



## ADDENDUM TO THE CONTRACT

for the

### MENDENHALL WASTEWATER TREATMENT PLANT BIOSOLIDS DRYER FACILITY Contract No. BE17-133

**ADDENDUM NO.:** ONE

**CURRENT DEADLINE FOR BIDS:**  
June 20, 2017

**PREVIOUS ADDENDA:** NONE

**ISSUED BY:** City and Borough of Juneau  
ENGINEERING DEPARTMENT  
155 South Seward Street  
Juneau, Alaska 99801

**DATE ADDENDUM ISSUED:** June 7, 2017

The following items of the contract are modified as herein indicated. All other items remain the same. This addendum has been issued and is posted online. Please refer to the CBJ Engineering Contracts Division webpage at: <http://www.juneau.org/engineering ftp/contracts/Contracts.php>.

#### **INFORMATION ITEMS:**

1. The advertised estimate is being increased to \$14.8 million.
2. Hazardous Materials Insurance. The pollution liability coverage may be covered by a Subcontractor, as long as the Prime Contractor does not touch **any** of the hazardous materials.

#### **PROJECT MANUAL:**

Item No.: 1 SECTION 00030 – NOTICE INVITING BIDS, PRE-BID CONFERENCE. **Change** the Pre-Bid Conference **from**

June 19, 2017, at 10:00 am in the City and Borough of Juneau Engineering Conference Room, 3<sup>rd</sup> Floor Marine View Center, Juneau, AK,

**to**

June 13, 2017, 9:30 am, at the Mendenhall Wastewater Treatment Plant, 2009 Radcliff Road, Juneau, AK.

Item No.: 2 SECTION 00030 – NOTICE INVITING BIDS, DESCRIPTION OF WORK, BASE BID. **Add** the following:

1. Project Component Descriptions: The project includes the following components as generally described below and detailed in the Contract Documents:
  - a. ABF Building Demolition: Demolition of this building will include the entire above-grade structure and all of the process equipment housed inside. The concrete

floor slab will be removed as shown in the drawings, and the pre-existing rectangular clarifiers below the concrete slab will be excavated out for use in the new facility.

- 1) The existing belt filter press building on the southeast corner of the ABF building will remain in place, and the belt filter press must remain in service for the duration of the project.
- b. Yard Piping: Yard piping improvements include potable water supply, gravity sewer, storm water system improvements, and a sewer force main from new TWAS pumps. Yard piping also includes buried fuel oil and hot water supply/return piping.
- c. Site Civil Improvements: Site scape work will include limited asphalt demolition and new asphalt and concrete aprons.
- d. New Biosolids Building: The new CMU building will house the biosolids dryer, sludge cake hoppers, augers, feed pumps, dose pumps, condenser, thermal fluid heater, bagging system, electrical and control rooms, lab and restroom, and belt filter press.
  - 1) Sequencing provisions for construction of the building must take into account installation of the biosolids dryer, hoppers and other large equipment that cannot be installed through doors.
- e. Biosolids Dryer (Owner procured equipment): The Owner has pre-procured the biosolids dryer and supporting equipment, as identified in the Contract Document appendices. In general the equipment includes the BioCon dryer, two sludge cake hoppers, associated augers, wet cake feed pumps, dose pumps, structural platforms and walkways, associated condenser, thermal fluid heating skid, dried sludge pellet bagging system, and associated instruments, valves, devices, controls and equipment.
- f. Non-Potable Water Supply System Modifications: The non-potable water supply capacity will be increased through installation of a third vertical turbine pump. The two existing pump motors will be replaced with VFD compatible motors. A new pump control panel with VFD's for all three pumps will be added.
- g. Thickened Waste Activated Sludge (TWAS) Pump Modifications: Two new progressive cavity TWAS pumps will be installed in the existing pipe gallery in the SBR building. The new pumps will include a new pump control panel and VFD's for control of the pumps. Automatic (on/off/speed) control of the pumps will be provided through the belt filter press control panel.
- h. Belt Filter Press: A new (additional) belt filter press will be installed in the new biosolids building. The existing belt press will remain in operation through construction and following construction. The new belt filter press will discharge the dewatered sludge into the 50 CY hopper provided by Kruger.
- i. Polymer Feed System: The polymer feed system will inject polymer into the new TWAS force main in the SBR building before the force main continues to the new biosolids building and the new belt filter press.
- j. Odor Control System(s): Odor control systems will be installed for the new biosolids building.

- k. HVAC: The HVAC system must be closely coordinated with the odor control systems.

Item Numbers 3 and 4 below were left out of the electronic document. (If you obtained a hard-copy document by coming into the office, the information is the same as in your hard-copy document.)

Item No. 3: **Add** the following attached sections, labeled Addendum No. 1:

SECTION 00400 – DBE OVERVIEW,  
SECTION 00410 – DEC – DBE – MBE/WBE,  
SECTION 00415 – USE OF AMERICAN IRON AND STEEL,  
SECTION 00430 – EQUAL EMPLOYMENT OPPORTUNITY,  
SECTION 00440 – PREVAILING WAGE RATES – STATE OF ALASKA (SRF)  
REQUIREMENTS.

Item No. 4: **Add** the attached SECTION 00831 – DAVIS-BACON REQUIREMENTS, labeled Addendum No. 1.

Item No. 5: SECTION 00800 – SUPPLEMENTARY GENERAL CONDITIONS, SGC 5.2 – INSURANCE AMOUNTS, Paragraph 3.3.D – Hazardous Materials. **Delete** and **replace** with the following:

“D. Hazardous Materials: As a condition of the Contract award, CONTRACTOR shall provide evidence of insurance coverage for Contractor’s Pollution Liability as applicable to the WORK covered by abatement Subcontractor(s). Such coverage shall include operations addressing the removal and disposal of all hazardous materials with no exclusions for lead. Minimum limits shall be \$1,000,000. Form of such policies shall be acceptable to the OWNER.”

Item No. 6: **Add** the attached SECTION 017500 – EQUIPMENT TESTING AND PLANT STARTUP, labeled Addendum No. 1.

Item No. 7: **Add** the attached SECTION 443031 – ODOR CONTROL DUCT WORK, labeled Addendum No. 1.

By:   
Greg Smith,  
Contract Administrator

Total number of pages contained within this Addendum: 59

## **SECTION 00400 – STATE OF ALASKA (SRF) REVOLVING LOAN PROGRAM REQUIREMENTS**

This project is being partially funded by the State of Alaska Department of Environmental Conservation (ADEC) Revolving Loan Fund. As the ADEC Revolving Loan Fund program is funded by the EPA, there are additional special requirements to be adhered to during the bid and life of the contract. The sections listed below provide the requirements, forms and links to additional information necessary to meet the Federal requirements necessary to utilize the ADEC revolving loan funding:

- 00400 ADEC Loan Fund DBE Overview
- 00410 Minority and Women Owned Business Enterprise (MBE/WBE)
- 00415 Use of American Iron and Steel
- 00430 Equal Employment Opportunity (EEO)
- 00440 Davis-Bacon Requirements  
Federal and State Prevailing Wage Rate Compliance Statement

**SECTION 00400 - DBE OVERVIEW**  
**STATE OF ALASKA**  
**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**ALASKA CLEAN WATER FUND & ALASKA DRINKING WATER FUND**

**DISADVANTAGE BUSINESS ENTERPRISES  
OVERVIEW**

The loan recipient, consultant and contractor of an Alaska Clean Water or Drinking Water Fund revolving loan project are required to comply with EPA regulations (40 CFR Part 33) concerning the use of disadvantage owned businesses enterprises (DBE). Also required is compliance with EEO/Affirmative Action Regulations of the Department of Labor (see attached Statement of Acknowledgement). These regulations help ensure that economic opportunities are available to all people of this country.

The expenditure of Federal funds must reflect equal opportunity, anti-discrimination provisions of the 1964 Civil Rights Act, affirmative action and DBE or more specifically small, minority and women-owned businesses utilization under EPA's DBE program. Utilization may be through prime contracting, subcontracting, joint-venture, procurement of supplies, material or equipment, or other business participation utilized in completing a project. For all situations, contractors must take necessary and reasonable steps to ensure DBE's have the maximum opportunity to compete for and/or perform contracts. Contractors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of projects where assistance is provided from an ADEC revolving loan fund program.

NOTE: On March 26, 2008, the Environmental Protection Agency (EPA) Office of Small Business Programs (OSBP) published its final rule, "Participation by Disadvantaged Business Enterprises in Procurement under Environmental Protection Agency Financial Assistance Agreements (DBE Rule) in the Federal Register (40 CFR part 30-40). The final rule took effect on May 25, 2008." The EPA DBE Program encompasses many of the components of the former MBE/WBE Program and also includes changes.

