



City of
Evans, Colorado

Contract Documents and Specification for

**Evans Emergency Generators
Installation**

July 28, 2015

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CONTRACTING PROCEDURES

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1.1 ADVERTISEMENT FOR BIDS

The City of Evans, Colorado will receive sealed bids for the following projects:

Emergency Generator at Evans Operation Center and Evans Fire station 2.

Bids will be received by the City Clerk at 1100 37th Street, Evans, Colorado, until **11:00 A.M.** on **August 20, 2015** at which time said bids will be publicly opened in the City Clerk's Office.

A **mandatory** pre-bid meeting will be held for these projects at the **Evans Fire station 2, 2100 37th, Evans, Colorado on August 17, 2015 at 9:00 A.M.**

This project consists of two smaller projects; **Project A** will be known as Evans Public Works Operation Center, whereas **Project B** will be known as Evans Fire Station 2. Both **Projects A** and B include but are not limited to installing one emergency generator to the Public Works Operation center and one emergency generator at Evans Fire Station 2. This project includes the purchasing and installation of specified generators, installing natural gas line to new generator; installing auto-transfer switch; complete all electrical work from the generator, auto-transfer switch to the facilities electrical panels; prepping the ground for the installation for a generator pad, where needed; Contractors needed to obtain all appropriate building permits and schedule inspections; both fuel pumps at the Public Works Operation Center must be able to run-off the emergency generator.

Copies of the contract documents may be obtained at the Evans Community Complex.

All bids and work completed must be in accordance with **FEMA** and **Davis Bacon** requirements, see project specifications for more information.

The Evans City Manager reserves the right to reject any or all bids, to waive any informalities in bids, and to accept the bid that is in the best interests of the City of Evans, Colorado.

CITY OF EVANS, COLORADO

By:_
David Burns
Emergency Management Coordinator

1.2 Released on **July 28th, 2015**

INFORMATION FOR BIDDERS

1.2.1 OWNER

The OWNER of this project is the City of Evans, 1100 37th Street, Evans, Colorado 80620; phone number (970) 475-1113 and fax number (970) 330-3472.

1.2.2 ENGINEER

The awarded contractor must engineer and draw up as-built drawings for both projects. Drawings must be submitted them to the City of Evans Building Department and the City of Evans Project Manager for approval. The City of Evans Project Manager is **David Burns**, phone number **(970) 475-1199**.

1.2.3 BID SUBMITTAL

Bids will be received by the City Clerk of Evans, Colorado (herein called the "CITY"), at Evans Community Complex, 1100 37th Street, Evans, CO 80620 until **11:00A.M.** on **August 20, 2015**, and then at said place publicly opened and read aloud.

1.2.4 BID SUBMITTAL

A **mandatory** pre-bid meeting will be held for both projects. The pre-bid meeting will take place at the Evans Fire station 2, **2100 37th, Evans, Colorado** on **August 17, 2015 at 9:00 A.M.** and at **City of Evans Public Works Operation Center 1958 40th street**, Evans, Colorado, **immediately following the meeting at Evans Fire Station 2.**

Each Bid must be submitted in a sealed envelope, addressed to:

City Clerk
City of Evans
1100 37th Street
Evans, CO 80620

Each sealed envelope containing a bid must be plainly marked on the outside as bid for

Evans Emergency Generator Projects

and the envelope should bear on the outside the name of the bidder, their address, and the name of the project(s) for which the bid is submitted. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to: City Clerk, City of Evans, 1100 37th Street, Evans, CO 80620.

All bids must be made on the required bid sheet. All blank spaces for bid prices must be filled in, in ink or typewritten, and the bid sheet must be fully completed and executed when submitted. Only one copy of the bid sheet is required.

1.2.4 INFORMALITIES

The CITY may waive any informalities, minor defects, or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. In the event of strikes, wars, acts of God or other good cause as determined by the City Manager, bid openings may be extended for a reasonable time not to exceed thirty calendar days. No bidder may withdraw a bid within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot reasonably be awarded within the specified period, the time may be extended by mutual agreement between the CITY and the bidder.

1.2.5 CONDITIONS OF WORK

Bidders must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule(s) by examination of the site and such other actions as the bidder deems necessary. After bids have been submitted, the bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done.

The CITY shall provide to any and all bidders, prior to bidding, all information that is pertinent to and delineates and describes the land owned and rights-of-way acquired upon request.

The Contract Documents contain the provisions required for the construction of the project. Information otherwise obtained from an officer, agent or employee of the CITY or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

1.2.6 BID SECURITY

Each bid must be accompanied by a Bid Bond payable to the City for five percent of the total amount of the bid. As soon as the bid prices have been compared, the CITY will return the bonds of all except the three lowest responsible bidders within three days after the date of the bid opening. When the Agreement is executed, the Bid Bonds of the two remaining unsuccessful bidders will be returned. The Bid Bond of the successful bidder will be retained until the Agreement, Payment Bond and Performance Bond have been executed and approved, after which it will be returned.

A Performance Bond in the amount of 115 percent of the Contract Price and Payment Bond in the amount of 100 percent of the Contract Price, each with a corporate surety approved by the CITY or other form approved by the City, will be required for the faithful performance of the contract.

1.2.7 POWER OF ATTORNEY

Attorneys-in-fact who sign the Bid Bonds or Payment Bonds and Performance Bonds must file with each bond a certificate and effective dated copy of their Power of Attorney.

1.3 AWARD OF CONTRACT

The party to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date when Notice of Award is delivered to the bidder. The Notice of Award shall be accompanied by the necessary Agreement. In case of failure of the bidder to execute the Agreement and to furnish said Bonds and Certificates, the CITY may at its option, consider the bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the CITY. The CITY will be entitled to such other rights as may be granted by law.

The CITY within fourteen (14) days of receipt of acceptable Performance Bond, Payment Bond Certificates of Insurance and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the CITY not execute the Agreement within such period, the bidder may, by written notice, withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the CITY.

The Notice to Proceed shall be issued within ten (10) days of the execution of the Agreement by the CITY or as otherwise stated in the Special Conditions. Should there be reasons why the

Notice to Proceed cannot reasonably be issued within such period, the time may be extended by mutual agreement between the CITY and the CONTRACTOR. If the Notice to Proceed has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The CITY may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the CITY all such information and data for this purpose as the CITY may request. The CITY reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the CITY that such bidder is qualified to carry out the obligations of the Agreement and to complete the work contemplated therein. The CITY reserves the right to reject any conditional or qualified bid.

The CONTRACTOR shall commence work not later than fifteen (15) calendar days after date of the Notice to Proceed issued by the CITY to the CONTRACTOR and shall complete the work as specified, within the time specified in the contract. In the event no written Notice to Proceed is issued by the CITY, the contract time as specified in the contract shall be counted from the first day of actual work on the project. All work shall be prosecuted in an orderly and diligent manner. The CONTRACTOR shall cooperate with, and conform to, the request of the CITY to expedite particular portions of the work or to suspend or transfer its operations on any portion of the work where such alteration of the CONTRACTOR's operations is deemed advisable by the CITY.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.

