

# PROJECT MANUAL

Volume 1 of 1

## Training Equipment Rehabilitation Project for Alaska Regional Training Center

AUGUST 2019



### BIDDER INFORMATION

See Instruction to Bidders for Bid Proposal Information

Name: \_\_\_\_\_

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

Telephone: \_\_\_\_\_

Project No.: 2950.001.00-041-000113

Set No.: \_\_\_\_\_





**PROJECT MANUAL**  
**FOR**  
**TRAINING EQUIPMENT REHABILITATION PROJECT**  
**AT**  
**ALASKA REGIONAL TRAINING CENTER**  
**FOR THE**  
**CITY OF KENAI**  
**210 FIDALGO AVENUE**  
**KENAI, AK 99611**

Prepared by:



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July 2019



Written By: TFO Checked By: NE

Approved by: [Signature]  
[Project Manager or Project Principal]

PROJECT NO: 2950.001.00-041-000113

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**CITY OF KENAI  
210 FIDALGO AVENUE  
KENAI, ALASKA 99611-8236**

**ADVERTISEMENT FOR BID**

**Project Name: Alaska Regional Fire Training Center Training Equipment Rehabilitation**

**Pre-Bid Meeting:** August 14<sup>th</sup>, 2019 at 1:00 pm at City Hall Council Chambers

**Site Visit / Tour of Site**

**Last Day for Questions:** August 21<sup>th</sup>, 2019 4:00 pm, local time.

**Bid Due Date and Time:** August 29<sup>th</sup>, 2019 by 2:00 pm local time.

Project consists of the Rehabilitation of the Training Equipment at the Alaska Regional Aircraft Fire Training Center located at 450 Daubenspeck Circle, Kenai, AK 99611. Scope of Work includes replacement of mechanical, electrical & control systems associated with the training equipment.

All interested parties, including Disadvantaged Business Enterprises, are encouraged to submit bids. The City of Kenai will not exclude bidders on the grounds of race, color, creed, national origin, or sex.

Persons with a disability who need special accommodations concerning this advertisement for bid should contact Public Works at City Hall at the above address and telephone number.

Special Note: The time line above is fixed and will not be extended. Owner urges Bidders to review documents and submit questions early. Funding for this project is contingent upon the timeline indicated.

Bidders should contact the Public Works Department at (907) 283-8236 to be placed on the plans holders list. Questions may be submitted to [publicworks@kenai.city](mailto:publicworks@kenai.city).

Bids must be delivered in a sealed envelope clearly marked with the project name to the Public Works Department at the address above. Bid documents can be obtained on the City of Kenai website at [www.kenai.city](http://www.kenai.city) or at City Hall for a non-refundable fee of \$150.00 including sales tax for each set of documents.

This contract will be subject to the provisions of the Federal Davis Bacon and State of Alaska Title 36 Wage and Hour Administration Pamphlet Statutes and Regulations and will require 100% performance and payment bonds.

**Publish:** Anchorage Daily News – August 1, 2019  
Peninsula Clarion – August 2, 2019

AD

Rev 2016-01-22

**SECTION 1.2  
CITY OF KENAI  
INSTRUCTIONS TO BIDDERS**

**1. GENERAL**

These instructions specify the form and procedures for the submission of a complete and acceptable bid. To obtain addenda in a timely manner, you should be on the City of Kenai's plan holder's list. Downloading project specifications and drawings from the City website or other online plans rooms does not place you on the City's plan holder's list. To be added to the plan holder's list, please contact the Public Works Department Administrative Assistant by phone (907) 283-8236 or by email at [PublicWorks@kenai.city](mailto:PublicWorks@kenai.city).

Project Name: **Training Equipment Rehabilitation Project**

Pre-Bid Meeting: August 14<sup>th</sup>, 2019 at 1:00 pm at City Hall Council Chambers

Site Visit / Tour of Site

Last Day for Questions: August 21<sup>th</sup>, 2019 4:00 pm, local time.

Bid Due Date and Time: August 29<sup>th</sup>, 2019 by 2:00 pm local time

Local Preference per Kenai Municipal Code: No (Not allowed by FAA)

**2. EVIDENCE OF QUALIFICATIONS**

Upon request of the City, a Bidder whose bid is under consideration for the award of the Agreement, shall submit promptly to the City, satisfactory evidence of the Bidder's financial resources, their experience, their performance in completing other projects of a similar nature, and the organization and equipment they have available for the performance of the Agreement.

**3. BIDDER QUALIFICATIONS**

Before the bid is considered for award, the City reserves the right to determine whether or not a Bidder is responsible and to require the Bidder to complete a Bidder Qualification Form and/or provide a current financial statement prepared by a Certified Public Accountant. The City shall determine whether a Bidder is responsible on the basis of the following criteria:

- The skill and experience demonstrated by the Bidder in performing Agreements of a similar nature.
- The Bidder's record for honesty and integrity.
- The Bidder's capacity to perform in terms of facilities, personnel, and financing.
- The Bidder's past performance under City Agreements. If the Bidder has

failed in any material way to perform its obligations under any Agreement with the City, the Bidder may be determined as a non-responsible Bidder.

- A Bidder's representations concerning their qualifications will be construed as a covenant under the Agreement. Should it appear that the Bidder has made a material misrepresentation, the City shall have the right to terminate the Agreement for the Contractor's breach, and the City may then pursue such remedies as provided in the Agreement Documents or as provided by state statute, City code, or as appropriate.

Any final determination that a Bidder is non-responsible will be made by the City Manager. Such determination will be made in writing to the Bidder setting forth the reasons for such determination.

#### **4. CONDITIONS AFFECTING THE WORK**

The Bidder shall examine carefully the site(s) of the proposed work and the bid documents before submitting a bid. The submission of a bid shall be an admission 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 and accuracy of the bid documents.

The City assumes no responsibility for any understanding or representations concerning conditions made by any of its officers, agents, or employees prior to the execution of this Agreement, unless such understanding or representations are expressly stated in the bid documents or Addenda.

The Bidder shall include in their bid, sufficient sums to cover all items required by the Agreement and the conditions of the site(s), and shall rely entirely upon their own examination in making their bid. The submission of a bid shall be taken as prima facie evidence of compliance with this paragraph.

If information or documentation required for submitting an accurate and complete bid is absent from these documents, the Bidder is required to notify the Public Works Director by facsimile (907) 283-3014, or by e-mail to [PublicWorks@kenai.city](mailto:PublicWorks@kenai.city).

#### **5. SECURITY TO BE FURNISHED BY BIDDER**

If the bid exceeds \$100,000, a certified check, bank cashier's check, or bid bond, made payable to the City of Kenai amount equal to five (5%) percent of the total bid, shall accompany each bid as evidence of good faith, a guarantee that if awarded the agreement, the Bidder will execute the Agreement and give bond as required. All Bidder's checks or bid bonds will be retained until the successful Bidder has entered into a satisfactory agreement and furnished bonds, as required. The successful Bidder shall furnish the City a Performance and Payment bond in the full amount of the Agreement and shall maintain the Bond in force during the continuance of the Agreement. The bonds must be furnished prior to the City's execution of the Agreement. The Bond shall be for the faithful performance of the Agreement in all respects including, but not limited to,



payments for all materials and labor. All alterations, extensions of time, additional work, and other changes authorized by the Agreement Documents may be made without securing the consent of the Surety or Sureties. Power-of-Attorney for the person signing the Bond for the Surety must be submitted with the Bond. These Bonds, in whatever amount required by the specific agreement, shall be administered and deemed governed by the provisions of Alaska Statutes Title 36, Chapter 25, and shall comply with all requirements for payment and submission of claims as provided by that chapter.

## **6. LICENSING**

Alaska State Statutes requires that all businesses wishing to engage in business in Alaska obtain license(s). All Bidders are required to furnish with their bid, the applicable, current licenses required to perform the work. Applicable licenses may include the following: Contractor's License, Specialty Contractor License, and Alaska Business License. Failure to submit license(s) with the bid may result in rejection of the Contractor's bid.

## **7. TAX COMPLIANCE CERTIFICATE**

No agreement will be awarded to any individual or entity that is in violation of the tax laws of the City of Kenai or the Kenai Peninsula Borough unless the violation is cured within ten business days of notice. The Tax Compliance Certificate must be signed by the Bidder only and submitted with the bid. The City will obtain verification of tax compliance from the Kenai Peninsula Borough for the successful bidder. Bids submitted without a completed Tax Compliance Certificate may be considered non-responsive.

## **8. INTERPRETATION OR CORRECTIONS OF BID DOCUMENTS**

Bidders shall notify the Public Works Director promptly of any error, omission, or inconsistency that may be discovered during examination of the bid documents and the proposed work site(s). Requests from Bidders for interpretation or clarification of the bid documents shall be made in writing to the Public Works Director and shall arrive no later than the time and date specified in Section 1 of these Instructions to Bidders. Questions may be faxed to (907) 283-3014 or emailed to [PublicWorks@kenai.city](mailto:PublicWorks@kenai.city). The subject line of the email or fax must include the name of the project.

Oral questions may be presented at a pre-bid conference if one is provided for in Section 1 of these Instructions to Bidders. Interpretations, corrections, or changes, if any, to the bid documents shall be made by Addendum. Bidders shall not rely upon interpretations, corrections, and changes made in any other manner, including orally, at the pre-bid conference. Interpretations, corrections, and changes shall not be binding unless included in an Addendum. All Addenda issued during the time of bidding shall become part of the Agreement Documents. Questions or requests for clarifications shall be directed to the Public Works Director. Only written interpretations or corrections by Addendum shall be binding, and no other forms of interpretation or correction will be binding on the City of Kenai.

It is the Bidder's sole responsibility to ascertain that they have received all Addenda issued by the City of Kenai. Addenda will be issued electronically and/or by facsimile. All Addenda must be acknowledged in the space provided on the Bid Form. If no Addenda have been issued, write or type zero or "N/A" on the Bid Form in the space provided.

## **9. PREPARATION AND SUBMISSION OF BIDS**

Bids must be received at City Hall prior to the time and date specified in Section 1 of these Instructions to Bidders.

Bids must be submitted on the Bid Form furnished. Bids must be completed in ink or by typewriter, and must be manually signed by an authorized person. If erasures or other changes appear on the forms, the person signing the bid must initial each erasure or change in ink.

Bids shall specify a unit or lump sum price, typed or written in ink in figures, for each bid item called for. In case of error in the extension of prices, the unit price will govern. Bids may be rejected if they show any omissions, alteration of the forms, additions not called for, conditional or alternate bids not called for, qualified bids, or irregularities of any kind.

It is expressly agreed that the quantities shown in the Bid Form, whether for a "Unit Price Bid" or in connection with a "Lump Sum Bid" on the Bid Form are approximate only for use as a basis for comparison of bids and are not to be taken to be either representations or warranties. The City does not expressly, nor by implication, agree that the actual amount of work will correspond therewith.

The Bid Form invites bids on definite plans and specifications. Only the amounts and information asked for on the Bid Form will be considered as the bid. Each Bidder shall bid upon the work exactly as specified and as requested on the Bid Form, and Bidders shall bid upon all alternates as indicated. When bidding on an alternate for which there is no charge, Bidder shall write the words "No Charge" in the space provided.

One (1) complete bid package shall be completely sealed in an envelope clearly marked with the Bidder's company name, and the "Project Name" and "Bid Due Date" specified in Section 1 of these Instructions to Bidders. A complete bid package shall include the following documents:

1. Bid Form
2. Tax Compliance Certificate
3. Applicable Licenses
4. Non-Collusion Affidavit
5. Bid Bond with Power-of-Attorney (If Bid exceeds \$100,000.00)
6. DBE Attachment 1 Disadvantaged Business Enterprise Declaration
7. DBE Attachment 2 Bidder's Registration Form (for Prime contractor only)
8. DBE Attachment 3 List of Potential Subcontractors
9. Buy American Compliance Certificate (See Supplemental General Conditions)

## 10. EEO Certification

Bids received without all the required documents may be considered non-responsive. Bids received after the bid due date and time will be considered non-responsive and will not be accepted.

No responsibility shall be attached to the City for the premature opening of, or the failure to open a bid not properly addressed and identified.

Please note that overnight delivery from the lower 48 states is generally not available. Prospective Bidders should anticipate a minimum of two to three days delivery time for express, priority or expedited delivery services.

## 10. MODIFICATION OF BIDS

Bid modifications will be accepted by the City at [publicworks@kenai.city](mailto:publicworks@kenai.city) and binding upon the Bidder where the modification:

- is received at City Hall prior to the time and date specified in Section 1 of these Instructions to Bidders.
- does not identify the adjusted Bid Total price. Only adjustments to the sealed bid will be accepted. For example:
  - CORRECT – Decrease the Unit Bid Price of Item XXX by \$2.50 per ton and the Bid Total by \$2,500.
  - CORRECT – Increase the Unit Bid Price of Item XXX and the Bid Total by \$5,000
  - INCORRECT – Decrease the Bid Total by \$5,000 for a new Total of \$95,000.
- is signed by the same individual who signed the original bid.

Should there be more than one bid modification from a Bidder, only the last modification received prior to the deadline shall be applied to the bid. All earlier modifications shall be disregarded.

Any modification which fails to meet any requirement of this section shall be rejected, and the bid shall be considered as if no modification had been attempted.

It is the Bidder's responsibility to confirm the City's receipt of any bid modification.

## 11. WITHDRAWAL OF BID

At any time prior to the scheduled closing time for receipt of bids, any Bidder may withdraw their bid, either personally or by written request.

After the scheduled closing time for receipt of bids, no Bidder will be permitted to withdraw their bid unless Notice of Award is delayed for a period exceeding ninety (90) days.

A bid may not be withdrawn after opening without the written consent of the City.

## **12. ACCEPTANCE – REJECTION OF BIDS**

The City reserves the right to reject any or all bids, to waive minor irregularities in any bids or in the bidding procedure, and to accept any bid presented which meets or exceeds said specifications and which is deemed to be in the best interest of the City. However, the requirements for timeliness and manual signatures shall not be waived. The City is not obligated to accept the lowest bid and is not responsible for bid preparation costs.

## **13. EXECUTION OF AGREEMENTS**

The successful Bidder shall be required to execute an Agreement for the work within ten (10) days after receiving the Notice of Award and Agreement documents from City; if Contractor does not return executed copies within this time, then, at the option of City, the bid may be rejected.

## **14. AWARD OF AGREEMENT**

It is the intent of the City to award the bid to the lowest, qualified, responsive and responsible Bidder. Unless otherwise stated in the bid documents, the Agreement, if awarded, shall be awarded to the responsible Bidder who submits the lowest responsive bid. When bid documents contain a base bid and alternates, only the total of the base bid and the alternates to be awarded shall be used to determine the low Bidder.

The amount of the Agreement shall be the total sum of the amounts computed from the estimated quantities and unit prices and/or the lump sum awarded by the City and specified in the Agreement.

On all bids, Notice of Award or rejection will be given within ninety (90) days of bid opening. The notice will be in writing and signed by the Public Works Director. A Notice of Intent to Award, and no other act of the City of Kenai or its representatives, constitutes an acceptance of a bid. The acceptance of a bid shall bind the successful Bidder to execute the Agreement.

## **15. AGREEMENT AND PERFORMANCE AND PAYMENT BOND SIGNATURE INSTRUCTIONS WHEN BONDS ARE REQUIRED**

The successful Bidder shall insert the full name and business of the Contractor in the Agreement and on the Performance and Payment Bond, hereinafter the Bond.

If the Contractor is a partnership or joint venture, all partners or joint ventures shall sign the Agreement and the Bond except that one partner or one joint venturer may sign for the partnership or joint venture when all other partners or joint venturer's have executed a Power-of-Attorney authorizing one partner or joint venturer to sign. The Power-of-Attorney shall accompany the executed Agreement and the Bond.

If the Contractor is a Limited Liability Company (LLC), a person with appropriate authority to bind the LLC shall execute the Agreement and Bond unless a Power-of-Attorney or Corporate Resolution accompanies the executed Agreement and Bond.

If the Contractor is a corporation, the President or Vice-President and Secretary or Treasurer of the corporation shall execute the Agreement and the Bond unless a Power-of-Attorney or Corporate Resolution accompanies the executed Agreement and Bond.

The Bond shall be returned undated as to Agreement Date. The Agreement Date shall be inserted on the Agreement when the City signs the Agreement and the Bond shall be dated the same as the Agreement Date.

## **16. SPECIAL PROVISIONS**

If funded in part or in whole by a grant or grants, the contractor and their subcontractors will be required to comply with the requirements of these grants, including insurance and purchasing requirements, if any. If any permits are included with the bid documents, e.g. a U.S Corp of Engineers wetland permit, all conditions of this permit must be met by the Contractor and their Subcontractors.

## **17. APPEAL PROCEDURE**

KMC 7.15.120 Appeal procedures.

(a) Any party submitting a bid or proposal for a contract with the City and who believes that they are adversely affected by the City's relevant ordinances, regulations, procurement process, or by any acts of the City in connection with the award of a City contract, may file a protest appeal with the City Clerk. All protest appeals must be to the City within five (5) calendar days of the issuance of the City's notice of its intent to award the contract. The appeal must be hand delivered, delivered by mail, or by facsimile and must comply with all requirements of this section. If the fifth day is a City-recognized holiday or a weekend, the deadline for appeal shall be the next work day. It is up to the protester to choose a method of delivery to assure timely receipt by the City.

(b) Rejection of Appeal. The Clerk shall reject an untimely or incomplete appeals. Such rejection shall be final and may be appealed to the Superior Court pursuant to the Court Rules of Appellate Procedure.

(c) The protest appeal must be in writing and shall include the following information:

(1) The name, address, e-mail, and telephone (and facsimile if available) numbers of the protesters;

(2) The signature of the protester or the protester's representative;

(3) Identification of the contracting agency and the solicitation or contract at issue;

(4) A statement of the legal and factual grounds of the protest, including copies of relevant documents; and

(5) The form of relief requested.

(d) Stay of Award. If a timely and complete protest appeal is filed, the award of the contract shall be stayed until all administrative remedies have been exhausted, unless the City Manager determines in writing that award of the contract pending resolution of the appeal is in the best interests of the City.

(e) Notice and Response. Notice of the stay and protest appeal shall be delivered to any party who may be adversely affected by the City Manager's decision by facsimile, first class mail or in person within three (3) business days of receipt of a properly filed appeal.

(f) City Manager Decision. The City Manager shall issue a written decision to the appellant within ten (10) business days of the date the appeal is filed. If multiple appeals have been filed, they may be consolidated for purposes of the decision. Copies of the appeal and decision shall be provided to any interested party requesting one. The decision may include any lawful action, including without limitation an amendment of all or any part of the recommended award. For good cause shown, the City Manager may extend the date for the decision for such additional period as may be necessary.

(g) If the City Manager sustains a protest in whole or in part, the City Manager shall implement an appropriate remedy. In determining an appropriate remedy, the City Manager shall consider the circumstances surrounding the solicitation or procurement including the seriousness of the procurement deficiencies, the degree of prejudice to other interested parties or to the integrity of the procurement system, the good faith of the parties, the extent the procurement has been accomplished, costs to the agency and other impacts on the agency of a proposed remedy, and the urgency of the procurement to the welfare of the City.

(h) Notwithstanding subsections (a) and (b) immediately above, if the City Manager sustains a bid protest appeal in whole or part, the protester's damages shall not exceed the reasonable bid or proposal preparation costs.

(i) Appeal to Superior Court. Appeals may be taken from the written decision of the City Manager within thirty (30) days of the date of the decision pursuant to Part VI of the

## **18. COMPLIANCE OR ACCEPTED ALTERNATES TO SPECIFICATIONS**

Bidder hereby agrees that the material offered will meet all the requirements of the specifications in this solicitation unless alternates have been deemed acceptable by the City. Manufacturer's names, trade names, brand names, model and catalog numbers used in these specifications are for the purpose of describing and establishing general quality levels. Such references are not intended to be restrictive. Alternates will be approved via addenda, and only via addenda. Request for alternates must be submitted no later than the Last Day for Questions in the Advertisement for Bid. An alternate must be requested via email sent to the addresses in section 1 with an explanation giving in detail the extent of the alternate, the reason for which it is requested, and why the City should approve the alternate. Provide as much detail as possible. If multiple models or options are provided with your submittal data clearly indicate which you are requesting. The City of Kenai will be the sole judge of whether an alternative is acceptable to the items specified.

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## **CITY OF KENAI**

### **BID FORM**

TO: City of Kenai  
Public Works Department  
210 Fidalgo Avenue  
Kenai, Alaska 99611-7794

FROM: \_\_\_\_\_  
Name of Bidder's Company or Business Entity

#### **BIDDER'S DECLARATION & UNDERSTANDING**

The undersigned, hereinafter called the Bidder, declares that the Bidder has carefully examined the Addenda, Specifications and Drawings, Agreement, General Conditions, and Instructions to Bidders (hereinafter called "Bid Documents"), and the location(s) where work is to be performed for the project, and that the Bidder has satisfied themselves as to the quantity and condition of work involved.

It is expressly agreed that the quantities shown in the Bid Form, whether for a "Unit Price Bid" or in connection with a "Lump Sum Bid" on the Bid Form are approximate only for use as a basis for comparison of Bids and are not to be taken to be either representations or warranties. The City does not expressly, nor by implication, agree that the actual amount of work will correspond therewith.

The Bidder further declares that the only person or parties interested in the Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the City of Kenai, and that the Bid is made without any connection or collusion with any person submitting another Bid

The Bidder agrees not to withdraw this bid within ninety (90) days after the actual date of the bid opening

#### **DOCUMENTS TO SUBMIT WITH THIS BID**

1. Bid Form
2. Tax Compliance Certificate
3. Applicable Licenses
4. Non-Collusion Affidavit
5. Bid Bond with Power-of-Attorney (If Bid exceeds \$100,000.00)
6. DBE Attachment 1 Disadvantaged Business Enterprise Utilization Declaration
7. DBE Attachment 2 Bidder's Registration Form (for Prime contractor only)
8. DBE Attachment 3 List of Potential Subcontractors Form

### **DOCUMENTS TO SUBMIT WITHIN 5 DAYS AFTER INTENT TO AWARD**

1. DBE Attachment 4 DBE Utilization Report.
2. DBE Attachment 5 Letter of Intent
3. DBE Attachment 6 Summary of Good Faith Effort Documentation (if DBE goal not met) DBE
4. Attachment 7 Contact Report Form (if DBE goal not met)
5. DBE Attachment 2 Bidder's Registration Form (for each DBE and non-DBE subcontractor) working on the project.

### **DOCUMENTS THE CITY OF KENAI IS TO RECEIVE WITHIN 10 DAYS AFTER NOTICE OF AWARD**

The Bidder agrees that if this Bid is accepted he will deliver to the City of Kenai, within ten (10) calendar days of Notice of Award, the following:

1. Executed Agreement
2. Certificate(s) of Insurances\*
3. Construction Schedule
4. List of Subcontractors
5. Performance and Payment Bond
6. Power of Attorney and/or Corporate Resolution (See Instructions to Bidders)

\* The City shall be named as an additional insured on General Liability and Automobile Liability insurances with respect to the performance or failure to perform under this Agreement.

### **TIME OF COMPLETION AND LIQUIDATED DAMAGES**

Bidder agrees to commence and complete work as follows: Owner anticipates issuance of a Notice to Proceed on or about October 1, 2019 with a Substantial Completion date of February 28, 2020. The training center training classes begin April 1, 2020.

Liquidated Damages. Liquidated damages will be charged at Fifteen Hundred Dollars (\$1,500.00), plus additional services, including expenses, by the Engineer, for each calendar day that expires after the contract time required for substantial completion to the actual date of completion as provided for in the Agreement Documents.

### **BID TABULATION AND SUMMARY**

Bidder agrees to perform all of the work described and per the conditions in the Bid Documents for the prices stated on this Bid Form.

Prices are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern. In case of error in the extension of prices, the unit price will govern. Bidder understands that the City reserves the right to reject any or all bids and to waive irregularities in the bidding.

**BID GUARANTEE:** The Undersigned further agrees that the check or bid bond accompanying the bid is left in escrow with the City, that the amount of the check or bond is the measure of damages which the City will sustain by failure of the Undersigned to deliver said documents within ten (10) days after written notice of the award of contract to him or her, and that check shall become the

property of the City, or the bid bond shall remain in full effect, should he or she so fail. But if this bid is not accepted within ninety (90) days of the date set for the opening thereof, or if accepted and the Undersigned delivers said Agreement, and performance, and labor, and material payment bonds as required, the check shall be returned to him or her and the bid bond shall become void.

### **CERTIFICATIONS**

#### **Buy America Certification (Title 49 U.S.C. Section 50101)**

As a matter of bid responsiveness, the bidder or offeror must complete and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter "X". Additional information regarding Buy American Requirements can be found in Section 1.8.A.2 Buy American Preferences.

#### **Certificate of Buy American Compliance for Manufactured Products (Non-building construction projects, equipment acquisition projects)**

- ☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:
- a) Only installing steel and manufactured products produced in the United States, or;
  - b) 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;
  - c) 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:

1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
2. To faithfully comply with providing US domestic product
3. To furnish US domestic product for any waiver request that the FAA rejects
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

- ☐ The bidder or offeror 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 or offeror with the apparent low bid agrees:

1. To the submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the proposal.
3. To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

**CERTIFICATION OF OFFEROR/BIDDER REGARDING TAX DELINQUENCY AND FELONY**

**CONVICTIONS:** The bidder must complete the following two certification statements. **Refer to Section 1.8 –Federal Contract Provision, Item A24.** The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark "X" in the space following the applicable response. The bidder agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

- 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** /\_\_\_/ a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

**CERTIFICATION OF EQUAL EMPLOYMENT OPPORTUNITY:** During the performance of this contract, the bidder agrees to follow the requirements listed in **Section 1.8 - Item 13. Equal Employment Opportunity.** The Bidder shall complete the following EQUAL OPPORTUNITY CERTIFICATION by checking the appropriate boxes.

- A. The Bidder **has** /\_\_\_/ **has not** /\_\_\_/ participated in a previous contract subject to the equal opportunity clause prescribed by Executive Order 10925, or Executive Order 11114, or Executive Order 11246.
- B. The Bidder **has** /\_\_\_/ **has not** /\_\_\_/ submitted all compliance reports in connection with any such contract due under the applicable filing requirements; and that representations indicating submission of required compliance reports signed by proposed sub-contractors will be obtained prior to award of subcontracts.
- C. If the Bidder has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports as required by applicable instructions, the Bidder shall submit a compliance report on Standard Form 100, "Employer Information Report EEO-1" prior to the award of contract.

**CERTIFICATION OF OPERATIONAL CONFORMANCE:**

At the time of Substantial Completion, the bidder hereby certifies, subject to the provisions of Liquidated and Actual Damages, that the performance of the rehabilitated Tank Farm, rehabilitated Fuel Spill Trainer and rehabilitated Specialized Aircraft Fires Trainer shall meet or exceed all of the performance requirements found in the specifications, specifically the original design Performance Specification for Aircraft Fires Trainer and the original design System Specification for the Fuel Spill Fire Trainer. The bidder hereby acknowledges that liquidated damages, including additional services and expenses of the Engineer, will begin at the time of equipment commissioning at Substantial Completion, until such time all performance standards are met. Must meet the intent of FAA Advisory Circular AC 150/5200-17B.

### **EXECUTION OF BID**

Bidder shall complete and submit all pages of the Bid Form.

I have received the Bid Documents for the Project: Training Equipment Rehabilitation Project.

I have received Addenda No(s). \_\_\_\_\_ and have included their provisions in my proposal.

I have examined both the Bid Documents and the work locations, and submit the following bid with the understanding that I agree:

1. To hold my bid open ninety (90) consecutive calendar days.
2. To accept the provisions of the Bid Documents.
3. To enter into and execute an Agreement, if awarded, on the basis of my Bid.
4. To furnish all labor and materials and to accomplish the work in accordance with the Bid Documents.
5. To accomplish Substantial Completion as specified above in TIME OF COMPLETION.

Complete Bid Forms on the following pages:

| SCHEDULE 1 - TRAINER EQUIPMENT INFRASTRUCTURE |             |     |       |            |            |
|---|-------------|-----|-------|------------|------------|
| SCHEDULE                                      | DESCRIPTION | QTY | UNITS | UNIT PRICE | TOTAL COST |

|    |  |   |         |       |       |
|----|--|---|---------|-------|-------|
| 1A | Propane Tank Farm General Rehabilitation | 1 | LS      | _____ | _____ |
|    |  |   | Dollars |       |       |
|    | (UNIT PRICE IN WORDS)                    |   |         |       |       |
| 1B | Replace Tank Farm Propane Pumps          | 1 | LS      | _____ | _____ |
|    |  |   | Dollars |       |       |
|    | (UNIT PRICE IN WORDS)                    |   |         |       |       |

|                                    |  |  |                          |  |  |
|------------------------------------|--|--|--------------------------|--|--|
| TOTAL SCHEDULE 1                   |  |  |                          |  |  |
|                                    |  |  |                          |  |  |
| (TOTAL SCHEDULE 1: PRICE IN WORDS) |  |  | (TOTAL PRICE IN FIGURES) |  |  |

|      |  |   |         |       |       |
|------|--|---|---------|-------|-------|
| A1-A | Additive Alternative A - Replace Pump Motors | 1 | LS      | _____ | _____ |
|      |  |   | Dollars |       |       |
|      | (UNIT PRICE IN WORDS)                        |   |         |       |       |

|      |  |   |         |       |       |
|------|--|---|---------|-------|-------|
| A1-B | Additive Alternative B - Replace Starters and Cut off Switches | 1 | LS      | _____ | _____ |
|      |  |   | Dollars |       |       |
|      | (UNIT PRICE IN WORDS)  |   |         |       |       |

|      |   |   |         |       |       |
|------|---|---|---------|-------|-------|
| A1-C | Additive Alternative C - Vaporizer Equipment Rehabilitation | 1 | LS      | _____ | _____ |
|      |   |   | Dollars |       |       |
|      | (UNIT PRICE IN WORDS)                                       |   |         |       |       |

| SCHEDULE 2 - FUEL SPILL TRAINER |             |     |       |            |            |
|---------------------------------|-------------|-----|-------|------------|------------|
| SCHEDULE                        | DESCRIPTION | QTY | UNITS | UNIT PRICE | TOTAL COST |

|    |  |   |         |       |       |
|----|--|---|---------|-------|-------|
| 2A | Fuel Spill Trainer Control System Rehabilitation | 1 | LS      | _____ | _____ |
|    | (UNIT PRICE IN WORDS)                            |   | Dollars |       |       |
| 2B | Bunker Equipment Rehabilitation                  | 1 | LS      | _____ | _____ |
|    | (UNIT PRICE IN WORDS)                            |   | Dollars |       |       |
| 2C | Burn Pit Rehabilitation                          | 1 | LS      | _____ | _____ |
|    | (UNIT PRICE IN WORDS)                            |   | Dollars |       |       |
| 2D | Install New Water Deck Burn Pit System           | 1 | LS      | _____ | _____ |
|    | (UNIT PRICE IN WORDS)                            |   | Dollars |       |       |

|                                       |  |                          |  |  |  |
|---------------------------------------|--|--------------------------|--|--|--|
| SUBTOTAL SCHEDULE 2                   |  |                          |  |  |  |
| (SUBTOTAL SCHEDULE 2: PRICE IN WORDS) |  | (TOTAL PRICE IN FIGURES) |  |  |  |

|       |  |   |         |       |       |
|-------|--|---|---------|-------|-------|
| A2- A | Additive Alternative A - Replace Air Blower Motor/Fan/Heater | 1 | LS      | _____ | _____ |
|       | (UNIT PRICE IN WORDS)  |   | Dollars |       |       |

|      |   |   |         |       |       |
|------|---|---|---------|-------|-------|
| A2-B | Additive Alternative B - Spill Fire Slab Hydronic Heating System Rehabilitation | 1 | LS      | _____ | _____ |
|      | (UNIT PRICE IN WORDS)   |   | Dollars |       |       |

| SCHEDULE 3 - SPECIALIZED AIRCRAFT FIRES TRAINER |             |     |       |            |            |
|---|-------------|-----|-------|------------|------------|
| SCHEDULE  | DESCRIPTION | QTY | UNITS | UNIT PRICE | TOTAL COST |

|    |  |   |         |  |  |
|----|--|---|---------|--|--|
| 3A | Control System Rehabilitation                        | 1 | LS      |  |  |
|    |  |   | Dollars |  |  |
|    | (UNIT PRICE IN WORDS)                                |   |         |  |  |
| 3B | Replace mockup exhaust system fan and motor          | 1 | LS      |  |  |
|    |  |   | Dollars |  |  |
|    | (UNIT PRICE IN WORDS)                                |   |         |  |  |
| 3C | Replace combustion air system fan, motor and ducting | 1 | LS      |  |  |
|    |  |   | Dollars |  |  |
|    | (UNIT PRICE IN WORDS)                                |   |         |  |  |
| 3D | Replace Smoke Generation System                      | 1 | LS      |  |  |
|    |  |   | Dollars |  |  |
|    | (UNIT PRICE IN WORDS)                                |   |         |  |  |
| 3E | Replace Agent Detection System                       | 1 | LS      |  |  |
|    |  |   | Dollars |  |  |
|    | (UNIT PRICE IN WORDS)                                |   |         |  |  |
| 3F | Replace 7 Fireplace Control Assemblies               | 1 | LS      |  |  |
|    |  |   | Dollars |  |  |
|    | (UNIT PRICE IN WORDS)                                |   |         |  |  |

|                                    |                          |  |  |
|------------------------------------|--------------------------|--|--|
| TOTAL SCHEDULE 3                   |                          |  |  |
| (TOTAL SCHEDULE 3: PRICE IN WORDS) | (TOTAL PRICE IN FIGURES) |  |  |

|         |  |   |         |  |  |
|---------|--|---|---------|--|--|
| DA3 - A | Deductive Alternative 3 - Replace 4 Fireplace Control Assemblies, Rehabilitate 3 | 1 | LS      |  |  |
|         |  |   | Dollars |  |  |
|         | (UNIT PRICE IN WORDS)  |   |         |  |  |



| <b>BID SUMMARY</b>                         |                          |
|--|--------------------------|
| <b>TOTAL SCHEDULE 1:</b>                   |                          |
| (TOTAL SCHEDULE 1 PRICE IN WORDS)          | (BID PRICE IN FIGURES)   |
| <b>TOTAL SCHEDULE 2:</b>                   |                          |
| (TOTAL SCHEDULE 2 PRICE IN WORDS)          | (TOTAL PRICE IN FIGURES) |
| <b>TOTAL SCHEDULE 3:</b>                   |                          |
| (TOTAL SCHEDULE 3 PRICE IN WORDS)          | (TOTAL PRICE IN FIGURES) |
| <b>TOTAL BID (Schedules 1-3):</b>          |                          |
| (TOTAL BID: ALL SCHEDULES, PRICE IN WORDS) | (BID PRICE IN FIGURES)   |

**Award:** The Owner reserves the right to award the contract to the low, responsive, responsible Bidder meeting the requirements stated on the Bid Form, based on the Base Bid or for the combination of Base Bid and any Alternatives or Schedules selected by the Owner, in the best interest of the Owner. The Owner shall award one (1) contract for Project.

An Agreement shall not be formed and no rights shall exist under the Agreement until the final Agreement is fully executed by all parties. Bidder agrees to commence work immediately upon full execution of the Agreement or such later time as defined in a Notice To Proceed.

**If provided a Notice of Award, Bidder agrees to execute and perform the Agreement in accordance with the Bid Documents.**

**By executing this Bid I certify that I have authority to bind the Company or Business Entity submitting this bid.**

\_\_\_\_\_  
Name of Company or Business Entity

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Address

\_\_\_\_\_  
Fax

\_\_\_\_\_  
Address

\_\_\_\_\_  
Email Address

**Acknowledge Addendum:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## SECTION 1.5

### CITY OF KENAI AGREEMENT BETWEEN OWNER AND CONTRACTOR

MADE AS OF THE \_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_

BETWEEN the OWNER:

CITY OF KENAI  
210 Fidalgo Avenue  
Kenai, Alaska 99611-7794

AND the CONTRACTOR:

XXXXXXXXXXXX  
XXXXXXXXXXXX  
XXXXXXXXXXXX

FOR the PROJECT: **Training Equipment Rehabilitation Project**

The Owner and Contractor agree as set forth below.

#### **ARTICLE 1** **THE WORK**

The Contractor shall perform all the work required by the contract documents.

#### **ARTICLE 2** **ENUMERATION OF THE CONTRACT DOCUMENTS**

The additional documents which are specifically incorporated into this Agreement by reference and which form the contract documents are:

- A. Any and all later modifications, change orders, and written interpretations of the contract documents issued by the Owner
- B. This Agreement
- C. Addenda
- D. Supplemental General Conditions (if any)
- E. General Conditions
- F. Drawings and Specifications Provided by Engineer. In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided.
- G. Drawings and Specifications in the latest edition of the Municipality of Anchorage Standard Specifications (M.A.S.S.) In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided. Contractor is responsible for obtaining the latest edition of the M.A.S.S.

- H. The Request for Proposals / Invitation to Bid
- I. The Contractor's bid/proposal.

Any other attachments to this Agreement do not form a part of the Agreement but are for reference or proof of compliance with the requirements of the Agreement, except where the provisions of this Agreement provide such attachments will be or are a part of the Agreement.

These form the contract and what is required by any of the documents shall be as binding as if required by all. The intention of the contract documents is to require the furnishing of all labor, material, equipment, and other items necessary for the proper execution and completion of the work and to prescribe the terms and conditions of the contract and payment, so as to include work

\* M.A.S.S. is the Municipality of Anchorage Standard Specifications, and Divisions 20 through 80 are hereby incorporated into these Contract Documents. Division 10 is specifically excluded. The Contractor is responsible for checking to ensure they have the most current version. Specifications, drawings, and general provisions provided by the Owner (City of Kenai) or their Agents (Engineers, Architects, or others as appointed by the City) take precedence over the M.A.S.S. and materials which may be necessary to produce the intended results.

### **ARTICLE 3**

#### **TIME OF COMMENT AND COMPLETION**

Work shall commence upon receipt of the Notice to Proceed. All work must be substantially completed by December 1, 2019; \_\_\_XXX\_\_\_ days after the date of the Notice to Proceed. Liquidated damages will be charged against the Contractor as provided below.

### **ARTICLE 4**

#### **CONTRACT SUM**

The Owner shall pay the Contractor as provided in this contract the total sum price of \$X, XXX, XXX.XX for the successful completion of the specified work.

### **ARTICLE 5**

#### **PROGRESS PAYMENT**

Progress payments shall be made per the General Conditions.

### **ARTICLE 6**

#### **FINAL PAYMENT**

Final payment shall be made per the General Conditions. The Contractor shall request the final inspection at least five (5) days in advance of the anticipated date of inspection. If all work has not been satisfactorily completed, the Contractor shall be liable for all costs incurred by the Owner in making such inspection.

## **ARTICLE 7** **NOTICES**

All legal notices relating to this contract, including changes of address, shall be mailed to the Owner and the Contractor at the following addresses:

**OWNER**  
CITY OF KENAI  
Public Works Director  
210 Fidalgo Avenue  
Kenai, AK 99611

**CONTRACTOR**  
XXXXXXXXXX  
XXXXXXXXXX  
XXXXXXXXXX

## **ARTICLE 8** **INDEMNIFICATION**

No provision in the contract documents lessens, alters, or makes inapplicable the requirement for indemnification stated in the General Conditions or other documents incorporated into the contract by this Agreement.

## **ARTICLE 9** **JURISDICTION: CHOICE OF LAW**

This contract shall be governed by the laws of the State of Alaska, and any lawsuit brought thereon shall be filed in the Third Judicial District at Kenai, Alaska.

## **ARTICLE 10** **ATTACHMENTS**

In the event there is any difference between an attachment to the original of this Agreement on file with the City of Kenai Public Works Department and any attachment to a copy of the Agreement, the attachments to the original filed with the Public Works Department shall control.

## **ARTICLE 11** **LIQUIDATED DAMAGES**

Owner and Contractor recognize that time is of the essence in performance of this contract and the Owner will suffer financial loss if the work is not substantially complete within the time specified above, plus any extensions thereof allowed in accordance with contract documents. They also recognize the delays, expense and difficulties involved in proving the actual loss suffered by Owner if the work is not substantially complete on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner Fifteen Hundred Dollars (\$1,500.00) for each calendar day that expires after the contract time required for substantial completion to the actual date of substantial completion determined as set out in the Contract Documents. The Owner and Contractor agree that this amount is a reasonable forecast of just compensation for the harm that is caused by the delay.

**ARTICLE 12**  
**NO THIRD PARTY BENEFICIARY**

This Agreement is intended solely for the benefit of each party hereto. Nothing contained herein shall be construed or deemed to confer any benefit or right upon any third party.

OWNER and CONTRACTOR each binds themselves, their partners, successors, assigns and legal representatives in respect to all covenants, Agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the parties have made and executed this Contract this day and year first above written.

\_\_\_\_\_  
OWNER: CITY OF KENAI

\_\_\_\_\_  
CONTRACTOR

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

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

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

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

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
Business Address

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

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

STATE OF ALASKA )  
)SS.  
THIRD JUDICIAL DISTRICT )

STATE OF ALASKA )  
)SS.  
THIRD JUDICIAL DISTRICT )

THIS IS TO CERTIFY that on  
This \_\_\_\_ day of \_\_\_\_ 20\_\_  
Paul Ostrander, City Manager,  
City of Kenai, Alaska, being personally  
known to me or having produced  
satisfactory evidence of identification,  
appeared before me and acknowledged  
the voluntary and authorized execution  
of the foregoing instrument on behalf of  
said City.

THIS IS TO CERTIFY that on  
This \_\_\_\_ day of \_\_\_\_ 20\_\_  
\_\_\_\_\_  
(title) \_\_\_\_\_  
of \_\_\_\_\_ being personally  
known to me to having produced  
satisfactory evidence of identification,  
appeared before me and acknowledged  
the voluntary and authorized execution  
of the foregoing instrument on behalf of  
said corporation.

\_\_\_\_\_  
NOTARY PUBLIC FOR ALASKA  
My Commission Expires: \_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC FOR ALASKA  
My Commission Expires: \_\_\_\_\_

Approved by Legal: \_\_\_\_\_  
Approved by Finance: \_\_\_\_\_

The foregoing Contract, including all Contract Documents which are a part thereof, is in due form according to the law and is hereby approved.

\_\_\_\_\_  
Attorney for the

**See attached forms:**

- A. CERTIFICATION FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS**  
(Requires Signature)
- B. DISCLOSURE OF LOBBYING ACTIVITIES** (Requires Disclosure)
- C. LETTER OF INTENT** (Requires Signature If Utilizing DBE)
- D. ACKNOWLEDGEMENT OF LIQUIDATED DAMAGES** (Requires Signature)



**Attachment "A"**  
**CERTIFICATION FOR CONTRACTS, GRANTS, LOANS,  
AND COOPERATIVE AGREEMENTS**

The undersigned certifies, 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 undersigned, 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 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 of Lobby Activities," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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.

Signed: \_\_\_\_\_ Dated: \_\_\_\_\_  
Contractor's Authorized Representative

**Attachment "B"**  
**DISCLOSURE OF LOBBYING ACTIVITIES**

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

|  |  |   |  |
|--|--|---|--|
| 1. Type of Federal Action:<br><input type="checkbox"/> a. Contract<br><input type="checkbox"/> b. Grant<br><input type="checkbox"/> c. Cooperative Agreement<br><input type="checkbox"/> d. Loan<br><input type="checkbox"/> e. Loan Guarantee<br><input type="checkbox"/> f. Loan Insurance   |  | 2. Status of Federal Action<br><input type="checkbox"/> a. id/Offer/Application<br><input type="checkbox"/> b. Initial Award<br><input type="checkbox"/> c. Post-award  | 3. Report Type:<br><input type="checkbox"/> a. Initial filing<br><input type="checkbox"/> b. Material change<br>For Material Change Only:<br>Year____ Quarter____<br>Date of last report |
| 4. Name and Address of Reporting Entity:<br><input type="checkbox"/> Prime <input type="checkbox"/> Subawardee<br>Tier ____, if known:<br>Congressional District, if known:  |  | 5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:<br>Congressional District, if known:  |  |
| 6. Federal Department/Agency:  |  | 7. Federal Program Name/Description:<br>CFDA Number, if applicable:   |  |
| 8. Federal Action Number, if known:  |  | 9. Award Amount, if known:<br>\$  |  |
| 10. a. Name and Address of Lobbying Entity<br>(if individual, last name, first name, MI):  |  | b. Individuals Performing Services (including address if different from No. 10a)<br>(last name, first name, MI):<br><br>(attach Continuation Sheet(s) SF-LLL-A, if necessary)   |  |
| 11. Amount of Payment (check all that apply):<br>\$_____ <input type="checkbox"/> actual <input type="checkbox"/> planned  |  | 13. Type of Payment (check all that apply):<br><input type="checkbox"/> a. Retainer<br><input type="checkbox"/> b. One- time fee<br><input type="checkbox"/> c. Commission<br><input type="checkbox"/> d. Contingent fee<br><input type="checkbox"/> e. Deferred<br><input type="checkbox"/> f. Other; specify: |  |
| 12. Form of Payment (check all that apply):<br><input type="checkbox"/> a. Cash<br><input type="checkbox"/> b. In-kind: specify: nature_____ value_____  |  |   |  |
| 14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contacted, for Payment indicated in Item 11:<br><br>(attach Continuation Sheet(s) SF-LLL-A, if necessary)   |  |   |  |
| 15. Continuation Sheet(s) SF-LLL-A attached: <input type="checkbox"/> Yes <input type="checkbox"/> No  |  |   |  |
| Information requested through this form is authorized by title 31 U.S.C. Section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure. |  | Signature:<br>Print Name:<br>Title:<br>Telephone No:_____ Date:   |  |
| Federal Use Only:  |  | Authorized for Local Reproduction<br>Standard Form - LLL  |  |

**DISCLOSURE OF LOBBYING ACTIVITIES**  
**CONTINUATION SHEET**

Reporting Entity: \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_

SAMPLE

### Attachment "C" LETTER OF INTENT

The Letter of Intent form shall be completed, and **submitted with the executed contract documents**. A separate Letter of Intent form is required for each proposed DBE subcontractor.

#### **LETTER OF INTENT**

Name of Bidder's Firm: \_\_\_\_\_

Bidder's Address: \_\_\_\_\_

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

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

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

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

Telephone (including area code): \_\_\_\_\_

Description of work to be performed by DBE firm:

Bidder intends to utilize the above named DBE firm for the work described above. The estimated amount of work is valued at \$ \_\_\_\_\_

Bidder's confirmation of intent to use DBE contractor:

Bidder's Signature: \_\_\_\_\_

**Attachment "D"**  
**ACKNOWLEDGEMENT OF LIQUIDATED DAMAGES**

This acknowledgement dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by \_\_\_\_\_[CONTRACTOR] wherein **CONTRACTOR** acknowledges and agrees that the construction contract which is the subject matter of this submitted bid contains a liquidated damages clause.

Contractor acknowledges and agrees that because this is a construction contract, it is impracticable or extremely difficult to fix, determine and prove Owner's actual damages for delay in completing the project within the time specified, and for this reason a liquidated damages clause is both appropriate and necessary. It is mutually agreed that a sum of **\$1500 .00** per day is a reasonable and good faith estimate of the anticipated and probable damages THE City of Kenai will incur should the Contractor fail to complete within the contract time specified. Contractor acknowledges that this mutually agreed upon liquidated damages amount has been specifically taken into account in arriving at the dollar amount of Contractor's submitted bid. This liquidated damages amount shall be included in the construction contract and the Contractor acknowledges and agrees to be bound by this amount.

The mutually agreed upon liquidated damages amount may be deducted from money due or to become due to Contractor should Contractor be awarded the construction contract and should Contractor fail to complete the work within the time specified.

By: \_\_\_\_\_  
(Contractor)

Its: \_\_\_\_\_  
(Title)

**SECTION 1.5  
SPECIAL PROVISIONS  
CONTENTS  
KENAI TRAINING CENTER  
KENAI, ALASKA**

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## **SPECIAL PROVISIONS**

The following Special Provisions are hereby made a part of this contract and shall supplement and/or supersede any articles of these specifications in conflict therewith.

Any subsequent addenda issued after these specifications have been prepared shall supplement and/or supersede any article of these specifications.

Herein the **Owner**, shall be understood to be City of Kenai, Kenai, Alaska

Herein the **Engineer**, shall be understood as the firm of **Morrison Maierle, Inc**

Herein where the term **FAA** is used it shall be understood as the **Federal Aviation Administration**.

### **1.00 LOCATION AND SCOPE**

1.01 Location: Alaska Regional Emergency Services Training Center, Kenai, Alaska

1.02 Scope: The major elements of work include:

Schedule 1 – Trainer Equipment Infrastructure

Schedule 2- Fuel Spill Trainer Rehabilitation

Schedule 3 – Specialized Aircraft Fires Trainer Rehabilitation

### **2.00 CONTRACT DOCUMENTS**

2.01 Specifications: As itemized in Table of Contents of these specifications.

2.02 Plans: The plans for the project are bound separately but are as much a part and parcel of these contract documents as if they were bound herein. Said plans are itemized by sheet title and number on the title sheet of the plans.

### **3.00 PRE-BID / PRE-CONSTRUCTION / PRE-PAVING CONFERENCE**

3.01 The Pre-Bid Conference . . There will be a Pre-Bid Conference, at the time and location referenced in the invitation to bid. Interested Prime Contractors are encouraged to attend. The purpose of the conference will be to discuss safety, construction scope, and scheduling. A tour of the project site will be conducted for interested parties following the conference. The Owner will not provide additional tours. A pre-construction conference will be scheduled with the successful bidder(s) following contract award and prior to construction.



### **3.02 Pre-Construction Conference.**

The Prime Contractor(s) shall submit within seven (7) days prior to the pre-construction conference(s) a construction schedule in a form that shows the daily schedule of work. The schedule shall be capable of updating to show actual progress of work, and enable revisions, if required, to be easily made. Construction operations may begin no sooner than five (5) days after approval of the construction schedule. This time is necessary for coordination of the Airport users.

At the pre-construction conference(s), the Contractor(s) will be required to discuss details of how they expect to conduct their operations. These details shall include their best estimate of timing on such things as delivery of materials and the commencement of the various construction activities as per the Schedule outlined in the plans and specifications. Costs associated with the pre-construction conference(s) shall not be paid for directly, but shall be absorbed in other items of work.

## **4.00 PROJECT, FINANCING AND SCHEDULING**

4.01 Funding: This project is to be built with the Owner's local funds and grant(s) from the FAA. Therefore, award of the Contract by the Sponsor will be made subject to concurrence of the FAA.

4.02 Scheduling: The Notice to Proceed with construction of the project will be issued to the Contractor after FAA concurrence in Contract award is made and grant issued for the project.

The Notice to Proceed however is dependent on the issuance of a grant by the FAA and the Owners ability to issue a notice to proceed.

4.03 Permits: All permits required to complete the work are an obligation of the Contractor to obtain at the Contractor's expense.

## **5.00 NUMBER OF PRIME CONTRACTS**

The Owner reserves the right to enter into a single contract with a single Contractor for the combination of schedules and alternate schedules as selected by the Owner. See City of Kenai General Provisions as it relates to limitations on subcontracting portions of the contract.

5.01 Subcontracts:

The successful prime contractor shall provide a copy of all subcontractor contracts on the project.

## **6.00 CONSTRUCTION SURVEYS BY CONTRACTOR**

All survey requirements shall be the responsibility of the Contractor and shall comply with the requirements of the Technical Specifications as applicable.

## **7.00 CONSTRUCTORTION SURVEYS BY CONTRACTOR**

**7.01 Underground Utilities.** The Contractor shall be responsible for checking with the Owners of underground utilities as to the location of their underground lines. The Contractor shall be solely responsible for any damage done to these installations due to failure to locate them or to properly protect them when their location is known.

It shall be solely the responsibility of the Contractor to fully coordinate his work with the agencies and to keep them informed of his construction activities so that these vital installations are fully protected at all times.

**7.02 Jobsite Safety.** Jobsite health and safety is the sole responsibility of the Contractor. Neither the professional activities of the Engineer/Owner, nor the presence of the Engineer's/Owner's employees and subconsultants at the construction site, shall relieve the Contractor, Subcontractors or any other Contractor entity of their obligations, duties and responsibilities including, but not limited to, construction means, methods, sequence, techniques or procedures necessary for performing, superintending or coordinating all portions of the work of construction in accordance with the contract documents and any health or safety precautions required by any regulatory agencies. The Contractor shall indemnify and defend the Owner, Engineer, and Engineer's subconsultants from all claims arising from the performance of the Contractor and his Subcontractors.

It is understood and agreed that the Contractor has sole responsibility for jobsite safety. Notwithstanding this Contractor responsibility, if the Engineer observes situations that the Engineer believes to be a hazard or safety violation, the Engineer shall report the matter to the Contractor, the Owner and the Project Manager. The Contractor agrees to indemnify the Engineer and hold the Engineer harmless from any claims, demands or liability arising from the Engineer's exercise of professional responsibility in this regard.

**Personal Protective Equipment.** All Contractor personnel shall wear safety vests and other applicable personal protective equipment (PPE) while on the project site in accordance with the Contractor's safety program. As the Contractor is responsible for all jobsite safety, the Contractor may direct the Owner and Engineer to utilize required PPE while in their designated work area(s).

## **8.00 MATERIALS TESTING AND QUALITY CONTROL**

### **8.01 Testing Responsibilities.**

#### **Contractor**

The Contractor shall provide an independent certified testing laboratory (approved by the Engineer and meeting project specifications) to perform all materials, acceptance, and

quality control tests called for in the specifications, at no cost to the Owner.

Testing results shall be provided to the Engineer at the time of the test. Handwritten reports shall to be delivered to the Engineer the next working day, with a typewritten report to follow. A full copy of the typewritten testing results on applicable FAA forms, and an electronic copy on a CD, shall be provided to the Engineer from the testing laboratory at the end of construction. No work on a particular item shall be accomplished until the required preliminary and suitability tests have been completed for that particular item. At the Owner's request the Contractor shall provide samples of materials for independent test verification at the Owner's expense.

Acceptance and rejection of materials will generally be determined from tests made of the various courses complete and in-place in the field. It is the responsibility of the Contractor to conduct, control and test his production operations in such a manner that the material produced will meet the specification requirements.

- 8.02 Acceptance and rejection of materials will generally be determined from tests made of the various courses complete and in-place in the field. It is the responsibility of the Contractor to conduct, control and test his production operations in such a manner that the material produced will meet the specification requirements.
- 8.03 In addition, the Contractor shall provide a summary of all materials testing performed on the project in a neatly organized bound document covering all materials testing organized by each specification section. The summary of the test results shall be provided in electronic format.

## **9.00 CONTRACT TIME, LIQUIDATED AND ACTUAL DAMAGES**

The project schedule is anticipated to be:

**October 1, 2019** – Issue Notice to Proceed with construction.  
**March 2, 2020** – Substantial Completion Inspection  
**March 2 – March 6, 2020** - Commissioning of Equipment  
**March 27, 2020** – Final Inspection and completion of project.

These dates may be subject to changes based on availability of grant funds or other occurrences.

- 9.01 Contract Time: Contract time is as follows:

**October 1, 2019** – Issue Notice to Proceed with construction.  
**March 2, 2020** – Substantial Completion Inspection  
**March 27, 2020** – Final Inspection and completion of project.

Liquidated damages apply to overrun of contract time

A pre-construction conference will be held prior to beginning construction, at which time, a Notice to Proceed will be issued. The Notice to Proceed (NTP) dates is contingent on the construction schedule proposed by the Contractor and approved by the Owner.

Once the Engineer agrees that the contract is substantially complete, the Engineer will examine the project and provide a punch list of items to be completed. Upon receipt of the punch list, the Contractor shall have ten (10) calendar days to complete the punch list items and any other items remaining to complete the project, unless otherwise agreed to by the Owner in writing. Typically, the project will not be considered substantially complete until at least 95% of all work has been satisfactorily completed.

Should the punch list items of work not be completed within the time period, the Owner has the right to employ another company to perform the work and withhold payments to the Prime Contractor to pay for completion.

#### 9.02 Liquidated Damages and Actual Damages:

The Owner shall be entitled to liquidated damages for failure of the Contractor to complete the work within the specified contract time noted above.

The Contractor further agrees to pay damages for expenses incurred by the Owner for additional engineering services during the contract time overrun; for unscheduled employment of the Engineer necessitated by the Contractor working overtime, Sundays, or holidays; and for furnishing materials or equipment not in conformance with the Contract Documents.

A. As compensation for damages incurred by the Owner as a result of the Contractor exceeding the specified total contract time, the Contractor shall be assessed a liquidated damage of \$1,500.00 per calendar day for each calendar day that the work remains uncompleted beyond the specified contract time for the total project.

C. The Bidder further agrees to pay actual damages according to the following hourly rates for the unscheduled employment of the Engineer necessitated by the Contractor:

1. Working more than 10 hours per day, more than five (5) days per week and Saturdays (time and one-half), and holidays, and Sundays (double time).
2. Furnishing materials or equipment not in conformance with Contract Documents necessitating redesign by the Engineer.
3. Working beyond the time of completion established in the Notice to Proceed with Construction:

| Description  | Cost      |
|--|-----------|
| Supervising Engineer III   | \$195/ hr |
| Supervising Engineer II  | \$185/hr  |
| Supervising Engineer I   | \$175/hr  |
| Senior Engineer II   | \$160/hr  |
| Senior Engineer I  | \$145/hr  |
| Design Engineer II   | \$135/hr  |
| Design Engineer I  | \$125/hr  |
| Engineer Intern II   | \$112/hr  |
| Engineer Intern I  | \$103/hr  |
| Senior Engineering Technician  | \$138/hr  |
| Engineering Technician   | \$103/hr  |
| Land Surveyor III  | \$135/hr  |
| Land Surveyor II   | \$120/hr  |
| Land Surveyor I  | \$108/hr  |
| Survey Technician III  | \$95/hr   |
| Survey Technician II   | \$85/hr   |
| Survey Technician I  | \$72/hr   |
| Out-of-Pocket Cost<br>Materials, Equipment, supplies,<br>transportation, lodging, subsistence,<br>etc. | At Cost   |

Liquidated and actual damages noted above will be applied concurrently, if applicable, for each calendar day and occurrence in which the Contractor does not meet the criteria noted.

All damages shall be paid by deduction from monthly progress payments and the final payment.

## **10.00 PAYMENT TO CONTRACTORS**

10.01 General: This AIP project involves payment to Contractors not only from funds the Owner has on hand for this purpose but also, to a substantial degree grant funds from the Federal Aviation Administration (FAA). The Contractor is hereby advised that the Owner and the Engineer will expedite partial and final payments to the Contractor as much as possible but since FAA grant funds must be obtained to make these payments, the Contractor should anticipate and allow time for obtaining these grant funds before expecting partial or final payments under this Contract.

10.02 Partial and Final Payments: Following is the procedure, which will be used in making partial and final payments to the Contractor. At the pre-construction conference the Engineer and Contractor(s) shall agree on a date each month when work will be cut off for that month's estimate. No later than ten (10) calendar days after said cut-off date the Engineer will prepare the estimate for payment to the Contractor and Federal Aid Application for FAA grant payment to the Airport which will be provided to the Owner within the ten day period.

A. No later than seven (7) days after receipt of the Federal Grant payment from the U.S.

Treasury the Airport will process and pay the claim for the partial or final estimate as the case may be.

- B. The Contractor may request in writing a reduction in the amount of retainage withheld.
- C. The Contractor will not be paid the final retainage of his contract price until the final FAA inspection has been held. There may be considerable delay in receiving final payment.
- D. Final Payment shall not be due until the Contractor has provided the Owner with an "Amounts Paid DBE Participants," in the form provided, Record Drawings as per General and Special Provisions, and Lien Releases or certification as per General and Special Provisions.
- E. The making of final payment will not relieve the Contractor from claims arising from the failure of the work to comply with the requirements of the Contract Document.

10.03 Payments to Subcontractors and Suppliers: The Prime Contractor agrees to pay each subcontractor and supplier under this prime contract for satisfactory performance of its contract no later than ten (10) days from the receipt of each payment the Prime Contractor receives from the Owner. The Prime Contractor agrees further to return retainage payments to each subcontractor or supplier within ten (10) 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 Owner. This clause applies to both DBE and non-DBE subcontractors and suppliers.

## **11.00 ENGINEERING INTERPRETATIONS**

11.01 Engineering Decisions: It is realized that timely engineering decisions on construction activities or results have an important bearing on the Contractor's schedule. On this project the Engineer will make every effort to have a Resident Project Representative (RPR) readily available to the project during the construction schedule, who has the authority to make judgment calls on matters dealing with interpretation of the plans and specifications, with the one qualification, that he shall have the right to take twenty-four (24) hours to confer with other Engineers or FAA before giving said decision.

When the decision affects a plan design or specification change, it should be realized that more time may be required than twenty-four (24) hours to gain the necessary Owner and FAA participation in the decision process including time for formal change order preparation as required.

## **12.00 EMERGENCY SITUATIONS**

12.01 Contractor shall take appropriate measures during emergency situations.

### **13.00 INSURANCE – Refer to the City of Kenai General Conditions.**

### **14.00 SUBMITTALS**

14.01 Initial Submittal: Prior to the first application for payment, the Contractor shall submit the following information:

- A. Schedule of Amounts for Contract Payment: This form shall contain a breakdown of the labor, materials and other costs associated with the various portions of the work and shall be the basis for the progress payments to the Contractor (Summary of Project Costs).
- B. Subcontractor List: The Contractor shall list all Subcontractors doing work in excess of \$5,000.00 and their current Contractors Registration Number.
- C. Copies of all Subcontracts.
- D. Progress Schedule: The Contractor shall prepare a progress schedule, using a form of his choosing, that is acceptable to the Engineer. The schedule show the estimated progress of the entire project through the time period allowed for completion.

14.02 Shop Drawings: See Special Provision 19.00 regarding Buy American Requirement and required timing of submittals.

- A. Shop Drawings: The term "shop drawings" includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials requested by the Engineer to be furnished by the Contractor to explain in detail specific portions of the work required by the Contract.
- B. Contractor's Review and Approval: The Contractor shall coordinate all submittals and review them for accuracy, completeness, and compliance with contract requirements and shall indicate his approval thereon as evidence of such coordination and review. Items submitted to Engineer without evidence of the Contractor's approval may be returned for resubmission.
- C. Buy American Certification. The contractor shall provide with each product to be used on the project the "Buy American Certification" form or letter from the supplier or manufacturer certifying that the products meet the Buy American Requirements. The letter shall specifically state that the product complies with 49 USC § 50101 for steel and manufactured goods used on AIP projects.

14.03 Procedure:

- A. Date and Number: Unless required otherwise due to Buy American requirements, at least ten (10) days prior to their need for approval, Contractor shall forward to Engineer all items required by the individual sections of the specifications. Unless a different

method is called for in the individual sections, submittals shall be provided in electronic PDF format via e-mail and/or the number of hard copies provided that are desired to be returned to the Contractor.

- B. Cover Letter: All submittals shall be forwarded with a cover letter from the Contractor, identifying the project and the portion of the project to which it applies. Submittals that are related to or affect each other shall be forward simultaneously as a package to facilitate a coordinated review. Uncoordinated submittals will be rejected. The Engineer reserves the right to require submittals in addition to those called for in individual sections.

#### 14.04 Engineer's Approval:

- A. Engineer's Approval: The Engineer will indicate his approval and disapproval of each submittal and, if he does not approve the submittal as submitted, will indicate his reasons therefore. Any work done prior to approval shall be at the Contractor's own risk. Approvals shall not relieve the Contractor from responsibility for complying with the requirements of this Contract. If submittals show variations from the Contract requirements, the Contractor shall describe such variations in writing, within the before mentioned cover letter at the time of submission. Approval of such variations shall be accompanied with a Contract Modification. Minor variations not involving a change in price or time of performance will not be issued a modification.

### 15.00 DISPUTE RESOLUTION (MEDIATION)

Mediation must be initially used for dispute resolution for Claims for Adjustment, Disputes, Acceptance and Final Payment.

OWNER and CONTRACTOR agree that if a dispute arises out of or relates to the Contract Documents, or a breach thereof, and if the dispute cannot be settled through direct discussions, the parties agree to first endeavor to settle the dispute by non-binding mediation administered by the American Arbitration Association under its Construction Industry Mediation Rules before having recourse to a judicial forum.

OWNER and CONTRACTOR further agree to include a similar mediation provision in all agreements with independent Contractors, design professionals and consultants retained for the project and to require all independent Contractors, design professionals and consultants also to include a similar mediation provision in all agreements with Subcontractors, subconsultants, suppliers or fabricators so retained, thereby providing for mediation as the first method for dispute resolution between the parties to those agreements.

When a written decision of the Engineer states that the decision is final but subject to mediation, a demand for mediation of a dispute concerning such decision must be made within 30 days after the date on which the party making the demand receives the final written decision. Failure to demand mediation within said 30 day period shall result in the Engineer's decision becoming final and binding upon the Owner and Contractor.



## **16.00 FEDERAL AID RELATIONSHIP (FAA GRANT) TO INSTRUCTIONS TO BIDDERS**

Since a Federal Grant from the Federal Aviation Administration is involved in this project, any provision of Alaska law giving preference to an Alaska resident over a non-resident bidder **does not** apply to this Federal Aid Project.

## **17.00 UNDERGROUND UTILITIES**

The Contractor shall be responsible for checking with the Owners of underground utilities as to the location of their underground lines. The Contractor shall be solely responsible for any damage done to these installations due to failure to locate them or to properly protect them when their location is known.

It shall be solely the responsibility of the Contractor to fully coordinate his work with the agencies and to keep them informed of his construction activities so that these vital installations are fully protected at all times.

The following is a list of Owners and Contact Persons who are known to have utilities at the Airport. This list may not be complete and the Contractor is urged to communicate and coordinate his activities with all involved parties.

## **18.00 - RECORD DRAWINGS AND MATERIALS TESTING SUMMARY**

The Contractor's Superintendent shall maintain at the project site, a "Record Set of Drawings" showing field changes, as-built elevations, unusual conditions encountered during construction, the manufacturer and manufacturer's catalog number of equipment supplied, and such other data as required to provide the Owner with an accurate "as constructed" set of record drawings.

The Contractor shall furnish this "Record Set" to the Engineer following the Final Inspection of the Project.

The Contractor shall furnish the "Materials Testing Summary" as described in paragraph 8.00 of these Special Provisions, to the Engineer following the Final Inspection of the Project.

**The Contractor's final estimate and final payment will not be processed until the "Record Set" of drawings and the material testing summary are received and approved by the Engineer.**

## **19.00 BUY AMERICAN REQUIREMENT-SUPPLEMENTAL INFORMATION**

In submitting a proposal on the project the contractor is certifying that they will not acquire (or permit any subcontractor) to use any steel or manufactured products produced outside the United States on any portion of the project, unless otherwise approved by the FAA. Therefore, for the contractors shall either:

1. Certify, in writing, all products are wholly produced in the US of US materials, or
2. Request a waiver to use non-US produced products, or
3. Certify that all equipment that is being used on the project is on the Nationwide Buy American conformance list.

The contractor is required to submit with each submittal a certification that the material or equipment meets the Buy American Requirements or is listed on a National Waiver List or is an excluded material. Forms are available in the project manual or available from the engineer.

### **19.01 Types of Waivers**

There are four types of waivers to Buy American:

1. Public interest waiver;
2. Insufficient quantity or quality.
3. 60% or more of the components and subcomponents in the facility or equipment are of US origin and final assembly is in the US; or
4. Applying Buy American increases the cost of the overall project by more than 25%.

Many pieces of equipment are constructed with some non-US produced components or subcomponents. Therefore, it is expected that the majority of grants will have waivers issued unless the project is constructed of materials that already have a nationwide waiver.

### **19.02 Nationwide Waiver**

Much of the equipment that is frequently used on AIP projects has been reviewed by FAA Headquarters and a nationwide waiver has been issued. The Nationwide Buy American conformance list is posted on the [www.faa.gov](http://www.faa.gov) website at the following address:

[http://www.faa.gov/airports/aip/procurement/federal\\_contract\\_provisions/](http://www.faa.gov/airports/aip/procurement/federal_contract_provisions/)  
by clicking the tab, "Equipment Meeting Buy American Requirements"

If the equipment is on the nationwide waiver list, no additional waiver is required, however the appropriate forms shall be filled out as provided in the project manual.

### **19.03 Who can Issue Waivers**

Only FAA headquarters may issue waivers for reasons 1 and 2. FAA field offices (Regional Offices and/or Airports District Offices) may issue waivers for reasons 3 and 4.

Waiver request forms are available in the project manual or from the engineer.

### **19.04 Defining the Project, Facility and Equipment, and Final Assembly Location in the 60%/US final assembly waiver**

The waiver can be considered if “at least 60% of the cost of the components and subcomponents in the **facility or equipment** are produced in the United States and the final assembly of the facility or equipment has occurred in the United States.” The correct application of the terms is discussed below.

#### Project

The “**Project**” is generally the project that is being bid. The “**Project**” does not extend over multiple grants or phases, even though the overall project may be phased or may be built in multiple bid packages.

#### Facility or Equipment

- For a building, the portion of the building that is being funded under the AIP or ARRA grant is the “facility” listed in the waiver.
- For other projects, the bid items as described in the latest edition of FAA Advisory Circular 5370-10 will generally be the “equipment” referred to in the waiver except for airfield electrical equipment.
- For airfield electrical equipment, the “L-” items listed in the Addendum to FAA Advisory Circular 5345-53C, latest edition will generally be the “equipment” referred to in the waiver.
- For a vehicle or single piece of equipment like a snow plow or ARFF vehicle, the single vehicle itself is the “equipment.”

#### Final Assembly Location and Labor Exclusion

Final assembly is the substantial transformation of the various components and subcomponents into the equipment. For a building, the final assembly is actual construction of the building.

- For any project other than a building project, the final assembly location is the location where the equipment is assembled, not the project site itself.
- For a building, the final assembly location is the airport building site.

In any calculation of Buy American percentage, the labor for the final assembly is excluded. This is because the Buy American statute is based on the cost of materials and equipment, not labor. For a building, this means that only the costs of the materials as they are delivered to the airport site are considered when calculating US and non-US component and subcomponent costs. For equipment, the costs of the final assembly at the manufacturing site are excluded.

Component calculation forms or sheets are available from the Engineer.

#### **19.05 Common Materials that are waived or excluded from Buy American - Cement, Concrete, Asphalt and Steel**

Cement and concrete is excluded from the Buy American preference requirements (although the steel used for reinforcement, ties, stirrups, etc. must meet Buy American.)

Asphalt and other petroleum products are waived as an excepted item under AMS Guidance T3.6.4.1.e: Foreign Acquisition – Definitions identifying Asphalt as a petroleum product.

Steel is specifically identified in the statute. Therefore, all rebar and discrete, identifiable steel components must be manufactured in the United States.

#### **19.06 FAA Waiver**

After the FAA has determined that the final assembly location is in the US and the percent of US components and subcomponents is above 60%, a waiver may be issued. **The waiver is for the single project – not a nationwide waiver.**

#### **19.07 What Information is required to Issue a Waiver**

For waiver type 3, a waiver can be considered if “at least 60% of the cost of the components and subcomponents in the **facility or equipment** are produced in the United States and the final assembly of the facility or equipment has occurred in the United States.”

Contractors must request waivers from the Owner in writing, with sufficient supporting information. The Owner will forward the request to the FAA. Contractors are responsible for ensuring their waiver request is complete and accurate using project specific information.