Some changes are:

- Creation of the Disadvantaged Business Enterprise (DBE) Program (formerly the Minority Business Enterprise/Women's Business Enterprise (MBE/WBE) Program).
- Recipients receiving a total of \$250K or less in financial assistance in a given fiscal year are exempt from this requirement.
- The "Six Affirmative Steps" and "Six Positive Efforts" were combined into the "Six Good Faith Efforts."
- A recipient must require its prime contractor to pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient.
- The loan recipient must be notified in writing by its prime contractor prior to any termination of a DBE subcontractor.

## SECTION 00400 - DBE OVERVIEW

- If a DBE subcontractor fails to complete work under the subcontract for any reason, the prime contractor must use the Six Good Faith Efforts in selecting a replacement subcontractor.
- The prime contractor must employ the Six Good Faith Efforts even if the prime has achieved its Fair Share Objectives.
- Recipients who reported quarterly under the old MBE/WBE program will report semi-annually. [Note – this has been recently updated to now only require annual reporting.]
- MBE's and WBE's can no longer self-certify. They must be certified by EPA, Small Business Administration (SBA), Department of Transportation (DOT) or by state, local, Tribal or private entities whose certification criteria match EPA's. (MBEs and WBEs must be certified in order to be counted toward a recipient's MBE/WBE accomplishments.) The new requirements affect all financial assistance agreements entered into from the effective date of the rule (May 25, 2008). The new DBE rule won't affect those financial assistance agreements entered into before May 25, 2008; those will still operate under the old MBE/WBE program requirements.

## SUMMARY OF GOALS

Stated simply, in meeting DBE goals under this program, the prime contractor must either 1) achieve the goal of contracting to Minority or Women-Owned Enterprises (MBE/WBE), or 2) follow the proper procedures in thoroughly documenting good faith efforts to achieve MBE/WBE goal participation. A prime contractor who is an MBE/WBE firm can also be counted towards the goal. (see attached current participation goals for the Department)

## REQUIREMENTS

### A. Definitions

- Disadvantaged Business Enterprise – Per EPA requirements for projects funded under the Alaska Drinking Water Fund and Alaska Clean Water Fund loan programs, Disadvantage Business Enterprises only include entities owned and/or controlled by socially and economically disadvantaged individuals (as described in 42 USC 7601 and 42 USC 4370d) – which includes Women's Business Enterprises (WBE) and Minority Business Enterprises (MBE). (for more information go to: <http://www.epa.gov/osbp/grants.htm>)
- Minority Business Enterprise or Women Owned Business Enterprise – means a small business concern which is owned and controlled by one or more minorities or women. Owned and controlled means a business:
  1. Which is at least 51 percent owned by one or more minorities or women, or in the case of a publicly owned business, at least 51% of the stock is owned by one or more minorities or women;

## SECTION 00400 - DBE OVERVIEW

2. Whose management and daily business operations are controlled by one or more such individuals.
- Socially Disadvantaged Individual – means a person who is a citizen or lawful permanent resident of the United States and who is:
- Black;
  - Hispanic;
  - Portuguese;
  - Asian American;
  - American Indian and Alaskan Native; and
  - Members of other groups, or other individuals, found to be economically and socially disadvantaged by the United States Small Business Administration under section 8(a) of the federal Small Business Act.
- Economically Disadvantaged Individual – those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital or credit opportunities, as compared to others in the same business area who are not socially disadvantaged.

### **B. Implementation for DBE Procurement**

As part of ADEC's capitalization grants for both the ADWF and ACWF loan programs, the programs have an overall Fair Share (or utilization goal) objective of 3.89% for MBE entities and 2.02% for WBE entities for construction only (effective July 1, 2013 – June 30, 2016). The loan recipient, engineering firm responsible for construction phase services, and prime contractor are required to adopt this same fair objective. The fair share objective is not a quota, EPA cannot penalize ADEC, the loan recipient, engineering firm, of the prime contractor for not meeting MBE or WBE participation objectives.

The prime contractor and consulting engineer responsible for construction phase services are required to make the good faith efforts and apply necessary administrative requirements. If the good faith efforts are not made when subcontracts are considered for the prime construction contract or for engineering construction phase services, the ability of ADEC to fund the project, or portion thereof, may be jeopardized.

### **C. How to Count DBE (MBE/WBE) Goals**

The proposed MBE/WBE firms to be used must be declared by the Bidder before contract award. The MBE/WBE may act as a prime contractor, subcontractor, joint venture partner, or supplier. To be counted toward a goal, the MBE/WBE must perform a commercially useful function. To calculate the minimum dollar value for MBE/WBE participation, multiply the total estimated contract price (including additives or alternates, if any) by the goal percentage.

### **D. How to Obtain DBE (MBE/WBE) Participation**

Prior to the scheduled pre-bid conference, solicit MBE/WBE participation to meet the goal. By contract award, the Bidder must either meet the goal or have made good faith efforts to do so. Good faith efforts include, but are not limited to the following:

## **SECTION 00400 - DBE OVERVIEW**

1. Including qualified small, minority and women's business enterprises on solicitation lists.
2. Assuring that small, minority and women's businesses are solicited. If the MBE/WBE is only certified as a DBE, such as through the Alaska Department of Transportation, and the bidder has exhausted all efforts to determine the subcontractor MBE/WBE status, the bidder may document either category of certification to meet goal objectives.
3. Dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority and women's businesses.
4. Establish delivery schedules, where requirements of the work permit, which will encourage participation by small, minority and women's businesses.
5. Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce, as appropriate.
6. If the prime contractor or proposer awards subcontracts/procurements, require the subcontractor to take the affirmative steps 1 through 5 above.

### **E. How to Credit DBE (MBE/WBE) Participation**

If the Bidder's firm is a qualified Minority or Women-Owned Business Enterprise, credit will be given for the portion of the contract for which the Bidder performs a commercially useful function, and for that portion that is subcontracted to other MBE/WBE firms. For example, a MBE/WBE prime contractor proposes to perform 60% of a project quoted at \$500,000, and subcontracts 20% to a majority firm and the remaining 20% to another MBE/WBE. This means the credited MBE/WBE participation will be 80% for the project (60% + 20%) or \$400,000.

### **F. The DBE (MBE/WBE) Reporting Package**

To meet the MBE/WBE reporting requirements of the program, the following forms need to be submitted during the course of bidding, contract award, and administration of this project:

1. COMPLIANCE STATEMENT - acknowledges the MBE/WBE requirement by the bidder. It must be provided with the bid.
2. REPORT OF PARTICIPATION – documents the level of anticipated MBE/WBE participation. It is submitted after bid opening, but before contract award.
3. CONTACT DOCUMENTATION – documents the efforts taken to attain the MBE/WBE goals and it, or other documentation should be submitted with the Report of Participation if the bidder did not meet the established goal.
4. CONTRACT & PROCUREMENT ANNUAL REPORT – documents the actual MBE/WBE contracts executed by the Prime Contractor and submitted to the Community. In the first week of October each year (reporting period, Oct – Sep), the Community will submit a listing of the executed contracts (for the previous reporting period) through



## SECTION 00400 - DBE OVERVIEW

ADEC's Municipal Matching Grants & Loans online reporting form "SRF loan – MBE/WBE Utilization Form" under the OASys "Reports" tab at the following link:

<https://dec.alaska.gov/Applications/Water/OASys/ValidationInfo.aspx>

### G. Create and Maintain a Bidders List

Any entity that receives an ACWF or ADWF SRF loan is required to create and maintain a bidders list if the loan recipient is subject to, or chooses to follow, competitive bidding requirements. **The list must include all firms that bid or quote on prime contracts, or bid or quote subcontracts, including both MBE/WBEs and non-MBE/WBEs** and must be maintained until the end of the project.

### H. DBE Anti-Discrimination Contract Clause

Under 40 CFR part 33, Appendix A, the following statement must be included in **every contract** issued by an ACWF/ADWF borrower to a prime contractor. The statement cannot be changed, modified, or altered in any way.

*"The contractor 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 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. 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 other legally available remedies."*

## **SECTION 00410 – STATE OF ALASKA (SRF) MBE/WBE PROGRAM REQUIREMENTS**

Projects receiving State of Alaska Department of Environmental Conservation Revolving Loan Program require Contractors to comply with the following Minority and Women Owned Business Enterprise Program (MBE/WBE). The documentation for complying with the MBE / WBE requirements are included in this section:

### **SECTION 00410 Table of Contents:**

- Page 1 Disadvantaged Business Enterprises (Minority and Women-Owned Business Enterprises Compliance Statement
- Page 2 Disadvantaged Business Enterprises (Minority and Women-Owned Business Enterprises Report of Participation
- Page 3 Disadvantaged Business Enterprises (Minority and Women-Owned Business Enterprises Contact Documentation

**SECTION 00410 - DEC - DBE - MBE/WBE**  
**STATE OF ALASKA**  
**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**DISADVANTAGE BUSINESS ENTERPRISES**  
**(MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES)**  
**COMPLIANCE STATEMENT**

To be eligible for award of this contract, the bidder/proposer must execute and submit, as part of his or her bid proposal, this statement relating to Disadvantage Business Enterprises (Minority and Woman-Owned Business Enterprises). This statement shall be deemed a material factor in the City's evaluation of this bid proposal. Failure to complete and submit this statement, or the inclusion of a false statement, shall render the bid proposal non-responsive.