Each bidder is responsible for inspecting the site and informing himself of the conditions under which the work is to be performed and for reading and being thoroughly familiar with the contract documents. The bidder's inspection shall cover the ground, structure, obstacles which may be encountered, location of water tables, and other matters relevant to the work both above and below ground. Where test boring logs, indicating underground conditions, are shown on the drawings, this data is for the bidder's information and to reflect the conditions observed at the time and place of drilling. The CITY shall be held responsible for any variance or deviation from the data shown on the drawings, as encountered during actual construction. The failure or omission of any bidder to do any of the foregoing shall in no way relieve any bidder from any obligation in respect to their bid. The successful bidder will not be allowed any extra compensation in the form of contract price or time by any matter or thing on which they could have fully informed the CITY of prior to the bidding.

The successful bidder shall supply the names and addresses of major material suppliers and subcontractors when requested to do so by the CITY.

All bidders will provide the CITY of Evans with a current list of references of previous work performed in this field.

The OWNER reserves the right to reject any or all bids, pass upon the regularity or waive any irregularities of the bidders. The OWNER may also determine the acceptability of any surety offered.

If Bid Schedules are set forth in the Proposals, the CONTRACTORS must bid on all the Schedules. The CONTRACTOR'S bid considered for award shall be for the combined low bid for the Base Bid and Force Account.

Portions of any project may have been termed "Alternates or Contingent" and the OWNER reserves the right to include or remove any or all of these Alternates from the Contract.

1.3.1 CONSIDERATION OF PROPOSALS:

After the proposals are opened and read, they will be compared on the basis of the summation of the products of the approximate quantities shown in the bid schedule by the unit bid prices. The results of such comparisons will be immediately available to the public. In the event of a discrepancy between unit bid prices and extensions, the unit bid price shall govern.

The right is reserved to reject any or all proposals, to waive technicalities or to advertise for new proposals, if in the judgment of the awarding authority the best interests of the CITY will be promoted thereby.

1.3.2 Condition of Award:

The awarded contract, if awarded, will be made within 30 calendar days after the opening of the proposals. The contract award will go to the lowest responsible qualified bidder whose proposal complies with all the requirements prescribed and is determined by the CITY to be in the best interests of the CITY. The successful bidder will be notified, by letter mailed to the address shown on their proposal, that their bid has been accepted and that they have been awarded the contract.

1.3.3 CANCELLATION OF AWARD:

The CITY reserves the right to cancel the award of any contract at any time before the execution of said contract by all parties without any liability against the CITY.

1.3.4 EXECUTION AND APPROVAL OF CONTRACT:

The Contract shall be signed by the successful bidder and returned, together with required attachments outlined in Section 1.5.7. All documents will be executed in triplicate and shall be submitted to the CITY within 10 calendar days after the date of award. If the signed Contract and Bond is returned by the successful bidder within 10 calendar days after award and if the Contract is not executed by the CITY within 60 days from date of award, the bidder shall have the right to withdraw his bid without penalty. No Contract shall be considered effective until it has been fully executed by all of the parties thereto.

1.3.5 FAILURE TO EXECUTE CONTRACT:

Failure to execute the Contract and file acceptable bonds within 10 calendar days after the date of award shall be just cause for the cancellation of the award. The forfeiture of the proposal guaranty which shall become the property of the CITY. The CITY may elect to waive forfeiture of the proposal guaranty only if it is determined that the bidder has made a good faith remedial error and that no damages were sustained by the CITY. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised and constructed under contract or otherwise, as the CITY may decide.

1.4 THE CONTRACT: FOLLOWING EXECUTION

1.4.1 MATERIALS:

Unless otherwise stipulated, the CONTRACTOR shall provide and pay for all materials, labor, water, tools, equipment, light power, transportation, and other facilities necessary for the execution and completion of the work. The CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials.

1.4.2 PROGRESS SCHEDULE:

The CONTRACTOR shall submit, schedules which shall show the proposed order in which they proposes to carry on the work and dates at which the CONTRACTOR will start or end each phase of the work. The Special Conditions or Drawings may require that certain phases or parts of the work be completed first or in a certain order. If the CONTRACTOR elects to use PERT or CPM charts, they shall furnish original copies of them and all revisions or amendments thereto as the work progresses to the CITY's upon request.

1.4.3 ASSIGNMENT OF CONTRACT:

No assignment by the CONTRACTOR of this contract or the funds received thereunder by the CONTRACTOR will be recognized unless such assignment and the surety has been given due notice of such assignment and has been furnished written consent of approval by the CITY. Such written approval by the CITY shall not relieve the CONTRACTOR of the obligations incurred by it under the terms of this contract. In addition to the usual recitals in assignment contracts, the following language must be set forth:

It is agreed that the funds to be paid to the assignee under this assignment are subject to a prior lien for services rendered or materials supplied for the performance of the work called for in said contract in favor of all persons, firms, or corporations rendering such services or supplying such materials."

1.4.4 SUBLETTING OF CONTRACT:

The CONTRACTOR shall as soon as practical after signing the contract, notify the City Project Manager in writing, with the names and qualifications of all subcontractors proposed for work and shall not employ any that the CITY may within a reasonable time object to. The CONTRACTOR will not be allowed to subcontract more than fifty percent (50%) of the total monetary value of the contract without prior written approval of the OWNER. The CONTRACTOR shall notify the CITY of each subcontract they awards, giving:

- A. Name, address, and telephone number of the subcontractor
- B. Branch of work covered
- C. Total price of subcontract
- D. Date of subcontract

Subcontractors, before commencing work, must file with the CITY satisfactory certificates in duplicate showing insurance coverage. Failure of the subcontractor to provide such certificates shall not relieve the CONTRACTOR of his obligation to insure and to hold the CITY harmless. Subcontractors shall also file with the CITY PROJECT MANAGER copies of applicable permits and licenses required to do the subcontracted work.

1.4.5 OTHER CONTRACTS:

The CITY may award other contracts for additional work, and the CONTRACTOR shall fully cooperate with such contractors and carefully fit ITS own work to that provided under the other contracts as may be directed by the CITY. The CONTRACTOR shall not commit or permit any act that will interfere with the performance of work by any other contractor.

1.5 CONTRACT DOCUMENTS

1.5.1 NON-COLLUSION STATEMENT

_____, being first duly sworn, deposes and says
that:

- (1) He/she is the _____ of _____
(owner, partner, officer, representative or agent)
_____, the
(Company's Name)
bidder that has submitted the attached bid;
- (2) He/she is fully informed respecting the preparation and contents of the attached bid and of all pertinent circumstances respecting such bid;
- (3) Such bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the contract for which the attached bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the attached bid or of any other bidder, or to fix any overhead, profit or cost element of the bid price or the bid price of any unlawful agreement any advantage against the City of Evans or any person interested in the proposed contract; and
- (5) The price or prices quoted in the attached bid are fair and proper and are not tainted by a collusion, conspiracy, connivance, or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signed: _

Title: _

Subscribed and sworn to before me this _____ day of _____, A.D., **2015**.