The FAA will conduct its review and approval based on the information provided by the Contractor.

The information that must be provided for either equipment or for a building:

- Project Number
- Project Name
- Airport Name
- Total Project Cost (excluding labor)
- Total Equipment or Bid Item Cost for which the waiver is being requested
- Total Equipment or Bid Item Cost excluding labor for final assembly.
- For equipment, the following additional information is required:
- The equipment or bid item for which the waiver is being requested
- The manufacturer and country of origin of the equipment or bid item.
- The location of the final assembly of the equipment or bid item (not the airport site)

For equipment, the following additional information is required:

- The equipment or bid item for which the waiver is being requested
- The manufacturer and country of origin of the equipment or bid item.
- The location of the final assembly of the equipment or bid item (not the airport site)
- The cost of the US components and subcomponents for the equipment or bid item for which the waiver is being requested
- The cost of the non-US components and subcomponents for the equipment or bid item for which the waiver is being requested
- The resulting percent of US and non-US components

For a building, the following additional information is required:

- The building (called the facility in the Buy American statute) for which the waiver is being requested

- The manufacturer and country of origin of the US and non-US materials that will be used in the building,
- For a building, the location of the final assembly is the airport site
- The cost of the US components and subcomponents for the equipment or bid item for which the waiver is being requested
- The cost of the non-US components and subcomponents for the equipment or bid item for which the waiver is being requested
- The resulting percent of US and non-US components

#### **19.08 Common Misconceptions**

- Belief that if a manufacturer is "FAA-certified" that Buy America has been satisfied. This is not true. The FAA certification certifies that technical standards have been met. However, FAA-certified equipment manufactured outside the U.S. does not meet Buy America provisions of the AIP unless a waiver has been issued.
- Misconception that the North America Free Trade Act (NAFTA) exempts equipment manufactured in Mexico or Canada from "Buy America" requirements. This is not true for AIP.
- The Buy American Requirements for other Federal Grant programs may be different than AIP grant programs. The Buy American Requirements for the ARRA, FHWA, and other federal grant programs reference different section of federal code as it relates to the Buy American Requirements for the AIP grant program.

**19.09 LIST OF SUPPLIES/MATERIALS THAT THE U.S. GOVERNMENT HAS DETERMINED ARE NOT PRODUCED IN THE UNITED STATES IN SUFFICIENT AND REASONABLY AVAILABLE QUANTITIES AND OF SUFFICIENT QUALITY (JANUARY 1991).**

|  |  |
|--|--|
| Acetylene, black   | Fibers of the following types:   |
| Agar, bulk   | abaca, abace, agave, coir, flax,   |
| Anise  | jute, jute burlaps, palmyra and  |
| Antimony, as metal or oxide  | sisal  |
| Asbestos, amosite, chrysolite,<br>and crocidolite  | Goat and kidskins  |
| Bananas  | Graphite, natural, crystalline,<br>crucible grade  |
| Bauxite  | Handsewing needles   |
| Beef, corned, canned   | Hemp yarn  |
| Beef extract   | Hog bristles for brushes   |
| Bephenium Hydroxynapthoate   | Hyoscine, bulk   |
| Bismuth  | Ipecac, root   |
| Books, trade, text, technical, or<br>scientific; newspapers; pamphlets;<br>magazines, periodicals; printed<br>briefs and films; not printed in the<br>United States and for which<br>domestic editions are not available | Iodine, crude  |
| Brazil nuts, unroasted   | Kaurigum   |
| Cadmium ores and flew dust   | Lac  |
| Calcium cyanamide  | Leather, sheepskin, hair type  |
| Capers   | Lavender oil   |
| Cashew nuts  | Manganese  |
| Castor beans and castor oil  | Menthol, natural bulk  |
| Chalk, English   | Mica   |
| Chestnuts  | Microprocessor chips (brought onto a<br>construction site as separate units<br>for incorporation into building<br>systems during construction or<br>repair and alternation of real<br>property |
| Chicle   | Nickel, primary, in ingots, pigs, shots,<br>cathodes, or similar forms; nickel<br>oxide and nickel salts   |
| Chrome ore or chromite   | Nitroguanidine (also known as<br>picrite)  |
| Cinchona bark  | Nux vomica, crude  |
| Cobalt, in cathodes, rondelles, or<br>primary ore and metal forms  | Oiticica oil   |
| Cocoa beans  | Olive oil  |
| Coconut and coconut meat,<br>unsweetened, in shredded,<br>desiccated or similarly prepared<br>form   | Olives (green, pitted or unpitted, or<br>stuffed, in bulk  |
| Coffee, raw or green bean  | Opium, crude   |
| Colchicine alkaloid, raw   | Oranges, mandarin, canned  |
| Copra  | Petroleum, crude oil, unfinished oils,<br>and finished products (see<br>definitions below)   |
| Cork, wood or bark and waste   | Pine needle oil  |
| Cover glass, microscope slide  |  |
| Cryolite, natural  |  |
| Dammar gum   |  |
| Diamonds, industrial, stones, and<br>abrasives   |  |
| Emetine, bulk  |  |
| Ergot, crude   |  |
| Erthrityl tetranitrate   |  |
| Fair linen, altar  |  |

LIST OF SUPPLIES/MATERIALS THAT THE U.S. GOVERNMENT HAS DETERMINED ARE NOT PRODUCED IN THE UNITED STATES IN SUFFICIENT AND REASONABLY AVAILABLE QUANTITIES AND OF SUFFICIENT QUALITY (JANUARY 1991).

|   |  |
|---|--|
| Platinum and related group metals,<br>refined, as sponge, powder, ingots,<br>or cast bars                                 | Tantalum   |
| Pyrethrum flowers   | Tapioca flour and cassava  |
| Quartz crystals   | Tartar, crude; tartaric acid and<br>cream of tartar in bulk  |
| Quebracho   | Tea in bulk  |
| Quinidine   | Thread, metallic (gold)  |
| Quinine   | Thyme oil  |
| Rabbit fur felt   | Tin in bars, blocks, and pigs  |
| Radium salts, source and special<br>nuclear materials   | Tripolidine hydrochloride  |
| Rosettes  | Tungsten   |
| Rubber, crude and latex   | Vanilla beans  |
| Rutile  | Venom, cobra   |
| Santonin, crude   | Wax, canauba   |
| Secretin  | Woods; logs, veneer, and lumber of<br>the following species:   |
| Shellac   | Alaskan yellow cedar, angelique,<br>balsa, ekki, greenhart, lignum,<br>vitae, mahogany, and teak   |
| Silk, raw and unmanufactured  | Yarn, 50 Denier rayon  |
| Spare and replacement parts for<br>equipment of foreign manufacture,<br>and for which domestic parts are<br>not available | "Crude oil" means crude petroleum, as it is<br>produced at the wellhead, and liquids (under atmospheric<br>conditions) that have been recovered from mixtures of<br>hydrocarbons that existed in a vaporous phase in a reservoir<br>and that are not natural gas products. |
| Spices and herbs, in bulk   |  |
| Sugars, raw   |  |
| Swords and scabbards  |  |
| Talc, block, steatite   |  |

"Finished products" means any one or more of the following petroleum oils, or a mixture or combination of these oils, to be used without further processing except blending by mechanical means:

- A. "Asphalt" - a solid or semi-solid cementations material that (1) gradually liquefies when heated, (2) has bituminous as its predominating constituents, and (3) is obtained in refining crude oil.
- B. "Fuel oil" - a liquid or liquefiable petroleum product burned for lighting or for the generation of heat or power and derived directly or indirectly from crude oil, such as kerosene, range oil, distillate fuel oils, gas oil, diesel fuel, topped crude oil, or residues.
- C. "Gasoline" - a refined petroleum distillate that, by its consumption, is suitable for use as a carburant in internal combustion engines.
- D. "Jet fuel" - a refined petroleum distillate used to fuel jet propulsion engines.
- E. "Liquefied gases" - hydrocarbon gases recovered from natural gas or produced from petroleum refining and kept under pressure to maintain a liquid state at ambient temperatures.
- F. "Lubricating oil" - a refined petroleum distillate or specially treated petroleum residue used to lessen friction between surfaces.
- G. "Naphtha" - a refined petroleum distillate falling within a distillation range overlapping the higher gasoline and lower kerosene.
- H. "Natural gas products" - liquids (under atmospheric conditions) including natural gasoline, that:
  - 1. are recovered by a process of absorption, adsorption, compression, refrigeration, cycling, or a combination of these processes, from mixtures of hydrocarbons that existed in a vaporous phase in a reservoir, and
  - 2. when recovered and without processing in a refinery, definitions of products contained in subdivision (B), (C), and (G) above.
- I. "Residual fuel oil" - a topped crude oil or viscous residuum that, as obtained in refining or after blending with other fuel oil, meets or is the equivalent of MILSPEC Mil-F-859 for Navy Special Fuel Oil and any more viscous fuel oil, such as No. 5 or Bunker

C.

"Unfinished oils" means one or more of the petroleum oils listed under "Finished products" above, or a mixture or combination of these oils, that are to be further processed other than by blending by mechanical means."



## **20.00 WORK AREA CLEANUP**

Sufficient time should be provided at the end of each work period to allow for cleanup and inspection of the work area before it is opened to traffic. All construction debris should be totally removed from the work area. All construction materials that must be left onsite should be secured so that they cannot be dislodged by wind. The Contractor's superintendent will accompany the project manager on an inspection of the work area before it is opened to traffic. The Contractor should have the necessary manpower and equipment standing by to perform any additional cleanup that may be identified during this inspection.

Any haul roads that cross vegetated areas shall be composted, seeded and hydromulched at the completion of construction at the contractor's expense. This includes those haul road across vegetated area that are designated on the plans.

## **21.00 CONTRACTOR'S CERTIFICATE AND RELEASE.**

Contractor's Certificate and Release shall be required to be provided to the Owner, on the forms as provided in the construction documents, or on forms approved for use by the Engineer.

The Final Application for Payment shall be accompanied with all releases and waivers in the Contractor's possession for obligations for labor, equipment, materials, subcontracts, taxes, fees, professional services, rent and royalties arising out of or related to the Work.

The Contractor shall also provide an affidavit certifying and warranting to Owner that all obligations for labor, equipment, materials, subcontracts, taxes, fees, professional services, rent and royalties arising out, or related to the Work will be fully paid and satisfied on receipt of final payment, and agreeing that the Contractor will indemnify, hold harmless, and defend Owner against any and all claims, liabilities, demands, and expenses for any obligation, or asserted obligation for labor, equipment, materials, subcontracts, taxes, fees, professional services, rent or royalties, arising out of the related work.

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## **SECTION 1.6**

### **MEASUREMENT AND PAYMENT**

#### **SCHEDULE 1 - TRAINER EQUIPMENT INFRASTRUCTURE**

##### **REFERENCE TECHNICAL SPECIFICATIONS, CODES AND STANDARDS**

The following applicable publications form part of this specification. Unless specified otherwise, the standards, codes and advisory circulars must be the editions current at the date of calling for tenders.

##### **FAA Advisory Circulars:**

|                 |   |
|-----------------|---|
| AC 150/5220-17B | Aircraft Rescue and Fire Fighting (ARFF) Training Facilities  |
| AC 150/5300-13  | Airport Design  |
| AC 150/5320-6E  | Airport Pavement Design and Evaluation  |
| AC 150/5320-5C  | Surface Drainage Design   |
| AC 150/5220-4   | Water Supply Systems for Aircraft Fire and Rescue Protection  |
| AC 150/5370-10  | Standards for Specifying Construction of Airports – The relevant clauses applicable to this project are at Appendix A |
| AC 150/5370-2E  | Operational Safety Airside  |
| AC 150/5380-5   | Debris Hazards at Civil Airports  |
| AC 150/5200-28  | Notices to Airmen (NOTAM) for Airport Operators   |

##### **NFPA (National Fire Protection Association)**

|            |   |
|------------|---|
| NFPA 30:   | Flammable and Combustible Liquids Code  |
| NFPA 54:   | National Fuel Gas Code  |
| NFPA 58:   | Liquefied Petroleum Gas Code  |
| NFPA 70:   | National Electrical Code  |
| NFPA 402M: | Aircraft Rescue and Firefighting Operations   |
| NFPA 415:  | Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways |

#### **2.4 COMPLIANCE CERTIFICATE**

All fire raining equipment shall be certified and labelled by a Nationally Recognized Testing Laboratory to ensure that all applicable standards and codes are complied with. A Nationally Recognized Testing Laboratory must meet the requirements of OSHA 1910.7.

Table from Drawing 9733E-06

ALASKA REGIONAL FIRE TRAINING CENTER KENA, ALASKA  
9733E-06 SCHEMATIC FLOW DIAGRAM

| BILL of MATERIAL |      |                 |                      |   |
|------------------|------|-----------------|----------------------|---|
| ITEM:            | QTY: | MANUFACTURER: * | MODEL No.:           | DESCRIPTION:  |
| 1.               | 1    | PLANT SYSTEMS   | GP-100               | WATERBATH VAPORIZER, 1100 GPH CAPACITY  |
| 2.               | 6    | NIBCO           | F535                 | 4"-300# FLANGED FULL PORT BALL VALVE  |
| 3.               | 4    | CORKEN          | F1521F-101GR         | 4" PUMP, 650 RPM W/20 H.P. MOTOR GEAR REDUCTION   |
| 4.               | 4    | CORKEN          | FC300                | 3" FLOW INDICATING BACK CHECK VALVE   |
| 5.               | 5    | NIBCO           | F530                 | 3"-300# FLANGED BALL VALVE  |
| 6.               | 5    | NIBCO           | F530                 | 2"-300# FLANGED BALL VALVE  |
| 7.               | 4    | MOONEY          | "FLOWGRID"           | 2"-300# FLG'D. BACK PRESSURE RELIEF VALVE, W/100% CAPACITY THROTTLE PLATE, 60-200# SPRING - SET @ 120 PSIG, SET UP FOR LIQUID PROPANE |
| 8.               | 8    | BERGQUIST       | No. 217              | 1/4" MNPT X 1/4" FNPT NEEDLE VALVE  |
| 9.               | 8    | NOSHOK          | 25.300               | 0-300# LIQUID FILLED PRESSURE GAUGE   |
| 10.              | 17   | FISHER          | H124                 | 1/4" HYDROSTATIC RELIEF VALVE   |
| 11.              | 2    | CONTROL ASSOC.  | 2C1-003-537          | 6" LIQ. VALVE W/ACTUATOR, LIMITSWITCH, SOLENOID-FLANGED WAFER STYLE   |
| 12.              | 1    | CONTROL ASSOC.  | 2C1-003-540          | 2" VAPOR VALVE W/ACTUATOR, LIMITSWITCH, SOLENOID-FLANGED WAFER STYLE  |
| 13.              | 4    | LEXAIR          | M3820623             | 1/4" - 3 WAY PNEUMATIC CONTROL VALVE  |
| 14.              | 1    | FISHER          | 1098EGR              | 2"- 300# FLG. PRESSURE REGULATOR W/ 3-40 PSIG PILOT   |
| 15.              | 1    | FISHER          | 1805-52              | 2" SCREWED PRESSURE RELIEF VALVE  |
| 16.              | 2    | APOLLO          | 83-105-01            | 1" FULL PORT BALL VALVE SCREWED   |
| 17.              | 1    | MERCURY         | P770-2-3/8           | 2" NPT RAIN CAP   |
| 18.              | 2    | NIBCO           | F535                 | 6"-300# FLANGED FULL PORT BALL VALVE  |
| 19.              | 4    | MUESSCO         | 762                  | 4"-300# FLANGED CAST-STEEL "Y" STRAINER W/40 MESH SCREEN  |
| 20.              | 1    | FISHER          | 98H                  | 1/4" SCR'D. BACK PRESSURE RELIEF VALVE 130-200# SPRING  |
| 21.              | 2    | APOLLO          | 73-101               | 1/4" SCR'D. BALL VALVE  |
| 22.              | 9    | CENTRAL         | TYPE "E"             | 4"-300# INSULATING FLANGE KIT   |
| 23.              | 3    | CENTRAL         | TYPE "E"             | 6"-300# INSULATING FLANGE KIT   |
| 24.              | 2    | CENTRAL         | TYPE "E"             | 2"-300# INSULATING FLANGE KIT   |
| 25.              | 2    | CENTRAL         | 108-010110-000       | 1"-3000# INSULATING UNION   |
| 26.              | 12   | BERGQUIST       | 17#                  | 17# MAGNESIUM ANODE BAG   |
| 27.              | 1    | BROOKS          | T04BA1CC28BABBB      | 4"-300# TURBINE FLOWMETER   |
| 28.              | 1    | BROOKS          | TRI-10 #0310 A2C1A58 | ELECTRONIC REGISTER W/PULSE OUTPUT  |
| 29.              | 1    | FISHER          | N301-08              | 1" SCREWED GLOBE VALVE  |
| 30.              | 1    | FISHER          | 627                  | 1" SCREWED PRESSURE REGULATOR W/5-35 PSIG SPRING  |
| 31.              | 5    | CENTRAL         | 108-020210-000       | 2" - 3000# INSULATING UNION   |
| 32.              | 1    | CENTRAL         | 108-121210-000       | 1-1/4" - 3000# INSULATING UNION   |

\* OR EQUAL

**Table from Drawing 9733E-11**

ALASKA REGIONAL FIRE TRAINING CENTER KENAI, ALASKA  
9733E-11 TANK TRIM

| BILL of MATERIAL |      |               |              |   |
|------------------|------|---------------|--------------|---|
| ITEM             | QTY. | MANUFACTURE * | MODEL #      | DESCRIPTION   |
| 1                | 4    | FISHER        | C404-A32-600 | 4"-300# FLANGED INTERNAL VALVE W/TYPE<br>P312 AIR CYLINDER OPERATOR |
| 2                | 2    | REGO          | A3400L6      | 3" MNPT BACK PRESSURE CHECK VALVE                                   |
| 3                | 2    | REGO          | A7518FP      | 3"-300# FLANGED ANGLE GLOBE VALVE                                   |
| 4                | 3    | FISHER        | H124         | 1/4" HYDROSTATIC RELIEF VALVES                                      |
| 5                | 1    | REGO          | 7534G        | 2" SCREWED RELIEF VALVE   |
| 6                | 1    | REGO          | 7534-20      | 3" PIPEAWAY ADAPTOR   |
| 7                | 1    | MERCURY       | P770-3 1/2   | 3" RAIN CAP   |
| 8                | 1    | REGO          | A6586C       | 2" SCR'D. SWING-AWAY BACK PRESS. CHECK VALVE                        |
| 9                | 1    | REGO          | A7537P4      | 2" SCREWED EXCESS FLOW VALVE  |
| 10               | 3    | REGO          | A7514AP      | 2" SCREWED ANGLE GLOBE VALVE  |
| 11               | 1    | FISHER        | J701         | THERMOMETER   |
| 12               | 1    | REGO          | 2805C        | 3/4" COMBINATION VALVE  |
| 13               | 1    | NOSHOK        | 25-300       | 0-300# LIQUID FILLED PRESSURE GAUGE                                 |
| 14               | 1    | MAGNETEL      | 22-29        | 2 1/2" MNPT ADAPTER   |
| 15               | 1    | MAGNETEL      | P6336-11     | LIQUID LEVEL INDICATOR-TOP MOUNT                                    |
| 16               | 1    | MAGNETEL      | R6315-12     | LIQUID LEVEL TRANSMITTER  |
| 17               | 1    | REGO          | A2137A       | 2" SCR'D. EXCESS FLOW VALVE   |

\* OR EQUAL

## 1A PROPANE TANK FARM GENERAL REHABILITATION

### 1A - 1.0 - Description:

Remove and dispose of existing equipment. Install new in-kind equipment in accordance with the following:

- a. Replace internal tank valve pneumatic actuators and associated pneumatic control valves.

| Reference Drawing | Item      | Description                   | Quantity |
|-------------------|-----------|-------------------------------|----------|
| 9733-11           | Part of 1 | Air Cylinder Operator         | 4        |
| 9733-06           | 13        | 3-Way Pneumatic Control Valve | 4        |

- b. Replace propane flow and pressure control components.

| Reference Drawing | Item | Description                      | Quantity |
|-------------------|------|----------------------------------|----------|
| 9733-06           | 4    | Flow Indicating Back Check Valve | 4        |
| 9733-06           | 7    | Back Pressure Relief Valve       | 4        |
| 9733-06           | 10   | Hydrostatic Relief Valve         | 14       |

|         |    |                            |   |
|---------|----|----------------------------|---|
| 9733-06 | 20 | Back Pressure Relief Valve | 1 |
|---------|----|----------------------------|---|

- c. Replace automatic 6" pneumatic controlled propane shut-off valve

| Reference Drawing | Item | Description  | Quantity |
|-------------------|------|--|----------|
| 9733-06           | 11   | 6" Liquid Shut-Off Valve w/Actuator and Limit Switch | 1        |
| 9733-06           | 8    | Needle Valve   | 2        |
| 9733-06           | 9    | Pressure Gauge                                       | 2        |

- d. Replace manual propane shut-off valves and associated insulating flange kits.

| Reference Drawing | Item | Description   | Quantity |
|-------------------|------|---------------|----------|
| 9733-06           | 2    | 4" Ball Valve | 4        |
| 9733-06           | 5    | 3" Ball Valve | 4        |
| 9733-06           | 6    | 2" Ball Valve | 4        |
| 9733-06           | 18   | 6" Ball Valve | 1        |
| 9733-06           | 21   | 4" Ball Valve | 2        |

- e. Replace 4" Y-Strainers.

| Reference Drawing | Item | Description                       | Quantity |
|-------------------|------|-----------------------------------|----------|
| 9733-06           | 19   | 4" Y-Strainer with 40 Mesh Screen | 4        |

- f. Recertify liquid propane tank

Provide a pressure test on the 30,000 gallon propane tank to re-certify the condition of the tank in accordance with current NFPA standards. Testing shall be conducted by an independent testing lab.

- g. Clean and re-paint propane distribution piping.

All exposed propane piping shall be cleaned and repainted in accordance with current NFPA standards for exterior propane pipe.

- h. Pressure test compressed air system, repair leaks.

Provide a pressure test on the compressed air system to current ASME standards. Isolate and repair any leaks.

- i. It is the Contractor's responsibility to certify that any re-used components are suitable for use in the refurbished system.

## METHOD OF MEASUREMENT

**1A -2.1 Propane Tank Farm General Rehabilitation** shall be measured per lump sum, unit complete with all materials, parts and equipment, delivered, installed and commissioned.

## BASIS OF PAYMENT

**1A - 3.1** Payment to be made under:

### **Schedule 1A – Propane Tank Farm General Rehabilitation – Per Lump Sum**

---

## **1B Replace Tank Farm Propane Pumps**

**1B - 1.1** - Description:

- a. Replace Propane Pumps including reduction gears. Remove and dispose of existing equipment. Install new in-kind equipment in accordance with the following:

| Reference Drawing  | Item | Description    | Quantity |
|--------------------|------|----------------|----------|
| 9733-06/E-3 PP 1-4 | 3    | 4" Pump        | 4        |
| 9733-06            | 8    | Needle Valve   | 4        |
| 9733-06            | 9    | Pressure Gauge | 4        |

## METHOD OF MEASUREMENT

**1B -2.1 Replace tank farm propane pumps** shall be measured per lump sum, unit complete with all required materials, parts and equipment, delivered, installed and commissioned.

## BASIS OF PAYMENT

**1B -3.1** Payment to be made under:

### **Schedule 1B - Replace Tank Farm Propane Pumps – Per Lump Sum**

---

## **A1-A - Additive Alternative A - Replace Propane Pump Motors**

**1C - 1.1** - Description: Replace Propane Pump Motors. Remove and dispose of existing equipment. Install new in-kind equipment in accordance with the following:

| Reference Drawing  | Item | Description | Quantity |
|--------------------|------|-------------|----------|
| 9733-06/E-3 PP 1-4 |      | Pump Motors | 4        |

#### **METHOD OF MEASUREMENT**

**1C - 2.1 Replace propane pump motors** shall be measured per lump sum, unit complete with all required materials, parts and equipment, delivered, installed and commissioned.

#### **BASIS OF PAYMENT**

**1C - 3.1** Payment to be made under:

**Schedule A1-A - Replace Propane Pump Motors – Per Lump Sum**

---

### **A1-B Additive Alternative B - Replace Propane Pump Motor Starters**

**A1-B - 1.1** - Description: Replace propane pump motor starters and cut off switch. Remove and dispose of existing equipment. Install new in-kind equipment in accordance with the following:

| Reference Drawing  | Item | Description                        | Quantity |
|--------------------|------|------------------------------------|----------|
| 9733-06/E-3 PP 1-4 |      | Pump Starters and Cut-Off Switches | 4        |

#### **METHOD OF MEASUREMENT**

**A1-B -1.2 Replace propane pump motor starters** shall be measured per lump sum, unit complete with all required materials, parts and equipment, delivered, installed and commissioned.

#### **BASIS OF PAYMENT**

**A1-B -1.3** Payment to be made under:

**Additive Alternative B – Replace Propane Pump Motor Starters – Per Lump Sum**

---



## **A1-C Additive Alternative C – Vaporizer Equipment Rehabilitation**

### **A1 - C - 1.1 - Description**

Contractor shall inspect and operate the propane vaporizer to determine if is operating to normal operational standards. Repair if necessary, and replace any obsolete parts.

### **METHOD OF MEASUREMENT**

**A1- C -1.2 Vaporizer Equipment Rehabilitation** shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

### **BASIS OF PAYMENT**

**A1-C -1.3** Payment to be made under:

**Additive Alternative C –Vaporizer Equipment Rehabilitation – Per Lump Sum**

---

## **SCHEDULE 2 - FUEL SPILL TRAINER**

### **Schedule 2A Fuel Spill Trainer Control System Rehabilitation**

**2A – 2.1** Description: Remove and dispose of existing equipment. Install new in-kind or of higher quality equipment as follows:

- Replace all propane detection sensors system wide, at all locations, to new infrared technology, or better.
- Replace I/O Rack Assembly located in the training building with new current technology.
- Replace computer and operating software to most current version (see below). Copy-righted software to match all existing functions, operations and scenarios, as a minimum
- Integrate and commission training system software, hardware and all operational components.

#### **CONTROL SYSTEM DESIGN**

The main control system shall be a Programmable Logic Controller (PLC) with and Operator Interface comprised of a PC workstation using and Ethernet connection to the PLC. The PLC shall interface with all system I/O and the onboard program shall be responsible for the operation of the trainer's active functions. The system shall be designed to operate the fire scenarios, control and monitor safety systems, log activity and perform diagnostic testing on the trainer.

The Spill Fire Training system and the SAFT shall each utilize their own PLC in order to provide operational independence.

Two (2) Operator Workstations shall be provided, each capable of running either the Spill Fire Training System and the SAFT Training System in order to provide functional redundancy.

A centralized storage station shall be provide to allow for centralized, common storage for all system configuration files, logged data and user settings. This system shall include and external data storage device for periodic backup. A second backup storage station shall be provided in order to provide functional redundancy.

#### **a. OPERATOR WORKSTATIONS**

Each Operator Workstation shall be provided with the following features as a minimum.

|                          |  |
|--------------------------|--|
| Processor (CPU)          | 3ghz Core i5                                   |
| Memory                   | 16 GB RAM                                      |
| Hard Drive               | 240 GB Solid State Drive                       |
| Front Productivity Ports | 5-in-1 memory card reader, 2 USB, audio        |
| Keyboard and Mouse       | USB Low-profile keyboard and USB optical mouse |

|               |  |
|---------------|--|
| Graphics Card | Capable of driving two digital displays (DVI or Displayport or HDMI connection) at a minimum resolution of 1920X1080 each. |
| Monitor       | Dual 24" Diagonal Full HD Widescreen LCD Monitors (minimum resolution of 1920X1080 each.)                                  |
| Printer       | Color Laser Printer to be networked (shared) between the trainers  |
| UPS           | Shall be provided for each PC Workstation  |
| Other         | Modems, networking cabling or interconnection drives that are required for proper system use                               |

The processor shall have adequate arithmetic, logical processing input/output and memory access speeds to assure real time processing of all assigned functions and to assure no erratic behavior in the display.

The Input Output system of the computer shall have the capability to input or output to and from one or more units of peripheral equipment while continuing operation of a real time situation and to permit sampling of controls and activation of displays with speed and accuracy.

The computer system shall have the following spare capacities:

|                        |     |
|------------------------|-----|
| Solid State Drive      | 50% |
| Spare Storage Capacity | 50% |
| Input Output System    | 10% |

#### b. CENTRALIZED STORAGE STATION

The Storage Station (and spare) shall utilize a PC with a Windows 10 (or higher) or Windows Server 2012 (or higher) Operating System.

The Storage Station shall be provide with the following features as a minimum. The spare Storage Station shall be identical to the Primary Storage Station

|                  |  |
|------------------|--|
| Processor (CPU)  | 3ghz Core i5   |
| Memory           | 16 GB RAM  |
| Hard Drive       | 500 GB Solid State Drive   |
| Data Storage     | SQL Server   |
| External Storage | 2TB hard drive storage for backup utilizing DSATA or USB 3.0 or higher                       |
| Printer          | Color Laser Printer to be networked (shared) between the trainers                            |
| UPS              | Shall be provided for each PC Workstation  |
| Other            | Modems, networking cabling or interconnection drives that are required for proper system use |

The processor shall have adequate arithmetic, logical processing input/output and memory access speeds to assure real time processing of all assigned functions and to assure not erratic behavior in the display.

The Input Output system of the computer shall have the capability to input or output to and from one or more units of peripheral equipment while continuing operation of a real time situation and to permit sampling of controls and activation of displays with speed and accuracy

The computer system shall have the following spare capacities:

|                        |     |
|------------------------|-----|
| Solid State Drive      | 50% |
| Spare Storage Capacity | 50% |
| Input Output System    | 10% |

#### c. OPERATING SCREENS

The Spill Fire Trainer shall be operated using dual color graphics display terminal, keyboard and pointing device or touch screen. The following screens shall be provided:

#### d. FIRE TRAINING SCREEN

Shall be a graphical representation of the burn areas showing all fire zones and shall display all of the parameters and graphics necessary to setup and operate the Spill Fires. During fire operation fire scenario conditions shall be displayed on the screen and shall include:

1. Indication of fireplace enable / disable status
2. Indication of pilot / main flame status
3. Extinguishment agent application
4. Actual burn time
5. Effective extinguishment application time
6. Total scenario time

The status of Spill Fire zones shall be displayed using a color coded graphical display.

A parameter set up window shall display all fixed and selectable parameters of the fire including the valid range of selectable parameters. Invalid parameter inputs shall be rejected. Operation of a fire zone shall be inhibited until selectable parameters are validated.

A diagnostics menu shall offer a selection of tests that automatically test all major trainer system components. The menu shall include a daily operational readiness test to confirm operation of the entire system prior to the start of training.

#### 3.1.2.19.1 DAILY OPERATIONS READINESS TEST SCREEN

Shall provide all the relevant information to indicate that the system is ready for training.

#### Pilot Diagnostics Screen

Shall allow the operator to test any and all system pilots either individually or collectively. Main flame shall be disabled whilst in this mode.

#### 3.1.2.19.2 SMOKE GENERATOR DIAGNOSTICS SCREEN

Shall allow the operator to test any smoke generator individually or collectively. All flames are to be disabled while in this mode.

#### e. TRAINER DIAGNOSTICS

The control system shall include comprehensive diagnostic testing capabilities, with detailed on screen instructions to assist the system operator and maintenance personnel in clearly identifying and resolving system malfunctions.

### METHOD OF MEASUREMENT

**2A -2.2 Fuel Spill Trainer** shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

### BASIS OF PAYMENT

**2A -2.3** Payment to be made under:

#### **Schedule 2A – Fuel Spill Trainer – Per Lump Sum**

### **Schedule 2B Bunker Equipment Rehabilitation**

**2B – 2.1** - Description: Remove and dispose of all existing equipment, piping, electrical components, enclosures and all associated items. The bunkers shall be stripped except for equipment and enclosure supports, unless unusable by corrosion. Install new in-kind or of higher quality equipment. Must meet original design performance standards or better. This shall include, but not limited to the following:

- a. Fuel spill pilot components and enclosures
- b. Fuel spill liquid manifold assemblies
- c. Thermocouple junction boxes
- d. All control and power systems
- e. Replace black iron gas pipes in bunker walls with stainless steel pipe.

- f. Rehabilitate Three Dimensional Fuel Leak Fire to original or better.

**Fuel Spill Pilot Control - Replace the following:**

- 4 pilot heads
- 4 pilot air blowers
- 4 pilot air blower switches
- 4 pilot air blower pressure switches
- 4 pilot control valves
- Replace 2 enclosures.

**Manifold Assemblies – Replace the following:**

- 8 manifold assemblies

**Pneumatic Valves – Replace the following**

- All pneumatic valves shall be replaced with electric operated valves

**Pneumatic Valve Enclosures – Replace the following:**

- 8 valve enclosures

**Bunker Manual Shutoff Valves – Replace the following:**

- Bunker shut off valves

**Bunker Distribution Piping – Replace the following:**

- Replace all piping

**Thermocouple Junction Boxes – Replace the following:**

- Replace all junction boxes

**Fuel Spill Burner Elements – Replace the following:**

- All burner elements

**Agent Thermocouples – Replace the following:**

- All thermocouples and cables.

**METHOD OF MEASUREMENT**

**2B -2.2 Replace all components in each bunker** shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

**BASIS OF PAYMENT**

**2B -2.3** Payment to be made under:

**Schedule 2B – Replace all components in each bunker – Per Lump Sum**

## **Schedule 2C     Burn Pit Rehabilitation**

### **2C – 2.1 - Description:**

Remove and dispose of burn pit burner elements, supports, thermocouples and all associated components. Remove and dispose of burn pit stone. Conduct maintenance on slab joints and concrete surface with sealant, Sika Brand or approved equal, for water resistance conditions for water deck system.

### **METHOD OF MEASUREMENT**

**2C -2.2        Burn Pit Rehabilitation** shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

### **BASIS OF PAYMENT**

**2C -2.3** Payment to be made under:

**Schedule 2C – Burn Pit Rehabilitation – Per Lump Sum**

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## **Schedule 2D     Install New Water Deck Based Burn Pit System**

### **2D – 2.1 Description.**

#### **BURN AREA**

The propane fueled, Spill Fire Burn Area shall be a minimum of 12,265 sf (~125' dia.) total size.

The new design shall be water filled. The water level should not exceed 3" above the solid deck surface to permit ease of walking on the Spill Fire surface. There shall be a minimum of 78 burn area zones, with a minimum of 3 extinguishment agent sensors per zone.

The Spill Fire Burn Area shall be encompassed within the burn pit area. The burn pit detailed design shall be furnished by the Owner supplemented by Facility Interface Documents provided by the Contractor. Construction of the new components to the water deck system shall be provided by the Contractor. The Contractor shall be responsible for the design, procurement and installation, testing and integration of all the new fire generation and control equipment required for the rehabilitation of the spill fire area.

The burn area shall be as shown on the drawings. The burn area shall have a flat surface with no obstructions protruding onto the surface with the

exception of extinguishment agent sensors, provided by the Contractor, that shall also be capable of the walk on loading referenced above.

The surface shall be designed with independent removable sections of grates, grill, platforms, etc., to ensure ease of access to all of the propane delivery piping for installation and maintenance purposes while remaining firmly fixed under operational conditions;

Individual panels shall be able to be removable and replaceable, if required, without compromising the structural strength of adjacent sections;

All propane piping within the burn area shall be stainless steel.

#### 3.1.2.6 FIRE GENERATION EQUIPMENT

Fire generation equipment shall be designed, fabricated and installed in accordance with NFPA 54 and NFPA 58. The design fabrication and installation of the fire generation equipment shall minimize safety hazards to the personnel within the trainer. All burn area equipment necessary for generation and control of the fire shall be temperature resistant, weatherproof and watertight as necessary to function in the Spill Fire environment. The equipment shall be shielded as necessary to protect it from extinguishing agents which could be directed toward the equipment from the trainer. All functional equipment shall be accessible for maintenance.

Components:

##### **Propane Detection Sensors - Replace the following**

- All propane detection sensors with Infra-red type or most current technology available

##### **I/O Rack Assembly - Replace the following:**

- Entire I/O rack assembly
- PLC's to current technology standards

##### **Operator Control Station – Replace the following:**

- Computer equipment
- Copy- righted software to match all existing functions, operations and scenarios, as a minimum.

#### **METHOD OF MEASUREMENT**

**2D -2.2 Install New Water Deck Based Burn Pit System**, shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.



## **BASIS OF PAYMENT**

**2D -2.3** Payment to be made under:

**Schedule 2D – Install New Water Deck Based Burn Pit System – Per Lump Sum**

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### **A2- Additive Alternative A - Replace Air Blower, Motor, Fan & Heater**

**A2 - 1.1** - Description: Replace existing positive air blower, motor, fan and heater, Barry Blower, Model No. IIINDAHCN and Indeeco Electric Heater. Remove and dispose of existing equipment. Install new in-kind equipment.

## **METHOD OF MEASUREMENT**

**A2 - 2.1 Replace Air Bower, Motor, Fan & Heater** shall be measured per lump sum, unit complete with all required materials, parts and equipment, delivered, installed and commissioned.

## **BASIS OF PAYMENT**

**A2 - 3.1** Payment to be made under:

**Schedule A2- A - Replace Air Blower, Motor, Fan and Heater – Per Lump Sum**

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### **A2-B Additive Alternative B - Spill Fire Slab Hydronic Heating System Rehabilitation**

**A2-B - 1.1** - Description: Pressure test hydronic heating piping system. Repair any accessible leaks. Verify condition of fluid in system compared to original condition. Replace if not to acceptable standard, when compared to original standard if necessary.

## **METHOD OF MEASUREMENT**

**A2-B-1.2 Spill Fire Slab Hydronic Heating System Rehabilitation** shall be measured per lump sum, unit complete with all required materials, parts and equipment, delivered, installed and commissioned.

## **BASIS OF PAYMENT**

**A2-B -1.3** Payment to be made under:

**Additive Alternative A2-B – Spill Fire Slab Hydronic Heating System Rehabilitation  
– Per Lump Sum**

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## SCHEDULE 3 – SPECIALIZED AIRCRAFT FIRES TRAINER

### **Schedule 3A Control System Rehabilitation**

**3A – 3.1** Description: Remove and dispose of existing equipment. Install new in-kind or of higher quality equipment as follows:

- Replace all propane detection sensors system wide, at all locations, to new infrared technology, or better.
- Replace I/O Rack Assembly located in SAFT shelter, with new current technology.
- Replace computer and operating software to most current version (see below)
- Integrate training system software, hardware and all operational components.
- Replace pendant controls and stations.

#### CONTROL SYSTEM DESIGN

The main control system shall be a Programmable Logic Controller (PLC) with and Operator Interface comprised of a PC workstation using and Ethernet connection to the PLC. The PLC shall interface with all system I/O and the onboard program shall be responsible for the operation of the trainer's active functions. The system shall be designed to operate the fire scenarios, control and monitor safety systems, log activity and perform diagnostic testing on the trainer.

The Spill Fire Training system and the SAFT shall each utilize their own PLC in order to provide operational independence.

Two (2) Operator Workstations shall be provided, each capable of running either the Spill Fire Training System and the SAFT Training System in order to provide functional redundancy.

A centralized storage station shall be provide to allow for centralized, common storage for all system configuration files, logged data and user settings. This system shall include and external data storage device for periodic backup. A second backup storage station shall be provided in order to provide functional redundancy.

#### a. OPERATOR WORKSTATIONS

Each Operator Workstation shall be provided with the following features as a minimum.

|                          |  |
|--------------------------|--|
| Processor (CPU)          | 3ghz Core i5                                   |
| Memory                   | 16 GB RAM                                      |
| Hard Drive               | 240 GB Solid State Drive                       |
| Front Productivity Ports | 5-in-1 memory card reader, 2 USB, audio        |
| Keyboard and Mouse       | USB Low-profile keyboard and USB optical mouse |

|               |  |
|---------------|--|
| Graphics Card | Capable of driving two digital displays (DVI or Displayport or HDMI connection) at a minimum resolution of 1920X1080 each. |
| Monitor       | Dual 24" Diagonal Full HD Widescreen LCD Monitors (minimum resolution of 1920X1080 each.)                                  |
| Printer       | Color Laser Printer to be networked (shared) between the trainers  |
| UPS           | Shall be provided for each PC Workstation  |
| Other         | Modems, networking cabling or interconnection drives that are required for proper system use                               |

The processor shall have adequate arithmetic, logical processing input/output and memory access speeds to assure real time processing of all assigned functions and to assure no erratic behavior in the display.

The Input Output system of the computer shall have the capability to input or output to and from one or more units of peripheral equipment while continuing operation of a real time situation and to permit sampling of controls and activation of displays with speed and accuracy.

The computer system shall have the following spare capacities:

|                        |     |
|------------------------|-----|
| Solid State Drive      | 50% |
| Spare Storage Capacity | 50% |
| Input Output System    | 10% |

#### b. CENTRALIZED STORAGE STATION

The Storage Station (and spare) shall utilize a PC with a Windows 10 (or higher) or Windows Server 2012 (or higher) Operating System.

The Storage Station shall be provide with the following features as a minimum. The spare Storage Station shall be identical to the Primary Storage Station

|                  |  |
|------------------|--|
| Processor (CPU)  | 3ghz Core i5   |
| Memory           | 16 GB RAM  |
| Hard Drive       | 500 GB Solid State Drive   |
| Data Storage     | SQL Server   |
| External Storage | 2TB hard drive storage for backup utilizing DSATA or USB 3.0 or higher                       |
| Printer          | Color Laser Printer to be networked (shared) between the trainers                            |
| UPS              | Shall be provided for each PC Workstation  |
| Other            | Modems, networking cabling or interconnection drives that are required for proper system use |

The processor shall have adequate arithmetic, logical processing input/output and memory access speeds to assure real time processing of all assigned functions and to assure not erratic behavior in the display.

The Input Output system of the computer shall have the capability to input or output to and from one or more units of peripheral equipment while continuing operation of a real time situation and to permit sampling of controls and activation of displays with speed and accuracy

The computer system shall have the following spare capacities:

|                        |     |
|------------------------|-----|
| Solid State Drive      | 50% |
| Spare Storage Capacity | 50% |
| Input Output System    | 10% |

f. OPERATING SCREENS

The SAFT Trainer shall be operated using dual color graphics display terminal, keyboard and pointing device or touch screen. The following screens shall be provided:

g. FIRE TRAINING SCREEN

Shall be a graphical representation of the burn areas showing all fire zones and shall display all of the parameters and graphics necessary to setup and operate the SAFT Fires. During fire operation fire scenario conditions shall be displayed on the screen and shall include:

1. Indication of fireplace enable / disable status
2. Indication of pilot / main flame status
3. Extinguishment agent application
4. Actual burn time
5. Effective extinguishment application time
6. Total scenario time
7. Compartment propane levels and temperature levels.

The status of SAFT Fires shall be displayed using a color coded graphical display.

A parameter set up window shall display all fixed and selectable parameters of the fire including the valid range of selectable parameters. Invalid parameter inputs shall be rejected. Operation of a fire zone shall be inhibited until selectable parameters are validated.

A diagnostics menu shall offer a selection of tests that automatically test all major trainer system components. The menu shall include a daily

operational readiness test to confirm operation of the entire system prior to the start of training.

#### 3.1.2.19.1 DAILY OPERATIONS READINESS TEST SCREEN

Shall provide all the relevant information to indicate that the system is ready for training.

##### Pilot Diagnostics Screen

Shall allow the operator to test any and all system pilots either individually or collectively. Main flame shall be disabled whilst in this mode.

#### 3.1.2.19.2 SMOKE GENERATOR DIAGNOSTICS SCREEN

Shall allow the operator to test any Smoke Generator individually or collectively. All flames are to be disabled while in this mode.

#### h. TRAINER DIAGNOSTICS

The control system shall include comprehensive diagnostic testing capabilities, with detailed on screen instructions to assist the system operator and maintenance personnel in clearly identifying and resolving system malfunctions

### METHOD OF MEASUREMENT

**3A -3.2 Control System Rehabilitation**, shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

### BASIS OF PAYMENT

**3A -3.3** Payment to be made under:

#### **Schedule 3A – Control System Rehabilitation – Per Lump Sum**

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### **3B - Replace Mockup Exhaust System Fan and Motor**

**3B – 3.1** - Description: Remove and dispose of existing Replace mockup exhaust system fan and motor equipment. Install new in-kind mockup exhaust system fan and motor equipment.

### METHOD OF MEASUREMENT

**3B- 3.2 Replace mockup exhaust system fan and motor**, shall be measured per lump sum,

unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

#### **BASIS OF PAYMENT**

**3B -3.3** Payment to be made under:

**Schedule 3B – Replace mockup exhaust system fan and motor – Per Lump Sum**

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### **3C - Replace combustion air system fan, motor and ducting**

**3C – 3.1** - Remove and dispose of existing combustion air system fan, motor and ducting equipment. Install new in-kind equipment.

#### **METHOD OF MEASUREMENT**

**3C -3.2 - Replace combustion air system fan, motor and ducting**, shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

#### **BASIS OF PAYMENT**

**3C -3.3** Payment to be made under:

**Schedule 3C – Replace combustion air system fan, motor and ducting – Per Lump Sum**

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### **3D Replace smoke generation system**

**3D – 3.1** Description: Remove and dispose of existing smoke generation system equipment. Install new in-kind smoke generation system equipment.

#### **METHOD OF MEASUREMENT**

**3D -3.2 Replace smoke generation system**, shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

#### **BASIS OF PAYMENT**

**3D -3.3** Payment to be made under:

## **Schedule 3D – Replace smoke generation system – Per Lump Sum**

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### **3E Replace Agent Detection System**

**3E – 3.1** Description: Remove and dispose of existing agent detection system equipment. Install new in-kind agent detection system equipment.

#### **METHOD OF MEASUREMENT**

**3E -3.2 Replace agent detection system**, shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

#### **BASIS OF PAYMENT**

**3E -3.3** Payment to be made under:

**Schedule 3E – Replace agent detection system – Per Lump Sum**

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### **3F Replace 7 Fireplace Control Assemblies**

**3F – 3.1** Description: Remove and dispose of existing 7 Fireplace Control Assemblies equipment. Install new in-kind 7 Fireplace Control Assemblies.

#### **METHOD OF MEASUREMENT**

**3F -3.2 Replace 7 Fireplace Control Assemblies**, shall be measured per lump sum, unit complete with all required labor, materials, parts and equipment, delivered, installed and commissioned.

#### **BASIS OF PAYMENT**

**3F -3.3** Payment to be made under:

**Schedule 3F – Replace 7 Fireplace Control Assemblies – Per Lump Sum**

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### **DA3-A Deductive Alternative B - Replace 4 Fireplace Control Assemblies, Rehabilitate 3**

**DA3-A - 1.1** - Description: Replace 4 Fireplace Control Assemblies and salvage components from the 4 replaced assemblies to be used to rehabilitate 3 Fireplace Control Assemblies. Install new in-kind equipment in accordance with the following:

- Replace burner control assemblies for wing engine fire, tail engine fire, wheel brake fire, and cabin fires.
- Salvage all parts. Refurbish cockpit fire, baggage compartment fire, lavatory fire, and APU fire with salvaged parts from 4 new assembly locations.
- Verify operation of all components replace parts where obsolete or inoperative. Install new where necessary.

### **METHOD OF MEASUREMENT**

**DA3-B-1.2 Replace 4 Fireplace Control Assemblies, Rehabilitate 3** shall be measured per lump sum, unit complete with all required materials, parts and equipment, delivered, installed and commissioned.

### **BASIS OF PAYMENT**

**DA3-B -1.3** Payment to be made under:

**Additive Alternative DA3-B – Replace 4 Fireplace Control Assemblies, Rehabilitate 3 – Per Lump Sum**

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# **GENERAL CONDITIONS OF THE CONTRACT BETWEEN OWNER AND CONTRACTOR**

## **ARTICLE 1     CONTRACT DOCUMENTS**

- 1.1 The contract documents enumerated in the Agreement between Owner and Contractor form the final and completely integrated contract between the parties and supersede any prior statements, negotiations, agreements, documents or representations, written or oral. What is required by any one contract document is deemed to be required by all documents.
- 1.2 The contract documents consist of documents designated as contract documents and enumerated in the Agreement between Owner and Contractor.
- 1.3 The contract documents do not include any documents unless specifically enumerated in Agreement between Owner and Contractor.
- 1.4 Unless specifically provided otherwise in the contract documents the parties to this agreement intend that Contractor will obtain all permits, inspections, tests, bonds, and insurance required by state or federal law, rule, regulation or order, or local ordinance or rule or regulation or the contract documents, whichever requirement is greater, and provide all labor, equipment, transportation, water, heat, utilities, tools, scaffolding, materials, supplies, facilities, and services necessary for performance of the contract and that the cost of these requirements be included within the contract price. The parties further intend that the cost of all overhead, supervision, and other incidental expenses required or occasioned by the contract is included in the contract price. The parties also intend that minor items required to produce complete functional system(s) and sub-system(s) are deemed to be required by the contract documents at the contract price whether or not specifically expressed. The requirements stated in this provision apply whether or not the execution or completion of the work is temporary or permanent and whether or not it is incorporated or to be incorporated in the work or final product.
- 1.5 The requirements of the contract documents and the duties and rights of each party may be amended subsequent to execution of this contract only by:
  1. A written amendment to the contract signed by both parties; or,
  2. A change order issued pursuant to ARTICLE 9.1
- 1.6 The term "Work" includes all procurement, labor, materials, products, equipment, erection, installation, and alterations necessary to complete the construction envisioned by this contract. The term "Project" refers to the overall construction, of which the work required by the contract may be the whole or may be a part. The term "Architect" also refers to Registered Engineers as appropriate.
- 1.7 The contract between Owner and Contractor shall be executed and returned by Contractor within the time required in the instructions to bidders. A written Notice to Proceed with the work will be issued to Contractor within five (5) days after Owner has executed the contract, except as provided in ARTICLE 4.1.3.
- 1.8 Should any provision or requirement of one portion of the contract documents conflict with any other portion of the contract documents, unless otherwise provided herein, the conflict will be resolved by reference to the contract documents in the following order of priority:
  - A. Any and all later modifications, Change Orders, and written interpretations of the Contract Documents issued by the Owner
  - B. The Agreement
  - C. Addenda
  - D. Supplemental General Conditions (if any)
  - E. General Conditions

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<sup>1</sup> Unless otherwise stated, all references to an ARTICLE refer to the articles of these general conditions.

- F. Drawings and Specifications Provided by Engineer. In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided.
  - G. Drawings and Specifications in the latest edition of the Municipality of Anchorage Standard Specifications (M.A.S.S.) In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided. Contractor is responsible for obtaining the latest edition of the M.A.S.S.
  - H. The Request for Proposals / Invitation to Bid
  - I. The contractor's bid/proposal.
- 1.9 In case of difference between small and large scale drawings, the large scale drawings shall govern. Schedules on any contract drawing shall take precedence over conflicting information on that or any other contract drawing. On any of the drawings where a portion of the work is detailed or drawn out and the remainder is shown in outline, the parts detailed or drawn out shall apply also to all other like portions of the work.
- 1.10 In the event Contractor believes a discrepancy exists in the contract documents, Contractor shall submit the issue to the Project Representative together with Contractor's proposed course of action for performance of the work. Project Representative shall respond within seven (7) working days or advise Contractor that a response cannot be given within that time. If response will take more than seven (7) working days, Project Representative shall take steps to provide a response within a reasonable time. Any action taken by Contractor prior to or without Owner's response shall be at Contractor's own risk and expense.
- 1.11 Words and abbreviations which are not defined in the contract documents, but which have well known technical or trade meanings, shall be construed in accordance with the common meaning established by sound architectural or engineering practice in the State of Alaska.
- 1.12 Drawings, Specifications, other documents prepared for this project, and copies of them that are furnished by Owner and/or Architect or Consultant for this project, whether or not the documents or project are completed, shall be the property of Owner. All rights of use are reserved to Owner for this project and any subsequent project in which Owner participates in construction. Owner specifically relieves Architect or Consultant of any responsibility or liability pertaining to any subsequent use of the documents, in whole or in part, where those documents bear the stamp of a subsequent Architect or Consultant and are used for a subsequent project.
- 1.13 An electronic version of contract documents, typically in pdf format on a disc, will be furnished to the Contractor without charge. Contractor shall check all documents furnished immediately upon receipt and shall promptly notify Owner of any discrepancies.
- 1.14 The contract documents shall not be construed in any way as limiting Contractor's responsibility to perform the work completely, nor shall any prior customs or trade practices be held to constitute a waiver of the requirements of the contract documents or any portion of them.
- 1.15 The individual(s) executing the contract represent that they have the legal authority to execute the contract as or on behalf of Contractor in accordance with the bid instructions and the contract documents.
- 1.16 Execution of the contract by Contractor is a representation that Contractor has visited the site, become familiar with the local conditions under which the work is to be performed, has correlated personal observations with the requirements of the contract documents and enters this contract with knowledge of those conditions.

## **ARTICLE 2 ADMINISTRATION OF THE CONTRACT**

- 2.1 The term "Project Representative" shall mean a person or entity employed by or under contract to Owner to be Owner's on-site designated representative. The term Project Representative shall include the Project Representative's employees.

- 2.2 The terms "Architect" or "Engineer" (hereinafter used interchangeably) shall mean the person or entity contracted by the City of Kenai to provide design services for the project. Architect or Engineer also includes employees of the Architect or Engineer. Architect shall provide professional services during construction as described herein below or as authorized by Owner.
- 2.3 Project Representative will provide administration of this contract and all communication made to Owner, Architect or Engineer by Contractor shall be made through Project Representative.
- 2.4 Project Representative will be Owner's primary representative during construction until final payment has been made and the project has been closed out. Owner's instructions to Contractor shall be made through Project Representative, who shall have authority to act on behalf of Owner to the extent set forth in this contract.
- 2.5 Project Representative shall not have the authority to require additional work, changes in the work, modifications or waivers of the rights, work or duties required by the contract documents or the right to bind Owner to any change in specifications or drawings without the written consent of Owner except as provided herein.
- 2.6 Project Representative shall have authority to allow minor deviation in the requirements of the contract documents by Field Order to a maximum cumulative amount of \$5,000.00 per each additional work item, change in work, modification or waiver in the work. Field Orders are to be incorporated into a subsequent Change Order.
- 2.7 Project Representative will render interpretations of the contract documents necessary for the proper execution or progress of the project. All interpretations and decisions of Project Representative shall be consistent with the intent of the contract documents and shall be in writing.
- 2.8 Matters relating to design intent will be referred to the design Architect whose decisions will be final, consistent with the intent of the contract documents.
- 2.9 Project Representative, Architect, and authorized representatives of Owner shall have access to the project site and to the work at all times and shall be afforded every reasonable facility for ascertaining whether or not the work is in accordance with the requirements and intent of the contract documents.
- 2.10 All claims, disputes and other matters in question between Contractor and Owner relating to the execution or progress of the work shall be resolved pursuant to ARTICLE 12.
- 2.11 Project Representative shall have the authority: 1) to reject work which does not conform to the contract documents; 2) to require additional inspections or testing of any work during, prior to, or after fabrication, installation, or completion; 3) to specify both remedial work necessary to correct defective work and the time within which such work must be performed.
- 2.12 On the basis of on-site observations and inspections Project Representative will keep Owner informed of the progress of the work, and will endeavor to guard Owner against defects and deficiencies in the work. If Project Representative determines that any construction method, sequence, material, technique, safety precaution, act or omission of Contractor, Contractor's subcontractors, suppliers, or any of their agents, is detrimental to the progress, quality or safety of the work or to Owner's interest, then Project Representative shall inform Owner promptly, and Owner may, among other things, stop the work and order remedial measures. This provision shall not eliminate or reduce the responsibilities or requirements placed upon contractor and/or subcontractors by the contract documents and shall not place any liability upon the owner for action or omission in regard to this provision.
- 2.13 In accordance with the requirements of ARTICLE 8.5, Project Representative will determine amounts owing to Contractor and will recommend that Owner issue payment in the amount determined due.
- 2.14 Project Representative, with the concurrence of Owner, will determine the dates of Substantial Completion and Final Completion. The Architect will receive and forward to Owner for Owner's review, written warranties and related documents required by the contract and assembled by Contractor.

- 2.15 Project Representative's duties, responsibilities, and limitations of authority will not be modified without written consent of Owner and Project Representative.

### **ARTICLE 3 OWNER GENERAL RIGHTS AND DUTIES**

- 3.1 At Owner's option, Owner may undertake any or all tasks of Project Representative described in ARTICLE 2.
- 3.2 Owner's directions to Contractor will be made in writing either directly or through Project Representative in accordance with ARTICLE 2. No verbal representation shall be binding upon any party unless confirmed in writing.
- 3.3 Owner shall have the right to perform work related to the project under separate contract(s) in accordance with the provisions of ARTICLE 6.
- 3.4 Owner shall have the right to issue change orders from time to time which may alter the scope of work required by the contract documents. All change orders will be subject to provisions of ARTICLE 9.
- 3.5 Owner will have the authority to reject work which does not conform to the requirements of the contract documents and to require such remedial work at no charge to Owner as is necessary to correct the defective work. Where defective work is being performed by Contractor and Contractor fails to correct the defective work within a reasonable period of time as set out in ARTICLE 10, or repeatedly fails to carry out the work in accordance with the contract documents, Owner shall have the authority to order an immediate halt to all defective work. Any losses suffered by Contractor as a result of the halt shall be borne by Contractor without recourse to Owner. Issuance of a stop-work order shall not be construed as constituting a breach of the agreement nor authorize Contractor to refuse to perform other portions of the work which Owner has not halted.
- 3.6 Owner shall have the right to terminate the contract or suspend performance of the contract as set out in these general conditions or other contract documents.
- 3.7 Owner shall promptly pay Contractor all sums properly due as provided by ARTICLE 8. If Owner fails to issue payment for a period of forty-five (45) days after the certificate of payment has been approved by Project Representative, without a written statement indicating why payment is being withheld, then Contractor may terminate the contract upon seven (7) days written notice to Owner and may recover from Owner payment for all work executed and for any proven losses sustained upon any materials, equipment and tools, including a reasonable profit and overhead.
- 3.8 Owner and Contractor warrant that neither party will maintain an action against the other for punitive or exemplary damages.

### **ARTICLE 4 CONTRACTOR'S GENERAL RIGHTS AND DUTIES**

#### **4.1 EXAMINATION OF SITE AND CONTRACT DOCUMENTS**

- 4.1.1 The term "Contractor" means the person or entity identified in the Agreement which has contracted with Owner to perform the work of the contract. This definition includes a responsible officer of Contractor's organization or its authorized representative who shall be made known to Owner.
- 4.1.2 Contractor represents by execution of the Agreement that Contractor has carefully examined the contract documents and the site upon which the work is to be performed and has developed familiarity with the nature, extent, site access, and risks involved in the work and with all local conditions and applicable statutes, ordinances and regulations that may affect the performance of the work. Contractor assumes full responsibility for having correlated Contractor's study of the contract documents and observation of the site. Contractor represents that Contractor has studied all available surveys and investigation reports of subsoil and latent physical conditions of the site and has made such additional surveys and investigations as Contractor deemed necessary for the performance of the work at the contract price, within the time specified and in accordance with the requirements of the contract documents.

- 4.1.3 Contractor shall not begin work until given a Notice to Proceed, which will be issued as promptly as possible after the Agreement has been executed by all parties. If Owner is required to delay issuance of a Notice to Proceed for more than five (5) working days because of fault of Contractor or other reasons which Owner deems sufficient, then Contractor shall be notified in writing of the delay and when issuance of the Notice to Proceed is anticipated.
- 4.1.4 Before commencing any part of the work, and prior to undertaking each subsequent phase of the work, Contractor shall carefully study the plans and specifications and check and verify all previous work and pertinent dimensions, figures and amounts shown in them and shall make all applicable field measurements. Contractor shall at once report in writing to Owner any apparent conflict, ambiguity, discrepancy, error or other omissions which Contractor may discover. Contractor shall be liable to Owner for failure to notify Owner of any conflict, ambiguity, discrepancy, error or other omissions which Contractor discovered, but failed to report to Owner and shall be responsible for providing a remedy.
- 4.1.5 Contractor shall lay out the work from established base lines and bench marks indicated on the drawings and shall be responsible for all measurements in connection therewith. Contractor will be held responsible for the execution of the work to such lines and grades. It shall be the responsibility of Contractor to maintain, preserve, or replace all stakes and other marks.
- 4.1.6 Drawings showing location of equipment, piping, etc., are diagrammatic and job conditions will not always permit installation in the location shown. If a situation occurs which may require relocation of an item or system which substantially differs from the location called for in the contract documents, it shall be brought to Owner's attention immediately and the relocation determined with the concurrence of Architect or Engineer. If Contractor relocates such items without approval, Contractor will be responsible for any cost or expense for removal or further relocation necessitated by installation without approval.

## **4.2 SUBMITTALS**

- 4.2.1 Within 10 days after the effective date of the notice to proceed and prior to commencement of work, Contractor shall submit to Owner the construction progress schedule and schedule of values required in Articles 4.2.2, 4.2.3 and 4.2.4. The schedule of values and progress schedule must be acceptable to owner and provide reasonable divisions of contract work with corresponding payment. No payment will be made under this contract prior to completion of this requirement. In cases of a unit bid project, the bid schedule on the bid form will be the schedule of values.
- 4.2.2 In accordance with the requirements governing submittals as provided in the contract documents, Contractor shall prepare and submit to Owner a detailed progress schedule for the work which reveals and identifies the critical path of progress, which is consistent with the work and time required by the contract, and which shall provide for the most expeditious and practicable execution of the work. Float time between work items is part of the project and not property of the Contractor. Float time is defined as the amount of time that spans from completion of one previously scheduled activity and extends to the point at which the next scheduled activity is set to begin.
- 4.2.3 Contractor shall also provide Owner with a proposed schedule of values upon submittal of a detailed progress schedule for the work. The schedule of values shall be allocated to various portions of the work and be prepared in such a form and supported by such data to substantiate its accuracy as reasonably required by Owner. Each item of work shall include all applicable profit and overhead. This schedule of values, unless objected to by owner shall be the basis for progress payments made to Contractor and shall include specific lump sum amounts for "Final Payment." This line item shall be in conformance with guidelines specified in ARTICLE 8. Contractor, at the request of Owner, shall amend the progress schedule and the schedule of values as the work progresses.
- 4.2.4 The schedule of values must show a complete breakdown of all phases of the work required by the contract documents. Payment will be in accordance with ARTICLE 8. Pay requests, schedules of value and progress schedules must correspond.
- 4.2.5 Contractor shall submit for Architect's and Owner's approval all product data required by the contract documents in conformance with the dates specified in the detailed progress schedule. Such data include illustrations, standards, schedules, performance charts, instructions, brochures, diagrams, or other

information necessary to assist Architect in determining whether a proposed product meets the intent of the contract documents.

- 4.2.6 Contractor shall also submit physical samples of materials, equipment or workmanship where required by the contract documents. After approval by Owner and Architect, the sample shall be established as the minimum standard of work, material, equipment or other quality which will be acceptable for work of which the sample is representative.
- 4.2.7 Submittal of shop drawings by contractor constitutes a representation by contractor that the submittal and work, or products required or to be used in accordance with that submittal, will meet or exceed the criteria and conditions of the contract documents and that performance of the work identified in those submittals will meet the progress schedule.
- 4.2.8 Before initiating any work for which shop drawings are required, Contractor shall obtain Architect's approval of the shop drawings, which include drawings, diagrams, schedules and other data specially prepared by Contractor, a subcontractor, a manufacturer, a supplier or distributor to illustrate in detail that portion of the work. Contractor shall review, approve, and submit all shop drawings, whether prepared by himself/herself or subcontractor or supplier. It shall be the duty of Contractor to provide a whole or complete system and to coordinate all work depicted by a particular shop drawing with the work required by other shop drawings for that portion of the work or for related or adjacent work.
- 4.2.9 Contractor shall provide a copy of all transmittal letters to Project Representative at the time the submittal is made to Architect. Architect will review Contractor's submittals only for conformance with the design concept of the work and the information given in the contract documents. Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component. Architect will return reviewed submittals to Contractor with written comments and forward one set to Project Representative with reasonable promptness so as to cause no delay. A minimum of five (5) sets of submittals shall be required.
- 4.2.10 Should Architect reject any proposed shop drawings, product data or sample, Contractor shall resubmit revised drawings, samples or product data and draw Architect's attention to any deviation or revisions other than those requested by Architect.
- 4.2.11 All of Contractor's submittals shall be made in conformance with the dates specified in the detailed progress schedule with reasonable promptness and in such sequence as to cause no delay in the work of Owner or any separate contractor.
- 4.2.12 The Contractor shall provide two (2) hard copies and an electronic .PDF file of the operation and maintenance manuals for equipment and systems incorporated in the work.

#### **4.3 SAFETY AND CONTROL OF SITE**

- 4.3.1 Contractor is deemed to be in physical control of the work site. Contractor shall confine Contractor's operations at the site to those areas described in the contract documents or permitted by applicable statutes, ordinances or permits.
- 4.3.2 Contractor shall not unreasonably encumber the site with materials, equipment or ancillary construction. Contractor shall be responsible for eliminating or minimizing to the extent reasonably possible, public hazards and inconveniences which might result from this work.
- 4.3.3 Contractor shall at all times keep the premises free from accumulation of excess snow, waste materials or rubbish and shall keep adjacent public road clear of mud and dust caused by Contractor's activities. At the completion of the work, Contractor shall remove all waste materials and rubbish from the project as well as Contractor's tools, equipment and surplus materials. The removal and disposal of waste materials, rubbish, or other material, shall be accomplished in accordance with all local, state and federal requirements.
- 4.3.4 Contractor shall be responsible for initiating, maintaining and supervising all necessary safety precautions in connection with this work and shall be responsible for ascertaining and adhering to all applicable federal, state, and local standards, laws, ordinances, regulations, requirements and any lawful order of any public authority bearing on the safety of persons or property or their protection from damage, injury, or loss.

- 4.3.5 Contractor's duty to maintain a safe and secure project site shall include all precautions necessary to assure the safety and protection against injury and damage, of all employees engaged in the work and any other person who may be affected by the work including Owner's agents and employees; Contractor's agents and employees; and members of the general public. Contractor shall assure the safety and protection of all work, materials and equipment which may be upon the site; utilities and other property of Owner including portions of structures and utilities not designated for removal or relocation, trees, shrubs, lawns, walks, pavements and roadways. Contractor duties include but are not limited to protection of project site from vandalism. Such precautions shall further include but not be limited to protection from dangers from hazardous materials.
- 4.3.6 Contractor shall take all necessary measures to prevent members of the general public from entering upon the site without the permission of Owner or Contractor.
- 4.3.7 Contractor shall comply with all OSHA requirements, give all safety notices, erect and maintain all reasonable safeguard notices and barriers, including danger signs and fences which may be required to protect the site and limit access to it.
- 4.3.8 In the event of an emergency, the Contractor will take all means necessary to minimize all damage to or exposure from effects of a catastrophic event. In such case, the Contractor may consult with Owner or seek Owner's assistance. The responsibility for protection of the site, work, and all material remains with the Contractor.
- 4.3.9 Contractor shall designate a person in Contractor's employ at the site to be primarily responsible for the prevention of accidents, identification of all applicable safety standards, statutes and regulations, including but not limited to those addressing hazardous material, and full compliance therewith. This person shall be Contractor's Superintendent unless otherwise designated by Contractor in writing to Owner.
- 4.3.10 Should Project Representative or other representative of Owner ascertain that a safety danger exists, Project Representative or Owner may order an immediate cessation of all dangerous activity and a correction of any safety hazard. Written notice of the order to stop work or to correct the safety hazard shall be made to Contractor as soon as practicable. Contractor shall have no recourse against Owner for any alleged losses or delays arising from this section unless the order to stop work or correct safety deficiency is wholly without basis.
- 4.3.11 Should Contractor elect to utilize explosives or other hazardous materials or equipment, or should Contractor be required to do so for the execution of the work, Contractor shall first give jurisdictional authorities and Owner notice of the intention to utilize hazardous materials, explosives or equipment at a particular time and date. Contractor shall use the utmost care in utilizing such materials and shall use only properly qualified and licensed personnel.
- 4.3.12 Contractor shall correct any damage to the property of Owner or other parties which arises out of the activities or omissions of Contractor, Contractor's agents, subcontractors, employees, personnel or suppliers. Contractor shall commence remedial activities within seven (7) days from the date of the damage. If Contractor fails to do so, Owner or the affected party may utilize his own forces to correct or replace the damaged property and Contractor shall promptly reimburse Owner or the affected party for all losses and costs thereupon. In the event Contractor fails to reimburse Owner as set forth herein, Owner may set off the amount due Owner from any amount due Contractor.

#### **4.4 SUPERVISION AND QUALITY OF THE WORK**

- 4.4.1 Contractor shall supervise and direct the work using the best skill and attention. Contractor is responsible for, and agrees to comply with all applicable local, state and federal ordinances, laws, regulations and statutes. Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures, and for the schedule and coordination of all portions of the work to be performed under the contract. Contractor shall also be required to coordinate the work with that of any other contractor working on the project so as to minimize delay, inconvenience, and expense to both. Where identified in writing by Owner at any time, Contractor shall be required to coordinate the work with any partial use of the site that Owner deems necessary.



- 4.4.2 All materials and equipment shall be applied, installed, connected, erected, used, cleaned, prepared or conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processor except as otherwise provided in the plans and specifications.
- 4.4.3 Contractor shall keep on the job site at all times during work progress, a competent resident superintendent capable of reading and thoroughly understanding the plans and specifications. The superintendent will be Contractor's representative at the site and all communications given to the superintendent shall be as binding as if given to Contractor directly. In the event Contractor decides to replace the superintendent, Contractor shall submit to Owner a written notice including the proposed new superintendent's qualifications. The superintendent shall not be replaced without this written notice and a statement of non-objection by the Owner.
- 4.4.4 Contractor shall provide sufficient, competent, and suitable qualified personnel to survey and lay out the work and to perform all construction required by the contract documents. Contractor is responsible for maintaining good discipline and order at the job site at all times and shall not employ any unfit person or anyone not skilled in the task assigned to that person.
- 4.4.5 Contractor shall be fully responsible to Owner for the acts and omissions of Contractor's employees and agents, Contractor's subcontractors and their employees and agents, and any other persons performing any of the work for the benefit of Contractor.
- 4.4.6 Contractor shall not permit the possession or use of alcohol or controlled substances on the site, and shall remove from the site any person who possesses, uses, or is under the influence of alcohol or controlled substances. Contractor shall require all Contractor's agents, subcontractors, employees or suppliers who perform work on site to sign a statement that they have been informed and will abide by the above policy. A copy of all such statements shall be kept at the job site throughout the duration of Contractor's work.
- 4.4.7 Contractor warrants to Owner that all work will be free from faults and defects and meeting or exceeding the requirements of the contract documents and all local, state, and federal legal requirements. All work not so conforming to these standards will be considered defective, and Owner may require its correction.

#### **4.5 DIVISION OF THE WORK**

- 4.5.1 The division of the work into various specialties and divisions in the contract specifications and drawings shall not bind Contractor in apportioning the work among various subcontractors, specialty contractors or workers, and Contractor's own employees.