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*The \_\_\_\_\_ (Company Name) acknowledges that Minority/Woman-Owned Business Enterprises (MBE/WBE) goal of 5.91% participation (with a good faith effort of 3.89% MBE and 2.02% WBE, Effective July 1, 2013 thru June 30, 2016) has been established for this contract, and hereby assures that it will meet the goal or provide documentation to show that the mandatory good faith efforts have been made.*

*The undersigned certifies that this bidder/proposer is aware of and will comply with MBE/WBE goals of this project and all applicable federal and state statutes and regulations concerning Disadvantage Business Enterprises (Minority and Woman-owned Business Enterprises).*

*We certify that should we be declared successful bidder/best proposer we shall submit such data as required for award of the contract within the time limits set forth in the contract specifications unless otherwise specified. In addition, we acknowledge that Minority/Woman-Owned Business Enterprises Contract and Procurement Reports will be submitted to the City for each half year of active construction.*

*We understand that if we are the successful bidder/best proposer and we fail to meet the MBE and/or WBE goals, or fail to demonstrate that we have made the required good faith effort the City can render the bid proposal non-responsive.*

Company Name \_\_\_\_\_ RFP/Contract \_\_\_\_\_

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

Title \_\_\_\_\_

**STATE OF ALASKA  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**DISADVANTAGE BUSINESS ENTERPRISES  
(MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES)  
REPORT OF PARTICIPATION**

Project Name \_\_\_\_\_ RFP/Contract No. \_\_\_\_\_

Company Name \_\_\_\_\_ Prepared By \_\_\_\_\_

The successful bidder/proposer must complete and submit this form after bid time, but prior to contract award. Please list below the name and address of each DBE (MBE/ WBE) subcontractor who will perform work under this contract, along with the contracted amount that will be applicable to the goal. Indicate whether the firm is MBE or WBE, and include your own firm if MBE/WBE eligible. A proposal submitted without adequate MBE/WBE participation or showing of good faith efforts to achieve such participation can render the bid proposal non-responsive. One copy of each executed MBE/WBE subcontract must be provided to the City by the successful prime contractor. Any changes to the list below must have prior approval by the City. Please note, if the MBE/WBE is only certified as a DBE, such as through the Alaska Department of Transportation, and the bidder has exhausted all efforts to determine the subcontractor MBE/WBE status, the bidder may document either category of certification to meet goal objectives.

Firm Name	AK Contractor's License No.	Contact Name & Phone No.	Type of Work	Contract Amount	MBE/WBE
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____
_____	_____	_____	_____	\$ _____	_____

Contract(s) Total: \$ \_\_\_\_\_ MBE/WBE Goal: \_\_\_\_\_ % Achieved: \_\_\_\_\_ % = \$ \_\_\_\_\_

Authorized Representative's Signature \_\_\_\_\_ Date \_\_\_\_\_

## SECTION 00410 - DEC DBE MBE/WBE

**STATE OF ALASKA**  
**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**DISADVANTAGE BUSINESS ENTERPRISES**  
**(MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES)**  
**CONTACT DOCUMENTATION**

Project Name \_\_\_\_\_ RFP/Contract No. \_\_\_\_\_

Company Name \_\_\_\_\_ Authorized Signature/Title \_\_\_\_\_

This form is provided for your convenience to document your efforts in meeting DBE (MBE/WBE) utilization goals. You may use additional sheets if needed. If you do not meet the MBE/WBE goal, you may return this form, or other supporting documentation (explanations, advertising notices, solicitations, etc.) with your MBE/WBE Report of Participation.

Firm _____	MBE _____ WBE _____
Address _____	

Type of Work _____	Bid Amount \$ _____
Dates of Contact _____	_____
Method of Contact _____	_____
Contact's Name _____	_____
Results of Contact _____	_____
If rejected, why _____	_____

Firm _____	MBE _____ WBE _____
Address _____	

Type of Work _____	Bid Amount \$ _____
Dates of Contact _____	_____
Method of Contact _____	_____
Contact's Name _____	_____
Results of Contact _____	_____
If rejected, why _____	_____

Firm _____	MBE _____ WBE _____
Address _____	

Type of Work _____	Bid Amount \$ _____
Dates of Contact _____	_____
Method of Contact _____	_____
Contact's Name _____	_____
Results of Contact _____	_____
If rejected, why _____	_____



**STATE OF ALASKA**  
**MUNICIPAL GRANTS & LOANS**  
**ALASKA CLEAN/DRINKING WATER FUND**  
 USE OF AMERICAN IRON AND STEEL

**From the “Consolidated Appropriations Act, 2014” H.R. 3547**  
 (PL113-76, enacted 1/17/2014) , and as codified under section 608 of the  
 FWPCA (Federal Water Pollution Control Act)

“SEC. 436. (a)(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the “Administrator”) finds that—

- (1) applying subsection (a) would be inconsistent with the public interest;
- (2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
- (3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

(e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds for carrying out the provisions described in subsection (a)(1) for management and oversight of the requirements of this section.

(f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency’s capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.”



**STATE OF ALASKA**  
**MUNICIPAL GRANTS & LOANS**  
**ALASKA CLEAN/DRINKING WATER FUND**  
 USE OF AMERICAN IRON AND STEEL

**CERTIFICATION BY THE OWNER**  
 OF COMPLIANCE WITH THE  
**USE OF AMERICAN IRON AND STEEL LAW**  
 enacted on 1/17/2014

*(To be completed by the duly authorized Utility System representative and  
 provided to the Municipal Grants & Loans (MGL) Program prior to start  
 of construction.)*

We, the Owner (Utility System) named, \_\_\_\_\_, having obtained a loan from the State of Alaska Clean/Drinking Water State Revolving Fund, to fund the Project named \_\_\_\_\_, and identified as Project # \_\_\_\_\_ hereby submit to the MGL Program, certification from each contractor working on the Project that the use of American Iron and Steel in the construction of the Project complies with the law, or that a waiver has been obtained from the U.S. Environmental Protection Agency.

\_\_\_\_\_  
 Signature of Official

\_\_\_\_\_  
 Printed name

\_\_\_\_\_  
 Date

Attachment: Certification by Owner



**STATE OF ALASKA**  
**MUNICIPAL GRANTS & LOANS**  
**ALASKA CLEAN/DRINKING WATER FUND**  
USE OF AMERICAN IRON AND STEEL

**CERTIFICATION BY BIDDER**  
OF COMPLIANCE WITH THE  
**USE OF AMERICAN IRON AND STEEL LAW**  
enacted on 1/17/2014

We, the bidding prime contractor and subcontractors, as named below, hereby certify that all the American iron and steel used in the Project named \_\_\_\_\_, also identified as Project Loan No \_\_\_\_\_ will comply with the Use of American Iron and Steel Law, or obtain the necessary waiver(s) from the U.S. Environmental Protection Agency.

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

\_\_\_\_\_  
Signature of Official                      Printed name                      Date

-----  
Subcontractor Name                      Signature of Official                      Date

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_





**STATE OF ALASKA**  
**MUNICIPAL GRANTS & LOANS**  
**ALASKA CLEAN/DRINKING WATER FUND**  
 USE OF AMERICAN IRON AND STEEL

## *Sample Step Manufacturer Certification*

*(Documentation must be provided on company letterhead)*

Date \_\_\_\_\_

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

Company Address \_\_\_\_\_

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

Subject:

American Iron and Steel Step Manufacturer Certification for  
 Project Name \_\_\_\_\_

I, \_\_\_\_\_ (company representative), certify that the \_\_\_\_\_  
 (melting, bending, coating, galvanizing, cutting, etc.) process for \_\_\_\_\_  
 (manufacturing or fabricating) the following products and/or materials shipped or provided for  
 the project is in full compliance with the American Iron and Steel requirement as mandated in  
 EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Such process took place at the following location: \_\_\_\_\_(address)

If any of the above compliance statements change while providing material to this project we  
 will immediately notify the prime contractor and the engineer.

\_\_\_\_\_  
 Company representative

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Date

SECTION 00430 - EQUAL EMPLOYMENT OPPORTUNITY

STATE OF ALASKA  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

EQUAL EMPLOYMENT OPPORTUNITY  
STATEMENT OF ACKNOWLEDGEMENT

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

PLEASE CHECK THE APPROPRIATE BOXES

THE ☐ Bidder

☐ proposed Subcontractor

hereby CERTIFIES:

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

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

☐ NO (go to PART B)

☐ YES (go to PART C)

**PART B.** The company named below (Part C) has submitted the Standard Report Form 100 this year, or intends to at this time.