Notary _____ Public_____
My Commission expires: _

1.5.2 BID PROPOSAL

Evans Emergency Generator Project

Proposal of _____ (hereinafter called bidder),
doing business as * _____ organized and existing
under the laws of the State of _____, to the City of Evans (hereinafter
called CITY).

In compliance with your Advertisement for Bids, bidder hereby proposes to perform all work for the **Evans Emergency Generator Projects** in strict accordance with contract documents, within the time set forth therein, and at prices stated below.

By submission of this bid, each bidder certifies, and in cases of a joint bid, each party hereto certifies as to their own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid with any other bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date specified in the Special Conditions. Bidder further agrees to pay liquidated damages as provided in the Special Conditions.

Bidder acknowledges receipt of the following Addendum:

Bid shall include all applicable permits, licenses, taxes and fees.

Bidder agrees to perform all work described in the contract documents in accordance with the attached Bid Schedule.

* Insert "a Corporation", "a Partnership", or "an Individual" as applicable.

BID SCHEDULE EVANS EMERGENCY GENERATOR PROJECTS

Item	Description	Quantity	Units	Unit Cost	Total
EVANS EMERGENCY GENERATOR PROJECT A (PUBLIC WOKS OPERATION CENTER)					
1	Furnish and install (1) new 130KW Natural Gas 120/208V 3 Phase Generator. (with batteries)	1	EA		
2	Furnish and install (1) new 400A 120/208V 3 Phase 4 wire, open transition, NEMA 3R, automatic transfer switch.	1	EA		
3	Intercept load side of existing 400A service and re-route to new transfer switch.	1	EA		
4	Furnish and install conduit and wiring from existing service to new ATS, from ATS to new generator and from ATS to existing tap box.	1	EA		
5	Furnish and install remote annunciator for new generator system.	1	EA		
6	New concrete pad for 130KW generator	1	EA		
7	Trenching and backfill for electrical installations	1	EA		
8	As built drawings engineered stamped	1	EA		
9	Install natural gas line from gas meter to new generator.	1	EA		

Subtotal \$

Item	Description	Quantity	Units	Unit Cost	Total
EVANS EMERGENCY GENERATOR PROJECT B (EVANS FIRE STATION 2)					
1	Furnish and install (1) new 200KW Natural Gas 120/240V 1 Phase Generator.	1	EA		
2	Furnish and install (1) new 800A 120/240V 1 Phase 3 wire, open transition, NEMA 3R, service rated automatic transfer switch.	1	EA		
3	Intercept load side of existing 800A service and re-route to new transfer switch.	1	EA		
4	Furnish and install conduit and wiring from existing service to new ATS, from ATS to new generator and from ATS to existing tap box.	1	EA		
5	Trenching, backfill and compaction for conduits, and wiring installed from existing service to existing concrete pad that generator will sit on.	1	EA		
6	Furnish and install remote annunciator for new generator system.	1	EA		
7	Demo existing manual transfer switch feeding current EM Panel.	1	EA		
8	Re-work existing wiring so that existing EM panel is fed directly from MDP which will be backed up by new generator system.	1	EA		
9	Installation of j –box on exterior of building to reconnect panel to MDP.	1	EA		
10	As built drawings engineered stamped	1	EA		
11	Install natural gas line from gas meter to new generator.	1	EA		
12	Demo existing mobile back-up generator.	1	EA		

Subtotal	\$
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Grand Total	
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Notes:

- Pre-bid meeting is **mandatory**.
- All materials shall be delivered to the appropriate addresses below:
 - **Project A:** City of Evans Public Works Operation Center 1958 40th Street, Evans, Colorado 80620
 - **Project B:** Evans Fire Protection District Station 2, 2100 37th Street, Evans, Colorado 80620
- All materials shall be inspected upon arrival and any damage prior to delivery will be the responsibility of the manufacturer/seller.
- All works shall be in conformance with the current City adopted codes (International Building Code 2012, International Plumbing Code 2012, International Mechanical Code 2012, International Fire Code 2012, and the National electrical Code 2011)

Base Bid – Grand Total:

\$.

The undersigned, if awarded the Contract, at the prices shown in the bid, agrees that the work will be substantially completed on or before January 15, 2016 and completed and ready for final payment on or before January 31, 2016.

Date _____

Company

Official Address:

Signature

Title

1.5.4 BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,
_____ as Principal, and _____ surety, are hereby
held and firmly bound unto the City of Evans in the penal sum of (\$ _____) for the
payment of which, well and truly to be made, we hereby jointly and severally bind
ourselves, successors and assigns.

Signed this _____ day of _____, 2015.

The condition of the above obligations is such that whereas the Principal has submitted to
the City of Evans a certain bid, attached hereto and hereby made a part hereof, to
enter into a contract in writing, for the

Evans Emergency Generator Projects

NOW THEREFORE,

- (A) If said bid shall be rejected, or in the alternate,
- (B) If said bid shall be accepted and the Principal shall execute and deliver a
contract in the form of contract attached hereto (properly) completed in
accordance with said bid and shall furnish a bond for his faithful performance of
said contract, and for the payment of all persons performing labor or furnishing
materials in connection therewith, and shall in all other respects perform the
agreement created by the acceptance of said bid,

then this obligation shall be void, otherwise, the same shall remain in force and effect; it
being expressly understood and agreed that the liability of the Surety for any and all claims
hereunder, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations by any
extension of the time within which the CITY may accept such bid; and said Surety does
hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunder set their hands
and seals, and such of them as are corporations have caused their corporate seals to
be hereto affixed and these presents to be signed by their proper officers, the day and
year first set forth above.

Principal

Surety

By: _

1.5.5 NOTICE OF AWARD

TO: -

PROJECT DESCRIPTION: **Evans Emergency Generator Projects**

The CITY, represented by the undersigned, has considered the bid submitted by you for the above described work in response to its Advertisement for Bids dated **July 28th, 2015.**

You are hereby notified that your bid has been accepted for **Evans Emergency Generator Projects** in the amount of **{Bid Amount}**.

You are required by the Information for Bidders to execute the Agreement and furnish the required Contractor's Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date of this Notice to you. If you fail to execute said Agreement and to furnish said bonds and certificates within ten (10) days from the date of this Notice, said CITY will be entitled to consider all your rights arising out of the CITY's acceptance of your bid as abandoned and as a forfeiture of your Bid Bond. The CITY will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the CITY.

Dated this day of **2015.**

The City of Evans
(CITY)

By: _
Title: Emergency Management Coordinator

1.5.6 ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged on this, the day of_
- **{Year}**.

By: _

Title: _

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (circular 570 as amended) and be authorized to transact business in the State of Colorado.

