within electrical enclosures.
  - 1. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.
- D. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- E. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- F. Connect twisted pair cable according to Section 260523 "Control-Voltage Electrical Power Cables."
- G. Route and brace conductors according to manufacturer's written instructions. Do not obscure manufacturer's markings and labels.
- H. Brace and support equipment according to Section 260548.16 "Seismic Controls for Electrical Systems."

### 3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- B. Perform the following tests and inspections:
  - 1. After installing equipment, test for compliance with requirements according to NETA ATS.
  - 2. Visual and Mechanical Inspection:
    - a. Compare equipment nameplate data with Drawings and Specifications.
    - b. Inspect physical and mechanical condition.
    - c. Inspect anchorage, alignment, grounding, and required clearances.
    - d. Verify that the unit is clean.
    - e. Verify appropriate lubrication on moving current-carrying parts and on moving and sliding surfaces.
    - f. Verify that manual transfer warnings are attached and visible.
    - g. Verify tightness of all control connections.
    - h. Inspect bolted electrical connections for high resistance using one of the following methods, or both:
      - 1) Use of low-resistance ohmmeter.
      - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method according to manufacturer's published data.
    - i. Perform manual transfer operation.

- j. Verify positive mechanical interlocking between normal and alternate sources.
  - k. Perform visual and mechanical inspection of surge arresters.
  - l. Inspect control power transformers.
    - 1) Inspect for physical damage, cracked insulation, broken leads, tightness of connections, defective wiring, and overall general condition.
    - 2) Verify that primary and secondary fuse or circuit-breaker ratings match Drawings.
    - 3) Verify correct functioning of drawout disconnecting contacts, grounding contacts, and interlocks.
3. Electrical Tests:
- a. Perform insulation-resistance tests on all control wiring with respect to ground.
  - b. Perform a contact/pole-resistance test. Compare measured values with manufacturer's acceptable values.
  - c. Verify settings and operation of control devices.
  - d. Calibrate and set all relays and timers.
  - e. Verify phase rotation, phasing, and synchronized operation.
  - f. Perform automatic transfer tests.
  - g. Verify correct operation and timing of the following functions:
    - 1) Normal source voltage-sensing and frequency-sensing relays.
    - 2) Engine start sequence.
    - 3) Time delay on transfer.
    - 4) Alternative source voltage-sensing and frequency-sensing relays.
    - 5) Automatic transfer operation.
    - 6) Interlocks and limit switch function.
    - 7) Time delay and retransfer on normal power restoration.
    - 8) Engine cool-down and shutdown feature.
4. Measure insulation resistance phase-to-phase and phase-to-ground with insulation-resistance tester. Include external annunciation and control circuits. Use test voltages and procedure recommended by manufacturer. Comply with manufacturer's specified minimum resistance.
- a. Check for electrical continuity of circuits and for short circuits.
  - b. Inspect for physical damage, proper installation and connection, and integrity of barriers, covers, and safety features.
  - c. Verify that manual transfer warnings are properly placed.
  - d. Perform manual transfer operation.
5. After energizing circuits, perform each electrical test for transfer switches stated in NETA ATS and demonstrate interlocking sequence and operational function for each switch at least three times.
- a. Simulate power failures of normal source to automatic transfer switches and retransfer from emergency source with normal source available.
  - b. Simulate loss of phase-to-ground voltage for each phase of normal source.
  - c. Verify time-delay settings.

- d. Verify pickup and dropout voltages by data readout or inspection of control settings.
    - e. Perform contact-resistance test across main contacts and correct values exceeding 500 microhms and values for one pole deviating by more than 50 percent from other poles.
    - f. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.
  - 6. Ground-Fault Tests: Coordinate with testing of ground-fault protective devices for power delivery from both sources.
    - a. Verify grounding connections and locations and ratings of sensors.
  - C. Coordinate tests with tests of generator and run them concurrently.
  - D. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation and contact resistances and time delays. Attach a label or tag to each tested component indicating satisfactory completion of tests.
  - E. Transfer switches will be considered defective if they do not pass tests and inspections.
  - F. Remove and replace malfunctioning units and retest as specified above.
  - G. Prepare test and inspection reports.
  - H. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each switch. Remove all access panels so joints and connections are accessible to portable scanner.
    - 1. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
    - 2. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
    - 3. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switch 11 months after date of Substantial Completion.
- 3.4 DEMONSTRATION
- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain transfer switches and related equipment.
  - B. Training shall include testing ground-fault protective devices and instructions to determine when the ground-fault system shall be retested. Include instructions on where ground-fault sensors are located and how to avoid negating the ground-fault protection scheme during testing and circuit modifications.

- C. Coordinate this training with that for generator equipment.

**END OF SECTION 263600**

## SECTION 26 5119 - LED INTERIOR LIGHTING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.

#### 1.2 SUMMARY

- A. Section includes the following types of LED luminaires:
  - 1. Linear industrial.
  - 2. Exterior wall mount
  - 3. Exit

#### 1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color Rendering Index.
- C. Fixture: See "Luminaire."
- D. IP: International Protection or Ingress Protection Rating.
- E. LED: Light-emitting diode.
- F. Lumen: Measured output of lamp and luminaire, or both.
- G. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Arrange in order of luminaire designation.
  - 2. Include data on features, accessories, and finishes.
  - 3. Include physical description and dimensions of luminaires.
  - 4. Include life, output (lumens, CCT, and CRI), and energy-efficiency data.
  - 5. Photometric data and adjustment factors based on laboratory tests, complying with IES "Lighting Measurements Testing and Calculation Guides" for each luminaire type. The adjustment factors shall be identical to those indicated for the luminaire as applied in this Project.

- a. Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Shop Drawings: For nonstandard or custom luminaires.
  - 1. Include plans, elevations, sections, and mounting and attachment details.
  - 2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 3. Include diagrams for power, signal, and control wiring.
- C. Sustainable Design Submittals:

## 1.5 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Data: For luminaires, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- B. Product Certificates: For each type of luminaire.

## 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For luminaires and lighting systems to include in operation and maintenance manuals.
  - 1. Provide a list of all lamp types used on Project; use ANSI and manufacturers' codes.

## 1.7 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
- B. Provide luminaires from a single manufacturer for each luminaire type.
- C. Each luminaire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

## 1.9 WARRANTY

- A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
- B. Warranty Period: Five year(s) from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Luminaires shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- B. Ambient Temperature: 5 to 104 deg F (Minus 15 to plus 40 deg C).
  - 1. Relative Humidity: Zero to 95 percent.
- C. Altitude: Sea level to 1000 feet (300 m).

### 2.2 LUMINAIRE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Factory-Applied Labels: Comply with UL 1598. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles.

### 2.3 MATERIALS

- A. Metal Parts:
  - 1. Free of burrs and sharp corners and edges.
  - 2. Sheet metal components shall be steel unless otherwise indicated.
  - 3. Form and support to prevent warping and sagging.
- B. Steel:
  - 1. ASTM A36/A36M for carbon structural steel.
  - 2. ASTM A568/A568M for sheet steel.
- C. Stainless Steel:
  - 1. 1. Manufacturer's standard grade.
  - 2. 2. Manufacturer's standard type, ASTM A240/240M.
- D. Galvanized Steel: ASTM A653/A653M.



- E. Aluminum: ASTM B209.

## 2.4 METAL FINISHES

- A. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

## 2.5 LUMINAIRE SUPPORT

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for channel and angle iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: 1/2-inch (13-mm) steel tubing with swivel ball fittings and ceiling canopy. Finish same as luminaire.
- C. Rod Hangers: 3/16-inch (5-mm) minimum diameter, cadmium-plated, threaded steel rod.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before luminaire installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 TEMPORARY LIGHTING

- A. If approved by the Engineer, use selected permanent luminaires for temporary lighting. When construction is sufficiently complete, clean luminaires used for temporary lighting and install new lamps.

### 3.3 INSTALLATION

- A. Comply with NECA 1.
- B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.
- C. Supports:
  - 1. Sized and rated for luminaire weight.
  - 2. Able to maintain luminaire position after cleaning.
  - 3. Provide support for luminaire without causing deflection of ceiling or wall.
  - 4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100

percent of luminaire weight and a vertical force of 400 percent of luminaire weight.

- D. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for wiring connections.