☐ NO

☐ YES

NOTE: Bidders and proposed Subcontractors who file Standard Report Form 100 may also be required to file Form CC-257 Monthly Employment Utilization Report if the project has significant financial impact on a community, or the bidder/subcontractor has signed an agreement to do so. At a minimum, the bidder/subcontractor is required to maintain records which reflect the reporting requirements of CC-257. Standard Report Form 100 and instructions may be obtained by writing to:

EEO-1 Joint Reporting Committee  
P.O. Box 19100  
Washington, DC 20036-9100  
Telephone (866) 286-6440  
Email: [el.techassistance@eoc.gov](mailto:el.techassistance@eoc.gov)

**PART C.**

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

\_\_\_\_\_  
Date

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

(\_\_\_\_\_)\_\_\_\_\_  
Telephone No.

\_\_\_\_\_  
Address of Company

\_\_\_\_\_  
Zip Code

\_\_\_\_\_  
Project Name

\_\_\_\_\_  
Contract Number

- Joint Reporting  
Committee
- Equal Employment  
Opportunity Com-  
mission
  - Office of Federal  
Contract Compli-  
ance Programs (Labor)

## EQUAL EMPLOYMENT OPPORTUNITY

### EMPLOYER INFORMATION REPORT EEO-1

Standard Form 100  
REV. 01/2006

O.M.B. No. 3045-0007  
EXPIRES 01/2009  
100-214

#### Section A—TYPE OF REPORT

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

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

(1) ☐ Single-establishment Employer Report

Multi-establishment Employer:

(2) ☐ Consolidated Report (Required)

(3) ☐ Headquarters Unit Report (Required)

(4) ☐ Individual Establishment Report (submit one for each establishment with 50 or more employees)

(5) ☐ Special Report

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

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

1. Parent Company

a. Name of parent company (owns or controls establishment in item 2) omit if same as label

OFFICE  
USE  
ONLY

Address (Number and street)

City or town

State

ZIP code

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

a. Name of establishment

Address (Number and street)

City or Town

County

State

ZIP code

b. Employer identification No. (IRS 9-DIGIT TAX NUMBER)

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

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

- ☐ Yes ☐ No 1. Does the entire company have at least 100 employees in the payroll period for which you are reporting?
- ☐ Yes ☐ No 2. Is your company affiliated through common ownership and/or centralized management with other entities in an enterprise with a total employment of 100 or more?
- ☐ Yes ☐ No 3. Does the company or any of its establishments (a) have 50 or more employees AND (b) is not exempt as provided by 41 CFR 60-1.5, AND either (1) is a prime government contractor or first-tier subcontractor, and has a contract, subcontract, or purchase order amounting to \$50,000 or more, or (2) serves as a depository of Government funds in any amount or is a financial institution which is an issuing and paying agent for U.S. Savings Bonds and Savings Notes?
- If the response to question C-3 is yes, please enter your Dun and Bradstreet identification number (if you have one):

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

# SECTION 00430 - EQUAL EMPLOYMENT OPPORTUNITY

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## Section D-EMPLOYMENT DATA

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

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

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

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

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

## Section F - REMARKS

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

## Section G - CERTIFICATION

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

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

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

## **SECTION 00440 –PREVAILING WAGE RATES – STATE OF ALASKA (SRF) REQUIREMENTS**

Projects receiving State of Alaska Department of Environmental Conservation Revolving Loan Program require Contractors to comply with the Federal and State of Alaska Prevailing Wage Rates. The ADEC Revolving Loan Program requires the Contractor to pay the higher of the prevailing wage rates (Federal or State of Alaska). The required information and documentation for Labor Standards, Reporting, and Prevailing Wage Rate Determinations can be found in Sections 00830 and 00840.

State of Alaska, Department of Labor, Laborers' and Mechanics' Minimum Rates of Pay, AS 36.05.010 and AS 36.05.050, Wage and Hour Administration Pamphlet No. 600, the latest edition published by the State of Alaska, Department of Labor inclusive, are made a part of this contract by reference.

## SECTION 00831 - DAVIS-BACON REQUIREMENTS

### **Wage Rate Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6)**

#### **Preamble**

With respect to the Clean Water and Safe Drinking Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides subgrants or loans to eligible entities within the State. Typically, the subrecipients are municipal or other local governmental entities that manage the funds. For these types of recipients, the provisions set forth under Roman Numeral I, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section I-5.

Occasionally, the subrecipient may be a private for profit or not for profit entity. For these types of recipients, the provisions set forth in Roman Numeral II, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section II-3(ii)(A), below and for compliance as described in Section II-5.

#### **I. Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6) For Subrecipients That Are Governmental Entities:**

The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the FY 2013 Continuing Resolution with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient may contact Lorraine Fleury at [fleury.lorraine@epa.gov](mailto:fleury.lorraine@epa.gov) or at 215-814-2341 of EPA, Region III Grants and Audit Management Branch for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/whd/>

##### **1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.**

Under the FY 2013 Continuing Resolution, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

##### **2. Obtaining Wage Determinations.**

(a) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

## SECTION 00831 - DAVIS-BACON REQUIREMENTS

- (i) While the solicitation remains open, the subrecipient shall monitor [www.wdol.gov](http://www.wdol.gov) weekly to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.
- (ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor [www.wdol.gov](http://www.wdol.gov) on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from [www.wdol.gov](http://www.wdol.gov) into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

### 3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2013 Continuing Resolution, the following clauses:

- (1) Minimum wages.

## SECTION 00831 - DAVIS-BACON REQUIREMENTS

(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 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 (a)(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 § 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 paragraph (a)(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.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, [www.dol.gov](http://www.dol.gov).

(ii)(A) The subrecipient(s), on behalf of EPA, 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 State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative,



## SECTION 00831 - DAVIS-BACON REQUIREMENTS

will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official 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 subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request 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.

(2) Withholding. The subrecipient(s), shall upon written request of the EPA Award Official or 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, all or part of the wages required by the contract, the (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 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

## SECTION 00831 - DAVIS-BACON REQUIREMENTS

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 subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls 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 the weekly payrolls. 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/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 subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, 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 subrecipient(s).

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

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 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;

## SECTION 00831 - DAVIS-BACON REQUIREMENTS

(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 State, EPA 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 or State 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, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, 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 Office of Apprenticeship Training, Employer and Labor Services 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

## SECTION 00831 - DAVIS-BACON REQUIREMENTS

applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, 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 EPA determines may be appropriate, 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.

## SECTION 00831 - DAVIS-BACON REQUIREMENTS

(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 Subrecipient(s), State, EPA, 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.

### **4. Contract Provision for Contracts in Excess of \$100,000.**

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(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 (a)(1) of this section the contractor and any subcontractor responsible therefore 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 (a)(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 (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall 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

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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 (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(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 (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

### 5. Compliance Verification

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or

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subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/contacts/whd/america2.htm>.

### **II. Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6) For Subrecipients That Are Not Governmental Entities:**

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under the FY2013 Continuing Resolution with respect to subrecipients that are not governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient for guidance. If a State recipient needs guidance, the recipient may contact Lorraine Fleury at [fleury.lorraine@epa.gov](mailto:fleury.lorraine@epa.gov) or at 215-814-2341 of EPA, Region III Grants and Audit Management Branch for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/whd/>

**Under these terms and conditions, the subrecipient must submit its proposed DB wage determinations to the State recipient for approval prior to including the wage determination in any solicitation, contract task orders, work assignments, or similar instruments to existing contractors.**

#### **1.\_ Applicability of the Davis- Bacon (DB) prevailing wage requirements.**

Under the FY 2013 Continuing Resolution, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

#### **2. Obtaining Wage Determinations.**

(a) Subrecipients must obtain proposed wage determinations for specific localities at [www.wdol.gov](http://www.wdol.gov). After the Subrecipient obtains its proposed wage determination, it must submit the wage determination to **INSERT STATE CONTACT NAME, EMAIL, and TELEPHONE NUMBER** for approval prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar

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instruments to existing contractors (ordering instruments unless subsequently directed otherwise by the State recipient Award Official.

(b) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

- (i) While the solicitation remains open, the subrecipient shall monitor [www.wdol.gov](http://www.wdol.gov) on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.
- (ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor [www.wdol.gov](http://www.wdol.gov) on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(c) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from [www.wdol.gov](http://www.wdol.gov) into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

### 3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and



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decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2013 Continuing Resolution, the following clauses:

(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 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 (a)(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 § 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 paragraph (a)(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.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, [www.dol.gov](http://www.dol.gov).

(ii)(A) The subrecipient(s), on behalf of EPA, 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 State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

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(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 subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient(s) to the State award official. The State award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official 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 and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request 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.

(2) Withholding. The subrecipient(s) shall upon written request of the EPA Award Official or 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

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working on the site of the work, all or part of the wages required by the contract, the (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 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 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 subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls 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 the weekly payrolls. 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/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 subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, 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 subrecipient(s).