1.5.7 AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 2015, between the City of Evans, hereinafter called "CITY", and _____, doing business as hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the phased construction of **Evans Emergency Generator Projects.**
2. The CONTRACTOR shall furnish all material, supplies, tools, equipment, labor, permits, and other services necessary for the construction and completion of the project described herein.
3. The CONTRACTOR shall commence the work required by the Contract Documents in accordance with the date stated in the Special Conditions and shall complete the work within the time stated in the Special Conditions unless the period for completion is extended otherwise by the Contract Documents.
4. The CONTRACTOR agrees to perform all the work described in the Contract Documents and comply with the terms therein for the sum of **{Project Amount}** for the **Evans Emergency Generator Projects.**
5. The term "Contract Documents" means and includes the following:
 - (A) Advertisement for bids
 - (B) Information for Bidders
 - (C) Non-Collusion Statement
 - (D) Bid Proposal
 - (E) Bid Schedule
 - (F) Bid Bond
 - (G) Notice of Award
 - (H) Acceptance of Notice
 - (I) Agreement
 - (J) Payment Bond
 - (K) Performance Bond
 - (L) Certificate of Incorporation
 - (M) Certificates of Insurance
 - (N) Notice to Proceed
 - (O) Special Conditions
 - (P) General Conditions
 - (Q) Technical Provisions
 - (R) Drawings
 - (S) Change Order
 - (T) Addendum

No. _____, dated _____, 2015
No. _____, dated _____, 2015

No. _____, dated _____, 2015
(U) Notice of Contractor's Settlement
(V) Final Receipt and Guarantee
(W) Other

6. The CITY will pay the CONTRACTOR in the manner and at such time as set forth in the General Conditions, such amounts required by the Contract Documents.
7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement, each of which shall be deemed an original on the date first written above.

THE CITY OF EVANS

CONTRACTOR

BY
NAME John Morris
TITLE Mayor

BY _
NAME _
TITLE _
ADDRESS _

(SEAL)

ATTEST:

ATTEST:

NAME
TITLE

NAME _
TITLE _

APPROVED AS TO FORM:

Evans City Attorney

APPROVED AS TO SUBSTANCE

Evans City Manager

1.5.8 PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, Corporation, Partnership or Individual

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto the City of Evans, 1100 37th Street, Evans, Colorado 80620, hereinafter called CITY, in the penal sum of \$ _____ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly, severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain Contract with the CITY, dated the _____ day of _____, **2015**, a copy of which is hereto attached and made a part hereof for the construction of:

Evans Emergency Generator Projects

NOW, THEREFORE, if the Principal shall well, truly, and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the CITY, with or without notice to the Surety and during the two-year guarantee period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the CITY from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the CITY all outlay and expense which the CITY may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any ways affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the CITY and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed this _____ day of _____, 2015.

ATTEST:

Principal

Principal Secretary

By _____ (S)

(SEAL)

Witness as to Principal

Address

ATTEST:

Surety Secretary

(SEAL)

Witness as to Surety

By _____
Attorney-in-Fact

Address

Address

NOTE: Date of bond must not be prior to date of contract. If CONTRACTOR is a partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (circular 570, as amended) and be authorized to transact business in the state where the project is located.

1.5.9 PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

Name of Contractor

Address of Contractor

a _____ hereinafter called Principal, and
Corporation, Partnership or Individual

Name of Surety

Address of Surety

hereinafter called Surety, are held and firmly bound unto the City of Evans, 1100 37th Street, Evans, Colorado 80620 hereinafter called "CITY", in the penal sum of \$ _____ in a lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the CITY, dated the _____ day of _____ 2015, a copy of which is hereto attached and made a part hereof for the construction of:

Evans Emergency Generator Projects

NOW, THEREFORE, the Principal shall, during the entire length of said contract and any extension thereof, promptly make payments to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof. Including all amounts due for materials, lubricants, oil, gasoline, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work. All insurance premiums on said work, and for all labor performed in such work whether by subcontractor or otherwise. If Principal fails to make any payments identified above, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract shall in any way affect its obligation on time.

PROVIDED, FURTHER, that no final settlement between the CITY and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ (number) counterparts, each one of which shall be deemed an original, this the _____ day of **2015**.

ATTEST:

Principal

Principal Secretary

By _____ (S)

(SEAL)

Witness as to Principal

Address

ATTEST:

Surety Secretary

(SEAL)

Witness as to Surety

By _____
Attorney-in-Fact

Address

Address

NOTE: Date of bond must not be prior to date of contract. If CONTRACTOR is a partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds for must appear on the Treasury Department's most current list (circular 570, as amended) and be authorized to transact business in the state where the project is located.

1.5.10 NOTICE TO PROCEED

TO: _____

DATE: _

Project: **Evans Emergency Generator Projects**

You are hereby notified to commence work in accordance with the Agreement dated **{Agreement Date}**, on or before **{Start Date}**, and the date of Substantial Completion is _____, and the date of readiness for final payment is _____ [(or) the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

THE CITY OF EVANS

By David Burns

Title Emergency Management Coordinator

1.5.11 ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged by

this the _____ day of _____, **2015.**

By _

Title_

1.5.12 CHANGE ORDER

CHANGE ORDER NO. _
DATE: _

PROJECT: **Evans Emergency Generator Projects**

TO (CONTRACTOR): _

JUSTIFICATION: _

You are directed to make the following changes in the work. All other terms and conditions of the contract not expressly modified hereby shall remain in full force and effect.

The original contract sum was	\$ _
Net change by previous change orders	\$ _
The contract sum prior to this Change Order was	\$ _
The contract sum will be (increased) (decreased) or (unchanged) by this Change Order	\$ _
The contract sum including this Change Order will be	\$ _
The new contract time will be (increased) (decreased) or (unchanged) by () days.	

The date of completion as of the date of this Change Order is therefore , **2015.**

ACCEPTED BY:

ORDERED BY:

Contractor

The City of Evans
1100 37th Street
Evans, CO 80620

Address

By

By _

Date

Date _

1.5.13 NOTICE OF CONTRACTOR'S SETTLEMENT

This is to notify all persons interested that the City of Evans, Colorado will make final payment to **{Contractor's Name}** for work completed on **Evans Emergency Generators Projects**

Said final payment will be made on **{Final Payment Date}**.

Anyone having claims in conjunction with this project may file same with the undersigned no later than **{Wednesday Before Final Payment Date}**.

CITY OF EVANS

By _
David Burns, Emergency
Management Coordinator

Dated: **July 28, 2015**

1.5.14 FINAL RECEIPT AND GUARANTEE

CITY OF EVANS

Date:

Received this date of {Final Payment Date}, as full and final payment of the cost of improvements provided in the Contract executed by {Contractor's Name} and Payee on or about {Agreement Date}. Together with all amendments, change orders, and additions thereto, the sum of (\${Final Payment Amount}). The final payment includes the full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals. An additional consideration of One Dollar (\$1.00) for the execution hereto, and the undersigned hereof releases the City of Evans from any claims whatsoever resulting from said contract and all work performed thereunder.