#### **4.6 TITLE 36 AND OTHER STATUTORY REQUIREMENTS**

- 4.6.1 Contractor shall give and post all notices and comply with all federal, state, and local laws, ordinances, regulations, requirements and any lawful order of any public authority bearing on the performance of the work, and shall notify Owner in writing if the drawings and specifications or the contract documents are at variance therewith. If Contractor knows or should know that Contractor is performing work contrary to such legal requirements without giving written notice to Owner in time for Owner to give a stop work order, the Contractor shall bear all costs to remedy that work and to bring it into conformance with the applicable requirements. In the event Contractor fails to reimburse Owner as set forth herein, Owner may set off the amount due Owner from any amount due Contractor. This requirement does not lessen or alter the requirement for indemnification stated in ARTICLE 4.13.
- 4.6.2 Contractor and subcontractors shall strictly comply with all requirements of Title 8, Chapter 30 of the Alaska Administrative Code and Title 36 of the Alaska Statutes as applicable to this contract.
- 4.6.3 Contractor or subcontractors of the contractor shall pay all employees unconditionally as required by AS 36.05.040 and any other applicable laws or regulations. Wages may not be less than those stated in the advertised specifications, regardless of the contractual relationship between the Contractor or subcontractors and laborers, mechanics, or field surveyors. The wages are determined for the region in which the work is done and the rates are issued by the Alaska State Department of Labor (see attached Title 36 wage schedule). The scale of wages to be paid shall be posted by Contractor in a prominent and easily accessible place at the site of the work. If it is found that a laborer, mechanic or field surveyor employed by the Contractor or subcontractor has been or is being paid a rate of wages less than the rate

of wages required by this contract, Owner may, on written notice to Contractor hold Contractor in immediate default and terminate Contractor's right to proceed with the work or that part of the work for which there is a failure to pay the required wages, and Owner may prosecute the remaining work to completion by contract or otherwise, holding Contractor and Contractor's sureties liable for any costs in excess of the contract price. In the event Owner permits Contractor to pursue further work under the contract, Owner shall withhold so much of the accrued payments as is necessary to pay to laborers, mechanics, or field surveyors employed by the Contractor or subcontractors the difference between the rates of wages required by the contract to be paid laborers, mechanics, or field surveyors on the work and the rates of wages in fact received by laborers, mechanics, or field surveyors.

- 4.6.4 A copy of certified payrolls shall be provided to the Project Representative with each Progress Payment Request.

#### **4.7 PROJECT RECORDS**

- 4.7.1 Contractor shall maintain at the project site copies of plans and technical specifications, approved shop drawings and manufacturers' information sheets, and other contractor documents which are necessary for the expeditious and correct execution of the work.
- 4.7.2 Contractor shall maintain at the project site a complete daily job report showing job conditions, work activities started, in progress, interrupted and completed; work force, including identification and number of Contractor's employees and subcontractors by craft; receipt and disposition of materials and equipment; tests performed, visiting personnel and any accidents on a particular day. Owner shall have access to the daily report at all times. A copy of each daily report shall be provided to Project Representative at the end of each week.
- 4.7.3 Contractor shall keep one record copy of all specifications, drawings, addenda, modifications, and shop drawings at the job site in good order and annotated to show all changes made during the construction process. These shall be available to Owner during construction and turned over to Owner prior to final completion of the work.

#### **4.8 ALLOWANCES**

- 4.8.1 Contractor shall include in the contract sum all allowances stated in the specifications or plans, and all items covered by these allowances shall be supplied in such amounts, or by such a person, as Owner may direct. The allowance shall include the cost to Contractor, less applicable trade discounts, of materials and equipment required by the allowance; delivery at the site, applicable taxes; Contractor's cost for unloading and handling on the site, for labor, installation, overhead, profit and other expenses incurred by Contractor. Whenever the cost of the allowed item exceeds or is less than the allowance, the contract sum shall be adjusted equitably by change order.

#### **4.9 NONDISCRIMINATION**

- 4.9.1 Contractor must comply with all federal and state laws, rules, regulations and orders, and all local ordinances, regulations and rules concerning wages, taxes, social security, workers' compensation, nondiscrimination, licenses, registration requirements, and similar provisions governing employment of individuals.
- 4.9.2 Contractor will not discriminate against any employee or applicant for employment or refuse employment to a person, or bar a person from employment, or discriminate against a person in compensation or in a term, condition, or privilege of employment because of the person's race, religion, color, or national origin, or because of the person's age, physical or mental disability, sex, marital status, changes in marital status, pregnancy, or parenthood when the reasonable demands of the position do not require distinction on the basis of age, physical or mental disability, sex, marital status, changes in marital status, pregnancy, parenthood, or political affiliation. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. Contractor further agrees to insert this provision in all subcontracts hereunder and to require the subcontractors to insert this provision in their subcontracts.

Notwithstanding the prohibition against employment discrimination on the basis of marital status or parenthood stated above, an employer may, without violating this provision, provide greater health and retirement benefits to employees who have a spouse or dependent children than are provided to other employees.

- 4.9.3 Contractor shall state, in all solicitations or advertisements for employees to work on contract jobs, that all qualified applicants will receive consideration for employment in accordance with the above referenced nondiscrimination clause.
- 4.9.4 Contractor shall comply with the reporting requirements which the State of Alaska may establish by regulation.
- 4.9.5 Contractor shall include the provisions of these paragraphs in this section in every subcontract or purchase order under this contract so as to be binding upon every such subcontractor or vendor of Contractor under this contract.

#### **4.10 TAXES**

- 4.10.1 Contractor shall pay all sales, consumer, use and other taxes for the work or portions thereof provided by Contractor which are legally enacted at the time bids are received, whether or not yet effective.
- 4.10.2 Contractor shall comply with Owner's requirements for payment of taxes. This contract is specifically subject to the provisions of City of Kenai Code, as it now stands or as it may be amended, including but not limited to termination of the contract for non-compliance. If the violation arises from failure to file or remit sales taxes, no payment will be made to Contractor until all filings have been made and all amounts due are paid.

#### **4.11 PERMITS, FEES, AND NOTICES**

- 4.11.1 Contractor shall secure the building permit from the City of Kenai at no cost. Unless otherwise provided in contract documents, Contractor shall secure and pay for all other legally required permits and government fees, licenses and inspections necessary for the proper execution and completion of the work. These are customarily secured after execution of the contract. These costs are part of the contract price. This provision does not lessen the requirements set out in ARTICLE 1.4.
- 4.11.2 Contractor is required to comply with all permits obtained by Owner for project, if any. Contractor is responsible for requesting information from Owner regarding any applicable permits obtained by Owner.

#### **4.12 ROYALTIES AND PATENTS**

- 4.12.1 Contractor shall pay for all royalties and license fees. Contractor shall defend all suits or claims for infringement of any patent rights and shall save Owner harmless from loss on account thereof.

#### **4.13 INDEMNIFICATION**

- 4.13.1 The contractor shall indemnify, hold harmless, and defend the City at its own expense from and against any and all claims, losses, damages or expenses, including reasonable attorney's fees, of, or liability for, any wrongful or negligent acts, errors, or omissions of the contractor, its officers, agents or employees, or any subcontractor under this contract. The contractor shall not be required to defend or indemnify the City for any claims of, or liability for, any wrongful or negligent act, error, or omission solely due to the independent negligence of the City. If there is a claim of, or liability for, the joint negligence of the contractor and the independent negligence of the City, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. Apportionment shall be determined upon final determination of percentage of fault. If any such determination is by settlement, the percentage of fault attributed to each party for purposes of this indemnification provision shall only be binding upon the parties included in the settlement agreement. "Contractor" and "City" as used in this article include the employees, agents, officers, directors, and other contractors who are directly responsible, respectively, to each. The term "independent negligence of the City" is negligence other than in the City's selection, administration, monitoring, or controlling of the contractor and in approving or accepting the contractor's work.

## **ARTICLE 5 SUBCONTRACTORS AND SUPPLIERS**

### **5.1 DEFINITIONS AND RESPONSIBILITIES**

- 5.1.1 A subcontractor is a person or entity having a direct contractual relationship with Contractor, or with one of Contractor's subcontractors, to perform any of the work at the site. A supplier is any manufacturer or person or firm providing materials, equipment or assemblies to Contractor or to one of the subcontractors for inclusion in this project.
- 5.1.2 All contracts between Contractor, subcontractors and suppliers (whether or not in privity with Contractor) shall be in accordance with the terms of this contract and shall incorporate the General Conditions of this contract. Contractor shall include in such contracts, and require its inclusion in any subcontracts, a provision holding any subcontractor or supplier (whether or not in privity with Contractor) directly accountable to Owner for work which fails to meet the requirements of the contract documents, or which prevents Contractor or any subcontractor from performing work. This direct accountability to the Owner shall be in addition to Contractor's liability for any such failure.
- 5.1.3 The provisions in this ARTICLE shall not be construed as creating a right of recourse, or any direct contractual relationship, between Owner or Owner's agents and any subcontractor, supplier, or manufacturer (whether or not in privity with Contractor).
- 5.1.4 Contractor shall make all necessary copies of these contract documents available to Owner and to each subcontractor and shall require each subcontractor to make copies of these contract documents available to each of Contractor's subcontractors, if any.
- 5.1.5 Contractor shall be fully responsible for enforcing discipline among subcontractors, their employees and their subcontractors, and for insuring that each subcontractor performs the work in accordance with the contract documents and all safety regulations.
- 5.1.6 Contractor shall have the discretion to require subcontractor(s) to provide payment or performance bonds for work of the subcontractor(s).

### **5.2 AWARDS TO SUBCONTRACTORS AND SUPPLIERS**

- 5.2.1 At Owner's request Contractor shall submit to Owner a list of all principal subcontractors and material suppliers and shall not contract with any proposed person or organization to whom Owner voices a reasonable objection. This provision applies to substitution of subcontractors or suppliers subsequent to Owner's initial objection to a proposed person or entity. Such list shall be submitted in accordance with Division 1 requirements as provided in the contract specifications.
- 5.2.2 Rejection of a proposed subcontractor or material supplier shall not entitle Contractor to any increase in the contract sum or time.
- 5.2.3 At Owner's request Contractor shall submit to Owner a copy of any subcontract and any purchase orders for materials and equipment prior to purchase of such items.

### **5.3 CONTRACTOR PAYMENTS TO SUBCONTRACTORS AND SUPPLIERS**

- 5.3.1 Recognizing the importance of maintaining the integrity of a public contract, Contractor warrants that Contractor will pay all subcontractors and material suppliers at least monthly on or about the 20th day of each month upon approval of the subcontractors' and materials suppliers' billing, for all apparently acceptable work performed on the site during the preceding month and for all apparently acceptable material incorporated into the project or delivered and properly stored at the site during any month for which Contractor has received payment from Owner. If Owner retains a percentage of sums due, Contractor may retain a like percentage, but when retainage is paid, Contractor must pay to the subcontractor or supplier interest on retainage equal to interest rate paid to Contractor by Owner.
- 5.3.2 In furtherance of Contractor's warranty under this ARTICLE and ARTICLE 8, Owner, may require Contractor to declare Contractor's status of accounts with any or all the subcontractors and suppliers. A proof of payment to subcontractors and suppliers shall be made in a form acceptable to Owner. If Contractor

breaches this warranty and fails to pay each subcontractor and materials supplier within 45 days after a monthly billing has been presented, then Owner reserves the right to withhold sufficient sums from Progress Payments due to Contractor and to issue payment to the subcontractors or material suppliers directly. This ARTICLE shall not be construed as creating a right in the subcontractors or material suppliers to have direct recourse against Owner for payment. Contractor expressly agrees that Owner will not be liable for any exercise of Owner's discretionary right under this section, and Contractor agrees to release and indemnify Owner for any claims arising therefrom, either by Contractor directly or by any subcontractor or material supplier. Likewise, this ARTICLE shall not be construed as creating a right in Contractor's surety or any other subrogated party to have direct recourse against Owner for failure to withhold sums pursuant to this section.

## **ARTICLE 6     SEPARATE CONTRACTS**

- 6.1 Owner has the right to award separate contracts for work on the project that is not included in this contract.
- 6.2 When separate contracts are awarded for different portions of the Project or other work on the site, the term Contractor in the contract documents in each case shall mean the Contractor who executes each separate contract.
- 6.3 Contractor shall afford other contractors and Owner's own forces reasonable opportunity for the introduction and storage of materials and equipment and for the execution of their work and shall properly connect and coordinate Contractor's work with theirs as required by the contract documents.
- 6.4 Any costs caused by defective or ill-timed work under separate contracts shall be borne by the party responsible thereof and shall be paid promptly.
- 6.5 When separate contracts are let within the limits of any one project, each Contractor shall conduct the work so as not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with his or her contract and shall protect and save harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

- 6.6 If any part of Contractor's work depends upon work performed by Owner or any separate contractor, prior to proceeding with the work, Contractor is required to report to Owner any apparent discrepancies, defects or delays in the other work which impede proper execution of the work required by this contract. If Contractor fails to report such unsuitable work by another contractor to Owner, then Contractor shall be deemed to have accepted the unsuitable work and any liability for all deficiencies, damages and costs which arise as a result of the defective work or of Contractor's use or covering of the unsuitable work.
- 6.7 Should Contractor or any subcontractor delay or cause damage to the work or property of any other contractor or person, Contractor shall repair the damage or settle the claim and shall further, to the extent allowed by law, indemnify, defend, and hold Owner harmless from any and all claims, costs, expenses, injury, damages, or loss of any kind, including attorneys' fees, court costs, or arbitration costs, which arise out of such delay or damage.
- 6.8 Should a dispute arise between Contractor and separate contractors as to the responsibility for completing, finishing or cleaning up particular work or a portion of the work, Owner may complete, finish or clean up the disputed portion and apportion the cost among Contractors responsible as Owner shall determine to be equitable.

## **ARTICLE 7     BONDS AND INSURANCE**

### **7.1     PERFORMANCE AND PAYMENT BONDS**

- 7.1.1 For contracts with a contract sum of one hundred thousand dollars (\$100,000) or greater, or as otherwise specified in the request for bid, Contractor shall provide as part of the basic contract sum, a performance bond and a payment bond, each in the amount of 100% of the contract amount, prior to Owner's execution

of the contract. Contractor shall have no recourse of any kind against Owner, if Owner declines to award a contract due to Contractor's failure to provide the required bonds. These bonds, in whatever amount required by the specific contract, shall be administered and deemed governed by the provisions of Alaska Statutes Title 36, Chapter 25 and shall comply with all requirements for payment and submission of claims as provided by that chapter.

- 7.1.2 All bonds shall name Owner as the beneficial party and shall protect Owner for a period of at least one year subsequent to the date of final payment upon this contract. All bonds shall be executed upon a form acceptable to Owner and by a surety company licensed to do business within the State of Alaska and acceptable to Owner. The form of the bond shall provide that Owner shall have at least thirty (30) days prior notice of any lapse in bond coverage. The bond payment shall be applicable to all subcontractors or material suppliers (whether or not in privity with Contractor) who might attempt to assert a claim against Owner.
- 7.1.3 Owner may inform the surety as to the general progress and status of the work. A copy of all communications with the surety company shall be provided promptly to Contractor upon request.
- 7.1.4 In the event Contractor refuses, or is unable to make payments to laborers, subcontractors or material suppliers, or to complete the work, or to correct defective work, within the times provided by this contract, Owner may elect to call upon Contractor's surety to rectify Contractor's default. Contractor shall first be given seven (7) calendar days written notice (effective when mailed) of Owner's intentions to call upon the surety company and Owner shall specify to Contractor the basis for the proposed course of action. If Contractor fails to correct the default within the time provided, Owner shall promptly call upon the surety.
- 7.1.5 Prior to final payment or reduction in retainage, Contractor shall provide written consent of each affected surety releasing Owner from any further claims arising from payment to Contractor and obligating the surety company to rectify any default, nonpayment, defective work, error, omission or deficiency of Contractor.
- 7.1.6 Contractor and Owner expressly agree that Owner shall be entitled to retain from payments to Contractor amounts in excess of normal retainage if these additional amounts may be necessary to indemnify Contractor's surety for any payment or corrective work which the surety might be required to undertake. This additional retainage will be made only upon written directive by Contractor's surety specifying the reason for retaining extra amounts, the amounts to be retained and agreement of the surety to reimburse Owner for any interest which may be due Contractor under the provisions of the Alaska Statutes.

## **7.2 CONTRACTOR'S INSURANCE**

- 7.2.1 The services to be rendered under this contract are those of an independent Contractor.
- 7.2.2 Contractor and all subcontractors, if any, shall be responsible for the purchase and maintenance of all insurance required by law and at a minimum purchase the insurance coverage as specified in ARTICLE 7.2.5 and 7.2.6 below, and any other insurance coverage as may be specified in ARTICLE 7.2.11 SUPPLEMENTARY GENERAL CONDITIONS OF INSURANCE, if attached and forming a part of this contract. Such insurance shall be by a company/corporation currently rated "A-" or better by A.M. Best.
- 7.2.3 This insurance coverage required by ARTICLE 7.2.5 and 7.2.6, and ARTICLE 7.2.11 if attached, shall be in acceptable form, and for the amounts specified by the City of Kenai, or as required by law, whichever is greater.
- 7.2.4 The insurance policies shall remain in force for the life of the contract and shall be a part of the contract price.
- 7.2.5 Commercial general liability with minimum coverage of \$1,000,000 and automobile liability insurance with minimum coverage of \$1,000,000 combined single limit bodily injury and property damage per occurrence. This insurance shall be primary and exclusive of any other insurance carried by the City of Kenai. The commercial general liability insurance shall be without limitation on the time within which the resulting loss, damage, or injury is actually sustained.
- 7.2.6 Per Alaska State Statutes, Worker's Compensation and Employers Liability Insurance shall be provided for all employees who are performing work under this contract.

- 7.2.7 Certificate(s) of Insurance shall be provided by Contractor and all subcontractors, or their Insurance Companies and/or their Agents, naming the City of Kenai as an additional insured for the work specified in this contract with a waiver of subrogation for commercial general liability insurance and automobile liability insurance. The certificates of insurance must reference the specific contract by name. Workers compensation insurance must be endorsed for waiver of subrogation against the City. Certificates of Insurance, acceptable in form and content, will be delivered to Owner at the address designated for legal service in the agreement, at or prior to presentation of the contract for execution by owner.
- 7.2.8 There shall be no cancellation or material change of the insurance coverage, or intent not to renew the insurance coverages as specified in this contract, without thirty (30) days prior written notice to the City of Kenai. Notice of cancellation, material change in coverage, or intent not to renew will be delivered to the address designated for legal notice in the agreement.
- 7.2.9 Upon renewal or change in policies during the contract, Certificates of Insurance shall be delivered to the address designated for legal notice in the agreement.
- 7.2.10 Owner shall have the option to purchase and maintain such insurance as will protect Owner against property losses or liability claims, which may arise from operations under the contract. Insurance providing coverage against fire and extended coverage perils, may, at Owner option, provide coverage to the full insurable value of the project and insure the interests of Contractor and all subcontractors as their interests may appear. Any recovery for loss insured pursuant to this General Condition is to be adjusted to Owner and made payable to Owner as trustee for the insured, as their interests may appear. This section does not modify the contractor or subcontractors' responsibility to provide insurance as required in ARTICLE 7.
- 7.2.11 May be added in supplementals as Supplementary General Conditions of Insurance.

## **ARTICLE 8 MEASUREMENT, PAYMENT AND COMPLETION**

### **8.1 SCOPE OF PAYMENT**

- 8.1.1 Unless altered by change order, Contractor shall be paid only that sum set forth in the agreement between Owner and Contractor as Contractor's compensation for performance of all work required by the contract documents.

### **8.2 LUMP SUM PAY ITEMS**

- 8.2.1 Each bid item is characterized as either a lump sum item or a unit price item in the bid documents. Where the item is bid at a lump sum price, no additional compensation shall be paid to Contractor for additional work required because Contractor failed to include items or quantities in Contractor's estimate or a subcontractor's estimate, or failed to utilize proper construction means, methods, procedures or sequence or by virtue of any decision of Contractor.
- 8.2.2 Contractor is required to provide and pay for all requirements necessary for the proper execution and completion of the contract unless specifically excluded by the contract documents. The costs are part of the contract price. The requirements include but are not limited to the requirements stated in ARTICLE 1.4.
- 8.2.3 All materials and equipment incorporated in the work shall be new except as otherwise provided in the contract documents. All materials and equipment shall meet or exceed the requirements of the plans and specifications and Contractor shall furnish, if requested, satisfactory evidence as to the source, kind and quality of any materials and equipment.

### **8.3 UNIT COST ITEMS**

- 8.3.1 Quantities appearing in the bid schedule are approximate and are prepared for comparison of bids. Payment to Contractor will be for actual quantities of work performed and materials furnished in accordance with the contract documents. Scheduled quantities of work and materials may be increased, decreased or eliminated as provided herein.

### **8.4 APPLICATION FOR PAYMENT**

- 8.4.1 Applications for payment shall be based on Contractor's submitted schedule of values, as approved by Owner per Section 4.2. Schedule of values shall be prepared in such form and supported by such data as may be required by Owner to substantiate its accuracy prior to Contractor's first application for payment.
- 8.4.2 The schedule of values shall include quantities of work, unit prices and other items comprising the contract price. It shall subdivide the work into each component part in sufficient detail to serve as the basis for progress payments during construction.
- 8.4.3 With each subsequent application for progress payment, Contractor shall provide a schedule of values to Owner showing all work which has been performed to date together with the value thereof, and the percentage of work completed.

## **8.5 PROGRESS PAYMENTS**

- 8.5.1 Progress Payments shall be made monthly, based upon the amount of apparently acceptable work performed at the site and apparently acceptable materials purchased for the project and properly stored at the site during the previous month. Disbursement of progress payments will not effect a transfer of the risk of loss from the Contractor to the Owner for invoiced equipment or material. The risk of loss of the work and all material and equipment not yet incorporated in the work is the liability of the Contractor until substantial or final completion, whichever is earlier.
- 8.5.2 The value of work performed and materials stored shall be set forth in Contractor's revised schedule of values. If requested by Owner, Contractor shall promptly provide Owner any additional information necessary to ascertain the value of the work performed or the cost of materials stored at the site during the previous month. Each updated Schedule of Values shall be in the form of a notarized affidavit. Proof of certified payroll shall be provided per ARTICLE 4.
- 8.5.3 By application for payment, Contractor warrants and guarantees to Owner that title to all work, materials, and equipment for which payment is requested will pass to Owner either by incorporation in the construction and after substantial completion or upon receipt of payment, whichever occurs later, that such title will be clear of all liens, claims, security interests, and other encumbrances, except for liens to be released later prior to final payment and specifically identified on the application for payment, and that all such work, materials, and equipment are of acceptable quality.
- 8.5.4 Each application for payment shall be made no later than the tenth day of each month for work performed during the preceding month. Progress Payment requests shall be submitted to Project Representative for analysis and recommendation to Owner.
- 8.5.5 Project Representative will review Contractor's application for payment within seven (7) working days after receipt and if Project Representative ascertains that the amounts set forth therein are properly due and owing to Contractor, then Project Representative shall issue a Certificate of Payment to Owner. If Project Representative determines that only a portion of the sum requested is then properly due and owing to Contractor, then Project Representative may issue a Certificate of Payment in a lesser amount or may reject the application altogether. Project Representative will notify in writing both Contractor and Owner of the reasons for reduction or rejection of any application for Progress Payment.
- 8.5.6 Project Representative's issuance of a Certificate of Payment constitutes a representation that the work has progressed to the point indicated and that to the best of Project Representative's professional knowledge and information, Contractor is entitled to payment in the amounts certified.

## **8.6 RETAINAGE**

- 8.6.1 After receipt from Project Representative of the Certificate for Payment, Owner shall make payment to Contractor within thirty (30) days. Owner shall have the option to retain up to 10% of the full amount of the Certificate for Payment plus lump sum amounts for material and equipment not properly stored, or subject to damage prior to use. Amounts retained by Owner may be held by Owner until project completion. If the project involves grant money or the City has entered into a written contract with the state to provide state funds, payment will be made in accordance with AS 36.90.200-270.



- 8.6.2 Owner may withhold additional sums of money from progress payments in an amount sufficient to safeguard and protect Owner against any apparently meritorious claims against Contractor by any party other than Owner, and for any work which Owner ascertains to be defective or not meeting the requirements of the contract documents.

## **8.7 CONDITIONS OF PAYMENT**

- 8.7.1 Project Representative may refuse to approve all or any part of any request for progress payment if, in Project Representative's opinion, it would be incorrect to make the representation to Owner set out in ARTICLE 8. Project Representative may also refuse to approve all or any part of any request for progress payment, if subsequently discovered evidence or the results of subsequent inspections or tests nullify any payment previously approved.
- 8.7.2 Owner may withhold payment to the extent necessary to protect Owner from loss resulting from:
- A. Defective or damaged work;
  - B. Claims or liens which have been filed or may be reasonably expected;
  - C. Contract price reduction by modifications or change orders;
  - D. Owner cost to correct or complete defective work;
  - E. Unsatisfactory prosecution of the work by Contractor, including but not limited to failure to furnish adequate submittals or to clean up the work or site;
  - F. Reasonable evidence that the work cannot be completed for the unpaid balance of the contract sum;
  - G. Failure of Contractor to make payment properly due to subcontractors, employees, suppliers or utilities;
  - H. Reasonable evidence to believe the work cannot be completed within the contract time.
  - I. Damage to Owner's property not replaced or repaired in timely manner.

When the grounds for withholding payment are removed, payment shall be made for amounts withheld.

- 8.7.3 Neither the issuance of a Certificate of Payment, nor the making of any progress payment, nor the partial or entire use of the project by Owner shall constitute an acceptance of any work not in accordance with the contract documents nor shall it constitute a waiver of any right accruing to Owner or of any duty of Contractor.

## **8.8 SUBSTANTIAL COMPLETION**

- 8.8.1 Substantial Completion is defined as the state of construction at which the work is sufficiently complete and in accordance with the contract documents, so that Owner could occupy and utilize the work or a specific portion of it, for its intended use.
- 8.8.2 When Contractor considers the work substantially complete Contractor shall notify Project Representative in writing and request a Substantial Completion inspection. The request shall be made a minimum of three business days in advance. The notice shall include a comprehensive list of items to be completed, reasons they are not completed and a date of anticipated completion. The notice shall also include copies of all code compliance inspections, the Certificate of Occupancy, if applicable, and any other documents required by the contract.
- 8.8.3 Project Representative shall schedule the Substantial Completion inspection and notify Contractor. The inspection will be performed by Project Representative, Architect, Design Engineers, and Owner personnel in the presence of Contractor. Should this inspection find the work not substantially complete, Owner may terminate the inspection and promptly notify Contractor in writing of the conditions for reinspection. Any deficiencies identified by this inspection will be listed and promptly furnished to Contractor for remedial action.
- 8.8.4 If Contractor has requested that Project Representative and Owner make an inspection to ascertain Substantial Completion, and if the work is not then substantially complete, Contractor shall be liable for all costs Owner, Architect, and Project Representative have incurred in making the inspection.

- 8.8.5 If it is determined on the basis of inspection that the work is substantially complete, Project Representative will issue a Certificate of Substantial Completion. Included in the certificate shall be a list of items which must be completed or corrected before final payment and the time within which such items shall be complete and corrected. Failure to include an item on this list does not alter the responsibility of Contractor to complete all work in accordance with contract requirements.
- 8.8.6 Certificate of Substantial Completion shall state the date of Substantial Completion and the respective responsibilities of Owner and Contractor for the maintenance, insurance and security of the work. Certificate of Substantial Completion shall specifically authorize Owner to take possession of the premises and utilize them for their intended purpose. Owner's beneficial occupancy of the premises shall make reasonable allowance for the performance of the work which Contractor must complete prior to final completion.
- 8.8.7 If Contractor fails to complete or correct work required by the Certificate of Substantial Completion within the time allowed, then the Certificate of Substantial Completion shall be voided and the contract time expended by Contractor shall be counted, and the acceptability of the work shall be inspected as if a Certificate of Substantial Completion had not been issued.
- 8.8.8 Upon Substantial Completion of the work and upon application by Contractor and certification by Project Representative, Owner shall make payment, reflecting adjustment in retainage, if any, for such work as provided in the contract documents.

## **8.9 FINAL COMPLETION AND WARRANTY PERIOD**

- 8.9.1 The terms Final Completion and Warranty Period refer to, respectively, the finalization of the construction phase and a one-year warranty period following the Substantial Completion. Final Completion shall be represented by a lump sum dollar amount identified on the schedule of values. Final Payment represents a sum of money to perform all tasks necessary from Substantial Completion to Final Completion, including completion of final punch list, completion of as-built data, turnover of all warranty information, notarized acknowledgments of payments, and relinquishment of claims against Owner.
- 8.9.2 When Contractor considers the work ready for Final Completion, Contractor shall forward to Project Representative an application for final payment including (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work have been paid or otherwise satisfied, (2) consent of surety, if any, to payment, (3) irrevocable, notarized proof of payment and relinquishment of claim against Owner, issued by every subcontractor (whether or not in privity with Contractor), material supplier and other party who might assert a claim against Owner, and (4) all other documentation required by the contract documents. Project Representative and Owner shall promptly inspect the work to see that it is fully performed and complete, that all portions of the work are acceptable and that the contract is fully performed aside from completion of the Warranty Period. After Project Representative has made a determination that these requirements have been met, Project Representative shall prepare and recommend that Owner issue a Certificate of Final Completion and Final Payment.
- 8.9.3 Project Representative's approval of Final Payment constitutes an additional representation by Project Representative to Owner that to the best of Project Representative's knowledge and information, all conditions which Contractor must fulfill prior to being entitled to Final Payment have in fact been fulfilled in accordance with the contract documents.
- 8.9.4 If any party refuses to relinquish its claim, or if Owner considers that any item or portion of the work: (1) is of doubtful acceptability under the contract documents; or (2) may diminish the value of the work; or (3) may prove to be ultimately unreliable; or (4) may prove to be less functional than required by the intent of the contract, then Owner, in lieu of refusing Final Payment to Contractor, may allow Contractor to furnish a bond in a form and in an amount satisfactory to indemnify Owner against losses occasioned thereby. If any additional costs to settle the claim or to correct work of doubtful quality accrue to Owner in excess of the indemnity available to Owner, Contractor shall refund to Owner all differences and costs which Owner might be compelled to pay, including all litigation costs and reasonable attorney fees.
- 8.9.5 Acceptance of final payment by Contractor constitutes an explicit waiver of all claims which Contractor might assert against Owner except those previously made in writing and identified by Contractor as unsettled at the time of the Application for Final Payment.

- 8.9.6 Final Payment to Contractor shall constitute a waiver of all claims which Owner might assert except those arising from: (1) unsettled claims; (2) faulty or defective work (3) failure of the work to comply with the requirements of the contract documents; (4) warranties required by this contract or that by their terms do not expire upon completion of the contract.
- 8.9.7 If, after Substantial Completion, Warranty Completion is delayed through no fault of Contractor, or by the issuance of change orders affecting Final Completion, Owner may, upon recommendation of the Project Representative, extend the contract time by a reasonable period and accept certified applications for further Progress Payments.
- 8.9.8 Upon completion of all requirements identified in ARTICLE 8 as "Final" the funds representing Final Payment shall be released to Contractor along with the Certificate of Final Completion. Upon issuance of Certificate of Final Completion all contract sums shall be accounted for to Contractor and shall be paid to Contractor. However, any and all applicable bonds shall not be released until after the Warranty Period.
- 8.10 TIME AND LIQUIDATED DAMAGES**
- 8.10.1 The time permitted for construction of the work will run from issuance of Notice to Proceed through the dates for Substantial Completion as specified in Agreement between Owner and Contractor, unless a specific completion date is specified.
- 8.10.2 The term "day" as used in this contract shall mean "calendar day" unless specifically stated otherwise.
- 8.10.3 All warranty periods and obligations accruing to Contractor through completion of the work shall be considered to begin on the date of Substantial Completion, unless otherwise agreed to separately in writing by Owner and Contractor.
- 8.10.4 Contractor shall begin the work as soon as possible after the date identified in Notice to Proceed and shall prosecute the work expeditiously and with adequate labor and materials.
- 8.10.5 Liquidated damages will be applied in the amount set out in the Agreement.
- 8.10.6 Claims for extension of time will be considered only if they affect "critical path" items specifically identified in the detailed progress schedule or in any applicable Supplementary Conditions. Claims for extension of the contract time must be made in writing to Owner not more than twenty (20) days after the reason for requested extension appears.

## **ARTICLE 9 CHANGES IN THE WORK, CONTRACT PRICE, AND TIME**

### **9.1 CHANGE ORDERS**

- 9.1.1 Without invalidating this contract, Owner may, at any time, order additions, deletions, or revisions in the work. All such changes must be authorized by written change order. Upon receipt of a change order, Contractor shall proceed with the work in accordance with applicable requirements of the contract documents. If any change order entails an increase or decrease in the contract price or an extension or curtailment of the contract time, adjustment will be made as provided herein.
- 9.1.2 Extra work will be paid for either at a fixed price specified in the change order (using unit prices or a lump sum amount) or on a time and materials basis.
- 9.1.3 Project Representative may authorize minor changes, alterations or deviations in the work in accordance with ARTICLE 2. These changes shall be authorized by written Field Order to be included in a subsequent Change Order.
- 9.1.4 Any additional work performed by Contractor without a properly executed change order will not entitle Contractor to an increase in the contract amount or to an extension of the contract time, except in the case of emergency threatening life, safety or property.

## **9.2 ISSUANCE OF CHANGE ORDER**

- 9.2.1 The contract sum constitutes the total compensation to Contractor for the work required by this contract. The contract price may be changed only by a properly executed change order. Any request for increase in the contract price shall be based upon written notice delivered to Project Representative within ten (10) days after the reason for the proposed increase appears. Change order proposals must be accompanied by all pertinent data and documentation, including a detailed estimate showing costs, quantities, unit prices and markups for overhead and profit.
- 9.2.2 Project Representative shall analyze Contractor's change order proposal and shall make a recommendation to Owner within a reasonable period of time. If Owner accepts the proposal, Project Representative shall prepare the change order for execution by Contractor and Owner.
- 9.2.3 The value of any work added or deleted by change order shall be determined by one of the following methods:
- A. Application of unit prices set forth in the bid: unit prices shall include all direct and indirect costs of the work, including labor, equipment (whether owned or rented), materials, home office expense, all overhead and profit.
  - B. Application of mutually accepted unit prices for work not covered by bid unit prices: unit prices shall include all direct and indirect costs of the work, including labor, equipment (whether owned or rented), materials, home office expense, all overhead and profit.
  - C. Mutual acceptance of a lump sum: Contractor's lump sum proposal must include an itemized breakdown of all costs of Contractor, subcontractors and suppliers. Breakdowns shall show quantities and prices of labor, materials, equipment and other direct costs. To direct costs shall be added the allowable combined overhead and profit as provided in ARTICLE 9.4.
  - D. At Owner's option, Contractor may be directed to proceed with additional work on a "time and materials" basis which may also stipulate a maximum "not to exceed" amount. Contractor will be required to maintain and submit detailed records showing all quantities and prices of labor, materials, equipment and other direct costs. To direct costs shall be added the allowable combined overhead and profit as provided in ARTICLE 9.4.
- 9.2.4 When both additions and credits for related work or substitutions are involved in any one change, the allowance for overhead and profit shall be based on the net change. All related items within a proposal shall be considered as a single item for purposes of computing overhead and profit.
- 9.2.5 When Contractor is directed to proceed on a time and materials basis, costs of the work shall be submitted daily for approval by Project Representative and may only include:
- A. Actual payroll costs for employees, as substantiated by certified payroll, in the direct employ of Contractor for the times actually utilized in prosecution of the additional work, including allowance for benefits which Contractor customarily provides its employees;
  - B. The actual substantiated cost to Contractor for all material and equipment incorporated into the work, including transportation and storage expenses;
  - C. The actual substantiated amounts of payments by Contractor to subcontractors for work performed by the subcontractors;
  - D. Any costs of special consultants to the extent authorized by Owner;
  - E. Substantiated equipment rental costs at reasonable market rates;
  - F. Additional supervision and travel costs reasonably related to the work performed;
  - G. Increased bond premiums;
  - H. Additional license fees, permits, or applicable taxes;

- I. Minor incidental expenses such as telegrams and long distance telephone charges.

To these direct costs shall be added the allowable combined overhead and profit as provided in ARTICLE 9.4.

- 9.2.6 Unless specifically agreed to by Owner in writing, the cost of additional work shall not include any portion of Contractor's general overhead, nor any sum attributable to Contractor's prosecution and supervision of the principal work at the site, nor any overtime expense, unless specifically agreed to by Owner in writing. Contractor shall not be compensated for any casualty or other losses or expenses attributable to negligence of Contractor or any person in its employ or any subcontractor or supplier.
- 9.2.7 Payment to Contractor shall be made only for the actual quantities of work performed and accepted or materials furnished, in conformance with the contract or applicable change order. When the accepted quantities of work or materials vary from the quantities stated in the bid schedule, Contractor shall accept as payment in full, payment at the original contract unit prices for the quantities of work and materials furnished, completed and accepted; except as provided in the contract documents.

### **9.3 UNIT PRICES**

- 9.3.1 When unit prices are used, and where the final quantity of a major contract item varies more than 25% above or below the bid quantity, either party to the contract may request an equitable adjustment in the contract unit price of that item. A major contract item is an item equal to 10% or more of the total contract.
- 9.3.2 When the final quantity of work is less than 75% of the bid quantity, the equitable adjustment shall be made for those units of work done and accepted, except that the total payment for the item shall not exceed 75% of the total amount bid for the item.
- 9.3.3 To determine unit prices for authorized changes or additions in the work that alter the quantity of work under a lump sum pay item, adjustment to the pay item will be determined by multiplying the added or deleted quantity by the quotient of the contract lump sum price and the estimated quantity shown on the original plans. Payment will be made under a new contract item established for that purpose. Adjustments will be made as a change order to the contract.
- 9.3.4 No allowance shall be made for any increased expenses, loss of expected reimbursement or loss of anticipated profits suffered or claimed, either directly from such alterations in quantities or indirectly from unbalanced allocations among the contract items by Contractor, or any other causes.

### **9.4 ALLOWABLE OVERHEAD AND PROFIT**

- 9.4.1 When the value of change order work is determined by the lump sum method or by the time and materials method, the following definitions and percentages shall apply.
- 9.4.2 Direct costs are defined as the net cost to Contractor to accomplish a given change. Costs of bonds and insurance associated with the change shall be applied after addition of indirect costs.
- 9.4.3 Indirect costs are defined as general operational charges relating to the accomplishment of a given change, including but not limited to small tools, incidental job burdens and general office expense.
- 9.4.4 Overhead and Profit: Allowances for all indirect costs shall be identified as combined overhead and profit and shall not exceed the percentages in the following schedule:
  - A. Additive work:
    - (1) Prime Contractor:
      - (a) 15% of the direct costs of own work in excess of \$1,000.00; 20% when the total value of own work is equal to or less than \$1,000.00.
      - (b) 8% of the direct costs of work performed by subcontractors not including subcontractor's overhead and profit.
      - (c) 8% of the direct costs of equipment.
    - (2) Subcontractors: percentages represented in subsections (a) and (b) are a maximum percentage

- allowed regardless of the tier or number of subcontractor(s) performing the work:
- (a) 15% total of the work performed by subcontractors in excess of \$1,000.00; 20% total of the work performed by subcontractor equal to or less than \$1,000.00.
  - (b) 8% of the direct costs of equipment.
  - (3) In no case shall overhead and profit exceed 23% of the direct costs of work or 16% of the direct costs of equipment when the cost of the work exceeds \$1,000.00. In no case shall overhead and profit exceed 28% of the direct costs of work or 16% of the direct costs of equipment when the cost of the work is equal to or less than \$1,000.00.

B. Deductive work:

- (1) Prime Contractor: 4% of the direct cost of deleted own work.

## **9.5 CONCEALED CONDITIONS**

- 9.5.1 This ARTICLE applies only when concealed conditions substantially at variance with the conditions set forth in the contract documents are encountered and these conditions were not foreseeable by Contractor or reasonably inferable from information provided by Architect or Owner in the bidding documents.
- 9.5.2 If it is determined the Contractor could not predict the concealed conditions as set forth under ARTICLE 9.5.1, Owner may issue a change order for the performance of additional work required with an equitable adjustment in the contract sum. Contractor shall not begin work upon any concealed condition until Owner has approved a written change order

## **ARTICLE 10 TESTING AND CORRECTION OF WORK**

### **10.1 TESTS AND INSPECTIONS**

- 10.1.1 Contractor shall be responsible for securing permits and approvals from entities having jurisdiction over the work. Contractor will provide any special testing or inspections required by the contract documents. Contractor shall notify Owner 48 hours prior to performing testing. Contractor shall not cover work that requires testing, inspection or approval until such testing, inspection, or approval has been completed. Owner reserves the right to approve the testing agency.
- 10.1.2 Neither observation by Owner nor inspections, tests, or approvals by Owner or Owner's testing agency shall relieve Contractor from Contractor's obligation to perform the work in accordance with the contract documents.

### **10.2 UNCOVERING OF WORK**

- 10.2.1 If any work is covered or buried contrary to contract requirements or Owner's written request, such work shall be uncovered at Owner's request for inspections, tests or approvals. Uncovering and recovering shall be at Contractor's expense, unless Contractor has given notice of intent to cover the work and Owner has not acted with reasonable promptness to provide any necessary tests, inspections or approvals.
- 10.2.2 If any work has been covered which Owner has not specifically requested to observe prior to covering, or if Owner considers it necessary or advisable that covered work be inspected or tested by others, then Contractor shall, at Owner's request, uncover, expose or otherwise make available for observation, inspection, or testing, that portion of the work as Owner may require. Contractor shall furnish all necessary labor, materials and equipment. If such work is found to be defective, Contractor shall bear all expenses, including compensation for any additional professional services and testing. If, however, the uncovered work is found not to be defective, Contractor shall be allowed an equitable adjustment in the contract price or the contract time. Only Contractor's direct costs attributable to the uncovering of work and its recovering shall be allowed.

### **10.3 DEFECTIVE WORK**

- 10.3.1 All work not meeting the requirements of the contract documents shall be considered defective.
- 10.3.2 Contractor shall promptly correct or replace any defective work. Any and all costs associated with correction or replacement shall be borne by Contractor. Contractor shall also bear the expense of making good all

work of others destroyed or damaged or required to be redone because of the correction or replacement of defective work.

- 10.3.3 If, after seven (7) days written notice to Contractor, Contractor fails to correct deficiencies or to provide Owner with an approved schedule for correcting defective work, Owner may, without prejudice to any other remedy it may have, make good deficiencies and deduct the cost thereof from the payment then or thereafter due Contractor. No extensions of time shall be allowed for correction of work that is defective.

## **ARTICLE 11 WARRANTIES**

- 11.1 Contractor unconditionally warrants for a period of one year from issuance of the Certificate of Substantial Completion the usability and quality of all work, labor and materials incorporated into the project, unless otherwise provided in the contract documents. After the approval of Final Payment and prior to the expiration of one year after the date of Final Completion, any work found to be defective shall be remedied promptly by Contractor within fourteen (14) days of written notice without cost to Owner and in accordance with Owner's written instructions. Contractor shall either correct such defective work, or, if it has been rejected by Owner, remove it from the site and replace it with acceptable work. If Contractor does not promptly comply with the terms of Owner's instructions, Owner may have the defective work corrected or the rejected work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be deducted from Warranty Period Payment, unless the surety elects to remedy deficiency.
- 11.2 In addition to other warranties set forth in this contract and in accordance with requirements stated in the contract documents, Contractor shall obtain and transmit to Architect all warranties on material and equipment incorporated into the work and either provided by the supplier or otherwise required by the contract documents. Transmittal of warranties to Owner shall be a prerequisite of the Certificate of Final Completion.
- 11.3 All material and equipment installed by Contractor shall have a manufacturer's warranty for a period of one year, except as otherwise provided by the contract documents. The period of warranty shall begin on the date of Substantial Completion unless otherwise noted on the Certificate of Substantial Completion. This article does not limit any manufacturer's warranty which extends for a period of time longer than that specified as minimum in the contract documents.
- 11.4 If a warranty period in excess of one year on a particular item or part of the work is required by the contract documents, the longer warranty period shall govern warranty obligations of Contractor.
- 11.5 Owner may accept defective work or materials found during the warranty period instead of requiring correction or removal and replacement. If acceptance occurs prior to approval of final payment, a change order shall be issued to reduce the contract price. If acceptance occurs after approval of final payment, an appropriate amount shall be paid by Contractor to Owner.
- 11.6 The provisions of this ARTICLE shall not be construed as limiting the right of Owner to make a claim against Contractor for work not constructed in accordance with the contract documents. Where a defect attributable to Contractor's or subcontractor's materials or workmanship appears after expiration of the one-year warranty period, Owner shall notify Contractor of the appearance of damages due to defective work or materials and shall offer Contractor the right to replace or repair all defective work and other work using Contractor's forces. If Contractor fails to correct the work and any consequentially damaged work within a reasonable time, or if Contractor refuses to correct the work, Owner may correct the work utilizing Owner's own forces. Contractor shall pay Owner all costs attributable to correction of the defective work and any consequential damages occasioned by the defective work.
- 11.7 Should Owner and Contractor agree to delay completion of any items, the one-year warranty period for those items shall commence upon written acceptance of each item by Owner.

## **ARTICLE 12 CLAIMS AND LITIGATION**

- 12.1 This contract shall be governed by the laws of the State of Alaska, and any lawsuit brought thereon shall be filed in the Third Judicial District at Kenai, Alaska.

- 12.2 No controversy or claim arising out of this contract shall be subject to binding arbitration unless both Owner and Contractor agree in writing to submit the question to arbitration at the time when the controversy arises.
- 12.3 All claims, disputes and other matters in question between Contractor and Owner relating to the execution or progress of the work shall be referred initially to Project Representative, who shall render a recommendation in writing to Owner within a reasonable time.
- 12.4 During pendency of any claim arising out of this contract, Contractor shall carry on the work and maintain the Progress Schedule approved by Owner unless otherwise agreed by Contractor and Owner in writing. Should Contractor cease work, Contractor shall be in breach of this contract and Owner shall have the right to terminate the contract and to prosecute the work to completion with Owner's own forces or with a replacement Contractor. Contractor shall be responsible for any increase in costs to Owner above the contract price.
- 12.5 Contractor may make claims for additional costs only if the additional cost involved has occurred because of:
- A. A change order issued by Owner, where the additional sum due Contractor set forth in the change order is in dispute.
  - B. An order by Owner to stop the work where Contractor was not at fault.
  - C. Concealed conditions as set out in ARTICLE 9.
  - D. Failure of payment by Owner pursuant to ARTICLE 3.
  - E. Additional costs or delays caused by separate contractors' or Owner's forces in accordance with ARTICLE 6.
- 12.6 Contractor shall not make a claim for additional costs where the basis of the claim lies in an oversight or mistake made by Contractor during the bidding process or by reason of negligent acts or omissions of Contractor or any mistake in judgment or improper selection of construction means, methods, sequences and materials during the course of construction.
- 12.7 If Contractor is entitled to make claim for an increase in the contract sum, Contractor shall deliver to Owner written notice of Contractor's intention to assert each claim within twenty (20) days after occurrence of each event giving rise to the claim. Contractor must give this notice of claim and specify the full extent and nature of the claim(s) to Owner before proceeding to execute the work upon which a claim might be asserted. No claim for additional costs or compensation shall be valid unless the prior twenty (20) day notice has been given. Adherence to this provision shall be strict. Any adjustment in the contract sum resulting from settlement of claims shall be authorized by change order.

## **ARTICLE 13    TERMINATION OF THE CONTRACT OR SUSPENSION OF THE WORK**

### **13.1 TERMINATION BY OWNER**

- 13.1.1 Owner shall have the right to terminate the contract if Contractor should file for bankruptcy, reorganization, otherwise be declared insolvent, or if Contractor makes a general assignment for the benefit of creditors. Exercise of these rights, where required by law, is contingent upon relief from the automatic stay provisions of the United States Bankruptcy Court or through other appropriate court order. This right of termination is in addition to the right of Owner to terminate for cause outlined below and other rights of termination as stated in the contract documents.
- 13.1.2 Termination for cause: If Contractor: (1) repeatedly refuses or fails to supply enough proper skilled workmen; or (2) fails to pay promptly all subcontractors, suppliers, or other parties as set out in the contract documents; or (3) fails to adhere in all respects to the provisions of Title 8, Chapter 30, of the Alaska Administrative Code and Title 36 of the Alaska Statutes as applicable to this contract and all other pertinent statutes, ordinances or regulations or orders of any local, state, or federal authority concerning payment; or (4) allows insurance to lapse; or (5) if after seven (7) days written notice, without prejudice to any other remedy of Owner, Contractor fails to correct to Owner's satisfaction deficiencies in work that does not conform to the contract documents; or (6) allows a situation that creates a danger to person or property to arise. Where an emergency situation creating a danger to person or property arises, Owner may at its option terminate the contract and take possession of the site and any of Contractor's equipment and material necessary to complete an emergency response or hire a separate contractor to complete the



emergency response. Contractor shall be paid the contract rate for the material used and shall be paid for the use of Contractor's equipment at the price shown in the contract documents or at the rate for such equipment listed in RENTAL RATE BLUE BOOK FOR CONSTRUCTION EQUIPMENT, published by Machinery Information Division of K-III Directory Corporation, 1735 Technology Drive, Suite 410, San Jose, California 95110. If the rate for such equipment is not so listed, reliable sources will be used to determine a reasonable rate.

- 13.1.3 In the event of termination for cause, Owner shall have the right of set-off, from any payment due Contractor, of all expenses, costs, and damages including but not limited to all professional and legal expenses and attorneys' fees and costs or other additional expenditures necessary to complete the projects that are occasioned by the termination. In the event such amounts exceed the amount of payment withheld, Contractor shall be liable to Owner for such amounts. No payment shall be made to Contractor prior to determination that a balance is due Contractor after the amount of set-off is determined.
- 13.1.4 Owner may terminate this contract at any time for the convenience of Owner for any reason deemed by Owner to be in the best interest of Owner.
- 13.1.5 If this contract is terminated for convenience, Contractor will be directed to make all necessary preparations for closing out the project and for safeguarding Owner's materials and the work already completed. Contractor will be paid for all conforming work done to date and for all materials delivered to the site and already paid for by Contractor, together with all reasonable costs directly attributed to termination, including fixed overhead. Contractor shall be responsible for minimizing the extent of such expenses and shall **not** be paid for expenses which could have been reasonably avoided. On the date that notice of termination or suspension for convenience is issued, Contractor shall immediately take all actions necessary to stop orders of material, rental of equipment or premises, employment of persons on the project, and shipment of materials not yet delivered to the site. The notice of termination or suspension for convenience shall specify a date by which all steps necessary for termination shall be completed and by which Contractor shall have removed any unused material and all Contractor's equipment and forces. Contractor shall leave the premises in a clean and safe condition on or prior to the date specified in the notice. Owner shall certify that all termination procedures have been completed and that the premises have been turned over to the possession of Owner. Within fifteen (15) days after that certification by Owner, Contractor shall render to Owner a bill for all expenses incurred in termination and for all work done subsequent to the last progress payment. Owner shall pay Contractor all sums properly due, together with any retainage not necessary to cover apparently nonconforming work or other changes, within fifteen (15) working days after the bill has been received by Owner, provided that Owner has received releases for all liens.
- 13.1.6 If Contractor is terminated for cause or default on this contract, the performance bond surety shall commence performance within fourteen (14) days of the termination or default. If the surety does not arrange for or commence performance by that date, Owner shall have the option to complete or arrange for performance and the surety shall not be relieved of any responsibility for payment of costs of performance.
- 13.1.7 Should Owner elect to terminate Contractor's services prior to final completion of the work, such termination shall not affect any rights Owner might assert against Contractor at time of termination or thereafter. Any retention or payment of monies by Owner to Contractor shall not release Contractor from that liability.

## **13.2 SUSPENSION OF THE WORK**

- 13.2.1 Owner may, at any time and for any reason, suspend the work or any portion of it for a period not to exceed ninety (90) days, by written notice delivered to Contractor thirty (30) days prior to the date fixed for suspension. The notice of suspension shall fix the date on which the work is to be resumed and Contractor shall resume the work on the date so fixed. Equitable adjustment in the contract price, the contract time, or both shall be made for cost or delay directly attributable to suspension of the work.

## **13.3 TERMINATION BY CONTRACTOR**

- 13.3.1 If through no act or fault of Contractor, Owner orders a suspension of work for a period of more than ninety (90) days, Contractor may, upon thirty (30) days written notice to Owner, terminate this contract and recover from Owner payment for work accepted to date plus purported overhead and profit in the manner provided in ARTICLE 9.4. Contractor shall also have the right to terminate this contract if Owner fails within forty-

five (45) days to pay amounts properly due Contractor for satisfactorily accomplished work, so certified by Project Representative, as due and payable. The provisions of this section do not include amounts ordinarily retained from Contractor's Application for Payment or amounts retained because of unsatisfactory, defective, or incomplete work, or for any other reason provided in the contract documents.

#### **ARTICLE 14 MISCELLANEOUS PROVISIONS**

- 14.1 Whenever any provision of the contract documents requires written notice, such notice shall be deemed to have been given and binding when given by certified mail to the respective party at the address provided in the Legal Notice provision of the agreement section of the contract documents.
- 14.2 Neither party may assign this contract without the written consent of the other party and Contractor may not delegate duties under this contract other than as provided in the contract documents without the prior written consent of Owner.
- 14.3 In the event a provision of the contract documents is found to be unenforceable or void for any reason, it shall be considered as severed from the contract documents, and the remaining portions of the contract documents shall stand as if that provision had never been included in the contract documents. In the event the unenforceable or void provision is legally essential to the continuing existence of the contract, the parties shall attempt to substitute a reasonable replacement provision.
- 14.4 **No general condition stated in these provisions or other provision in the contract documents lessens, alters, or makes inapplicable the requirement for indemnification stated in ARTICLE 4.13. In the event of conflict between any contract provisions, the requirements set out in ARTICLE 4.13 control.**

#### **END GENERAL CONDITIONS**

## Section 1.7 Federal Contract Provisions

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## **FEDERAL CONTRACT PROVISIONS – Instructions**

The following federal contract provisions are part of the contract documents. These federal contract provisions shall be incorporated into all subcontracts by whole or by reference.

### **A1 ACCESS TO RECORDS AND REPORTS**

#### **A1.1 CONTRACT CLAUSE**

##### **ACCESS TO RECORDS AND REPORTS**

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Owner, 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.

### **A2 AFFIRMATIVE ACTION REQUIREMENT**

#### **A2.1 SOLICITATION CLAUSE**

##### **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:

#### **Timetables**

Goals for minority participation for each trade: 15.1% (Alaska – Non-SMSA Counties)

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 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.

<https://www.dol.gov/ofccp/construction/contractaward/index.html>

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is Alaska, Kenai Peninsula Borough, Kenai.

### **A3 BREACH OF CONTRACT TERMS**

#### **A3.1 CONTRACT CLAUSE**

##### **BREACH OF CONTRACT TERMS**

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 the 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.

**A4 BUY AMERICAN PREFERENCE****A4.1 SOLICITATION CLAUSE****A4.1.1 Buy American Preference Statement****BUY AMERICAN PREFERENCE**

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 Federal Aviation Administration 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 or offeror must complete and submit the Buy America certification included herein with their bid or offer. The Owner will reject as nonresponsive any bid or offer that does not include a completed Certificate of Buy American Compliance.

**A4.1.2 Certificate of Buy American Compliance –  
Manufactured Product****Certificate of Buy American Compliance for Manufactured Products**

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

- ☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:
- a) Only installing steel and manufactured products produced in the United States;
  - b) Installing manufactured products for which the Federal Aviation Administration (FAA) has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
  - c) 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:

- 1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
  - 2. To faithfully comply with providing U.S. domestic product.
  - 3. To furnish U.S. domestic product for any waiver request that the FAA rejects
  - 4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.
- ☐ The bidder or offeror hereby certifies it cannot comply with the 100 percent 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 or offeror with the apparent low bid agrees:

1. To submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that supports the type of waiver being requested.
2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the proposal.
3. To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.
4. 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 the item components and subcomponents produced in the United States is more than 60 percent of the cost of all components and subcomponents of the “item”. The required documentation for a Type 3 waiver is:

- a) Listing of all product components and subcomponents that are not comprised of 100 percent U.S. domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and 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 at place of manufacture.
- c) Percentage of non-domestic component and subcomponent cost as compared to total “item” component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

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

- a) Detailed cost information for total project using U.S. 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.

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Date

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Signature

---

Company Name

---

Title

## **A5 CIVIL RIGHTS - GENERAL**

### **A5.1 CONTRACT CLAUSE**

#### **A5.1.1 Clause for Contracts**

##### **GENERAL CIVIL RIGHTS PROVISIONS**

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 by Title VI of the Civil Rights Act of 1964.

## **A6 CIVIL RIGHTS – TITLE VI ASSURANCE**

### **A6.1 CONTRACT CLAUSES**

#### **A6.1.1 Title VI Clauses for Compliance with Nondiscrimination Requirements**

##### **Compliance with Nondiscrimination Requirements:**

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 Acts 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. **Nondiscrimination:** 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 Nondiscrimination Acts and Authorities, 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



Nondiscrimination Acts and Authorities 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 Nondiscrimination Acts and Authorities 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 or 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
  - 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.

#### **A6.1.2 Title VI List of Pertinent Nondiscrimination Acts and Authorities**

##### **Title VI List of Pertinent Nondiscrimination Acts and Authorities**

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 USC § 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 USC § 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 USC § 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 USC § 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 USC §§ 12131 – 12189) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Nondiscrimination statute (49 USC § 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 nondiscrimination 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 USC 1681 *et seq.*).

## **A7 CLEAN AIR AND WATER POLLUTION CONTROL**

### **A7.1 CONTRACT CLAUSE**

#### **CLEAN AIR AND WATER POLLUTION CONTROL**

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 USC § 740-7671q) and the Federal Water Pollution Control Act as amended (33 USC § 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.

## **A8 CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS**

### **A8.1 CONTRACT CLAUSE**

#### **CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS**

##### **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 lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this clause.

**A9 COPELAND “ANTI-KICKBACK” ACT**

**A9.1 CONTRACT CLAUSE**

**COPELAND “ANTI-KICKBACK” ACT**

Contractor must comply with the requirements of the Copeland “Anti-Kickback” Act (18 USC 874 and 40 USC 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.

**A10 DAVIS-BACON REQUIREMENTS**

**A10.1 CONTRACT CLAUSE**

**DAVIS-BACON REQUIREMENTS**

1. Minimum Wages.

(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;
- (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, DC 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.

(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 that 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 that 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 [www.dol.gov/whd/forms/wh347instr.htm](http://www.dol.gov/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 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) 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) 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) 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 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 that 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 USC 1001.

## **A11 DEBARMENT AND SUSPENSION**

### **A11.1 SOLICITATION CLAUSE**

#### **A11.1.1 Bidder or Offeror Certification**

##### **CERTIFICATION OF OFFERER/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.

#### **A11.1.2 Lower Tier Contract Certification**

##### **CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT**

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.

## **A12 DISADVANTAGED BUSINESS ENTERPRISE**

### **A12.1 REQUIRED PROVISIONS**

#### **A12.1.1 Solicitation Language (Solicitations that include a Project Goal)**

Information Submitted as a matter of bidder responsiveness:

The Owner's award of this contract is conditioned upon Bidder or Offeror satisfying the good faith effort requirements of 49 CFR §26.53.

As a condition of bid responsiveness, the Bidder or Offeror must submit the following information with its proposal on the forms provided herein:

- 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 or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the Owner's project goal; and
- 5) If Bidder or Offeror cannot meet the advertised project DBE goal, evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR part 26.

Information submitted as a matter of bidder responsibility:

The Owner's award of this contract is conditioned upon Bidder or Offeror satisfying the good faith effort requirements of 49 CFR §26.53.

The successful Bidder or Offeror must provide written confirmation of participation from each of the DBE firms the Bidder or Offeror lists in its commitment within five days after bid opening.

- 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 or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the Owner's project goal; and
- 5) If Bidder or Offeror cannot meet the advertised project DBE goal, evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR part 26.

#### **A12.1.2 Solicitation Language (Race/Gender Neutral Means)**

The requirements of 49 CFR part 26 apply to this contract. It is the policy of the Owner 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.

**A12.1.3 Prime Contracts (Projects Covered by a DBE Program)**

**DISADVANTAGED BUSINESS ENTERPRISES**

**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 Department of Transportation-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:

- 1) Withholding monthly progress payments;
- 2) Assessing sanctions;
- 3) Liquidated damages; and/or
- 4) Disqualifying the Contractor from future bidding as non-responsible.

**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 Owner. 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 Owner. This clause applies to both DBE and non-DBE subcontractors.

**A13 DISTRACTED DRIVING**

**A13.1 CONTRACT CLAUSE**

**TEXTING WHEN DRIVING**

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 Federal Aviation Administration 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 subgrant.

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 that involve driving a motor vehicle in performance of work activities associated with the project.

**A14 ENERGY CONSERVATION REQUIREMENTS**

**A14.1 CONTRACT CLAUSE**

**ENERGY CONSERVATION REQUIREMENTS**

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 USC 6201*et seq*).

**A15 DRUG FREE WORKPLACE REQUIREMENTS**

**A15.1 CONTRACT CLAUSE**

None.

**A16 EQUAL EMPLOYEMENT OPPORTUNITY (EEO)**

**A16.1 MANDATORY CONTRACT CLAUSE**

**A16.1.1 EEO Contract Clause**

**EQUAL OPPORTUNITY CLAUSE**

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. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, 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 it 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.

#### **A16.1.2 EEO Specification**

##### **STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS**

1. As used in these specifications:

- 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 part 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 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 as 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 to ensure that the EEO policy and the 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 supervisor's 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 part 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).

## **A17 FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)**

### **A17.1 SOLICITATION CLAUSE**

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.

## **A18 LOBBYING AND INFLUENCING FEDERAL EMPLOYEES**

### **A18.1 CONTRACT CLAUSE**

#### **CERTIFICATION REGARDING LOBBYING**

The Bidder or Offeror certifies by signing and submitting this bid or proposal, 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 or Offeror, 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 undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

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.

## **A19 PROHIBITION of SEGREGATED FACILITIES**

### **A19.1 CONTRACT CLAUSE**

#### **PROHIBITION OF SEGREGATED FACILITIES**

- (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 Employment 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 rest rooms 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 Employment Opportunity clause of this contract.

**A20 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970****A20.1 CONTRACT CLAUSE**

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. The employer must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The employer 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 (29 CFR Part 1910). The employer 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.

**A21 PROCUREMENT OF RECOVERED MATERIALS****A21.1 CONTRACT CLAUSE****PROCUREMENT OF RECOVERED MATERIALS**

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 products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- 1) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or
- 2) 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/smm/comprehensive-procurement-guidelines-construction-products](http://www.epa.gov/smm/comprehensive-procurement-guidelines-construction-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.

**A22 RIGHT TO INVENTIONS**

**A22.1 CONTRACT CLAUSE**

**RIGHTS TO INVENTIONS**

DOES NOT APPLY.

**A23 SEISMIC SAFETY**

**A23.1 CONTRACT CLAUSE**

**A23.1.1 Construction Contracts**

**SEISMIC SAFETY**

The Contractor agrees to ensure that all work performed under this contract, including work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

**A24 TAX DELINQUENCY AND FELONY CONVICTIONS**

**A24.1 CONTRACT CLAUSE**

**CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS**

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 inserting a checkmark (✓) 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.

**Certifications**

- 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.

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.

## **Term Definitions**

**Felony conviction:** 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.

## **A25 TERMINATION OF CONTRACT**

### **A25.1 CONTRACT CLAUSE**

#### **A25.1.1 Termination for Convenience**

#### **TERMINATION FOR CONVENIENCE CONSTRUCTION**

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:

- 1) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;
- 2) 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;
- 3) reasonable and substantiated claims, costs, and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
- 4) 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.

#### **A25.1.2 Termination for Default**

##### **TERMINATION FOR DEFAULT CONSTRUCTION**

Section 80-09 of General Conditions establishes conditions, rights, and remedies associated with Owner termination of this contract due to default of the Contractor.

#### **A26 TRADE RESTRICTION CERTIFICATION**

##### **A26.1 SOLICITATION CLAUSE**

##### **TRADE RESTRICTION CERTIFICATION**

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror –

- 1) 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 (USTR);
- 2) 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 USTR; and
- 3) has not entered into any subcontract for any product to be used on the Federal project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR.

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 USC 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 USTR or
- 2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such USTR list or
- 3) who incorporates in the public works project any product of a foreign country on such USTR 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 USTR, 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 (FAA) may direct through the Owner cancellation of the contract or subcontract for default at no cost to the Owner or the FAA.

## **A27 VETERAN'S PREFERENCE**

### **A27.1 CONTRACT CLAUSE**

#### **VETERAN'S PREFERENCE**

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 USC 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.

END OF DOCUMENT



# **CITY OF KENAI**

## **DISADVANTAGED BUSINESS ENTERPRISE PROGRAM**

*Kenai Municipal Airport*

**2019**

**Alaska Regional Fire Training Center  
Training Equipment Rehabilitation**

**&**

**Alaska Regional Fire Training Center  
Building Rehabilitation**

**Contract Specifications**

**CITY OF KENAI  
DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM  
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**CITY OF KENAI  
DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM**

**Contract Specifications**

**DESCRIPTION**

**Policy**

The City of Kenai has established a Disadvantaged Business Enterprise (DBE) program in accordance with regulations of the U.S. Department of Transportation (DOT), **49 CFR Part 26**. The City of Kenai is committed to increasing the opportunity for Disadvantaged Business Enterprises (DBE's) to participate in the performance of contracts where participation is a requirement of the state and federal funding sources.

**CONTRACTOR'S OBLIGATION**

The Contractor agrees to ensure that DBE's as defined in **49 CFR 26**, have the increased opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with state or federal funds provided under this agreement. In this regard, all contractors shall take all necessary and reasonable steps in accordance with **49 CFR Part 26**, to ensure that DBE's have the increased opportunity to compete for and perform contracts.

Each contract the City of Kenai signs with a contractor (and each subcontract the prime contractor signs with a subcontractor) must include the following clauses:

Contract Assurance

The contractor, sub recipient 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 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 recipient deems appropriate.

Prompt Payment

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 of Kenai. 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 of Kenai. This clause applies both to DBE and non-DBE subcontractors.

## **Compliance**

All bidders who fail to meet the DBE goal and fail to demonstrate good faith efforts shall not be eligible to be awarded the contract. Contractors or subcontractors for this Federal Aviation Administration assisted contract are hereby notified that failure to carry out the DBE obligations shall constitute a breach of contract which may result in termination of the contract, or such other remedy found appropriate by the City.

The City of Kenai will bring to the attention of the Department of Transportation any false, fraudulent, or dishonest conduct in connection with the program, so that DOT can take the steps (e.g. referral to the Department of Justice for criminal prosecution, referral to the DOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules) provided in 26.109. The City will also consider similar action under our own legal authorities, including responsibility determinations in future contracts.

## **GENERAL**

### **Use of Certified Firms**

A DBE must be certified by the City of Kenai or the State Alaska Department of Transportation before credit may be allowed toward the DBE goal. Directories and updated information regarding certified firms may be obtained from the Airport Manager's Office, Kenai Municipal Airport, 305 N. Willow, Suite 200, Kenai, AK, 99611, (907-283-7951) or online through the State of Alaska at <http://www.dot.state.ak.us>.

A DBE must perform a commercially useful function, i.e., must be responsible for the execution of a distinct element of work and must carry out its responsibilities by actually performing, managing and supervising work.

A DBE joint venture partner must be responsible for a clearly defined portion of the work to be performed in addition to satisfying requirements for ownership and control. Credit is limited to the percent of the DBE's joint venture participation.

### **Good Faith Efforts**

The requirements of **49 CFR 26, Regulations of the U.S. Department of Transportation**, apply to this contract.

It is the policy of the City of Kenai to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All

firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this bid specification. These requirements apply to all bidders/offers, including those who qualify as a DBE. An overall DBE goal of **2 % percent** has been established. The bidder/offeror shall make good faith efforts, as defined in **Appendix A, 49 CFR Part 26** (Attachment 9), to meet the contract goal for DBE participation in the performance of this contract.

The bidder/offeror shall be required to submit the following information **prior to a commitment by the City of Kenai to award the contract** to the apparent successful competitor, as a condition of responsibility.

1. The names and addresses of DBE firms that will participate in the contract.
2. A description of the work that each DBE will perform.
3. The dollar amount of the participation of each DBE firm participation
4. The written and signed documentation (**DBE Utilization Report - Attachment 4**) of commitment to use a DBE subcontractor whose participation it submits to meet a contract goal;
5. Written and signed confirmation (**Letter of Intent - Attachment 5**) from the DBE that it is participating in the contract as provided in the prime contractor's commitment; and
6. If the contract goal is not met, evidence of good faith efforts (**Summary of Good Faith Effort Documentation – Attachment 6 and Contract Report Form – Attachment 7**).

DBE participation in this contract may be in the form of a prime contract, subcontract, joint venture, or another arrangement that qualifies fewer than **49 CFR Sections 26.55 or 26.53 (g)** both of which are included in Attachment 9.

#### Demonstration of good faith efforts

The obligation of the bidder/offeror is to make good faith efforts. The bidder/offeror can demonstrate that it has done so by either meeting the contract goal or documenting good faith efforts. Examples of good faith efforts are found in **Appendix A to Part 26**.

The Project Director will be responsible for determining whether a bidder/offeror who has not met the contract goal has documented sufficient good faith effort to be regarded as responsible.



The City will, as a minimum, use the following criteria to judge if the bidder who has not met the contract goals demonstrated sufficient good faith efforts:

1. Soliciting through all reasonable and available means (e.g. attendance at a pre-bid meeting, if any, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation;
2. Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation;
3. Efforts made to select portions of the work proposed to be performed by DBEs in order to increase the likelihood of achieving the stated goal;
4. Efforts to negotiate with DBEs for specific sub bids including a minimum:
  - (a) The names, addresses, and telephone numbers of DBEs that were contacted
  - (b) A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed; and
  - (c) A statement of why additional agreements with DBEs were not reached;
5. Concerning each DBE the bidder contacted but rejected as unqualified, the reasons for the bidder's conclusion.
6. Effort made to assist the DBEs contacted that needed assistance in obtaining bonding or insurance required by the bidder or the City of Kenai.

The **Summary of Good Faith Efforts** (Attachment 6) and the **Contact Report Form** (Attachment 7) may be used for documenting contacts and summarizing good faith efforts. We will ensure that all information is complete and accurate and adequately documents the bidder/offeror's good faith efforts before we commit to the performance of the contract by the bidder/offeror.

## **PARTICIPATION GOAL**

A Disadvantaged Business Enterprise goal has been approved for FY2019-FY21 at 2%. The City of Kenai will meet the maximum feasible portion of its overall goal with a race neutral program.

Measurement of attainment of these goals will be based on the actual amount of money received by the DBE for commercially useful work on this project.

## **DETERMINATION OF COMPLIANCE**

### **Phase 1 – Bid and Award**

All bidders/offerors shall submit the following completed forms **with the bid**:

1. ***Disadvantaged Business Enterprise Declaration*** (Attachment 1). Bids submitted without this form attached will be considered non-responsive.
2. ***Bidder's Registration Form*** (Attachment 2). Required of all prime bidders **with the bid**.
3. ***List of Potential Subcontractors*** (Attachment 3). Required of all prime bidders **with the bid**.