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

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 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 State, EPA 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 or State 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, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, 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 Office of Apprenticeship Training, Employer and Labor Services 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

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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 Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, 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.

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(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 EPA determines may be appropriate, 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 Subrecipient(s), State, EPA, 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.

### **4. Contract Provision for Contracts in Excess of \$100,000.**

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(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.

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(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore 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 (b)(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 (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient shall upon the request of the EPA Award Official or 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 (a)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(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 (b)(1) through (4) of this section.

(c) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

### 5. Compliance Verification

(a). The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

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(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

(c). The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB . In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d). The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.



## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

### **PART 1 – GENERAL**

#### **1.1 GENERAL**

- A. Plant startup is prerequisite to satisfactory completion of the contract requirements and shall be completed prior to substantial completion.
- B. In the absence of specific testing requirements for equipment and systems, this section shall govern. Where provisions of this section conflict with specific testing requirements found elsewhere in these Contract Documents, such specific testing requirements shall govern. Where provisions of this section do not conflict with specific testing requirements found elsewhere in these Contract Documents, the provisions of this section and specific testing requirements found elsewhere shall be considered complementary, and testing requirements in both sections shall apply.
- C. Startup and commissioning activities generally include but may not be limited to the following:
  - 1. Biosolids dryer system and supporting augers, sludge pumps, dose pumps, bagging systems, condenser, thermal fluid heating system, ventilation equipment, and all associated instruments controls, electrical panels.
  - 2. Non-potable water system modifications including pumps, drives, instruments and controls.
  - 3. Thickened waste activated sludge (TWAS) pump system including pumps, drives, instruments and associated controls.
  - 4. Sludge dewatering belt press including the belt press and associated instruments and controls.
  - 5. Sludge dewatering polymer feed system.
  - 6. Odor control systems including the odor control for the new biosolids building and the existing headworks facility.
  - 7. Heating, ventilation and cooling system for the new biosolids building.
  - 8. Lighting controls.
- D. Conduct all tests, check out, startup, and related requirements indicated in the Contract Documents and provide documentation of same to the ENGINEER prior to requesting Substantial Completion from the ENGINEER. Where manufacturer onsite inspections are required before startup, the manufacturer shall furnish a written statement (System Verification) that the installation and check out is complete and proper and that the item(s) are ready for startup.
- E. Startup of the new treatment plant processes requires the combined expertise of the CONTRACTOR, Subcontractors, the ENGINEER, and the OWNER. The CONTRACTOR shall be responsible for coordinating all parties for a successful startup: the ENGINEER and OWNER will be available for technical and operational advice prior to and during startup.
- F. General requirements for startup activities are included in this Section. More specific requirements may also be included in other portions of the Contract Documents.
- G. Temporary facilities may be necessary. If so, CONTRACTOR shall design, provide, operate, and later decommission them.

## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

### **1.2 RELATED SPECIFICATIONS**

- A. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
- B. Division 01 - General Requirements.
  - 1. Section 01 33 00 – Submittal Procedures
- C. Division 21 – Fire Suppression
  - 1. Section 21 13 13 - Wet-Pipe Sprinkler Systems
- D. Division 23 – Heating, Ventilation, and Air Conditioning (HVAC)
- E. Division 26 – Electrical
  - 1. Section 26 09 43 - Network Lighting Controls
- F. Division 28 – Electronic Safety and Security
  - 1. Section 28 46 21 - Digital, Addressable Fire-Alarm System
- G. Division 41 – Material Processing and Handling Equipment
  - 1. Section 41 22 00 - Cranes and Hoists
  - 2. Section 41 22 23.19 – Monorail Hoists
- H. Division 43 – Process Gas and Liquid Handling Equipment
  - 1. Section 43 23 23 – Packaged Booster Pump System
  - 2. Section 43 23 57 – Progressing Cavity Pumps
- I. Division 44 – Air Pollution Control
- J. Division 46 – Water and Wastewater Equipment
  - 1. Section 46 71 16 - Belt Filter Press
- K. Appendix D Dryer System Supplier Installation Checklists and Submittal information

### **1.3 DEFINITIONS**

- A. Biosolids Drying System Supplier: Kruger Inc (See specification section 01 10 00 for Contractor assumption of “Owner’s Contract with Kruger, Inc.)
- B. Contractor Assigned Equipment includes all equipment, valves, motors, transmitters, platforms, piping, or other supplies provided by Kruger or their supplier(s) included in Appendix D.
- C. Commissioning Authority (CxA): The commissioning authority will be representatives from the City and Borough of Juneau.

## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

- D. Commissioning Manager (CxM): A qualified individual appointed by the Contractor to manage the commissioning process on behalf of the Contractor.
- E. Commissioning Plan: A document, developed by the Commissioning Team, that outlines the commissioning process, commissioning scope and defines responsibilities, processes, schedules, develops equipment and system specific checklists and start-up procedures, and the documentation requirement of the Commissioning Process.
- F. Commissioning Team:
  - 1. Members Appointed by Contractor(s): Individuals, each having the authority to act on behalf of the entity he or she represents, organized to implement the commissioning process through coordinated action. The commissioning members appointed by the Contractor shall consist of, but not be limited to, the Project Superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxA.
  - 2. Members Appointed by OWNER: The Project Manager for the OWNER, representatives of the facility's operations and maintenance staff, representatives from the design team.
- G. Commissioning is defined as testing, demonstrations, and other activities as required to achieve Substantial Completion. Commissioning includes System Verification, Functional Performance Testing (FT), and Reliability Acceptance Testing, manufacturer's services, certifications of readiness for testing, and troubleshooting, checkout, and shakedown activities.
- H. OWNER Provided Equipment: The OWNER will purchase and provide certain equipment to the Contractor to install. OWNER provided equipment includes the new belt filter press and a new vertical turbine pump for the non-potable water system.
- I. System Verification is used to document proper installation has been completed before testing of the equipment. This includes checking that all equipment identification labels are attached, all equipment mounting bolts are tight, belts are at the proper tension, lubrication has been completed if necessary, all electrical connections are correct and secure, wire tests have been completed and the I/O has been verified, any required sensors or transmitters are in place and wired to the control panel, and the equipment is installed according to the manufacturer's instructions. The General Contractor will provide documentation that each piece of equipment has been verified for initial start-up testing. This documentation can be the manufacturers installation form with any project specific requirements included. System Verification of all portions of the WORK shall be successfully completed prior to starting Functional Performance Testing.
- J. Functional Performance Testing (FT) is the systematic demonstration through testing and extended operation that major equipment and auxiliary systems, including related components, sub-systems, and systems operate properly and consistent with their intended function. FT involves balancing, adjustments, calibration, loop checks, and loop validation. Functional Performance Testing shall simulate shutdown conditions, failure conditions, power fail and restart, bypass conditions, and failure resets. Systems must be run through all the control system's sequence of operation. Functional Performance Testing will not be considered complete

## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

until successful results and documentation of tests and manufacturer's certifications required by the Contract Documents are submitted and accepted by the ENGINEER.

- K. Reliability Acceptance Testing is the demonstration over an extended period, as stipulated in Section 3.3, that the equipment functions as intended during normal operations in full conformance with the Contract Document.

### **1.4 SUBMITTALS**

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Action Submittals – Require ENGINEER'S responsive action.
  - 1. Commissioning Plan: Not less than 60 Days prior to startup, submit for review a detailed Commissioning Plan. The CONTRACTOR shall revise the Plan as necessary based on review comments. The Plan shall include:
    - a. Schedules for manufacturers' equipment certifications
    - b. Schedules for submitting final Technical Manuals
    - c. Schedule for training the OWNER'S personnel
    - d. All equipment Operation and Maintenance Manuals
    - e. All Testing and Balancing Reports
    - f. System Verification forms used to verify installation
    - g. Functional Performance Testing forms used to record equipment performance
    - h. Description of temporary facilities and schedule for installation and decommissioning them
    - i. List of OWNER and CONTRACTOR-furnished supplies
    - j. Detailed schedule of operations to achieve successful Functional Performance Testing and Reliability Acceptance Testing
    - k. Checklists and data forms for each item of equipment
    - l. Address coordination with the OWNER's staff
    - m. Designate a representative of the CONTRACTOR who has the authority to act in matters relating to startup and has experience in testing the equipment included in the WORK. The Plan shall also designate the roles and responsibilities of any Subcontractors that may be involved in startup activities
    - n. Safety, startup, and testing procedures and proposed inspection and certification forms and records
    - o. Interconnection of new to existing facilities:
      - 1) Date and time frame of proposed shutdown or interconnection, including sequence of events and activities to be conducted
      - 2) A detailed description of sequences and activities for the planned shutdown and interconnection
      - 3) Staff, equipment, and materials that will be at the Site before commencing the shutdown

## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

- 4) Other provisions so that interconnection, testing, and startup will be completed within the planned time
  - 5) Pressure testing of pipes.
2. System Outage Requests: Request for shutdown of existing systems as necessary to test or start up new facilities.
3. Records and Documentation
  - a. Completed System Verification Forms prior to Functional Performance Testing.
  - b. Completed Certification form from Kruger that all Contractor Assigned Equipment has been properly installed and is ready to begin Functional Performance Testing.