The undersigned by these present certifies that all persons doing work upon or furnishing materials for said improvements under the foregoing contract and all additions have been paid in full. The undersigned further certifies that all work has been completed in a workmanlike manner in conformity with the plans and specifications. That should any portion of said work or material prove defective within **two (2) years** from the date of initial acceptance of the entire project by the CITY, the undersigned shall replace any such defective material and remedy any such defective work to the satisfaction of the City of Evans and shall defend, indemnify, expenses, and charge of every kind which may arise as a result of any such defective material and workmanship during said period. **The Performance and Payment Bonds for this contract shall remain in effect for the period of the guarantee.**

Evans Emergency Generator Projects

Signature: _

Name: _

Title: _

1.6 INSURANCE REQUIREMENTS

The CONTRACTOR shall secure and maintain insurance policies that will protect itself, its subcontractors, and the City of Evans, from claims for bodily injuries, death or property damage, which may arise from operations under this contract. Whether such operations be by the CONTRACTOR or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:

- (a) Statutory Worker's Compensation
- (b) Commercial General Liability
 - General Aggregate \$1,200,000
 - Products/ (Completed Operations Aggregate) \$1,200,000
 - Each Occurrence \$ 900,000
 - Personal & Advertising Injury \$ 900,000
 - Fire Damage \$ 50,000
 - Medical Expense \$ 5,000
- (c) Automobile Liability
 - Bodily Injury and Property Damage/ (Combined Single Limit) \$ 900,000
- (d) Builders Risk/Installation Floater Full Replacement Cost
Be written on a Builder's Risk "All-Risk" or on Peril or Special Causes of Loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, false work, and Work in transit and shall insure against at least the following perils: fire, lightning, extended coverage, theft, vandalism and malicious mischief, collapse, debris removal, demolition occasioned by enforcement of laws and regulations, water damage.

The Certificate of Insurance must show the City of Evans, as Additional Insureds.

All policies shall be for not less than the amounts set forth above or as stated in the Special Conditions. Other forms of insurance shall also be provided if called for by the Special Conditions.

Certificates or copies of policy of such insurance shall be filed with the CITY and shall be subject to its approval as to adequacy of protection, within the requirements of the specifications. Certificates of Insurance shall contain a 30-day written notice of cancellation in favor of the CITY.

ARTICLE 2.0

GENERAL CONDITIONS

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2.1 DEFINITIONS

- (a) The Contract Documents shall consist of the Advertisement for Bids, Information for Bidders, Non-Collusion Statement, Bid Proposal, Bid Bond, Notice of Award, Agreement, Performance Bond, Payment Bond, Insurance Requirements, Notice to Proceed, Change Order, Notice of Contractor's Settlement, Final Receipt and Guarantee, Drawings, Specifications, and Special and General Conditions, including all modifications thereof incorporated in any of the documents before and after the execution of the Contract.
- (b) The CITY and the CONTRACTOR are those named as such in the Agreement. They are treated through the Contract Document as if each were of singular number.
- (c) Wherever in this Contract the word "ENGINEER" is used, it shall be understood as referring to the Contractors Engineer.
- (d) Wherever in this Contract the word "CITY PROJECT MANAGER" is used, it shall be understood as referring to the City Emergency Coordinator or the CITY's appointed representative, acting personally or through any assistants or assigns.
- (e) Any written notice served pursuant to the terms of the Agreement shall be deemed to have been duly served as if delivered in person or by registered mail to the individual, partner, an officer of the corporation for whom it is intended, or any authorized representative thereof.
- (f) The term "subcontractor" shall mean anyone, other than the contractor, who furnished at the site, under an agreement with the CONTRACTOR, labor, or labor and materials, or labor and equipment, but shall not include any person who furnished services of a personal nature.
- (g) Work shall mean the furnishing of all labor, materials, equipment, and other incidentals necessary to the successful completion of the Contract and the carrying out of all duties and obligations imposed by the Contract.
- (h) Extra work shall mean additional labor, materials, equipment, and other incidentals required to complete the Contract for the purpose for which it was intended. Extra work that wasn't shown on the Drawings or called for in the Specifications must be authorized by the CITY.
- (i) Dispute shall mean lack of agreement between any parties that have any obligations, duties, or responsibilities under the terms of the Contract Drawings or Specifications.

2.1.1 ABBREVIATIONS

Wherever the following abbreviations are used in these general conditions, supplemental condition, specifications, standard details or on the drawings, they are to be construed the same as the respective expressions represented.

AASHTO	American Association of State Highway and Transportation Officials
AAN	American Association of Nurserymen
AB	Aggregate Base
Aban	Abandon
ABC	Aggregate base course
AC	Asphalt cement or concrete
ACB	Asphalt concrete base
ACI	American Concrete Institute
ACP	Asbestos cement pipe
ACPA	American Concrete Pipe Association
ACWS	Asphalt concrete wearing surface
AGC	Associated General Contractors of America, Inc.
Agg	Aggregate
Ahd	Ahead
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
APA	American Plywood Association
Approx	Approximate
APWA	American Public Works Association
AR	Aged residue
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
Asph	Asphalt
ASTM	American Society for Testing Materials
Ave	Avenue
AWPA	American Wood Preservers Association
AWSC	American Welding Society Code
AWWA	American Water Works Association
Bbl	Barrel
BC	Beginning of curve
BCR	Beginning of curb return
Beg	Beginning
Bk	Book or Back
Blvd	Boulevard
BM	Bench Mark or Board Measure
Brg	Bearing
BST	Bituminous Surface Treatment

BTB	Bituminous Treated Base
BTU	British Thermal Units
BVC	Beginning of vertical curve
BVCE	Beginning of vertical curve elevation
BVCS	Beginning of vertical curve station
C	Centigrade or Curb
CB	Catch Basin
CBF&C	Catch basin frame & cover
CC or C/C	Center to Center
CCA	Colorado Contractor's Association, Inc.
CDOT	Colorado Department of Transportation
CE	City or County Engineer
Cem	Cement
CF	Curb face
cfs	Cubic Feet per second
CIP	Cast Iron pipe
CIPP	Cast-in-place concrete pipe
CL or C	Centerline
Cm	Centimeter
CMP	Corrugated metal pipe
CO	Clean out
Col	Column
Conc	Concrete
Const	Construct
CP	Concrete pipe(non-reinforced)
CRS	Colorado Revised Statutes
CTB	Cement Treated Base
Cu	Cubic
CY	Cubic Yards
Deg	Degree
DF	Douglas Fir
DG	Decomposed granite
Dia	Diameter
Dim	Dimension
DIP	Ductile Iron Pipe
Div	Division
Dr	Drive
DRCOG	Denver Regional Council of Governments
Drwg	Drawing
Dwy	Driveway
Ea	Each
Ease	Easement
E	East
EC	End of curve