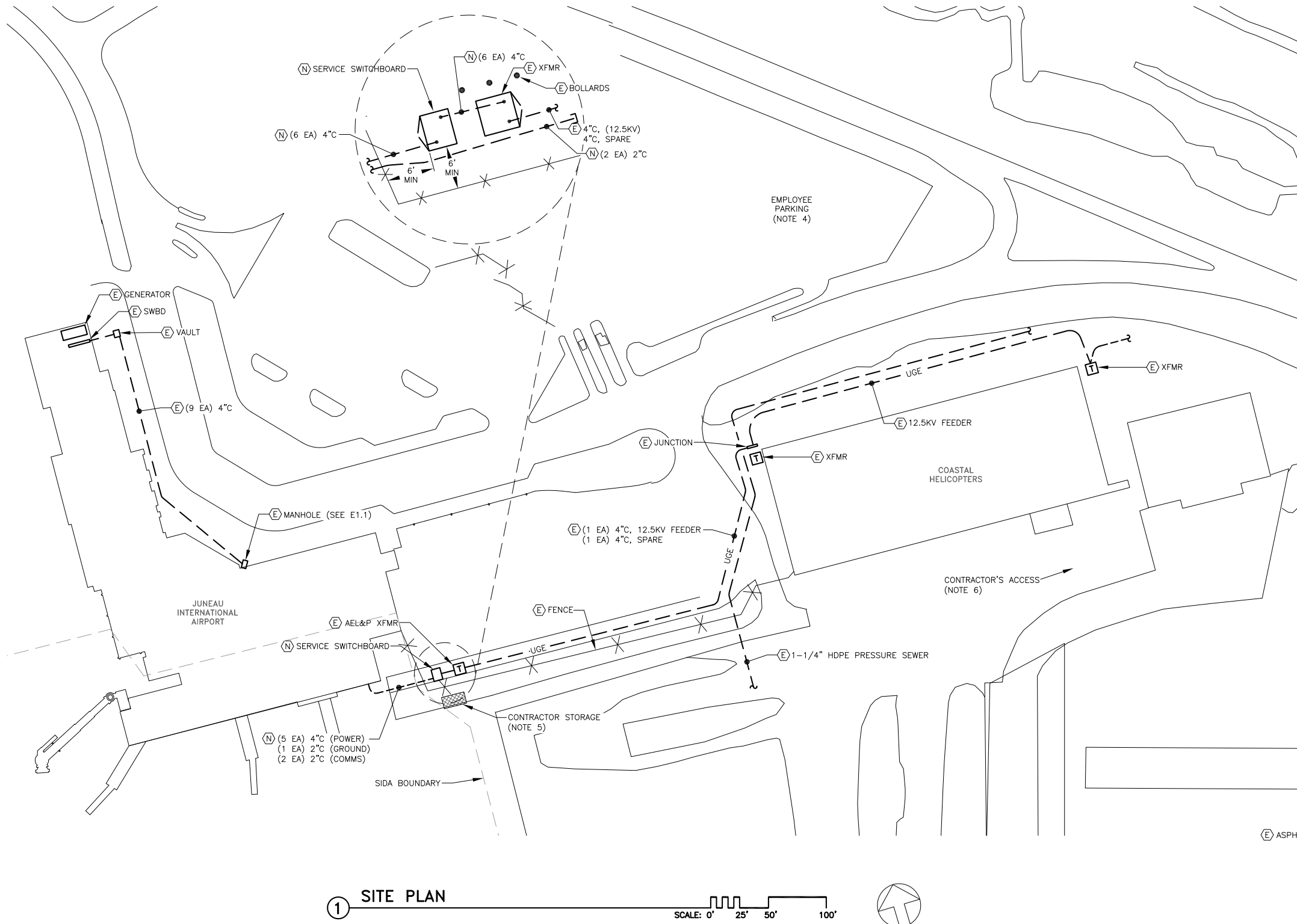
#### 3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
  - 1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
- B. Luminaire will be considered defective if it does not pass operation tests and inspections.
- C. Prepare test and inspection reports.

**END OF SECTION 26 5119**

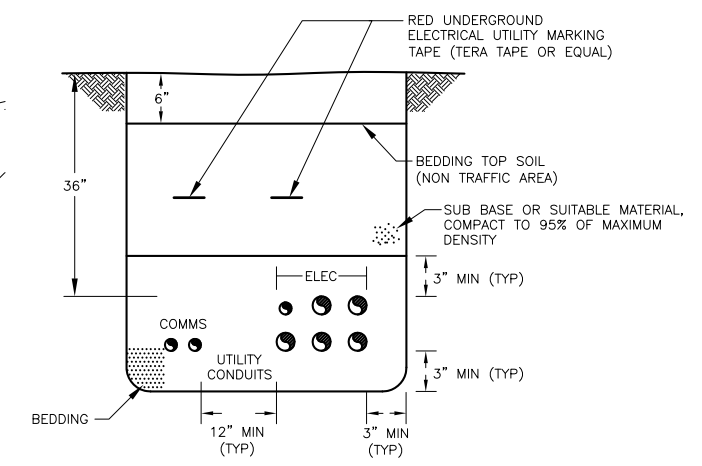


Plotted 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 JIA TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.0.DWG

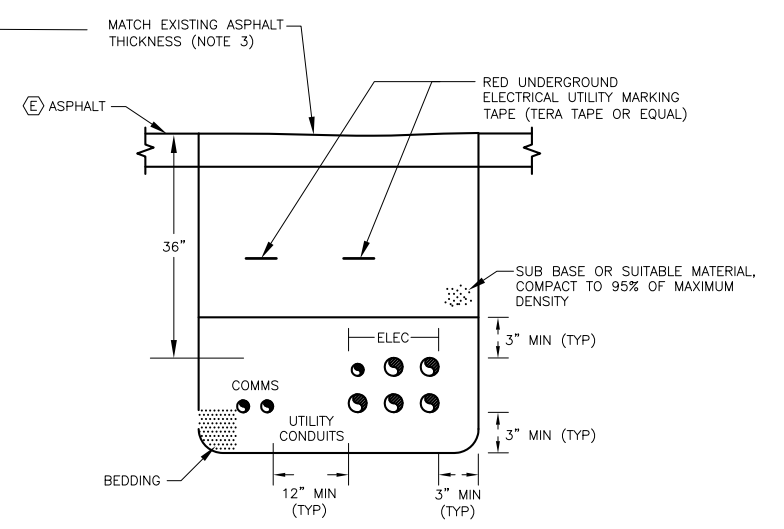


**1 SITE PLAN**  
 SCALE: 0' 25' 50' 100'

- NOTES:
1. FIELD LOCATE AND IDENTIFY ALL UTILITIES IN THE VICINITY OF THE NEW EQUIPMENT FEEDER ROUTE.
  2. CONFIRM THE SELECTED FEEDER ROUTE AND SWITCHBOARD LOCATIONS WITH THE JUNEAU INTERNATIONAL AIRPORT PROJECT MANAGER.
  3. ASPHALT TO MATCH EXISTING.
  4. COORDINATE CONTRACTOR PARKING WITH AIRPORT PROJECT MANAGER AT THE EMPLOYEE PARKING AREA LOT.
  5. LIMITED STORAGE AREA FOR MATERIALS. COORDINATE AREA, LOCATION, AND ACCESS WITH THE AIRPORT PROJECT MANAGER.
  6. ACCESS TO SECURE AREA STORAGE VIA GATE K AT AIRPORT FIRE STATION. MAINTAIN ACCESS CLEARANCE PER AIRPORT PROJECT MANAGER.



**2 TRENCH DETAIL - UNPAVED**  
 NO SCALE



**3 TRENCH DETAIL - PAVED**  
 NO SCALE



526 Main Street  
 Juneau, Alaska 99801  
 (907) 586-9788

**JNU TERMINAL RECONSTRUCTION**  
**ELECTRIC SERVICE**  
**BE19-217**  
**JUNEAU, ALASKA**

**SITE PLAN**  
**TRENCH DETAILS**

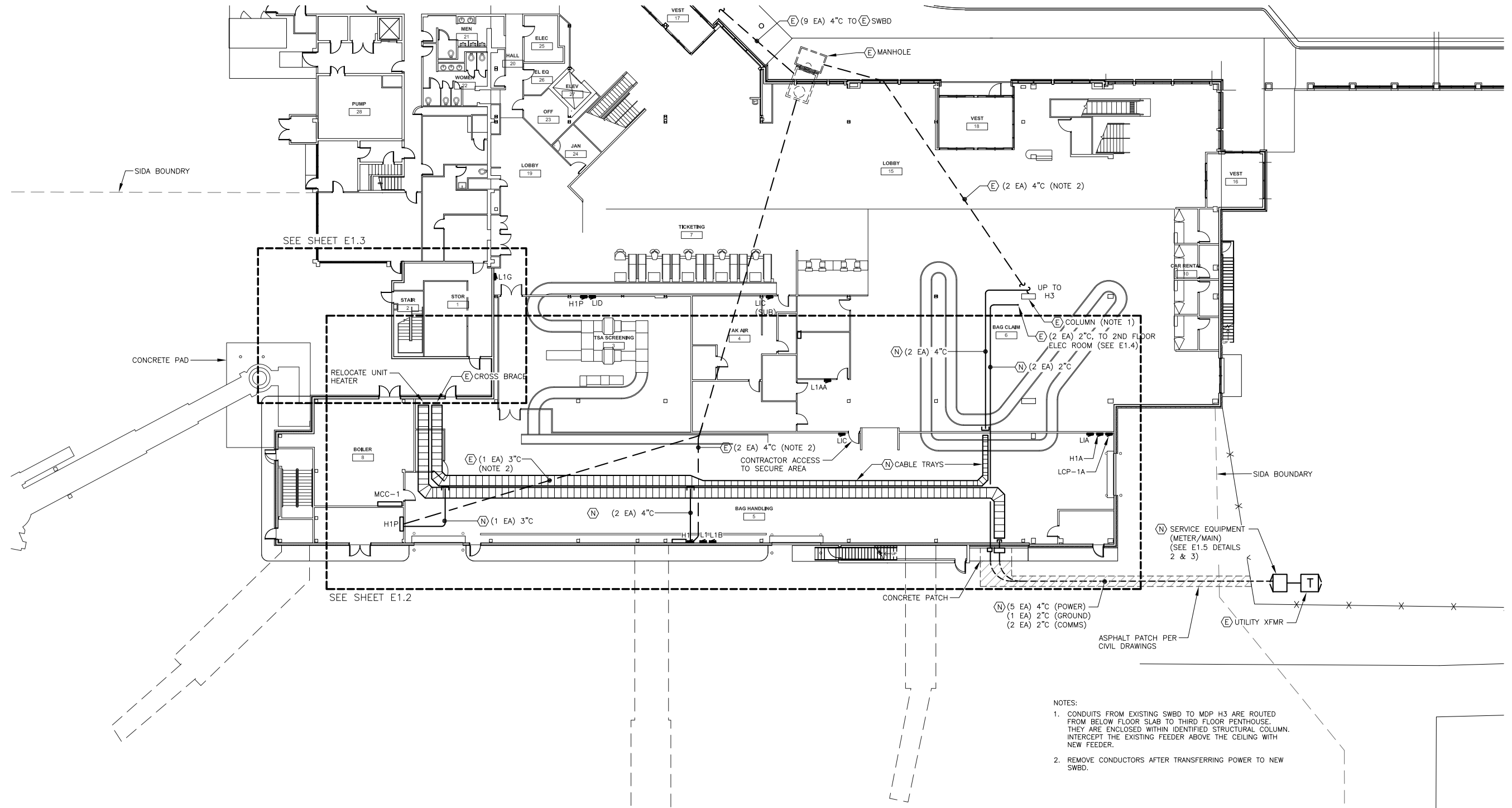
| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