### **1.5 CONTRACTOR’S COMMISSIONING RESPONSIBILITIES**

- A. Coordinate with the Drying System Supplier, all subcontractor, equipment suppliers, and systems integrators to verify equipment is properly installed and connected to the control system to allow Functional Performance Testing.
- B. The Contractor shall assign a Commissioning Manager to manage commissioning activities of the Contractor, and subcontractors.
- C. The Contractor shall ensure that the commissioning responsibilities outlined in these specifications are included in all subcontracts and that subcontractors comply with the requirement of these specifications.
- D. The Contractor shall ensure that each installing subcontractor shall assign representatives with expertise and authority to act on behalf of the subcontractor and schedule them to participate in and perform commissioning team activities including but not limited to, the following:
  1. Participate in commission coordination meetings.
  2. Conduct operation and maintenance training sessions in accordance with approved training plans.
  3. Verify that Work is complete and systems are operational including calibration of instrumentation and controls.
  4. Participate in meetings to coordinate Functional Performance Testing.
  5. Provide information to the Commissioning Manager for developing commissioning plans.
  6. Provide technicians familiar with the construction and operation of installed system and who shall develop specific test procedure to conduct Functional Acceptance Testing of installed system.

### **1.6 OWNERS COMMISSIONING RESPONSIBILITIES**

- A. Appoint members to the Commissioning Authority.
- B. Organize and lead the Commissioning Team.

## SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP

- C. Assign operation and maintenance personnel and schedule them to participate in commission team activities including, but not limited to, the following:

1. Coordination meetings.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Witness and assist in Functional Performance Testing.

### 1.7 CONTRACTOR COORDINATION WITH DRYER SYSTEM SUPPLIER

- A. This section specifies the Contractor's responsibilities during testing, training, and commissioning of all mechanical, electrical, and instrumentation equipment associated with Contractor Assigned Kruger Biosolids Drying System and OWNER provided equipment. The Biosolids Drying System Supplier's responsibilities during testing, training, and commissioning of the Contractor Assigned Biosolids Drying System is provided in Appendix D of the Contract documents. All aspects of testing shall be performed jointly by the System Supplier and Contractor, as defined in this section and Appendix D. The Contractor shall coordinate all activities including scheduling with the System Supplier as required to achieve a fully tested and functional System.
- B. The Contractor shall develop and coordinate schedules for all aspects of testing required for Contractor Assigned equipment and OWNER provided equipment with the System Supplier and incorporate the commissioning schedule into the Contractor's construction schedule. The Contractor shall coordinate with the System Supplier to conduct and document field tests (mechanical, control systems, and integrated systems tests) of the Biosolids Drying System and its associated components, including verification of remote Contractor provided equipment operated through or interlocked with the System Supplier control panel. ***The Contractor will be responsible for any additional costs incurred as a result of the site or equipment not being ready per Kruger's site preparation forms, included in Appendix D, or for unsafe conditions.***
- C. The Contractor shall be responsible for providing support systems and labor, under the direction of the System Supplier, to modify, replace, or otherwise correct unsatisfactory installation of the Biosolids Drying System equipment and components during all testing requirements of the Contractor Assigned equipment. The Contractor shall be responsible for performing pressure and/or leakage tests on piping and tanks, electrical tests, and loop and control tests. The Contractor shall be responsible for all costs associated with the installation of Contractor Assigned equipment, failure of equipment and systems provided and installed by the Contractor, and for removal and replacement of defective equipment furnished by the System Supplier. The Contractor shall be responsible for all costs associated with the testing, training, and commissioning.

## PART 2 – PRODUCTS

### 2.1 Test Equipment

- A. The Contractor shall provide all standard and specialized testing equipment required to perform Functional Acceptance Testing.

## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

- B. Data logging equipment and software required to test equipment shall be provided by the Contractor.
- C. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications. If not otherwise noted, the following minimum requirements apply: Temperature sensors and digital thermometers shall have a certified calibration to an accuracy of 0.5°C and a resolution of  $\pm 0.1^\circ\text{C}$ . Pressure sensors shall have an accuracy of  $\pm 2.0\%$  of the value range being measured (not full range of meter).

### **PART 3 - EXECUTION**

#### **3.1 GENERAL**

##### **A. Supplies**

- 1. The CONTRACTOR shall furnish:
    - a. Any required testing equipment.
    - b. Chemicals.
    - c. Fuel.
    - d. Oil and grease.
    - e. Other necessary materials not listed for the OWNER to furnish.
  - 2. The OWNER will furnish:
    - a. Water.
    - b. Power.
- B. Startup Records: The CONTRACTOR shall maintain the following during testing and startup and submit originals to ENGINEER:
- 1. Lubrication and service records for each mechanical and electrical equipment item.
  - 2. Hours of daily operation for each mechanical and electrical equipment item.
  - 3. Equipment alignment and vibration measurement records.
  - 4. Logs of electrical measurements and tests.
  - 5. Instrumentation calibration and testing logs.
  - 6. Testing and validation of SCADA inputs, outputs, logic functions, status indications, and alarms.
  - 7. Factory and field equipment settings.
  - 8. Log of problems encountered and remedial action taken.
  - 9. Other records, logs, and checklists as required by the Contract Documents.

#### **3.2 SYSTEM VERIFICATION**

- A. Completed system verification forms shall be completed prior to Functional Performance Testing by the Contractor for:
  - 1. Sludge pumps

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2. Chemical feed pumps
3. Belt Press
4. NPW Pump
5. Odor control equipment including all fans, mist eliminators, and carbon scrubbers
6. Contractor Assigned Biosolids Drying System Supplier Equipment (See Section B below).
  - a. Wet Cake Hoppers
  - b. Wet Cake Feed pumps
  - c. Dosing Pumps
  - d. Dryer
  - e. Thermal Fluid Skid
  - f. Condenser
  - g. Bagging System
  - h. All conveyors
  - i. All pressure and temperature sensors and transmitters
7. Fuel oil system including the day tank
8. Fire suppression
9. Heat pumps
10. Lighting Controls

- B. The Contractor shall submit a “Notice of Completed Installation” (NOCI) to the System Supplier after completed installation of the Biosolids Drying System. Refer to Appendix D section 2.2 for specific checklists required by the Kruger. The System Supplier shall submit to the Contractor and OWNER written installation certification that equipment and systems comprising the Contractor Assigned equipment have been properly installed. The installation certification shall state that all equipment has been properly installed in accordance with the manufacturer's instructions, that it has been serviced with the proper lubricants, that applicable safety equipment is correctly installed, and that all required electrical and mechanical appurtenances are properly connected. The System Supplier shall confirm that the manufacturer's authorized representative, who issues the installation certification, is qualified in this task. The System Supplier shall be responsible for providing authorized manufacturers' representatives for installation certification of the Contractor's installation of the Contractor Assigned equipment

### **3.3 PREREQUISITES TO FUNCTIONAL PERFORMANCE TESTING**

- A. The Functional Performance Testing (FT) shall start prior to midday on a Monday, Tuesday, or Wednesday. Testing periods shall not include holidays, based on the OWNER's calendar.
- B. The following shall be completed before FT begins.
1. All System Verification forms have been completed and provided to the Commissioning Authority
  2. The Dryer System Supplier has provided written certification per section 3.2 B
  3. All Technical Manual information required by the Contract Documents has been submitted.
  4. Duct work to and from the condenser is tested and is leak proof.



## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

5. Safety equipment, emergency eyewash unit, fire extinguishers, gas detectors, protective guards and shields, emergency repair kits, safety chains, handrails, gratings, safety signs, and valve and piping identification required by the Contract Documents are provided. Devices and equipment shall be fully functional, adjusted, and tested.
6. Manufacturer's certifications of proper installation have been accepted.
7. Leakage tests, electrical tests, and adjustments have been completed.
8. The Commissioning Authority has approved the Commissioning Plan.
9. Temporary facilities are functional, adjusted, and ready for use.
10. All equipment, instrumentation, and control panels shall be permanently installed and wired. All fiber optic and Ethernet cabling must be terminated and tested. Power must be available to allow for testing of all control equipment. Site painting and cleanup shall be completed before Functional Performance Testing of electrical equipment.
11. Individual instrumentation loops (analog, status, alarm, and control) have been verified functionally.
12. Pressure switches, flow switches, timing relays, level switches, vibration switches, temperature switches, RTD monitors, pressure regulating valves, and other control devices to the settings determined by the ENGINEER or the equipment manufacturer have been adjusted and calibrated.
13. Individual interlocks between the field-mounted control devices and the motor control circuits, control circuits of variable-speed controllers, and packaged system controls have been verified.