ECR	End of curb return
El or Elv	Elevation
Equa or Eq	Equation
EVC	End of vertical curve
EVCE	End of vertical curve elevation
EVCS	End of vertical curve station
Ex or Exist	Existing
F	Fahrenheit
FB	Field Book
F & C	Frame & cover
FH	Fire hydrant
FL or F	Floor line or flow line
FIEI	Floor Elevation
Fnd	Found
fps	Feet per second
FS	Finished surface
FSS	Federal Specifications and Standards
Ft	Foot or feet
G	Gutter
Ga	Gage
Galv	Galvanized
GL	Ground line
gpm	Gallons per minute
Gr	Grade
H	High or height
HC	House connection
Hdwl	Headwall
Horiz	Horizontal
Hwy	Highway
ID	Improvement District or inside diameter
IE	Invert Elevation
IEEE	Institute of Electrical and Electronic Engineers
In	Inch
Inv	Invert
IP	Iron Pipe
IPS	Iron Pipe Size
Irrig	Irrigation
Jt	Joint
JC	Junction Chamber
Jct	Junction
JS	Junction Structure

L	Length
Lb	Pound
L&T	Lead and tack
LD	Local depression
LF	Linear Feet
LH	Lamp hole
Lin	Linear
Long	Longitudinal
Lt	Left
M	Map or maps
Max	Maximum
Meas	Measured
MH	Manhole
MHF&C	Manhole frame and cover
Min	Minutes or minimum
Misc	Miscellaneous
MLorM	Monument line
Mm	Millimeter
Mon	Monolithic or monument
MTD	Multiple tile duct
MUTCD	Manual of Uniform Traffic Control Devices
N	North
NBS	National Bureau of Standards
NCPI	National Clay Pipe Institute
NE	Northeast
NEC	National Electric Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NP	Non-plastic
NPI	Non-pay item
NSC	National Safety Council
NSF	National Sanitation Foundation
NW	Northwest
No	Number
OC	On center
OD	Outside diameter
Oz	Ounces
PC	Point of curvature
PCR	Point of curb return
PCC	Point of compound curve or Portland Cement Concrete
PI	Point of intersection or plastic index
PL	Property line
POC	Point of Curve

POS	Point of Spiral
PP	Power pole
ppm	Parts per million
PRC	Point of reverse curve
Prod	Proposed or property
psi	Pounds per square inch
psf	Pounds per square foot
PTorPOT	Point of Tangent
P&TP	Power and telephone pole
Pvmt	Pavement
Q	Rate of flow
R	Radius
RC	Reinforced concrete
RCP	Reinforced concrete pipe
Rd	Road
Rdwy	Roadway
Reinf	Reinforced, Reinforcing
Ret Wall	Retaining Wall
RGRCP	Rubber Gasket Reinforced Concrete Pipe
rpm	Revolutions Per Minute
Rt	Right
R/W or Row	Right-of-way
S	South or slope
SAE	Society of Automotive Engineers
San	Sanitary
SC	Spiral to Curve
SCCP	Steel cylinder concrete pipe
SD	Storm drain or Sewer District
SDDTC	Storm Drainage Design and Technical Criteria
Sdl	Saddle
Sec	Seconds
Sect	Section
SE	Southeast
SF	Square feet
Sht	Sheet
Spec	Specifications
SPR	Simplified Practice Recommendation
SpMH	Special manhole
Sq Ft Yd	Square Foot, Yard
SS	Sanitary sewer
St	Street
Sta	Station
Std	Standard
Str gr	Structural grade

Struct	Structure or structural
SW	Southwest
SY	Square Yard
T	Tangent Distance
Tel	Telephone
Temp	Temporary
TH	Test hole
TP	Telephone pole
Tr	Tract
Trans	Transition
TS	Traffic signal or Tangent to spiral
TSC	Traffic signal conduit
Typ	Typical
UD & FCD	Urban Drainage and Floor Control District
USDCM	Urban Storm Drainage Criteria Manual
UL	Underwriters Laboratories
USC&GS	United States Coast and Geodetic Survey
USGS	United States Geological Survey
V	Velocity of flow
VC	Vertical curve
VCP	Vitrified clay pipe
Vert	Vertical
W	West or width
WI	Wrought iron
WS	Wearing surface
Wt	Weight
Yd	Yard
'	feet or minutes
"	inches or seconds
o	degrees
%	percent
#	number or pound
@	at
/	per
=	equals

2.1.2 GENERAL DEFINITIONS AND TERMS:

Whenever in these specifications or in other contract documents the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

Addendum: A Supplement to any of the Contract Documents issued, in writing, after advertisement of but prior to the opening of bids for a contract.

Advertisement: The public announcement, as required by law, inviting bids for work to be performed or materials to be furnished.

Agency: The government agency for which the construction is being done, either by permit or contract.

Agreement: The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are made a part thereof as provided therein.

Application for Payment: The form accepted by the CITY PROJECT MANAGER which is to be used by CONTRACTOR in requesting progress or final payment and which is to include such supporting documentation as required by the Contract Documents.

Award: The formal action of the governing body in accepting a proposal.

Backfill: Material placed in an excavated space to fill such space. For trenches this space will be the area from 1 foot above the top of the pipe or conduit to the existing or proposed finished grade of pavement.

Base Course: The upper course of the granular base of a pavement or the lower course of an asphalt concrete pavement structure.

Bedding: Is the material placed in the area from the bottom of the trench to 1 foot above the top of the pipe or conduit.

Bid: The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bidder: Any qualified individual, firm, partnership, corporation or combination thereof, acting directly or through a duly authorized representative who legally submits a proposal for the advertised work.

Bond Issue Project: A project financed from bonds issued by the CITY pledging credit or a revenue resource.

Bridge: A structure, including supports, erected over a depression or an

obstruction, as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads and having a length measured along the center of roadway of more than 20 feet between undercopings of abutments or extreme ends of openings for multiple boxes.

(Length) The length of a bridge structure is the over-all length measured along the line of survey stationing back to back of backwalls of abutments, if present, otherwise end to end of the bridge floor; but in no case less than the total clear opening of the structure.

(Roadway Width) The clear width measured at right angles to the longitudinal centerline of the bridge between the bottom of curbs or guard timbers or in the case of multiple height of curbs, between the bottom of the lower risers.

Budget Project: A project financed by funds from General Tax levies and shared revenue funds set aside in the annual budget adopted by the Evans City Council.

Building: Any structure built for the support, shelter, or enclosure of persons, animals, chattel or movable property.

Building Code: A regulation adopted by the governing body establishing minimum standards of construction for the protection of the public health, safety, and welfare in terms of measured performance rather than in terms of rigid specifications of materials and methods.

Calendar Day: Every day shown on the calendar.

Change Order: A written order issued by the CITY PROJECT MANAGER to the CONTRACTOR to make changes in the work or to perform extra work, and setting forth conditions for payment and/or adjustment in time of completion.

City: A municipal corporation, organized and existing under and by virtue of the laws of the State of Colorado.

City Clerk: The duly authorized person who performs the duties of clerk for the Contracting Agency.

Completion Time: The number of calendar days for completion of an act, including authorized time extensions. In case a calendar date of completion is shown in the proposal in lieu of the number of calendar days, the contract shall be completed by that date. The time within which an act is to be done shall be computed by excluding the first and including the last day; and if the last day be Sunday or a legal holiday, that shall be excluded.