In addition to bid submission requirements, the successful bidder must demonstrate DBE responsibility **prior to award** of this contract by:

1. Submitting a copy of the ***DBE Utilization Report*** (Attachment 4) listing the certified DBE's to be used to meet the goals.
2. Submitting a ***Letter of Intent*** (Attachment 5) from each **DBE** subcontractor.
3. Submitting a ***Bidder's Registration Form*** (Attachment 2) for each subcontractor (DBE and non-DBE) working on the project.
4. If the form contains less DBE participation than is required to meet the goal, documentation of good faith efforts in the form of the ***Summary of Good Faith Effort Documentation*** (Attachment 6) must be submitted. A ***Contact Report Form*** (Attachment 7) may be used for documenting contacts and summarizing good faith efforts.

**If the contract goal is not met, failure to document sufficient good faith effort will result in bidder's disqualification for award.**

### Administrative reconsideration

Within 15 days of being informed by City of Kenai that it is not responsible because it has not documented sufficient good faith efforts, a bidder/offeror may request administrative reconsideration. Bidder/offerors should make this request in writing to the following for the appointment or designation of a reconsideration official:

City Manager  
210 Fidalgo Avenue  
Kenai, AK, 99611  
Tel: 283-8222

The reconsideration official will not have played any role in the original determination that the bidder/offeror did not document sufficient good faith efforts.

As part of this reconsideration, the bidder/offeror will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The bidder/offeror will have the opportunity to meet in person with our reconsideration official to discuss the issue of whether it met the goal or made adequate good faith efforts to do. We will send the bidder/offeror a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. The result of the reconsideration process is not administratively appealable to the Department of Transportation.

#### Good Faith Efforts when a DBE is replaced on a contract

We will require a contractor to make good faith efforts to replace a DBE that is terminated or has otherwise failed to complete its work on a contract with another certified DBE, to the extent needed to meet the contract goal. We will require the prime contractor to notify the DBE Liaison Officer immediately in writing of the DBE's inability or unwillingness to perform and provide reasonable documentation.

In this situation, we will require the prime contractor to obtain our prior approval of the substitute DBE and to provide copies of new or amended subcontracts, or documentation of good faith efforts.

The City of Kenai will require a prime contractor obtain prior written consent before terminating for convenience a DBE subcontractor and then performing the work of the terminated subcontractor with its own forces or through an affiliate.

If unable to replace with a DBE, the contractor will give full documentation to the City of Kenai (as required above and prior to completing the original DBE area of work) as to efforts made to obtain replacement of DBE participation. After review by the City of Kenai the award may be continued or terminated at the option of the City.

## Phase II – Construction

**Prior to construction, the contractor shall submit, in writing, the designation of a DBE officer.**

The work items and creditable dollar amounts shown for a DBE firm on the ***DBE Utilization Report*** (Attachment 4) must be included in any subcontract with that firm, or prior written approval for replacement of the DBE participation must have been granted, before the City can approve substitution of the subcontract.

If the prime contract was awarded on the basis of sufficient “good faith effort,” any subcontract containing items for which good faith effort documentation was not provided prior to award will be subject to the following requirement:

**If the subcontract is with a non-DBE, the contractor must make at least one contact and submit documentation prior to subcontract approval.**

Written proof of commitments (i.e, purchase orders or sales receipts) with DBE suppliers and manufacturers **must be submitted to the City of Kenai.**

## INFORMATION COLLECTION AND REPORTING

### Bidders List

The City of Kenai will create a bidders list, consisting of information about all DBE and non-DBE firms that bid or quote on FAA-assisted contracts. For every firm, the following information must be included:

- (1) Firm name;
- (2) Firm address;
- (3) Firm’s status as a DBE or non-DBE;
- (4) The age of the firm; and
- (5) The annual gross receipts of the firm.

A ***Bidder’s Registration Form*** (Attachment 2) will be included in each solicitation packet. All bidding **Prime Contractors, DBE and non-DBE**, must complete this form and **return it with the bid**. The successful **Prime Contractor** must submit **Bidder Registration Forms** for all subcontractors, DBE and non-DBE, who attempted to bid or quote on the contract **prior to bid award**.

### Monitoring Payments to DBEs

We will require prime contractors to maintain records and documents of payments to DBEs for three years following the performance of the contract. The Prime Contractor will produce and make these records available for inspection if

asked by the City of Kenai or DOT. This reporting requirement also extends to any certified DBE subcontractor.

The prime contractor is required to submit a ***Monthly Summary of DBE Participation*** (Attachment 8) documenting the amount paid and total payment to date of actual payments to DBE firms for work committed to the prime contractor for the term of the contract. *This is required even if zero dollars (\$0) are paid that month.*

DBE participation will be counted towards the goal in accordance with **49 CFR 26, Section 26.55.**

We may perform interim audits of contract payments to DBEs. The audit will review payments to DBE subcontractors to ensure that the actual amount paid to DBE subcontractors equals or exceeds the dollar amounts stated in the ***DBE Utilization Report.***

**City of Kenai  
DBE  
LIST OF SUBMITTALS**

**DBE Certification with the State of Alaska**

State of Alaska – DOT/PF  
Civil Rights Office  
P.O. Box 196900  
Anchorage, AK 99519-6900  
Tel: 907.269.0853

Certification may take up to 90 days.

**Advertisement for Bid**

**Bid Opening - Bidder's Submittals**

*Bidder's Registration Form*, Contractors & Subcontractors, Attachment 2  
*Potential Subcontractors Form*, Attachment 3  
*DBE Declaration*, Bidder, Attachment 1 (if applicable)

**Prior to Bid Award**

*Bidder's Registration Form*, Subcontractors, Attachment 2  
*DBE Utilization Report*, Bidder, Attachment 4 (if applicable)  
*Letter of Intent*, Prime Contractor or Subcontractors, Attachment 5 (if applicable)  
*Summary of Good Faith*, Bidder, Attachment 6 (if applicable)  
*Contact Report Form*, Bidder, Attachment 7 (if applicable)

**Bid Award**

Council Resolution and Purchase Order  
Notice of Award

**Contract**

Contract Forms (Due within 10 calendar days of Notice of Award)  
Sign Contract

**Notice to Proceed**

**Construction**

Designation of a DBE Officer, Contractor submits in writing (if applicable)

**Monthly DBE Reports**

*Monthly Summary of DBE Participation*, Prime Contractor, Attachment 8  
(if applicable)

**City of Kenai** 210 Fidalgo Avenue, Suite 200 Kenai, AK 99611

## DBE Program - SUBCONTRACTABLE ITEMS

**PROJECT NAME:** \_\_\_\_\_

The following is a list of subcontractable items by category/subcategory that must be considered under the DBE Program, Good Faith Efforts Criteria. If the bidder cannot achieve the DBE Utilization Goal, then the bidder should also consider other items not listed that could be subcontracted to DBEs.

[illegible]

**CITY OF KENAI  
DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION  
DECLARATION**

Project Name: \_\_\_\_\_

Project Number: \_\_\_\_\_

To be eligible for award of this contract, the bidder must execute and submit, as a part of his proposal, this declaration relating to Disadvantaged Business Enterprise (DBE). This declaration shall be deemed a part of the contract. Therefore, failure to complete and submit this declaration or the inclusion of a false certification shall be considered as evidence that the proposal is non-responsive.

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner (please check the appropriate space):

\_\_\_\_\_ The bidder/offeror is committed to a minimum of 2 percent DBE utilization on this contract.

\_\_\_\_\_ The bidder/offeror (if unable to meet the DBE goal of 2 percent) is committed to a minimum of \_\_\_\_\_ percent DBE utilization on this contract and submits documentation demonstrating good faith efforts.

Name of bidder/offeror's firm \_\_\_\_\_

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

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



ATTACHMENT 2 – ALL PRIME BIDDERS MUST SUBMIT WITH THE BID. ALL SUBCONTRACTORS MUST SUBMIT PRIOR TO BID AWARD.



## DBE PROGRAM



210 Fidalgo Avenue, Suite 200  
Kenai, AK 99611

305 N. Willow, Suite 200  
Kenai, AK 99611

## BIDDER'S REGISTRATION FORM

PROJECT NAME \_\_\_\_\_ NUMBER \_\_\_\_\_

In accordance with Section 26.11 of 49 CFR Part 26 all contractors and sub contractors bidding on prime contracts and bidding or quoting subcontracts on DOT-assisted contracts must complete this form to be registered with the City of Kenai. If you have any questions, please call (907) 283-7951.

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

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

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

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

E-mail Address: \_\_\_\_\_

Date Firm was established: \_\_\_\_\_

The firm listed above is a (check all that apply):

|                                   |                              |                             |   |
|-----------------------------------|------------------------------|-----------------------------|---|
| Is this firm a prime contractor?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |   |
| Is this firm a subcontractor?     | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Identify Specialty _____                                  |
| Is this firm a service provider?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Identify Service _____                                    |
| Is this firm a material supplier? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Identify Material _____                                   |
| Is this firm a manufacturer?      | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Identify Product _____                                    |
| Is this firm a certified DBE*?    | <input type="checkbox"/> Yes | <input type="checkbox"/> No | *Disadvantaged Business Enterprise                        |
| Is this firm a SBE?               | <input type="checkbox"/> Yes | <input type="checkbox"/> No | *Small Business Enterprise (Complete page 2 of this form) |

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

## **ADDITIONAL INFORMATION REQUIRED FOR SELF-CERTIFIED SMALL BUSINESS ENTERPRISE PROGRAM (SBE)**

**Notice to Self-Certified SBE Firms:** All businesses are required to submit a Bidder's Registration form before a contract can be awarded.

In order to verify your firm's compliance with business size standards under 49 CFR 26.67(2) (i) and 26.65(b), **at award** you will be required to submit the following documents:

- SBE Affidavit of Certification Eligibility
- Personal Financial Statement
- Past three (3) years of your corporations and/or individual tax returns
- If not a certified DBE, please provide documentation that you are self-certified as a small business (please contact Procurement Technical Assistance Center (PTAC) at 907-274-7232 if you require assistance on becoming a self-certified small business

At the time of award send required documentation to: City of Kenai – Public Works  
210 Fidalgo  
Kenai, AK 99611

### **Fostering Small Business Participation (SBE) (49 CFR 26.39):**

To meet the requirements of 49 CFR 26.39, the City of Kenai will implement an element to structure contracting requirements in order to facilitate competition by small business concerns. The fostering small business participation component of the City of Kenai's DBE program is written to conform to the US DOT's requirements. This component is only applicable to federally funded projects and includes the following assurances:

- No geographic preferences will be implemented.
- There are no limits on the number of contracts awarded to firms participating in the program.
- Efforts will be made to avoid creating barriers to the use of new, emerging, and/or untried businesses.
- The SBE program is not prohibited by State law.

### **A. SBE Directory Information**

1. Can you verify at time of award that your firm does not exceed the business size standards of \$22.41 million for the last three years of gross annual receipts per 49 CFR 26.65(b)?

( ) Yes      ( ) No

*\*If you marked "No" you do not qualify for the SBE program.*

2. Can you verify at the time of award that your firm does not exceed the personal net worth standards of \$1.32 million per 49 CFR 26.67(2) (i)?

( ) Yes      ( ) No

*\*If you marked "No" you do not qualify for the SBE program.*

(continued next page)

ATTACHMENT 2 – ALL PRIME BIDDERS MUST SUBMIT WITH THE BID. ALL SUBCONTRACTORS MUST SUBMIT PRIOR TO BID AWARD.

3. Contact Information

---

Name of Firm

---

Contact Name

---

Telephone Number

---

Fax number

---

Email address

---

Company website

## City of Kenai – DBE Program

### POTENTIAL SUBCONTRACTORS

PROJECT NAME \_\_\_\_\_ NUMBER \_\_\_\_\_

Name of bidder/offeror's firm: \_\_\_\_\_

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Telephone: \_\_\_\_\_

Section 26.11 of 49 CFR Part 26 requires the City of Kenai to create and maintain a bidders list containing information about DBE and non-DBE contractors and subcontractors who seek work on the City's federally-assisted contracts. The purpose of a bidders list is to provide the most accurate data possible for use in setting overall goals.

Please list below the name, address, and telephone number of probable or potential subcontractors your firm may use. This is not a binding list. Should your firm be the successful bidder, Bidder Registration Forms will be required from each subcontractor prior to award bid. Attach a separate sheet if necessary.

|    |                      |                         |                           |
|----|----------------------|-------------------------|---------------------------|
| 1. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |
| 2. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |
| 3. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |
| 4. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |
| 5. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |
| 6. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |
| 7. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |
| 8. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |
| 9. | _____<br><b>Name</b> | _____<br><b>Address</b> | _____<br><b>Telephone</b> |

## City of Kenai – DBE Program DBE UTILIZATION REPORT

PROJECT NAME \_\_\_\_\_ NUMBER \_\_\_\_\_

All bidders/offerors will be required to submit the following information to the City of Kenai, prior to the award of the contract.

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner (please circle the choice):

1. It has / has not (circle one) met the DBE Goal for the project. If it has not met the goal, the required documentation of sufficient good faith efforts is / is not (circle one) attached.
2. Below are the **certified** DBE's to be used in meeting the DBE goal:

| FIRM NAME | BID ITEM, WORK, OR PRODUCT | SUBCONTRACT AMOUNT | *ROLE | \$\$ AMOUNT OF PARTICIPATION |
|-----------|----------------------------|--------------------|-------|------------------------------|
|           |                            |                    |       |                              |
|           |                            |                    |       |                              |
|           |                            |                    |       |                              |
|           |                            |                    |       |                              |

\*Role = Prime Contractor (P), Joint Venture (JV), Subcontractor (Sub), Supplier (Spl) or Manufacturer (M)

Total Creditable DBE Utilization Amount \$ \_\_\_\_\_

Basic Bid Amount \$ \_\_\_\_\_

DBE Participation % of Basic Bid Amount \_\_\_\_\_ %

DBE Project Goal \_\_\_\_\_ %

If accepted for "good faith efforts" this amount becomes the required minimum level of DBE participation.

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

\_\_\_\_\_  
Principal's Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company Address

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Date

## ***City of Kenai – DBE Program***

### **PRIME CONTRACTOR'S WRITTEN DBE COMMITMENT**

**PROJECT NAME** \_\_\_\_\_ **NUMBER** \_\_\_\_\_

All firms bidding on City of Kenai projects must have a written commitment from each DBE firm to be subcontracted. Please complete this form for each DBE firm.

**Name of Prime Contractor's firm:** \_\_\_\_\_

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Telephone: \_\_\_\_\_

**Name of DBE firm:** \_\_\_\_\_

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Telephone: \_\_\_\_\_

**Description of work to be performed by DBE firm:**

---

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---

---

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated dollar value of this work is \$ \_\_\_\_\_.

#### **Affirmation**

The above-named DBE firm affirms that it will perform the portion of the contract for the estimated dollar value as stated above.

By \_\_\_\_\_ Date \_\_\_\_\_  
Signature & Title (DBE firm)

**If the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.**

(Each DBE subcontractor must submit to the Prime)

## City Of Kenai – DBE Program

### SUMMARY OF GOOD FAITH EFFORT DOCUMENTATION

PROJECT NAME \_\_\_\_\_ NUMBER \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

List all items considered for DBE utilization.

| a.<br>MATERIAL OR SPECIFIC ITEM<br>OF WORK (PAY ITEM) | b.<br>ACCEPTABLE DBE<br>QUOTE RECEIVED | c.<br># of DBEs CONTACTED<br>IN DBE DIRECTORY | d.<br># of DBEs that<br>RESPONDED | e.<br># OF DBEs<br>QUOTES RECEIVED |
|---|--|---|-----------------------------------|------------------------------------|
|   |  |   |                                   |                                    |
|   |  |   |                                   |                                    |
|   |  |   |                                   |                                    |
|   |  |   |                                   |                                    |
|   |  |   |                                   |                                    |
|   |  |   |                                   |                                    |
|   |  |   |                                   |                                    |
|   |  |   |                                   |                                    |
| Comments:   |  |   |                                   |                                    |

1. Complete a DBE Contract Report for each item for which a direct contact was made.
2. If acceptable DBE quote received, skip c, d, & e.
3. Submit a copy of letters mailed. (if same letter, one copy with list of addresses is acceptable)
4. Submit proof of advertisement. Advertisement is not acceptable as the only type of contact.

## City of Kenai -DBE Program CONTACT REPORT FORM

PROJECT NAME \_\_\_\_\_ NUMBER \_\_\_\_\_

Specific Work or Materials: \_\_\_\_\_

**DBE Firm Contacted:**

\_\_\_\_\_  
Name Address ( )  
Telephone Number

**\*INSTRUCTIONS FOR SECTIONS A – D ON NEXT PAGE**

**A. INITIAL CONTACT:**

1. Date: \_\_\_\_\_ Method: ☐ Phone ☐ Mail ☐ Fax ☐ Other \_\_\_\_\_

2. Name & Title of Person Contacted: \_\_\_\_\_

**3. DBE's Response:**

Date: \_\_\_\_\_ Method: ☐ Phone ☐ Mail ☐ Fax ☐ Other \_\_\_\_\_

☐ Submitted an acceptable sub-bid. (If sub-bid accepted **Skip to Section D**)

☐ Not interested (indicate reason) \_\_\_\_\_

☐ Needs more information. Date Prime requested information: \_\_\_\_\_

Will provide quote by: \_\_\_\_\_

☐ Sub-bid was unacceptable (**complete Section C**).

**B. FOLLOW-UP:**

1. Date: \_\_\_\_\_ Method: ☐ Phone ☐ Mail ☐ Fax ☐ Other \_\_\_\_\_

2. Name & Title of Person Contacted: \_\_\_\_\_

**3. DBE's Response:**

Date: \_\_\_\_\_ Method: ☐ Phone ☐ Mail ☐ Fax ☐ Other \_\_\_\_\_

☐ Submitted an acceptable sub-bid. (**If sub-bid accepted skip to Section D**)

☐ Received unacceptable sub-bid. (**Complete Section C**).

☐ Other (explain): \_\_\_\_\_

**C. EXPLANATION OF FAILURE TO ACHIEVE AN ACCEPTABLE SUB-BID:**

1. Were the following required efforts made?

☐ Yes ☐ No Identified the specific work, products, materials in the quote(s)

☐ Yes ☐ No Offered assistance in acquiring necessary bonding and insurance



**C. (Continued)**

☐ Yes ☐ No Provided all necessary information for the work items or materials

2. Was the DBE's quote non-competitive (i.e. more than 10% higher than the accepted quote)?

☐ Yes ☐ No

3. Was the DBE unable to perform in some capacity? ☐ Yes ☐ No Explain: \_\_\_\_\_

\_\_\_\_\_

**D. CERTIFICATION:**

**I certify that the information provided above is accurate and that efforts to solicit sub-bids were made in good faith.**

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name & Title of City Reviewer

\_\_\_\_\_  
Date

**\*INSTRUCTIONS FOR SECTIONS A – D:**

**A. INITIAL CONTACT (Must be made at least 10 days prior to bid opening)**

1. **Date & method of initial contact:** Indicate the method and date that actual contact was made or the date correspondence was postmarked. Leaving a message does not constitute a contact. Attach a copy of dated letter or fax.
2. **Name & Title of Person Contacted:** Name & title of company representative with whom you corresponded or discussed a sub-bid.
3. **DBE's Response:** Indicate one or more of the responses listed. If a firm bid was received & 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 sub-bid or to conclude discussions with a sub-bid submittal.

1. **Date & method of follow-up contact:** Indicate the method and date that actual contact was made or the date correspondence was postmarked. Leaving a message does not constitute a contact. Attach a copy of dated letter or fax.
2. **Name & Title of Person Contacted:** Name & title of company representative with whom you corresponded or discussed a sub-bid.
3. **DBE's Response:** Indicate one or more of the responses listed. If a firm bid was received & accepted, skip to Section D.

**C. EXPLANATION OF FAILURE TO ACHIEVE AN ACCEPTABLE SUB-BID**

1. A **No** response to items la., b., or c. will result in rejection of this contact. Be specific on results of discussions.
2. A **YES** answer to item 2. is grounds for rejecting a DBE sub-bid.
3. A **YES** answer to item 3. is grounds for rejecting a DBE sub-bid, only if the inability to perform is in an area of work specifically identified as a sub-item under the applicable bid item.

**D. CERTIFICATION**

This certification of accuracy and good faith by the Contractor will be verified by contact with the listed firm. Falsification of information on the DBE Contact Report is grounds for debarment action under AS 36.30.640(4).

## City of Kenai - DBE Program SUMMARY OF DBE PARTICIPATION

(TO BE COMPLETED BY PRIME CONTRACTOR)

PROJECT NAME &amp; NUMBER \_\_\_\_\_ Number \_\_\_\_\_

For Payments Made in the Month of \_\_\_\_\_ Year \_\_\_\_\_

 \_\_\_\_\_ Prime is a DBE? ☐ Yes ☐ No  
**Prime Contractor**

### SUBCONTRACTORS

| (DBE) FIRM NAME | AGREED PRICE | AMOUNT PAID<br>THIS PERIOD | AMOUNT PAID<br>TO DATE | FINAL PAYMENT            |                          |
|-----------------|--------------|----------------------------|------------------------|--------------------------|--------------------------|
|                 |              |                            |                        | YES                      | NO                       |
|                 |              |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|                 |              |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|                 |              |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|                 |              |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|                 |              |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|                 |              |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|                 |              |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |

### MANUFACTURERS (100% DBE Credit)

| FIRM NAME | MATERIALS<br>SUPPLIED | AMOUNT PAID<br>THIS PERIOD | AMOUNT PAID<br>TO DATE | FINAL PAYMENT            |                          |
|-----------|-----------------------|----------------------------|------------------------|--------------------------|--------------------------|
|           |                       |                            |                        | YES                      | NO                       |
|           |                       |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                       |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                       |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                       |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                       |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                       |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |

(Continued on next page)

**BROKERS (5% DBE Credit for brokerage fees)**

| FIRM NAME | PRODUCT SERVICE<br>BROKERED | AMOUNT PAID<br>THIS PERIOD | AMOUNT PAID<br>TO DATE | FINAL PAYMENT            |                          |
|-----------|-----------------------------|----------------------------|------------------------|--------------------------|--------------------------|
|           |                             |                            |                        | YES                      | NO                       |
|           |                             |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                             |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                             |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |

**REGULAR DEALERS (60% DBE Credit)**

| FIRM NAME | MATERIALS SUPPLIED | AMOUNT PAID<br>THIS PERIOD | AMOUNT PAID<br>TO DATE | FINAL PAYMENT            |                          |
|-----------|--------------------|----------------------------|------------------------|--------------------------|--------------------------|
|           |                    |                            |                        | YES                      | NO                       |
|           |                    |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                    |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                    |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                    |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                    |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                    |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |
|           |                    |                            |                        | <input type="checkbox"/> | <input type="checkbox"/> |

DBE participation will be counted towards goals in accordance with Section 26.55 of 49 CFR Part 23 & 26.

I certify that all information in this Summary of DBE Participation is true and complete.

\_\_\_\_\_  
Signature & Title of Company Representative

\_\_\_\_\_  
Date

The above information has been verified by:

\_\_\_\_\_  
Signature & Employee Title

\_\_\_\_\_  
Date

Submit this form by the 15<sup>th</sup> of the month following the reporting month: Airport Administrative Office  
305 N. Willow, Suite 200  
Kenai, Alaska 99611  
Fax: 907-283-3737



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

## FEDERAL EEO BID CONDITIONS

### STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS FOR ALL NON-EXEMPT FEDERAL AND FEDERALLY-ASSISTED CONSTRUCTION CONTRACTS TO BE AWARDED IN THE STATE OF ALASKA

#### Authority and Guidelines.

The Alaska Department of Transportation & Public Facilities (Department), as a State Transportation Agency (STA), has authority under 23 U.S.C. 140 and its implementing regulations to conduct a compliance program addressing Equal Employment Opportunity (EEO) and Affirmative Action (AA) in employment on non-exempt federal and federally-assisted construction contracts that are awarded in the State of Alaska. The STA's authority to administer a contract compliance with Nondiscrimination, EEO and AA programs are authorized under 23 U.S.C., 49 U.S.C., Title VI of the Civil Rights Act of 1964, MAP-21 and implementing regulations. The provisions of 23 CFR 200 and 49 CFR 21 provide authority to determine, and where necessary obtain compliance with the nondiscrimination provisions of Title VI. Under the provisions of Title VI 23 USC and related regulations, including 49 CFR 21 and 26, and 23 CFR Part 200, 230 and 633, it is the STA's responsibility to ensure compliance with and to enforce on all projects of Federal-aid contractors and subcontractors, whether a particular contract or work-site involves Federal-aid funds or not.

These citations confirm the requirement for contractors to provide, and States to obtain information that ensure non-discrimination in employment on all of Federal and federally-assisted projects, and through these provisions, provide for EEO for minorities and women in all terms and conditions of their employment at all of their facilities and on all projects.

1. Definitions. As used in these specifications:

- a. **“Covered area”** means the geographical area described in the solicitation from which this contract resulted;
- b. **“Employer identification number”** means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
- c. **“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 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).

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 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 DOL in the covered area, either individually or through an association, its affirmative action obligations on all work in the Plan area shall be in accordance with that Plan for those trades that have unions participating in the Plan. Contractors must 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 good faith effort to achieve an equal representation of minority and female employment under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors in an approved Plan does not excuse any covered Contractor's or subcontractor's failure to make good faith efforts to achieve the Plan.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 5(a) through 5(p) of these specifications.
5. 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 shall specifically ensure that all foremen, 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.
  - 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 therefor, along with whatever additional actions the Contractor may have taken.
  - d. Provide immediate written notification to the Civil Rights Office's Contract Compliance Officer when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman 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 5(b) 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 on-site supervisory personnel such as Superintendent, general foreman, 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.
  - 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 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 to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
  - n. 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.
  - o. 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.
  - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
6. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations 5(a) through 5(p). 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 5(a) through 5(p) 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 work force participation, makes a good faith effort to meet its

individual EEO obligations, 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.

7. The Contractor 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 if a particular group is employed in a substantially disparate manner.
8. The Contractor shall not use the equal employment or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
9. The Contractor shall not enter into any subcontract with any person or firm debarred from government contracts.
10. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in item 5(a-p) above, so as to achieve maximum results from its efforts to ensure equal employment opportunities.
11. 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.
12. Nothing herein provided shall be construed as a limitation upon the application of other laws that 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 Programs).
13. The Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
14. EEO/AA obligations are applicable to all of the Contractor's construction work (whether or not it is federal or federally-assisted) performed in the covered area. The hours on 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 equalizing minority and female employment percentages shall be a violation of the contract. Compliance with equal minority and female employment utilization will be measured against the total work hours performed.
15. The Contractor shall provide written notification to the Department, for all subcontracts 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.
16. As used in the Bid Notice, and in the contract resulting from this project's solicitation, the "covered area" is the State of Alaska.



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

## REQUIRED CONTRACT PROVISIONS for FEDERAL-AID (FTA) CONSTRUCTION CONTRACTS

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### I. GENERAL

1. These contract provisions shall apply to all work performed on the contract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required

Contract Provisions and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. In this contract, *Grantor and FTA* means Federal Transit Administration; *Alaska DOT&PF and agency* means the Alaska Department of Transportation and Public Facilities; *AMHS* means Alaska Marine Highway System.

### II. FLY AMERICA REQUIREMENTS

The Fly America requirements apply to the transportation of persons or property, by air, between a place in the U.S. and a place outside the U.S., or between places outside the U.S., when the FTA will participate in the costs of such air transportation.

The Fly America requirements flow down from the Alaska DOT&PF to first tier contractors, who are responsible for ensuring that lower tier contractors and subcontractors are in compliance.

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that the Alaska DOT&PF receipt of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S. Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.



### **III. BUY AMERICA REQUIREMENTS**

The Buy America requirements apply to the following types of contracts: Construction Contracts and Acquisition of Goods or Rolling Stock (valued at more than \$100,000).

The Buy America requirements flow down from the Alaska DOT&PF to first tier contractors, who are responsible for ensuring that lower tier contractors and subcontractors are in compliance. The \$100,000 threshold applies only to the grantee contract, subcontracts under that amount are subject to Buy America.

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, and microcomputer equipment and software. Separate requirements for rolling stock are set out at 49 C.F.R. 5323(j)(2)(C) and 49 C.F.R. 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

A bidder or offeror must submit to the Alaska DOT&PF the appropriate Buy America certification with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

### **IV. CHARTER BUS AND SCHOOL BUS REQUIREMENTS**

The Charter Bus and School Bus requirements apply to the following type of contract: Operational Service Contracts.

The Charter Bus requirements flow down from the Alaska DOT&PF to first tier service contractors.

Charter Service Operations – The contractor agrees to comply with 49 U.S.C. 5323 (d) and 49 CFR Part 604, which provides the Alaska DOT&PF of FTA assistance are prohibited from providing charter service using federally funded equipment or facilities if there is at least one private charter operator willing and able to provide the service, except under one of the exceptions at 49 CFR 604.9. Any charter service provided under one of the exceptions must be “incidental,” i.e., it must not interfere with or detract from the provision of mass transportation.

The School Bus Requirements flow down from the Alaska DOT&PF to first tier service contractors.

School Bus Operations – Pursuant to 49 U.S.C. 5323(f) and 49 CFR Part 605, the Alaska DOT&PF in receipt of FTA assistance may not engage in school bus operations exclusively for the transportation of students and school personnel in competition with private school bus operators unless qualified under specified exemptions. When operating exclusive school bus service under an allowable exemption, the Alaska DOT&PF may not use federally funded equipment, vehicles, or facilities.

### **V. CARGO PREFERENCE REQUIREMENTS**

The Cargo Preference requirements apply to all contracts involving equipment, materials, or commodities which may be transported by ocean vessels.

The Cargo Preference requirements apply to all subcontracts when the subcontract may be involved with the transport of equipment, material, or commodities by ocean vessel.

Cargo Preference – Use of United States-Flag Vessels – The Contractor agrees:

a. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;

b. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated “on board” commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and the Alaska DOT&PF (through the contractor in the case of a subcontractors bill-of-lading.)

c. to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

### **VI. SEISMIC SAFETY REQUIREMENTS**

The Seismic Safety requirements apply only to contracts for the construction of new buildings or additions to existing buildings.

The Seismic Safety requirements flow down from the Alaska DOT&PF to first tier contractors to assure compliance, with the applicable building standards for Seismic Safety, including work performed by all subcontractors.

Seismic Safety – The contractor agrees that any new building or addition to an existing building will be designed and

constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

## **VII. ENERGY CONSERVATION REQUIREMENTS**

The Energy Conservation requirements are applicable to all contracts.

The Energy Conservation requirements extend to all third party contractors and their contracts at every tier and subrecipients and their subagreements at every tier.

Energy Conservation – The contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

## **VIII. CLEAN WATER REQUIREMENTS**

The Clean Water requirements apply to each contract and subcontract which exceeds \$100,000.

The Clean Water requirements flow down to FTA recipients and subrecipients at every tier.

Clean Water:

1. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the Alaska DOT&PF and understands and agrees that the Alaska DOT&PF will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.
2. The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

## **IX. BUS TESTING**

The Bus Testing requirements pertain only to the acquisition of Rolling Stock/Turnkey.

The Bus Testing requirements should not flow down, except to the turnkey contractor as stated in the Master Agreement.

Bus Testing – The Contractor (Manufacturer) agrees to comply with 49 U.S.C. A 5323(c) and FTA's implementing regulation at 49 CFR Part 665 and shall perform the following:

- 1) A manufacturer of a new bus model or a bus produced with a major change in components or configuration shall provide a copy of the final test report to the Alaska DOT&PF at a point in the procurement process specified by the Alaska DOT&PF which will be prior to the Alaska DOT&PF's final acceptance of the first vehicle.
- 2) A manufacturer who releases a report under paragraph 1 above shall provide notice to the operator of the testing facility that the report is available to the public.
- 3) If the manufacturer represents that the vehicle was previously tested, the vehicle being sold should have the identical configuration and major components as the vehicle in the test report, which must be provided to the Alaska DOT&PF prior to Alaska DOT&PF's final acceptance of the first vehicle. If the configuration or components are not identical, the manufacturer shall provide a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.
- 4) If the manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or components), the manufacturer shall provide the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

## **X. PRE-AWARD AND POST DELIVERY AUDITS REQUIREMENTS**

These requirements apply only to the acquisition of Rolling Stock/Turnkey.

These requirements should not flow down, except to the turnkey contractor as stated in the Master Agreement.

The Contractor agrees to comply with 49 U.S.C. § 5323(1) and FTA's implementing regulation at 49 CFR Part 663 and to submit the following certifications:

- (1) Buy America Requirements: The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America. If the Bidder/Offeror certifies compliance with Buy America, it shall submit documentation which lists 1) component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; and 2) the location of the final assembly point for the rolling

stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

- (2) Solicitation Specification Requirements: The Contractor shall submit evidence that it will be capable of meeting the bid specifications.
- (3) Federal Motor Vehicle Safety Standards (FMVSS): The Contractor shall submit 1) manufacturer's FMVSS self-certification sticker information that the vehicle complies with relevant FMVSS or 2) manufacturer's certified statement that the contracted buses will not be subject to FMVSS regulations.

## **XI. LOBBYING**

The Lobbying requirements apply to Construction/Architectural and Engineering/Acquisition of Rolling Stock/Professional Service Contract/Operational Service Contract/Turnkey contracts.

The Lobbying requirements mandate the maximum flow down, pursuant to Byrd Anti-Lobbying Amendment, 31 USC 1352(b)(5) and 49 CFR Part 19, Appendix A, Section 7.

Lobbying Certification and Disclosure of Lobbying Activities for third party contractors are mandated by 31 USC 1352(b)(5), as amended by Section 10 of the Lobbying Disclosure Act of 1995, and DOT implementing regulation, "New Restrictions on Lobbying," at 49 CFR § 20.110(d).

Language in Lobbying Certification is mandated by 49 CFR Part 19, Appendix A, Section 7, which provides that contractors file the certification required by 49 CFR Part 20, Appendix A.

Modifications have been made to the Lobbying Certification pursuant to Section 10 of the Lobbying Disclosure Act of 1995.

Use of "Disclosure of Lobbying Activities" Standard Form-LLL set forth in Appendix B of 49 CFR Part 20, as amended by "Government wide Guidance For New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96) is mandated by 49 CFR Part 20, Appendix A.

Byrd Anti-Lobbying Amendment, 31 USC 1352, as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65 [to be codified at 2 USC § 1601, et seq.] Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of

Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the Alaska DOT&PF.

## **XII. ACCESS TO RECORDS AND REPORTS**

Reference Chart "Requirements for Access to Records and Reports by Type of Contracts" in the appendix.

FTA does not require the inclusion of these requirements in subcontracts.

Access to Records – The following access to records requirements apply to this Contract:

1. Where the Purchaser is not the Alaska DOT&PF but a local government and is the FTA Recipient or a subgrantee of the FTA Recipient in accordance with 49 CFR 18.36(i), the Contractor agrees to provide the Purchaser, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, paper and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 CFR 633.17 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Contractor's records and construction sites pertaining to a major capital project, defined at 49 USC 5302(a)1, which is receiving federal financial assistance through the programs described at 49 USC 5307, 5309 or 5311.
2. Where the Purchaser is the Alaska DOT&PF and is the FTA Recipient or a subgrantee of the FTA Recipient in accordance with 49 CFR 633.17, Contractor agrees to provide the Purchaser, the FTA Administrator or his authorized representatives, including any PMO Contractor, access to the Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309, or 5311. By definition, a major capital project excludes contracts of less than the simplified acquisition threshold currently set at \$100,000.
3. Where the Purchaser enters into a negotiated contract for other than a small purchase or under the simplified acquisition threshold and is an institution of higher education, a hospital or other non-profit organization and is the FTA Recipient or a

subgrantee of the FTA Recipient in accordance with 49 C.F.R. 19.48, Contractor agrees to provide the Purchaser, FTA Administrator, the Comptroller General of the United States or any of their duly authorized representatives with access to any books, documents, papers and record of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions.

4. Where any Purchaser which is the Alaska DOT&PF or a subgrantee of the Alaska DOT&PF in accordance with 49 U.S.C. 5325(a) enters into a contract for a capital project or improvement (defined at 49 U.S.C. 5302(a)(1) through other than competitive bidding, the Contractor shall make available records related to the contract to the Purchaser, the Secretary of Transportation and the Comptroller General or any authorized officer or employee of any of them for the purposes of conducting an audit and inspection.
5. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
6. The Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three years after the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until the Purchaser, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. Reference 49 CFR 18.39(i)(11).
7. FTA does not require the inclusion of these requirements in subcontracts.

### **XIII. FEDERAL CHANGES**

The Federal Changes requirement applies to all contracts.

The Federal Changes requirement flows down appropriately to each applicable changed requirement.

**Federal Changes** - Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Master Agreement between Purchaser and FTA, as they may be amended or promulgated from time to time during the

term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

### **XIV. BONDING REQUIREMENTS**

For those construction or facility improvement contracts or subcontracts exceeding \$100,000, FTA may accept the bonding policy and requirements of the Alaska DOT&PF, provided that they meet the minimum requirements for construction contracts as follows:

- a. A bid guarantee from each bidder equivalent to five (5) percent of the bid price. The "bid guarantees" shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.
- b. A performance bond on the part to the Contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.
- c. A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment, as required by law, of all persons supplying labor and material in the execution of the work provided for in the contract. Payment bond amounts required from Contractors are as follows:
  - (1) 50% of the contract price if the contract price is not more than \$1 million;
  - (2) 40% of the contract price if the contract price is more than \$1 million but not more than \$5 million; or
  - (3) \$2.5 million if the contract price is more than \$5 million.
- d. A cash deposit, certified check or other negotiable instrument may be accepted by a grantee in lieu of performance and payment bonds, provided the grantee has established a procedure to assure that the interest of FTA is adequately protected. An irrevocable letter of credit would also satisfy the requirement for a bond.

Bonding requirements flow down to the first tier contractors.

#### **Bid Bond Requirements (Construction)**

##### **(a) Bid Security**

A Bid Bond must be issued by a fully qualified surety company acceptable to Alaska DOT&PF and listed as a company currently authorized under 31 CFR, Part 223 as possessing a Certificate of Authority as described thereunder.

##### **(b) Rights Reserved**

In submitting this Bid, it is understood and agreed by bidder that the right is reserved by Alaska DOT&PF to reject any and all bids, or part of any bid, and it is agreed that the Bid may not be withdrawn for a period of [ninety (90)] days subsequent to the opening of bids, without the written consent of Alaska DOT&PF.

It is also understood and agreed that if the undersigned bidder should withdraw any part or all of his bid within [ninety (90)] days after the bid opening without the written consent of Alaska DOT&PF, shall refuse or be unable to enter into this Contract, as provided above, or refuse or be unable to furnish adequate and acceptable Performance Bonds and Labor and Material Payments Bonds, as provided above, or refuse or be unable to furnish adequate and acceptable insurance, as provided above, he shall forfeit his bid security to the extent of Alaska DOT&PF's damages occasioned by such withdrawal, or refusal, or inability to enter into an agreement, or provide adequate security therefor.

It is further understood and agreed that to the extent the defaulting bidder's Bid Bond, Certified Check, Cashier's Check, Treasurer's Check, and/or Official Bank Check (excluding any income generated thereby which has been retained by Alaska DOT&PF as provided in [Item x "Bid Security" of the Instructions to Bidders]) shall prove inadequate to fully recompense Alaska DOT&PF for the damages occasioned by default, then the undersigned bidder agrees to indemnify Alaska DOT&PF and pay over to Alaska DOT&PF the difference between the bid security and Alaska DOT&PF's total damages, so as to make Alaska DOT&PF whole.

The undersigned understands that any material alteration of any of the above or any of the material contained on this form, other than that requested, will render the bid unresponsive.

#### **Performance and Payment Bonding Requirements (Construction)**

The Contractor shall be required to obtain performance and payment bonds as follows:

##### **(a) Performance bonds**

1. The penal amount of performance bonds shall be 100 percent of the original contract price, unless the Alaska DOT&PF determines that a lesser amount would be adequate for the protection of the Alaska DOT&PF.
2. The Alaska DOT&PF may require additional performance bond protection when a contract price is increased. The increase in protection shall generally equal 100 percent of the increase in contract price. The Alaska DOT&PF may secure additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

##### **(b) Payment bonds**

1. The penal amount of the payment bonds shall equal:

- (i) Fifty percent of the contract price if the contract price is not more than \$1 million.
- (ii) Forty percent of the contract price if the contract price is more than \$1 million but not more than \$5 million; or
- (iii) Two and one half million if the contract price is more than \$5 million.

2. If the original contract price is \$5 million or less, the Alaska DOT&PF may require additional protection as required by subparagraph 1 if the contract price is increased.

#### **Performance and Payment Bonding Requirements (Non-Construction)**

The Contractor may be required to obtain performance and payment bonds when necessary to protect the Alaska DOT&PF's interest.

(a) The following situations may warrant a performance bond:

1. Alaska DOT&PF property or funds are to be provided to the contractor for use in performing the contract or as partial compensation (as in retention of salvaged material).
2. A contractor sells assets to or merges with another concern, and the Alaska DOT&PF, after recognizing the latter concern as the successor in interest, desires assurance that it is financially capable.
3. Substantial progress payments are made before delivery of end items starts.
4. Contracts are for dismantling, demolition, or removal of improvements.

(b) When it is determined that a performance bond is required, the Contractor shall be required to obtain performance bonds as follows:

1. The penal amount of performance bonds shall be 100 percent of the original contract price, unless the Alaska DOT&PF determines that a lesser amount would be adequate for the protection of the Alaska DOT&PF.
2. The Alaska DOT&PF may require additional performance bond protection when a contract price is increased. The increase in protection shall generally equal 100 percent of the increase in contract price. The Alaska DOT&PF may secure additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) A payment bond is required only when a performance bond is required, and if the use of payment bond is in the Alaska DOT&PF's interest.

(d) When it is determined that a payment bond is required, the Contractor shall be required to obtain payment bonds as follows:

1. The penal amount of payment bonds shall equal:

(i) Fifty percent of the contract price if the contract price is not more than \$1 million;

(ii) Forty percent of the contract price if the contract price is more than \$1 million but not more than \$5 million; or

(iii) Two and one half million if the contract price is increased.

#### **Advance Payment Bonding Requirements**

The Contractor may be required to obtain an advance payment bond if the contract contains an advance payment provision and a performance bond is not furnished. The Alaska DOT&PF shall determine the amount of the advance payment bond necessary to protect the Alaska DOT&PF.

#### **Patent Infringement Bonding Requirements (Patent Indemnity)**

The Contractor may be required to obtain a patent indemnity bond if a performance bond is not furnished and the financial responsibility of the Contractor is unknown or doubtful. The Alaska DOT&PF shall determine the amount of the patent indemnity to protect the Alaska DOT&PF.

#### **Warranty of the Work and Maintenance Bonds**

1. The Contractor warrants to Alaska DOT&PF, the Architect and/or Engineer that all materials and equipment furnished under this Contract will be of highest quality and new unless otherwise specified by Alaska DOT&PF, free from faults and defects and in conformance with the Contract Documents. All work not so conforming to these standards shall be considered defective. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

2. The Work furnished must be of first quality and the workmanship must be the best obtainable in the various trades. The Work must be of safe, substantial and durable construction in all respects. The Contractor hereby guarantees the Work against defective materials or faulty workmanship for a minimum period of one (1) year after Final Payment by Alaska DOT&PF and shall replace or repair any defective materials or equipment or faulty workmanship during the period of the

guarantee at no cost to Alaska DOT&PF. As additional security for these guarantees, the Contractor shall, prior to the release of Final Payment, furnish separate Maintenance (or Guarantee) Bonds in form acceptable to Alaska DOT&PF written by the same corporate surety that provides the Performance Bond and Labor and Material Payment Bond for this Contract. These bonds shall secure the Contractor's obligation to replace or repair defective materials and faulty workmanship for a minimum period of one (1) year after Final Payment and shall be written in an amount equal to ONE HUNDRED PERCENT (100%) of the CONTRACT SUM, as adjusted (if at all).

#### **XV. CLEAN AIR**

The Clean Air requirements apply to all contracts exceeding \$100,000, including indefinite quantities where the amount is expected to exceed \$100,000 in any year.

The Clean Air requirements flow down to all subcontracts which exceed \$100,000.

**Clean Air** - (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 *et seq.* The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

#### **XVI. RECYCLED PRODUCTS**

The Recycled Products requirements apply to all contracts for items designated by the EPA, when the purchaser or contractor procures \$10,000 or more of one of these items during the fiscal year, or has procured \$10,000 or more of such items in the previous fiscal year, using Federal funds. New requirements for "recovered materials" will become effective May 1, 1996. These new regulations apply to all procurement actions involving items designated by the EPA, where the procuring agency purchases \$10,000 or more of one of these items in a fiscal year, or when the cost of such items purchased during the previous fiscal year was \$10,000.

These requirements flow down to all contractor and subcontractor tiers.

**Recovered Materials** - The contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

## **XVII. DAVIS-BACON AND COPELAND ANTI-KICKBACK ACTS**

The Davis-Bacon and Copeland Acts are codified at 40 USC 3141, *et seq.* and 18 USC 874. The Acts apply to grantee construction contracts and subcontracts that "at least partly are financed by a loan or grant from the Federal Government." 40 USC 3145(a), 29 CFR 5.2(h), 49 CFR 18.36(i)(5). The Acts apply to any construction contract over \$2,000. 40 USC 3142(a), 29 CFR 5.5(a). "Construction," for purposes of the Acts, includes "actual construction, alteration and/or repair, including painting and decorating." 29 CFR 5.5(a). The requirements of both Acts are incorporated into a single clause (*see* 29 CFR 3.11) enumerated at 29 CFR 5.5(a) and reproduced below.

### **Davis-Bacon and Copeland Anti-Kickback Acts**

(1) **Minimum wages** - (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), 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 regulations issued 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 equivalents 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 classifications and wage rates conformed under paragraph (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 be easily 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) Except with respect to helpers as defined as 29 CFR 5.2(n)(4), 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; and

(4) With respect to helpers as defined in 29 CFR 5.2(n)(4), such a classification prevails in the area in which the work is performed.

(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, DC 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 paragraphs (a)(1)(ii) (B) or (C) of this section, 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.

(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.

(v)(A) The contracting officer shall require that any class of laborers or mechanics 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 therefor 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, Washington, DC 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 with 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 paragraphs (a)(1)(v) (B) or (C) of this section, 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.

(2) **Withholding** – The Alaska DOT&PF 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 the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the Alaska DOT&PF 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 (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). 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 section 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 cost 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 Alaska DOT&PF. 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 Alaska DOT&PF for transmission to the FTA 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 social security numbers to the prime contractor for its own records, without weekly submission to the Alaska DOT&PF.

(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 maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5 and that such information is correct and complete;

(2) That each laborer or 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 (a)(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 (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal Transit 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, Alaska DOT&PF, 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 of the Wage and Hour Division of the U.S. Department of Labor determines that a different practice prevails for the applicable 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 who 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 5.5(a)(1) through (10) and such other clauses as the Federal Transit 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 5.5.

(7) **Contract termination: debarment** - A breach of the contract clauses in 29 CFR 5.5 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 Alaska DOT&PF, 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.

## **XVIII. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The Contract Work Hours and Safety Standards Act is codified at 40 USC 3701, *et seq.* The Act applies to grantee contracts and subcontracts "financed at least in part by loans or grants from ... the Federal Government." 40 USC 3701(b)(1)(B)(iii) and (b)(2), 29 CFR 5.2(h), 49 CFR 18.36(i)(6). Although the original Act required its application in any construction contract over \$2,000 or non-construction contract to which the Act applied over \$2,500 (and language to that effect is still found in 49 CFR 18.36(i)(6)), the Act no longer applies to any "contract in an amount that is not greater than \$100,000." 40 USC 3701(b)(3) (A)(iii).

The Act applies to construction contracts and, in very limited circumstances, non-construction projects that employ "laborers or mechanics on a public work." These non-construction applications do not generally apply to transit procurements because transit procurements (to include rail cars and buses) are deemed "commercial items." 40 USC 3707, 41 USC 403 (12). A grantee that contemplates entering into a contract to procure a developmental or unique item should consult counsel to determine if the Act applies to that procurement and that additional language required by 29 CFR 5.5(c) must be added to the basic clause below.

### **Contract Work Hours and Safety Standards**

(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 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 section 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 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 section, 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 section.

(3) **Withholding for unpaid wages and liquidated damages** - The Alaska DOT&PF 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 section.

(4) **Subcontracts** - The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

## **XIX. RESERVED**

## **XX. NO GOVERNMENT OBLIGATION TO THIRD PARTIES**

Applicable to all contracts.

Not required by statute or regulation for either primary contractors or subcontractors, this concept should flow down to all levels to clarify, to all parties to the contract, that the Federal Government does not have contractual liability to third parties, absent specific written consent.

### **No Obligation by the Federal Government.**

(1) The Purchaser and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the Alaska DOT&PF, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

(2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

## **XXI. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS**

These requirements are applicable to all contracts.

These requirements flow down to contractors and subcontractors who make, present, or submit covered claims and statements.

**Program Fraud and False or Fraudulent Statements or Related Acts.**

(1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

**XXII. TERMINATION**

All contracts (with the exception of contracts with nonprofit organizations and institutions of higher education,) in excess of \$10,000 shall contain suitable provisions for termination by the Alaska DOT&PF including the manner by which it will be effected and the basis for settlement. (For contracts with nonprofit organizations and institutions of higher education the threshold is \$100,000.) In addition, such contracts shall describe conditions under which the contract may be terminated for default as well as conditions where the contract may be terminated because of circumstances beyond the control of the contractor.

The termination requirements flow down to all contracts in excess of \$10,000, with the exception of contracts with nonprofit organizations and institutions of higher learning.

**a. Termination for Convenience (General Provision)** The Alaska DOT&PF may terminate this contract, in whole or in part, at any time by written notice to the Contractor when it is in the Government's best interest. The Contractor shall be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The Contractor shall promptly submit its termination claim to Alaska DOT&PF to be paid the Contractor. If the Contractor has any property in its possession belonging to the Alaska DOT&PF, the Contractor will account for the same, and dispose of it in the manner the Alaska DOT&PF directs.

**b. Termination for Default [Breach or Cause] (General Provision)** If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the Alaska DOT&PF may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by the Alaska DOT&PF that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the Alaska DOT&PF, after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

**c. Opportunity to Cure (General Provision)** The Alaska DOT&PF in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions.

If Contractor fails to remedy to Alaska DOT&PF's satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within [ten (10) days] after receipt by Contractor of written notice from Alaska DOT&PF setting forth the nature of said breach or default, Alaska DOT&PF shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude Alaska DOT&PF from also pursuing all available remedies against Contractor and its sureties for said breach or default.

**d. Waiver of Remedies for any Breach** In the event that Alaska DOT&PF elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this

Contract, such waiver by Alaska DOT&PF shall not limit Alaska DOT&PF's remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

**e. Termination for Convenience (Professional or Transit Service Contracts)** The Alaska DOT&PF, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the Alaska DOT&PF shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination.

**f. Termination for Default (Supplies and Service)** If the Contractor fails to deliver supplies or to perform the services within the time specified in this contract or any extension or if the Contractor fails to comply with any other provisions of this contract, the Alaska DOT&PF may terminate this contract for default. The Alaska DOT&PF shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. The Contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner or performance set forth in this contract.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Alaska DOT&PF.

**g. Termination for Default (Transportation Services)** If the Contractor fails to pick up the commodities or to perform the services, including delivery services, within the time specified in this contract or any extension or if the Contractor fails to comply with any other provisions of this contract, the Alaska DOT&PF may terminate this contract for default. The Alaska DOT&PF shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of default. The Contractor will only be paid the contract price for services performed in accordance with the manner of performance set forth in this contract.

If this contract is terminated while the Contractor has possession of Alaska DOT&PF goods, the Contractor shall, upon direction of the Alaska DOT&PF, protect and preserve the goods until surrendered to the Alaska DOT&PF or its agent. The Contractor and Alaska DOT&PF shall agree on payment for the preservation and protection of goods. Failure to agree on an amount will be resolved under the Dispute clause.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Alaska DOT&PF.

**h. Termination for Default (Construction)** If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract or any extension or fails to complete the work within this time, or if the Contractor fails to comply with any other provisions of this contract, the Alaska DOT&PF may terminate this contract for default. The Alaska DOT&PF shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. In this event, the Alaska DOT&PF may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Alaska DOT&PF resulting from the Contractor's refusal or failure to complete the work within specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Alaska DOT&PF in completing the work.

The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause if-

1. the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include: acts of God, acts of the Alaska DOT&PF, acts of another Contractor in the performance of a contract with the Alaska DOT&PF, epidemics, quarantine restrictions, strikes, freight embargoes; and

2. the contractor, within [10] days from the beginning of any delay, notifies the Alaska DOT&PF in writing of the causes of delay. If in the judgment of the Alaska DOT&PF, the delay is excusable, the time for completing the work shall be extended. The judgment of the Alaska DOT&PF shall be final and conclusive on the parties, but subject to appeal under the Disputes clauses.

If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Alaska DOT&PF.

**i. Termination for Convenience or Default (Architect and Engineering)** The Alaska DOT&PF may terminate this contract in whole or in part, for the Alaska DOT&PF's convenience or because of the failure of the Contractor to fulfill the contract obligations. The Alaska DOT&PF shall terminate by delivering to the Contractor a Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to the Contracting Officer all data, drawings, specifications, reports, estimates, summaries, and other information and materials accumulated in performing this contract, whether completed or in process.

If the termination is for the convenience of the Alaska DOT&PF, the Contracting Officer shall make an equitable adjustment in the contract price but shall allow no anticipated profit on unperformed services.

If the termination is for failure of the Contractor to fulfill the contract obligations, the Alaska DOT&PF may complete the work by contract or otherwise and the Contractor shall be liable for any additional cost incurred by the Alaska DOT&PF.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Alaska DOT&PF.

**j. Termination for Convenience of Default (Cost-Type Contracts)** The Alaska DOT&PF may terminate this contract, or any portion of it, by serving a notice or termination on the Contractor. The notice shall state whether the termination is for convenience of the Alaska DOT&PF or for the default of the Contractor. If the termination is for default, the notice shall state the manner in which the contractor has failed to perform the requirements of the contract. The Contractor shall account for any property in its possession paid for from funds received from the Alaska DOT&PF, or property supplied to the Contractor by the Alaska DOT&PF. If the termination is for default, the Alaska DOT&PF may fix the fee, if the contract provides for a fee, to be paid the contractor in proportion to the value, if any, of work performed up to the time of termination. The Contractor shall promptly submit its termination claim to the Alaska DOT&PF and the parties shall negotiate the termination settlement to be paid the Contractor.

If the termination is for the convenience of the Alaska DOT&PF, the Contractor shall be paid its contract close-out costs, and a fee, if the contract provided for payment of a fee, in proportion to the work performed up to the time of termination.

If, after serving a notice of termination for default, the Alaska DOT&PF determines that the Contractor has an excusable reason for not performing, such as strike, fire, flood, events which are not the fault of and are beyond the control of the contractor, the Alaska DOT&PF, after setting up a new work schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

### **XXIII. GOVERNMENT-WIDE DEBARMENT AND SUSPENSION (NONPROCUREMENT)**

In conjunction with the Office of Management and Budget and other affected Federal agencies, DOT published an update to 49 CFR Part 29 on November 26, 2003. This government-wide regulation implements Executive Order 12549, *Debarment and Suspension*, Executive Order 12689, *Debarment and Suspension*,

and 31 U.S.C. 6101 note (Section 2455, Public Law 103-355, 108 Stat. 3327).

The provisions of Part 29 apply to all grantee contracts and subcontracts at any level expected to equal or exceed \$25,000 as well as any contract or subcontract (at any level) for Federally required auditing services. 49 CFR 29.220(b). This represents a change from prior practice in that the dollar threshold for application of these rules has been lowered from \$100,000 to \$25,000. These are contracts and subcontracts referred to in the regulation as "covered transactions."

Grantees, contractors, and subcontractors (at any level) that enter into covered transactions are required to verify that the entity (as well as its principals and affiliates) they propose to contract or subcontract with is not excluded or disqualified. They do this by (a) Checking the Excluded Parties List System, (b) Collecting a certification from that person, or (c) Adding a clause or condition to the contract or subcontract. This represents a change from prior practice in that certification is still acceptable but is no longer required. 49 CFR 29.300.

Grantees, contractors, and subcontractors who enter into covered transactions also must require the entities they contract with to comply with 49 CFR 29, subpart C and include this requirement in their own subsequent covered transactions (i.e., the requirement flows down to subcontracts at all levels).

### **Suspension and Debarment**

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, the contractor is required to verify that none of the contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by the Alaska DOT&PF. If it is later determined that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to the Alaska DOT&PF, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

## XXIV. PRIVACY ACT

When a grantee maintains files on drug and alcohol enforcement activities for FTA, and those files are organized so that information could be retrieved by personal identifier, the Privacy Act requirements apply to all contracts.

The Federal Privacy Act requirements flow down to each third party contractor and their contracts at every tier.

**Contracts Involving Federal Privacy Act Requirements** - The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any contract:

(1) The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974,

5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Federal Government. The Contractor understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying contract.

(2) The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by FTA.

## XXV. CIVIL RIGHTS REQUIREMENTS

The Civil Rights Requirements apply to all contracts.

The Civil Rights requirements flow down to all third party contractors and their contracts at every tier.

**Civil Rights** - The following requirements apply to the underlying contract:

(1) **Nondiscrimination** - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

(2) **Equal Employment Opportunity** - The following equal employment opportunity requirements apply to the underlying contract:

(a) **Race, Color, Creed, National Origin, Sex** - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. 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. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(b) **Age** - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(c) **Disabilities** - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(3) The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

## XXVI. BREACHES AND DISPUTE RESOLUTION

All contracts in excess of \$100,000 shall contain provisions or conditions which will allow for administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate. This may include provisions

for bonding, penalties for late or inadequate performance, retained earnings, liquidated damages or other appropriate measures.

The Breaches and Dispute Resolutions requirements flow down to all tiers.

**Disputes** - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of Alaska DOT&PF's [Contracting Officer]. This decision shall be final and conclusive unless within [ten (10)] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the [Contracting Officer]. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the [Contracting Officer] shall be binding upon the Contractor and the Contractor shall abide by the decision.

**Performance During Dispute** - Unless otherwise directed by Alaska DOT&PF, Contractor shall continue performance under this Contract while matters in dispute are being resolved.

**Claims for Damages** - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

**Remedies** - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the Alaska DOT&PF and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the Alaska DOT&PF is located.

**Rights and Remedies** - The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the Alaska DOT&PF, (Architect) or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

## **XXVII. PATENT AND RIGHTS IN DATA**

Patent and rights in data requirements for federally assisted projects ONLY apply to research projects in which FTA finances the purpose of the grant is to

finance the development of a product or information. These patent and data rights requirements do not apply to capital projects or operating projects, even though a small portion of the sales price may cover the cost of product development or writing the user's manual.

The patent and Rights in Data requirements apply to all contractors and their contracts at every tier.

The FTA patent clause is substantially similar to the text of 49 CFR Part 19, Appendix A, Section 5, but the rights in data clause reflects FTA objectives. For patent rights, FTA is governed by Federal law and regulation. For data rights, the text on copyrights is insufficient to meet FTA's purposes for awarding research grants. This clause, with larger rights as a standard, is proposed with the understanding that this standard could be modified to FTA's needs.

## **CONTRACTS INVOLVING EXPERIMENTAL, DEVELOPMENTAL, OR RESEARCH WORK.**

**A. Rights in Data** - This following requirements apply to each contract involving experimental, developmental or research work:

(1) The term "subject data" used in this clause means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the contract. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as punched cards, magnetic tape, or computer memory printouts; and information retained in computer memory. Examples include, but are not limited to: computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to contract administration.

(2) The following restrictions apply to all subject data first produced in the performance of the contract to which this Attachment has been added:

(a) Except for its own internal use, the Alaska DOT&PF or Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the Alaska DOT&PF or Contractor authorize others to do so, without the written consent of the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public; this restriction on publication, however, does not apply to any contract with an academic institution.

(b) In accordance with 49 C.F.R. § 18.34 and 49 C.F.R. § 19.36, the Federal Government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for "Federal Government purposes," any subject data or copyright described in subsections (2)(b)1 and (2)(b)2 of this clause



below. As used in the previous sentence, "for Federal Government purposes," means use only for the direct purposes of the Federal Government. Without the copyright owner's consent, the Federal Government may not extend its Federal license to any other party.

1. Any subject data developed under that contract, whether or not a copyright has been obtained; and

2. Any rights of copyright purchased by the Alaska DOT&PF or Contractor using Federal assistance in whole or in part provided by FTA.

(c) When FTA awards Federal assistance for experimental, developmental, or research work, it is FTA's general intention to increase transportation knowledge available to the public, rather than to restrict the benefits resulting from the work to participants in that work. Therefore, unless FTA determines otherwise, the Alaska DOT&PF and the Contractor performing experimental, developmental, or research work required by the underlying contract to which this Attachment is added agrees to permit FTA to make available to the public, either FTA's license in the copyright to any subject data developed in the course of that contract, or a copy of the subject data first produced under the contract for which a copyright has not been obtained. If the experimental, developmental, or research work, which is the subject of the underlying contract, is not completed for any reason whatsoever, all data developed under that contract shall become subject data as defined in subsection (a) of this clause and shall be delivered as the Federal Government may direct. This subsection (c), however, does not apply to adaptations of automatic data processing equipment or programs for the Alaska DOT&PF or Contractor's use whose costs are financed in whole or in part with Federal assistance provided by FTA for transportation capital projects.

(d) Unless prohibited by state law, upon request by the Federal Government, the Purchaser and the Contractor agree to indemnify, save, and hold harmless the Federal Government, its officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Alaska DOT&PF or Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under that contract. Neither the Alaska DOT&PF nor the Contractor shall be required to indemnify the Federal Government for any such liability arising out of the wrongful act of any employee, official, or agents of the Federal Government.

(e) Nothing contained in this clause on rights in data shall imply a license to the Federal Government under any patent or be construed as affecting the scope of any

license or other right otherwise granted to the Federal Government under any patent.

(f) Data developed by the Alaska DOT&PF or Contractor and financed entirely without using Federal assistance provided by the Federal Government that has been incorporated into work required by the underlying contract to which this Attachment has been added is exempt from the requirements of subsections (b), (c), and (d) of this clause, provided that the Alaska DOT&PF or Contractor identifies that data in writing at the time of delivery of the contract work.

(g) Unless FTA determines otherwise, the Contractor agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

(3) Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (i.e., a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual, etc.), the Alaska DOT&PF and the Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in

U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

(4) The Contractor also agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

**B. Patent Rights** - The following requirements apply to each contract involving experimental, developmental, or research work:

(1) General - If any invention, improvement, or discovery is conceived or first actually reduced to practice in the course of or under the contract to which this Attachment has been added, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, the Alaska DOT&PF and Contractor agree to take actions necessary to provide immediate notice and a detailed report to the party at a higher tier until FTA is ultimately notified.

(2) Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual), the Alaska DOT&PF and the Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small

Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

(3) The Contractor also agrees to include the requirements of this clause in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

## **XXVIII. TRANSIT EMPLOYEE PROTECTIVE AGREEMENTS**

The Transit Employee Protective Provisions apply to each contract for transit operations performed by employees of a Contractor recognized by FTA to be a transit operator. (Because transit operations involve many activities apart from directly driving or operating transit vehicles, FTA determines which activities constitute transit "operations" for purposes of this clause.)

These provisions are applicable to all contracts and subcontracts at every tier.

**Transit Employee Protective Provisions.** (1) The Contractor agrees to the comply with applicable transit employee protective requirements as follows:

(a) **General Transit Employee Protective Requirements** - To the extent that FTA determines that transit operations are involved, the Contractor agrees to carry out the transit operations work on the underlying contract in compliance with terms and conditions determined by the U.S. Secretary of Labor to be fair and equitable to protect the interests of employees employed under this contract and to meet the employee protective requirements of 49 U.S.C. A 5333(b), and U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the letter of certification from the U.S. DOL to FTA applicable to the FTA Alaska DOT&PF's project from which Federal assistance is provided to support work on the underlying contract. The Contractor agrees to carry out that work in compliance with the conditions stated in that U.S. DOL letter. The requirements of this subsection (1), however, do not apply to any contract financed with Federal assistance provided by FTA either for projects for elderly individuals and individuals with disabilities authorized by 49 U.S.C. § 5310(a)(2), or for projects for nonurbanized areas authorized by 49 U.S.C. § 5311. Alternate provisions for those projects are set forth in subsections (b) and (c) of this clause.

(b) **Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5310(a)(2) for Elderly Individuals and Individuals with Disabilities** - If the contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5310(a)(2), and if the U.S. Secretary of Transportation has determined or determines in the

future that the employee protective requirements of 49 U.S.C. § 5333(b) are necessary or appropriate for the Alaska DOT&PF and the public body subrecipient for which work is performed on the underlying contract, the Contractor agrees to carry out the Project in compliance with the terms and conditions determined by the U.S. Secretary of Labor to meet the requirements of 49 U.S.C. § 5333(b), U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the U.S. DOL's letter of certification to FTA, the date of which is set forth Grant Agreement or Cooperative Agreement with the state. The Contractor agrees to perform transit operations in connection with the underlying contract in compliance with the conditions stated in that U.S. DOL letter.

(c) **Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5311 in Nonurbanized Areas** - If the contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5311, the Contractor agrees to comply with the terms and conditions of the Special Warranty for the Nonurbanized Area Program agreed to by the U.S. Secretaries of Transportation and Labor, dated May 31, 1979, and the procedures implemented by U.S. DOL or any revision thereto.

(2) The Contractor also agrees to include any applicable requirements in each subcontract involving transit operations financed in whole or in part with Federal assistance provided by FTA.

## **XXIX. DISADVANTAGED BUSINESS ENTERPRISE (DBE)**

The newest version on the Department of Transportation's Disadvantaged Business Enterprise (DBE) program became effective July 16, 2003. The rule provides guidance to grantees on the use of overall and contract goals, requirement to include DBE provisions in subcontracts, evaluating DBE participation where specific contract goals have been set, reporting requirements, and replacement of DBE subcontractors. Additionally, the DBE program dictates payment terms and conditions (including limitations on retainage) applicable to all subcontractors regardless of whether they are DBE firms or not.

See the Special Provision Section 120 Disadvantaged Business Enterprise (DBE) Program for the requirements of the Alaska DOT&PF for DBE.

## **XXX. RESERVED**

## **XXXI. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS**

The incorporation of FTA terms applies to all contracts.

The incorporation of FTA terms has unlimited flow down.

**Incorporation of Federal Transit Administration (FTA) Terms** - The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1E, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any Alaska DOT&PF requests which would cause Alaska DOT&PF to be in violation of the FTA terms and conditions.

#### **XXXII. DRUG AND ALCOHOL TESTING**

The Drug and Alcohol testing provisions apply to Operational Service Contracts.

Anyone who performs a safety-sensitive function for the Alaska DOT&PF or subrecipient is required to comply with 49 CFR 653 and 654, with certain exceptions for contracts involving maintenance services. Maintenance contractors for non-urbanized

area formula program grantees are not subject to the rules. Also, the rules do not apply to maintenance subcontractors.

#### **Drug and Alcohol Testing**

The contractor agrees to establish and implement a drug and alcohol testing program that complies with 49 CFR Parts 653 and 654, produce any documentation necessary to establish its compliance with Parts 653 and 654, and permit any authorized representative of the United States Department of Transportation or its operating administrations, the State Oversight Agency of Alaska, or the Alaska DOT&PF, to inspect the facilities and records associated with the implementation of the drug and alcohol testing program as required under 49 CFR Parts 653 and 654 and review the testing process. The contractor agrees further to certify annually its compliance with Parts 653 and 654 before April 15 and to submit the Management Information System (MIS) reports before before March 15 to the Contracting Officer. To certify compliance the contractor shall use the "Substance Abuse Certifications" in the "Annual List of Certifications and Assurances for Federal Transit Administration Grants and Cooperative Agreements," which is published annually in the Federal Register.

## XXXII. APPENDIX

### Requirements for Access to Records and Reports by Types of Contract

| Contract Characteristics                      | Operational Service Contract                   | Turnkey  | Construction  | Architectural Engineering         | Acquisition of Rolling Stock      | Professional Services             |
|---|--|--|---|-----------------------------------|-----------------------------------|-----------------------------------|
| <u>I State Grantees</u>                       |  |  |   |                                   |                                   |                                   |
| a. Contracts below SAT (\$100,000)            | None   | Those imposed on state pass thru to Contractor             | None  | None                              | None                              | None                              |
| b. Contracts above \$100,000/Capital Projects | None unless <sup>1</sup> non-competitive award |  | Yes, if non-competitive award or if funded thru <sup>2</sup> 5307/5309/5311 | None unless non-competitive award | None unless non-competitive award | None unless non-competitive award |
| <u>II Non State Grantees</u>                  |  |  |   |                                   |                                   |                                   |
| a. Contracts below SAT (\$100,000)            | Yes <sup>3</sup>                               | Those imposed on non-state Grantee pass thru to Contractor | Yes   | Yes                               | Yes                               | Yes                               |
| b. Contracts above \$100,000/Capital Projects | Yes <sup>3</sup>                               |  | Yes   | Yes                               | Yes                               | Yes                               |

Sources of Authority:

<sup>1</sup> 49 USC 5325 (a)

<sup>2</sup> 49 CFR 633.17

<sup>3</sup> 18 CFR 18.36 (i)

## SUBCONTRACTORS LIST

PROJECT: **PROJECT NAME**

### PRIME CONTRACTOR

Name: \_\_\_\_\_

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

Phone: \_\_\_\_\_ Contractor's License: \_\_\_\_\_ Business License: \_\_\_\_\_

**Note:** Subcontractors will not be allowed to start work or be on the job site until the following information has been filled out and copies of Contractors' and Business Licenses have been attached. During this project, the City must be notified of any changes in this list.

### SUBCONTRACTORS

Name: \_\_\_\_\_ Amount of Contract: \_\_\_\_\_

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

Phone: \_\_\_\_\_ Contractor's License: \_\_\_\_\_ Business License: \_\_\_\_\_

\*\*\*\*\*

Name: \_\_\_\_\_ Amount of Contract: \_\_\_\_\_

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

Phone: \_\_\_\_\_ Contractor's License: \_\_\_\_\_ Business License: \_\_\_\_\_

\*\*\*\*\*

Name: \_\_\_\_\_ Amount of Contract: \_\_\_\_\_

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

Phone: \_\_\_\_\_ Contractor's License: \_\_\_\_\_ Business License: \_\_\_\_\_

\*\*\*\*\*

Name: \_\_\_\_\_ Amount of Contract: \_\_\_\_\_

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

Phone: \_\_\_\_\_ Contractor's License: \_\_\_\_\_ Business License: \_\_\_\_\_

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**SAMPLE**

**Alaska Department of Commerce, Community, and Economic Development**  
P.O. Box 110806, Juneau, Alaska 99811-0806

## **ALASKA BUSINESS LICENSE**

The licensee named below holds Alaska Business License Number \_\_\_\_\_  
Covering the period of: \_\_\_\_\_ through \_\_\_\_\_  
Line of Business: \_\_\_\_\_

**COMPANY NAME**

ADDRESS

**Owner:**  
NAME OF OWNER

This license shall not be taken as permission to do business in the state without having complied with  
The other requirements of the laws of the State of Alaska or of the United States.

*Alaska Department of Commerce, Community, and Economic Development*  
Commissioner: \_\_\_\_\_

This license must be posted in a conspicuous place at the business location. It is not transferable or assignable.