### **3.4 FUNCTIONAL PERFORMANCE TESTING**

- A. After individual equipment items and subsystems have been tested and certified as required by the Technical Specifications, tests of systems comprised of single or multiple equipment items with appurtenant equipment and instruments and controls shall be conducted. Items of equipment shall be tested as part of a system to the maximum extent possible.
- B. The CONTRACTOR shall demonstrate the manual and automatic modes of operation to verify proper control sequences, software interlocks, proper operation of software logic and controllers, etc. System testing shall include the use of water or other process media, as applicable, to simulate the actual conditions of operation.
- C. Systems testing activities shall follow the detailed procedures and checklists in the Commissioning Plan. Completion of systems shall be documented by a report.
- D. The CONTRACTOR shall demonstrate utility, chemical feed, safety equipment, and other support systems before whole process systems.
- E. Furnish the ENGINEER at least 10 Days written notice confirming the start of Functional Performance Testing.
- F. Startup Sequence: The following identify specific considerations for the respective systems in regards to coordinating with related work.

## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

1. Non-potable Water System Modifications: This work must be completed, tested, accepted before startup and Functional Performance Testing activities can proceed on the belt press and the biosolids dryer.
  2. TWAS Pumps: These pumps will supply the new belt press through a new force main that will also connect to the existing belt press. These pumps can be tested by pumping to the existing belt press. The TWAS pumps must be tested and accepted before testing of the polymer injection system and the belt press can proceed.
    - a. Polymer Injection/Feed System: The polymer feed system will inject polymer into the TWAS pump force main in the SBR building. The polymer feed system must be tested in conjunction with startup of the belt press system. CONTRACTOR to coordinate accordingly with respective manufacturer representatives.
    - b. Belt Press: Testing, startup and acceptance of the belt filter press must be completed prior to startup activities for the biosolids dryer.
    - c. Contractor to coordinate with manufacturer's startup representatives for these three systems to be on site at the same time.
  3. Odor Control and HVAC Systems: The odor control and HVAC systems shall be tested and balanced prior to initiation of sludge processing through the biosolids dryer. This includes the odor control system for the headworks building.
  4. Biocon Dryer & Kruger Scope of Supply:
    - a. Refer to the Appendix D information for the following:
      - 1) Equipment installation instructions
      - 2) Technical instructions for operation and start-up of the system.
    - b. Kruger has included the following days for startup and commissioning of the equipment.
      - 1) Installation, startup and Functional Performance Testing: 15 days.
      - 2) Commissioning (BioCon Optimization) and Reliability Acceptance Testing: 30 days
      - 3) O&M and Process Training: 10 Days
- G. Perform functional performance testing on all equipment including, but not limited to, equipment listed in Section 3.2.
1. Sludge Pumps
    - a. Control of Variable Frequency Drives from maximum to minimum motor speed
    - b. Pressure and flow and variable flows
    - c. Start and stop from Belt Press PLC
    - d. Run dry protection
    - e. Over pressure protection

## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

2. Chemical Feed Pumps
  - a. Control of VFD from 4-20 mA signal
  - b. Pacing of VFD from flow meter
  - c. Pressure Relief Valve function
3. Belt Press
  - a. Autostart procedure
  - b. Emergency Stop function
  - c. Electrical Sensor shutdowns
  - d. Booster pump operation, pressure and flow rate
  - e. Start/Stop of sludge pumps
  - f. Stop on high level signal from 50 cubic yard hopper
4. NPW Pump
  - a. Start/ stop based on pressure transmitter
  - b. VFD speed control
5. Odor Control including
  - a. Test and Balance Report
6. Contractor Assigned Kruger Biosolids Drying System
  - a. Wet Cake Hoppers
    - 1) Operate with sludge feeding from both hoppers
    - 2) Operate with sludge feeding from each hopper separately
    - 3) Mixing screws emergency stop
    - 4) Operate with and without belt press operating
    - 5) Level transmitter function
    - 6) Level switch function
  - b. Wet cake feed pumps and Dosing pumps
    - 1) VFD speed control function
    - 2) Pressure transmitter function –high and low pressure shutoff
  - c. Dryer
    - 1) Verification of temperature switches
    - 2) Verification of sprinkler valves
    - 3) Shutdown and clearance of product from dryer
    - 4) Verify vacuum is maintained inside dryer unit
    - 5) Verification of belt and extraction screw speed feedback
    - 6) Extraction screw emergency stop
    - 7) Verification of pressure transmitters

## **SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP**

- 8) Depositors run forward and reverse
  - 9) Depositors limit switches
  - 10) Verification of moisture content in dried solids
- d. Thermal Fluid Skid
  - 1) Verification of all safeties and interlocks
  - 2) Record and verify all pressure and temperature setpoints
  - 3) Cycle test through normal starting sequence
  - 4) Run through shutdown
- e. Condenser
  - 1) Verify temperature transmitters
  - 2) Verify high level alarms and fan failure status
  - 3) Verify dryer and vacuum fan speed feedback control
  - 4) Duct work is leak proof
- f. Bagging System
  - 1) Verify automatic operation of knifegate valves to control filling of bags
  - 2) Confirm high level alarms
  - 3) Confirm weight readings
- 7. Fuel oil system
  - a. Pump operation on/off levels
  - b. Verify Anti-Siphon Valve Operation
- 8. Fire Suppression
  - a. Test based on NFPA 13, including hydrostatic test, backflow prevention assemblies, pressure reducing valves, waterflow detecting devices including associated alarm circuits.
- 9. Heat Pumps
  - a. Starter operation
  - b. DDC control sequence
  - c. Freeze-up and high discharge temperature
  - d. High and low pressure safety switches
- 10. Lighting Controls
  - a. Infrared occupancy sensors
  - b. Emergency lighting photocells
  - c. Exit sign battery backup

## SECTION 01 75 00 – EQUIPMENT TESTING AND PLANT STARTUP

### 3.2 MALFUNCTIONS

- A. During the extended operational demonstrations, all components, subsystems, systems, and equipment must properly run continuously 24 hours per day at rates indicated by the ENGINEER throughout the test period. Unless indicated otherwise, if any item fails or malfunctions during the test, the item shall be repaired and the test restarted at time zero with no credit given for the operating time before the failure or malfunction. Malfunctions satisfying all 3 of the following conditions will allow the demonstration period to resume at the elapsed time when the malfunction started:
1. Malfunction did not cause any interruption of the continuous operation of any other components, subsystems, systems, and equipment.
  2. Malfunction was corrected without causing or requiring any components, subsystems, systems, and equipment to cease operations.
  3. Malfunction was corrected within one hour of the time the malfunction was detected (the one hour period includes the time required to locate the cause of the malfunction, beginning upon CONTRACTOR'S notification from the ENGINEER that a malfunction has occurred and ending when the item is corrected and the system is successfully placed back into operation).
- B. The CONTRACTOR shall arrange for manufacturer's representatives to visit the Site as often as necessary to correct malfunctions.

### 3.3 RELIABILITY ACCEPTANCE TESTING

- A. Subject to the malfunction criteria above, each system shall be demonstrated for a continuous period as identified in the following table. If any system malfunctions, the item or equipment shall be repaired and the test restarted at time zero with no credit given for the elapsed time before the malfunction.

System	Demonstration Period
Non-Potable Water System	14 days
TWAS Pumps & Polymer Feed System	14 days
Belt Press	14 days
Odor Control & HVAC Systems	14 days
BioCon Dryer	30 days

- B. The CONTRACTOR shall start up the Biosolids plant and operate it without malfunction for a consecutive 30 day period. During the 30 day period, the biosolids plant shall be operated to meet the OWNER'S needs. The dryer is not intended to run nonstop for 30 days. If any equipment item, subsystem, or system malfunctions, the item or equipment shall be repaired and the test restarted at time zero with no credit given for the elapsed time before the malfunction.
- C. The CONTRACTOR shall furnish the ENGINEER at least 10 Days written notice confirming the start of Reliability Acceptance Testing.

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- D. The CONTRACTOR shall furnish the services of manufacturers' representatives, if necessary, to correct equipment malfunctions and assist with the commissioning demonstration.
- E. The OWNER will furnish certified treatment plant operators during the Reliability Acceptance Testing. Certified operators will be under the direct supervision of and be responsible to the OWNER. The CONTRACTOR shall furnish continuous, 24 hour staffing at the facility.
- F. Defects that appear shall be promptly corrected. Time lost for wiring corrections, control point settings, or other reasons that interrupt the test may, at the judgement of the ENGINEER, be cause for extending the demonstration an equal amount of time.
- G. During Reliability Acceptance Testing, the CONTRACTOR shall:
  - 1. Lubricate and maintain equipment in accordance with the manufacturers' recommendations.
  - 2. Perform other activities needed to maintain proper operation of the equipment and systems.
  - 3. Clean or replace strainers, screens, and filter elements.