Conflicting Utility Line: An existing utility line, shown or not shown on the drawings, is a conflicting line when any part falls within the trench pay widths as listed or within the dimensions, as shown on the drawings, for appurtenant structures.

Construction Project: The erection, installation, remodeling, alteration, of durable facilities upon, under, or over the ground. This shall include, but is not limited to buildings, roadways and utility pipes, lines, poles or other structures.

Contingent Bid Item: This is a minor bid item which is likely, but not certain, to occur during the course of work. If the CITY PROJECT MANAGER determines that this work is required, the CONTRACTOR will accomplish the work and payment will be made based on the contingent unit bid price included in the proposal. Since the quantity listed in the proposal is primarily for bid comparison, the amount of work required by the CITY PROJECT MANAGER may vary materially from this.

Contract: The written instrument executed by the CONTRACTOR and the Contracting Agency by which the CONTRACTOR is bound to furnish all labor, equipment, and materials and to perform the work specified, and by which the Contracting Agency is obligated to compensate the CONTRACTOR therefore at the prices set forth therein. The Contract Documents are herewith by reference made a part of the contract as if fully set forth therein.

Contract Documents: The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements issued on or after the Effective Date of the Agreement.

Contracting Agency: The legal entity that has contracted for the performance of the work or for whom the work is being performed.

Contractor: The individual, firm, partnership, corporation or combination thereof entering into a contract with the Contracting Agency to perform the advertised work.

Council: The City Council that by law constitutes the Legislative Department of the City organized and existing under and by virtue of the laws of the State of Colorado.

Culvert: Any structure not classified as a bridge, which provides an opening under or adjacent to the roadway.

Days: Unless otherwise designated, days will be understood to mean calendar days.

Emergency: Unforeseen occurrences and combinations of circumstances involving the public welfare or the protection of work already done under the Contract Documents, or which endanger life or property and call for immediate action or remedy.

Equipment: (Construction)-All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of work.

(Installed)-All material or articles used in equipping a facility as furnishings or apparatus to fulfill a functional design.

Extra Work: An item of work not provided for in the contract as awarded but found essential to the satisfactory completion of the contract within its intended scope.

Field Order: A written set of emergency instructions to the CONTRACTOR issued only where the time required for preparation and execution of a formal Change Order would result in a delay or a stoppage of work, or would allow a hazardous condition to exist.

Flooding: Flooding will consist of the inundation of the entire lift with water, puddled with poles or bars to insure saturation of the entire lift.

Foundation: For buildings or structures, this will be the substructure. For pipe this will be the native material or prepared material on which the pipe rests; normally, this is the bottom grade line of the trench.

Full Depth Pavement: An asphalt concrete pavement structure in which the granular base and sub-base are replaced by equivalent structural thickness of asphalt concrete.

General Conditions: Uniform general specifications adopted as standard specifications by the CITY PROJECT MANAGER.

Holiday: Holidays recognized by collective bargaining agreements in the State of Colorado are:

- New Year's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Day

Additional holidays recognizable by the State of Colorado Cities and Counties are:

- Martin Luther King's Birthday
- Presidents Day
- Columbus Day

Veteran's Day
General Election Day in even-numbered years

When New Year's Day, Independence Day or Christmas Day fall on Sunday, the following Monday shall be considered a holiday.

Additional legal holidays, when designated by the State Governor or President of the United States, will also be recognized by the State, City and/or County.

Improvement District Project: A project financed by assessments against the property included in a special assessment district authorized under, or implemented by an act of the legislature of the State and/or a procedural ordinance of the City or County.

Inspector: The authorized representative assigned to make detailed inspections of contract performance.

Jetting: Jetting is the densification of material, using a continuous supply of water, under pressure, transmitted to the material through a rigid pipe of sufficient length to reach the bottom of the lift being densified. In all cases, the entire lift will be completely saturated working from the top to the bottom.

Laboratory: The established materials testing laboratory of the Contracting Agency's Engineering Department, or other laboratories acceptable to and/or authorized by the CITY PROJECT MANAGER to test materials and work involved in the Contract.

Liquidated Damages: A daily charge made against the CONTRACTOR for each working day, including free time that any work shall remain uncompleted after elapse of Contract time.

Major Item: Any item of work and/or materials having an original contract value that exceeds ten percent of the amount of the original contract.

Materials: Any substance specified in the project, equipment and other material used or consumed in the performance of the work.

Median: The portion of a divided highway separating the roadways used by traffic going in opposite directions.

Method of Measurement: The manner in which a "Pay Item" is measured to conform to the "Pay Unit."

Non Pay Item: An item of work for which no separate payment will be made under the proposal, but which must be included as an incidental cost for payment on an associated pay item included in the proposal.

Notice of Award: A letter from the CITY advising the CONTRACTOR that they are the successful Bidder and the Evans City Council has accepted their proposal.

Notice to Bidders: The standard forms inviting proposals or bids.

Notice to Proceed: A directive issued by the CITY PROJECT MANAGER, authorizing the CONTRACTOR to start the work or improvements required in the Contract.

Obligee: One to whom another is obligated. For bonding purposes, the OWNER is the obligee.

Open Trench: The excavated area shall be considered as open trench until all the aggregate base course for pavement replacement has been placed and compacted or, if outside of a pavement area, until the excavated area is brought to finish grade or natural grade.

Owner: City of Evans, State of Colorado, acting through its legally constituted officials, officers or employees.

Pavement: Any surface of streets, alleys, sidewalks, courts, driveways, etc., consisting of mineral aggregate bound into a rigid or semi-rigid mass by a suitable binder such as, but not limited to, portland cement or asphalt cement.

Pavement Structure: The combination of sub-base, base course, and surface course placed on a sub-grade to support the traffic load and distribute it to the roadbed.

Pay Item: A detail of work for which individual payments are to be made under the Contract, as specified in the proposal.

Payment Bond: The security provided by the CONTRACTOR solely for the protection of claimants, supplying labor and materials to the CONTRACTOR or his Subcontractors.

Performance Bond: The security by the CONTRACTOR solely for the protection of the Contracting Agency and conditioned upon the faithful performance of the contract in accordance with the contract documents, drawings, specifications and conditions thereof.

Permit: The license to do construction in public rights-of-way and/or easements; issued by an Agency to a CONTRACTOR working for another party.

Plans: All approved drawings or reproductions thereof pertaining to the work and details therefor, which are made a part of the Project Manual and Contract Documents.

Plant: The Contractors' and/or subcontractors' facilities, including but not limited to small tools and mobile equipment, located on and/or offsite, necessary for preparation of materials and prosecution of work for the project.

Principal: The individual, firm or corporation primarily liable on an obligation, as distinguished from a surety.

Profile Grade: The trace of a vertical plane intersecting the top surface of the proposed wearing surface, usually along the longitudinal centerline of the roadbed. Profile grade means either elevation or gradient of such trace according to the context.