**E1.0**

SCALE: AS NOTED  
 DATE: JUNE 2019

Plotted: 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 JNU TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.1.DWG



- NOTES:
- CONDUITS FROM EXISTING SWBD TO MDP H3 ARE ROUTED FROM BELOW FLOOR SLAB TO THIRD FLOOR PENTHOUSE. THEY ARE ENCLOSED WITHIN IDENTIFIED STRUCTURAL COLUMN. INTERCEPT THE EXISTING FEEDER ABOVE THE CEILING WITH NEW FEEDER.
  - REMOVE CONDUCTORS AFTER TRANSFERRING POWER TO NEW SWBD.

1 ENLARGED SITE PLAN  
 SCALE: 0' 15' 30'



**HAIGHT & ASSOCIATES**

CONSULTING ELECTRICAL ENGINEERS

526 Main Street  
 Juneau, Alaska 99801  
 (907) 586-9788

JNU TERMINAL RECONSTRUCTION  
**ELECTRIC SERVICE**  
 BE19-217  
 JUNEAU, ALASKA

ENLARGED SITE PLAN

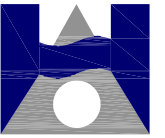
| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

**E1.1**

SCALE: AS NOTED  
 DATE: JUNE 2019

Plotted: 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 VIA TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.2.DWG



**HAIGHT & ASSOCIATES**  
CONSULTING ELECTRICAL ENGINEERS

526 Main Street  
Juneau, Alaska 99801  
(907) 586-9788

JNU TERMINAL RECONSTRUCTION  
**ELECTRIC SERVICE**  
BE19-217  
JUNEAU, ALASKA

ENLARGED BUILDING PLAN

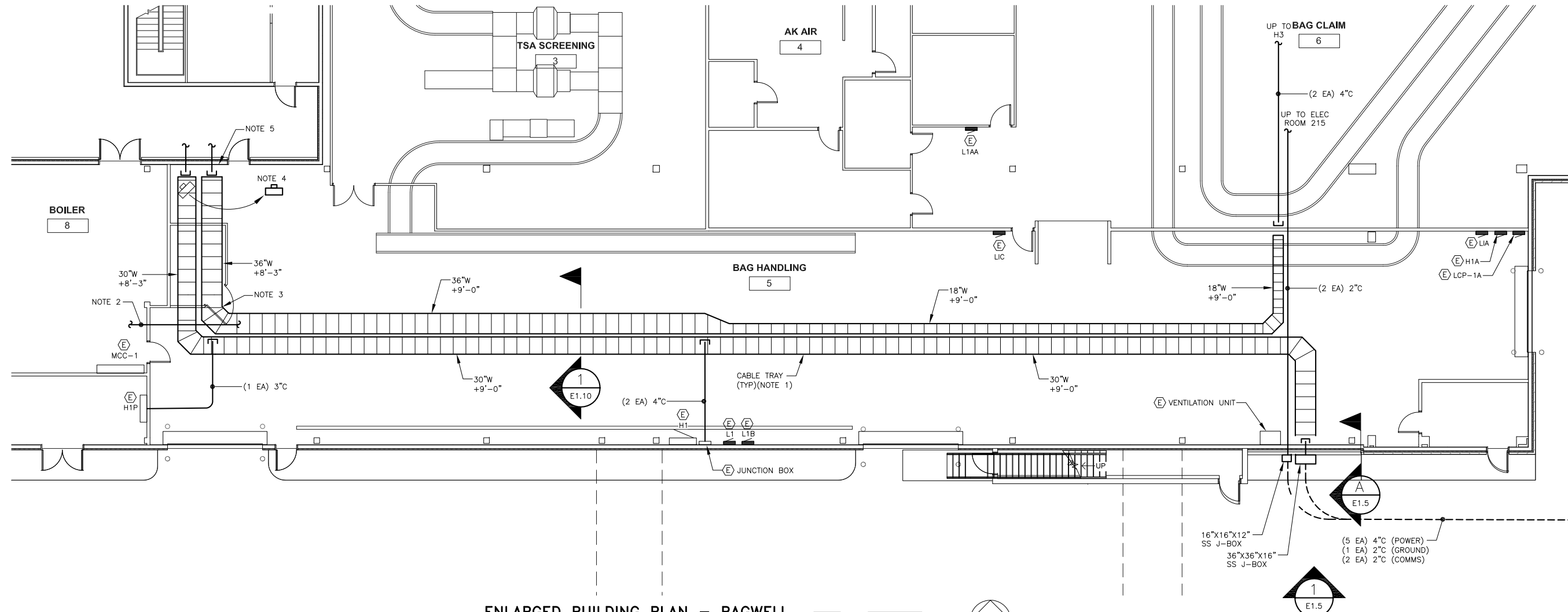
| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

**E1.2**

SCALE: AS NOTED  
DATE: JUNE 2019

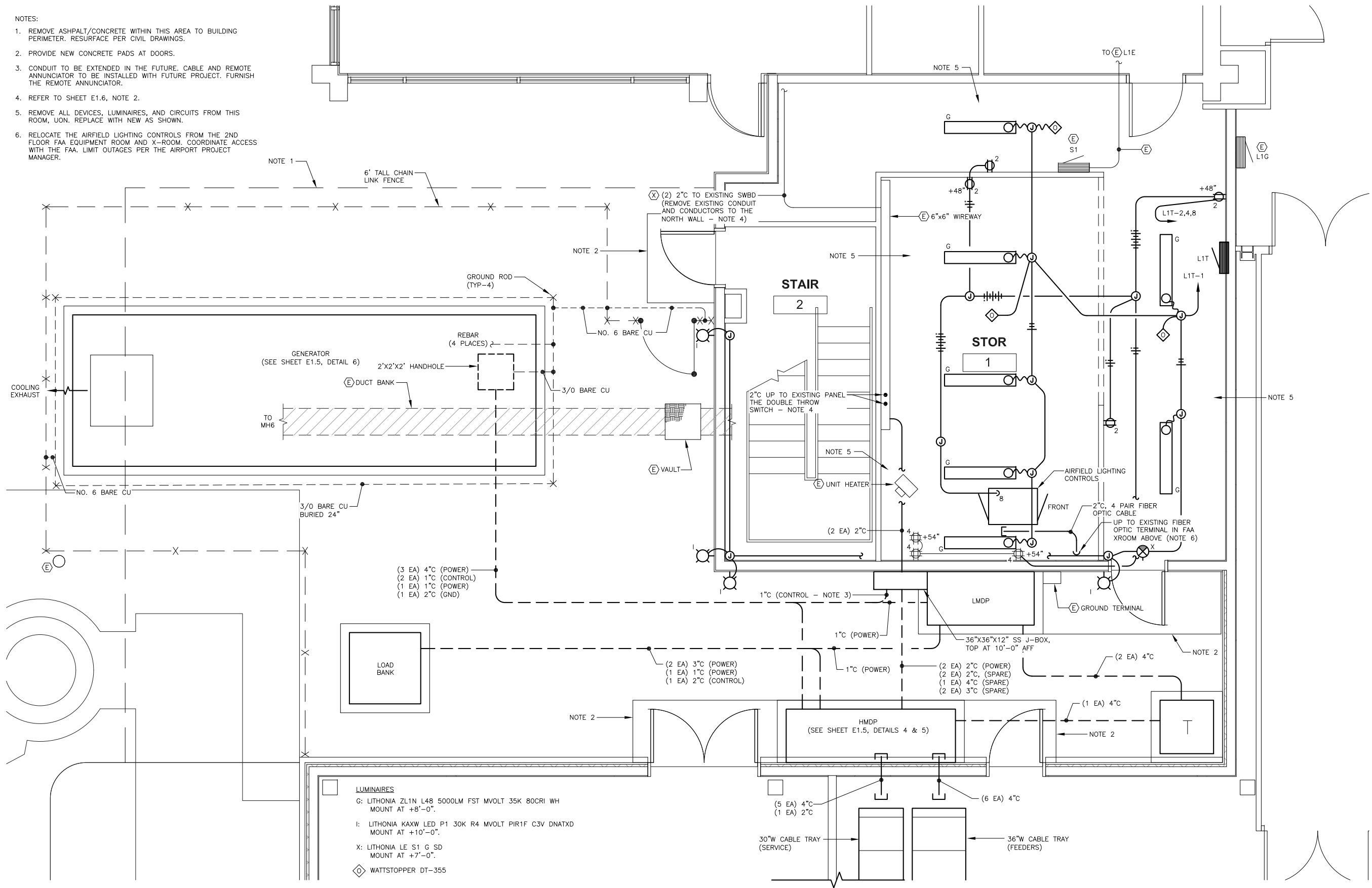
- NOTES:
- APPROXIMATE CABLE TRAY ELEVATIONS ARE NOTED. ADJUST TO AVOID PIPES AND CONDUITS.
  - REPOSITION ONE 1" C WITH DATA CABLES TO ALLOW SPACE FOR CABLE TRAY. REMOVE UNUSED CONDUIT.
  - SLOPE CABLE TRAY BETWEEN HORIZONTAL ELEVATIONS.
  - RELOCATE THE EXISTING HYDRONIC UNIT HEATER. VERIFY SPECIFIC LOCATION WITH OWNER.
  - AVOID STRUCTURAL CROSS BRACE.