**SAMPLE**

No. \_\_\_\_\_  
Effective: \_\_\_\_\_  
Expires: \_\_\_\_\_

**STATE OF ALASKA**  
**DEPARTMENT OF COMMERCE, COMMUNITY & ECONOMIC**  
**DEVELOPMENT**  
**Division of Occupational Licensing**

Division of Occupational Licensing

Certifies that

**COMPANY NAME**

Is a Registered

**Specialty**

Commissioner: \_\_\_\_\_

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

|          |                               |                |        |
|----------|-------------------------------|----------------|--------|
| PRODUCER | CONTACT NAME:                 |                |        |
|          | PHONE (A/C, No, Ext):         | FAX (A/C, No): |        |
| INSURED  | E-MAIL ADDRESS:               |                |        |
|          | INSURER(S) AFFORDING COVERAGE |                | NAIC # |
|          | INSURER A:                    |                |        |
|          | INSURER B:                    |                |        |
|          | INSURER C:                    |                |        |
|          | INSURER D:                    |                |        |
|          | INSURER E:                    |                |        |
|          | INSURER F:                    |                |        |

## COVERAGES

## CERTIFICATE NUMBER:

## REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE   | ADDL SUBR INSR WVD  | POLICY NUMBER   | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS   |
|----------|---|---|---|-------------------------|-------------------------|--|
| A        | GENERAL LIABILITY   |   |   |                         |                         | EACH OCCURRENCE \$ 1,000,000   |
|          | <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY  |   |   |                         |                         | DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000                                     |
|          | <input checked="" type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR                 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |   |                         |                         | MED EXP (Any one person) \$ 5,000  |
|          |   |   |   |                         |                         | PERSONAL & ADV INJURY \$ 1,000,000   |
|          |   |   |   |                         |                         | GENERAL AGGREGATE \$ 2,000,000   |
|          |   |   |   |                         |                         | PRODUCTS - COM/OP AGG \$ 2,000,000   |
|          |   |   |   |                         |                         |  |
|          |   | GEN'L AGGREGATE LIMIT APPLIES PER:                                      |   |                         |                         |  |
|          | <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC |   |   |                         |                         |  |
| A        | AUTOMOBILE LIABILITY  |   |   |                         |                         | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000   |
|          | <input checked="" type="checkbox"/> ANY AUTO  |   |   |                         |                         | BODILY INJURY (Per person) \$  |
|          | <input type="checkbox"/> ALL OWNED AUTOS  | <input type="checkbox"/> SCHEDULED AUTOS                                | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |                         |                         | BODILY INJURY (Per accident) \$  |
|          | <input type="checkbox"/> HIRED AUTOS  | <input type="checkbox"/> NON-OWNED AUTOS                                |   |                         |                         | PROPERTY DAMAGE (Per accident) \$  |
|          |   |   |   |                         |                         | Underinsured motorist \$ 1,000,000   |
|          |   |   |   |                         |                         |  |
|          |   |   |   |                         |                         |  |
|          |   |   |   |                         |                         |  |
| A        | <input checked="" type="checkbox"/> UMBRELLA LIAB   |   |   |                         |                         | EACH OCCURRENCE \$   |
|          | <input type="checkbox"/> EXCESS LIAB  | <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE     |   |                         |                         | AGGREGATE \$ 4,000,000   |
|          | <input checked="" type="checkbox"/> RETENTION \$ 10,000   |   |   |                         |                         |  |
| A        | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY   |   |   |                         |                         | <input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER |
|          | ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)                               | <input type="checkbox"/> Y <input checked="" type="checkbox"/> N        | N/A   |                         |                         | E.L. EACH ACCIDENT \$ 1,000,000  |
|          | If yes, describe under DESCRIPTION OF OPERATIONS below  |   | <input checked="" type="checkbox"/>                                     |                         |                         | E.L. DISEASE - EA EMPLOYEE \$ 1,000,000  |
|          |   |   |   |                         |                         | E.L. DISEASE - POLICY LIMIT \$ 1,000,000   |
|          |   |   |   |                         |                         |  |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Re: PROJECT NAME

The Certificate Holder is an Additional Insured on General Liability & Automobile policies, but only with respect to work done by or on behalf of the named insured for the project referenced. The Certificate Holder is granted Waiver of Subrogation on the General Liability, Automobile and Workers' Compensation policies as respects the referenced project

## CERTIFICATE HOLDER

## CANCELLATION

City of Kenai  
Public Works  
210 Fidalgo Ave  
Kenai, AK 99611

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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## PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_, hereinafter called Principal, and  
(Corporation, Partnership, or Individual)

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_

\_\_\_\_\_  
(Name of Owner)

\_\_\_\_\_  
(Address of Owner)

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

THE CONDITIONS OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with  
the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 201\_, a copy of which is hereto attached and made a part  
hereof for the construction of:

\_\_\_\_\_  
\_\_\_\_\_  
NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings,  
covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions  
thereof which may be granted by the Owner, with or without notice to the Surety, and if he 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 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 ways affects 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 Contractor shall abridge the right of

any beneficiary hereunder, who claims may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_.

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

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

ATTEST:

BY \_\_\_\_\_

\_\_\_\_\_  
(Witness as to Principal)

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

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

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

ATTEST:

BY \_\_\_\_\_  
(Attorney-in-Fact)

\_\_\_\_\_  
(Witness as to Surety)

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

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

NOTE: If Contractor is Partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

## PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_, hereinafter called Principal, and  
(Corporation, Partnership, or Individual)

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_

\_\_\_\_\_  
(Name of Owner)

\_\_\_\_\_  
(Address of Owner)

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

THE CONDITIONS OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with  
the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 201\_, a copy of which is hereto attached and made a part  
hereof for the construction of:

\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and  
corporations furnishing 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 said work, and all insurance premiums on said work, and for all labor, performed in such work  
whether by subcontractor or other-wise, 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 ways affects 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 Contractor shall abridge the right of  
any beneficiary hereunder, who claims may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_.

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

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

ATTEST:

BY \_\_\_\_\_

\_\_\_\_\_  
(Witness as to Principal)

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

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

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

ATTEST:

BY \_\_\_\_\_  
(Attorney-in-Fact)

\_\_\_\_\_  
(Witness as to Surety)

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

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

NOTE: If Contractor is Partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

**CONTRACTOR'S RELEASE AND AFFIDAVIT OF PAYMENTS**  
**OF DEBTS AND CLAIMS ("Release")**

**PROJECT NAME:**    **PROJECT NAME**

The undersigned, being first duly sworn, deposes and says:

1. That pursuant to this contract for project \_\_\_\_\_ between the undersigned and the City of Kenai dated \_\_\_\_\_ the undersigned hereby certifies that, except as listed below, he has paid in full or has otherwise satisfied all obligations for materials and equipment furnished for all work, labor, and services performed and for all known indebtedness and claims for which the Contractor or the City of Kenai is or may become liable in connection with performance under this contract. The Contractor warrants that he has made diligent search and inquiry to determine the existence of any such claim, debt, or liability and that all such obligations, whether liquidated, unliquidated, or disputed, have been satisfied.
  
2. The Contractor further certifies he did not extend any loan, gratuity, or gift of money of any form whatsoever to any employee or agent of the City, that he did not rent or purchase any equipment or materials from any employee of the City, nor to the best of his knowledge, from any agent of any employee of the City, and that he has not made any promise to an employee or agent of the City to do or undertake any such action after completion of the subject contract.
  
3. Pursuant to the above-described contract and in consideration of the final payment in the amount of \$\_\_\_\_\_, the undersigned Contractor hereby releases and discharges the City of Kenai, its officers, agents and employees of and from any and all further claim, debt, charge, demand, liability, or other obligation whatsoever under or arising from said contract, whether known or unknown and whether or not ascertainable at the time of the execution of this instrument. This release is complete, final, binding and irrevocable.
  
4. The Contractor shall indemnify, defend, save and hold the City, its elected and appointed officers, agents and employees, harmless from any and all claims, demands, suits, or liability of any nature, kind or character including costs, expenses, and attorneys fees resulting from Contractor or Contractor's officers, agents, employees, partners, attorneys, suppliers, and subcontractors' performance or failure to perform this Agreement in any way whatsoever. This defense and indemnification responsibility includes claims alleging acts or omissions by the City or its agents which are said to have contributed to the losses, failure, violations, or damage. However, Contractor shall not be responsible for any damages or claim arising from the sole negligence or willful misconduct of the City, its agents, or employees. Contractor and subcontractors shall also not be required to defend or indemnify the City for damage or loss that has been found to be attributed to an independent contractor directly responsible to the City under separate written contract.

If any portion of this Release is voided by law or court of competent jurisdiction, the remainder of this Release shall remain in full force and effect.



**CONTRACTOR'S RELEASE AND AFFIDAVIT OF PAYMENTS**  
**OF DEBTS AND CLAIMS ("Release")**

IN WITNESS WHEREOF, this Release has been executed this \_\_ day of \_\_\_\_\_, 201\_\_.

\_\_\_\_\_  
(Contractor's signature)

Title \_\_\_\_\_

**ACKNOWLEDGEMENT**

STATE OF ALASKA                    )  
  ) ss  
THIRD JUDICIAL DISTRICT        )

THIS IS TO CERTIFY that on this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_, before the undersigned, a Notary Public in and for the State of Alaska, duly commissioned and sworn, personally appeared \_\_\_\_\_, who, having produced satisfactory evidence of identification, and having acknowledged the voluntary and authorized execution of the foregoing instrument for the purposes therein mentioned, executed the above and foregoing instrument.

\_\_\_\_\_  
Notary Public for Alaska

My Commission Expires: \_\_\_\_\_

(NOTE: In case of a corporation, the attached Certificate of Authority must be completed by a corporate officer other than the one who signs above.)





*"Village with a Past, City with a Future"*

210 Fidalgo Avenue, Kenai, Alaska 99611-7794

Telephone: 907-283-7535 / Fax: 907-283-3014

www.kenai.city

## **CONSENT OF SURETY COMPANY TO FINAL PAYMENT**

**PROJECT:** \_\_\_\_\_

**CONTRACT DATE:** \_\_\_\_\_

**CONTRACTOR:** \_\_\_\_\_

**TO: CITY OF KENAI, OWNER**

210 Fidalgo Avenue

Kenai, AK 99611

Attn: Public Works Department

In accordance with the provisions of the above-referenced Contract between Owner, City of Kenai, and Contractor, Surety (insert name and address of Surety),

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_,

does hereby consent to and approve of the final payment to Contractor in the amount of \$\_\_\_\_\_, and in the case of Surety, it is further agrees as follows:

1. In giving this Consent, Surety has made its own investigation to determine whether said payment should be made to Contractor and Surety has not relied on any representation by the City of Kenai or its employees or agents which has induced it to consent to such payment.

2. Surety agrees that this payment shall not relieve Surety of any of its obligations to the City of Kenai as set forth in its Labor and Material Payment and Performance Bonds

and Surety waives any and all claims against City of Kenai for wrongful release of funds to Contractor.

IN WITNESS WHEREOF, said Surety Company has set its hand this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

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

\_\_\_\_\_  
(Signature of authorized representative)

\_\_\_\_\_  
(Printed name and title)

#### ACKNOWLEDGEMENT

STATE OF \_\_\_\_\_ )  
 ) ss.  
\_\_\_\_\_ )

THIS IS TO CERTIFY that on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,  
\_\_\_\_\_, Title: \_\_\_\_\_ of \_\_\_\_\_  
(Surety), being personally known to me or having produced satisfactory evidence of identification, appeared before me and acknowledged the voluntary and authorized execution of the foregoing instrument.

\_\_\_\_\_  
Notary Public for \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

**NOTE TO SURETY:** ATTACH PROOF OF POWER OF ATTORNEY OR OTHER DOCUMENTATION DEMONSTRATING SIGNATORY MAY BIND SURETY

## **SECTION 01 01 00 – SUMMARY OF WORK**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

A. Work Included:

1. Work required under this contract is described in the subsequent sections and is more particularly delineated in the Drawings, and includes the providing of all labor, equipment, tools, and materials required for the TRAINING EQUIPMENT REHABILITATION FOR THE CITY OF KENAI as described in this and subsequent sections and in other Contract Documents.
2. The Contract Documents do not purport to describe in detail, absolute and complete construction information. In some instances, drawings will be diagrammatic and not necessarily to exact scale or portray exact conditions at any particular location or situation.
3. It shall be the responsibility of the Contractor to determine conditions and requirements at each particular situation and provide all items necessary for the completion of the Work, according to the parameters established by the Contract Documents.

B. Language:

The language employed in these specifications is addressed directly to the Contractor. Imperative or indicative language is generally employed throughout and requirements so expressed are the mandatory responsibility of the Contractor even though the work specified actually may be accomplished by specialty subcontractors hired, retained, or otherwise engaged by the Contractor. References to third parties in this regard shall not be interpreted in any way as to relieve the Contractor of any of his responsibilities under the Contract.

#### **1.02 QUALITY ASSURANCE**

A. Qualifications of workers:

For all the operations under this Contract:

1. Employ a thoroughly qualified and experienced superintendent who shall be completely familiar with the requirements of the Contract Documents, who shall direct all work, and who shall be present at the job site at all reasonable times while work is in progress.
2. Employ only qualified journeymen mechanics, tradesmen, or installers who are thoroughly skilled and experienced in their respective trades or specialties.
3. Apprentices and helpers, when employed, shall be under the supervision of qualified journeymen mechanics or tradesmen at all times.

B. Referenced Standards:

Standards referenced in this and succeeding sections of the specifications shall become a part of the Contract Documents to the extent of their applicability to the particular item, process, method or operation involved.

**1.03 CONTRACTOR'S DUTIES**

- A. Except as otherwise specifically required, provide and pay for labor, materials, tools, machinery, equipment, and all transportation.
- B. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of the work.
- C. In the event of any observed variation between the Contract Documents and legal requirements, or any discrepancy or ambiguity in or among any of the requirements of the Contract Documents or any referenced standards, promptly notify the Owner's Representative in writing in which eventuality, appropriate changes and modifications to the Contract Documents will be initiated by the Owner and furnished to the Contractor. Contractor shall assume responsibility for work performed without proper notice to Owner, when such work was known by Contractor to be contrary to such requirements. Do not proceed in questioned areas until resolution or clarification has been obtained.

**1.04 PREMISES**

A. Contractor's Access:

The Owner will make available at the indicated locations, exterior space, as reasonable, for the storage and staging of the Contractor's materials and equipment, subject to the following controls.

- 1. Use of such areas shall be covered by the insurance required by the General Conditions (Provisions).
- 2. Storage shall be maintained in a neat and orderly condition at all times conforming to all fire and safety regulations.
- 3. Fire lanes and required exit pathways shall be kept free and unobstructed at all times.
- 4. Do not unreasonably encumber site with materials and equipment.
- 5. Do not impose loads which might impair the structural integrity of any work already in place.
- 6. Use of the space shall be coordinated with and subject to the requirements of the Owner.
- 7. Upon completion of the contract, restore all areas to original conditions which prevailed prior to onset of the work, or as otherwise provided in the Contract Documents.

B. Environmental Requirements:

- 1. Restrict all operations to the areas assigned for storage, staging, and other necessary operations, and do not permit the disturbance of any areas not assigned for approved operations shown as limits of construction under this Contract.
- 2. The areas indicated on the drawings where existing natural vegetation remains is to be protected by the Contractor. The Contractor shall cordon-off these areas. They are not to be used by the Contractor for storage of materials, access of any other purpose. Damage to the natural ground cover in these areas will be restored to the satisfaction of the Architect.
- 3. Employ all means necessary to avoid the accumulation of debris and construction residue, avoiding the spread of dust and noxious odors.

**PART 2 PRODUCTS**

**2.01 STORAGE AND PROTECTION**

Do not deliver any of the materials or equipment for this Contract to the job site until adequate facilities are available for their proper storage and protection. Comply with the detailed requirements in subsequent sections for the storage and protection of the particular products of those sections.

Take all measures necessary to protect the installed work and materials of all trades at all times before, during, and after installation.

**2.02 MATERIALS AND EQUIPMENT**

A. Design:

Design is based upon the method system, or product described, and the Drawings reflect the desired location and configuration. In some instances, the recommended installation details of the named manufacturer, comparable methods systems or products of alternate manufacturers will be considered (unless otherwise noted as "No Substitution") upon submittal per Sections 01 34 00 of these specifications.

B. Materials:

All materials proposed for incorporation into this project shall be new and as specified or as shown in the Drawings, or if not specifically called out, shall be of first quality of their respective kinds, as selected by the Contractor, subject to the approval of the Owner's Representative.

C. Minimum Quality:

In every instance the quality level shown or specified is intended as the minimum acceptable for the work to be performed or provided.

D. Conflicting or Overlapping Requirements:

In the event of conflict in or among any of the requirements of this specification or any referenced standards, or where two or more referenced standards or sets of requirements are specified, and establishes differing minimums of levels of quality, the most stringent requirement shall prevail and shall be so enforced, unless specific language in the text (not in the referenced standards) clearly indicates that the less stringent requirement is intended to prevail.

E. Submittals:

Make all submittals of materials and equipment proposed for incorporation into the Work in accordance with Section 01 34 00 and the specific requirements of other individual sections of these specifications.

**PART 3 EXECUTION**

**3.01 JOB CONDITIONS**

A. Inspection:

Do not commence any phase of the Work until all previous work has been examined and it has been determined that subsequent operations may be executed in a timely and orderly manner and in complete accordance with the original design, the approved submittals, and all applicable codes and regulations.

B. Installer's Certification:

Where directed in subsequent sections, obtain written certification from subcontractors or installers that substrates affecting their operations have been examined and found satisfactory for further work. Submittal of such certification, countersigned by the Contractor, shall be a condition for acceptance of that particular installation or phase of work.

C. Discrepancies:

In the event of discrepancy, ambiguity, conflict, interference, or any other unanticipated condition or situation which might impede timely execution of the Work, immediately notify the Owner's Representative and do not proceed in questioned areas until resolution or clarification has been obtained.

D. Repairs and Replacements:

In the event of damage to any part of any installed material, equipment, assembly, or system, make all repairs or replacements necessary to restore the original undamaged condition. Do not allow damaged material to be incorporated into the Work. Repairs and replacements shall be subject to the approval of the Owner's Representative and shall be accomplished at no additional expense to the Owner.

**3.02 INSTALLATION**

Install all work in complete accordance with the original design, the approved submittals, and all applicable codes and regulations. Perform all work under the direction of qualified supervisors, foremen, or leadmen, and do not permit any phase of the work to be commenced by subcontractors or subcontractors without qualified supervisors present to direct their operations.

**3.03 GUARANTEES AND WARRANTIES**

In addition to the requirements in the General Provisions, the Contractor shall extend to the Owner such other bond, warranty, or manufacturer's guarantee offered by any vendor, manufacturer, or other supplier on any material, goods, equipment, or workmanship included in the Work.

**END OF SECTION 01 01 00**

## **SECTION 01 02 70 – APPLICATIONS FOR PAYMENT**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Work Included:
  - 1. Application for Payment Procedures: Submit Application for Payment to the Owner's Representative in accordance with the schedule established by the General Conditions of the Contract and Agreement Between Owner and Contractor.
- B. Related Documents and Sections Described Elsewhere:
  - 1. Agreement Between Owner and Contractor.
  - 2. General Conditions, "Measurement, Payment and Completion."
  - 3. Section 01 37 00 - Schedule of Values
  - 4. Section 01 70 00 - Contract Close-out Procedures

#### **1.02 FORMAT AND DATA REQUIRED**

- A. Submit applications using AIA Document G702 or in a form acceptable to the Owner.
- B. Provide itemized data on continuation sheet using AIA Document G703 or in a form acceptable to the Owner using the Schedule of Values accepted by the Owner's Representative.

#### **1.03 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT**

- A. Application Form:
  - 1. Fill in required information, including that for change orders executed prior to date of submittal of application.
  - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
- B. Continuation Sheets:
  - 1. Fill in total list of scheduled component items of work with item number and scheduled dollar value for each item.
  - 2. Fill in dollar value in each column for each scheduled line when work has been performed or products stored.
    - a. Round off values to nearest dollar, or as specified for Schedule of Values.
  - 3. List each change order executed prior to date of submission at the end of the continuation sheets.
    - a. List by change order number and description, as for an original component item of work.

#### **1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS**

- A. Contractor shall submit suitable information, with a cover letter identifying:
  - 1. Project Name
  - 2. Application number and date
  - 3. Detailed list of enclosures
  - 4. For stored products:

- a. Submit separate recap for all stored materials included in Application for Payment.
  - b. All stored materials listed in recap shall be substantiated by invoices for the material and copies of the invoices shall be attached to the recap. If any stored materials are being claimed which are not stored in the construction site, itemized listing shall show location where materials are stored and such location shall be available for inspection of the materials. Contractor shall show proof of adequate insurance for material stored off-site. The Contractor shall request approval of any location for stored material, other than the construction site, prior to submittal of Application for Payment.
  - c. Stored material prices shall include cost of material, related freight costs, and applicable taxes; all of which must be substantiated by invoice.
5. Provide completed forms for Payment Request and Proof of Payment for subcontractors and suppliers.
- B. Submit one copy of data and cover letter with each copy of application.
- C. A copy of each of the subcontractor and supplier request form and a stored materials form.

**1.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT**

- A. Fill in application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting as specified in Section 01 70 00 - Contract Close-out Procedures.

**1.06 SUBMITTAL PROCEDURE**

- A. Submit Applications for Payment to Project Representative at the times stipulated in the General Condition.
- B. Number: Three copies of each application.
- C. When Owner's Representative finds application properly completed and correct, the Certificate for Payment will be transmitted to the Owner with copy of the transmittal letter.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 02 70**



## **SECTION 01 04 50 – CUTTING AND PATCHING**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

**A. Work Included:**

1. Cutting, fitting and patching required to complete the work and to:
  - a. Accommodate coordination of the Work.
  - b. Provide for installation of other work.
  - c. Remove and replace defective work.
  - d. Remove and replace work not conforming to requirements of Contract Documents.
  - e. Uncover other work for access or inspection.
  - f. Obtain samples for testing or similar purposes.
  - g. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.
  - h. Uncover portions of the work to provide for installation of ill-timed work.
2. Cutting and patching also includes, but is not limited to, cutting and patching of nominally completed and previously existing work, and is defined to exclude integral cutting and patching during manufacturing, fabricating, erecting, and installation process for individual units of work.

**B. Related Sections:**

1. Refer to other section of specifications for specific cutting and patching requirements and limitations applicable to individual units of work.

#### **1.02 SUBMITTALS**

**A. Submit written request to Owner's Representative well in advance of executing cutting or alteration which affects:**

1. Work of Owner or separate contractor.
2. Structural value or integrity of element of Project.
3. Integrity of effectiveness of weather exposed or moisture resistant elements or systems.
4. Efficiency, operating life, maintenance or safety of operating elements.
5. Visual qualities of sight exposed elements.

**B. Request shall include:**

1. Project identification.
2. Description of affected work.
3. Necessity for cutting.
4. Effect on other work, or structural integrity of project.
5. Description of proposed work. Designate:
  - a. Scope of cutting and patching
  - b. Contractor and trades to execute work
  - c. Products proposed for use
  - d. Extent of refinishing
6. Alternatives to cutting and patching

7. Designation of party responsible for cost of cutting and patching.
- C. Should conditions of work or schedule indicate change of materials or methods, submit written recommendation to Owner's Representative including:
  1. Conditions indicating change.
  2. Recommendations for alternative materials or methods.
  3. Submittals as required for substitutions.
  4. Time involved and impact to other on-going activities.
  5. Cost involved.
  6. Time work will be accomplished to provide for Owner's Representative's observations.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION**

**3.01 JOB CONDITIONS**

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by cutting and patching operations, to such acceptable or approved condition. Return adjacent areas to condition existing prior to start of work.

**3.02 VISUAL REQUIREMENTS**

- A. Do not cut and patch work exposed on exterior of building in manner resulting in reduction of visual qualities or resulting in evidence of cut and patch work. Remove and replace cut and patched work judged by Owner's Representative to be visually unacceptable.
- B. Work includes, but is not limited to, items of woodwork, paneling, drywall, wall finishing, finished flooring, and ceilings.

**3.03 MATERIALS**

- A. For replacement of work removed, comply with Specifications for type of work to be done, unless otherwise noted.
- B. Provide materials for cutting and patching which will result in equal to or better work being cut and patched in terms of performance characteristics and visual effect where applicable.

**3.04 INSPECTION**

- A. Inspect existing conditions of work including elements subject to movement or damage during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of new products.

**3.05 PREPARATION PRIOR TO CUTTING**

- A. Provide shoring, bracing, and support as required to maintain structural integrity of Project.
- B. Provide protection for other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations.

- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

**3.06 PERFORMANCE**

- A. Before the start of cutting work, meet at the work site with all parties involved in cutting and patching, including (if necessary) mechanical and electrical trades. Review areas of potential interference and conflict between the various trades. Coordinate layout of the work and resolve potential conflicts before proceeding with the work.
- B. Execute fitting and adjustment of products to provide finished installation to comply with specified products, functions, tolerances and finishes.
- C. Execute cutting and demolition by methods which will prevent damage to other work and provide proper surfaces to receive installation of repairs and new work.
- D. Restore work which has been cut or removed. Install new products to provide completed work in accord with requirements of Contract Documents.
- E. Do not cut and patch structural work in manner resulting in reduction of:
  - 1. Load carrying capacity.
  - 2. Load/deflection ratio.
- F. Refinish entire surface as necessary to provide even finish.
  - 1. Refinish continuous surfaces to nearest intersection.
  - 2. Refinish entire unit of an assembly.
- G. Cut the work using methods that are least likely to damage work to be retained or adjoining work. Where possible review proposed procedures with original installer; comply with original installer's recommendations.
- H. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work. Where feasible, inspect and test patched areas to demonstrate integrity of work.
- I. Restore exposed finishes of patched area and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.

**END OF SECTION 01 04 50**

**SECTION 01 05 20 – GRADES, LINES AND LEVELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Property lines, bench marks, existing and proposed grades, and improvements are indicated on Drawings.
- B. Lay out Work and provide lines and measurements for the Work.
  - 1. Verify adjustments required due to existing improvements, adjoining property rights, good appearance, and proper drainage.
- C. Take necessary measurements as far in advance of required installation as practical. Verify measurements given on Drawings.
  - 1. Report promptly variations and discrepancies to Owner's Representative.
  - 2. Verify incomplete or non-closing dimensions with Owner's Representative.
- D. Dimensions on Drawings take precedence over scaled dimension. Where dimensions are not given, scaled dimensions to nearest point of reference may be used subject to verification of Owner's Representative.

**1.02 SURVEYS, LINES AND LEVELS**

- A. Provide services of a registered civil engineer or registered land surveyor with a minimum of 5 years' experience in Alaska, acceptable to Owner's Representative and licensed in the State of Alaska, to lay out work.
  - 1. Establish interior and exterior construction and control lines.
  - 2. Set grades using:
    - a. Grade stakes
    - b. Slope stakes
    - c. Finish grade stakes
- B. Provide all layout and construction lines and grade staking required for type of work being performed according to normal engineering procedures.
- C. Maintain construction lines and grade staking in condition to assure accurate and proper control of work and to verify final grades and construction lines.
  - 1. Establish and safeguard additional bench marks in at least two widely separated places.
  - 2. Establish axis lines showing exact floor elevations and other lines, dimensions and reference points as required for information and guidance of all trades.

**1.03 SUBMITTALS**

- A. Take settlement readings of work, unless waived by owner.
  - 1. At predetermined number of points selected by Owner's Representative.
  - 2. Weekly until work is completed or until such time as directed.

- B. Record all survey data and make available to Owner's Representative.
- C. Submit certificate signed by registered engineer or surveyor certifying elevations and improvements are in conformance with requirements of Contract Documents.
  - 1. Describe in detail and indicate on Project Record Documents all variation from Contract Documents.
  - 2. Include field survey notes starting date, name of surveyor or foremen, and adequate description of temporary bench marks when used.
    - a) Orient sketches with north arrow and show relationship and ties to stationing control.
    - b) Reduce notes to show actual elevations at design datum.
  - 3. Base horizontal control, for Project Record Documents information, on stationing system shown. Use design datum for all elevations.

**PART 2 PRODUCTS (Not Used)**

**PART 3 EXECUTION (Not Used)**

**END OF SECTION 01 05 20**

## **SECTION 01 06 00 – REGULATORY REQUIREMENTS**

### **PART 1 GENERAL**

#### **1.01 BUILDING CODES**

- A. Construction which is not governed by a local building code or the Contract Documents will be governed by the more stringent provisions of the latest published, Statute adopted edition, of the following applicable codes:

2012 International Building Code  
2014 National Electrical Code  
2012 International Plumbing Code  
2012 International Mechanical Code  
2012 International Fire Code  
2012 International Energy Conservation Code  
2012 International Fuel Gas Code Chapters 6 & 7  
Americans with Disabilities Act (ADA)  
Accessibility Guidelines for Buildings and Facilities  
NFPA 13, 70, 72, 101, 110, 415 and 780

- B. Construction Type: VB

- C. Occupancy Type: S-1

#### **1.02 APPLICABLE STANDARDS**

- A. Where indicated, comply with requirements and recommendations of referenced standards and other publications, except to extent more detailed or more stringent provisions are required by applicable codes and governing regulations.
- B. Where two or more standards or recommendations of trade associations apply to same quality control requirement for work, comply with most stringent. Refer uncertain instances to Owner's Representative.

#### **1.03 FEES AND PERMITS**

- A. Comply with requirements of Contract General Conditions and Supplementary Conditions.

### **PART 2 PRODUCTS (not used)**

### **PART 3 EXECUTION (not used)**

**END OF SECTION 01 06 00**

## **SECTION 01 09 00 – REFERENCE STANDARDS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Quality assurance
- B. Schedule of references

#### **1.02 RELATED SECTIONS**

- A. General Conditions

#### **1.03 QUALITY ASSURANCE**

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the Bid date, except when a specific date is specified.
- C. Obtain copies of standards when required by Contract Documents.
- D. Maintain copy at jobsite during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Owner's Representative before proceeding.
- F. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### **1.04 SCHEDULE OF REFERENCES**

|        |  |
|--------|--|
| AA     | Aluminum Association<br>818 Connecticut Avenue, NW<br>Washington, DC 20006   |
| AABC   | Associated Air Balance Council<br>1000 Vermont Avenue, NW<br>Washington, DC 20005  |
| AASHTO | American Association of State Highway and Transportation Officials<br>444 North Capitol Street, NW<br>Washington, DC 20001 |
| ACI    | American Concrete Institute<br>Box 19150<br>Reford Station<br>Detroit, MI 48219  |

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| AGC  | Associated General Contractors of America<br>1957 E Street, N.W.<br>Washington, DC 20006   |
| AIA  | American Institute of Architects<br>1735 New York Avenue, N.W.<br>Washington, DC 20006   |
| AISC | American Institute of Steel Construction<br>400 North Michigan Avenue<br>Eighth Floor<br>Chicago, IL 60611   |
| AISI | American Iron and Steel Institute<br>1101 17 Street, N.W.<br>Washington, DC 20036  |
| AMCO | Air Movement and Control Association<br>30 West University Drive<br>Arlington Heights, IL 60004  |
| ANSI | American National Standards Institute<br>11 W. 42nd<br>New York, NY 10036  |
| ASME | American Society of Mechanical Engineers<br>345 East 47th Street<br>New York, NY 10017   |
| ASTM | American Society for Testing and Materials<br>1916 Race Street<br>Philadelphia, PA 19103   |
| AWS  | American Welding Society<br>550 LeJune Road, NW<br>Miami, FL 33135   |
| AWWA | American Water Works Association<br>6666 West Quincy Avenue<br>Denver, CO 80235  |
| CRSI | Concrete Reinforcing Steel Institute<br>933 Plum Grove Road<br>Schaumburg, IL 60195  |
| FM   | Factory Mutual System<br>1151 Boston-Providence Turnpike<br>PO Box 688<br>Norwood, MA 02062  |
| FS   | Federal Specification General Services Administration<br>Specifications and Consumer Information Distribution Section<br>Washington Navy Yard, Bldg. 197<br>Washington, DC 20407 |



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| IEEE  | Institute of Electrical and Electronics Engineers<br>345 East 47th Street<br>New York, NY 10017            |
| MBMA  | Metal Building Manufacturers Association<br>1300 Sumner Avenue<br>Cleveland, Ohio 44115                    |
| NAAMM | National Association of Architectural Metal Manufacturers<br>221 North LaSalle Street<br>Chicago, IL 60601 |
| NCMA  | National Concrete Masonry Association<br>2302 Horse Pen Road<br>Herndon, VA 22071                          |
| NEMA  | National Electrical Manufacturers' Association<br>2101 L Street, NW<br>Washington, DC 20037                |
| NFPA  | National Fire Protection Association<br>1 Battery March Park<br>Quincy, MA 02269                           |
| PCA   | Portland Cement Association<br>5420 Old Orchard Road<br>Skokie, IL 60077                                   |
| PS    | Product Standard<br>US Department of Commerce<br>Washington, DC 20203                                      |
| SDI   | Steel Deck Institute<br>PO Box 9506<br>Canton, OH 44711  |
| SSPC  | Steel Structures Painting Council<br>4400 Fifth Avenue<br>Pittsburgh, PA 15213                             |
| UL    | Underwriters' Laboratories, Inc.<br>333 Pfingston Road<br>Northbrook, IL 60062                             |

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 09 00**

## **SECTION 01 20 00 – PROJECT MEETINGS**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Owner's Representative shall conduct Preconstruction Conference and close out review meetings. Contractor is to assure orderly review during progress of work and to assure systematic discussion of problems and will conduct all project meetings throughout the construction period. These will include:
  - 1. Weekly progress review meeting which will include Owner's Representative, and Superintendent, and any necessary Subcontractors.
  - 2. First of Month meetings which will include Architect, responsible sub-consultants for respective agenda items Superintendent, and Owner's Representative. At this meeting the request for payment shall be submitted for approval. Also, at this meeting the Contractor shall show current as-built drawings for approval prior to the pay period payment.
- B. Owner's Representative, Architect and consultants, project inspectors, and testing personnel will attend as needed.
- C. Related Sections:
  - 1. Section 01 31 10 Scheduling
  - 2. Section 01 34 00 Shop Drawings, Product Data, and Samples
  - 3. Section 01 70 00 Contract Close-out Procedures
  - 4. Individual Specification Sections
- D. Contractor's discussions with subcontractors and materials suppliers are Contractor's responsibility and normally are not part of project meetings content.

#### **1.02 QUALITY ASSURANCE**

- A. For those persons designated by the Contractor to attend and participate in project meetings, provide required authority to commit Contractor to solutions agreed upon in project meetings.

#### **1.03 SUBMITTALS**

- A. Agenda Items: To the maximum extent practicable, advise Owner's Representative at least 24 hours in advance of project meetings regarding items to be on agenda.
- B. Contractor shall compile minutes of each project meeting, furnishing copies to Owner's Representative and Architect within seven days of each meeting.

### **PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION**

**3.01 MEETING SCHEDULE**

- A. Except as noted below for Preconstruction meeting, project meetings will be held weekly.
- B. Coordinate as necessary to establish mutually acceptable schedule for meetings.

**3.02 MEETING LOCATION**

- A. Owner's Representative will establish meeting location.

**3.03 PRECONSTRUCTION MEETING**

- A. Preconstruction Meeting will be scheduled to be held within 15 working days after Owner's Representative has issued the Notice to Proceed.
  - 1. In addition to Contractor, representatives of sitework, mechanical, electrical and other major subcontractors shall attend.
  - 2. Contractor shall notify other interested parties and request their attendance.
  - 3. Preconstruction meeting will be held in the Owner's Representative's office.
- B. Minimum agenda: Data shall be distributed and discussed on at least the following items:
  - 1. Organizational arrangement of Contractor's forces and personnel, those of subcontractors, materials suppliers, Architect and consultants.
  - 2. Channels and procedures for communication.
  - 3. Construction Schedule, including sequence of critical work. Review materials that might require long lead times, etc.
  - 4. Contract Documents, including distribution of required copies of original documents and revisions.
  - 5. Processing of shop drawings and other data submitted to Owner's Representative for review.
  - 6. Processing of Bulletins, field decisions, and change orders.
  - 7. Rules and regulations governing performance of Work.
  - 8. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.
  - 9. Processing of payment requests.
  - 10. Preliminary discussions of future close-out procedures.

**PROJECT MEETINGS**

- C. Attendance:
  - 1. As much as possible, assign the same person or persons to represent the Contractor at project meetings throughout progress of Work.
  - 2. Subcontractor, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved.
- D. Minimum Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of Work progress.
  - 3. Field observation, problems and decisions.
  - 4. Identification of problems which impede planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Review of off-site fabrication and delivery schedules.
  - 7. Maintenance of progress schedule.
  - 8. Corrective measures to regain projected schedules.
  - 9. Planned progress during succeeding work period.
  - 10. Coordination of projected progress.
  - 11. Maintenance of quality and work standards.
  - 12. Effect of proposed changes on progress schedule and coordination.
  - 13. Other business relating to Work.

**3.04 CONTRACTOR'S MEETINGS**

- A. Conduct meetings with his own forces, subcontractors and suppliers as is required in individual specifications sections.
- B. Notify Owner's Representative in writing of any impending meetings for which the Owner's Representative's input is needed.
- C. Provide written notice a minimum of two weeks prior to meeting date and include meeting topic, agenda, location, time and list of expected attendees.
- D. Take meeting minutes and provide copies to Owner's Representative within 3 calendar days after meeting.

**3.05 CLOSE-OUT MEETINGS**

- A. Review Section 01 70 00 regarding Contract Close-out Procedures. Approximately two months prior to Substantial Completion, weekly Project Meetings will include discussion of close-out activities.
- B. Contractor is responsible to invite subcontractors as necessary to review related close-out work.

**END OF SECTION 01 20 00**

## **SECTION 01 25 00 – DEFINITIONS AND EXPLANATIONS**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

A. Explanation:

This section of the General Requirements defines certain terms used in the specifications and explains the language, format, and certain conventions used in the Project Manual and associated Contract Documents.

B. Related Documents:

Other contract documents directly related to and in some way modified or governed by the General Requirements Division include, but are not necessarily limited to, the following:

1. General Provisions
2. Supplementary Conditions
3. Technical Specifications Sections

C. Limitations of Scope:

The definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the Work to the extent such definitions or explanations are not stated more explicitly in other parts of the Contract Documents.

#### **1.02 DEFINITIONS**

A. General:

A substantial amount of the specification language constitutes specific definitions for terms found in the other Contract Documents, including the Drawings which must be recognized as diagrammatic and quantitative in nature and not completely descriptive of the requirements indicated. Certain terms used repetitiously in the Contract Documents are defined generally as follows:

1. Contract Documents:

The Contract Documents consist of the Owner-Contractor Agreement, the Conditions (Provisions) of the Contract (General, Supplementary, & other Conditions), the Drawings, the Specifications and all Addenda issued prior to and all Modifications issued after execution of the Contract.

2. Project Manual:

The Project Manual is a bound volume or volumes, containing the Bidding Requirements and the Contract Documents, (except Drawings, Addenda, and Change Orders).

3. General Requirement:

The Provisions or Requirements of Division 1 sections and the General Requirements apply to the entire Work of the Contract, and where so indicated, to other elements of Work which are included in the project.

4. Work (capitalized, noun):

The Work comprises the completed construction required by the Contract Documents and includes all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction.

5. work (uncapitalized, verb or noun):

Refers to effort or accomplishment.

6. Indicated:

A cross reference to details, notes, or schedules on the drawings, other paragraphs or schedules in the specifications, and similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted", "scheduled", or "specified" are used in lieu of "indicated", it is for the purpose of helping the reader locate the reference, and no limitation of location is intended except as specifically noted.

7. Directed, Requested, Authorized, Selected, Approved:

Unless otherwise explained, shall imply: "Directed by the Owner's Representative....Authorized by the Owner's Representative", etc. However, no such implied meaning shall be interpreted as to extend the responsibility of the Owner's Representative into the field of responsibility of the Contractor under the Contract.

8. Refer:

Used to indicate that the subject is defined or specified in further detail at another location in the Contract Documents, or elsewhere as indicated. It shall not be interpreted to require the Contractor to procure, subcontract, or purchase the subject work in any specific manner.

9. Approve:

Where used in conjunction with the response of the Owner's Representative (Contracting Agency) to submittals, requests, applications, inquiries, reports, and claims by the contractor, the meaning shall be held to the limitations of the responsibilities and duties of the Owner's Representative. In no case shall it be interpreted as a release of the Contractor from responsibility to fulfill the requirements of the Contract Documents.

10. Project Site, Jobsite:

The location of and the space available and assigned to the Contractor for the performance of the Work. The extent of the Project Site is shown in the Drawings and may or may not correspond with the legal description of the land upon which the project is to be built.

11. Shall/Must/Will:

"Shall" is used generally to indicate a direct indicative requirement. Where encountered, "must" shall be interpreted to mean the same as "shall" and neither is to be interpreted to require more or less stringent compliance than the other.

"Will", where encountered in relation to acts or responsibilities of the Contractor, shall be accorded the same meaning as "shall".

12. Furnish:

Used to mean the procurement, delivery to the project site, unloaded, and ready for unpacking, assembly, erection, or installation, as applicable in each instance.

13. Install:

Used to describe operations at the project site including unpacking, assembly, erection, installation, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations, as applicable in each instance.

14. Provide:

Means Furnish and Install, complete and ready for the intended use, as applicable in each instance.

15. Installer:

The entity (person or firm) engaged by the Contractor, his subcontractor, or sub-subcontractor for the performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a general requirement and understanding that such entities (installers) shall be expert in the operations they are engaged to perform.

16. Shop Drawings:

All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by the Contractor, his subcontractors, suppliers, or the manufacturers of the products, which illustrate how specific products, assemblies, or systems are fabricated or installed into the Work.

17. Architect, Architect/Engineer:

Generally used interchangeably to denote the professional consultant retained by the Owner to design the project and prepare the Contract Documents; but also for consultation during administration of the Contract, interpretation of Contract Documents, review and evaluation of materials and methods, and general observation of the progress of the Work. The Architect shall provide construction administration and will be the primary contact for the contractor.

18. Owner's Representative:

The designated representative of the Owner during the construction period to administer the Contract, interpret Contract Documents, review and evaluate materials and methods, and observe and evaluate the progress of the Work. The Owner's Representative has final approval on construction administration decisions.

**1.03 EXPLANATION**

A. General:

This series of explanations is provided to assist the user of these specifications and associated Contract Documents to more readily understand the format, language, implied requirements and similar conventions of the content. None of these explanations shall be interpreted to modify the substance of the specified requirements.

B. Specification Production:

Portions of these specifications have been produced by editing master specifications and may contain minor inconsistencies. Such deviations are a normal result of this production technique, and no other meaning shall be implied or permitted.

C. Format:

The format of principal portions of these specifications can be generally described as follows, although other portions may not fully comply and no particular significance shall be attached to such compliance or non-compliance:

1. For convenience, the basic unit of specification text is a "Section", each unit of which is named and numbered. Sections are organized into related families of sections termed "Divisions", which are recognized as the present industry consensus on uniform organization and sequencing of construction specifications.
2. The section title is not intended to limit the meaning or content of the section, nor to be fully descriptive of the requirements specified therein, nor to be an integral part of the text. The Section identification is contained in the footer at the bottom of the page.

D. Page Numbering:

1. Pages are numbered independently and sequentially within each section. A new sequence of numbers begins with the beginning of each new Section and is located in the right-hand side of the footer on each page.

E. The Three Part Section:

Generally, each section of the specification has been subdivided into three (3) "parts" for uniformity and convenience. They are:

PART 1 GENERAL  
PART 2 PRODUCTS  
PART 3 EXECUTION

In the event additional parts are required for tables, schedules, etc. they will be added in the form of:

PART 4 APPENDIX

These parts do not limit the meaning of, and are not an integral part of, the text which specifies requirements. In some instances one or the other of these parts may not be used in which case it will be so noted as "not used."



F. Language:

Direct imperative language is used generally throughout the specifications, and requirements so expressed are the responsibility of the Contractor, even though the work specified actually may be accomplished by specialty subcontractors hired, retained, or otherwise engaged by the Contractor. Any references to third parties in this regard, shall not be interpreted in any way as to relieve the Contractor of any of his responsibilities under the contractor.

G. Specification Types:

The techniques or types of specification used to record the requirements varies throughout the text, and may include types commonly recognized as "prescriptive," "generic descriptive," "compliance with standards (reference)," "performance," "open," "open multi-product," "closed single product," "proprietary," or a combination of these.

H. Trades, Names:

The use of trade titles such as "carpentry," and degrees of expertise such as "journeyman (men)," implies neither that the work is required to be performed by that specific trade, nor that the level of expertise indicated is recognized as peculiar to membership or nonmembership in any trade or industry association or organization, nor that the specified requirements apply exclusively to work by tradesmen of that corresponding generic name.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 25 00**

## **SECTION 01 31 10 – SCHEDULING**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. To assure adequate planning and execution of the Work so that the Work is completed prior to the completion date stipulated in the Contract, and to assist the Owner's Representative in appraising the reasonableness of the proposed schedule and in evaluating progress of the Work, prepare a project schedule using the Critical Path Method.
- B. Requirements for progress schedule: General Conditions.
- C. Construction period: Form of Agreement
- D. Definitions:
  - 1. "Day", as used throughout the Contract unless otherwise stated, means "calendar day".

#### **1.02 SECTION INCLUDES**

- A. References
- B. Quality Assurance
- C. Format
- D. Schedules
- E. Submittals
- F. Review and evaluation
- G. Updating Schedules
- H. Distribution

#### **1.03 RELATED SECTIONS**

- A. General Conditions
- B. Supplementary Conditions
- C. Section 01 02 70 Application for Payment Procedures
- D. Section 01 20 00 Project Meetings
- E. Section 01 34 00 Shop Drawings, Project Data, and Samples
- F. Section 01 37 00 Schedule of Values

#### **1.04 REFERENCES**

- A. "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry", The Associated General Contractors of America (AGC), Washington, D.C., 1976 edition.
- B. "CPM in Construction Management - Project Management with CPM", James O'Brien, McGraw-Hill Book Company, New York, NY 1984, third edition.

**1.05 QUALITY ASSURANCE**

- A. A statement of CPM capability shall be submitted in writing prior to the award of the contract and will verify that either the contractor's organization has "in-house capability" qualified to use the Microsoft Project or that the contractor employs a consultant (firm) which is so qualified.

**1.06 FORMAT**

- A. Listing: Reading from left to right, in ascending order for each activity. Identify each activity with the applicable Specification section number.
- B. Diagram Sheet Size: Adequate for clear reading.
- C. Scale and Spacing: To allow for notations and revisions.

**1.07 SCHEDULES**

- A. Prepare the Critical Path Schedule, under concepts and methods outlined in the references list in Article 1.04 above. Show information in such detail that duration times of activities will range normally from one to 15 calendar days.
- B. Illustrate complete sequence of construction by activity, identifying work of separate areas. Provide dates for submittals, including those for Owner furnished items, and return of submittals; dates for procurement and delivery of products; and dates for installation of provision for testing. Provide legend for symbols and abbreviations used.
- C. Actual start date
  - 1. Actual finish date
  - 2. Latest start date
  - 3. Latest finish date
  - 4. Total and free float
  - 5. Monetary value of activity, keyed to Schedule of Values
  - 6. Percentage of activity completed
  - 7. Responsibility
- D. Analysis Program Microsoft Project: Capable of compiling monetary value of completed and partially completed activities, of accepting revised completion dates, and recomputation of all dates and float.
- F. Coordinate contents with Schedule of Values in Section 01 37 00.

**1.08 SUBMITTALS**

- A. Within 10 days after date established in Notice to Proceed, submit proposed preliminary critical path schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. Submittal of preliminary schedule shall occur prior to review and payment of any pay requests.
- C. Participate in review of preliminary and complete schedule jointly with Owner's Representative.
- D. Within 20 days after joint review of proposed preliminary schedule, submit draft of proposed complete project schedule for review. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.

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- E. Within 10 days after joint review, submit complete critical path schedule to final acceptance of work.
- F. Submit updated schedules with each Application for Payment.
- G. Submit 1 Compact Disc with file saved as MS Project format. Include updates on CD also.

**1.09 REVIEW AND EVALUATION**

- A. Participate in joint review and evaluation of schedule with Owner's Representative at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

**1.10 UPDATING SCHEDULES**

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Update diagrams to graphically depict current status of Work.
- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Indicate changes required to maintain Date of Substantial Completion.
- E. Submit sorts required to support recommended changes.
- F. Provide narrative report to define problem area, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

**1.11 DISTRIBUTION**

- A. Following joint review, distribute copies of updated schedules to Contractor's project site file, to Subcontractors, suppliers, Architect, and Owner's Representative.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown on Schedules.

**PART 2 PRODUCTS ( not used)**

**PART 3 EXECUTION ( not used)**

**END OF SECTION 01 31 10**

## **SECTION 01 34 00 – SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Work Included:
  - 1. Procedures for submittals.
- B. Related Work Described Elsewhere:
  - 1. General Conditions:
  - 2. Scheduling: Section 01 31 10
  - 3. Quality Control: Section 01 40 00
  - 4. Product Options and Substitutions: Section 01 63 00
  - 5. Project Record Documents: Section 01 72 00
  - 6. Operation and Maintenance Data: Section 01 73 00

#### **1.02 SHOP DRAWINGS**

- A. Present in a clear and thorough manner. Title each drawing with Project name and number; identify each element of drawings by reference to sheet number and detail, schedule, or room number of Contract Documents.
- B. Identify field dimensions; show relation to adjacent or critical features or Work or products.
- C. Sheet Size:
  - 1. Minimum: 8 1/2 x 11 in.
  - 2. Maximum: 30 x 42 in.
  - 3. In between: Modules of approximately 8 1/2 x 11 in.
- D. Scale and measurements: Make shop drawing accurately to a scale large enough to show pertinent parts of item and method of connection to Work.
- E. Shop drawings include fabrication, erection and setting drawings, schedule drawings, manufacturer's scale drawings, wiring and control diagrams, cuts or entire catalogs, pamphlets, descriptive literature, performance and test data.
- F. Check drawings and schedules, coordinate them with work of trades involved before submission and indicate their approval.
- G. Identify details by reference to sheet and detail, schedule or room numbers shown on Drawings.

#### **1.03 PRODUCT DATA**

- A. Submit product data when required by individual Specification Section.
  - 1. Products which are specified in individual Specification Sections or on Drawings by manufacturer's name and complete product number do not require submittal or product data.
  - 2. Supply products specified. Indicate on Submittal Schedule manufacturer's name and complete product number of product to be supplied, and reference Specification Section and Article number and Drawings and detail number.

- B. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and Article number. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.
- C. Modify manufacturers' standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work. Delete information not applicable.

**1.04 SAMPLES**

- A. Submit full range of manufacturer's standard finishes except when more restrictive requirements are specified, indicating; colors, textures, patterns, for selection. No color selection shall be made until all items needing color selection have been submitted.

Whenever color is specified "as selected", submit actual material color samples for Architect's selection.

- B. Submit samples to illustrate functional characteristics of products, including parts and attachments.
- C. Label each sample with identification required for transmittal letter.
- D. Provide field samples of finishes at Project, at location acceptable to Owner's Representative, as required by individual Specifications section. Install each sample complete and finished. Acceptable finishes in place may be retained in completed work.

**1.05 MANUFACTURER'S INSTRUCTIONS**

- A. Manufacturer's instructions for storage, preparation, assembly, installation, start-up, adjusting, balancing, and finishing.

**1.06 CERTIFICATES OF COMPLIANCE**

- A. Execute certificates of compliance for specified materials in three copies. Sign certificates by an authorized official of manufacturing company, and list name and address of Contractor, Project name and location, and quantity and date of shipment. List name and address of testing laboratory and date of tests on copies of lab test reports submitted with certificates.

**1.07 CONTRACTOR REVIEW**

- A. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirement of Contract Documents.
- B. Coordinate submittals with requirements of Work and of Contract Documents.
- C. Apply Contractor's review stamp, signed or initialed certifying to review, verification of products, field dimensions and field construction criteria, and coordination of information with requirements of Work and Contract Documents, for each sheet of shop drawings, manufacturer's installation instructions and product data, and label each sample to certify compliance with requirements of Contract Documents. Notify in writing at time of submittal, of any deviations from requirements of Contract Documents, with brief explanation describing deviation.

- D. Do not fabricate products or begin work which requires submittals until return of submittal with acceptance.
- E. It is the Contractor's responsibility to coordinate and verify field conditions, with approved shop drawings, prior to construction, in areas requiring shop drawings.

**1.08 SUBMITTAL REQUIREMENTS**

- A. Submittal Schedule: Within thirty days from receipt of Notice to Proceed, submit two copies of schedule of submittals requiring review to Owner's Representative.
  - 1. Include such items as shop drawings, product data, certificates of compliance, and material samples.
  - 2. Indicate type of item, requirement reference, and submittal dates.
  - 3. Allow 10 calendar days for Owner's Representative's review.
  - 4. Submittals not required will not be reviewed by Architect.
- B. Transmit submittals in accordance with approved progress schedule and in such sequence to avoid delay in the Work or work of other contracts.
  - 1. Transmit far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.
  - 2. For shop drawing submittal, schedule shall provide for maximum of 10 shop drawings per calendar week to be submitted for review for each of the mechanical, electrical, structural and architectural disciplines.
- C. Submittals shall be delivered to Owner's Representative's Office.
- D. Transmit submittals in groups containing all information required for complete review.
  - 1. Partial, incomplete submittals will be rejected.
- E. Provide 8 x 4 in. blank space on each submittal for Contractor's and Owner's Representative's stamp.
- F. Coordinate submittals into logical grouping to facilitate interrelation of the several items:
  - 1. Finishes which involve selection of colors, textures, or patterns.
  - 2. Associated items which require correlation for efficient function or for installation.
- G. PDF files of shop drawings are acceptable.
- H. Submit number of copies of product data and manufacturer's instructions Contractor requires, plus four copies which will be retained by Owner's Representative (two copies) and his consultants (two copies).
- I. Submit number of samples specified in individual Specifications Sections.
- J. Submit under accepted form of transmittal letter. Identify Project by title and number. Identify Work and product by Specifications section and Article number.
- K. Maintain submittal log showing status of submittals, make available for Owner's Representative's review upon request.

**1.09 RESUBMITTALS**

- A. Make resubmittals under procedures specified for initial submittals; identify changes made since previous submittal.

**1.10 DISTRIBUTION**

- A. Pick up reviewed copies of submittals at Owner's Representative's office when notified.
- B. Duplicate and distribute reproductions of shop drawings, copies of product data, and samples, which bear stamp of approval, to job site file, Record Documents file, Owner's Representative (2 copies), subcontractors, suppliers, and other entities requiring information.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 34 00**



**SECTION 01 37 00 – SCHEDULE OF VALUES**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. Work Included:
  - 1. Breakdown of Contract Sum showing values allocated to each of various parts of Work, as specified here and in other provisions of the Contract Documents.
  - 2. Schedule of values shall be compatible with "continuation sheet" accompanying applications for payment.
- B. Related Work Described Elsewhere:
  - 1. General Conditions:
  - 2. Supplementary Conditions
  - 3. Sections in Division 1 of this Specification.

**1.02 QUALITY ASSURANCE**

- A. Use required means to assure arithmetical accuracy of sums described.
- B. When required by Owner's Representative, provide copies of subcontractors or other acceptable data substantiating sums described.

**1.03 SUBMITTALS**

- A. Submit to Owner's Representative a Schedule of Values for Contractor's Work and subcontracted work in each applicable Section of Specifications, Division 2 through 33 inclusive, within ten days after Notice to Proceed.
- B. Upon Owner's Representative's request, support values with data substantiating correctness.
- C. Schedule of Values, unless objected to by Owner's Representative, shall be used only as basis for Contractor's Applications for Payment.
- D. Meet with Owner's Representative's and determine additional information, if any, required to be submitted.
- E. Secure the Owner Representative's approval of the schedule of values prior to submitting first application for payment.

**1.04 FORM AND CONTENT OF SCHEDULE OF VALUES**

- A. Type schedule on 8 1/2 x 11 in. white paper, Contractor's standard forms and automated printout will be considered for acceptance by Owner's Representative upon Contractor's request. Include emailing to Owner and Architect file saved to MS Excel format. Identify schedule with:
  - 1. Project title and location.
  - 2. Name and Address of Contractor.
  - 3. Date of Submission

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- B. List installed value of component parts of Work in sufficient detail to serve as basis for computing values for progress payments during construction.
- C. Follow Table of Contents as format for listing component item:
  - 1. Identify each line item with number and title of respective Section of Specifications.
- D. Under each major item list sub-values of major products or operations.
  - 1. Each line item shall include directly proportional amount of Contractor's overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, breakdown values into:
    - a. Cost of materials, delivered and unloaded, with taxes paid.
    - b. Total installed value.
- E. Sum of values listed in schedule shall equal total Contract Sum.

**1.05 SUB-SCHEDULE OF UNIT MATERIAL VALUES**

- A. Submit sub-schedule of unit costs and quantities for products on which progress payments will be requested for stored products.
- B. Form of submittal shall parallel Schedule of Values, with each item identified same as line item in Schedule of Values.
- C. Unit quantity for bulk materials shall include allowance for normal waste.
- D. Break unit values for material down into:
  - 1. Cost of material, delivered and unloaded at Site, with taxes paid.
  - 2. Installation costs, including Contractor's overhead and profit.
- E. Installed unit value multiplied by quantity listed shall equal cost of item in Schedule of Values.
- F. Materials incorrectly stored at the jobsite are subject to damage and may not be included in progress payments as determined by the Owner's Representative.
- G. The contract sum identified on the schedule of values as "Final" shall be based on the contract award and in an amount as found in the general conditions.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 37 00**

**SECTION 01 40 00 – QUALITY CONTROL**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. All material and workmanship shall be subject to inspection, examination, and test by the Owner's Representative at any and all times during manufacture and/or construction and at any and all places where such manufacture and/or construction are carried on. The Owner's Representative shall have the right to reject defective material and workmanship or require its correction. Rejected workmanship shall be satisfactorily corrected and rejected material shall be satisfactorily replaced with proper material without charge therefor, and the Contractor shall promptly segregate and remove rejected material from the premises. If the Contractor fails to proceed at once with replacement of rejected material and/or correction of defective workmanship, the Owner's Representative may, by contract or otherwise, replace such material and/or correct such workmanship and charge the cost thereof to the Contractor, or may terminate the right of the Contractor to proceed as provided in the General Conditions.
- B. The Contractor shall call for, coordinate and support inspections and tests required by the Contract Documents. The Owner shall pay all costs for special inspections and tests, required by the Contract Documents with the Contractor paying for coordination of said tests. The presence of, or absence from, the Contract work site of any Owner's Representative shall not relieve the Contractor of his responsibilities for providing of inspection or testing requirements of the Contract.
- C. Should it be considered necessary or advisable by the Owner's Representative, at any time before final acceptance of the entire work, to make an examination of work already completed by removing or tearing out, the Contractor shall promptly on request furnish all necessary facilities, labor, and materials. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or his Subcontractors, the Contractor shall defray all the expenses of such examinations and of satisfactory reconstruction. However, if such work is found to meet the requirements of the Contract, the actual direct cost of labor and material necessarily involved in the examination and replacement plus ten percent (10%) shall be allowed the Contractor and, in addition, if completion of the work has been delayed thereby, he shall be granted a suitable extension of time based on the additional work involved.
- D. Inspection of material and finished articles at the place of production, manufacture, or shipment shall be final except as regards latent defects, departures from specific requirements of the Contract, damage or loss in transit, and fraud or such gross mistakes as amount to fraud. Subject to the requirements contained in the preceding sentence, the inspection of materials and workmanship for final acceptance as a whole or in part shall be made at the site. Nothing contained in this paragraph shall in any way restrict the Contracting Agency's rights under any warranty or guarantee.

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- E. Manufactured articles, materials and equipment shall be applied, installed, connected, erected, cleaned, and conditioned as per manufacturer's printed directions, unless specified to contrary. The Contractor shall provide at least one set of all manufacturers' installation directions, on the jobsite at all times for inspection information.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 40 00**

## **SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Work Included:
1. Temporary utilities such as heat, water, electricity, and land line telephone.
  2. Computer with high speed internet access and fax machine.
  3. Field offices for the Contractor's personnel, Field offices and utilities for Owner's field office.
  4. Sanitary facilities.
  5. Enclosures such as tarpaulins, barricades, and canopies.
  6. Temporary security fencing.
  7. Project Sign.
  8. Site and interior lighting.
  9. Interior ventilation.
  10. Dust control.
  11. Traffic control.
  12. Security protection provisions.
  13. Access barriers.
  14. Removal of temporary facilities and controls.
- B. Related Work Described Elsewhere:
- |                                  |                  |
|----------------------------------|------------------|
| 1. General Conditions            |                  |
| 2. Supplementary Conditions      |                  |
| 3. Summary of Work               | Section 01 01 00 |
| 4. Construction Cleaning         | Section 01 56 90 |
| 5. Storage and Protection        | Section 01 62 00 |
| 6. Contract Close-out Procedures | Section 01 70 00 |
| 7. Final Cleaning                | Section 01 71 00 |
| 8. Cast-In-Place Concrete        | Section 03 30 00 |

#### **1.02 REQUIREMENTS NOT INCLUDED**

- A. Except that equipment furnished by subcontractors shall comply with requirements of pertinent safety regulations, such equipment normally furnished by the individual trades in execution of their own portions of the work are not part of this Section.
- B. Permanent installation and hookup of various utility lines are described in other Sections.
1. Contractor shall coordinate with Electric Utility for temporary power.
  2. Telephone: Contractor to provide phone for construction.
- C. Nothing in this Section is intended to limit types and amounts of temporary work required, and no omission from this Section will be recognized as indication by Owner's Representative such temporary activity or facility is not required for successful completion of Work and compliance with requirements of Contract Documents.

**1.03 QUALITY ASSURANCE**

- A. In addition to compliance with governing regulations and rules, and recommendations of utility companies, comply with specific requirements indicated in these specifications and with applicable local codes and industry standards for construction work.
- B. Comply with provision of Section 01 61 00 Transportation and Handling.
- C. Temporary connections shall be made in an approved manner meeting all applicable codes. Caution shall be taken so systems are not overloaded. Contractor shall take special precautions to keep his temporary connections and lines from being damaged. Temporary connections shall be disconnected and removed prior to completion of Project and returned to original conditions.

**1.04 JOB CONDITIONS**

- A. General:
  - 1. Establish and initiate use of each temporary facility at time first reasonably required for proper performance of Work.
  - 2. Terminate use and remove facilities at earliest reasonable time, when no longer needed or when permanent facilities have, with authorized use, replaced need.
- B. Conditions of Use:
  - 1. Install, operate, maintain, and protect temporary facilities in safe, non-hazardous, sanitary, manner and location, protective of persons and property, and free of deleterious effects.
- C. Pay costs for such general services and temporary facilities, except as otherwise specified, until final acceptance with Work unless Owner's Representative makes arrangements for use of complete portions of Work after Substantial Completion in accordance with provisions of General Conditions.

**PART 2 PRODUCTS**

**2.01 ELECTRICITY AND LIGHTING**

- A. The Contractor shall provide the following:
  - 1. Connect to temporary service and provide all equipment necessary for temporary power and lighting. Verify electrical service is of adequate capacity for all construction tools and equipment without overloading facilities.
  - 2. Provide power distribution as required throughout for construction operations of all trades. Locate power distribution boxes at convenient locations in building. Provide distribution boxes for each voltage supply complete with circuit breakers, disconnect switches, and other electrical devices required to protect power distribution system.
  - 3. Provide a temporary lighting system required to satisfy minimum requirements of work, inspection, safety and security. Supply not less than 2 watts per square foot of floor area for illumination in areas of building where work is being performed, unless higher illumination requirements are specified elsewhere.
  - 4. Temporary interior and exterior lighting during construction is to be maintained by Contractor so that work can be properly and safely performed. Special attention shall be given so that stairs, ladders, openings, barricades and other similar items and spaces are adequately lighted.

5. Conform to applicable provision of governing codes. Maintain temporary wiring in safe manner, utilized to not constitute hazard to persons or property.
6. Permanent electrical power, when in operating condition, may be used for temporary power for construction purposes, provided Contractor assumes full responsibility for entire power system.
7. At completion of construction work remove temporary wiring, lighting and other temporary electrical equipment devices.
8. Contractor shall be responsible for all power and gas utility costs during construction until substantial completion is approved.

## **2.02 HEATING AND VENTILATION**

- A. Contractor shall provide, at his own expense, sufficient temporary heat for proper installation of work; and to protect all work and materials; and shall keep humidity down to extent required to prevent corrosion, dampness and mildew potentially damaging to materials and finishes. Fuel, equipment, and method of temporary heat shall be reviewed by Owner's Representative for appropriateness. Do not overheat spaces and materials. All such heating, ventilation and services shall be provided and maintained until final acceptance of all work. In addition, provide heat and ventilation prior and during Work operations as specified in Specifications.
- B. Connect temporary heating and ventilating equipment to electric facilities; contractor to pay cost for energy used.
- C. Provide ventilation of enclosed areas to cure materials, to disperse humidity, and to prevent accumulations of dust, fumes, vapors, or gases.
- D. Prior to operation of permanent facilities for temporary purposes, verify installation is approved for operation, and filters are in place. Provide and pay for operation, maintenance and utilities. Use of permanent heating plant shall not relieve Contractor of guarantee responsibilities.
- E. If permanent heating system is used for temporary heat, or ducts used for ventilation, completely clean ducts of dust and dirt and replace disposable type filters on as-needed basis, and install new permanent type filters prior to occupancy by Owner.

## **2.03 WATER**

- A. Contractor shall furnish and install necessary temporary piping to carry on work and upon completion of Work shall remove all temporary piping.
- B. Contractor shall obtain necessary permits.
- C. Furnish drinking water with suitable containers and cups for use of employees. Conveniently locate drinking water dispensers in areas where Work is in progress.
- D. Contractor shall pay for all water brought to the site for construction work or obtained through utility.

## **2.04 SANITARY FACILITIES**

- A. Provide and maintain adequate temporary toilet and hand washing facilities, approved by regulating authorities, throughout construction for all personnel connected with Work.

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- B. Locate where directed when work is started and maintain in sanitary condition at all times supplied with adequate amounts of tissue, subject to inspection and approval of Owner's Representative.
- C. Provide separate facilities for male and female personnel when both sexes are working at Project.
- D. As soon as conditions allow, temporary toilets may, upon approval of Owner's Representative, be located outside near building entries.
- E. Remove temporary facilities when directed and disinfect premises.

**2.05 STORAGE AND SHOP**

- A. Contractor shall provide temporary storage and shop rooms and /or enclosures that may be required at site for safe and proper storage of tools, materials, etc. Locate such facilities only in locations approved by Owner's Representative and so as not to interfere in any way with proper installation and completion of other work.
- B. During progress of Work, materials shall be neatly stacked at such points as Owner's Representative may direct and shall be properly cared for and protected from weather and theft.
- C. Contractor shall store construction material and equipment within boundaries of designated areas. Storage of gasoline or similar fuels shall conform to NFPA regulations and local fire marshal regulations and shall be confined within definite boundaries apart from buildings as approved by authorities having jurisdiction.

**2.06 FIELD OFFICES**

- A. Provide a field office adequate in size and accommodation for Contractor's offices, office supplies and storage, and combined use by Owner's Representative, until Substantial Completion of the Project.

**2.07 TELEPHONE SERVICE**

- A. Provide and maintain direct line telephone service at Site to each of Contractor's field offices.
- B. Pay all costs for installation, maintenance, normal monthly charges and all Contractor's long distance charges.
- C. Remove temporary telephone service at completion of work.
- D. Provide functioning facsimile machine, copier, and network connection for contractor's email in office for duration of project.

**2.08 PROJECT IDENTIFICATION**

- A. Provide 8 w x 4 h ft. project sign of exterior grade plywood and wood frame construction, painted, 6" min. letters to Architect's design and colors.
- B. List title of project, names of Owner, Architect, and Contractor.
- C. Erect on site at location established by Owner's Representative.



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- D. No other signs are allowed without Owner's Representative's permission except those required by law.

**2.09 UTILITY MARKERS**

- A. Provide markers above all new and disturbed existing below grade buried utility lines in accordance with this Article. Identify location of markers and include marker information on Record Documents, specified in Section 01 72 00.
- B. Provide stake at each extremity end of utility with 14 gauge trace wire along side of each utility line. Securely attach trace wire to stake at each end.
- C. Set markers at all locations where the following conditions exist:
  - 1. Above utility lines at exterior walls of building and at entries and exits of lines from above grade installations.
  - 2. At ends and changes of direction of lines.
  - 3. Debatable locations shall be directed by the Owner's Representative.

**PART 3 EXECUTION**

**3.01 MAINTENANCE**

- A. Maintain temporary facilities and controls as long as needed for safe and proper completion of Work.
- B. Remove such temporary facilities and controls as rapidly as progress of Work will permit, or as directed by Owner's Representative.

**3.02 USE OF TEMPORARY FACILITIES**

- A. Temporary facilities shall be made available for use by workmen and subcontractors employed on Project and Owner's Representative, subject to reasonable direction by Contractor as to their proper and most efficient utilization.

**3.03 CONSTRUCTION AIDS**

- A. Provide and operate drainage and pumping equipment; maintain excavations and Site free of standing water.
- B. Provide and maintain properly calibrated moisture meter of type acceptable to Owner's Representative.
  - 1. Verify moisture content of concrete and concrete masonry units, wood and wood products, gypsum wallboard and other materials to assure that substrate products are dry and cured to subsequent finish manufacturer's recommendations prior to installation of finish materials.

**3.04 ENCLOSURES**

- A. Security:
  - 1. At earliest possible date, secure building against unauthorized entrance at times personnel are not working.

2. Provide temporary, insulation, weather-tight closures of openings in exterior surfaces to provide acceptable work conditions and protection for material; to allow for temporary heating and prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.

**B. Access Provisions:**

1. Provide ramps, stairs, ladders, and similar temporary access elements as reasonably required to perform Work and facilitate inspection during installation.
2. Comply with reasonable requests of governing authorities performing inspections.
3. When permanent stairs are available for access, during construction, cover finished surfaces and maintain free from damage and deterioration through substantial completion.

**3.05 PROTECTION OF INSTALLED WORK**

- A. Provide temporary protection for installed products in accordance with requirements specified in Section 01 62 00 and as follows. Control traffic in immediate area of installed products to minimize damage.
- B. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings. Protect finished floors and stairs from traffic, movement of heavy objects, and storage.
- C. Prohibit traffic and storage on waterproofed and roofed surfaces, on lawn, on concrete paving, and landscaped areas.
- D. Prohibit and take necessary precautions to prevent oil, gas and other liquids from vehicles and equipment from discharging onto concrete and asphalt concrete pavement.

**3.06 POLLUTION CONTROL**

- A. Use water sprinkling and other suitable methods to limit dust and dirt rising and scattering in air to lowest practicable level.
  1. Do not use water if use may create hazardous or objectionable conditions such as ice, flooding and pollution.
  2. Comply with governing regulations pertaining to environmental protection.

**3.07 TRAFFIC**

- A. Conduct operations and removal of debris to ensure minimum interference with adjacent occupied facilities.
- B. Do not close or obstruct completed areas without permission from Owner's Representative. Provide alternate and safe routes around closed or obstructed traffic ways if required.

**3.08 SECURITY AND PROTECTION PROVISIONS**

- A. Provide temporary security and protection including, but not limited to; fire protection, barricades, warning signs/lights, personnel security program (theft prevention), environmental protection, and similar provision intended to minimize property losses, personal injuries, and claims for damages at Site.

- B. Unauthorized Entry:
  - 1. Maintain provision for closing and locking building during non-working hours.