**END OF SECTION**

## **SECTION 44 30 31 – ODOR CONTROL DUCTWORK**

### **PART 1 – GENERAL**

#### **1.1 DESCRIPTION**

##### **A. Section Includes:**

1. Round and rectangular industrial ductwork.
2. Supports and hangers.
3. Duct sleeves.

#### **1.2 RELATED SPECIFICATIONS**

##### **A. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.**

##### **B. Division 01 - General Requirements.**

1. Section 01 33 00 – Submittal Procedures

##### **C. Division 23 – Heating, Ventilating and Air Conditioning (HVAC)**

1. Section 23 05 93 - Testing Adjusting and Balancing for HVAC

##### **D. Division 40 – Process Interconnections**

1. Section 40 05 05 - Exposed Piping Installation

#### **1.3 REFERENCE STANDARDS**

##### **A. The WORK of this Section shall comply with the current editions of the following codes as adopted by the City and Borough of Juneau Municipal Code.**

1. International Building Code
2. International Mechanical Code

##### **B. Air Movement and Control Association International, Inc. (AMCA)**

1. AMCA 500 – Test Method for Louvers, Dampers and Shutters
2. AMCA 511 – Certified Ratings for Air Control Devices

##### **C. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)**

1. ASHRAE CH 1 – Handbook – Equipment Volume, Duct Construction
2. ASHRAE CH 33 – Handbook – Fundamentals Volume, Duct Design
3. ASHRAE 90.1 – Energy Standard for Buildings Except Low-Rise Residential Buildings

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

1. NFPA 90A – Standard for the Installation of Air Conditioning and Ventilating Systems

## **SECTION 44 30 31 – ODOR CONTROL DUCTWORK**

### **E. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)**

1. SMACNA – Round Industrial Duct Construction Standard
2. SMACNA – Rectangular Industrial Duct Construction Standard

### **F. Underwriters Laboratories (UL)**

1. UL 181 – Factory-made Air Ducts and Connectors

## **1.4 SUBMITTALS**

### **A. Comply with Section 01 33 00 – Submittal Procedures.**

### **B. Action Submittals – Require ENGINEER’S responsive action.**

1. A copy of this Section, addendum updates included, with each paragraph check-marked to indicate compliance or marked to indicate requested deviations.
2. Detail sheets or catalog data showing compliance with this Section.
3. Shop drawings of ductwork layout.

## **PART 2 – PRODUCTS**

### **2.1 GENERAL**

- A. Ductwork shall be fabricated to the configurations and dimensions specified. Dimensions are shown for the inside of the duct.
- B. Ductwork shall be fabricated using the longitudinal welded seam technique.
- C. Flanged joints shall be sealed with closed-cell neoprene gaskets compressed between mating flanges.

### **2.2 DESIGN CRITERIA AND CONSIDERATIONS**

- A. General: Unless otherwise specified, sheet metal gage, reinforcing, hanger and support systems, ductwork joint types and other basic design construction details shall be in accordance with the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Round Industrial Duct Construction Standard and Rectangular Industrial Duct Construction Standard.
- B. System Leakage: All joints shall be sealed as required to limit total system leakage to a maximum of 1 percent of the specified equipment airflows.
- C. Change In Duct Size: Change in duct size shall be made by a uniformly tapering section. The change in direction of the tapering section shall not be more than 1 inch in 5 inches of run, unless otherwise specified.
- D. Bends in Duct: With the exception of mitered bends, all bends in ducts shall have inside radii equal to the duct width or diameter.



## SECTION 44 30 31 – ODOR CONTROL DUCTWORK

E. Duct Sleeves: Whenever ducts extend through concrete or masonry walls, floors or ceilings, they shall be provided with a sleeve as specified in Article 2.5. Concrete inserts shall be provided before pour to support all ductwork under this Section.

F. Requirements of Regulatory Agencies:

1. Ductwork construction, installation, and air system performance shall comply with UMC, ASHRAE CH-1 and CH-33, SMACNA Round Industrial Duct Construction Standards and SMACNA Rectangular Industrial Duct Construction Standards.

### 2.3 MATERIALS

A. For materials of construction reference Section 40 05 05 – Exposed Piping Installation.

### 2.4 JOINTS AND REINFORCING

- A. Transverse stiffeners and joints shall be appropriately spaced to maintain duct cross-section integrity in accordance with SMACNA Round Industrial Duct Construction Standards and Rectangular Industrial Ductwork Construction Standards.
- B. Ductwork shall have continuously welded joints. Joints shall not interfere with airflow in the ducts.

### 2.5 SUPPORTS AND HANGERS

- A. Ductwork shall be supported in accordance with SMACNA Round Industrial Duct Construction Standards and Rectangular Industrial Duct Construction Standards, and at intervals no greater than those indicated in the table below. Supports and hangers shall transmit all ductwork loads into the building structural frame through a system of intermediate beams and struts as necessary to accommodate requirements of these specifications.
- B. The CONTRACTOR shall submit construction details for supports and hangers and its proposed plan for location and type of supports, including location of any required expansion joints. Acceptance of the proposed locations and constructions details by the ENGINEER is required prior to the start of fabrication.
- C. Where supports and hangers are detailed on the Drawings, they shall be provided as shown.
- D. Ductwork Allowable Support Spans:

Inside Dimension - inches	Maximum span, feet
<20	12
24-36	15
42	17
48-54	20
60	22
72	24

## **SECTION 44 30 31 – ODOR CONTROL DUCTWORK**

1. Allowable spans for rectangular ductwork shall use the above table where the Inside Dimension refers to the vertical duct dimension. Allowable spans for round duct shall use the above table where the Inside Dimension refers to the duct diameter.
- E. Hangers and supports shall be lined with 1/8 inch thick neoprene, bonded to the metal hanger or support to cushion the ductwork.
- F. Hangers and supports shall fit the exterior of the duct closely and extend completely around the ductwork. Minimum width shall be the larger of 4 inches or 1/8 of the duct diameter.
- G. Supports shall be designed in accordance with IBC and the seismic loads listed in the Structural drawings.

### **2.6 DUCT SLEEVES**

- A. Sleeve flanges shall not be less than 4 inches wide and shall be installed tight against each side of the barrier. Sleeves shall be 2 inches larger than the duct or external duct insulation. The space between the duct (or insulation) and the sleeve shall be packed with fiberglass or material of original wall. Duct flanges not less than 4 inches wide shall be installed tight against the wall on each side and fastened to the duct sleeves.

### **2.7 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver ducts, fittings, and specials to site using loading methods which do not damage ducts or linings, or coatings.
- B. Duct materials delivered to site will be clearly marked to indicate size, type, class/schedule and coatings.
- C. Until ready for incorporation in the WORK, store on site as recommended by the duct materials manufacturer to prevent damage, undue stresses, or weathering.
- D. Store materials at least 8 inches above ground. Provide sufficient supports to prevent undue bending.
- E. Cover openings in duct, and temporarily seal to protect from contamination.
- F. Protect materials and equipment from damage due to environmental conditions. Use protective cover, and protect from surface water by elevating above floor or surrounding grade.
- G. Protect unfinished WORK at end of each workday from damage, contamination and moisture by use of plugs, caps or covers.
- H. Protect ducts and valves from damage pending performance of system tests.
- I. Use proper implements, tools, and facilities for the proper protection of the duct. Exercise care in the installation so as to avoid damage to duct, linings, and coatings.
- J. Inspect each duct and accessory prior to installation. Do not install damaged duct or duct with damaged protective coatings or linings.

## **SECTION 44 30 31 – ODOR CONTROL DUCTWORK**

- K. Prevent entry of foreign matter during handling, assembling, and installation. Use compressed air, wire brush, solvent and other acceptable means to remove all foreign matter from inside of duct prior to installation. Remove residual scale, dirt and other foreign matter from interior of ducts before final connections are made.

### **PART 3 – EXECUTION**

#### **3.1 INSTALLATION**

- A. Ductwork shall be installed in accordance with SMACNA and NFPA. All ductwork indicated on the drawings is schematic. Therefore, changes in duct size, duct configuration, and location may be necessary to conform to field conditions.
- B. Ductwork and accessories shall be installed to provide a system free from buckling, warping, breathing, and vibration. Ductwork installation shall permit installation of other required services without piercing, crimping, or reducing duct sizes. The inside of all ducts visible through grilles and registers shall be painted flat black.
- C. All ductwork shall be made airtight. Flanged joints shall be sealed with closed-cell neoprene gaskets compressed between mating flanges.
- D. All duct fittings shall be fabricated with continuously welded seams and joints.
- E. Should field inspection determine that deviations from these specifications have been made; the CONTRACTOR will be directed to bring the installation into compliance at the CONTRACTOR's expense.

#### **3.2 TESTS**

- A. Tests shall be as specified in Section 23 05 93 – Testing, Adjusting and Balancing for HVAC. Duct test holes with patches in ducts shall be provided where directed or necessary for testing and balancing purposes.

**END OF SECTION**