**1 ENLARGED BUILDING PLAN - BAGWELL**  
SCALE: 0 4' 8' 16'

Plotfiled 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 JNU TERMINAL NEW ELECTRICAL UTILTY\DRAWINGS\WORKING\E1.3.DWG

- NOTES:
1. REMOVE ASPHALT/CONCRETE WITHIN THIS AREA TO BUILDING PERIMETER. RESURFACE PER CIVIL DRAWINGS.
  2. PROVIDE NEW CONCRETE PADS AT DOORS.
  3. CONDUIT TO BE EXTENDED IN THE FUTURE. CABLE AND REMOTE ANNUNCIATOR TO BE INSTALLED WITH FUTURE PROJECT. FURNISH THE REMOTE ANNUNCIATOR.
  4. REFER TO SHEET E1.6, NOTE 2.
  5. REMOVE ALL DEVICES, LUMINAIRES, AND CIRCUITS FROM THIS ROOM, UON. REPLACE WITH NEW AS SHOWN.
  6. RELOCATE THE AIRFIELD LIGHTING CONTROLS FROM THE 2ND FLOOR FAA EQUIPMENT ROOM AND X-ROOM. COORDINATE ACCESS WITH THE FAA. LIMIT OUTAGES PER THE AIRPORT PROJECT MANAGER.



**1 ENLARGED BUILDING PLAN - ELECTRICAL YARD**  
 SCALE: 0 2' 4' 8'

- LUMINAIRES**
- G: LITHONIA ZL1N L48 5000LM FST MVOLT 35K 80CRI WH MOUNT AT +8'-0".
  - I: LITHONIA KAXW LED P1 30K R4 MVOLT PIR1F C3V DNATXD MOUNT AT +10'-0".
  - X: LITHONIA LE S1 G SD MOUNT AT +7'-0".
- ◇ WATTSTOPPER DT-355



526 Main Street  
 Juneau, Alaska 99801  
 (907) 586-9788

JNU TERMINAL RECONSTRUCTION  
**ELECTRIC SERVICE**  
 BE19-217  
 JUNEAU, ALASKA

ENLARGED BUILDING PLAN

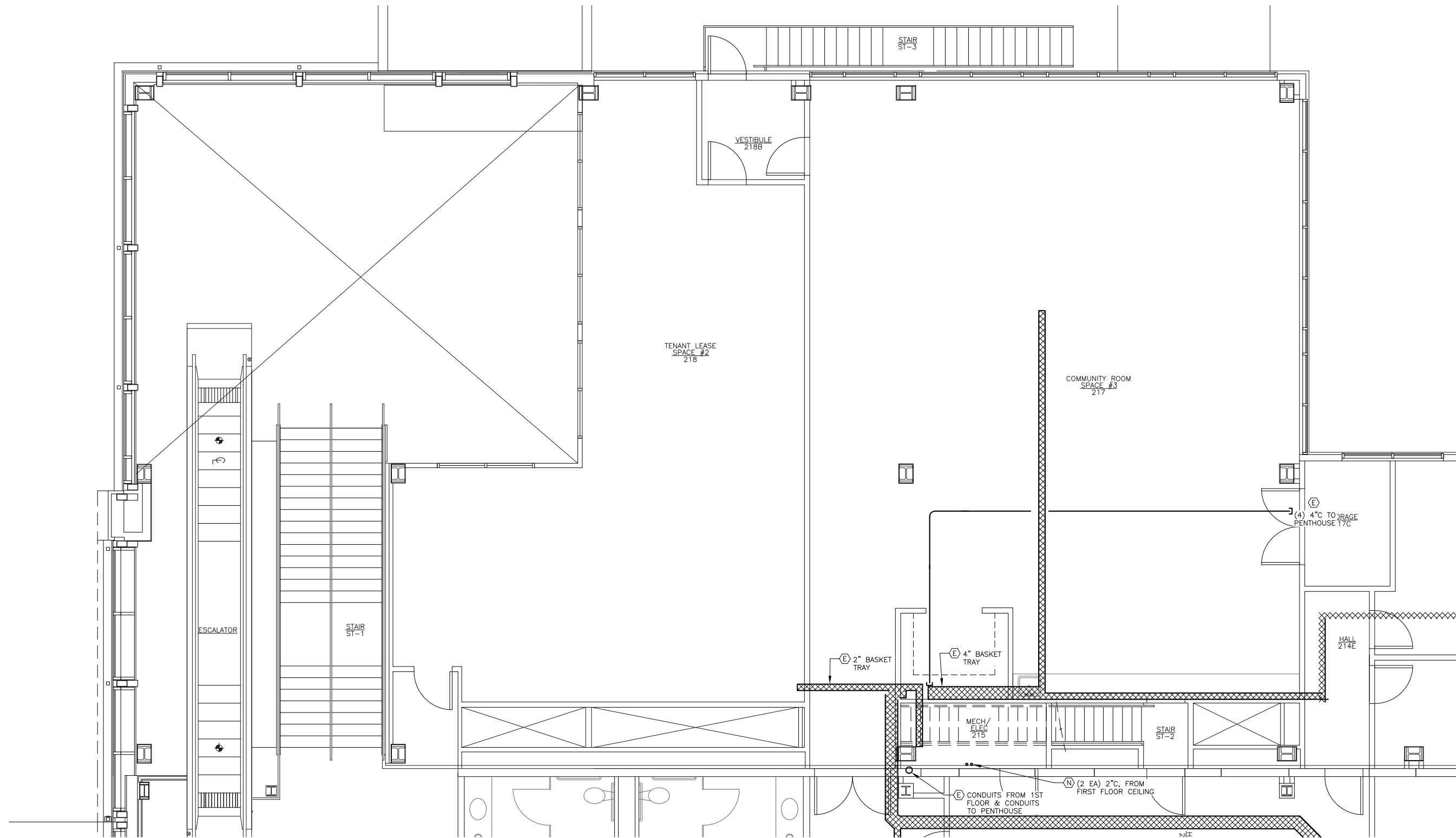
| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

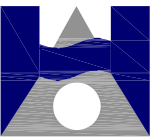
**E1.3**

SCALE: AS NOTED  
 DATE: JUNE 2019

Plotted: 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274- MCCOOL CARLSON GREEN\05 - JNU TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.4.DWG



① PARTIAL FLOOR PLAN - 2ND FLOOR EAST END  
 SCALE: 0 2' 4' 8'



**HAIGHT**  
 & ASSOCIATES

CONSULTING  
 ELECTRICAL  
 ENGINEERS

526 Main Street  
 Juneau, Alaska 99801  
 (907) 586-9788

JNU TERMINAL RECONSTRUCTION

**ELECTRIC SERVICE**  
 BE19-217

JUNEAU, ALASKA

PARTIAL FLOOR PLAN

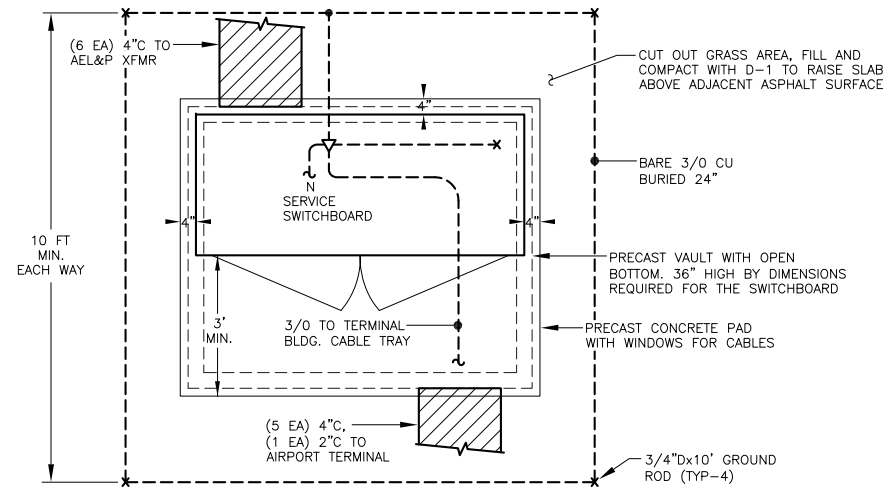
| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