**3.09 REMOVAL**

- A. Completely remove temporary materials and equipment when use is no longer required.
- B. Remove temporary underground installations to depth of 2 ft. below finish Site grade.
- C. Clean and repair damage caused by temporary installations or use of temporary facilities. Restore any installed facilities used for temporary services to specified, or original condition.

**3.10 CLEANING**

- A. Comply with requirement specified in Section 01 56 90.
- B. Maintain the public road and access to the Site in a clean condition. Remove the mud, dirt, rocks, etc. from the tires of vehicles before they exit the Site.

**END OF SECTION 01 50 00**

**SECTION 01 56 90 – CONSTRUCTION CLEANING**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. Work Included:
  - 1. Cleaning and disposal of waste materials, debris, and rubbish during construction.
- B. Related Work Described Elsewhere:
  - 1. General Conditions: Division 1
  - 2. Final Cleaning Section 01 71 00
  - 3. Individual Specification Sections: Specific cleaning for Product or Work.

**PART 2 PRODUCTS**

**2.01 EQUIPMENT**

- A. Provide covered containers for deposit of waste materials, debris, and rubbish.

**PART 3 EXECUTION**

**3.01 CLEANING**

- A. Maintain areas under Contractor's control free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition. Remove scrap materials, rubbish and trash daily from in and about building. Do not permit scrap materials, rubbish and trash to be scattered on adjacent areas.
- B. Maintain the public road and access to the site in a clean condition. Remove the mud, dirt, rocks, etc. from the tires of vehicles before they exit the Site.
- C. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to closing the space.
- D. Periodically clean interior areas to provide suitable conditions for work.
- E. Broom clean interior areas prior to start of surface finishing and continue cleaning on an as-needed basis.
- F. Control cleaning operations so that dust and other particles will not adhere to wet or newly-coated surfaces.

**3.02 DISPOSAL**

- A. Remove waste material, debris, and rubbish from site periodically and dispose of off-site.

**END OF SECTION 01 56 90**

**SECTION 01 60 00 – MATERIAL AND EQUIPMENT**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

A. Work Included:

1. Products

B. Related Work Described Elsewhere:

1. Instructions to Bidders:

2. General Conditions:

Division 1

3. Quality Control:

Section 01 40 00

**1.02 PRODUCTS**

A. Products: Means new materials, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work.

B. Provide interchangeable components of the same manufacture, for similar components.

C. No product or material shall be used as a building material in this project which contains any asbestos.

**PART 2PRODUCTS (not used)**

**PART 3EXECUTION (not used)**

**END OF SECTION 01 60 00**

## **SECTION 01 61 00 – TRANSPORTATION AND HANDLING**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Work Included:
  - 1. Protection of products schedule for use in Work.
- B. Related Work Described Elsewhere:
  - 1. General Conditions
  - 2. Additional procedures as specified in other sections of these Specifications.

#### **1.02 QUALITY ASSURANCE**

- A. Include procedures required to assure full protection of work and materials.

#### **1.03 MANUFACTURERS' RECOMMENDATIONS**

- A. Except as otherwise approved by the Owner's Representative, determine and comply with manufacturers' recommendations on product handling, storage, and protection.

#### **1.04 PACKAGING, TRANSPORTATION**

- A. Require supplier to package products in boxes or crates for protection during shipment, handling, and storage. Protect sensitive products against exposure to elements and moisture, including ocean barging.
- B. Protect sensitive equipment and finishes against impact, abrasion, and other damage. Temperature sensitive products, such as paint, shall be protected from freezing during shipment.
- C. Arrange deliveries of products in accordance with construction progress schedules. Allow time for inspection prior to installation.
- D. Coordinate deliveries to avoid conflict with work; conditions at site; limitations on storage space; availability of personnel and handling equipment; and Owner's use of premises.
- E. Deliver products to job site in their manufacturer's original container, with labels intact and legible.
  - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
  - 2. Promptly remove damaged material and unsuitable items from job site, and promptly replace with material meeting specified requirements, at no additional cost to Owner.
- F. Owner's Representative may reject as non-complying such material and products that do not bear identification satisfactory to the Owner's Representative as to manufacturer, grade, quality, and other pertinent information.
- G. Clearly mark partial deliveries of component parts of equipment. Identify equipment and contents to permit easy accumulation of parts and facilitate assembly.
- H. Immediately on delivery inspect shipment to ensure:

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1. Product complies with requirement of Contract Documents and reviewed submittals.
2. Quantities are correct.
3. Accessories and installation are correct.
4. Containers and packages are intact and labels are legible.
5. Products are protected and undamaged.

**1.05 PRODUCTS**

- A. Provide equipment and personnel to handle products, including those provided by Owner, by methods to prevent soiling and damage.
- B. Provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.
- C. Handle product by methods to avoid bending or overstressing. Lift large and heavy components only at designed lift points.

**1.06 PROTECTION**

- A. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.
- B. Provide protection for finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.
- C. Maintain finished surfaces clean, unmarred and suitably protected until accepted by Owner's Representative.

**1.07 REPAIRS AND REPLACEMENTS**

- A. In event of damage, promptly make replacement and repairs to approval of and at no additional cost to Owner.
- B. Additional time required to secure replacements and to make repairs will not be considered by Owner to justify an extension in Contract Time.

**PART 2PRODUCTS (not used)**

**PART 3EXECUTION (not used)**

**END OF SECTION 01 61 00**

**SECTION 01 62 00 – STORAGE AND PROTECTION**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. Work Included:
  - 1. Storage and protection of products scheduled for use in Work.

**1.02 QUALITY ASSURANCE**

- A. Include within Contractor's quality assurance program such procedures as are required to assure full protection of Work and materials.

**1.03 MANUFACTURERS' RECOMMENDATIONS**

- A. Except as otherwise approved by the Owner's Representative, determine and comply with manufacturers' recommendations on product handling, storage, and protection.

**1.04 STORAGE - GENERAL**

- A. Store products, immediately on delivery, in accordance with manufacturer's instruction, with seals and labels intact. Protect until installed.
- B. Arrange storage in manner to provide access for maintenance of stored items and for inspection.

**1.05 ENCLOSED STORAGE**

- A. Store products, subject to damage by elements, in substantial, weather-tight enclosures.
- B. Maintain temperature and humidity within ranges stated in manufacturer's instruction and/or individual technical specifications section.
- C. Provide humidity control and ventilation for sensitive products as required by manufacturer's instructions and as necessary to protect product.
- D. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.

**1.06 EXTERIOR STORAGE**

- A. Provide substantial platforms, blocking, or skids to support fabricated products above ground; slope to provide drainage. Protect products from soiling and staining.
- B. For products subject to discoloration or deterioration from exposure to elements, cover with impervious sheet material. Provide ventilation to avoid condensation.
- C. Store loose granular materials in clean solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.
- D. Provide surface drainage to prevent erosion and ponding of water.
- E. Prevent mixing of refuse, chemically injurious materials, and liquids.



**1.07 MAINTENANCE OF STORAGE**

- A. Periodically inspect stored products on a schedule basis.
- B. Verify storage facilities comply with manufacturer's product storage requirements.
- C. Verify manufacturer required environmental conditions are maintained continually.

**1.08 MAINTENANCE OF EQUIPMENT STORAGE**

- A. For mechanical and electrical equipment in long-term storage, provide manufacturer's service instructions to accompany each item, with notice of enclosed instructions shown on exterior of package.
- B. Service equipment on regularly scheduled basis, maintaining log of services; submit as record document.

**PART 2PRODUCTS (not used)**

**PART 3EXECUTION (not used)**

**END OF SECTION 01 62 00**

## **SECTION 01 63 00 – PRODUCT OPTIONS AND SUBSTITUTIONS**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Work Included:
  - 1. Contractor's options in selection of products.
  - 2. Products List
  - 3. Requests for Substitution Form.
- B. Related Work Described Elsewhere:
  - 1. Instructions to Bidders
  - 2. Substitution Request Form
  - 3. General Conditions
  - 4. Summary of Work: Section 01 01 00
  - 5. Reference Standards: Section 01 09 00
  - 6. Shop Drawings, Product Data, and Samples: Section 01 34 00
  - 7. Project Record Documents: Section 01 72 00
  - 8. Operation and Maintenance Data: Section 01 73 00

#### **1.02 OPTIONS**

- A. Products Specified by Reference Standard or by Description Only: Any product meeting those standards.
- B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution a minimum of 7 days prior to Bid for any manufacturer not specifically named. Following Proposal opening, only products of named manufacturers meeting specifications or approved substitutions shall be allowed.
- C. Products Specified by Naming Only One or More Manufacturers with "No Substitution" statement: Products of named manufacturers meeting specifications; no substitution allowed.

#### **1.03 PRODUCTS LIST**

- A. Within 15 days after date of Notice to Proceed, transmit three copies of list of major products which are proposed for installation, including name of manufacturer.
- B. Tabulate products by Specifications Section number, title and Article number.
- C. For Products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- D. Owner's Representative will reply in writing within 10 days stating whether there is reasonable objection to listed items. Failure to object to listed items shall not constitute waiver of requirements of Contract Documents.

#### **1.04 LIMITATIONS ON SUBSTITUTIONS**

- A. Instructions to Bidder govern terms for submitting request for substitutions under requirements specified in this Section.

- B. Requests for substitutions after Contract Award may be considered only in proven cases of product unavailability through no fault of Contractor.
- C. Substitutions will not be considered when acceptance will require substantial revision of Bidding or Contract Documents.
- D. Do not order or install substitute products without written acceptance.
- E. Two requests for substitution for each product will be considered. When substitution is not accepted, provide specified product.
- F. Owner's Representative and Architect will determine acceptability of substitutions.

**1.05 REQUESTS FOR SUBSTITUTIONS**

- A. Submit substitution requests using a Substitution Request Form. Substitution requests will not be reviewed without an accompanying fully executed Substitution Request Form.
- B. Submit separate request for each substitution. Document each request with complete data substantiating compliance of proposed substitution with requirements of Contract Documents.  
  
Submit samples, shop drawings from prior jobs, product data, manufacturer's installation instructions, and certified test results attesting to proposed product equivalence.
- C. Identify product by Specification Section and Article numbers. Provide manufacturer's name and address, trade name of product, and model or catalog number. List fabricators and suppliers as appropriate.
- D. Attach product data as specified in Section 01 34 00.
- E. List similar project using product, dates of installation, and names with numbers of Owner and Architect.
- F. Give itemized quality and performance comparison between proposed substitution with specified product, listing variations, and reference to Specification Section and Article numbers. Base comparison on tests and criteria specified, and with specified manufacturer's performance criteria when tests and criteria are not otherwise specified.
- G. List availability of maintenance services and replacement materials.
- H. State effect of substitution on construction schedule, and changes required in other work or products.
- I. Forms that are incomplete or incorrectly filled out will be rejected.

**1.06 BIDDER REPRESENTATION**

- A. Request for substitution constitutes representation that Bidder:
  - 1. Has investigated proposed product and has determined that it meets or exceeds the quality level of specified product.
  - 2. Will provide same warranty for substitution as for specified product.

3. Will coordinate installation and make changes to other Work which may be required for work to be complete with no additional costs to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner for review or redesign service associated with re-approval by authorities.

**1.07 SUBMITTAL PROCEDURES**

- A. Submit five copies of the Request for Substitution Form with attachments. Limit each request to one proposed substitution.
- B. Owner's Representative and Architect will review Contractor's request for substitutions with reasonable promptness.
- C. During bidding period, Owner will record acceptable substitutions in Addenda.
- D. For accepted products, submit shop drawings, product data, and samples under provisions of Section 01 34 00.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**SUBSTITUTION REQUEST FORM**

TO: CITY OF KENAI  
ATTN: SCOTT CURTIN  
210 FIDALGO AVE.  
KENAI, AK 99611  
(907) 283-8240

PROJECT: **TRAINING BUILDING REHABILITATION PROJECT**

SPECIFIED ITEM:

| Section | Paragraph | Description |
|---------|-----------|-------------|
|---------|-----------|-------------|

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: \_\_\_\_\_

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data area clearly identified.

Attached data also includes description of changes to Contract Documents which proposed substitution will require for its proper installation.

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

1. The proposed substitution does not affect dimensions shown on Drawings.
2. The undersigned will pay for changes to the building design, including engineering design, detailing and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

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

Submitted by:

Signature \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

Date \_\_\_\_\_

Telephone \_\_\_\_\_

For use by Design Consultant:

☐ Accepted ☐ Accepted as noted

☐ Not Accepted

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

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

Remarks: \_\_\_\_\_

**END OF SECTION 01 63 00**

## **SECTION 01 67 00 – SYSTEM DEMONSTRATION**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Work Included:
  - 1. Procedures for demonstration of equipment operation and instruction of Owner's personnel.
  - 2. Contractor shall be responsible for instruction and training of operating personnel in operation and maintenance of mechanical, electrical, and other systems in building.
- B. Related Work Described Elsewhere:
  - 1. Summary of Work: Section 01 01 00
  - 2. Operation and Maintenance Data: Section 01 73 00
  - 3. Divisions 10, 21, 22, 23, 26, 27 and 28
  - 4. Other Individual Sections: Specific requirements for demonstrating systems and equipment.

#### **1.02 QUALITY ASSURANCE**

- A. When specified in individual sections, require manufacturer to provide authorized representative to demonstrate operation of equipment and systems, instruct Owner personnel, and provide written report stating demonstrations and instructions have been completed.
- B. Owner's Representative will provide list of personnel to receive instructions and will coordinate their attendance at agreed upon times.

#### **1.03 SUBMITTALS**

- A. Submit preliminary schedule for Owner's Representative's approval, listing times and dates for demonstration of each item of equipment and each system three weeks prior to proposed dates.
- B. Contractor shall submit his training materials and agenda to the Owner's Representative at least 15 days prior to start of formal maintenance training classes. Mutually agreeable dates for receiving training shall be arranged with Owner's Representative. Building system shall be complete when training is given.
- C. Submit reports within one week after completion of demonstrations, that demonstrations and instructions have been satisfactorily completed. Give time and date of each demonstration, hours devoted to demonstration, and list of persons present.

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

### **PART 3 EXECUTION**

#### **3.01 PREPARATION**

- A. Verify equipment has been inspected and put into operation in accordance with applicable specification Section; testing, adjusting, and balancing has been performed in accordance with applicable specification Section, and equipment and systems are fully operational.
- B. Have copies of completed operation and maintenance manuals at hand for use in demonstrations and instructions.

**3.02 TYPE OF TRAINING**

- A. Instruction shall be on the job.
- B. Services of competent contractors or manufacturer engineers and qualified maintenance personnel shall be provided to adequately train designated Owner's employees in operation and maintenance of all mechanical and electrical systems.
- C. Operating and maintenance manuals prepared by Contractor, manufacturers literature of actual equipment installed and copies of approved posted operating instructions shall be used as a basis for training.

**3.03 DEMONSTRATION AND INSTRUCTIONS**

- A. Demonstrate operation and maintenance of equipment and systems to Owner's personnel two weeks prior to date of final inspection. For equipment requiring seasonal operation, perform instructions for operation and maintenance.
- B. Use operation and maintenance manuals as basis of instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled times, at equipment location.
- D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instructions.

**3.04 TIME ALLOCATED FOR INSTRUCTIONS**

- A. Training period: Training shall occur within one week after substantial completion. Not less than four hours for each category of major equipment and system except as specifically listed below:
  - 1. HVAC System: Including air handlers, duct work, dampers and related equipment with respective operating controls. 8 hours.
  - 2. Overall Control System: Coordinate respective HVAC and other system controls, show how controls function together and provide integrated overall system control. 8 hours.
  - 3. Electrical System: All building services, lighting, communications, public address system, access control, energy management systems, and all other electrical systems. 8 hours.
  - 4. Piping and Plumbing Systems: Storm and sanitary drainage systems, and hot and cold water supply systems. 4 hours.
  - 5. Fire protection equipment, intercom system, and other equipment not specifically stated above. 4 hours/each.
- B. Proof of training must be certified in writing by Owner's personnel.

**END OF SECTION 01 67 00**

## **SECTION 01 70 00 – CONTRACT CLOSE-OUT PROCEDURES**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

A. Work Included:

1. Administrative provisions for Substantial Completion and Final Acceptance.

B. Related Work Described Elsewhere:

- |  |                  |
|--|------------------|
| 1. General Conditions:                         |                  |
| 2. Summary of Work:                            | Section 01 01 00 |
| 3. Applications for Payment                    | Section 01 02 70 |
| 4. Temporary Facilities and Temporary Controls | Section 01 50 00 |
| 5. Final Cleaning                              | Section 01 71 00 |
| 6. Project Record Documents                    | Section 01 72 00 |
| 7. Operations and Maintenance Data             | Section 01 73 00 |
| 8. Warranties and Bonds                        | Section 01 74 00 |
| 9. Spare Parts and Maintenance Materials       | Section 01 75 00 |
| 10. Door Hardware                              | Section 08 70 00 |
| 11. Mechanical Sections                        |                  |
| 12. Electrical Sections                        |                  |

#### **1.02 SUBSTANTIAL COMPLETION**

- A. Advise Owner's Representative of pending insurance change-over requirements.
- B. When Contractor considers Work or designated portion of Work is substantially complete, submit written notice with list of items to be completed or corrected.
1. Submit formal written request for Substantial Completion Inspection.
  2. Contractor shall submit Certificate of Occupancy issued by local Building Official with the request for Substantial Completion Inspection.
- C. Should Owner Representative's inspection find Work is not substantially complete, he will promptly terminate the inspection, and notify Contractor in writing, listing observed deficiencies.
- D. Contractor shall remedy deficiencies and send a second written notice of substantial completion.
- E. When Owner's Representative finds Work is substantially complete he will prepare a Certificate of Substantial completion in accordance with provisions of General Conditions.

#### **1.03 FINAL COMPLETION**

- A. When Contractor considers Work is complete, submit written certification:
1. Contract Documents have been reviewed.
  2. Work has been inspected for compliance with Contract Documents.
  3. Work has been completed in accordance with Contract Documents, and deficiencies listed with Certificate of Substantial Completion have been corrected.
  4. Equipment and systems have been tested, adjusted, and balanced, and are fully operational.



- 5. Operation of systems has been demonstrated to Owner's Personnel.
- 6. Work is complete and ready for final inspection.

- B. Should Owner's Representative inspection find Work incomplete, he will promptly notify Contractor in writing listing observed deficiencies.
- C. Contractor shall remedy deficiencies and send a second certification of final completion.
- D. When Owner's Representative finds work is complete, he will consider close-out submittals.

#### **1.04 REINSPECTION FEES**

- A. Should status of completion of Work require re-inspection by Owner's Representative due to failure of Work to comply with Contractor's claims on initial inspection, Owner will deduct the amount of his expense, including but not necessarily limited to Owner's Representative compensation for re-inspection services from final payment to Contractor.

#### **1.05 CLOSE-OUT SUBMITTALS**

- A. Evidence of Compliance with Requirements of Governing Authorities:
  - 1. Certificate of Occupancy
  - 2. Certificates of Inspection required for mechanical and electrical systems.
- B. Project Record Documents: Under provision of Section 01 72 00.
- C. Operation and Maintenance Data: Under provisions of Section 01 73 00.
- D. Warranties and Bonds: Under provisions of Section 01 74 00.
- E. Spare Parts and Maintenance Materials: Under provisions of Section 01 75 00.
- F. Keys and Keying Schedule: Under provisions of Section 08 70 00.
- G. Evidence of Payment and Release of Liens: In accordance with Conditions of the Contract.
- H. Consent of Surety to Final Payment.
- I. Certificates of Insurance for Products and Completed Operations: In accordance with Supplementary Conditions.

#### **1.06 STATEMENT OF ADJUSTMENT OF ACCOUNTS**

- A. Submit final statement reflecting adjustments to Contract Sum indicating:
  - 1. Original Contract Sum
  - 2. Previous Change Orders
  - 3. Changes Under Allowances
  - 4. Changes Under Unit Prices
  - 5. Deductions for Uncorrected Work
  - 6. Deductions for Liquidated Damages
  - 7. Deductions for Re-inspection Fees
  - 8. Other Adjustments to Contract Sum
  - 9. Total Contract Sum as adjusted.
  - 10. Previous Payments
  - 11. Sum Remaining Due

- B. Owner's Representative will issue a final Change Order reflecting approved adjustments to Contract Sum not previously made by change orders.

**1.07 APPLICATION FOR FINAL PAYMENT**

- A. Submit application for final payment in accordance with provisions of Conditions of the Contract.

**PART 2PRODUCTS (not used)**

**PART 3EXECUTION (not used)**

**END OF SECTION 01 70 00**

## **SECTION 01 71 00 – FINAL CLEANING**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

A. Work Included:

1. Final Cleaning of Project.

B. Related Work Described Elsewhere:

1. General Conditions
2. Construction Cleaning: Section 01 56 90
3. Contract Close-out Procedures: Section 01 70 00
4. Individual Specifications Section: Specific cleaning of product or work.

#### **1.02 CLEANING**

A. Execute cleaning prior to inspection for Substantial Completion of the Work.

### **PART 2 PRODUCTS**

#### **2.01 CLEANING MATERIALS**

- A. Use materials which will not create hazards to health or property, and which will not damage surfaces.
- B. Use only materials and methods recommended by manufacturer of material being cleaned.

### **PART 3 EXECUTION**

#### **3.01 CLEANING**

- A. In addition to removal of debris and cleaning specified in other section, clean interior and exterior exposed-to-view surfaces.
- B. Remove temporary protection and labels not required to remain.
- C. Clean finishes free of dust, stains, films, and other foreign substances.
- D. Clean transparent and glossy materials to a polished condition; remove foreign substances. Polish reflective surfaces to a clear shine.
- E. Vacuum clean carpeted and similar soft surfaces.
- F. Clean, damp mop, wax, and polish resilient and hard-surface floors as specified.
- G. Clean surfaces of equipment and remove excess lubrication.
- H. Clean plumbing fixtures, food service equipment, and toilet accessories to a sanitary condition.

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- I. Clean permanent filters of ventilation equipment and replace disposable filters when units have been operated during construction; in addition, clean ducts, blowers and coils when units have been operated without filters during construction.
- J. Clean light fixtures and lamps.
- K. Maintain cleaning until Substantial Completion.
- L. Remove waste, foreign matter, and debris from roofs, gutters, area ways, and drainage systems.
- M. Remove waste, debris, and surplus materials from site. Clean grounds; remove stains, spills, and foreign substances from paved areas and sweep clean. Rake clean other exterior surfaces.
- N. Owner will provide final cleaning of interiors after Substantial Completion, except that items not adequately cleaned prior to Substantial Completion shall be recleaned prior to final inspection. Provide access and coordinate with Owner's personnel at a time agreeable to both parties.
- O. Prior to Substantial Completion, clean all parking lots, aprons and driveways on site to a new state.

**END OF SECTION 01 71 00**

## **SECTION 01 72 00 – RECORD DOCUMENTS**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Work Included:
  - 1. Maintenance of Record Document and samples.
  - 2. Submittal of Record Documents and samples.
- B. Related Work Described Elsewhere:
  - 1. Grades, Lines and Levels: Section 01 05 20
  - 2. Shop Drawings, Product Data and Samples Section 01 34 00
  - 3. Contract Close-out Procedures Section 01 70 00
  - 4. Operation and Maintenance Data Section 01 73 00
  - 5. Individual Specifications Sections:
  - 6. Manufacturer's certificates and certificates of inspection.
- C. The Contractor shall maintain on the jobsite one complete set of drawings and specifications on which all items located at jobsite and all changes of material, equipment, or dimensions shall be recorded and kept current on a daily basis and shall be made available to the Owner's Representative at all times. This shall include all work of the Contractor and Subcontractors. **Each progress pay request will not be processed until Owner's Representative determines that the Contractor has kept the "As-Built" drawings and specifications as specified.**

#### **1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES**

- A. In addition to requirements in General Conditions, maintain at the site for Owner's Representative one record copy of:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. Addenda
  - 4. Change Orders and other modifications to the Contract
  - 5. Reviewed shop drawings, product data, and samples
  - 6. Field test records
  - 7. Inspection certificates
  - 8. Manufacturer's certificates
- B. Store Record Documents and samples in Field Office apart from documents used for construction. Provide files, racks, and secure storage for Record Documents and samples.
  - 1. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff.
- C. Label and file Record Documents and samples in accordance with Section number listing in Table of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, printed letters.
- D. Maintain Record Document in a clean, dry and legible condition. Do not use Record Documents for construction purposes.

- E. In the event of loss of recorded data, use means necessary to again secure the data to the Owner's Representatives approval.
- F. Keep Record Documents and samples available for inspection by Owner's Representative.

**1.04 RECORDING**

- A. Record information on a set of blue line opaque drawings, and in a copy of a Project Manual, provided by Owner's Representative.
- B. Provide felt tip marking pens, maintaining separate colors for each major system, for recording information.
- C. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
  - 1. Make entries within 24 hours after receipt of information that the change has occurred.
- D. Contract Drawings and Shop Drawing: Legibly mark each item to record actual construction, including:
  - 1. Measured depths of elements of foundation in relation to finish first floor datum.
  - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surfaces improvements.
    - a. Locate with actual dimensions to building walls and corners, buried and concealed wiring and piping.
    - b. Show end of run, changes in direction, valves and splice boxes.
    - c. Record average depth relating to building datum.
  - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction. Show on Record Drawings, the centerline of each run.
    - a. Clearly identify the item by accurate note such as "cast iron drain", "galv. water," etc.
    - b. Show, by symbol or note, the vertical location of the item ("under slab," "in ceiling plenum," "exposed," etc.).
    - c. Make all identification sufficiently descriptive that it may be related reliably to the Specifications.
  - 4. Field changes of dimension and detail.
  - 5. Changes made by Modifications.
  - 6. Details not on original Contract Drawings.
  - 7. References to related shop drawings and Modifications.
- E. Specifications: Legibly mark each item to record actual construction, including:
  - 1. Manufacturer, trade name, and catalog number of each product actually installed, particularly optional items and substitute items.
  - 2. Changes made by Addenda and Modifications.
- F. Other Documents: Maintain manufacturer's certifications and inspection certifications required by individual Specifications sections.

**1.05 SUBMITTALS**

- A. At Contract close-out, deliver Record Documents and samples under provisions of Section 01 70 00.
- B. Transmit with cover letter in duplicate, listing:
  - 1. Date
  - 2. Project Title and Number
  - 3. Contractor's name, address and telephone number
  - 4. Number and title of each Record Document.
  - 5. Signature of Contractor or authorized representative.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 72 00**

**SECTION 01 73 00 – OPERATION AND MAINTENANCE DATA**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. Work Included:
  - 1. Format and content of manuals.
  - 2. Instruction of Owner's personnel.
  - 3. Schedule of submittals.
- B. Related Work Described Elsewhere:
  - 1. Shop Drawings, Product Data, and Samples Section 01 34 00
  - 2. Quality Control: Section 01 40 00
  - 3. Systems Demonstration: Section 01 67 00
  - 4. Project Record Documents: Section 01 72 00
  - 5. Warranties and Bonds: Section 01 74 00
  - 6. Individual Specifications Section: Specific requirements for operation and maintenance data.

**1.02 QUALITY ASSURANCE**

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

**1.03 FORMAT**

- A. Prepare data in the form of an instructional manual.
- B. Binders: Commercial quality, 8 1/2 x 11 in. three-ring binders with hardback, cleanable, plastic covers; two in. maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project, identify subject matter of contents.
- D. Arrange content under direction of Owner's Maintenance Department. Coordinate with Owner's personnel one week prior to assembly of manuals.
- E. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: manufacturer's printed data, or typewritten data on 24-pound paper.
- G. Drawings: Provide with reinforced punched binders tab. Bind in with text; fold larger drawings to size of text pages.



**1.04 CONTENTS, EACH VOLUME**

- A. Table of Contents: Provide title of Project, names, addresses, and telephone number of Owner's Representative, subconsultants, and Contractor with name of responsible parties, schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Mark (by highlighting, etc. each sheet to clearly identify specific products and component model numbers of equipment and materials used, and data applicable to installation. Delete inapplicable information.
  - 1. Furnish a separate complete set of approved product data, in file folders for each Section, with specification item number recorded on folder. Assemble in cardboard "bankers box", in section number sequence. Turn over to the City of Kenai.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
  - 1. Furnish a complete set of shop drawings, as installed, and turn over to the City of Kenai. Fold and place in folders as above for product data, with Drawing and Specification item number recorded on folder. Assemble in same cardboard "banker's box" as above, in Section number sequence.
- E. Type Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 40 00.
- F. Warranties and Bonds: As specified in Section 01 74 00.

**1.05 MANUAL FOR MATERIALS AND FINISHES**

- A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for reordering custom manufactured products.
  - 1. Furnish a complete list (room by room) of all paint used. List is to include: paint Manufacturer, Manufacturer's color codes used (by area), and the name, address and phone number of supplier.
  - 2. Furnish a complete list (room by room) of all floorcovering products used. List is to include: type of floorcovering, manufacturer, manufacturer's color codes used (by area), and the name, address and phone number of Installer.
  - 3. Furnish a complete list of all roofing materials used.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

- D. Additional Requirements: As specified in individual product specification Section.
- E. Provide a listing in Index for design data, with tabbed fly sheet and space for insertion of data.

**1.06 MANUAL FOR EQUIPMENT AND SYSTEMS**

- A. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- B. Panelboard Circuit Directories: Provide electrical service characteristics, controls and communications.
- C. Include color coded wiring diagrams as installed.
- D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Provide servicing and lubrication schedule, and list of lubricants required.
- G. Include manufacturer's printed operation and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.
- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Provide control diagrams by controls manufacturer as installed.
- K. Provide contractor's coordination drawings, with color coded piping diagrams as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Include test and balancing reports.
- N. Additional Requirements: As specified in individual product specification Sections.
- O. Provide a listing in Index for design data, with tabbed fly sheet and space for insertion of data.

**1.07 INSTRUCTION OF OWNER PERSONNEL**

- A. Before final inspection, instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
- B. For equipment requiring seasonal operation, perform instructions for other seasons within six months.

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- C. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- D. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

**1.08 SUBMITTALS**

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Owner's Representative will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes in final form 15 days prior to final inspection. Copy will be returned after final inspection, and after review by Owner's Maintenance Department and with Owner's Representative comments. Revise content of documents as required prior to final submittal.
- D. Submit six copies of revised volumes of data in final form within ten days after final inspection.
- E. A separate chapter will be prepared and submitted for each of the following types of equipment or systems included in the project:
  - 1. Heating, ventilating, and air conditioning system.
  - 2. Control Systems.
  - 3. Plumbing.
  - 4. Electrical Systems.
  - 5. Emergency Systems.
  - 6. Communication Systems.
  - 7. Energy Management Systems.
  - 8. Miscellaneous Building Equipment.
  - 9. Other equipment or systems as specified in individual specification Sections.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 73 00**

**SECTION 01 74 00 – WARRANTIES AND BONDS**

## PART 1 GENERAL

### 1.01 DESCRIPTION

- A. Work Included:
1. Preparation and submittal
  2. Time and schedules of submittals
- B. Related Work Described Elsewhere:
1. Instructions to Bidders:
  2. General Conditions:
  3. Contract Close-out Procedures Section 01 70 00
  4. Operation and Maintenance Data Section 01 73 00
  5. Individual Specification Sections: Warranties required for specific products or Work.

## 1.02 FORM OF SUBMITTALS

- A. Bind in commercial quality, 8-1/2 x 11 in. three ring side binders with hardback, cleanable, plastic covers.
- B. Label cover of each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible principal.
- C. Table of Contents: Neatly typed, in the sequence of index to Project Manual, with each item identified with its Section, and name of product or work item. Provide complete information for each of:
  1. Product or work item
  2. Supplier with name of principal, address and telephone number
  3. Date of beginning of warranty or bond
  4. Duration of warranty or bond
  5. Provide information for Owner's personnel:
    - a. Proper procedure in case of failure.
    - b. Instances which might affect validity of warranty or bond.
  6. Contractor, name of responsible principal, address and telephone number.
- D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address and telephone number of responsible principal.

**1.03 PREPARATION OF SUBMITTALS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item or work. Except for items put into use with Owner's Representative's permission, leave date of beginning of time of warranty until the Date of Substantial Complete is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

**1.04 TIME OF SUBMITTALS**

- A. For equipment or component parts of equipment put into service during construction with Owner's Representative's permission, submit documents within ten days after acceptance.
- B. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
- C. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 74 00**

**SECTION 01 75 00 – SPARE PARTS AND MAINTENANCE MATERIALS**

## PART 1 GENERAL

### 1.01 DESCRIPTION

- |    |  |  |
|----|--|--|
| A. | <p>Work Included:</p> <ol style="list-style-type: none"> <li>1. Products required.</li> <li>2. Storage and delivery of products.</li> </ol>  |  |
| B. | <p>Related Work Described Elsewhere:</p> <ol style="list-style-type: none"> <li>1. Storage and Protection</li> <li>2. Contract Close-out Procedures</li> <li>3. Operation and Maintenance Data</li> <li>4. Individual Specification Sections:<br/>maintenance data.</li> </ol> | <p>Section 01 62 00</p> <p>Section 01 70 00</p> <p>Section 01 73 00</p> <p>Specific requirements for operation and</p> |

## 1.02 PRODUCTS REQUIRED

- A. Provide quantities of products, spare parts, maintenance tools, and maintenance materials specified in individual sections to be provided to Owner, in addition to that required for completion of Work.
- B. Products: Identical to those installed in the work. Include quantities in original purchase from supplier or manufacturer to avoid variations in manufacture.

### 1.03 STORAGE, MAINTENANCE

- A. Store products with products to be installed in the Work, under provisions of Section 01 62 00.
- B. After delivery of products to site, maintain spare products in same space and condition as products to be installed in the Work.
- C. Maintain spare products in original containers with labels intact and legible, until delivery to Owner.

## 1.04 DELIVERY

- A. Coordinate with Owner's Representative: Deliver and unload spare products to Owner at Project site and obtain receipt prior to final payment. After delivery, Owner will handle and store products.
- B. For portions of Project accepted and occupied by Owner prior to Substantial Completion, deliver a proportional part of spare products to Owner; obtain receipt.
- C. Provide spare parts information for each different item of equipment furnished including:
  1. A complete list of parts and supplies and the name and address of a supplier.
  2. A list of parts and supplies that are either normally furnished at no extra cost with the purchase of the equipment or specified to be furnished as part of the contract.

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3. A list of additional items recommended by the manufacturer to ensure efficient operation for 180 days.

**PART 2 PRODUCTS (not used)**

**PART 3 EXECUTION (not used)**

**END OF SECTION 01 75 00**

## **SECTION 01 89 50 – EROSION, SEDIMENT AND POLLUTION CONTROL**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. This work consists of planning, providing, inspecting and maintaining control of erosion, sedimentation, water pollution, air pollution and hazardous materials contamination.

#### **1.02 DEFINITIONS**

**BMP (Best Management Practices).** A wide range of project management practices, schedules, activities, or prohibition of practices, that when used alone or in combination, prevent or reduce erosion, sedimentation, and/or pollution of air and adjacent water bodies and wetlands. BMPs include temporary or permanent structural and non-structural devices and practices. Common BMPs are described in DOT&PF's Alaska Storm Water Pollution Prevention Plan Guide.

**Final Stabilization.** A point in time when all ground-disturbing activities are complete and permanent erosion and sediment controls are established and functional. The stabilized site is protected from erosive forces of raindrop impact and water flow. Typically, all unpaved areas except graveled shoulders, crushed aggregate base course, or other areas not covered by permanent structures are protected by either a uniform blanket of perennial vegetation (at least 70 percent cover density) or equivalent permanent stabilization measures such as riprap, gabions, or geotextiles.

**HMCP (Hazardous Material Control Plan).** The Contractor's detailed plan for prevention of pollution that stems from the use, containment, cleanup, and disposal of hazardous material, including petroleum products generated by construction activities and equipment.

**NOI.** Notice of Intent to commence ground-disturbing activities under the NPDES General Permit. Use EPA Form 3510-9.

**NOT.** Notice of Termination of coverage under the NPDES General Permit. Use EPA Form 3510-13.

**NPDES General Permit.** The Storm Water General Permit for Large and Small Construction Activities, issued by the Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System (NPDES). It requires an approved SWPPP and NOIs listed as active status by the EPA prior to ground-disturbing activities for the project.

**SWPPP (Storm Water Pollution Prevention Plan).** The Contractor's plan for erosion and sediment control and storm water management under the NPDES General Permit. The SWPPP is developed by the Contractor and describes site-specific controls and management of issues identified for the project. .

#### **1.03 SUBMITTALS**

For all projects that disturb one acre or more of ground submit three copies each of your SWPPP and HMCP to the Engineer for approval. Sign all submittals. Deliver these documents to the Engineer no less than five calendar days prior to the preconstruction conference.

The Engineer will review the SWPPP and HMCP submittals within 14 calendar days. Submittals will be returned to you as either requiring modification, or as approved by the Engineer. The approved SWPPP must contain a certification, and be signed by you according to the Standard Permit Conditions of the



NPDES General Permit, Part 8, Appendix G. You must receive an approved SWPPP before you submit your NOI.

For projects that disturb five acres or more of ground, submit a copy of your approved and signed SWPPP, with the required permit fee to the Alaska Department of Environmental Conservation (ADEC) Storm Water Coordinator. Transmit proof of this submission to the Engineer.

Submit your signed NOI to EPA (electronic submission may be available). Submit copies of your signed NOI to the Engineer and to ADEC. Transmit proof of your ADEC submission to the Engineer. The City will transmit the City's NOI to the EPA. Allow adequate time for state and federal processing, prior to commencing ground-disturbing activities.

The active status NOIs, approved SWPPP and approved HMCP become the basis of the work required for the project's erosion, sediment, and pollution control.

When the Project is stabilized, as determined by the Engineer, submit your signed NOT to EPA with a copy to the Engineer. The City will transmit the City's NOT to the EPA.

#### **1.04 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS**

For projects that disturb 1 acre or more of ground, you must prepare a Storm Water Pollution Prevention Plan. Develop the SWPPP based on your scheduling, equipment, and use of alternative BMPs. The plan must consider first preventing erosion, then minimizing erosion, and finally trapping sediment before it enters waterways.

The plan must address your site-specific controls and management plan for the construction site as well as for all material sites, waste disposal sites, haul roads, and other affected areas, public or private. The plan must also incorporate all the requirements of the project permits.

Specify the line of authority and designate your field representative for implementing SWPPP compliance. Designate one representative for each subcontractor who perform earth disturbing activities or who install and maintain erosion and sediment control measures.

#### **1.05 HAZARDOUS MATERIAL CONTROL PLAN (HCMP) REQUIREMENTS**

Prepare a HCMP for the handling, storage, cleanup, and disposal of petroleum products and other hazardous substances. (See 40 CFR 117 and 302 for listing of hazardous materials.)

List and give the location of all hazardous materials, including office materials, to be used and/or stored on site, and their estimated quantities. Detail your plan for storing these materials as well as disposing of waste petroleum products and other hazardous materials generated by the project.

Identify the locations where storage, fueling and maintenance activities will take place, describe the maintenance activities, and list all controls to prevent the accidental spillage of oil, petroleum products and other hazardous materials.

Detail your procedures for containment and cleanup of hazardous substances, including a list of the types and quantities of equipment and materials available on site to be used.

Detail your plan for the prevention, containment, cleanup, and disposal of soil and water contaminated by accidental spills. Detail your plan for dealing with unexpected contaminated soil and water encountered during construction.

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Specify the line of authority and designate your field representative for spill response and one representative for each subcontractor.

#### **PART 2 PRODUCTS (not used)**

#### **PART 3 EXECUTION**

##### **3.01 CONSTRUCTION REQUIREMENTS**

Do not begin ground-disturbing work until after the EPA has acknowledged receipt of your NOI and the City's NOI and has listed them as active status. The EPA will post the status of the NOIs on the EPA website.

Post at the construction site:

- a. NPDES Permit number, if available, and a copy of the NOI,
- b. Name and phone number of your local contact person, and
- c. Location of a SWPPP available for viewing by the public.

Comply with all requirements of the approved HMCP and all state and federal regulations that pertain to the handling, storage, cleanup, and disposal of petroleum products or other hazardous substances. Contain, clean up, and dispose of all discharges of petroleum products and/or other materials hazardous to the land, air, water, and organic life forms. Perform all fueling operations in a safe and environmentally responsible manner. Comply with 18 AAC 75 and AS 46, Oil and Hazardous Substances Pollution Control. Report oil spills as required by federal, state and local law.

Comply with all requirements of the NPDES General Permit, implement all temporary and permanent erosion and sediment control measures identified in the SWPPP, and ensure that the SWPPP remains current.

Maintain all temporary and permanent erosion and sediment control measures in effective operating condition.

Perform inspections and prepare inspection reports in compliance with the project SWPPP and the NPDES General Permit.

Joint Inspections. Prior to start of construction, conduct a joint on-site inspection with the Engineer and the Contractor's field representative to discuss the implementation of the SWPPP.

Conduct the following additional joint on-site inspections with the Engineer:

- (1) During construction, inspect the following at least once every seven calendar days and within 24 hours of the end of a storm exceeding 0.5 inch in 24 hrs. (as recorded at or near the project site):
  - (a) Disturbed areas that have not been finally stabilized.
  - (b) Areas used for storage of erodible materials that are exposed to precipitation.
  - (c) Sediment and erosion control measures.
  - (d) Locations where vehicles enter or exit the site.
- (2) Prior to winter shutdown, to ensure that the site has been adequately stabilized.

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(3) At project completion, to ensure final stabilization of the project.

Winter Inspections. During winter shutdown, conduct inspections at least once every month and within 24 hours of a storm resulting in rainfall of 0.5 inch or greater. Monthly inspection requirements may be waived by the Engineer until one month before thawing conditions are expected to result in a discharge, if all of the following requirements are met:

- (1) Below-freezing conditions are anticipated to continue for more than one month.
- (2) Land disturbance activities have been suspended.
- (3) The beginning and ending dates of the waiver period are documented in the SWPPP.

Inspection Reports. Prepare and submit, within three calendar days of each inspection, a report on DOT&PF Form 25D-100, with the following information:

- (1) A summary of the scope of the inspection.
- (2) Name(s) of personnel making the inspection.
- (3) The date of the inspection.
- (4) Observations relating to the implementation of the SWPPP.
- (5) Any actions taken as the result of the inspection.
- (6) Incidents of non-compliance.

Where a report does not identify any incidents of non-compliance, certify that the facility is in compliance with the SWPPP and NPDES General Permit. You and the Engineer will sign the report according to Standard Permit Conditions of the NPDES General Permit, Part 8, Appendix G. All certifications shall be included as an appendix to the SWPPP.

Retain copies of the SWPPP, and all other records required by the NPDES General Permit, for at least three years from the date of final stabilization.

If unanticipated or emergency conditions threaten water quality, take immediate suitable action to preclude erosion and pollution.

Submit amendments to the SWPPP to correct problems identified as a result of any:

- a. Storm or other circumstance that threatens water quality, and
- b. Inspection that identifies existing or potential problems.

Submit SWPPP amendments to the Engineer within seven calendar days following the storm event or inspection. Detail additional emergency measures required and taken to include additional or modified measures. If modifications to existing measures are necessary, complete implementation within seven days.

Stabilize all areas disturbed after the seeding deadline within seven calendar days of the temporary or permanent cessation of ground-disturbing activities.

Submit a signed NOT to EPA and the Engineer:

- a. When the project site (including all material sources, disposal sites, etc.) has been finally stabilized and all storm water discharges from construction activities authorized by this permit have ceased, or
- b. When the construction activity operator (as defined in the NPDES General Permit) has changed.

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If you fail to coordinate temporary or permanent stabilization measures with the earthwork operations in a manner to effectively control erosion and prevent water pollution, the Engineer may suspend your earthwork operations and withhold monies due on current estimates for such earthwork items until all aspects of the work are coordinated in a satisfactory manner.

If you fail to:

- a. Pursue work required by the approved SWPPP,
- b. Respond to inspection recommendations and/or deficiencies in the SWPPP, or
- c. Implement erosion and sedimentation controls identified by the Engineer,

the Engineer may, after giving you written notice, proceed to perform such work and deduct the cost thereof, including project engineering costs, from your progress payments.

**END OF SECTION 01 89 50**

**SECTION 100**  
**TECHNICAL SPECIFICATIONS**  
**FOR**  
**SPILL FIRE TRAINER (SFT) REHABILITATION**  
**and**  
**SPECIALIZED AIRCRAFT FIRE TRAINER (SAFT) REHABILITATION**  
  
**TRAINING EQUIPMENT REHABILITATION**  
**ALASKA REGIONAL EMERGENCY SERVICES TRAINING CENTER**  
**KENAI, ALASKA**

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| 3.1.2.8  | Pilot Flame Monitoring                                  |
| 3.1.2.9  | Main Flame Monitoring                                   |
| 3.1.2.10 | Flame Height  |
| 3.1.2.11 | Flame Spread  |
| 3.1.2.12 | Re-Ignition   |
| 3.1.2.13 | Extinguishing Agent Detection                           |
| 3.1.2.14 | Three Dimensional Fuel Leak Fire                        |
| 3.1.2.15 | Spill Fire Operation                                    |
| 3.1.2.16 | Control System Design                                   |
| 3.1.2.17 | Operator Workstations                                   |
| 3.1.2.18 | Centralized Storage Station                             |
| 3.1.2.19 | Operating Screens                                       |
| 3.1.3    | Safety  |
| 3.1.3.1  | Prevention of Unauthorized Use                          |
| 3.1.3.2  | Emergency Shutdowns                                     |
| 3.1.3.3  | Propane Detection                                       |
| 3.1.3.4  | Pilot Monitoring  |
| 3.1.3.5  | Gas Supply Valves                                       |
| 3.1.3.6  | Hardware Malfunction                                    |

3.1.3.7 Temperature Monitoring  
3.1.3.8 All Other Sections Per Original Specifications

- 4.0 Specialized Aircraft Fire Trainer (SAFT)
  - 4.1 Owner's Requirements
    - 4.1.1 General
  - 4.2 Reference Drawings & Applicable Documents
  - 4.3 Materials
  - 4.4 Training Equipment Design
    - 4.4.1 Mockup
    - 4.4.2 Fireplace Components
    - 4.4.3 Fire Generation
    - 4.4.4 Pilot Flame
    - 4.4.5 Flame Growth
    - 4.4.6 Fire Extinguishment
    - 4.4.7 Re-Ignition
    - 4.4.8 Extinguishing Agent Detection
    - 4.4.9 Smoke Generation
  - 4.5 Ventilation Operation
  - 4.6 Control System
  - 4.7 Control System Design
    - 4.7.1 Operator Workstations
    - 4.7.2 Centralized Storage Station
    - 4.7.3 Software
    - 4.7.4 Operator Station
      - 4.7.4.1 Display
  - 4.8 Safety
    - 4.8.1 Prevention of Unauthorized Use
    - 4.8.2 Emergency Shutdown
    - 4.8.3 Gas Detection
    - 4.8.4 Pilot Monitoring
    - 4.8.5 Fail Safe Gas Supply Valves
    - 4.8.6 Supply Gas Control System
    - 4.8.7 Hardware Malfunction
    - 4.8.8 Ventilation Control
    - 4.8.9 Temperature Monitoring

## **1.0 PRELIMINARIES AND GENERAL**

### **1.1 INTERPRETATION**

The intent of the project is to rehabilitate the Training Center equipment and infrastructure to original design performance parameters with improved technology and equipment. The spill fire burn area will be constructed as a wet deck, walk-on spill fire with the same performance parameters or better than the original burn area design. The project drawings include details to complete the infrastructure components. Other existing components of the system will be replaced with new parts, materials and components to current technology where possible.

The Contractor shall be responsible to familiarize themselves to the current condition of the existing facility and what the new components will provide.

The intent of this Specification section is to supplement the original project specifications when the training center was constructed: Section 1000 – Spill Fire Trainer (SFT) and Section 1100 – Specialized Aircraft Fires Trainer (SAFT). This section will illustrate changes since that time that are due to improved computer and equipment technology. Four specification sections are important to review:

- Section 100 – Technical Specification for Spill Fire Trainer Rehabilitation and Specialized Aircraft Fire Trainer Rehabilitation
- Section 1000 – Fuel Spill Trainer
- Section 1100 – Aircraft Fires Trainer
- Section 1.6 – Measurement and Payment

The General Conditions of Contract, Special Conditions of Contract, and Measurement and Payment is to be read in conjunction with this Specification.

## **2.0 STATEMENT OF REQUIREMENTS**

### **2.1 INTRODUCTION**

The Owner – City of Kenai(Owner), is planning to rehabilitate the existing ARFF training facility at the Alaska Regional Training Center.

The Contractor's requirements includes all construction and installation of necessary infrastructure, rehabilitation of, and commissioning of, the ARFF training props including a Propane Spill Fire Trainer (SFT) and Specialized Aircraft Fire Trainer (SAFT), to achieve the following objectives under this contract, which includes:

### **TRAINING FACILITY PROPS**

#### **Schedule 1 - Trainer Equipment Infrastructure Rehabilitation:**

The rehabilitated system shall be replace propane storage and delivery equipment and components matching all existing original functions and equipment quality (as a minimum). Components are identified herein and in Section 1.6 Measurement and Payment.



Contractor shall provide as required:

- Install the infrastructure as designed for the rehabilitated system which shall include the replacement, certification and commissioning of parts and components of the existing propane and storage and delivery system.
- Manufacture and/or supply new replacement components
- Install new components
- Provide certification and commissioning of existing and new equipment for the propane storage and delivery system to original standards or better.

#### **Schedule 2 - Spill Fire Trainer Rehabilitation:**

Rehabilitated system shall be computer controlled, matching all existing original functions and scenarios (as a minimum), propane fueled, water based, walk-on deck type Spill Fire Trainer (SFT) with the existing passive/inactive aircraft mock up. Control room computer(s) must control both units on the same computer system.

Contractor shall provide as required:

- Install the infrastructure as designed for the rehabilitated system which shall include the change from the current dry system to a water based system, with walk on capabilities. Design includes water fill and drain capabilities.
- Manufacture and/or supply new replacement components
- Install new components
- Provide commissioning of new equipment and control system for the existing 125' diameter burn area Spill Fire Trainer.

#### **Schedule 3 –Specialized Aircraft Fire Trainer Rehabilitation:**

Rehabilitated system shall be computer and locally controlled system, matching all existing original functions and scenarios (as a minimum), propane fueled Specialized Aircraft Fires Trainer (SAFT). Control room computer must control both units on the same computer system.

Contractor shall provide as required:

- Install new infrastructure as designed and components for rehabilitated system.
- Manufacture and/or supply new replacement components.
- Install new components.
- Provide commissioning of new equipment and control system for the existing Specialized Aircraft Fires Trainer (SAFT).

### **GENERAL**

1. Provide all necessary construction drawings of new supporting infrastructure and facilities (propane fuel if required, water supply, additional pit infrastructure, and any required changes to supporting ancillary minor buildings and structures) as needed to support the above installations;

2. Propane Tank Farm: The Contractor shall provide design drawings and for all Rehabilitated infrastructure needs for the storage, supply and the delivery piping if required, including any valves and equipment necessary to interface the existing Propane Tank Farm with the Rehabilitated SFT, SAFT and structural training building. Control wiring shall be provided by the Contractor during installation, if required.

## 2.2 DOCUMENTATION AND TRAINING

The Contractor shall provide documentation and training in accordance with the installed equipment and the best practice usage protocols of that equipment. Documentation shall be supplied both in printed and electronic formats.

### 2.2.1 OPERATION AND MAINTENANCE MANUALS

Complete Operations Manuals, three (3) copies, for all systems shall be supplied that include; a training course outline, a view graphs and copies of the Operation and Maintenance used by students during the training course.

### 2.2.2 TRAINING COURSE

The Contractor shall provide 3 days of training for City of Kenai personnel. The course shall be based on the fire training systems Contractor's training materials and shall include operational use and maintenance. The Owner shall set a date for the course within 5 working days of the testing acceptance of the fire training systems.

### 2.2.3 ACCEPTANCE TESTING PROCEDURE

An acceptance test procedure for each installed fire training system shall be submitted to the Owner for review and approval. The Acceptance Test Procedures shall include sections for Trainer examination, detailed functional tests and performance tests. The fire training system Contractor shall implement a formal Acceptance Test Procedure that successfully demonstrates each trainer's subsystems. In addition, the Contractor shall test, demonstrate and certify all features and criteria specified. After the acceptance Test Procedure has been performed the completed test logs shall be submitted to Owner as a record of the examinations and tests completed.

### 2.2.4 DEVICE ACCEPTANCE CRITERIA

The fire training system Contractor shall demonstrate the SFT, SAFT, structural trainers, prior to acceptance the Owner. The fire training system Contractor shall develop and furnish Owner with a device acceptance test procedure for each trainer that describes specific tests to be carried out in order to meet the stated objectives of 2.2.5 and 2.2.6 and all other requirements of this document.

## 2.2.5 FUNCTIONAL TEST

Functional tests shall be conducted to ensure that all installed devices and all subsystems and components meet the criteria described herein. Testing shall encompass fire generation and extinguishment response, smoke generation and indication systems and all equipment related to the safe operation of all systems.

## 2.2.6 SAFETY SYSTEMS TESTS

Testing that demonstrates the installed devices provide an acceptance level of safety to Owner shall be required. Complete testing of the emergency stop, propane and hydrocarbon fuel detection systems shall be accomplished. The capability of systems required to be redundant shall be demonstrated through the simulated failure of subsystems and or components.

## 2.2.7 BIDDERS QUALIFICATIONS AND CAPABILITIES

Contractor shall clearly demonstrate, in its Qualification Proposal, that the Contractor has the following minimum qualifications:

- a. All Contractors must possess a valid State of Alaska Contractor's License and any additional Specialty Contractor's Licenses that may be required prior to the submission of their Qualification Proposal documents as specified herein.
- b. Any architect or civil, structural, mechanical, and electrical engineer who is a member of the Contractor's team, providing design, must be licensed in the State of Alaska.
- c. **Firm Experience and Past Performance:** All Contractors shall provide a detailed, accurate summary of projects and experience to fully support their qualifications as required in Section 3 - Qualifications, below.

To establish minimum qualifications, the Contractors shall submit qualification information that accurately illustrate the completion of a minimum of five (5) new ARFF Training Center projects similar in size, dollar value and complexity. Information submitted shall include information on past performance in terms of schedule, budget, quality and innovations / value added. This material may also be used in support of the qualification requirements of Section 3 as well.

The prospective Contractor shall provide the following information:

A company profile that fully describes the manufacturer's ability to provide the required system engineering, system equipment, software, and post-purchase system support. This section shall include a complete summary of experience with closed-loop gas-fueled, live fire training systems. Note: A closed-loop gas-fueled, structural live fire training system is defined as a system where fire decay and extinguishment is fully controlled by the

computer based on trainee actions in applying extinguishing agent(s) – no operator input of any kind is required for fires to decay, extinguish, and re-flash. The profile shall also include information relative to the outdoor props in this specification.

A history of experience with a minimum of five (5) new, completed computer controlled Aircraft Rescue and Fire Fighter (ARFF) Trainers of equal or greater complexity. The previous experience summary shall consist of documentation that accurately illustrates the Spill Fire Trainer (SFT) size and complexity and shall have had a minimum of 125 foot diameter burn area with a passive mockup similar in size to Boeing B737 or similar aircraft. The SFT shall have had minimum of 70 independently computer controlled burn zones. Each Specialized Aircraft Fires Trainer shall have had a minimum of seven computer-controlled interior and exterior fires and shall have been a minimum size of a B737.

The list of qualifying trainers must include:

- a. the award date,
- b. the scheduled completion date,
- c. the actual completion date,
- d. the contract value,
- e. the name and telephone number of a person employed by the Owner who has personal knowledge of the training system supplier's contractual and technical performance.

A summary of five (5) completed propane fueled, PLC/computer controlled, structural live fire trainer systems with fully automatic agent detection and fire response capability. The systems cited shall be of equal or greater complexity than the system being procured. All systems cited must be closed-loop – manually extinguished systems are not acceptable.

d. **Safety Analysis Report:**

The prospective fire training system supplier shall provide a safety analysis report prepared by an independent engineering consulting firm, which addresses the design and performance of a completed fire training system that is similar in complexity to the system to be procured. The report shall include:

A description of the process by which the safety analysis to the system was conducted.

An analysis of the potential operational hazards of the system and the specific design features that address these hazards.

A fault tree analysis of system catastrophic and critical failures that illustrates the probability of occurrence within the following limits:

Catastrophic – less than 1 in 1,000,000 for 3,000 hours of operation.

Critical – less than 1 in 100,000 for 3,000 hours of operation.

A system safety design checklist that supports the confirmation of the system safety design goals.

Catastrophic and critical failures shall be as defined in United States specification MIL-STD-882B or equivalent. The definitions therein are catastrophic failures are those which result in death to personnel or total loss of system and critical failures are those which result in severe injury to personnel, severe occupational illness or major system damage.

## 2.2.8 INTRODUCTION AND GENERAL CONDITIONS

This live fire training system specification is intended to solicit response from fire training facility Contractors with a proven record of supplying quality functional systems that meet the specific requirements of the end user.

## 2.2.9 EQUIPMENT CERTIFICATION

The prospective live fire training system Contractor shall submit written evidence that the live fire training equipment that shall be supplied has been certified and labelled by a Nationally Recognized Testing Laboratory (NRTL) to ensure that the equipment complies with the requirements of the latest editions of the following standards. (An NRTL must meet the requirements of OSHA 29 CFR 1910.7)

NFPA 86, The Standard for Ovens and Furnaces  
UL 508A, The Standard for Industrial Control Equipment  
NFPA 1403 The Standard on Live Fire Training Evolutions

Each document utilized for the certification and listing process, including those not covered in this section, should be documented on the testing report. The method of pilot and burner utilized for testing should also be included in the testing report. The manufacturer certification process should be conducted annually, and the report should indicate the next scheduled testing date.

## 2.2.10 ADDITIONAL INFORMATION

Each application to be a qualified Contractor shall include a transmittal letter that identifies the documents submitted for Owner review. It is the sole responsibility of the fire training system Contractor to submit all design details and proposed preliminary design drawings.

## 2.2.11 SUBMITTALS

The Contractor shall be responsible for providing three (3) copies of an operator and maintenance manual. The operation and maintenance manual shall include detailed information on the operation of the training systems, including start-up, training, and shut down of the system. The manual shall also include information regarding routine maintenance of the system and shall provide a list of part

numbers and manufactures of all user replaceable parts.

## 2.3 REFERENCE TECHNICAL SPECIFICATIONS, CODES AND STANDARDS

The following applicable publications form part of this specification. Unless specified otherwise, the standards, codes and advisory circulars must be the editions current at the date of calling for tenders.

### **FAA Advisory Circulars:**

|                 |   |
|-----------------|---|
| AC 150/5220-17B | Aircraft Rescue and Fire Fighting (ARFF) Training Facilities  |
| AC 150/5300-13  | Airport Design  |
| AC 150/5320-6E  | Airport Pavement Design and Evaluation  |
| AC 150/5320-5C  | Surface Drainage Design   |
| AC 150/5220-4   | Water Supply Systems for Aircraft Fire and Rescue Protection  |
| AC 150/5370-10  | Standards for Specifying Construction of Airports – The relevant clauses applicable to this project are at Appendix A |
| AC 150/5370-2E  | Operational Safety Airside  |
| AC 150/5380-5   | Debris Hazards at Civil Airports  |
| AC 150/5200-28  | Notices to Airmen (NOTAM) for Airport Operators   |

### **NFPA (National Fire Protection Association)**

|            |   |
|------------|---|
| NFPA 30:   | Flammable and Combustible Liquids Code  |
| NFPA 54:   | National Fuel Gas Code  |
| NFPA 58:   | Liquefied Petroleum Gas Code  |
| NFPA 70:   | National Electrical Code  |
| NFPA 402M: | Aircraft Rescue and Firefighting Operations   |
| NFPA 415:  | Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways |

## 2.4 COMPLIANCE CERTIFICATE

All fire raining equipment shall be certified and labelled by a Nationally Recognized Testing Laboratory to ensure that all applicable standards and codes are complied with. A Nationally Recognized Testing Laboratory must meet the requirements of OSHA 1910.7.

## 3.0 SPILL FIRE TRAINER (SFT)

### 3.1.1 GENERAL

The Spill Fire Trainer shall be used to train and certify fire-fighters in the management, control and extinguishment of large scale fuel fires. The trainer shall utilize propane in the liquid phase as its fuel.

The Spill Fire Trainer shall simulate an intense large scale aviation fuel fire and shall respond to water or foam firefighting agent application. The trainer shall provide the capability to:

1. Generate a flame in appearance similar in height color and density to aviation jet fuel fires.
2. Operate in varied areas of engulfment to simulate differing aircraft incidents and amounts of spilled fuel.
3. Realistically respond under computer control to ARFF vehicle and hand line attacks either individual or multiple using water as the agent.
4. Replicate extinguishing characteristics of foam (AFFF) when water is applied as the surrogate extinguishing agent.
5. Provide the capability to vary the difficulty in extinguishing the fire.
6. Provide the capability of re-ignition to any area of the Spill Fire. Selected burn areas and control of the re-ignition over these areas shall have safety features which ensure against injury to personnel.
7. Provide the ability to re-spread fire over the active area if extinguishment is incomplete.
8. Allow for operator to select flame spread rate and to initialize training scenario parameters.
9. Operate the facility year round with no appreciable loss of performance in temperatures as low as -30 degrees F and a sustained wind speed to 15 knots. See original Specification Section 1000

### 3.1.2 TRAINING EQUIPMENT DESIGN

#### 3.1.2.1 MATERIALS

The materials selected shall be appropriate for the intended use and shall be able to withstand an environment that includes the effects of heat and thermal shock on a repetitive basis. It shall be impervious to the physical forces associated with fire-fighting streams and shall not produce any harmful toxic reactions as a result of the training environment. The equipment utilized to generate fire shall be corrosion resistant and shall be able to withstand both the rapid heat from the generated flames and the rapid cooling resulting from fire-fighting medium application.

#### 3.1.2.2 BURN AREA

The propane fueled, Spill Fire Burn Area shall be a minimum of 12,265 sf (~125' dia.) total size.

The new design shall be water filled. The water level should not exceed 3" above the solid deck surface to permit ease of walking on the Spill Fire surface.

The Spill Fire Burn Area shall be encompassed within the burn pit area. The burn pit detailed design shall be furnished by the Owner. The Contractor shall be responsible for the installation and construction of the new infrastructure for the rehabilitated burn pit, in accordance design provided by the owner. The contractor shall be responsible for the procurement and installation and commissioning of all the fire generation and control equipment required for the rehabilitation of the spill fire area.

The burn area decking shall be capable of supporting the walk-on loading of 100 #/sf minimum. The burn area decking shall have a flat surface with no obstructions protruding onto the surface with the exception of extinguishment agent sensors that shall also be capable of the walk on loading referenced above.

The surface shall is designed with independent removable sections of grates, grill, platforms, etc., to ensure ease of access to all of the propane delivery piping for installation and maintenance purposes while remaining firmly fixed under operational conditions;

Individual panels shall be able to be removable and replaceable, if required, without compromising the structural strength of adjacent sections;

All propane piping within the burn area shall be stainless steel.

#### 3.1.2.3 MOCKUP

The Three Dimensional Fuel Leak Fire shall be rehabilitated as well.

#### 3.1.2.4 TRAINING FIRE CONTROL COMPONENTS

Propane in the liquid state shall be utilized as the fuel for the trainer to produce flames in the burn area. Flames shall spread across the burn area under the control of the controls system specifically designed for the trainer.

#### 3.1.2.5 FLAME APPEARANCE

The fire generation equipment shall produce dense yellow orange flames characteristic of dense high carbon content burns. Propane consumption rates required to achieve realistic flame appearance shall be the responsibility of the Contractor. The Contractor shall advise the client during the design phase of proposed consumption rates. The existing propane system shall be reviewed for "fit-for-purpose" and compliance with performance requirements of this specification and the proposed new mock-up and training installation.



#### 3.1.2.6 FIRE GENERATION EQUIPMENT

See original Specification Section 1000.

See Section 1.6 Method of Measurement and Payment

#### 3.1.2.7 FIRE RESOLUTION

See original Specification Section 1000.

#### 3.1.2.8 PILOT FLAME MONITORING

See original Specification Section 1000

#### 3.1.2.9 MAIN FLAME MONITORING

See original Specification Section 1000

#### 3.1.2.10 FLAME HEIGHT

See original Specification Section 1000

#### 3.1.2.11 FLAME SPREAD

See original Specification Section 1000

#### 3.1.2.12 RE-IGNITION

See original Specification Section 1000

#### 3.1.2.13 EXTINGUISHING AGENT DETECTION

A minimum of 3 sensors shall be located in each fire zone to detect the application of extinguishing agents, when applied using ARFF vehicles and hand lines.

See original Specification Section 1000

#### 3.1.2.14 THREE DIMENSIONAL FUEL LEAK FIRE

See original Specification Section 1000

#### 3.1.2.15 SPILL FIRE OPERATION

The Spill Fire Trainer shall be designed for safe operation under the control of an operator using a computer terminal and keyboard or touch screen located in the control room. The operator shall have the facility to stop any exercise immediately should the need arise.

The Spill Fire Trainer shall be designed to provide training in control and extinguishment of large area fuel spill fires that occur as the result of aircraft incidents. The fire shall burn within the boundary of the selected burn area

size and fire zones of the Spill Fire Trainer burn area pit. A mockup shall be installed in the center of the burn area.

The operator shall be able to:

Initiate pilot mode for any or all selected pilots and receive confirmation of their ignition.

Initiate Main Flame mode and have fire begin at the pilot zones and then spread to all selected zones in accordance with the preset parameters.

The fire shall respond to the application of selected fire-fighting agents and shall extinguish under computer control according to the application of the agent. Agent must be applied to all selected fire zones in order to attain extinguishment. If agent application ceases before total extinguishment. The provision shall be available to provide respreads of the fire to previously extinguished zones. For safety, any segment that has fully extinguished shall not respread. Respread fires shall be available at predetermined locations within the Spill Fire Trainer and initiated only on command of the operator.

While under agent application maximum burn time shall not exceed five (5) minutes and if no agent is applied to the burn area the exercise shall terminate within two (2) minutes.

Parameters of operation selectable by the operator shall be:

| Parameters                  | Range   |
|-----------------------------|---|
| • Active Zones              | Any 1 or a combination of multiple zones                                  |
| • Start Positions           | Any 1 or a combination of the zones immediately adjacent to the 4 pilots. |
| • Reflash Zones             | Limited to the 1 active zone adjacent to each active pilot.               |
| • Initial Spread Rate       | 0.5, 1.0, 1.5, 2.0 ft/sec   |
| • Extinguishment Difficulty | LEVEL 1 thru LEVEL 4  |
| • Agent Type                | AFFF, FFFP, FPF, PF   |
| • Respread Rate             | 0.5, 1.0, 1.5 ft/sec  |
| • Respread Delay            | 0 to 20 seconds   |
| • Respread Mode             | Enabled, Disabled   |
| • Reflash Enable Window     | 0 to 60 seconds   |
| • Advanced Parameters       | Wall of Flame: ON/OFF<br>Attack From: Forward, Aft, Rescue, Non-Rescue    |

### 3.1.2.16 CONTROL SYSTEM DESIGN

The main control system shall be a Programmable Logic Controller (PLC) with and Operator Interface comprised of a PC workstation using and

Ethernet connection to the PLC. The PLC shall interface with all system I/O and the onboard program shall be responsible for the operation of the trainer's active functions. The system shall be designed to operate the fire scenarios, control and monitor safety systems, log activity and perform diagnostic testing on the trainer.

The Spill Fire Training system and the SAFT shall each utilize their own PLC in order to provide operational independence.

Three (3) Operator Workstations shall be provided, each capable of running either the Spill Fire Training System, the SAFT Training System, and the Structural training Building in order to provide functional redundancy.

A centralized storage station shall be provide to allow for centralized, common storage for all system configuration files, logged data and user settings. This system shall include and external data storage device for periodic backup. A second backup storage station shall be provided in order to provide functional redundancy.

#### 3.1.2.17 OPERATOR WORKSTATIONS

Each Operator Workstation shall be provided with the following features as a minimum.

|                          |  |
|--------------------------|--|
| Processor (CPU)          | 3ghz Core i5   |
| Memory                   | 16 GB RAM  |
| Hard Drive               | 240 GB Solid State Drive   |
| Front Productivity Ports | 5-in-1 memory card reader, 2 USB, audio  |
| Keyboard and Mouse       | USB Low-profile keyboard and USB optical mouse   |
| Graphics Card            | Capable of driving two digital displays (DVI or Displayport or HDMI connection) at a minimum resolution of 1920X1080 each. |
| Monitor                  | Dual 24" Diagonal Full HD Widescreen LCD Monitors (minimum resolution of 1920X1080 each.)                                  |
| Printer                  | Color Laser Printer to be networked (shared) between the trainers  |
| UPS                      | Shall be provided for each PC Workstation  |
| Other                    | Modems, networking cabling or interconnection drives that are required for proper system use                               |

The processor shall have adequate arithmetic, logical processing input/output and memory access speeds to assure real time processing of all assigned functions and to assure no erratic behavior in the display.

The Input Output system of the computer shall have the capability to input or output to and from one or more units of peripheral equipment while continuing operation of a real time situation and to permit sampling of controls and activation of displays with speed and accuracy.

The computer system shall have the following spare capacities:

|                        |     |
|------------------------|-----|
| Solid State Drive      | 50% |
| Spare Storage Capacity | 50% |
| Input Output System    | 10% |

### 3.1.2.18 CENTRALIZED STORAGE STATION

The Storage Station (and spare) shall utilize a PC with a Windows 10 (or higher) or Windows Server 2012 (or higher) Operating System.

The Storage Station shall be provide with the following features as a minimum. The spare Storage Station shall be identical to the Primary Storage Station

|                  |  |
|------------------|--|
| Processor (CPU)  | 3ghz Core i5   |
| Memory           | 16 GB RAM  |
| Hard Drive       | 500 GB Solid State Drive   |
| Data Storage     | SQL Server   |
| External Storage | 2TB hard drive storage for backup utilizing DSATA or USB 3.0 or higher                       |
| Printer          | Color Laser Printer to be networked (shared) between the trainers                            |
| UPS              | Shall be provided for each PC Workstation  |
| Other            | Modems, networking cabling or interconnection drives that are required for proper system use |

The processor shall have adequate arrhythmic, logical processing input/output and memory access speeds to assure real time processing of all assigned functions and to assure not erratic behavior in the display.

The Input Output system of the computer shall have the capability to input or output to and from one or more units of peripheral equipment while continuing operation of a real time situation and to permit sampling of controls and activation of displays with speed and accuracy

The computer system shall have the following spare capacities:

|                        |     |
|------------------------|-----|
| Solid State Drive      | 50% |
| Spare Storage Capacity | 50% |
| Input Output System    | 10% |

### 3.1.2.19 OPERATING SCREENS

The Spill Fire Trainer shall be operated using dual color graphics display terminal, keyboard and pointing device or touch screen. The following screens shall be provided:

#### a. FIRE TRAINING SCREEN

Shall be a graphical representation of the burn areas showing all fire zones and shall display all of the parameters and graphics necessary to setup and operate the Spill Fires. During fire operation fire scenario conditions shall be displayed on the screen and shall include:

1. Indication of fireplace enable / disable status
2. Indication of pilot / main flame status
3. Extinguishment agent application
4. Actual burn time
5. Effective extinguishment application time
6. Total scenario time

The status of Spill Fire zones shall be displayed using a color coded graphical display.

A parameter set up window shall display all fixed and selectable parameters of the fire including the valid range of selectable parameters. Invalid parameter inputs shall be rejected. Operation of a fire zone shall be inhibited until selectable parameters are validated.

A diagnostics menu shall offer a selection of tests that automatically test all major trainer system components. The menu shall include a daily operational readiness test to confirm operation of the entire system prior to the start of training.

#### b. DAILY OPERATIONS READINESS TEST SCREEN

Shall provide all the relevant information to indicate that the system is ready for training.

Pilot Diagnostics Screen

Shall allow the operator to test any and all system pilots either individually or collectively. Main flame shall be disabled whilst in this mode.

#### c. VALVE DIAGNOSTICS SCREEN

Shall allow the operator to test any fire zone valve individually or collectively. All flames are to be disabled whilst in this mode.

#### d. TRAINER DIAGNOSTICS

The control system shall include comprehensive diagnostic testing capabilities, with detailed on screen instructions to assist the system operator and maintenance personnel in clearly identifying and resolving system malfunctions.

#### 3.1.3 SAFETY

The Spill Fire Trainer shall be designed to ensure that hazards to personnel are minimized both during training scenarios and when the mock up is not in operational use.

The Contractors are required to submit a safety analysis report prepared by an independent engineering consulting company that supports the design and performance of a functionally equivalent system. The report shall include:

A description of the process by which the safety analysis of the system was carried out.

The analysis of potential operational hazards of the system and the specific design features that address these hazards.

A fault tree analysis of system catastrophic and critical failures that illustrate the probability of occurrences within the following limits:

1. Catastrophic      -less than 1 in 1,000,000 for 3000 hours of operation
2. Critical            -less than 1 in 100,000 for 3000 hours of operation

A system design checklist that supported the confirmation of the system safety design goals.

A summary of all system test and analysis events that led to the final system design test and acceptance.

##### 3.1.3.1 PREVENTION OF UNAUTHORIZED USE

The control system shall provide security protocols and fail-safe's that are designed to prevent unauthorized use. These fail safes shall be designed to protect staff who may be carrying out maintenance duties on the mock-up or are engaged in training activities with the mock-up that do not require system activation.

##### 3.1.3.2 EMERGENCY SHUTDOWNS

Emergency shutdowns shall be provided at the Operators Station and at a safety officer's station. The shutdown switches shall be clearly visible and protected against accidental activation. Activation of any switch shall immediately shut off propane flow to the Spill Fire Trainer.

#### 3.1.3.3 PROPANE DETECTION

A propane detection system shall operate 24 hours a day. The propane detection system shall operate independently of the Spill Fire Trainer's computer system.

Infra-red propane detection sensors shall be located in all enclosures or equipment rooms that house propane piping and control components and wherever propane may accumulate. An audible alarm shall sound and a visual indication of a propane hazard shall appear on the control panel in the Control Room in the event of an excess propane level. In addition the propane supply shall be interrupted until propane concentration is below the shutdown set point.

#### 3.1.3.4 PILOT MONITORING

In order to prevent hazardous build-up of liquid petroleum gas burner pilots shall be inextinguishable once lit. An active monitoring system of the flames shall be provided by way of a self-checking flame safeguard control system. If pilot ignition is not achieved during pilot start up sequence the flow of gas to the pilot shall be shutoff and the operator alerted to the type and location of the problem. If for any reason the pilot flame is extinguished at any time the system will shut off all gas flow to all pilots and fire places. The system shall be self-checking and will advise the operator of any malfunction and immobilize the system.

#### 3.1.3.5 GAS SUPPLY VALVES

See original Specification Section 1000.

#### 3.1.3.6 HARDWARE MALFUNCTION

See original Specification Section 1000.

#### 3.1.3.7 TEMPERATURE MONITORING

Temperature sensors shall be installed in each of the equipment bunkers. Should the temperature reach 175 degrees F, an automatic trainer shutdown shall occur, a high temperature hazard shall be displayed at the control console and the cooling water system shall start automatically at full capacity.

#### 3.1.3.8 ALL OTHER SECTIONS PER ORIGINAL SPECIFICATIONS

## **4.0 SPECIALIZED AIRCRAFT FIRE TRAINER (SAFT)**

### **4.1 OWNER'S REQUIREMENTS**

#### **4.1.1 GENERAL**

See original Specification Section 1100.  
Refer to Section 1.6 Measurement and Payment

### **4.2 REFERENCE DRAWINGS & APPLICABLE DOCUMENTS**

Refer to drawings included with the bid package  
See original Specification Section 1100.  
Refer to Section 1.6 Measurement and Payment.

### **4.3 MATERIALS**

Refer to drawings included with the bid package  
See original Specification Section 1100.  
Refer to Section 1.6 Measurement and Payment.

### **4.4 TRAINING EQUIPMENT DESIGN**

#### **4.4.1 AIRCRAFT MOCKUP**

No changes required

#### **4.4.2 FIREPLACE COMPONENTS**

See original Specification Section 1100.  
Refer to Section 1.6 Measurement and Payment.

#### **4.4.3 FIRE GENERATION**

Fire generation equipment shall be designed, fabricated and installed in accordance with NFPA 54 and NFPA 58. The design fabrication and installation of the fire generation equipment shall minimize safety hazards to the personnel within the trainer. All burn area equipment necessary for generation and control of fires shall be temperature resistant, weatherproof and watertight as necessary to function in a fire training environment.

All interior fires shall utilize vapor propane for pilot flames and main flames. All exterior fires shall utilize vapor propane for pilot flames and liquid propane for main flames.

All fireplaces need full local control capability. Local Control will be in the form of a removable pendant and/or wireless control pendant.

For the purposes of this document Local Control and Manual Override Control mean the same.



#### 4.4.4 PILOT FLAME

See original Specification Section 1100.

#### 4.4.5 FLAME GROWTH

See original Specification Section 1100.

#### 4.4.6 FIRE EXTINGUISHMENT

See original Specification Section 1100.

#### 4.4.7 RE-IGNITION

See original Specification Section 1100.

#### 4.4.8 EXTINGUISHING AGENT DETECTION

See original Specification Section 1100.  
Refer to Section 1.6 Measurement and Payment.

#### 4.4.9 SMOKE GENERATION

See original Specification Section 1100.  
Refer to Section 1.6 Measurement and Payment.

### 4.5 VENTILATION & OPERATION

See original Specification Section 1100.  
Refer to Section 1.6 Measurement and Payment.

### 4.6 CONTROL SYSTEM

All training fires shall be designed with safety as the prerequisite. Control systems shall make provision for the activation of individual, multiple or the full range of fires concurrently. All operations shall be monitored from the fire control room and the operator shall be able to immediately stop any or all fire scenarios as the need may arise. Training fires shall not burn longer than three (3) minutes without the detection of an extinguishing agent.

### 4.7 CONTROL SYSTEM DESIGN

The main control system shall be a Programmable Logic Controller (PLC) with and Operator Interface comprised of a PC workstation using and Ethernet connection to the PLC. The PLC shall interface with all system I/O and the onboard program shall be responsible for the operation of the trainer's active functions. The system shall be designed to operate the fire scenarios, control and monitor safety systems, log activity and perform diagnostic testing on the trainer.

The Spill Fire Training system and the A380 SAFT shall each utilize their own PLC in order to provide operational independence.

Two (2) Operator Workstations shall be provided, each capable of running either the Spill Fire Training System or the A380 SAFT Training System, in order to provide functional redundancy.

A centralized storage station shall be provide to allow for centralized, common storage for all system configuration files, logged data and user settings. This system shall include and external data storage device for periodic backup. A second backup storage station shall be provided in order to provide functional redundancy.

#### 4.7.1 OPERATOR WORKSTATIONS

Each Operator Workstation shall be provided with the following features as a minimum.

|                          |  |
|--------------------------|--|
| Processor (CPU)          | 3ghz Core i5   |
| Memory                   | 16 GB RAM  |
| Hard Drive               | 240 GB Solid State Drive   |
| Front Productivity Ports | 5-in-1 memory card reader, 2 USB, audio  |
| Keyboard and Mouse       | USB Low-profile keyboard and USB optical mouse   |
| Graphics Card            | Capable of driving two digital displays (DVI or Displayport or HDMI connection) at a minimum resolution of 1920X1080 each. |
| Monitor                  | Dual 24" Diagonal Full HD Widescreen LCD Monitors (minimum resolution of 1920X1080 each.)                                  |
| Printer                  | Color Laser Printer to be networked (shared) between the trainers  |
| UPS                      | Shall be provided for each PC Workstation  |
| Other                    | Modems, networking cabling or interconnection drives that are required for proper system use                               |

The processor shall have adequate arithmetic, logical processing input/output and memory access speeds to assure real time processing of all assigned functions and to assure no erratic behavior in the display.

The Input Output system of the computer shall have the capability to input or output to and from one or more units of peripheral equipment while continuing operation of a real time situation and to permit sampling of controls and activation of displays with speed and accuracy.

The computer system shall have the following spare capacities:

|                        |     |
|------------------------|-----|
| Solid State Drive      | 50% |
| Spare Storage Capacity | 50% |
| Input Output System    | 10% |

#### 4.7.2 CENTRALIZED STORAGE STATION

The Storage Station (and spare) shall utilize a PC with a Windows 10 (or higher) or Windows Server 2012 (or higher) Operating System.

The Storage Station shall be provide with the following features as a minimum. The spare Storage Station shall be identical to the Primary Storage Station

|                  |  |
|------------------|--|
| Processor (CPU)  | 3ghz Core i5   |
| Memory           | 16 GB RAM  |
| Hard Drive       | 500 GB Solid State Drive   |
| Data Storage     | SQL Server   |
| External Storage | 2TB hard drive storage for backup utilizing DSATA or USB 3.0 or higher                       |
| Printer          | Color Laser Printer to be networked (shared) between the trainers                            |
| UPS              | Shall be provided for each PC Workstation  |
| Other            | Modems, networking cabling or interconnection drives that are required for proper system use |

The processor shall have adequate arithmetic, logical processing input/output an memory access speeds to assure real time processing of all assigned functions and to assure not erratic behavior in the display.

The Input Output system of the computer shall have the capability to input or output to and from one or more units of peripheral equipment while continuing operation of a real time situation and to permit sampling of controls and activation of displays with speed and accuracy

The computer system shall have the following spare capacities:

|                        |     |
|------------------------|-----|
| Solid State Drive      | 50% |
| Spare Storage Capacity | 50% |
| Input Output System    | 10% |

#### 4.7.3 SOFTWARE

The Trainers digital computer system Windows based software programs shall be capable of the following:

1. Performance of control and processing functions to perform fire simulation control and the interface of processing functions in real time. Timers, temperatures and unburned gas LEL's shall be displayed numerically. All other fire simulation control shall be graphical
2. Diagnostic programs to check computer system operation and peripheral equipment
3. A report generation system that provides logs of trainer activity and system messages. At a minimum the system shall log burn data for every

training session , including a Unique Scenario designation ID, the date and the time of the training session, burn time, pilot time, agent application time, smoke duration (if applicable), effect firing time (if applicable) and crew trained during that session. Interior fires shall also store temperature and unburned fuel LEL data for reporting graphically. The fuel spill shall also store burn temperature for reporting graphically,

4. A daily system readiness to check basic system operational status, including at a minimum, pilot, and smoke generation equipment.
5. Log On security system to ensure only selected operators of the system have Administrative privilege
6. Integration with the security system to prevent operation of the trainer if someone attempts to breach their designated level of authority.
7. The system should display pending Maintenance tasks, including a text description of the Task and the Unique Task Number, at the beginning of each Training Day or upon Operator request. The operator must be able to mark tasks as completed and the system must automatically refresh the maintenance data based on pre-determined Task Frequencies. The System must also log Tasks that re marked as complete, including Date and Time Complete, Operator marking the Task as Complete, the Unique Task Number, and the text description of the task. The Operator shall have the capability of running reports of pending Tasks due and a History of Tasks Completed.
8. The system should provide a database of trainees, allowing for the creation of Training Crews, which can then be assigned to training sessions for report purposes. Crew information will be associated with all stored training session data for reporting purposes. The Operator will be able to report on all Crews and Trainees, including those that are currently active and those that have been marked as inactive.

#### 4.7.4 OPERATOR STATION

The aircraft mock-up trainer shall be operated from a dedicated operator's position with a clear view down both sides of the fuselage. The station shall consist of a dual color display terminals and keyboard and emergency shutdown switch and a work station desk. The workstation shall be configured in such a way that it permits independent operation from any other trainer system present.

##### 4.7.4.1 DISPLAY

The display screen shall present the operator with all necessary information required to operate any and all training fires simultaneously or independently. The display screen shall also provide status indications of all safety features and failure of devices, manually activated emergency shutdowns and automatic system fire stoppages.

## 4.8 SAFETY

The mock-up shall be designed to ensure that hazards to personnel are minimized both during training scenarios and when the mock-up is not in operational use.

Contractors are required to submit a safety analysis report prepared by an independent engineering consulting company that supports the design and performance of a functionally equivalent system. The report shall include:

A description of the process by which the safety analysis of the system was carried out.

The analysis of potential operational hazards of the system and the specific design features that address these hazards.

A fault tree analysis of system catastrophic and critical failures that illustrate the probability of occurrences within the following limits:

1. Catastrophic -less than 1 in 1,000,000 for 3000 hours of operation
2. Critical -less than 1 in 100,000 for 3000 hours of operation

A system design checklist that supported the confirmation of the system safety design goals.

A summary of all system test and analysis events that led to the final system design test and acceptance.

### 4.8.1 PREVENTION OF UNAUTHORIZED USE

The control system shall provide security protocols and fail safe's that are designed to prevent unauthorized use. These failsafe's shall be designed to protect staff who may be carrying out maintenance duties on the mock-up or are engaged in training activities within the mock-up that do not require system activation.

### 4.8.2 EMERGENCY SHUTDOWNS

Emergency shutdowns shall be provided at the Operator's Station and at each entrance and exit to the mock-up. The shutdown switches shall be clearly visible and protected against accidental activation. Local pendants shall be equipped with Emergency Stops.

### 4.8.3 GAS DETECTION

A gas detection system shall be fitted to the mock-up to detect unburned propane levels throughout the mock-up fuselage on all (3) decks. Infra-red detection systems shall be used to provide adequate detection speeds and reduce system maintenance. The gas detection system shall operate independently of the mock-ups computer system and if gas levels reach a predetermined level all training fires shall shut down and ventilation fans shall exhaust the interior of the fuselage.

#### 4.8.4 PILOT MONITORING

In order to prevent hazardous build-up of liquid petroleum gas burner pilots shall be inextinguishable once lit. An active monitoring system of the flames shall be provided by way of a continuous self-checking flame safeguard control system. If pilot ignition is not achieved during pilot start up sequence the flow of gas to the pilot shall be shut off and the operator alerted to the type and location of the problem. If for any reason the pilot flame is extinguished at any time the system shall shut off all gas flow to all pilots and fire places. The system shall be self-checking and shall advise the operator of any malfunction and immobilize the system.

#### 4.8.5 FAIL SAFE GAS SUPPLY VALVES

Gas supply valves shall close automatically when electrical power is lost. Identified critical supply valves shall have proof of closure capability and shall provide valve position feedback to the control system. The operator shall be alerted to valves that are not at the commanded state.

#### 4.8.6 SUPPLY GAS CONTROL SYSTEM

The Contractor shall supply a block and vent system in the mock-ups gas control system to monitor and control the incoming flow of gas to the fire generation equipment. This system shall be under the control of the Mock-ups computer system.

#### 4.8.7 HARDWARE MALFUNCTION

Hardware malfunction of any safety devices shall be displayed at the operator's station terminal and shall shut down the trainer operation.

#### 4.8.8 VENTILATION CONTROL

The ventilation system shall be designed to achieve (1) air change per minute within the aircraft mockup. Ventilation system airflow operation shall be confirmed by the control system. When the training system is started up, during automatic or manual emergency shutdown the ventilation system shall operate at maximum capacity. In the event of a ventilation system malfunction operating power shall be inhibited and a malfunction message sent to the control console.

#### 4.8.9 TEMPERATURE MONITORING

Temperature sensors shall be placed at strategic locations throughout the mock-up and shall interface via the control system with the ventilation system. If levels reach 500 degrees F the ventilation system shall activate at full capacity and a warning shall be displayed at the control console. If the temperature should reach 700 degrees F automatic fireplace shutdown shall occur along with continuous ventilation, and a warning shall be displayed at the control console.

## **SECTION 1000**

### **FUEL SPILL TRAINER**

#### **PERFORMANCE SPECIFICATION**

##### **1.0 SCOPE**

This specification covers the requirements for design, fabrication, installation, testing, and performance of a propane-fueled, computer-controlled Fuel Spill Fire Trainer, that will meet the objectives of FAA Advisory Circular 150/5220-17A.

##### **1.1 General**

The Fuel Spill Trainer (FST) will be used to train and certify firefighters in the control and extinguishment of large scale fuel spill fires. The trainer shall utilize propane as its fuel to reduce air pollution, eliminate ground water contamination and provide training versatility.

The FST shall simulate an intense large area aviation fuel fire. The training fires shall respond to either water or foam surrogate agent application. To meet the training needs of the Owner, the trainer shall provide the capability to:

- 1) Generate flame appearance in height, color, density and temperature similar to that of aviation jet fuel fires.
- 2) Operate in either full or partial engulfment modes to simulate varying aircraft incidents, and quantity of spilled fuel.
- 3) Realistically respond under computer control, to either single or multiple handline or ARFF vehicle attacks from any direction using either water or surrogate foam agents.
- 4) Provide simulated reflash over predetermined burn areas. Selected burn areas and control of the reflash over these areas shall have safety features which ensure against personnel injury.
- 5) Provide capability to vary level of difficulty in extinguishing the fires.
- 6) Allow instructor to select flame spread rates and to initialize his training scenario parameters.

- 7) Enable fire respread over the selected active burn area if extinguishment procedures are incomplete.
- 8) Operate the trainer safely year-round, in temperatures down to -30°F, and winds up to 15 knots, with no appreciable loss of performance.

## **1.2 Applicable Documents**

Trainer equipment design and installation shall comply with the following standards.

- \* NFPA 402M - Aircraft Rescue and Fire Fighting Operations
- \* NFPA 54 - National Fuel Gas Code
- \* NFPA 58 - LP Gas, Storage and Use
- \* NFPA 70 - National Electrical Code
- \* FAA Advisory AC150-5220-17A

## **1.3 Materials**

Materials shall be appropriate for their intended use, and shall withstand the training environment, including heat, thermal shock and the physical forces of extinguishing agent application. Selected materials shall not produce any harmful toxic effects.

## **1.4 Burn Area Design**

### **1.4.1 Burn Area**

The Fuel Spill Burn Area (FSBA) shall cover an area of at least 12,271 square feet with flame.

The FSBA surface shall be realistic in appearance, with no trip hazards such as exposed piping, and shall support the weight of training personnel. The trainer design shall allow the surface to be at the same elevation as the surrounding ground level, or slightly below, and shall permit the buildup of the surrogate foam used as extinguishing agent. The required burn area base and drainage system for the trainer shall not permit applied extinguishing agents to permeate the soil. The agents will be collected and directed to the Owner's holding or disposal area.

The fuel spill burn area will be enclosed in the burn pit. The burn pit detailed design and construction shall be furnished by the Owner. The trainer equipment supplier shall be responsible for the design, procurement and installation of all trainer equipment and propane diffusion material required for the FSBA.



### **1.4.2 Mockup**

A mockup shall be located in center of the burn area, properly supported on concrete footings. The concrete footings will be designed and furnished by the owner. The mockup shall be designed to survive the fire environment and ARFF apparatus. The mockup shall be an inactive representation of a Boeing 737 commercial airliner and shall be 10 feet in diameter, 75 feet in length and have a wing span of 60 feet. The wing shall be 12 feet wide, at the fuselage, and have an engine mockup 4 feet in diameter and 10 feet long. The Starboard Wing shall be attached to the fuselage and the Port Wing shall be detached from the fuselage. Tail height shall be 6 feet above the top of the fuselage. The mockup shall be constructed of corrosion and heat resistant material.

The aircraft mockup shall incorporate a water cooling system to prevent overheating of the mockup. The Contractor shall also provide bunker covers designed to protect equipment inside the bunkers from the heat of the fires.

## **1.5 Fire Generation System**

The fire generation system shall utilize propane as fuel and shall produce flames in the burn area. The flames shall spread across the burn area under the control of the trainer's control system. For safety, the flames shall not be affected by the application of extinguishing agents, but shall extinguish only when the control system cuts-off the propane supply.

### **1.5.1 Flame Appearance**

The fire generation equipment shall be designed to produce dense, yellow-orange flames characteristic of high carbon content burns. Propane consumption rates required to achieve realist flame appearance shall be the responsibility of the device supplier. However, it is anticipated that the fuel consumption rate of final design will not exceed 800 gallons per minute of liquid propane. The supplier will be held responsible for correcting any problems with design should the measured consumption rate exceed this rate.

### **1.5.2 Fire Generation Equipment**

The fire generation equipment shall be designed, fabricated, and installed in accordance with the guidelines of NFPA, 54, NFPA 58 and the specific safety requirements of Section 1.9. The design, fabrication, and installation of the fire generation equipment shall minimize safety hazards to personnel within the trainer. All burn area equipment necessary for generation and control of the fire shall be temperature resistant, weatherproof, and watertight as necessary to function in the Fuel Spill Fire environment. The equipment shall be shielded as necessary to protect it from extinguishing agents which could be directed toward the equipment from the trainer. All functional equipment shall be accessible for maintenance.

### **1.5.3 Fire Resolution**

The FSBA shall be comprised of individually controlled fire zones, designed to provide a continuous flame appearance. Propane flow to the fire zones shall be controlled to provide flames that spread and recede with the same appearance as burning jet fuel. Each fire zone shall be controlled by dedicated flame generation hardware. Fire zone size shall not exceed 1.2% of the surface area of the fuel spill burn area (150 s.f.). There shall be no fire zones located beneath the aircraft mock-up.

### **1.5.4 Ignition**

Flames shall be ignited by an inextinguishable pilot system. The pilot shall be monitored automatically. On loss of pilot all propane flow to the portion of the fire ignited by the particular pilot shall stop immediately, unless that portion of the FSBA has already been confirmed to have been ignited. A corresponding message shall be displayed on the operator station CRT screen.

Two full sets of replacement parts shall be provided for the ignition system that may routinely need replacement. In addition, one extra sensor for each burner element shall also be provided.

### **1.5.5 Flame Height**

Flame height shall be proportional to the surface area of the fire area.

### **1.5.6 Flame Spread**

Flame spread rate in square feet per second shall be selectable by the operator.

### **1.5.7 Reflash**

The burn area shall be provided with four designated reflash areas. Flames shall be generated in these areas only when initiated by the operator. Reflash area coverage shall be limited to one fire zone, in order to minimize hazardous exposure of trainees to these flames.

### **1.5.8 Three Dimensional Fuel Leak Fire**

The fuel leak fire is located on the wing engine aircraft mock-up. It is actually linked to operate in conjunction with several of the fuel spill burn area elements on the ground in front of the engine mock-up. The fuel leak burner gives the appearance of a fuel leak falling from the engine to the ground which has ignited and the burner elements on the ground provide the ability to spread the fire. Agent detection is provided for either water or surrogate foam attack. If a powder or combination attack is made by the trainees the instructor shall be provided a manual capability of extinguishing the fire.

## **1.6 Agent Detection System**

Extinguishing agent sensors shall be located throughout the trainer and shall detect the application of water and surrogate AFFF (commercial liquid detergent concentrate) when applied to the training fire using hand lines or truck turret nozzles. Response of the agent detection system shall be fast enough to permit the trainer's control system to reduce propane flow and extinguish the training fire at a rate consistent with actual extinguishment of jet fuel spill fire.

## **1.7 Control System Design**

The FST control system shall provide control and monitoring of all trainer functions and conditions by the operator at the trainer's control station. These include setup and control of training exercises, and monitoring both the extinguishing effort and safety conditions throughout the trainer.

### **1.7.1 Control Room**

The control room for the Fuel Spill Trainer shall be located in the control building for the Fuel Spill and Aircraft Fires Trainer. The control building shall be located at least 300 feet away from the center of the FSBA and the floor height of the control room will be at least 18 feet above the top surface of the FSBA.

This control room shall house the operator's station, central computer, the power control panel, and peripheral equipment such as a printer. The control room shall be provided with HVAC to maintain temperatures between 60 - 80°F.

The Owner shall provide an equipment room on the ground floor for additional electronic cabinets and power distribution panels. This space shall be provided with HVAC to maintain temperatures between 60 - 80°F.

### **1.7.2 Operator Station**

The Fuel Spill Trainer shall be controlled by a dedicated operator's station. The operator's station shall consist of a central digital computer, a color display terminal and keyboard, an emergency shutdown switch, and a workstation desk. The workstation desk shall be configured and installed in the trainer's control room such that it permits the operator to operate the trainer while observing the training exercise from the control room window.

#### **1.7.2.1 Display Terminal**

The trainer shall be operated using a color display terminal and its keyboard. A series of screens shall present the operator with all necessary information to operate the trainer in full engulfment, or any partial engulfment mode.

The operator shall only be able to enter the operating mode of the trainer through proper entry of a password. The operator shall be provided with the capability to select or input the following:

- \* Training Mode
  - Full Engulfment - All Fire Zones
  - Previously Configured Patterns - Selected Fire Zones
  - New Patterns - Consisting of any Combination of Available Fire Zones
  - 3-D Fuel Leak From Engine - Selected Fire Zones

(The ability to create new configurations or edit existing configurations shall be protected by passwords associated with specific security levels.)

- \* Flame Spread Rate                      150 - 2000 Square Feet/Second
- \* Extinguishment Response                      Water or AFFF
- \* Reflash Enable                                      1, 2, 3, and/or 4 designated areas may be selected.
- \* Point(s) of Origin                                      Select one of 4 designated fire zones from which fires will start.
- \* Flame Mode
  - \* Pilot                                      Lights and confirms the presence of all selected pilot flames
  - \* Fire                                      Initiates fire spread to selected Training Mode.
  - \* Reflash                                      Initiates simulated reflash.
  - \* Agent                                      Operator forced agent detection at any selected segment.
  - \* Extinguished                                      Indicates a fire zone where the control valve has been closed by the control system
- \* Diagnostics

The main operation screen shall, at a minimum, display the following:

- \* Flame mode for each fire zone
- \* Start and duration of flame mode (time displays) for the training scenario
- \* Start of extinguishment agent application (time display)
- \* Extinguishment agent application and location
- \* Fire zone extinguishment
- \* Reflash State

A diagnostics menu screen shall offer a selection of troubleshooting guides to all major trainer system components. These shall include at a minimum the agent detectors, pilot monitors, and any calibration that can be done remotely. The screen shall also include a daily operational readiness test to confirm operation of all major components. The ability to create new configuration or edit existing configuration shall be protected by a second level password.

Help screens shall be selectable to provide the operator with assistance in operating the trainer and running diagnostics, and shall be available for viewing at any time.

The control system shall confirm flame presence in each fire zone.

### **1.7.3 Digital Computer System**

The digital computer system shall be a commercial, off-the-shelf system and shall be provided with the following features:

- \* A hard disk drive for non-volatile storage of the trainer system software, 36 giga byte Minimum.
- \* A 1.44 Bytes 3-1/2 inch floppy disk drive for pre-stored exercises and backup
- \* A high resolution color graphics monitor for the video display.
- \* An Input/Output (I/O) system for communication with the trainer's control components.
- \* 300 DPI Laser printer.
- \* CD Rom Drive.

The processor of the digital computer system shall have adequate arithmetic, logical processing, input/output and memory access speeds to assure real-time processing of all assigned functions and assure no erratic behavior in the display of instrument indications.

The I/O system of the computer shall provide the capability to input or output to and from one or more units of peripheral equipment while continuing operation of the real-time simulation. An additional 10% of I/O capacity shall be available at time of device acceptance.

The I/O interface equipment shall include all input/output communications hardware and discrete and analog inputs and outputs. The interface shall be designed to permit sampling of controls and activation of displays and the like with sufficient speed and accuracy to meet the requirements of this specification.

The digital computer system shall have the following spare capacities: hard disk drive, 50% spare storage capacity; main memory, 25% spare storage capacity; CPU 25% spare processing capacity; and input/output system 10% spare expansion capacity.

#### **1.7.3.1 Software**

The trainer's digital computer system software programs shall include the following capability:

- \* Real-time control and processing programs to perform all fire simulation control and operator interface processing functions.
- \* Diagnostic programs to check the operation of the computer system and peripheral equipment.
- \* System daily readiness check program.
- \* Operating system software commercially available for the selected computer.
- \* Password security to guard against unauthorized use of the system.

#### **1.7.4 Power Control Panel**

A dedicated power control panel shall be provided for the Fuel Spill Trainer. The panel shall control the application of all electrical power to the trainer. To prevent unauthorized use of the trainer, the panel shall be equipped with a two-position keylock power switch. The two positions shall be "ON" & "STANDBY". In the "STANDBY" position, power shall remain applied to all excess propane monitoring sensors. The key shall be removable only in the "STANDBY" position.

### **1.8 Fuel Spill Fire Operation**

The Fuel Spill Trainer shall be designed for safe operation under the control of the operator using the color display terminal and keyboard at the operators' station. The operator shall be able to stop any exercise immediately should the need arise.

The Fuel Spill Trainer shall be designed to provide training in control and extinguishment of large area fuel spill fires that occur as the result of aircraft incidents. The fire shall burn within the boundary of the selected burn area size and fire zones of the Fuel Spill Trainer burn area pit. A mockup shall be installed in the center of the burn area.

When the PILOT mode is initiated by the operator all selected pilots shall be energized and confirmed.

Under agent application, maximum burn time shall not exceed 3 minutes; if no agent is applied to the Fuel Spill Trainer within 2 minutes, the training exercise shall terminate.

When FIRE mode is initiated by the operator, all selected fire zones of the Fuel Spill fire shall be brought to the maximum flame height according to the preset parameters. The fire shall respond to the application of water, or surrogate AFFF extinguishing agent. The fire shall extinguish under computer control according to the application of extinguishing agent. Agent must be applied to the entire fire (all active zones) for the fire to completely extinguish. If agent application is stopped before extinguishment, fire shall respread to extinguished zones originally selected. For safety, any segment that has fully extinguished shall not reflash. Reflash fires shall be available at predetermined locations within the Fuel Spill Trainer and initiated only on command of the operator.

### **1.8.1 Training Scenario Report**

A training scenario report shall provide the capability to log in specific conditions and record data related to the training exercise.

The digital computer system shall commence a work file at the beginning of a training exercise to record exercise events which shall be printed at the end of the exercise on command of the instructor.

The training scenario report shall provide the instructor with the capability to enter general conditions related to the training exercise. A datalog information screen shall be provided with data entry fields for the Operator's Name, Instructor Names, Scenario Description, Crew or Company Identification, Trainee Names and ID Numbers, and a General Comments Field for manual entry of information relevant to the exercise such as wind speed, wind direction, temperature and humidity levels.

Additional data entered will record wind speed and direction, temperature and humidity and climate conditions.

The training scenario report screen shall allow the instructor to easily edit instructor supplied entries to facilitate changes between exercises.

Training scenario data recorded during the training exercise shall include:

- \* Project Scenario Mode
  - \* Partial, Full Engulfment or Localized
  - \* Burn Area Diameter
- \* Total Burn Time
- \* Total Extinguishment Time
- \* Estimated Fuel Consumption
- \* Reflash Activated
- \* Time At Start Of Burn
- \* Total Extinguishment Application

## **1.9 Safety**

The trainer shall be designed to minimize hazards to personnel. Safety conditions shall be displayed on the operator's station display terminal.

### **1.9.1 Emergency Shutdown Switches**

Emergency shutdown push-button switches shall be provided at the operator's station, and at a safety officer's station on the observation platform of the control building. The switches shall be clearly visible and guarded against accidental activation. Pushing either switch shall immediately shut off propane flow to the trainer's burn area and shall result in an "Emergency Shutdown" message overriding the display terminal's operation screen. Manual emergency shutdown shall be independent of computer operation.

Additionally, a radio remote control emergency shutdown system with two portable transmitters shall be provided to initiate an emergency shutdown from any open location within the vehicle maneuvering area.

### **1.9.2 Propane Detection**

Propane detection sensors shall be located in all enclosures or equipment rooms that house propane piping and control components, and wherever propane could accumulate. The propane detection system shall operate independently of the trainer's computer system. If propane concentrations reach 25% of the least explosive limit (LEL) at any sensor location, all propane flow to the trainer shall be stopped and a "Propane Shutdown" message, including the sensor location, shall override the display terminal's operation screen.

To announce the excess propane level, an alarm shall sound in the control room and an indication of a propane hazard shall appear at the control console. In addition, the propane supply shall be interrupted until the propane concentration is below the shutdown set point. Failure of the propane sensing hardware shall be indicated automatically on the control console and such failures shall shutdown the training fire.

### **1.9.3 Pilot Monitoring**

Pilot shall be continuously monitored. Loss of a pilot shall result in immediate shutdown of propane flow to the portion of the burn area ignited by the pilot, unless that portion of the burn area has already been separately confirmed to have been ignited. Failure to verify flame presence in a burn area fire zone shall result in the immediate shutdown of propane flow to that fire zone.



#### **1.9.4 Fail Safe Supply Valves**

Propane supply valves shall close automatically on loss of electrical power. Critical propane supply valves shall have proof-of-closure capability to provide valve position feedback to the control system.

#### **1.9.5 Hardware Malfunction**

Hardware malfunction of any safety device shall be displayed on the operator's station display terminal, and shall down trainer operation.

#### **1.9.6 Safety Supply Valves**

For safety purposes the fire zones in the burn area shall be grouped into a minimum of eight sectors. The liquid propane feed line for each of these sectors shall be provided with a minimum of one solenoid operated safety shutdown valve for the liquid propane. When activated, the valve will allow the flow of liquid propane to the fire zones within its sector. The valve shall operate under computer control and shall activate only after pilot flame confirmation. It shall close automatically in the event of a power failure, related safety system malfunction, or manual or automatic emergency system shutdown.

#### **1.10 Alert System**

The Fuel Spill Trainer System shall be provided with a Klaxon Alert system to notify training ground personnel of an impending burn. The Klaxon Alert system shall signal a burn alert prior to both the pilot and main flame burn initiation.

#### **1.11 Device Acceptance Criteria**

The trainer equipment supplier shall demonstrate the installed fire training simulator system prior to Owner acceptance. The trainer equipment supplier shall develop and furnish the Owner with a device acceptance test procedure which describes specific tests to be accomplished in order to meet the objectives of paragraphs 1.11.1 and 1.11.2.

##### **1.11.1 Functional Tests**

Functional tests shall be conducted to ensure that the installed device and all subsystems and components meet the criteria described herein. Testing shall encompass fire generation and extinguishment response, control and indicating system, and all related equipment.

### **1.11.2 Safety Systems Test**

Testing to demonstrate that the installed device provides an acceptable level of safety to the Owner shall be required. Complete testing of the emergency stop and propane detection systems shall be accomplished. The capability of systems required to be redundant shall be demonstrated through the simulated failure of subsystems and/or components.

## **1.12 Documentation and Training**

The training equipment supplier shall provide documentation and training in accordance with paragraphs 1.12.1 and 1.12.4.

### **1.12.1 Engineering Drawings**

The trainer equipment supplier shall provide installation and maintenance level assembly/wiring drawing and associated parts lists sufficient to maintain the system, and permit procurement of all maintenance parts. The installation drawings shall be submitted to the A&E selected by the Owner for review and approval at least 30 days prior to the scheduled start of installation. The drawings shall include all details of hardware fastening, anchoring, or penetration requirements related to the fuel spill burn and apron area. All fastening or anchoring of hardware within the burn and apron area shall utilize techniques which will not result in any leakage or seepage of effluent through the burn area base.

### **1.12.2 Operation and Maintenance Manuals/Spare Parts Listing**

The trainer equipment supplier shall supply an operation and maintenance manual structured to enable the Owner to operate and maintain the training device and to perform all necessary preventive maintenance, fault isolation, and corrective maintenance. The manual shall also include a recommended spare parts list with current prices as of the publication date. The content and organization of operation and maintenance manuals shall be such as to permit its use as a text for the training course.

The trainer equipment supplier shall deliver the operation and maintenance manuals not less than thirty days prior to the start of testing.

### **1.12.3 Training Material**

The trainer equipment supplier shall provide training course material including an instructor's guide and a curriculum outline sufficient to support a one week training course covering operation and maintenance of the training device.

#### **1.12.4 Training**

The trainer equipment supplier shall provide forty (40) hours of training for Owner personnel. The course shall be based on the trainer equipment suppliers delivered training materials.

The training course will be given within 30 days following fuel spill trainer testing and acceptance and will start on a date set by the owner.

#### **1.13 Warranty**

The fuel spill fire trainer system shall be guaranteed against all defects for a period of one year after Owner acceptance. This warranty excludes expendable items, normal failure or damage caused by Owner misuse or neglect. During the warranty period, the trainer equipment supplier shall conduct four scheduled visits to the site for the purpose of conducting preventive maintenance services.

A total of four preventive maintenance visits to incorporate all portions of the training system is acceptable.

#### **1.14 On-Site Logistics Services**

The supplier shall provide the support required to maintain the training hardware and software in an operable condition for a three month period following trainer acceptance. The services shall be provided on-site for eight hours per day, Monday through Friday. All parts and supplies shall be furnished at the suppliers expense.

During this period the suppliers on-site representative shall assist the instructors in operating and understanding the trainer's capability and versatility.

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**SECTION 1100**  
**PERFORMANCE SPECIFICATION**  
**FOR**  
**AIRCRAFT FIRES TRAINER**

**2.0 SCOPE**

This specification covers the requirements for design, fabrication, installation, testing, and performance of a propane-fueled, computer controlled Aircraft Fires Trainer (AFT).

**2.1 General**

The Aircraft Fires Trainer will be used to train and certify firefighters in aircraft rescue and fire fighting, especially in techniques of control and extinguishment of internal and external fuselage fires. The following training fires shall be furnished as part of the trainer.

- \* Cabin Interior Fire
- \* Engine Fire (Wing)
- \* Wheel/Brake Fire (Under the Wing)
- \* Baggage Compartment Fire
- \* Cockpit Fire
- \* Galley Fire
- \* Lavatory Fire
- \* APU Fire
- \* Cargo Bay Fire
- \* Electronics Bay Fire
- \* Engine Fire (TAIL)

The trainer shall utilize propane as its fuel source.

The trainer shall be designed to operate safely year-round with no loss of performance. The trainer shall be operational in temperature down to -30°F, and winds up to 15 knots.

## **2.2 Applicable Documents**

Trainer equipment design shall comply with the following standards:

- \* NFPA 402M-Aircraft Rescue and Fire Fighting Operations
- \* NFPA 1403-Live Fire Training Evolutions In Structures
- \* NFPA 54 -National Fuel Gas Code
- \* NFPA 58 -LP Gas, Storage and Use
- \* NFPA 70 -National Electrical Code
- \* FAA Advisory 150/5220-17A

## **2.3 Materials**

Materials shall be appropriate for their intended use, and shall withstand the training environment, including heat and thermal shock and the physical forces of extinguishing agent application. Selected materials shall not produce any harmful toxic effects.

Fire generation equipment subjected to excessive heat or flames shall use corrosion-resistant materials that will repeatedly withstand the rapid heating from the flames, rapid cooling from the applied agents and the forces of applied extinguishing agents.

## **2.4 Training Equipment Design**

### **2.4.1 Aircraft Mockup**

The trainer equipment supplier shall furnish an aircraft mockup representative of a commercial airline. It shall be a minimum of 10 feet in diameter, 75 feet long with a port (left) side wing extending 30 feet from the fuselage centerline. Mockups of an active jet engine, and a dual wheel landing gear shall be located under the wing in the configuration of a Boeing 737. A cockpit space shall be provided in the forward portion of the 75 foot fuselage.

The mockup structure shall be designed to withstand all loads and condition imposed on it by training exercises including the dynamic load of trainees and instructors, and the heat, thermal cycling, and forces that result from flames and application of extinguishing agents.

The mockup shall be provided with one functional forward passenger entry/exit door, one functional over-wing emergency exit, and one forced entry panel all located along the port side of the fuselage. An OSHA compliant student emergency exit door shall be provided on the starboard side of the mockup. The passenger door and emergency exit shall be operated in a similar manner as the corresponding door and emergency exit of a Boeing 737 in terms of handle operation and door swing. The forced entry panel shall be a replaceable aluminum sheet, 16 gauge, 24" by 48" covering an opening of 22" by 46" in the upper port side at the rear of the mockup. The panel shall be held in place by externally accessible bolts for ease of replacement.

The device supplier shall provide a portable stairway/platform to provide safe access to the forward passenger entry/exit door. The portable stairway/platform shall be equipped with guards and handrails. The platform shall be adequately sized to permit convenient and safe entry to or exit from the fuselage and allow full opening of the door.

Galley and Cabin Interior fires and passenger seat mockups will be located within the fuselage structure. The landing gear assembly shall contain the Wheel/Brake fire, and the engine mockup shall contain the Engine Fire. Simulated overhead luggage compartments shall be installed in the main cabin area along both side of the fuselage interior.

The facilities contractor will provide the footing structure for the aircraft mockup. Footings shall be designed to support the weight of the mockup and all equipment installed in it, plus the dynamic loads of training exercises. Additional foundation structures to house the control equipment required for operation of the trainer including burner components, ventilation fans, and I/O enclosures that connect the training building to the control station, shall be provided by the trainer equipment supplier.

The fireplace mockup structures shall be fabricated of materials that will withstand that heat and thermal cycling of the flames and the forces of applied extinguishing agents. The fireplace mockup structures shall be configured to adequately resemble the aircraft component they represent, as described in section 2.6. Each structure shall have all of the necessary equipment to produce the flames for the specific represented fire, as well as to detect the applied extinguishing agents.

#### **2.4.2 Fireplace Components Design**

In addition to its mockup structure, each fire shall have its own burner equipment and extinguishing agent detector(s) and shall have the means for producing smoke at the fireplace, consistent with the represented fire.

##### **2.4.2.1 Fire Generation**

The fire generation equipment shall be designed, fabricated, and installed in accordance with the guidelines of NFPA 54 and NFPA 58 and the specific safety requirements of paragraph 2.7. The design, fabrication, and installation of the fire generation equipment shall minimize safety hazards to personnel within the trainer building with respect to products of combustion and explosive conditions. Burners, blowers, remote control panels, and other equipment necessary for generation and control of fires shall be temperature resistant, weatherproof, and watertight as necessary to function in the Aircraft Fires Trainer environment. The equipment shall be shielded as necessary to protect such equipment from extinguishing agents which could be directed toward such equipment from the trainer interior. All functional equipment shall be accessible for maintenance.

#### **2.4.2.1.1 Pilot Flame**

Each fire shall have a minimum of one self-checking pilot flame monitor with an associated main flame shutoff valve that will stop all propane flow to the fire on loss of pilot flame. The pilot flame shall provide for ignition of main flame propane under all agent application conditions. The pilot flame shall be inextinguishable during fireplace operation. Pilot flames shall be obscured from the trainee's sight.

#### **2.4.2.1.2 Flame Growth**

After low fire is attained, the fire shall grow at a constant, selectable rate. The full growth dimension height shall be adjustable and shall be dependent on the flame's maximum dimension in accordance with the specific fire requirements of paragraph 2.6 whenever extinguishment is not attempted.

#### **2.4.2.1.3 Fire Extinguishment**

The fire shall recede and extinguish after exposure to the appropriate extinguishing agent(s) either for a cumulative, selectable time period, or in certain fireplaces, when the temperature of the mock-up falls below a preselected extinguishment level. Fires shall respond to extinguishing and post-extinguishing procedures described in section 2.6. When the extinguishment is initiated before the flame(s) attains full growth, the time period shall be linearly proportional to the actual flame growth time prior to the initiation of extinguishment. When the extinguishment is initiated after the flame attains full growth, the time period shall be equal to the time period entered by the operator at the Operator's Station. Whenever the fire is exposed to the extinguishing agent(s) for a time period which is less than that necessary to extinguish the fire, the fire recession shall cease and the fire shall spread and the flames shall grow again at a rate determined by the spread and growth initialization parameter.

#### **2.4.2.1.4 Reflash**

Fires shall reflash whenever post-extinguishment procedures identified in section 2.6 are not followed. After reflash, the fire shall spread and the flames shall grow at a selectable rate as specified for specific fires.

Whenever saturation or soaking with the extinguishing agent is necessary to preclude reflash, the extinguished fire shall reflash if the saturation or soaking is less than a selected time period or in certain fireplaces, when the temperature of the mockup does not reach the soaking temperature. The lapsed time from discontinuation of extinguishing agent detection during saturation or soaking to reflash shall be between 0 and 60 seconds. For Class A fires, the continuous application of water shall constitute soaking as specified for each fire.

Whenever the securement of a power or fuel source, required for fire extinguishment, is not attained, the fire shall reflash after the discontinuation of extinguishing agent detection.

#### **2.4.2.2 Extinguishing Agent Detection**

Active and/or passive transducers/sensors for each fireplace shall sense the presence and application time of the particular extinguishing agents, and shall provide appropriate signals to the AFT control system.

##### **2.4.2.2.1 Surrogate Extinguishing Agents**

To reduce wastewater treatment costs and protect the environment, the following surrogate extinguishing agents shall be used in the Aircraft Fires Trainer:

- \* For AFFF, commercial liquid detergent concentrate
- \* For Dry Powder, silicone coated sodium bicarbonate
- \* For Halon, Water

#### **2.4.2.3 Smoke Generation**

Smoke generation shall be controlled from the operator's station. Smoke agent materials shall be non-polluting, non-flammable/non-explosive and shall not decompose into harmful byproducts. Propylene glycol based smoke fluid shall not be used in a flame environment. The smoke agent reservoirs shall permit direct sighting of liquid levels using liquid level sight gauges or other appropriate means. Each smoke generator shall shutdown automatically in the event of internally detected excess temperature.

##### **2.4.2.3.1 Smoke Distribution**

Smoke shall be distributed throughout the trainer and to the fireplaces described in section 2.6 by a number of smoke generators. The distribution system shall provide smoke emission from the fireplaces at concentrations sufficient to reduce visual range in the training structure as defined in 2.4.2.3.2. The smoke distribution piping shall be designed and arranged to ensure protection of personnel from hot surfaces. All materials in the smoke distribution system shall be compatible with the smoke agent. The smoke shall be emitted from fireplaces as appropriate to fire realism.

##### **2.4.2.3.2 Obscuration**

The smoke generation system shall be capable of providing obscuration to 2 feet at the 3 foot level within one minute. The obscuration effectiveness of the smoke at the three foot level shall not be effected by the presence of live flames.



### **2.4.3 Ventilation**

The trainer equipment supplier shall provide a ventilation system that shall be capable of two air change per minute of the entire trainer (mockup and support structure) at maximum, or PURGE, flow. The ventilation system shall be installed in the mockup or supplier provided equipment structure and shall be rated for continuous duty with air at 500°F.

#### **2.4.3.1 Ventilation System Operation**

The ventilation system shall operate at PURGE flow when the training system is turned on and when an emergency shutdown occurs. When the trainer's Operate Power switch is turned on, the ventilation system shall operate for three minutes to purge the structure of any accumulated smoke or propane. During this time, all power to the trainer structure, except for the propane detection system, shall be inhibited.

The ventilation system shall also operate at maximum flow during any manual or automatic emergency shutdown of the trainer, such as a propane detection or hardware malfunction shutdown, and shall remain on until the emergency condition is corrected.

### **2.5 Control System Design**

The Aircraft Fires Trainer control system shall provide automatic control and monitoring of all trainer functions and conditions by the operator at the trainer's operator station. This includes setup and control of training exercises, and monitoring both the extinguishing effort and safety conditions throughout the trainer.

#### **2.5.1 Control Tower**

The control room for the Aircraft Fires Trainer will be located at the control building for both the Fuel Spill and Aircraft Fires Trainers.

The control room shall house the trainer's operator station, central computer, the power control panel, and peripheral equipment such as a printer. The control room shall be provided with HVAC to maintain temperatures between 60-80°F.

The Owner will provide an equipment room on the ground floor for additional electronic cabinets and power distribution panels. This space will be provided with HVAC to maintain temperatures between 60-80°F.

#### **2.5.2 Operator Station**

The Aircraft Fires Trainer shall be controlled by a dedicated operator's station. The operator's station shall consist of a central digital computer, a color display terminal and keyboard, an

emergency shutdown switch and a workstation desk. The workstation desk shall be configured and installed in the trainer's control room such that it permits independent operation of both the Fuel Spill and Aircraft Fires Trainers.

### **2.5.2.1 Display Terminal**

The trainer shall be operated using the color graphics display terminal and its keyboard. A series of screens shall present the operator with all necessary information to operate up to four training fires simultaneously.

On selection of a specific fire, the monitor shall display all fixed and selectable parameters of that fire. The valid range of selectable parameters shall be displayed. Input of invalid parameters shall be rejected. Operation of a fire shall be inhibited until all selectable parameters are valid. Smoke and fire shall function as programmed on instructor/operator command. A fire shall abort on command. During fire operation, fire scenario and all associated fuselage conditions shall be displayed on the fire scenario screen. The fire scenario screen shall include indication of the fireplace enable/disable status, indication of pilot/main flame status, status of smoke generation equipment, trainer actions taken, simulated fire condition (soaking, reflash, etc.), extinguishment agent application, actual burn time, effective extinguishment application time, and total scenario time. In addition, this information shall be displayed for all simultaneously running scenarios on one screen. Fires and smoke generation devices shall be operable simultaneously, sequentially, or individually from the operator's station or at the local control panel.

A diagnostics menu screen shall offer a selection of troubleshooting guides to all major trainer system components. These shall include at a minimum the propane monitoring system, smoke generators, agent detectors, pilot monitors, I/O communications, and any calibration that can be done remotely. The screen shall also include a daily operational readiness test to confirm operation of all major components. I/O communications shall be continuously monitored for proper operation.

A help screen shall be selectable to provide the operator with assistance in operating the trainer and running diagnostics.

### **2.5.3 Digital Computer System**

The digital computer system shall be provided with the following features:

- \* A minimum 3 giga byte hard disk drive for non-volatile storage of the trainer system software.
- \* A 1.44 Mbytes 3-1/2 inch floppy disk drive for pre-stored exercises and backup.
- \* A high resolution color graphics monitor for the video display.
- \* An Input/Output (I/O) system to communicate with the trainer's control components.
- \* 300 dpi, laser printer.

- \* CD Rom Drive.

The processor of the digital computer system shall have adequate arithmetic, logical processing, input/output and memory access speeds to assure real-time processing of all assigned functions and assure no erratic behavior in the display or instrument indications.

The I/O system of the computer shall provide the capability to input or output to and from one or more units of peripheral equipment while continuing operation of the real-time simulation. An additional 10% of I/O capacity shall be available to the Owner at time of device acceptance.

The I/O interface equipment shall include all input/output communications hardware and discrete and analog inputs and outputs. The interface shall be designed to permit sampling of controls and activation of displays and the like with sufficient speed and accuracy to meet the requirements of this specification.

The digital computer system shall have the following spare capacities: hard disk drive, 50% spare storage capacity; main memory, 50% spare storage capacity; CPU 50% spare processing capacity; and input/output system 10% spare expansion capacity. The dot matrix printer may be shared with the Fuel Spill Trainer.

#### **2.5.3.1 Software**

The trainer's digital computer system software programs shall include the following capabilities:

- \* Real-time control and processing programs to perform all fire simulation control and operator interface processing functions.
- \* Diagnostic programs to check the operation of the computer system and peripheral equipment.
- \* System daily readiness check program. The operation of all fires shall be inhibited until a system daily readiness check has been completed on all safety related systems.
- \* Operating system software commercially available for the selected computer.
- \* Password security to guard against unauthorized use of the system.

#### **2.5.4 Power Control Panel**

A power control panel shall be provided for the Aircraft Fires Trainer. The panel shall control the application of all electrical power to the trainer. To prevent unauthorized use of the trainer, the panel shall be equipped with a two position keylock power switch. The two positions shall be "ON" and "STANDBY". The key shall be removable only in "Standby" position. The control panel shall maintain power to the propane monitoring system and the ventilation fan(s) in the "STANDBY" position.

### **2.5.5 Local Control Panels**

Local (fire scenario) control panels shall be provided to enable an instructor to initiate a fire scenario from an immediate location near the fireplaces. Panel controls shall provide for fire and smoke selection. An emergency shutdown switch shall be included.

When a fire is initiated at the local control panel, the scenario shall run under the parameters selected at the operator's station. The local control panel shall not be active unless enabled at the operator's station.

## **2.6 Training Fire Operation**

All training fires shall be designed for safe operation. The control system shall allow up to four training exercises to be concurrently selected, programmed, initiated, and monitored by the operator using the color graphics display terminal and keyboard at the operator's station. The operator shall be able to stop any exercise immediately should the need arise. No fire scenario will be allowed to burn longer than three minutes without the detection of agent application.

### **2.6.1 Cabin Interior Fire**

The Cabin Interior fire shall be designed to provide training in control and extinguishment of large scale aircraft interior fires that may have resulted from fuel leaks or flammable cargo. The Cabin Interior Fire shall be located in mid-cabin on the starboard side of the fuselage mockup structure.

The cabin fire shall burn along a 12-foot section of the cabin wall from floor to ceiling and shall appear to engulf the cabin wall and seats. A total of four (4) rows of non-flammable seat mockups, generally representative of aircraft passenger seats, shall be installed along the cabin wall at the fire area.

Parameters of operation selectable by the operator shall be:

|                       |  |
|-----------------------|--|
| * Fire Start          | Fore or Aft end of Compartment.                              |
| * Fire Growth Rate    | 5 to 60 seconds  |
| * Extinguishment Mode | Time or temperature  |
| * Extinguishment Time | 5 to 30 seconds  |
| * Soaking Time        | 5 to 30 seconds  |
| * Reflash Delay Time  | 5 to 60 seconds after extinguishment, if soaking incomplete. |
| * Flashover           | Enabled or Disabled  |

When the Cabin Interior fire is initiated by the operator smoke shall begin filling the cabin, and flames shall start to grow and spread from the selected end of the cabin wall until the entire 12-foot area is engulfed in flames. The fire shall continue to burn until the application of water or surrogate AFFF is detected. The fire shall extinguish under computer control according to the pattern of agent application. Extinguishing agent must be applied to the entire 12-foot length of the fire area to completely extinguish the fire. Multiple sensors shall be distributed in the fire area for agent detection. The sensors shall detect the application and duration of agent applied during extinguishment and soaking. The soaking parameter must be satisfied in order to preclude reflash of the fire. If soaking is not complete, the fire will reflash and burn according to the original growth and spread parameters.

## **2.6.2 Wing and Tail Engine Fire**

The Engine Fire shall be designed to provide training in control and extinguishment of high bypass jet engine fires that occur both when the engine is running and when the engine has been shut down. Additionally, a hot engine flashover shall also be simulated. The Engine Fire shall be located in the jet engine mockup structure under the aircraft wing. The jet engine mockup nacelle shall be 4-feet in diameter, the exhaust shall be 2-feet in diameter, and the overall length shall be 8-feet long. The nacelle shall include extinguishment agent ports or kick-in panels. A manual emergency fuel tank valve and engine fire switch shall also be simulated in the cockpit space.

The running engine fire shall produce an intense jet of flame, 2-feet in diameter, extending 12 to 15 feet horizontally from the engine's exhaust, and shall respond to water, foam or Halon applied to the engine's intake or exhaust. The non-running engine fire shall produce lazy flames with a 5 to 6 foot height at either the engine intake area (i.e., bypass) or the engine exhaust. Each fire shall be independently exercisable. The fire shall also act sequentially with a selectable delay of 0-20 seconds. The non-running fires shall respond to water, foam, or surrogate Halon when applied through the extinguishing agent ports ("Kick in" Panels) in the side of the engine mockup.

If enabled by the operator, fire shall reflash unless the simulated manual emergency fuel tank valve in the cockpit is closed. Fires shall also automatically extinguish if the simulated engine suppressant fire switch in the cockpit is activated. For safety reasons, reflash shall initiate with small/short fires and gradually grow to full length.

Parameters of operation selectable by the operator shall be:

|                                 |                                       |
|---------------------------------|---------------------------------------|
| * Fire Type                     | Running, Non-running                  |
| * Non-running Fire Mode         | Fore, Aft, Fore to Aft or Aft to Fore |
| * Spread Delay                  | From 0 to 20 seconds                  |
| * Hot Engine Flashover          | Enable/Disable                        |
| * Extinguishment Time           | 2 to 30 seconds                       |
| * Manual Emerg. Fuel Tank Valve | Enable/Disable                        |
| * Engine Fire Switch            | - Enable/Disable                      |

- \* Reflash Delay - 5-20 seconds

When either a running or non-running engine fire is initiated by the operator smoke shall billow from the rear of the engine, and the fire shall grow at a fixed rate to its full size. The fire shall continue to burn until extinguishing agent is detected for the required period of time.

### **2.6.3 Wheel/Brake Fire**

The Wheel/Brake fire shall be designed to provide training in cooling overheated brakes to prevent fires, and extinguishment of fires that occur if brakes are not properly cooled. The Wheel/Brake fire structure is located under the aircraft mockup's wing and is configured as a dual wheel landing gear.

The wheels shall be 3 feet in diameter, 1-1/2 feet wide with cylindrically shaped representations of brakes from which smoke and flame shall emanate.

Parameters of operation selectable by the operator shall be:

- \* Growth - 5-20 seconds
- \* Extinguishment Time - 10 to 600 seconds
- \* Blowout Plug Rupture - Enable/Disable

The Auto mode shall include smoke and flames. When the Wheel/Brake fire is initiated in Automatic mode by the operator smoke shall begin emanating from the area of the brake representation as an indication of overheated brakes. Flames shall appear representing rupture and ignition of hydraulic lines. Flames shall grow at the selectable rate to a height of 6 feet. When application of water, surrogate AFFF, or simulated Halon 1211 to the fire is detected for the selected period of time, the fire shall extinguish. Fire response to surrogate dry chemical agent application shall be initiated manually by the instructor using the Local Control Panel. The Local Control Panel shall be equipped with a switch for manual input of agent application.

The wheel/brake fire representation shall also include a simulation of a ruptured blowout plug in the wheel mockup. The simulation shall consist of an audible discharge sound representative of the rapid air discharge that occurs when a tire ruptures. Simulation may use compressed air or other means to simulate the explosive sound of air released under high pressure. The local control panel shall be provided with the means of activating the simulated blowout plug rupture. The simulated blowout will exceed 110 dB.

### **2.6.4 Cockpit Fire**

The cockpit fire shall provide training in the control and extinguishment of a Class C, electronic equipment fire in a cockpit instrument panel mockup. The cockpit space shall be provided with mockups of the pilot and copilot seats. The seats shall be equipped with

representative functional harnesses for use in scenarios involving flight crew rescue training. A flight console mock-up between the cockpit seats shall be provided with functional simulations of engine throttles and engine fire extinguishers. A battery switch (toggle switch with red protective cover) shall be located on an overhead panel between the pilot and copilot seats. Six inactive toggle switches shall be located around the battery switch to provide realism for students.

The cockpit fire shall start with smoke emanating from the simulated instrument panel. After a selectable time period, flame shall appear at the instrument panel. The selectable period will allow the operator to simulate smoldering fires and to vary smoke obscuration levels within the cockpit space. When flames appear, both smoke and flame will continue to the completion of extinguishment.

Parameters of operation selectable by the operator shall be:

|   |               |
|---|---------------|
| * Time from start of smoke to initiation of flame | 0-90 seconds  |
| * Extinguishment time period                      | 5-30 seconds  |
| * Reflash interval after extinguishment           | 10-30 seconds |

The cockpit fire shall respond to the application of water or surrogate Halon 1211, and shall reflash at the selected interval if the source of simulated power has not been secured.

#### **2.6.5 Galley Fire**

The Galley fire shall be designed to provide training in control and extinguishment of Class C fires in the warming unit of a commercial aircraft galley. The Galley Fire structure shall be configured as a typical warming/storage galley unit of a commercial airliner and shall be located in the forward, starboard part of the fuselage mockup structure. A remote, functional switch panel shall permit simulation of securement of electrical power to the galley.

Parameters of operation selectable by the operator shall be:

|                       |   |
|-----------------------|---|
| * Extinguishment time | 2 to 10 seconds   |
| * Reflash Delay Time  | 5 to 20 seconds (after extinguishment, if power is not secured) |

When the Galley fire is initiated by the operator at the control station, smoke shall begin emanating from the edges of the Galley oven's door as an indication of the fire's location. When the door is opened, flames shall appear inside of the oven. The fire shall continue to burn until the application of water, or surrogate Halon 1211, has been detected, and the computer extinguishes the fire. The fire shall reflash after extinguishment if the simulated source of electrical power to the Galley is not secured via the associated switch. A bell shall also be provided inside of the aircraft structure to sound loudly as an indication of incorrect procedure if water is applied prior to power securement.

### **2.6.6 Lavatory Fire**

The lavatory fire shall be designed to provide training in control and extinguishment of fires in the trash receptacle of a commercial aircraft lavatory. The lavatory fire structure shall be configured as a typical lavatory of a Boeing 737 and shall be located in the rear part of the fuselage mockup structure.

Parameters of operation selectable by the operator shall be:

|   |   |              |
|---|---|--------------|
| * | Extinguishment time                     | 5-30 seconds |
| * | Soaking time after extinguishment       | 5-30 seconds |
| * | Reflash delay time after extinguishment | 5-30 seconds |

When the lavatory fire is initiated by the operator at the control station, smoke shall begin emanating from the edges of the lavatory door as an indication of the fire location. When the door is opened, flames shall appear inside the trash receptacle. The fire shall continue to burn until the application of water or surrogate extinguishing agent has been detected and the computer extinguishes the fire. If soaking is not complete, the fire shall reflash.

### **2.6.7 Baggage Compartment Fire**

The baggage compartment fire shall be located in the forward under floor section of the fuselage mock-up. The baggage compartment door will open down and away from the fuselage in a similar fashion to the same door on a commercial airliner. The door will be equipped with a switch to detect when the door opens. When the door opens the simulated baggage compartment will burst into flames and engulf the mock-up suitcases and boxes. The burners and agent sensors will be located beneath a grated floor which supports the mock-ups. The fire shall be fought through the baggage compartment doorway.

Parameters of operation selectable by the operator shall be:

|   |   |              |
|---|---|--------------|
| * | Extinguishment time                     | 5-30 seconds |
| * | Soaking time after extinguishment       | 5-30 seconds |
| * | Reflash delay time after extinguishment | 5-30 seconds |

When the baggage compartment fire is initiated by the operator at the control station, smoke shall begin emanating from the edges of the baggage compartment doorway as an indication of the fire location. When the doorway is opened, flames shall appear inside the baggage compartment. The fire shall continue to burn until the application of water or surrogate extinguishing agent has been detected and the computer extinguishes the fire. If soaking is not complete, the fire shall reflash.



### **2.6.8 Auxiliary Power Unit (APU) Fire**

The APU fire shall be representative of the auxiliary power unit located in the bottom of the Boeing 757 mock-up tail section. The fire area shall be located above double access doors located underneath the fuselage. The doors are to be equipped with a switch to start the main flames of the fire when the doors open. The APU mock-up shall be configured in a cylindrical shape with a simulated fuel line tube serving as the burner element and a simulated air duct serving for smoke distribution. The APU cylinder shall be open on top to collect extinguishing agent for detection.

The APU fire shall start with smoke emanating from around the compartment doors under the tail of the aircraft mockup. When the compartment doors are opened, flames will appear within the compartment. The fire can be extinguished using water, surrogate foam or surrogate Halon.

The selectable parameters of operation are:

|   |   |              |
|---|---|--------------|
| * | Extinguishment time                     | 5-60 seconds |
| * | Soaking time after extinguishment       | 0-60 seconds |
| * | Reflash delay time after extinguishment | 5-20 seconds |

When the soaking time is set to 0 seconds the reflash function is disabled. If reflash is enabled, the trainees must satisfy the soaking time requirement in order to prevent a reflash of the fire. An APU fire suppression switch shall be located in the cockpit. Activation of the APU fire suppression switch shall automatically extinguish the fire.

### **2.6.9 Electronics Bay Fire**

The electronics bay fire is located in the fuselage nose under the cockpit floor. The electronics bay mockup consists of various structural mock-ups on the fore and aft walls of the bay representing various electrical components. The bay is accessible through a hatch on the bottom of the fuselage. The electronics bay fire has no burner elements, but has smoke generation and a strobe light to represent electrical arcing in the bay. The electronics bay fire can be fought from outside the aircraft through the access panel door or from inside the cockpit through the cockpit floor penetration panel.

The selectable parameters of operation are:

|   |   |              |
|---|---|--------------|
| * | Extinguishment time                     | 2-10 seconds |
| * | Reflash delay time after extinguishment | 5-20 seconds |

When the electronics bay fire is initialized by the operator, smoke shall emanate from around the door of the compartment. When the door is opened, the strobe light will be visible, giving the appearance of an arcing electrical fire. The fire shall continue in this manner until sufficient

application of water or surrogate Halon has been detected. The fire shall continue to reflash until one of the electrical power disconnects (Main Power or APU Control) is thrown. A bell shall be provided, inside the aircraft mockup, which will sound loudly as an indication of incorrect procedure if water is applied inside the compartment prior to securing the electrical power.

#### **2.6.10 Training Scenario Report**

A training scenario report feature shall provide the capability to log in specific conditions and record data related to the training exercise. The digital computer system shall commence a work file at the beginning of a training exercise to record exercise events which shall be printed at the end of the exercise on command of the instructor. The training scenario report shall provide the instructor with the capability to enter general conditions related to the training exercise. Data entered by the instructor will consist of crew names, student names with social security number, function/position/location during the training exercise (e.g. right nozzleman, left nozzleman, etc.). Additional data entered will record general weather conditions and will consist of wind speed and direction, temperature and humidity and climate conditions.

The training scenario report screen shall allow the instructor to easily edit these entries to facilitate changes between exercises. Training scenario data recorded during the training exercise shall record trainer conditions and trainee actions. At completion of an exercise the operator can print out the report.

### **2.7 Safety**

The trainer shall be designed to minimize safety of hazards to personnel. Safety conditions shall be displayed on the operator's station display terminal.

The system supplier will be required to submit a safety analysis report, prepared by an independent engineering consulting firm, which supports the design and performance of a functionally equivalent system. The report shall include:

- \* A description of the process by which the safety analysis to the system was conducted.
- \* The analysis of the potential operational hazards of the system and the specific design features that address these hazards.
- \* A fault tree analysis of system catastrophic and critical failures that illustrates the probability of occurrence within the following limits:
  - \* Catastrophic - less than 1 in  $10^6$  for 3000 hours of operation.
  - \* Critical - less than 1 in  $10^5$  for 3000 hours of operation.
- \* A system safety design checklist that supported the confirmation of the system safety design goals.
- \* A summary of all system test and analysis events that lead to the final system design, test and acceptance.

### **2.7.1 Emergency Shutdown Switches**

Emergency shutdown push-button switches shall be provided at the operator's station, and at each entrance and exit to the trainer. All switches shall be clearly visible and guarded against accidental activation. Pushing any switch shall immediately shut off propane flow to the trainer, and shall result in an "Emergency Shutdown" message, including the switch's location, overriding the display terminal's operation screen. The trainer ventilation system shall start automatically at maximum capacity and shall continue for three minutes after reset of the emergency shutdown switch. Manual emergency shutdown shall be independent of computer operation.

### **2.7.2 Propane Detection**

The propane detection system shall utilize a draw sample system to collect air samples from areas where propane could accumulate, particularly in the immediate vicinity of each training fire. Minimum sample flow rate shall be 15cfh. Locally mounted diffusion sensors shall not be used due to their incompatibility with the heat, steam, and water of the training environment. The propane detection system shall operate independently of the trainer's computer system. If propane concentrations reach 10% of the Least Explosive Level (LEL) at any sensor location, a "Propane Warning" message, including the sensor location, shall appear on the display terminal's screen. If propane concentrations reach 25% LEL at any sensor location, all propane flow to the trainer shall be stopped and a "Propane Shutdown" message shall override the display terminal's operation screen. The propane detection system shall be selectable to operate 24 hours per day in the "Standby" mode on the power control panel.

There shall be a minimum of two propane sensor sampling points located near each interior fireplace.

To announce the excess propane level, an alarm shall sound in the control room and an indication of a propane hazard shall appear at the control console. In addition, the propane supply shall be interrupted at the block and vent and the ventilating system shall start automatically and operate at maximum capacity until the propane concentration is below the shutdown set point. Failure of the propane sensing hardware shall be indicated automatically on the control console and such failures shall shutdown all training fires and secure the propane distribution system.

Trainer propane detection system operation shall be verified on a daily basis.

### **2.7.3 Pilot Monitoring**

Safety considerations demand that the flames from any pilot burner, once ignited, be inextinguishable and remain lit until turned off by the control system. This is necessary to prevent potentially hazardous accumulations of propane gas from forming within the fireplace structures. Accordingly, active monitoring of the flames from the pilot burner in each fireplace shall be provided by a self-checking flame safeguard control system. If pilot ignition is not achieved during

a fireplace ignition sequence, the system shall shut off the flow of pilot gas and the instructor/operator shall be alerted to the type and location of the malfunction. If a pilot flame should be extinguished for any reason during a training scenario, the system shall immediately shut off all gas flow to the pilot and main burners, and the instructor/operator shall be alerted to the type and location of the malfunction. In addition, because of the critical safety function of this flame safeguard control system, the system itself shall

#### **2.7.4 Fail Safe Supply Valves**

Propane supply valves shall close automatically on loss of electrical power. Critical propane supply valves shall have proof of closure capability to provide valve position feedback to the control system.

#### **2.7.5 Block And Vent Propane Control System**

The trainer equipment supplier shall provide a block and vent system in the trainers gas control system to monitor and control the incoming flow of propane to the fire generation equipment. The block and vent system shall operate under the control of the digital computer system. It shall regulate the incoming propane gas from the delivery line pressure to the trainer's operating pressure. The gas pressure shall be monitored to ensure operation within high and low limits. If the pressure is too low, the system shall not be energized and if the pressure is too high the gas flow shall be shut down and excess pressure vented to protect downstream components. Operation pressure downstream of the block and vent shall be less than 5 PSI, in compliance with NFPA 54.

#### **2.7.6 Hardware Malfunction**

Hardware malfunction of any safety device shall be displayed on the operator's station display terminal and shall shut down trainer operation.

#### **2.7.7 Ventilation Control**

The ventilation system air flow operation shall be confirmed by the control system. When the operate power switch for the trainer is activated or during manual or automatic emergency shutdown of the trainer, the ventilation system shall operate at maximum capacity as described in paragraph 2.4.3. In the event of a ventilation system malfunction, operating power shall be inhibited and a hardware malfunction message shall appear at the control console.

#### **2.7.8 Temperature Monitoring**

Temperature sensors shall be installed five feet above the grating in the forward and aft sections of the fuselage and shall interface, via the control system, with the building ventilation system. Should temperature levels reach 500°F, a high temperature warning shall be displayed at the control console and the ventilation system shall start automatically at full capacity. Should the

temperature reach 700°F, an automatic fireplace shutdown shall occur, a high temperature hazard shall be displayed at the control console and the ventilation system shall start automatically at full capacity.

## **2.8 Device Acceptance Criteria**

The trainer equipment supplier shall demonstrate the installed fire training simulator system prior to Owner acceptance. The trainer equipment supplier shall develop and furnish the Owner with a device acceptance test procedure which describes specific tests to be accomplished in order to meet the objectives of paragraphs 2.8.1 through 2.8.2.

### **2.8.1 Functional Tests**

Functional tests shall be conducted to ensure that the installed device and all subsystems and components meet the criteria described herein. Testing shall encompass fire generation and extinguishment response, smoke generation control and indicating system, and all related equipment.