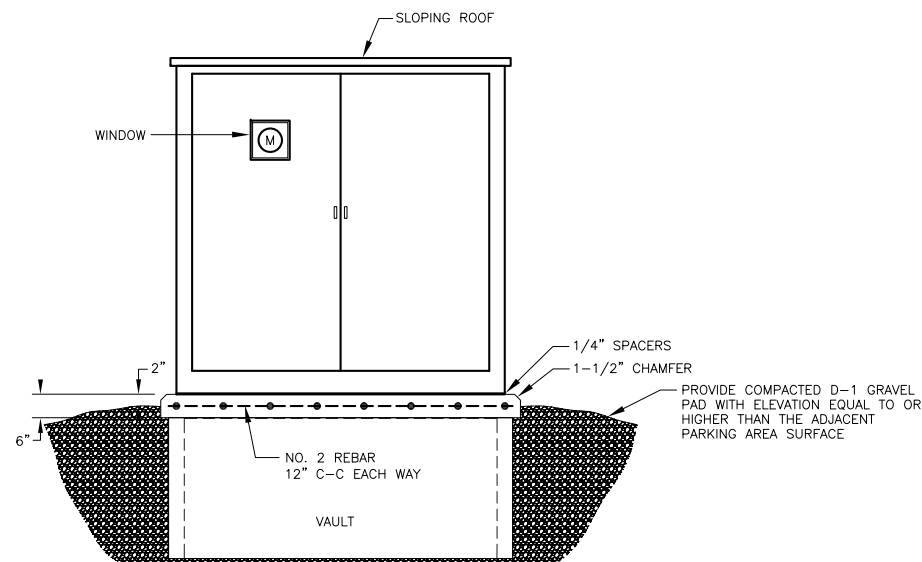
**E1.4**

SCALE: AS NOTED  
 DATE: JUNE 2019

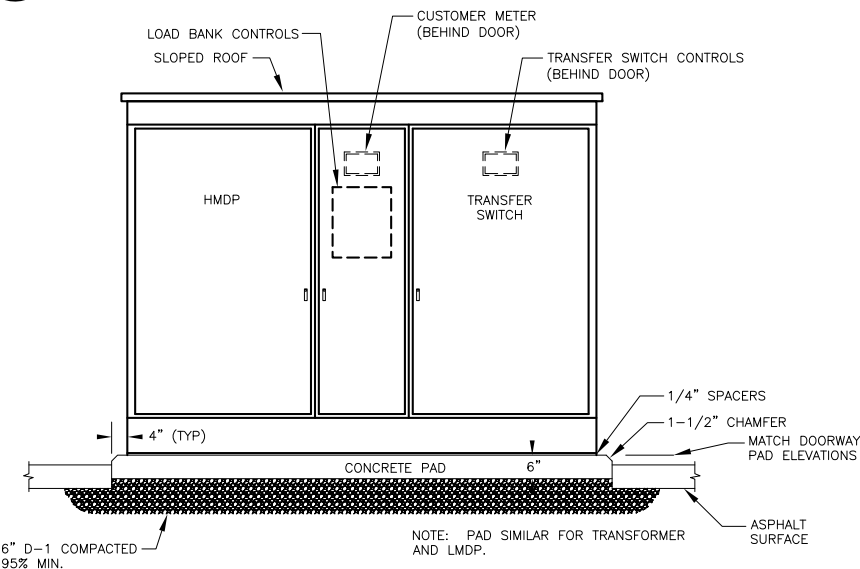




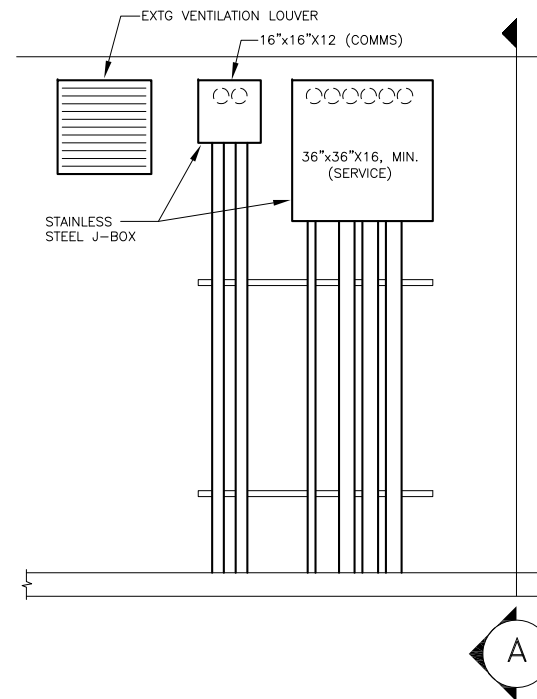
2 PLAN VIEW - SERVICE SWITCHBOARD  
E1.1 SCALE: 0 1' 2' 4'



3 ELEVATION - SERVICE SWITCHBOARD  
E1.1 SCALE: 0 1' 2' 4'

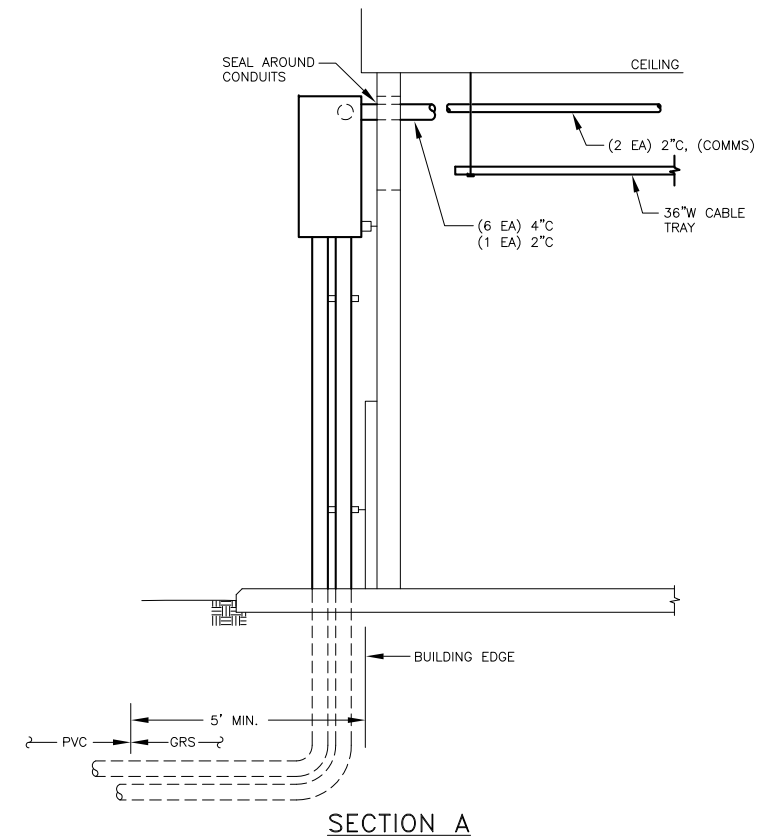


4 FRONT ELEVATION - HMDP  
E1.3 SCALE: 0 1' 2' 4'

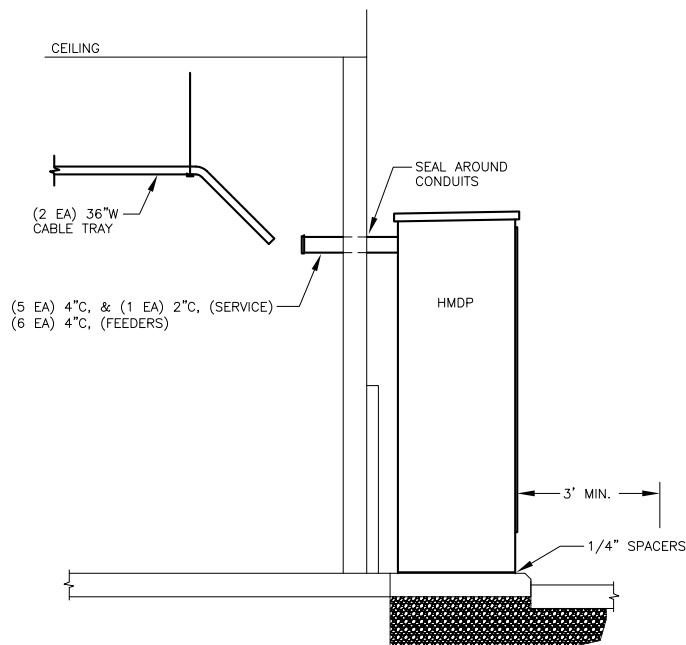


ELEVATION

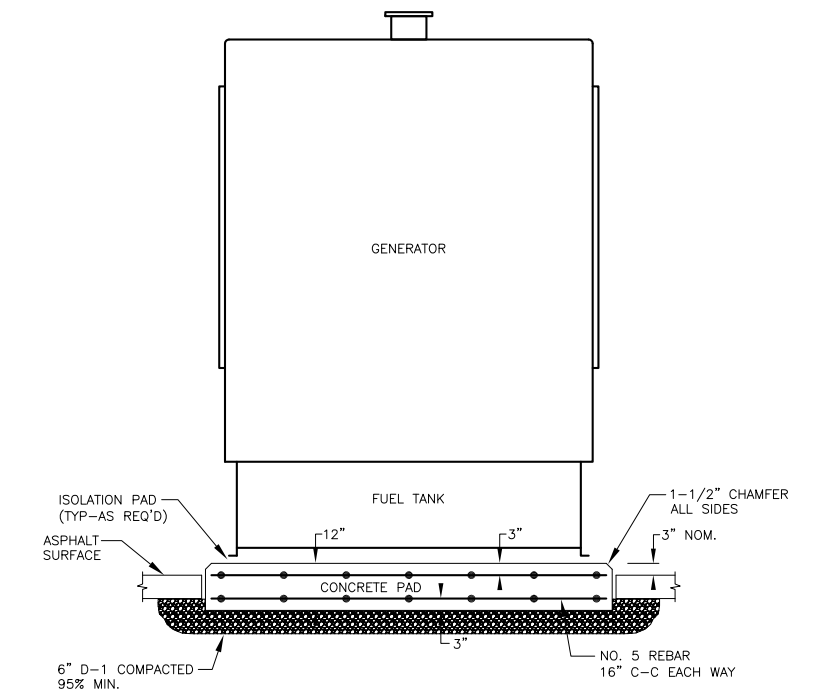
1 DETAIL - SERVICE FEEDER INTO TERMINAL BUILDING  
E1.2 SCALE: 0 1' 2' 4'