### **2.8.2 Safety Systems Test**

Testing to demonstrate that the installed device provides an acceptance level of safety to the Owner shall be required. Complete testing of the emergency stop and propane detection systems shall be accomplished. The capability of systems required to be redundant shall be demonstrated through the simulated failure of subsystems and/or components.

## **2.9 Documentation And Training**

The training equipment supplier shall provide documentation and training in accordance with paragraphs 2.9.1 through 2.9.4.

### **2.9.1 Engineering Drawings**

The trainer equipment supplier shall provide installation and maintenance level assembly/wiring drawing and associated parts list sufficient to maintain the system, and permit procurement of all maintenance parts.

### **2.9.2 Operation And Maintenance Manuals/Spare Parts Listing**

The trainer equipment supplier shall supply an operation and maintenance manual structured to enable the Owner to operate and maintain the training device and to perform all necessary preventive maintenance, fault isolation, and corrective maintenance. The manual shall also include a recommended spare parts list with prices. The content and organization of operation and maintenance manuals shall be such as to permit its use as a text for the training course.

The trainer equipment supplier shall deliver the operation and maintenance manuals not less than thirty days prior to start of testing.

### **2.9.3 Training Material**

The trainer equipment supplier shall provide training course material including an instructor's guide and a curriculum outline sufficient to support a 3 day training course covering operation and maintenance of the training device.

### **2.9.4 Training**

The trainer equipment supplier shall provide 3 days of training for Owner personnel. The course shall be based on the trainer equipment suppliers delivered training materials. The training course will be given within 30 days following training device testing and acceptance and will start on a date set by the owner.

### **2.10 Warranty**

The Aircraft Fires Trainer system shall be guaranteed against all defects and failures for a period of one year after Owner acceptance. This warranty shall exclude normal failure or damage caused by Owner misuse or neglect. During the warranty period, the trainer equipment supplier shall conduct four scheduled visits to the site for the purpose of conducting preventive maintenance services.

### **2.11 On-Site Logistics Services**

The supplier shall provide the support required to maintain the training hardware and software in an operable condition for a three month period following trainer acceptance. The services shall be provided on-site for eight hours per day, Monday through Friday. All parts and supplies shall be furnished at the suppliers expense.

During this period the suppliers on-site representative shall assist the instructors in operating and understanding the trainees capability and versatility.

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**SECTION PW-03300      CONCRETE**

**PART 1    GENERAL**

**1.01    WORK INCLUDED**

- A.    This section shall include constructing the cast-in-place concrete structures consisting of Portland cement, fine and coarse aggregate, water and selected admixtures, combined, mixed, transported, placed, finished, and cured as herein specified.
- B.    This section also includes grout for miscellaneous uses, surface hardeners, bonding agents, fiber reinforcement, and other related concrete accessories and construction requirements.
- C.    Contractor is responsible to have all cracks in water-bearing structures repaired by the epoxy injection method. The work shall be done by a certified applicator of the epoxy manufacturer.

**1.02    RELATED WORK**

- A.    Submittals:    Section 01300.
- B.    Quality Control:    Section 01400.
- C.    Concrete Formwork:    Section 03100.
- D.    Concrete Reinforcement:    Section 03200.
- E.    Expansion and Construction Joints: Section 03251.

**1.03    QUALITY ASSURANCE**

- A.    The Contractor shall have available on-site a copy of ACI SP-15 "Specifications for Structural Concrete for Buildings with Selected ACI and ASTM References."
- B.    The Contractor shall comply with all requirements of the following codes and standards, except as modified herein:
  - 1.    ACI 301 "Recommended Practice for Concrete Inspection."
  - 2.    ACI 318 "Building Code Requirements for Reinforced Concrete."
  - 3.    ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete."
  - 4.    ACI 305 "Recommended Practice for Hot Weather Concreting."
  - 5.    ACI 306 "Recommended Practice for Cold Weather Concreting."
  - 6.    ACI 308 "Recommended Practice for Curing Concrete."
- C.    Other references:

1. ASTM C-31 - Making and Curing Concrete Test Specimens in the Field
2. ASTM C-33 - Specification for Concrete Aggregates
3. ASTM C-94 - Specification for Ready-Mixed Concrete
4. ASTM C-143 - Standard Test Method for Slump of Portland Cement Concrete
5. ASTM C-150 - Specification for Portland Cement
6. ASTM C-260 - Specification for Air-Entraining Admixtures for Concrete
7. ASTM C-309 - Specification for Liquid Membrane-Forming Compounds for Curing
8. ACI 302 - Concrete Floor and Slab Construction
9. ACI 614 - Specification for Concrete Placement

#### 1.04 SUBMITTALS

- A. Refer to Section 01300, SUBMITTALS.
- B. The Contractor shall submit copies of the manufacturer's data with the application and installation instructions for proprietary materials and items, including reinforcement and forming accessories, admixtures, bonding and patching compounds, joint systems, curing compounds, floor hardeners, grout, and others as requested by the Engineer.
- C. A placement schedule shall be prepared by the Contractor and submitted to the Engineer for review prior to the start of concrete placement operations.
- D. The Contractor shall furnish copies of the delivery tickets for each load of concrete delivered to the site and other information as specified under ASTM C94, Certification.
- E. Concrete Mix Design Proposals
  1. Concrete Mix: Submit each mix design to the Engineer for review at least 14 days before first use is planned. Include substantiating test data and mix design details, including aggregate gradation and source, water/cement ratio, mix proportions, air content, slump, and strength. Substantiating data must include tests by an independent testing laboratory verifying the requirements specified under "Section 2.01 PROPORTIONING AND DESIGN OF MIXES" and "PART 4 TESTING". Submit complete information for each mix design which has different strength, different aggregate size or gradation, different proportions or is to be transported differently. For previously used mix submit copies of at least 10 tests meeting these specifications. Do not use any concrete until the mix design and substantiating data for that concrete has been reviewed.
  2. Pumped Concrete: At least 14 days before starting work, submit details of proposed pumping operation, equipment to be used, and mix designs. Do not pump concrete if Engineer feels an unsatisfactory concrete may result from the overall planned process and equipment.
- F. To demonstrate their capabilities and experience, provide qualification data for Contractor's proposed independent testing agency that will provide the testing services specified under **PART 4 TESTING**. Do not use the same agency that provides the mix design proposal specified herein. To qualify for acceptance, the independent testing agency must demonstrate, based on the evaluation criteria in ASTM C1093, that it has the experience and capability to satisfactorily conduct the testing indicated.



- G. Water-Holding Basin Repair Methods: As necessary if water holding basins fail tests as specified. Cracks shall be repaired by the epoxy injection process.
- H. Crack Repair Report: Epoxy injection materials manufacturer certification that crack repair was performed by a licensed and certified applicator per the manufacturer's recommendations.

## PART 2 PRODUCTS

### 2.01 PROPORTIONING AND DESIGN OF MIXES

- A. The following mix properties are required for all concrete placement within forms:

- 1. Proportion and design concrete mixes shall meet the following requirements:

|                            |  |
|----------------------------|--|
| Strength @ 7 days          | 2400 psi   |
| Strength @ 28 days         | 4000 psi   |
| Maximum water/cement ratio | 0.43 by weight   |
| Slump @ point of placement |  |
| Without superplasticizer   | 3-5 inches   |
| With superplasticizer      | 5-10 inches  |
| Minimum Cement Content     | 6 sacks/yard or<br>564 pounds per<br>cubic yard                        |
| Entrained Air              | 4-6%   |
| Maximum Aggregate Size     | 1-½ inch, as de-<br>fined below, un-<br>less shown on the<br>Drawings. |

- 2. Design shall be by an approved independent testing laboratory and a trial mix batch shall be made and tested by that laboratory. Average strength of cylinders in trial batch must exceed specified strength by 15%.

3. A previously used mix design may be used provided aggregate source is the same, the mixing equipment is the same, and provided at least 10 tests were made by an independent laboratory with results meeting these specifications.
  4. If any of the first three 7-day cylinder tests fail to meet the specified 7-day strength, the mix shall be modified for more strength. Submit modified mix for review before use.
  5. Adjustment to Concrete Mixes: Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, at no additional cost to the Owner. Test data for revised mix designs and strength results must be submitted and accepted before using the mix adjustments.
  6. Entrained Air: Air-entraining admixture shall be used unless otherwise shown or specified. Air-entraining admixture shall be added at the manufacturer's prescribed rate to result in concrete at the point of placement with an air content as specified herein (volume basis).
  7. Concrete shall be mixed in conformance with ASTM C94.
- B. Entrained air admixtures shall be used according to the manufacturer's prescribed rate. Test in accordance with ASTM C231.
- C. The use of an accelerating agent is not permitted unless specifically authorized by the Engineer.
- D. Combined Aggregate Gradings:
1. Aggregate size shall be 1-inch maximum for slabs, grade beams, interior walls, and sections less than 12 inches thick.
  2. Aggregate size shall be 3/4-inch maximum for structures with textured surfaces.
  3. Aggregate size shall be 1½-inches maximum for all other areas or sections, unless otherwise indicated on the Drawings.
  4. Grading limits for coarse aggregate shall be as follows:

| Sieve Size | Percentage Passing |         |           |
|------------|--------------------|---------|-----------|
|            | 1-1/2" Max.        | 1" Max. | 3/4" Max. |
| 2"         | -100               | --      | --        |
| 1-1/2"     | 95-100             | -100    | --        |
| 1"         | --                 | 95-100  | -100      |
| 3/4"       | 25-60              | --      | 90-100    |

MORRISON-MAIERLE, INC.

|       |      |       |       |
|-------|------|-------|-------|
| 1/2"  | --   | 25-60 | --    |
| 3/8"  | --   | --    | 40-90 |
| No. 4 | 0-10 | 0-10  | 5-20  |
| No. 8 | 0-5  | 0-5   | 0-5   |

5. Grading limits for fine aggregate shall be as follows:

| Sieve Size | Percentage Passing |
|------------|--------------------|
| 3/8"       | -100               |
| No. 4      | 95-100             |
| No. 8      | 80-100             |
| No. 16     | 50-85              |
| No. 30     | 25-60              |
| No. 50     | 10-30              |
| No. 100    | 2-10               |
| No. 200    | 0-4                |

6. The combined mixture of fine and coarse aggregate shall be such that not more than 1.5 percent passes the No. 200 sieve.

## 2.02 PORTLAND CEMENT

A. Meet ASTM C150, Type V or Dakota Cement Type I-IILA (low alkali) sulfate resistant, including low alkali provisions of Table 2 of that specification.

B. Nonhydraulic Abovegrade Structures: Use either Type I-IILA or Type V cement.

C. Hydraulic and Belowgrade Structures: Use Type V cement.

D. The use of Type V cement is not absolutely required. If Type V cement is not available, all concrete shall contain Dakota Cement Type I-IILA with a maximum 15 percent Type F Flyash added, as specified hereinafter.

## 2.03 AGGREGATES

A. Fine: Clean, sharp, natural sand, ASTM C 33. Fineness modulus shall not be less than 2.5 nor more than 3.0. Materials passing 200 sieve shall be 4 percent maximum.

B. Coarse: Crushed stone or gravel, ASTM C 33. Maximum size of coarse aggregate shall be 1½-inches as defined hereinbefore, unless otherwise indicated on the Drawings. Materials passing 200 sieve shall be 0.5 percent maximum.

C. Aggregates shall be natural, free from deleterious coatings, meeting ASTM C 33, nonreactive. Thoroughly and uniformly wash before use. Local aggregates, including the alkali reactive fine aggregate (Birdsall Blunt sand), are acceptable with the exception that they can only be used with Dakota Cement Type I-IIIA and Type F Flyash added as specified.

D. Local aggregates not in compliance with the soundness and durability requirements of this standard shall not be used except with prior written approval of the Engineer and provided it can be shown by special testing or a record of past performance that these aggregates produce concrete of adequate strength and durability. Aggregate soundness testing for fine and coarse aggregates shall be in accordance with ASTM C 88 using a sodium sulfate solution.

## 2.04 WATER

A. All water for concrete mixtures shall be clean, potable, and free from injurious substances and conforming to ASTM C 94. Water containing 2 percent or more common salt shall not be used and chloride levels shall be less than 500 parts per million.

## 2.05 AIR ENTRAINING ADMIXTURES

A. Air entraining admixtures shall be used in all concrete exposed to the weather and as specified for quality of concrete used, ASTM C 260, except that admixture shall be non-toxic after 30 days and contain no chlorides or other chemicals causing corrosion.

1. "Aerolith," Sonneborn Building Products, Inc.
2. "MB-VR," Master Builders Company.
3. "Sika-AER," Sika Chemical Corp.
4. "Darex AEA," W.R. Grace and Company.
5. "Protex," Protex Industries, Inc.

B. Must be compatible with water-reducing admixture.

## 2.06 WATER-REDUCING ADMIXTURES

A. Water-reducing admixtures shall conform to ASTM C 494, Type A or Type D.

B. Complex, multi-component, nonchloride, noncorrosive admixture providing unique performance qualities unobtainable from conventional water-reducing admixtures.

C. Manufacturer and Product:

1. Master Builders, Inc., Cleveland, OH, Pozzolith or Pozzolith Polyheed.

2. W.R. Grace & Co., Cambridge, MA, WRDA-79.

D. Must be compatible with air entraining admixture.

2.07

SUPERPLASTICIZERS

A. Meet ASTM C494 and use only Type F or G.

B. Hold slump of 5 inches or greater for the time required for placement into the structure.

C. Type F Superplasticizer: Batch plant added to extend plasticity time, control temperature of fresh concrete, reduce water 20 to 30 percent, and give higher strengths at all ages.

D. Type G Superplasticizer: Batch plant added to extend plasticity time, maintain setting characteristics similar to normal concrete throughout its recommended dosage range and at varying concrete temperatures, reduce water 30 to 40 percent, and give high-early and ultimate strengths.

E. Manufacturer and Product:

1. Master Builders, Inc., Cleveland, OH, Rheobuild or Pozzolith Polyheed at a dosage greater than 10 ounces per 100 pounds of cement.
2. W.R. Grace & Co., Cambridge, MA, Daracem 100.
3. Euclid Chemical Co., Cleveland, OH, Eucon Super F or 537G.

2.08 FLY ASH

A. Fly ash is permitted to be used with Dakota Cement Type I-III A. Submit complete manufacturer's literature. If used, conform to ASTM C618, Type F modified to allow  $\text{SiO}_2 + \text{Al}_2\text{O}_3 + \text{FeO}_3$  minimum 66 percent and  $\text{SiO}_2$  minimum 40 percent and to require a maximum loss on ignition of 2 percent. Do not use to replace more than 15% of cement by weight. Maximum water to cement plus fly ash ratio shall not exceed 0.36 by weight.

2.09 CALCIUM CHLORIDE

A. Calcium chloride and products containing more than 0.1% chloride ions are not permitted. Provide admixture manufacturer's written certification that chloride ion content complies with specified requirements.

2.10 CONCRETE CURING MATERIALS

A. Do not use curing compound where additional finishes such as hardeners, paintings, and other special coatings are required. Use water curing as specified instead.

B. Absorptive cover shall be provided by burlap cloth made from jute or kenaf, weighing approximately 9 ounces per square yard and complying with AASHTO M 182, Class 2.

C. A moisture retaining cover shall comply with one of the following:

1. Waterproof paper, ASTM C 171 or AASHTO M 171.
2. Polyethylene film, ASTM C 171.
3. Curing Compound: Resin based compound conforming to ASTM C 309, with additional requirement that the moisture loss shall not exceed 0.030 gm/square cm/72 hours.

D. Manufacturer's certification shall state that curing compound can be applied in one coat and shall show the quantity or coverage required to meet or exceed that above moisture retention.

E. Provide manufacturer's certification that curing compound is acceptable to the appropriate state agency or health department.

2.11 CRACK REPAIR EPOXY

- A. SCB Process by Adhesive Engineering Co., San Carlos, CA.
- B. Two-component epoxy injection by Sika Chemical Corp., Lyndhurst, NJ.
- C. Or equal.

2.12 NON-SHRINK GROUT

A. Nonshrink Grout Category I:

1. Nonshrink, nonmetallic, nongas-liberating grout for use in filling tie holes in concrete, blockouts for gate guides, joints of precast components or members, and grouting baseplates of columns that do not exceed one story in height shall be one of the following:

- a. Crystex, L&M Construction Chemicals, Inc., Omaha, NE
- b. EUCO NS grout, Euclid Chemical Co., Cleveland, OH
- c. Five Star Special 100, U.S. Grout Corp., Fairfield, CT
- d. SET nonshrink grout, Master Builders Co., Cleveland, OH
- e. Supreme grout, Gifford Hill & Co., Dallas, TX
- f. UPCON "Super Flow", UPCO Co., Cleveland, OH

2. All grout shall be a fluid consistency in use except that for formwork tie holes the grout shall be dry pack consistency and shall fill the conical section with dense grout hammered in with steel tool and steel hammer.

3. Use Category II grouts for patching defects in walls and slabs after form removal.

B. Nonshrink Grout Category II:

1. Nonshrink grout with natural aggregate for use in high strength, precision support of machine bases of 25 hp or less; bases for precast wall sections, columns, and precast members more than one story in height; and patching defects in walls and slabs after form removal shall conform to the Corps of Engineers' Specification for Non-Shrink Grout, CRD-C261-81 and to

these specifications. Fluid grout as determined by the flow cone, CRD-C611-81, shall have a minimum strength of 4,800 psi at 7 days and 6,800 psi at 28 days as determined by CRD-C227. The following listed grouts are acceptable for use as Category II grout (field test requirement shall be met):

- a. Conbextra High Flow, Fosroc, Twinsburg, OH
- b. Five Star Special 100, U.S. Grout Corp., Fairfield, CT
- c. EUCO HI-FLOW Grout, Euclid Chemical Co., Cleveland, OH
- d. Master Flow 713, Master Builders, Cleveland, OH
- e. Supreme grout, Gifford Hill & Co., Dallas, TX
- f. UPCON "Super Flow", UPCO Division, Cleveland, OH

2. No material other than water shall be added to the premixed grout at the jobsite. Follow manufacturer's instructions relative to mixing, placing, and curing.

C. Nonshrink Grout Category III:

1. Nonshrink grout for use in high strength, precision support of machine bases for machinery of 30 hp or greater and soleplates where very large loads and stresses from vibration and other dynamic loads are involved and when the equipment will be subject to thermal movements. The following grouts are acceptable for use as Category III grout (field test requirements shall be met):

- a. Embeco 636, Master Builders, Cleveland, OH
- b. Conbextra High Flow, Fosroc, Twinsburg, OH
- c. EUCO Hi-Mod grout, Euclid Chemical Co., Cleveland, OH
- d. CRYSTEX, L&M Construction Chemicals, Inc., Omaha, NE

2. The location for use, other than that specified above, shall be as shown on the Drawings and/or as specified hereinafter.

3. The grout shall be free of gas-producing or gas-releasing agents, free of oxidizing catalysts, free of inorganic accelerators, and free of chlorides. Provide performance characteristics when mixed to fluid consistency, 22 to 25 seconds (flow cone method, CRD-C 611-80) as follows:

- a. When mixed and maintained at 45 degrees F (7 degrees C) or higher, no visible bleeding and/or settlement up to 2 hours on 1/2 gallon grout poured into gallon can, covered with glass plate to prevent evaporation.
- b. Grout shall be cured in accordance with grout manufacturer's instructions.
- c. Provide (2" x 2" cube) strengths as specified. Prepare specimens and test in accordance with ASTM C 109-80 except as follows: Mix grout in accordance with manufacturer's instructions. Fill molds in two layers, puddling each layer gently with gloved finger five times; strike off excess grout; wipe edges of mold clean with rag and cover with steel plate clamped to mold until time to test. Seal cover 24

hours after placement.

4. The grout shall obtain a minimum compressive cube strength of 5,000 psi at 3 days and 9,000 psi at 28 days (2-inch cubes).

## 2.13 GROUT FOR HORIZONTAL CONSTRUCTION JOINTS IN WALLS

A. Neat cement grout shall be flowable and shall consist of sand, water, and a minimum of 12 sacks of cement per cubic yard. Provide positive measuring device such as a bucket or other device that will contain only enough grout for depositing in one place in the wall to ensure that any one portion of the form does not receive too much grout. The depositing of grout from pump hoses or large concrete buckets will not be permitted, unless inspection windows close to the joint are available to allow visual measurement of grout thickness and means for grout removal are available for removal of excess grout. Refer to PART 3 EXECUTION portion of these Specifications for other requirements.

## 2.14 SURFACE HARDENER

A. Surface hardeners shall consist of a colorless aqueous solution of sodium silicate and magnesium and zinc fluosilicates suitable for application to cured or partially cured concrete surfaces and capable of reacting with the soluble calcium compounds present in the concrete to form a thin surface of increased hardness with reduced potential for dusting.

B. Approved proprietary hardeners include:

1. Saniseal 100, Master Builders Company.
2. Hornolith, A.C. Horn Incorporated.
3. Lapidolith, Sonneborn Company.
4. Pena-Lith, W.R. Meadows Incorporated.

C. The solution shall be delivered ready for use at the job site.

## 2.15 CONTROL JOINT FORMS

A. Control Joint Forms: A standard manufacturer's item causing a control joint in the slab while providing keying across the joint. It shall not leave any portion projecting at the finished surface and it shall interrupt at least 1/4 of the slab depth. The joint or the method of installation shall insure a straight joint deviating not more than 1/2-inch from a straight line.

## 2.16 EPOXY BONDING AGENT

A. Two component material suitable for use on dry or damp surfaces. Provide material "Type", "Grade", and "Class", to suit project requirements. Meet the requirements of ASTM C 881.

B. Products: Subject to compliance with requirements, provide one of the following:

1. Edoco 2118 Epoxy Adhesive; Edoco Technical Prod.
2. Sikadur Hi-Mod; Sika Chemical Corp.



3. Euco Epoxy 463 or 615; Euclid Chemical Corp.
4. Patch and Bond Epoxy; The Burke Co.

2.17

FIBER REINFORCEMENT

- A. Polypropylene fibers engineered and designed for secondary reinforcement of concrete tanks, basins, and slabs. Fiber reinforcement shall comply with ASTM C 1116, Type III.
- B. Products shall be subject to compliance with the ASTM requirements, as provided by:
  1. Inc. Fibermesh, Fibermesh Company, Division Synthetic Industries
  2. Forta CR, Forta Corporation.
  3. Grace Fibers, W.R. Grace and Company.
- C. Add fiber reinforcement to concrete mix at a rate of 3.0 pounds/cubic yard for the wetwell walls and 1.5 pounds/cubic yard for concrete slabs unless otherwise recommended by the manufacturer.

**PART 3 EXECUTION**  
3.01 CONCRETE MIXING

- A. The materials for concrete shall be mixed at an acceptable concrete batch plant. Meet ACI 304 current edition and other requirements as specified for mix design, testing, and quality control.
- B. Ready-mix concrete shall comply with the requirements of ASTM C94 and as herein specified:
  1. The addition of water to the mix at project site must be approved by the Engineer and the maximum water-cement ratio shall not be exceeded. The delivery ticket shall be noted with amount of additional water added and submitted to the Engineer.
  2. Concrete shall be discharged at the job within 1-1/2 hours after water has been added to the cement and aggregates or cement batched with the aggregates, unless a longer time is specifically authorized by the Engineer.
  3. During hot weather or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required:
    - a. When the air temperature is between 85 degrees Fahrenheit and 90 degrees Fahrenheit, the mixing and delivery time shall be reduced from a maximum of 1-1/2 hours to 75 minutes and when the air temperature is above 90 degrees Fahrenheit, the mixing and delivery time shall be reduced to no more than 60 minutes.
- C. Truck Mixers:

1. Equip with electrically actuated counters to readily verify the number of revolutions of the drum or blades.
2. Counter:
  - a. Resettable, recording type, mounted in driver's cab.
  - b. Actuated at time of starting mixers at mixing speeds.
3. Performance Requirements:
  - a. Truck mixer operation shall provide a concrete batch as discharged within acceptable limits of uniformity with respect to consistency, mix and grading.
  - b. If slump tests taken at approximately the 1/4 and 3/4 points of the load during discharge give slumps differing by more than 1 inch when specified slump is 3 inches or less, or differing by more than 2 inches when specified slump is more than 3 inches, discontinue use of truck mixer unless causing condition is corrected and satisfactory performance is verified by additional slump tests.
  - c. Check mechanical details of mixer, such as water measuring, and discharge apparatus, condition of blades, speed of rotation, general mechanical condition of unit, and clearance of drum before attempting to reuse unit.
4. Do not use nonagitating or combination truck and trailer equipment for transporting ready-mixed concrete.

D. Mixing Process:

1. Concrete Volume in Truck:
  - a. Limit to 63 percent of total volume capacity per ASTM C94 when truck mixed.
  - b. Limit to 80 percent of total volume capacity when central mixed.
2. Mix each batch of concrete in truck mixer for minimum 70 revolutions of drum or blades at rate of rotation designated by equipment manufacturer as mixing speed.
3. Perform additional mixing, if required, at speed designated by equipment manufacturer as agitating speed.
4. Place materials, including mixing water, in mixer drum before actuating the revolution counter for determining the number of mixing revolutions.

3.02 PREPARATION

A. Pre-Placement Inspection:

1. Before placing concrete, the Contractor will inspect and complete the formwork installation, placement of rein-forcing steel, and items to be embedded or cast-in. Reinforcing shall not be stabbed into freshly placed concrete.



2. The wood forms shall be wetted immediately before placing the concrete when form coatings are not used. Dampen subgrade before placing concrete for slabs on grade unless a vapor barrier is used.

3. The installation of joint materials shall be coordinated with the placement of forms and reinforcing steel.

4. Secure reinforcement in position and allow Engineer to review acceptability before placing concrete.

B. Sleeves, Anchors and Inserts: All sleeves, anchors, and inserts required shall be properly placed, as detailed in the Drawings, in the concrete formwork and securely anchored to prevent displacement during the placing of the concrete.

### 3.03 CONCRETE PLACEMENT

A. Concrete shall be placed in compliance with the practices and recommendations of ACI Standards 304, 318, and 614, and as herein specified:

1. Concrete shall be placed continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the section. If a section cannot be placed continuously, the Contractor shall provide construction joints as specified in Section 03251, EXPANSION AND CONSTRUCTION JOINTS. The placement of concrete shall be done at such a rate that concrete is still workable. Concrete shall be placed as near as practicable to its final location to prevent segregation due to rehandling or flowing. Do not subject concrete to any procedure which will cause segregation.

2. In no case shall concrete be allowed to freely drop more than five feet.

3. Screed concrete which is to receive other construction to the proper level to avoid excessive skimming or grouting.

4. Concrete which has become non-plastic and unworkable, or does not meet the required quality control limits, or which has been contaminated by foreign material shall not be used. Do not use retempered concrete. Remove rejected concrete from the project site and dispose of it at an approved location.

5. Concrete discharge time shall be less than 90 minutes after adding cement to water and aggregate.

B. Placing Concrete Into Forms:

1. Concrete shall be placed in forms in horizontal layers not deeper than 18 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while the preceding layer is still workable to avoid cold joints.

2. Temporary spreaders in forms shall be removed when concrete placement has reached the elevation of such spreaders.

3. Concrete placed in forms shall be consolidated by mechanical vibrating equipment supplemented by hand-spading, rodding, and tamping. Use equipment and procedures for consolidation of concrete in accordance with the recommended practices of ACI 309, to suit the type of concrete and project conditions. Vibration of forms and reinforcing will not be permitted.

4. Vibrators shall not be used to transport concrete inside of the forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate the layer of concrete and at least 6 inches into the preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit the duration of the vibration to the time necessary to consolidate the concrete and complete embedment of reinforcement and other embedded items without causing segregation of the mix. Generally, this will be from 5 to 15 seconds in accordance with ACI 301.

5. Allowable Vertical Free Fall Drop to Final Placement:

a. 5 feet in forms 8-inch or less wide and 8 feet in forms wider than 8 inches, except as hereinafter specified.

b. Superplasticized Mixes: Up to 15 feet if slump is over 6 inches.

6. Do not use aluminum pipe or other aluminum conveying devices.

7. Provide sufficient illumination for interior of forms so concrete at places of deposit is visible to permit confirmation of consolidation quality.

C. Conveyor Belts and Chutes:

1. Design and arrange ends of chutes, hopper gates, and other points of concrete discharge throughout conveying, hoisting, and placing system such that concrete passing from them will not become segregated.

2. Do not use chutes longer than 50 feet.

3. Minimum Slopes of Chutes: Angled to allow concrete of specified consistency to readily flow without segregation.

4. Conveyor Belts:
- Approved by Engineer.
  - Wipe clean with a device which does not allow mortar adhering to the belt to be wasted.
  - Cover conveyor belts and chutes.

D. Retempering: For concrete or mortar in which cement has partially hydrated, retempering is not permitted.

E. Pumping of Concrete:

- General:
  - Pumping is the preferred method of placing concrete.
  - If pumped concrete does not produce satisfactory end results, discontinue pumping operation until the problem is corrected.
  - At Contractor's option, other approved methods of placement may be used.
- Equipment:
  - Provide standby pump, conveyor system, crane and concrete bucket, or other system acceptable to Engineer, on site during pumping, for adequate redundancy to assure completion of concrete placement without cold joints in case of a primary placing equipment breakdown.
  - Minimum Pump Hose (Conduit) Diameter: 4 inches.
  - Replace pumping equipment and hoses (conduits) that are not functioning properly.
  - Do not use aluminum conduits for conveying concrete.
- Field Control (For Pumped Concrete): Take concrete samples for slump (ASTM C143) and test cylinders (ASTM C31 and C39) and shrinkage specimens (ASTM C157) at placement (discharge) end of line.

F. Maximum Size of Concrete Placements:

- Limit size of each pour regardless whether slabs or walls, to allow for strength gain and some volume change due to shrinkage to take place. Size shall be as specified hereinafter.
- Expansion and Construction Joints:
  - Unless otherwise shown, where expansion joints are shown at approximately 60 feet spacing, intermediate construction joints are not required.
  - Where expansion joints are not shown or where expansion joints are spaced at larger distances, provide intermediate construction joints at maximum 40 feet unless approved in writing.
  - Locate joints, where not otherwise shown, as detailed on approved shop drawings.
  - Alternate pours at each side of construction joints with 10

days minimum curing time between pours.

G. Removal of Water: Remove all water from space to be occupied by concrete.

H. Consolidation And Visual Observation:

1. Consolidate concrete with internal vibrators with minimum frequency of 8,000 vpm and amplitude required to consolidate concrete in section being placed.
2. Provide at least one standby vibrator in operable condition at placement site prior to placing concrete.
3. Consolidation equipment and methods shall meet ACI 309.
4. Provide sufficient windows in the forms or limit form height to allow visual observation of concrete.
5. Vibrator operator shall be required to see concrete being consolidated to ensure good quality workmanship, or an individual shall actually observe the vibration of concrete at all times and advise vibrator operator of any changes needed to ensure complete consolidation.
6. Consolidation and placement locations shall be planned and accomplished so that vibrators shall be inserted in the concrete as it is placed and in locations not to exceed a distance of 5 feet from point of placement.

I. Placing Concrete Slabs on Grade:

1. Prior to concrete placing, any area of subgrade on which concrete is to be placed shall be properly wetted. Concrete slabs shall be placed in a continuous operation, within the limits of construction joints, until the placement of a panel or section is completed. When in-place concrete has sufficiently set up (at least 24 hours), an alternate section shall be placed. All joints between sections shall be properly keyed. The edges of all sections shall be tooled with a minimum radius or chamfer edging tool.
2. Concrete shall be consolidated during placement operations using vibrating equipment, so that the concrete is thoroughly worked around reinforcement and other embedded items and into the corners.
3. Slab surfaces shall be brought up to the correct level with a straightedge and struck off. Bull floats or darbies may be used to smooth the surface, leaving it free from humps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the slab surfaces prior to beginning finishing operations.
4. Control Joints for Slabs on Grade:
  - a. Locate as shown on the Drawings. Where not indicated, locate at 13 foot maximum intervals in both directions.
  - b. Construct with a manufactured, embedded, preformed

control joint form or stop pour at each control joint using keyway forms. Install form with no offsets and in straight lines as specified elsewhere.

c. Sawn control joints will be permitted. Saw joint 1½-inches deep or to depth indicated on the Drawings. Start sawing within 12-hours of final floating, but delay as necessary to prevent raveling.

5. Reinforcing steel shall be continuously maintained in the proper position during concrete placement operations.

6. All exterior concrete slabs shall be sloped in a manner to prevent the collection of water.

J. Bonding:

1. Surfaces of set concrete at all joints shall be roughened, except where bonding is obtained by use of an approved concrete bonding agent, and the surfaces shall be cleaned of laitance coating, loose particles, and foreign matter. Surfaces shall be roughened in a manner to expose bonded aggregate uniformly and laitance, loose particles of aggregates, or damaged concrete at the surface shall be removed.

2. Bonding of fresh concrete to new concrete that has set, but is less than 60 days old or is not fully cured shall be done as follows:

a. At joints between a footing and walls or columns, and between walls or columns and beams or slabs that they support, and elsewhere unless otherwise specified herein, dampen, but do not saturate, the roughened and cleaned surface of set concrete immediately before placing the fresh concrete.

b. At horizontal joints in exposed work, and at joints designed to contain liquids, dampen, but do not saturate, the roughened and cleaned surface of set concrete and apply a minimum 2-inch layer of neat cement grout.

c. Neat cement grout as specified hereinbefore shall be applied to a minimum thickness of 2 inches. Fresh concrete shall be placed before the cement grout has attained its initial set. Limit concrete lift placed immediately on top of grout to 12 inches.

d. An approved commercial bonding agent may be used in lieu of neat cement grout. The agent shall be applied to cleaned concrete surfaces in accordance with the printed instruction of the bonding agent manufacturer.

3. Epoxy bonding adhesive shall be applied in accordance with the manufacturer's recommendations for bonding to old concrete (more than 60 days old). Coat contact surfaces with bonding agent after mechanically roughening surface to a clean, rough surface.



K. Cold Weather Placing:

1. All concrete work shall be protected from physical damage or reduced strength which could be caused by freezing or low temperatures, in compliance with the requirements of ACI 306 and ACI 318 and as herein specified.
2. When the temperature of the surrounding air is expected to be below 40 degrees Fahrenheit during concrete placement or within 3 days (72 hours) thereafter, the temperature of the placed concrete shall be maintained at temperatures no lower than 60 degrees Fahrenheit for sections less than 12 inches in any dimension or 55 degrees for any other section. Heated water and/or aggregate shall be used in accordance with ACI 306.
  - a. The placed concrete temperature shall be main-tained at or above the specified temperatures for curing for at least 7 days.
3. Frozen concrete materials containing ice or snow shall not be used. Concrete shall not be placed on frozen subgrade or on subgrade containing frozen materials. The Contractor shall determine that the forms, reinforcing steel, and adjacent concrete surfaces are entirely free of frost, snow, and ice before placing any concrete.
4. The use of calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators shall not be allowed, unless authorized in writing by the Engineer.
5. Strength requirements may require additional protection and curing during cold weather due to delayed field strength gain.
6. Determine strength attainment, and the requirement for continue protection, from field test cylinders, cured along side the cast concrete structure.
7. Surface Temperature:
  - a. The actual temperature of concrete surface determines effectiveness of protection, regardless of air temperatures or whether the objective is durability or strength.
  - b. Provide a sufficient number of thermometers placed on concrete surfaces spaced throughout the work to allow inspection and monitoring of concrete surface temperatures representative of all the work.
8. External Heating Units:
  - a. Vent heating units and do not locally heat or dry concrete.
  - b. Do not exhaust flue gases directly into an enclosed area.
  - c. Ensure fire safety and fire prevention measures are enforced during use of heating units.
9. Maintain curing conditions which will foster normal strength development without excessive heat, and without critical saturation of concrete at the close of the protection period.

10. Limit rapid temperature changes, particularly before strength has developed sufficiently to withstand temperature stresses.

11. At end of the required period, discontinue protection in such a manner that the drop in temperature of any portion of concrete will be gradual and will not exceed, in 24 hours, 50 degrees F.

L. Hot Weather Placing:

1. When hot weather conditions exist that would seriously impair the quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

2. The ingredients shall be cooled before mixing to maintain the concrete temperatures at the time of placement below 80 degrees Fahrenheit. Mixing water may be chilled or chopped ice may be used.

3. The use of retarding admixtures will not be allowed, unless otherwise accepted in mix designs by the Engineer.

4. The forms shall be thoroughly wetted before placement of concrete. Make provisions for windbreaks, shading, fog sprays, sprinkling, or wet cover, when necessary.

5. Reflective Cracking:

a. Prevent reflective cracking due to differential temperatures between concrete and reinforcing steel.

b. If reinforcement is in direct sunlight or is more than 20 degrees F higher in temperature than concrete temperature before placement, wet reinforcement to cool it with water fog spray 10 minutes before placing concrete. Alternatively, reinforcing steel may be covered with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

c. Verify temperature of reinforcing is not more than 20 degrees F higher than fresh concrete.

### 3.04 JOINTS

A. Construction Joints:

1. Construction joints shall be located and installed as shown on the Drawings in a manner that will not impair the strength and appearance of the structure. Construction joints, if not shown, shall be located only with approval of the Engineer and as follows:

a. The Contractor shall provide key-ways at least 1-1/2 inch deep in all construction joints in walls, slabs, and between walls and footings.

b. Construction joints shall be placed perpendicular to the main reinforcement and all reinforcement shall continue across construction joints.

c. Construction joints shall be prepared as specified in ACI Standard 318.

B. Expansion joints shall be located as shown on the Drawings. Expansion joints shall be held down to receive the joint sealant. The horizontal and vertical waterstop shall be welded together to provide a continuous watertight seal.

C. For bonding to new concrete horizontal construction joints, roughen the surface of the hardened concrete. Thoroughly clean and saturate with water, cover the horizontal surfaces only with at least two to three inches of grout, as hereinbefore specified, and immediately place concrete. New concrete is defined as less than 60 days old. Limit the concrete lift placed immediately on top of the grout to 12-inches thick and thoroughly vibrate to mix and consolidate the grout and concrete together.

D. Also see Section 03251, EXPANSION AND CONSTRUCTION JOINTS.

### 3.05 FINISH OF FORMED SURFACES

#### A. Rough Form Finish:

1. This finish shall include formed concrete surfaces buried from view by backfill in the finish work or covered by other construction, unless otherwise shown or specified. Any surface which will be exposed to the air or water in the completed structure shall be a smooth form finish.

2. The standard rough form finish shall leave the concrete surface with the texture imparted by the form facing material used, with tie holes and defective areas repaired and patched and all fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.

3. Fill snap-tie holes with nonshrink, non-metallic grout as specified herein. Patch honeycomb areas and rock pockets with grout as specified herein. Small air holes do not require patching.

#### B. Smooth Form Finish (trowel finish):

1. This finish includes formed concrete surfaces which will be exposed to the air or water in the completed structure or to be covered with a coating material applied directly to the concrete, or a covering material bonded to the concrete, such as water proofing, damp-proofing, painting, or other similar system.

2. A smooth form finish shall be provided by selecting form materials that will impart a smooth, hard, uniform texture and arranging them orderly and symmetrically with a minimum of seams. All defective areas shall be patched and repaired with all fins or other projections completely removed and smoothed.

3. For smooth form finish walls:
  - a. Fill snap-tie holes with approved nonshrink, nonmetallic color matched grout as specified herein.
  - b. Grind off projections, fins, and rough spots.
  - c. Repair other defects such as honeycomb areas, rock pockets, and rough spots resulting from form release agent failure or other reason with color matched nonshrink grout as specified herein.
4. For smooth form trowel finish slabs:
  - a. Finish by screeding and floating with straight-edges to bring surface to required finish elevation shown.
  - b. While concrete is still green, but sufficiently hardened to bear a person's weight without deep imprint, wood float to true, even plane with no coarse aggregate visible.
  - c. Use sufficient pressure on wood floats to bring moisture to surface.
  - d. After surface moisture has disappeared, hand trowel concrete to produce smooth, impervious surface, free from trowel marks.
  - e. Burnish surface with an additional troweling. Final troweling shall produce a ringing sound from trowel.
  - f. Do not use dry cement or additional water during troweling. No excessive troweling will be permitted.
  - g. Power Finishing:
    - " An approved power machine may be used in lieu of hand finishing for finishing concrete floors and slabs in accordance with directions of machine manufacturer.
    - " Do not use power machine when concrete has not attained the necessary set to allow finishing without introducing high and low spots in slab.
    - " Do first steel troweling for slab by hand.

C. Grout Cleaned Finish (sacked rubbed finish):

1. A grout cleaned finish will be applied to all concrete surfaces as specified hereinafter which have received smooth form finish treatment.
2. The grout cleaned finish will use one part portland cement to 1-1/2 parts fine sand by volume, and shall be mixed with water to a consistency of thick paint. Proprietary additives may be used at the Contractor's option. Standard portland cement and white portland cement amounts shall be blended as determined by trial patches, so that final color of dry grout will match adjacent surfaces.
3. The concrete surfaces shall be thoroughly wetted before the application of grout to the surfaces and to fill small holes. Excess grout will be removed by scraping and rubbing with clean burlap.

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D. Broomed Finish:

1. Finish as specified for trowel floor finish, except omit final troweling and finish surface by drawing a fine-hair broom lightly across the surface.
2. Brooming: In same direction and parallel to expansion joints, or, in the case of inclined slabs, perpendicular to slope, except for round roof slab, broom surface in radial direction.

E. Sidewalk Finish:

1. Slope walks down ¼ inch per foot away from structures, unless otherwise shown.
2. Strike off surface by means of strike board and float with wood or cork float to a true plane, then flat steel trowel before brooming.
3. Broom surface at right angles to direction of traffic.
4. Lay out sidewalk surfaces in blocks with an approved grooving tool as shown or as directed by Engineer.

F. Related Unformed Surfaces:

1. At horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces, the placed concrete shall be struck off smooth and finished with a texture matching the adjacent formed surfaces. Continue the final surface treatment of the formed surfaces uniformly across the adjacent unformed surfaces, unless otherwise shown on the Drawings.

G. A 3/4-inch chamfer shall be provided at the top of all exposed walls, except where support angles are installed, and at exposed vertical corners.

H. In addition to the description of various finishes above, concrete surfaces shall be finished in accordance with ACI Standards 301 and 302 as scheduled below:

| <u>Surface</u>   | <u>Finish</u>  |
|--|--|
| Interior Slabs   | Smooth Trowel Finish   |
| Exterior Slabs   | Broom Finish   |
| Exterior Concrete Above Grade; Interior Walls, Columns, Beams and Ceilings | Rubbed Finish  |
| Exterior Concrete Below Grade  | Rough Finish, Correct Defective Areas including Stone Pocket and |
| Fill Tie   |  |
| Sidewalks  | Holes<br>Sidewalk Finish   |

3.06 CONCRETE CURING AND PROTECTION

A. General:

1. Freshly placed concrete shall be protected from premature drying and excessive cold or hot temperature, and maintained without drying at a relatively constant temperature for the 7 day period of time necessary for the proper hydration of the cement. Concrete damaged by improper curing or placement methods shall be replaced by the Contractor and at no additional expense to the Owner.

2. Curing procedures shall begin immediately after placement of the concrete and continue for at least seven days or until concrete has attained 75 percent of its compressive strength in accordance with ACI 308.

B. Curing Method:

1. Liquid membrane curing shall be provided as follows:

a. The Contractor shall use a commercially produced liquid membrane forming curing compound for curing concrete which meets the requirements of ASTM C309.

b. Apply the specified membrane-forming curing compound to damp concrete surfaces as soon as the water film has disappeared. Apply uniformly in a 2-coat continuous operation by power spray equipment in accordance with the manufacturer's directions. Recoat all areas which are subjected to heavy rainfall within 3 hours after initial application. Maintain the continuity of the coating and repair any damage to the coat during the entire 7 day curing period.

c. Membrane compounds shall not be used on surfaces which are to be covered with a coating material applied directly to the concrete or with a covering material bonded to the concrete, such as other concrete, liquid floor hardener, water-proofing, damp-proofing, flooring, paintings, and other coatings and finish materials.

2. Use approved water curing method where membrane compounds are not allowed.

3. For walls, use one of the following curing methods:

a. Method 1: Leave concrete forms in place and keep entire exposed surfaces wet at all times.

b. Method 2: Apply specified curing compound as specified, where allowed, immediately after removal of forms. Apply curing compound in two coats. Each coat shall be applied at the manufacturers recommended rate for one coat application.

c. Method 3: Continuously sprinkle 100 percent of all exposed surfaces.

4. For slabs, curbs, and sidewalks use one of the following curing methods:

- a. Method 1: Protect surface by ponding.
- b. Method 2: Cover with burlap or cotton mats and keep continuously wet.
- c. Method 3: Cover with 1-inch layer of wet sand, earth, or sawdust, and keep continuously wet.
- d. Method 4: Continuously sprinkle exposed surface.
- e. Other agreed upon method that will provide moisture to be present and uniform at all times on all surface of slabs.

C. Unformed surfaces shall be cured after finishing operations have been completed and as soon as marring of the concrete will not occur. The curing procedures shall continue for 7 days or until the concrete has attained 70 percent of its compressive strength in accordance with ACI 308.

D. Temperature of Concrete During Curing:

1. When the atmospheric temperature is 40 degrees Fahrenheit and below, the concrete temperature shall be maintained between 50 and 70 degrees Fahrenheit continuously throughout the 7 day curing period. When necessary, the Contractor shall make arrangements before the placement of concrete for heating, covering, insulation or housing as required to maintain the specified temperature and moisture conditions continuously throughout the concrete curing period. Cold weather protections shall comply with the requirements of ACI 306.

- a. Where water curing as specified herein for slabs is not possible, use an approved curing compound as herein specified at twice the manufacturer's recommended coverage per gallon.
- b. Where specified curing compound cannot be used, special methods using moisture shall be agreed upon prior to pouring the concrete slabs.
- c. Protect slabs during cold weather with poly-ethylene sheeting or other material inside required heated enclosure if foot traffic is permitted on slabs.

2. When the atmospheric temperature is 80 degrees Fahrenheit and above, or during other climatic conditions which will cause a rapid drying of the concrete, the Contractor shall make arrangements before the start of concrete placement for the installation of wind breaks or shading, and for fog spraying, wet sprinkling, or a moisture-retaining covering. The concrete shall be protected continuously for the 7 day concrete-curing period. Hot weather concrete protection shall comply with the requirements of ACI 305.

3. The concrete temperature shall be maintained as uniformly as possible, and protected from rapid atmospheric temperature changes. Temperature changes in concrete which exceed 5 degrees Fahrenheit in any one hour and 50 degrees Fahrenheit in any 24-hour period shall be avoided and protected against.

E. During the curing period the concrete shall be protected from damaging mechanical disturbances including load stresses, excessive vibration and from damage caused by rain or flowing water. All finished concrete surfaces shall be protected from damage by subsequent construction operations. Any damage incurred shall be repaired by the Contractor at no additional expense to the Owner.

### 3.07 CONCRETE REPAIRS

A. Cracks in waterholding structures that are determined to have caused excessive leakage or damp spots, or if seepage is present on exposed surfaces:

1. Epoxy inject all cracks with a two component epoxy as specified hereinbefore. Crack repairs shall be performed by a licensed applicator as specified hereinbefore.

B. Defective surface areas shall be repaired and patched with grout as specified hereinbefore immediately after removal of forms and as directed by the Engineer.

C. Repair of Formed Surfaces:

1. Formed surfaces which will be exposed-to-view or air in the completed structure and contain defects which adversely affect the appearance of the finish shall be repaired. The concrete with the defective surfaces shall be removed and replaced at no additional expense to the Owner if the defects cannot be repaired to the satisfaction of the Engineer. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, and holes left by rods and bolts, fins, and other discolorations that cannot be removed by cleaning.



2. Concealed formed concrete surfaces that contain defects that adversely affect the durability of the concrete shall be repaired. If defects cannot be repaired, the defective concrete shall be removed and replaced at no additional expense to the Owner.

D. Repair of Unformed Surfaces:

1. Unformed surfaces such as monolithic slabs may be tested by the Engineer for smoothness and to verify that the surface planeness meets the tolerances specified for each surface and finish. Any low and high areas shall be repaired by the Contractor at no additional expense to the Owner as specified herein.

2. Unformed surfaces that contain defects which adversely affect the durability of the concrete shall be repaired. Surface defects include crazing, cracks in excess of 0.01 inch in width or which penetrate to the reinforcement or completely through non-reinforced sections regardless of width, spalling, popouts, honeycomb, rock pockets, and other objectionable conditions.

3. High areas in unformed surfaces shall be repaired by grinding after the concrete has cured sufficiently so that repairs can be made without any damage to adjacent areas.

4. Low areas in unformed surfaces shall be repaired during, or immediately after, completion of surface finishing operations by cutting out the low areas and replacing with fresh concrete. The repaired areas shall be finished to blend into adjacent concrete. Proprietary patching compounds may be used when approved by the Engineer.

5. Defective areas, except random cracks and single holes not exceeding 1-inch diameter shall be repaired, by cutting the area out and placing fresh concrete. Defective areas shall be removed to sound concrete with clean, square cuts, and shall expose reinforcing steel with at least 3/4-inch clearance all around. Concrete surfaces in contact with patching concrete shall be dampened and brushed with a neat cement grout coating or approved epoxy adhesive, or a concrete of the same type or class as the original adjacent concrete. Place, compact, and finish as required to blend with the adjacent finished concrete. The repaired area shall be cured in the same manner as adjacent concrete.

6. Isolated random cracks in non-water holding structures and single holes not over 1 inch in diameter shall be repaired by the dry-pack method. Groove the top of cracks, and cut out holes to sound concrete. Clean off all dust, dirt, and loose particles. Dampen all cleaned concrete surfaces and apply by brush a neat grout coating. Place dry-pack before the cement grout takes its initial set. Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Compact the dry-pack mixture in place and finish to match the adjacent concrete. Keep the patched areas continuously moist for not less than 72 hours.

7. Repair methods not specified above may only be used if approved by the Engineer.

### 3.08 SURFACE HARDENERS

A. Interior slabs shall receive an application of surface hardener as recommended by the manufacturer of the surface hardener.

B. Floors to receive hardener shall be thoroughly cured for at least 28 days, clean, unpainted, free from membrane curing compounds, and perfectly dry with all work above them completed. Apply liquid hardener evenly, using three coats, allowing 24 hours between coats. The first coat shall be 1/3 strength, second coat 1/2 strength, and third coat 2/3 strength, mix with water. Each coat shall be applied so as to remain wet on the concrete surface for 15 minutes. Apply approved proprietary hardeners in conformance with the manufacturer's instructions. After the final coat is completed and dry, remove surplus hardener from the surface by scrubbing and mopping with water.

### 3.09 CLEANING AND DISINFECTION OF STRUCTURES

A. General: Refer to Section 13435, DISINFECTION AND CLEANING for more detailed description of cleaning and disinfection requirements.

B. Cleaning: Clean thoroughly all interior concrete surfaces using water under pressure. The cleaning method adopted should accomplish the following: (1) remove all deposits of foreign nature; (2) remove all growths; (3) clean the slopes, walls, top, and bottom; (4) avoid damage to the structure; and (5) avoid pollution or oil deposits by workers and equipment. All water used in cleaning the concrete structures should be disposed of before allowing water to the structure.

### 3.10 MISCELLANEOUS CONCRETE ITEMS

A. Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as shown on Drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.

B. Grout base plates and foundations as indicated, using specified non-shrink grout. Use non-metallic grout for exposed conditions, unless otherwise indicated. Block out the original concrete or finish off a sufficient distance below the bottom of the machinery base to provide for the thickness of grout shown on the Drawings. After the machinery has been set in position and wedged to the proper elevation by steel wedges, the space between the bottom of the machinery base and the original pour of concrete shall be filled with a pourable nonshrinking type grout as hereinbefore specified.

### 3.11 REJECTIONS

A. Concrete Strength: Concrete strength shall be considered satisfactory if the average test of the two 28-day specimens exceeds the specified strength and neither specimen test falls below 95% of the specified strength. If the average strength of the two test specimens is less than specified and either specimen test is less than 95% of the specified strength, the concrete represented by the tests is rejected and must be removed and replaced at the Contractor's expense.

B. Alignment: Where concrete slabs or walls do not meet the alignment requirements, the Contractor must grind off irregularities until they comply. However, if such removal leaves less concrete section than indicated, the Engineer may reject concrete if he feels the remaining section would not be adequate.

C. Flatwork: Finished flatwork exceeding the tolerances of these specifications shall be repaired or replaced so that strength or appearance is not adversely affected. Follow paragraph 3.07 for repair work or as directed by Engineer.

D. Appearance: Concrete exposed to view with defects which adversely affect the appearance of the specified finish may be repaired, if possible in accordance with paragraph 3.07. If, in the opinion of the Engineer, the defects cannot be repaired to equal the specified finish, the concrete shall be rejected.

E. Misplaced Members: Concrete members cast in the wrong location may be rejected if the strength, appearance, or function of the structure is adversely affected or misplaced items interfere with other construction.

F. Rejected Concrete: Rejected concrete shall be removed and replaced. Limits of removal shall be as directed by the Engineer to accomplish a structure equal in strength, serviceability, and appearance, to that which would have been achieved by acceptable concrete.

G. Expense of Repairs: The cost of all repairs, removal, replacement, etc., required by the provisions of this Article shall be borne by the Contractor.

## PART 4 TESTING

### 4.01 TESTS OF AGGREGATE

A. Provide tests of aggregate before concreting per ASTM C33. Tests may be waived by Engineer if aggregates to be used have shown actual use to produce concrete or required strength, durability, water-tightness, fire resistance, and wearing qualities. See Section 2.03 for additional information concerning local aggregates.

### 4.02 STRENGTH TEST OF CYLINDERS DURING WORK

A. Provide for test purposes, sets of four cylinders each, taken for each 50 cubic yards or portions placed each day. Test one cylinder per set at 7 days, two at 28 days, and retain one for backup.

B. Evaluation will be in accordance with ACI Standard Building Code Requirements for Reinforced Concrete (ACI 318 latest edition), Section 4.7, "Evaluation and Acceptance of Concrete", and these Specifications. Where the term "building official" is used in Section 5.6 of ACI 318, term shall be redefined to "the Owner's representative".

C. Specimens will be made, cured, and tested by the Contractor's independent testing firm in accordance with ASTM C31 and ASTM C39.

D. Frequency of testing may be increased at discretion of Engineer.

E. Cold Weather Placement Tests:

1. During cold weather concreting, Contractor's independent testing firm will cast cylinders for field curing as follows. Use method which will produce greater number of specimens:
  - a. Six extra test cylinders from the last 100 cubic yards of concrete.
  - b. Minimum three specimens for each 2 hours of placing time or for each 100 yards.
2. These specimens shall be in addition to those cast by Contractor for lab testing.
3. Protect test cylinders from the weather until they can be placed under same protection provided for the parts of the structure which they represent.
4. Keep field test cylinders in same protective environment as the parts of the structure they represent, to determine if specified strength has been obtained and no further protection is needed.
5. Test cylinders in accordance with applicable sections of ASTM C31 and C39.
6. Evaluation and Acceptance: As specified herein.

#### 4.03 SLUMP TESTS

- A. Take slump tests with each strength test and as directed in accordance with ASTM C143.

#### 4.04 AIR CONTENT

- A. ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231, pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.

#### 4.05 CONCRETE TEMPERATURE

- A. ASTM C1064; one test hourly when air temperature is 40 degrees F and below and when 80 degrees F and above, and one test for each set of compressive strength specimens.

#### 4.06 TEST OF HARDENED CONCRETE

- A. Acceptance shall be based on concrete cylinder tests in accordance with Paragraph 3.11. Contractor may provide additional test by coring per ASTM C42 or load tests for that portion of job where questionable concrete has been placed. Such additional testing will be accepted in lieu of cylinder tests. Results of rebound hammer tests will not be accepted except in defining problem areas.

#### 4.07 TESTING AGENCY

- A. All tests shall be made by an independent testing laboratory approved by the Engineer.

#### 4.08 COST OF TESTING

A. The Contractor shall bear all costs of testing required by this section including tests of hardened concrete where cylinder strengths indicate high or low strength concrete.

#### 4.09 TEST RESULTS

A. Submit two (2) copies of all tests to Engineer within 24 hours of testing.

#### 4.10 CURE BOX

- A. Provide a cure box at the project site for initial cure of test cylinders. Construct and equip box to provide initial cure in accordance with ASTM C31.

#### 4.11 WATER LEAKAGE TESTS

- A. Purpose: Determine integrity of finished concrete and to show exposed wall surfaces are visually acceptable.

B. All Water-Holding Structures:

1. Perform leakage tests after concrete has cured and obtained its design strength, and before backfill, or other work which will cover concrete wall surfaces is begun.
2. Make other equipment, i.e., stop gates, sluice gates, valves, etc., or temporary bulkheads water-tight prior to test.
3. As an alternative to having watertight bulkheads, gates, or valves, accurately measure the leakage through gates, valves, and bulkheads with methods acceptable to Engineer. An assumed leakage through gates and valves based on manufacturer's recommendations is not acceptable.
4. Fill with water to maximum liquid level prior to leak testing, and maintain level for 48 hours for moisture absorption by concrete.
5. Close all valves and gates to the structure and measure the change in water surface for a 24-hour period.
6. During test period, examine exposed portions of structure for dampness or leaks and mark visible leaks or damp spots.

C. Test Evaluation Criteria:

1. An acceptable test shall have a drop in water surface in 24-hour period with basin full less than 1/10 of 1 percent of normal volume of liquid contained in water-holding structure, after accounting for evaporation and precipitation in open basins, and damp spots or seepage are not present on walls or other areas exposed to view.
2. Determine evaporation by floating an evaporation pan in structure during test period.

- D. Excessive Leakage and Leakage Test Failure: If drop in water surface exceeds test evaluation criteria or if damp spots or seepage is visible in exposed surfaces, the leak test shall be considered as failing.

E. Repairs:

1. If leakage is excessive, or if damp spots or observed seepage is present on exposed surfaces, drain water-holding structure, repair all leaks and damp spots previously marked, and make necessary repairs, and retest basin.

2. Repair in accordance with these Specifications and as approved by Engineer.

F. Retest:

1. Refill water-holding structure and test for leakage until structure meets test criteria.

2. Successful Test: If liquid level criteria is met and damp spots and seepage problems are corrected, the retest will be considered acceptable.

END OF SECTION 03300

**PART 1 GENERAL****1.01 WORK INCLUDED**

- A. This section includes work necessary to furnish and install, complete, structural steel.

**1.02 RELATED WORK**

- A. Division 1 Section 01400, QUALITY CONTROL for independent testing agency procedures and administrative requirements.
- B. Division 5 Section 05500, MISCELLANEOUS METAL ITEMS for loose steel bearing and embedded plates and miscellaneous steel framing.

**1.03 SUBMITTALS**

- A. General: Submit each item in this section according to the Conditions of the Contract and Division 1 Section 01300, SUBMITTALS.
- B. Product data for each type of product specified.
- C. Shop drawings detailing fabrication of structural steel components:
  - 1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
  - 2. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
  - 3. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify high-strength bolted slip-critical, direct-tension, or tensioned shear/bearing connections.
- D. Qualification data for firms and persons specified in the "Quality Assurance" paragraph to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Mill test reports signed by manufacturers certifying that their products, including the following, comply with requirements:
  - 1. Structural steel, including chemical and physical properties.
  - 2. Bolts, nuts, and washers, including mechanical properties and chemical analysis.
  - 3. Shop primers.



4. Nonshrink grout.
  5. Direct-tension indicators.
- F. Submit results and reports for all testing and Special Inspections provided in accordance with Part 3 of this Section.

**1.04 QUALITY ASSURANCE**

- A. **Installer Qualifications:** Engage an experienced installer who has completed structural steel work similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance.
- B. **Fabricator Qualifications:** Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the work.
1. Fabricator must participate in the AISC Quality Certification Program and be designated an AISC- Certified Plant as follows:
    - a. Category: Category 1, conventional steel structures.
    - b. Fabricator shall be registered with and approved by authorities having jurisdiction.
    - c. As an alternate to Category 1 certifications, other fabricators will be allowed providing they can demonstrate a minimum of 10 years experience fabricating similar steel structures.
- C. Comply with applicable provisions of the following specifications and documents:
1. AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design".
  2. AISC's "Load and Resistance Factor Design (LFRD) Specification for Structural Steel Buildings".
  3. AISC's "Specification for Allowable Stress Design of Single-Angle Members".
  4. AISC's "Specification for Load and Resistance Factor Design of Single-Angle Members".
  5. ASTM A 6 (ASTM A 6M) "Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use".

6. Research Council on Structural Connections' (RCSC) "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".
- D. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code—Steel", latest edition. Present evidence that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
- E. Provide Special Inspections and testing as specified in Part 3 of this Section.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver structural steel to project site in such quantities and at such times to ensure continuity of installation.
- B. Store materials to permit easy access for inspection and identification. Keep steel members off ground by using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.
  1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.
  2. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

#### 1.06 SEQUENCING

- A. Supply anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.

### **PART 2 PRODUCTS**

#### 2.01 MATERIALS

- A. Wide flange "W" Sections: ASTM A992
- B. Angles, Channels, Plates, Bars and Other Structural Steel Shapes (as indicated on the Drawings): ASTM A36 (ASTM A36M).
- C. All steel shall be hot-dip galvanized after fabrication.
- D. Anchor Rods, Bolts, Nuts, and Washers: As follows:
  1. Unheaded Rods: ASTM A 36 (ASTM A 36M).

2. Headed Bolts: ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); carbon-steel, hex-head bolts; and carbon-steel nuts.
  3. Washers: ASTM A 36 (ASTM A 36M).
  4. Finish: Mechanically deposited zinc-coating, ASTM B 695, Class 50.
- E. Non-high Strength Bolts, Nuts, and Washers: ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); carbon-steel, hex-head bolts; carbon-steel nuts; and flat, unhardened steel washers.
1. Finish: Mechanically deposited zinc-coating, ASTM B 695, Class 50.
- F. Welding Electrodes: Use E70XX electrodes. Comply with AWS requirements.

## 2.02 PRIMER

- A. Primer: Anti-corrosive epoxy primer or fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer, depending on specific area where steel is to be located. Compatible with specified painting system in Section 09900, PAINTING.

## 2.03 FABRICATION

- A. Fabricate and assemble structural steel in shop to greatest extent possible. Fabricate structural steel according to AISC specifications referenced in this section and in shop drawings.
1. Camber structural steel members where indicated.
  2. Identify high-strength structural steel according to ASTM A 6 (ASTM A 6M) and maintain markings until steel has been erected.
  3. Mark and match-mark materials for field assembly.
  4. Fabricate for delivery a sequence that will expedite erection and minimize field handling of structural steel.
  5. Complete structural steel assemblies, including welding of units, before starting shop-priming operations.
  6. Comply with fabrication tolerance limits of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel.

- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible. Plane thermally cut edges to be welded.
- C. Finishing: Accurately mill ends of columns and other members transmitting loads in bearing.
- D. Holes: Provide holes required for securing other work to structural steel framing and for passage of other work through steel framing members, as shown on shop drawings.
  - 1. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame-cut holes or enlarge holes by burning. Drill holes in bearing plates.
  - 2. Weld threaded nuts to framing and other specialty items as indicated to receive other work.

#### 2.04 SHOP CONNECTIONS

- A. Shop install and tighten nonhigh-strength bolts, except where high-strength bolts are indicated.
- B. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent surface bleeding of back-side welding on exposed steel surfaces. Grind smooth exposed fillet welds ½-inch and larger. Grind flush butt welds. Dress exposed welds.

#### 2.05 SHOP PRIMING

- A. Shop prime steel surfaces, except the following:
  - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches (50 mm).
  - 2. Surfaces to be field welded or to receive high strength slip critical bolting.
  - 3. Galvanized surfaces.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits. Prepare surfaces according to SSPC specifications per SSPC-SP 3 "Power Tool Cleaning."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's instructions and at rate recommended by SSPC to provide

a dry film thickness of not less than 1.5 mils (0.038 mm). Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces. Apply 2 coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.

## **2.06 SOURCE QUALITY CONTROL**

- A. The Owner, at their expense, may employ a special inspector to conduct shop inspections.
- B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
- C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.
- D. In addition to visual inspection, shop-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.
  - 1. Liquid Penetrant Inspection: ASTM E 165.
  - 2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
  - 3. Ultrasonic Inspection: ASTM E 164.
- E. In addition to visual inspection, shop-welded shear connectors will be inspected and tested according to requirements of AWS D1.1 for stud welding and as follows:
  - 1. Bend tests will be performed when visual inspections reveal either less than a continuous 360-degree flash or welding repairs to any shear connector.
  - 2. Tests will be conducted on additional shear connectors when weld fracture occurs on shear connectors already tested, according to requirements of AWS D1.1.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Before erection proceeds, and with the steel erector present, verify elevations of concrete and masonry bearing surfaces and locations of anchorages for compliance with requirements.
- B. Do not proceed with erection until unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

### 3.03 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC specifications referenced in this Section.
- B. Base and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.
  - 1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
  - 2. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.
  - 3. Pack grout solidly between bearing surfaces and plates so no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure. Comply with manufacturer's instructions for proprietary grout materials.
- C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.
  2. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.
- E. Splice members only where indicated.
- F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.
- G. Do not use thermal cutting during erection.
- H. Do not enlarge unfair holes in members by burning or by using drift pins. Ream holes that must be enlarged to admit bolts.

### 3.04 FIELD CONNECTIONS

- A. Install and tighten nonhigh-strength bolts, except where high-strength bolts are indicated.
- B. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work. Comply with AISC specifications referenced in this Section for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

### 3.05 TESTING AND SPECIAL INSPECTIONS

- A. The Owner shall engage an independent testing and inspecting agency to perform Special Inspections and testing and to prepare test reports. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from requirements.
- B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
- C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.
- D. Field-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts." Direct-tension indicator gaps will be verified to comply with ASTM F 959, Table 2.

- E. In addition to visual inspection, field-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.
1. Liquid Penetrant Inspection: ASTM E 165.
  2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
  3. Ultrasonic Inspection: ASTM E 164.

**END OF SECTION 05120**



**05 3100  
STEEL DECKING**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.02 SUMMARY**

- A. Section Includes:
  - 1. Roof deck.
  - 2. Composite floor deck.

**1.03 ACTION SUBMITTALS**

- A. Product Data: For each type of deck, accessory, and product indicated.
- B. Shop Drawings:
  - 1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

**1.04 INFORMATIONAL SUBMITTALS**

- A. Welding certificates.
- B. Product Certificates: For each type of steel deck.
- C. Product Test Reports: For tests performed by a qualified testing agency, indicating that each of the following complies with requirements:
  - 1. Power-actuated mechanical fasteners.
- D. Evaluation Reports: For steel deck and power-actuated fasteners, from ICC-ES or IAPMO Uniform ES.
- E. Field quality-control reports.

**1.05 QUALITY ASSURANCE**

- A. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.
- B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

**PART 2 PRODUCTS**

**2.01 PERFORMANCE REQUIREMENTS**

- A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

**2.02 ROOF DECK**

- A. Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 31, and with the following:
  - 1. Galvanized-Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 40 (275), minimum, G60 (Z180) zinc coating.

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**STEEL DECKING**

2. Deck Profile: As indicated in the drawings.
3. Profile Depth: As indicated in the drawings.
4. Design Uncoated-Steel Thickness: As indicated in the drawings.
5. Span Condition: As indicated in the drawings.
6. Side Laps: As indicated in the drawings.

**2.03 COMPOSITE FLOOR DECK**

- A. Composite Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 31, with the minimum section properties indicated, and with the following:
1. Galvanized-Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 33 (230), G30 zinc coating.
  2. Galvanized and Shop-Primed Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 33 (230), G30 (Z90) zinc coating; with unpainted top surface and cleaned and pretreated bottom surface primed with manufacturer's standard gray baked-on, rust-inhibitive primer.
  3. Profile Depth: As indicated in the drawings.
  4. Design Uncoated-Steel Thickness: As indicated in the drawings.
  5. Span Condition: As indicated in the drawings.

**2.04 ACCESSORIES**

- A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
- B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.
- C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 (4.8-mm) minimum diameter.
- D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.
- E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), not less than 0.0359-inch (0.91-mm) design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
- F. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), of same material and finish as deck, and of thickness and profile indicated or recommended by SDI Publication No. 31 for overhang and slab depth.
- G. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck unless otherwise indicated.
- H. Piercing Hanger Tabs: Piercing steel sheet hanger attachment devices for use with floor deck.
- I. Weld Washers: Uncoated steel sheet, shaped to fit deck rib, 0.0747 inch (1.90 mm) thick, with factory-punched hole of 3/8-inch (9.5-mm) minimum diameter.
- J. Galvanizing Repair Paint: ASTM A 780/A 780M.
- K. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

**05 3100**  
**STEEL DECKING**

**3.02 INSTALLATION, GENERAL**

- A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section.
- B. Install temporary shoring before placing deck panels if required to meet deflection limitations.
- C. Locate deck bundles to prevent overloading of supporting members.
- D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.
- E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
- F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.
- G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.
- H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.
- I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

**3.03 ROOF-DECK INSTALLATION**

- A. Fasten roof-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter that is not less than 1-1/2 inches (38 mm) long, and as follows:
  - 1. Weld Diameter: As indicated in the drawings.
  - 2. Weld Spacing: As indicated in the drawings.
  - 3. Weld Washers: Install weld washers at each weld location.
- B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports as indicated and as follows:
  - 1. Mechanically fasten with self-drilling, No. 10 (4.8-mm-) diameter or larger, carbon-steel screws.
  - 2. Mechanically clinch or button punch.
  - 3. Fasten with a minimum of 1-1/2-inch- (38-mm-) long welds.
- C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches (38 mm), with end joints as follows:
  - 1. End Joints: Lapped 2 inches (51 mm) minimum.
- D. Miscellaneous Roof-Deck Accessories: Install ridge and valley plates, finish strips, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld or mechanically fasten to substrate to provide a complete deck installation.
  - 1. Weld cover plates at changes in direction of roof-deck panels unless otherwise indicated.
- E. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

**3.04 FLOOR-DECK INSTALLATION**

- A. Fasten floor-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated and as follows:
  - 1. Weld Diameter: As indicated in the drawings.
  - 2. Weld Spacing: As indicated in the drawings.
  - 3. Weld Washers: Install weld washers at each weld location.

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- B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports as indicated and as follows:
  - 1. Mechanically fasten with self-drilling, No. 10 (4.8-mm-) diameter or larger, carbon-steel screws.
  - 2. Mechanically clinch or button punch.
  - 3. Fasten with a minimum of 1-1/2-inch- (38-mm-) long welds.
- C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches with end joints as follows:
  - 1. End Joints: Lapped or butted at Contractor's option.
- D. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations unless otherwise indicated.
- E. Floor-Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of deck.
- F. Install piercing hanger tabs at [14 inches (355 mm)] <Insert dimension> apart in both directions, within 9 inches (228 mm) of walls at ends, and not more than 12 inches (305 mm) from walls at sides unless otherwise indicated.

**3.05 FIELD QUALITY CONTROL**

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Field welds will be subject to inspection.
- C. Prepare test and inspection reports.

**3.06 PROTECTION**

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780/A 780M and manufacturer's written instructions.
- B. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.
  - 1. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.
  - 2. Wire brushing, cleaning, and repair painting of bottom deck surfaces are included in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."
- C. Repair Painting: Wire brushing, cleaning, and repair painting of rust spots, welds, and abraded areas of both deck surfaces are included in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."

**END OF SECTION**