SECTION A

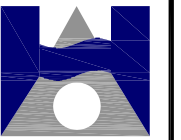
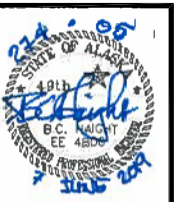


5 DETAIL - SECTION HMDP  
E1.3 SCALE: 0 1' 2' 4'



6 END ELEVATION - GENERATOR  
E1.3 SCALE: 0 1' 2' 4'

Plotted 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 VIA TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.5.DWG



**HAIGHT & ASSOCIATES**  
CONSULTING ELECTRICAL ENGINEERS

526 Main Street  
Juneau, Alaska 99801  
(907) 586-9788

JNU TERMINAL RECONSTRUCTION  
**ELECTRIC SERVICE**  
BE19-217  
JUNEAU, ALASKA

DETAILS  
.....

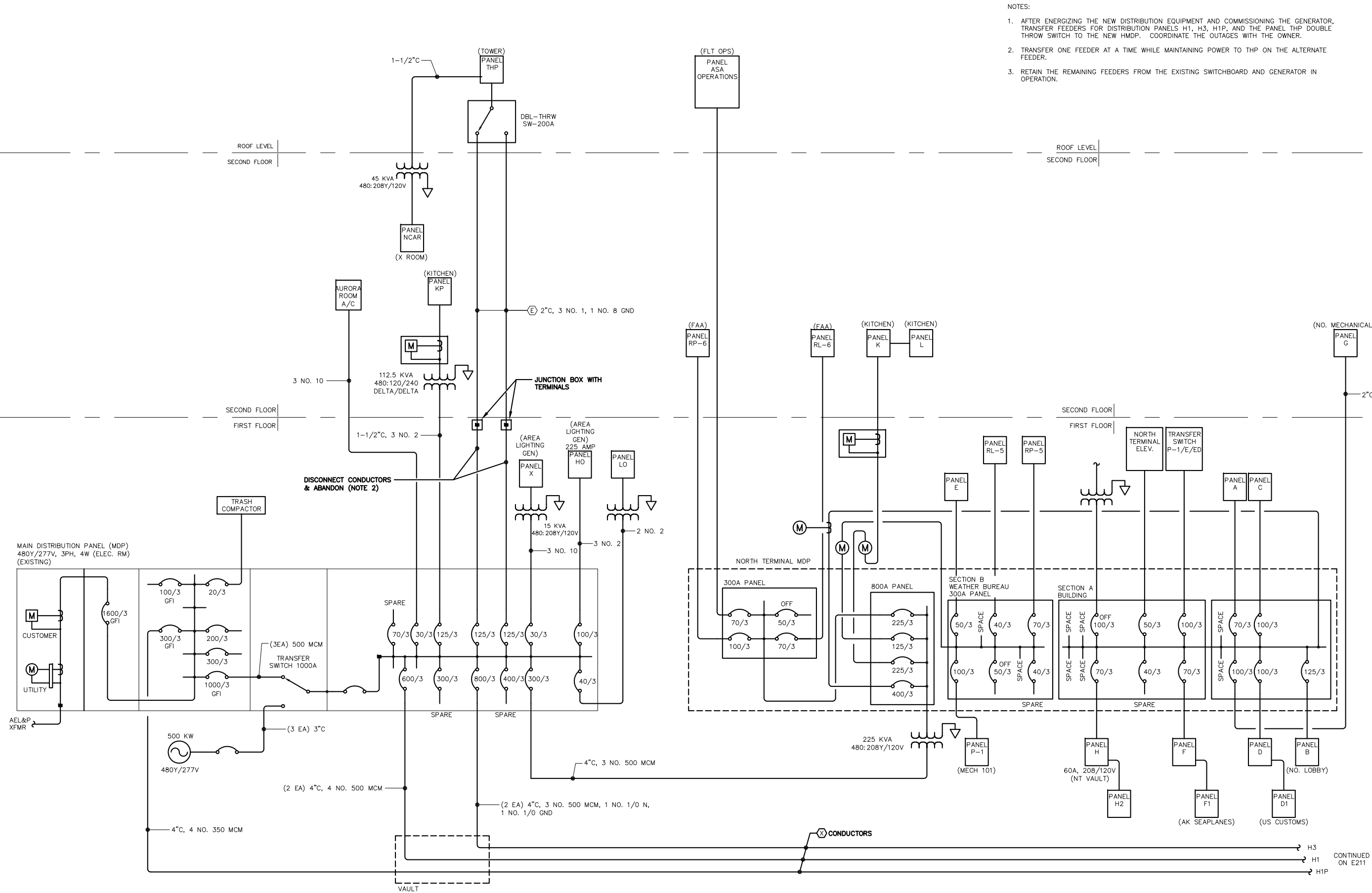
| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

**E1.5**

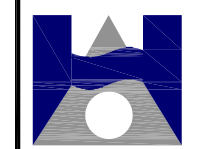
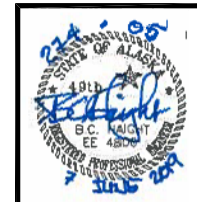
SCALE: AS NOTED  
DATE: JUNE 2019

Plotted 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 JJA TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.6.DWG



- NOTES:
1. AFTER ENERGIZING THE NEW DISTRIBUTION EQUIPMENT AND COMMISSIONING THE GENERATOR, TRANSFER FEEDERS FOR DISTRIBUTION PANELS H1, H3, H1P, AND THE PANEL THP DOUBLE THROW SWITCH TO THE NEW HMDP. COORDINATE THE OUTAGES WITH THE OWNER.
  2. TRANSFER ONE FEEDER AT A TIME WHILE MAINTAINING POWER TO THP ON THE ALTERNATE FEEDER.
  3. RETAIN THE REMAINING FEEDERS FROM THE EXISTING SWITCHBOARD AND GENERATOR IN OPERATION.

① SINGLE LINE DIAGRAM – EXISTING POWER DISTRIBUTION SYSTEM (PART 1)



**HAIGHT & ASSOCIATES**  
CONSULTING ELECTRICAL ENGINEERS

526 Main Street  
Juneau, Alaska 99801  
(907) 586-9788

JNU TERMINAL RECONSTRUCTION  
ELECTRIC SERVICE  
BE19-217  
JUNEAU, ALASKA

EXISTING SINGLE LINE DIAGRAM  
(PART 1)

| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

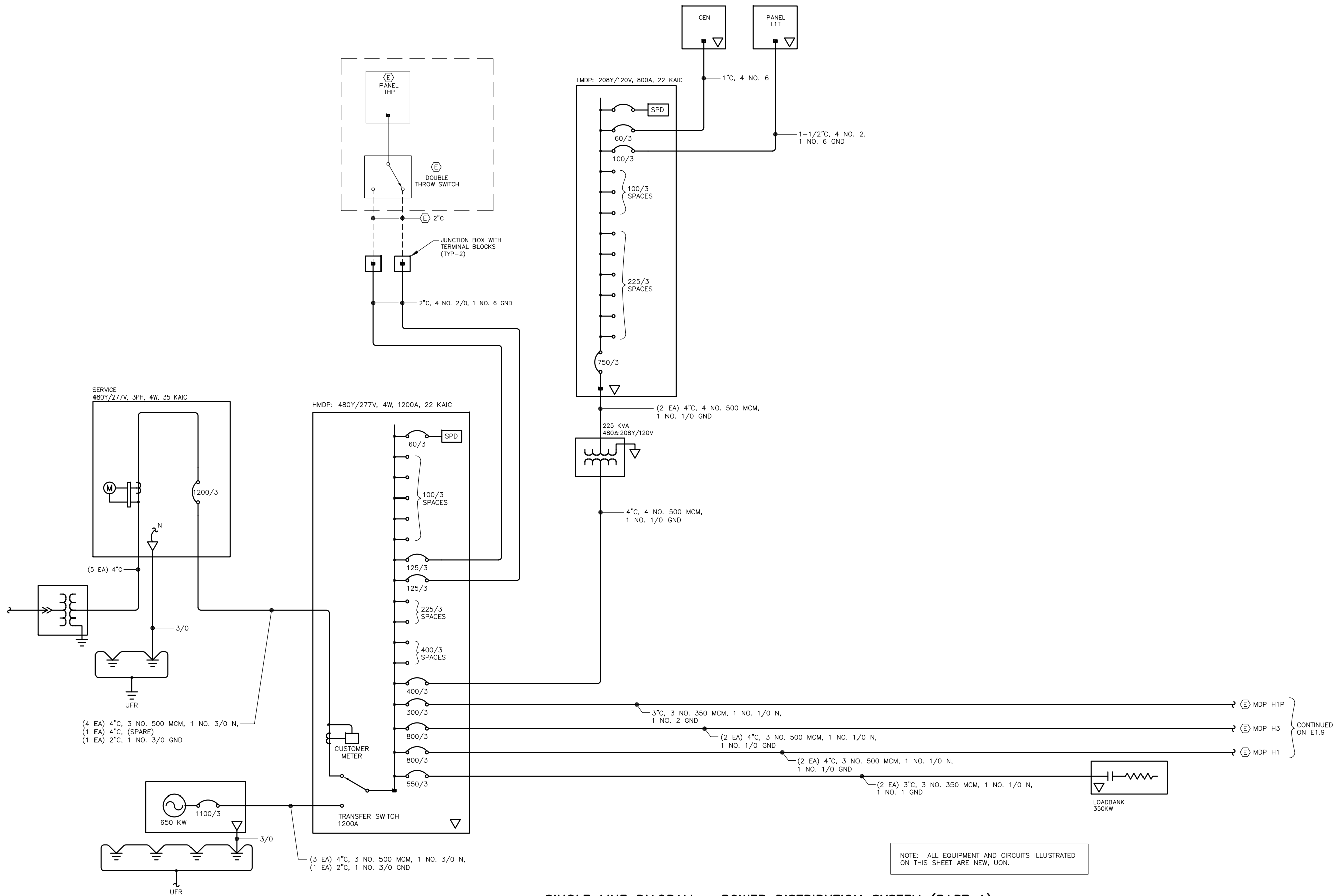
**E1.6**

SCALE: AS NOTED  
DATE: JUNE 2019

CONTINUED ON E211

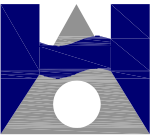


Plotted: 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 VIA TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.8.DWG



NOTE: ALL EQUIPMENT AND CIRCUITS ILLUSTRATED ON THIS SHEET ARE NEW, UON.

① SINGLE LINE DIAGRAM – POWER DISTRIBUTION SYSTEM (PART 1)



**HAIGHT & ASSOCIATES**  
CONSULTING ELECTRICAL ENGINEERS

526 Main Street  
Juneau, Alaska 99801  
(907) 586-9788

JNU TERMINAL RECONSTRUCTION  
**ELECTRIC SERVICE**  
BE19-217  
JUNEAU, ALASKA

SINGLE LINE DIAGRAM (PART 1)

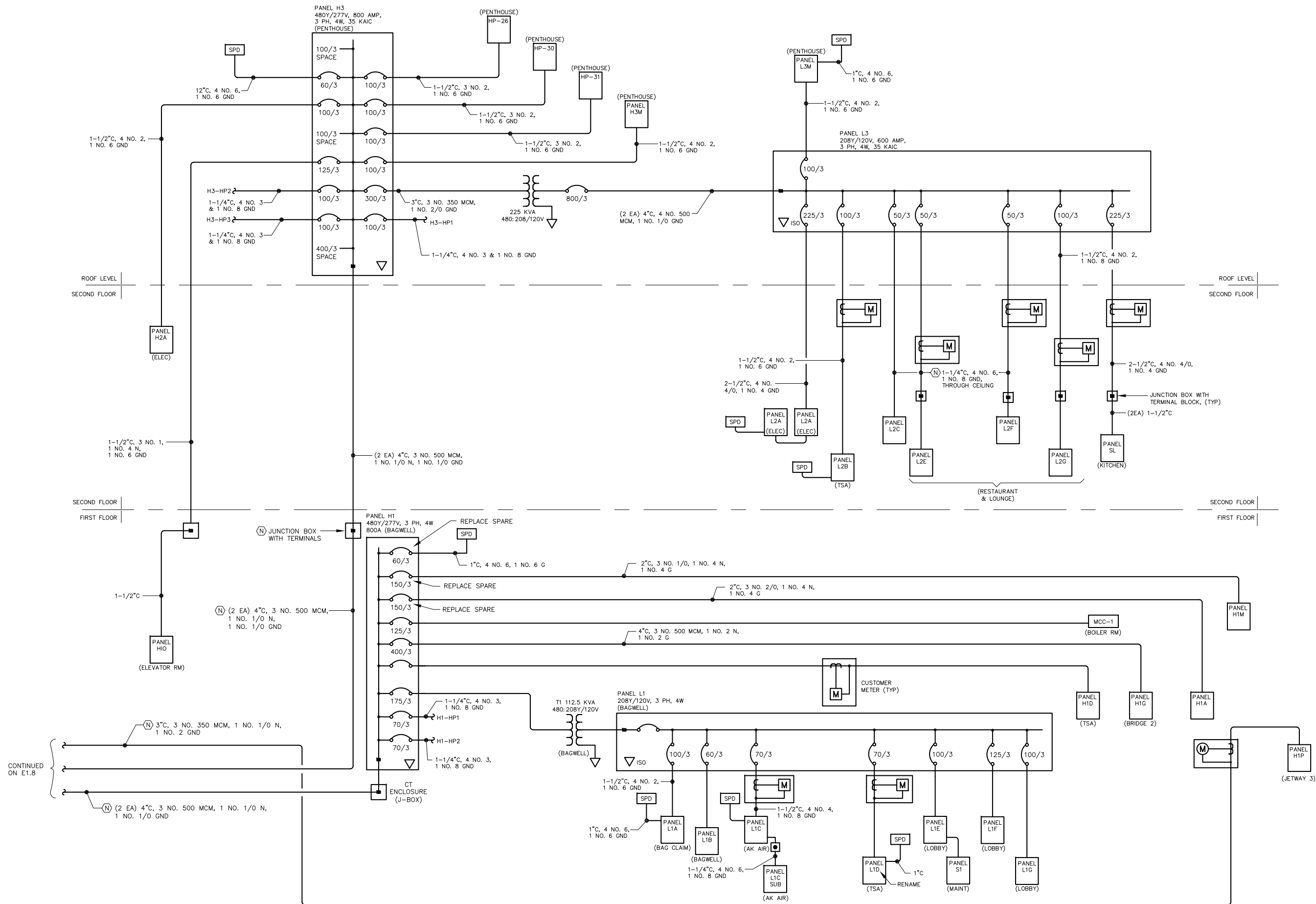
| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

**E1.8**

SCALE: AS NOTED  
DATE: JUNE 2019

Plotted 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 VIA TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.9.DWG



① SINGLE LINE DIAGRAM - POWER DISTRIBUTION SYSTEM (PART 2)

NOTE: ALL EQUIPMENT AND CIRCUITS ILLUSTRATED ON THIS SHEET ARE EXISTING, UNLESS NOTED OTHERWISE.



**HAIGHT & ASSOCIATES**  
 CONSULTING ELECTRICAL ENGINEERS

526 Main Street  
 Juneau, Alaska 99801  
 (907) 586-9788

JUNU TERMINAL RECONSTRUCTION  
**ELECTRIC SERVICE**  
 BE19-217  
 JUNEAU, ALASKA

SINGLE LINE DIAGRAM (PART 2)

| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

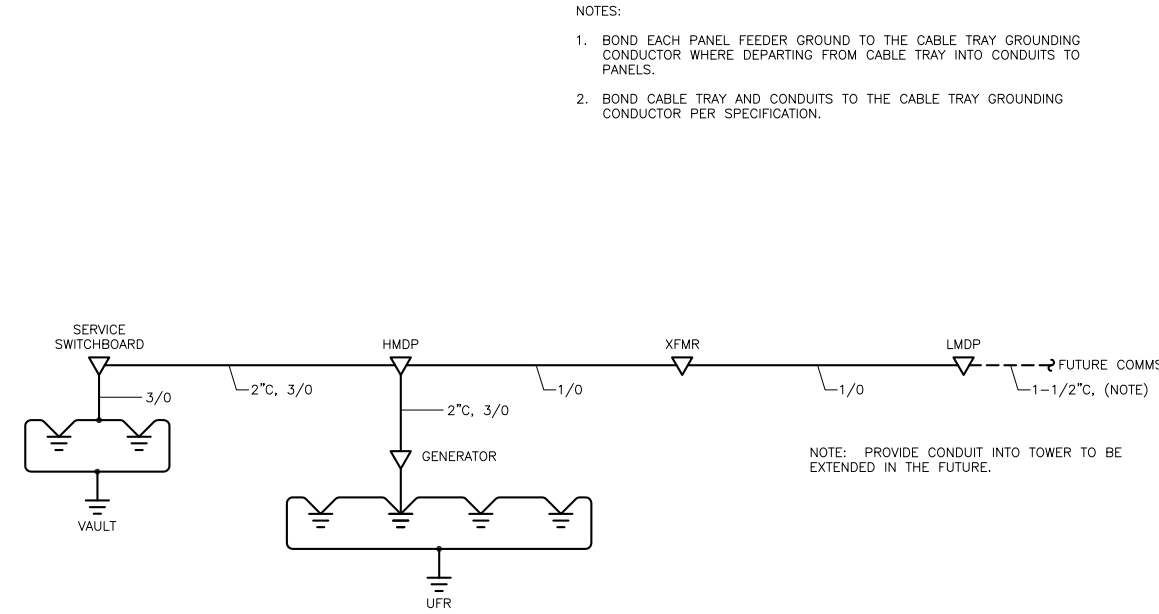
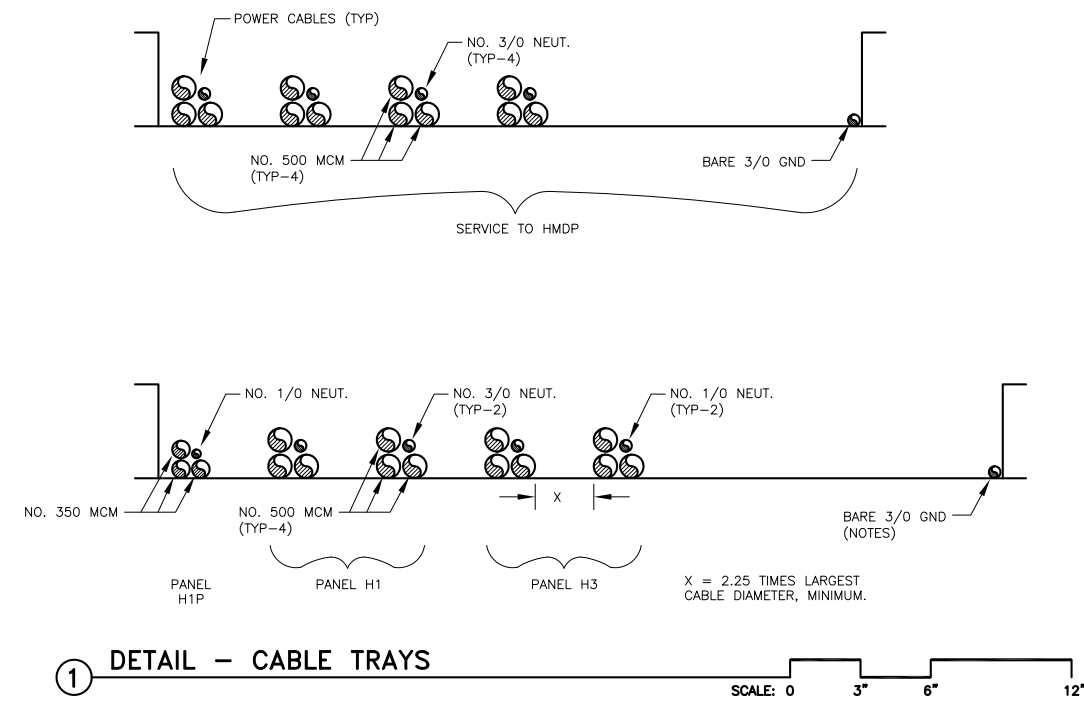
**E1.9**

SCALE: AS NOTED  
 DATE: JUNE 2019

Plotted: 6/10/2019 4:36 PM by Robbie Jensen F:\PROJECTS\274 MCCOOL CARLSON GREEN\05 JJA TERMINAL NEW ELECTRIC UTILITY\DRAWINGS\WORKING\E1.10.DWG

| PANEL GEN                                    |             | SIZE                    | VOLTS/PHASE     |     |     |     | MAIN                    |             | LOCATION            | MOUNT             |
|--|-------------|-------------------------|-----------------|-----|-----|-----|-------------------------|-------------|---------------------|-------------------|
|  |             | 100 AMPS                | 208Y/120V, 3 PH |     |     |     | MLO                     |             | GENERATOR           | SURFACE           |
| C<br>K<br>T<br>NO                            | DESCRIPTION | BREAKER<br>AMP/<br>POLE | KVA             |     |     |     | BREAKER<br>AMP/<br>POLE | DESCRIPTION |                     | C<br>K<br>T<br>NO |
|  |             |                         | CKT             | AØ  | BØ  | CØ  |                         |             |                     |                   |
| 1  | LIGHTS      | 20/1                    | 0.2             | 0.2 |     |     | 0.0                     | 20/1        |                     | 2                 |
| 3  |             |                         | 0.0             |     | 0.5 |     | 0.5                     | 20/1        | BATTERY CHARGER     | 4                 |
| 5  |             |                         | 0.0             |     |     | 0.0 | 0.0                     |             |                     | 6                 |
| 7  | DAMPERS     | 20/1                    | 0.2             | 1.4 |     |     | 1.2                     | 20/1        | BATTERY HEATER      | 8                 |
| 9  |             | 20/1                    | 0.0             |     | 1.5 |     | 1.5                     | 20/2        | JACKET WATER HEATER | 10                |
| 11   |             | 20/1                    | 0.0             |     |     | 1.5 | 1.5                     | --          | ----                | 12                |
| 13   |             |                         | 0.0             | 0.0 |     |     | 0.0                     |             |                     | 14                |
| 15   |             |                         | 0.0             |     | 0.0 |     | 0.0                     |             |                     | 16                |
| 17   |             |                         | 0.0             |     |     | 0.0 | 0.0                     |             |                     | 18                |
| 19   |             |                         | 0.0             | 0.0 |     |     | 0.0                     |             |                     | 20                |
| BALANCED CONNECTED LOAD: 5.1 KVA / 14.2 AMPS |             |                         | 1.6             | 2.0 | 1.5 |     |                         |             |                     |                   |
| MAXIMUM PHASE LOAD: 2.0 KVA / 16.7 AMPS      |             |                         |                 |     |     |     |                         |             |                     |                   |

| PANEL L1T                                   |                                 | SIZE                    | VOLTS/PHASE     |     |     |     | MAIN                    |             | LOCATION                   | MOUNT             |
|---|---------------------------------|-------------------------|-----------------|-----|-----|-----|-------------------------|-------------|----------------------------|-------------------|
|   |                                 | 100 AMPS                | 208Y/120V, 3 PH |     |     |     | MLO                     |             | TOWER - FIRST FLOOR        | SURFACE           |
| C<br>K<br>T<br>NO                           | DESCRIPTION                     | BREAKER<br>AMP/<br>POLE | KVA             |     |     |     | BREAKER<br>AMP/<br>POLE | DESCRIPTION |                            | C<br>K<br>T<br>NO |
|   |                                 |                         | CKT             | AØ  | BØ  | CØ  |                         |             |                            |                   |
| 1   | AIRFIELD LIGHTING CONTROLS ROOM | LTG                     | 20/1            | 0.4 | 1.3 |     | 0.9                     | 20/1        | MAINTENANCE                | 2                 |
| 3   |                                 |                         | 20/1            | 0.0 |     | 0.7 | 0.7                     | 20/1        | STORAGE/ALC ROOM           | 4                 |
| 5   |                                 |                         | 20/1            | 0.0 |     |     | 0.0                     |             |                            | 6                 |
| 7   |                                 |                         | 0.0             | 0.0 |     |     | 0.0                     |             |                            | 8                 |
| 9   |                                 |                         | 0.0             |     | 0.0 |     | 0.0                     |             |                            | 10                |
| 11  |                                 |                         | 0.0             |     |     | 1.0 | 1.0                     | 20/1        | AIRFIELD LIGHTING CONTROLS | 12                |
| 13  |                                 |                         | 0.0             | 0.0 |     |     | 0.0                     |             |                            | 14                |
| 15  |                                 |                         | 0.0             |     | 0.0 |     | 0.0                     |             |                            | 16                |
| 17  |                                 |                         | 0.0             |     |     | 0.0 | 0.0                     |             |                            | 18                |
| 19  |                                 |                         | 0.0             | 0.0 |     |     | 0.0                     |             |                            | 20                |
| 21  |                                 |                         | 0.0             |     | 0.0 |     | 0.0                     |             |                            | 22                |
| 23  |                                 |                         | 0.0             |     |     | 0.0 | 0.0                     |             |                            | 24                |
| 25  |                                 |                         | 0.0             | 0.0 |     |     | 0.0                     |             |                            | 26                |
| 27  |                                 |                         | 0.0             |     | 0.0 |     | 0.0                     |             |                            | 28                |
| 29  |                                 |                         | 0.0             |     |     | 0.0 | 0.0                     |             |                            | 30                |
| BALANCED CONNECTED LOAD: 3.0 KVA / 8.3 AMPS |                                 |                         | 1.3             | 0.7 | 1.0 |     |                         |             |                            |                   |
| MAXIMUM PHASE LOAD: 1.3 KVA / 10.8 AMPS     |                                 |                         |                 |     |     |     |                         |             |                            |                   |



526 Main Street  
Juneau, Alaska 99801  
(907) 586-9788

JNU TERMINAL RECONSTRUCTION  
**ELECTRIC SERVICE**  
 BE19-217  
 JUNEAU, ALASKA

DETAIL,  
 PANEL SCHEDULES

| REVISION | DESCRIPTION | DATE |
|----------|-------------|------|
|          |             |      |
|          |             |      |
|          |             |      |
|          |             |      |

SHEET NUMBER

**E1.10**

SCALE: AS NOTED  
DATE: JUNE 2019