Project: A specific coordinated construction or similar undertaking identified by a single project number and bid and awarded as one contract. On occasion two or more projects may be bid and awarded as a single contract.

Project Manual: All the integral documents of the contract including but not limited to, Contract Documents, General Conditions, Supplemental Conditions, Specifications and drawings.

Project Supplemental Conditions: See definition for Supplemental Conditions.

Proposal: The offer of a bidder on the prescribed form, to perform the work and to furnish the labor and materials at the prices quoted.

Proposal Form: The approved form on which the Contracting Agency requires bids to be prepared and submitted for the work.

Proposal Guarantee: The security furnished with a bid to guarantee that the bidder will enter into the contract if his bid is accepted.

Proposal Pamphlet: The book or pamphlet pertaining to a specific project, containing proposal forms, special provisions and other information necessary for and pertinent to the preparation of the proposal or bid.

Referred Documents: On all work authorized by the Contracting Agency, any referenced documents in the specification, i.e., Bulletins, Standards, Rules, Methods of Analysis or test. Codes and Specifications of other Agencies, Engineering Societies or Industrial Associations, refer to the Latest Edition thereof, including Amendments, which are in effect and published at the time of Advertising for Bids or the issuing of a permit for the work, unless otherwise stated.

Reasonably Close Conformity: Compliance with reasonable and customary manufacturing and construction tolerances where working tolerances are not specified. Where working tolerances are specified, reasonably close conformity means compliance with such working tolerances.

Right-of-Way: A general term denoting, land, property or interest therein, usually in a strip, acquired for or devoted to a street, highway, or other public improvement.

Road: A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Roadside: A general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.

Roadside Development: Those items necessary to the complete roadway that provide for the preservation of landscape materials and features; the rehabilitation and protection against erosion of all areas disturbed by construction through seeding, sodding, mulching and the placing of other ground covers; such suitable planting and other improvements as may increase the effectiveness and enhance the appearance of the roadway.

Roadway: The portion of the right-of-way intended primarily for vehicular traffic, and including all appurtenant structures and other features necessary for proper drainage and protection. Where curbs exist, it is that portion of roadway between the faces of the curbs.

Salvageable Material: Material that can be saved or salvaged. Unless designated or directed by the CITY PROJECT MANAGER or shown on the drawings, all salvageable material shall remain the property of the CONTRACTOR.

Sewers: Conduits and related appurtenances employed to collect and carry off water and waste matter to a suitable point of final discharge.

Shop Drawings: Drawings or reproduction of drawings, detailing; fabrication and erection of structural elements, falsework and forming for structures, fabrication of reinforcing steel, installed equipment and installation of systems, or any other supplementary drawings or similar data, which the CONTRACTOR is required to submit for approval with engineering stamp.

Shoulder: The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses.

Sidewalk: That portion of the roadway primarily constructed for the use of pedestrians.

Supplemental Conditions: The special conditions, requirements, additions, and/or revisions to the General Conditions and Standard Specifications, applicable to the work, to cover conditions or requirements peculiar to the project under consideration. Supplemental Conditions fall within one of the two following categories and take precedence over the General Conditions.

- (a) Project Special Conditions. Special Conditions peculiar to the project

and not otherwise thoroughly nor appropriately set forth in the general conditions or standard specifications or drawings.

(b) Standard Special Conditions. Special directions or requirements not otherwise thoroughly or appropriately set forth in the standard specifications, and which are peculiar to a selected group of projects or which are intended for temporary use.

Specifications: The descriptions, directions, provisions, and requirement for performing the work as contained in the Contract Documents.

State: The State of Colorado.

Storm Drain: Any conduit and appurtenance intended for the reception and transfer of stormwater.

Street: Streets, avenues, alleys, highways, crossings, lanes, intersections, courts, places, and grounds now open or dedicated or hereafter opened or dedicated to public use and public ways.

Structures: Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, end-walls, sewers, service pipes, underdrains, foundation drains, fences, swimming pools, and other features which may be encountered in the work and not otherwise classed herein.

Sub-base: The lower course of the base of a roadway, immediately above the sub-grade.

Subcontractors: Those having direct contracts with the CONTRACTOR and those who furnish material worked into a special design according to the Drawings and Specifications for the work, but not those who merely furnish material not so worked.

Sub-grade: The supporting structures on which the pavement and its special under courses rest.

Substantial Completion: The work (or a specified part thereof) has progressed to the point where, in the opinion of CITY PROJECT MANAGER and OWNER as evidenced by a letter of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended. The terms "substantially complete" and "substantially completed" as applied to any work refer to Substantial Completion thereof. The work must meet the following criteria for Substantial Completion to apply:

- At least 90% of all pay items have been completed and are eligible for payment.
- A list of incomplete work items has been issued by the OWNER or CITY PROJECT MANAGER to the CONTRACTOR and the

CONTRACTOR has accepted and acknowledges the list.

Substructure: All of that part of the structure or building below the bearings of simple and continuous spans, skewbacks of arches and tops of footings of rigid frames, together with the backwalls, wingwalls, and wing protection railings.

Superintendent: The Contractor's authorized representative in responsible charge of the work.

Superstructure: The entire structure or building except the substructure.

Supplemental Specifications: Additions and revisions to the Standard Specifications that are adopted subsequent to issuance of the printed Project Manual.

Surety: The individual, firm or corporation, bound with and for the CONTRACTOR for the acceptable performance, execution, and completion of the work, and for the satisfaction of all obligations incurred.

Surface Course: The finish or wearing course of an asphalt concrete pavement structure.

Title or Headings: The titles or headings or the sections and subsections herein are intended for convenience of reference and shall not be considered as having any bearing on their interpretation.

Township, City, Town or District: A subdivision of the State of Colorado used to designate or identify the location of the proposed work.

Traveled Way: The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

Utility: Pipe lines, conduits, ducts, transmission lines, overhead or underground wires, railroads, storm drains, sanitary sewers, irrigation facilities, street lighting

traffic signals, and fire alarm systems, and appurtenances of public utilities and those of private industry, businesses or individuals solely for their own use or use of their customers which are operated or maintained in, on, under, over or across public right-of-way or public or private easement.

Waterworks (Water Supply System): The reservoirs, pipe lines, wells, pumping equipment, purification works, mains, service pipes, and all related appliances and appurtenances utilized in the procurement, transportation and delivery of an adequate, safe, and palatable water supply for the Contracting Agency.

Work: Any of all of the improvements mentioned and authorized to be made, and the construction, demolition, reconstruction, and repair of all or any portion of such improvements, and all labor, services, incidental expenses, and material necessary or incidental thereto.

Working Day: A calendar day, exclusive of Saturdays, Sundays and Contracting Agency recognized legal holidays, on which weather and other conditions not under the control of the CONTRACTOR will permit construction operations to proceed for the major part of the day with the normal working force engaged in performing the controlling item or items of work which would be in progress at that time.

2.2 GENERAL CONTRACT REQUIREMENTS

2.2.1 FAMILIARITY WITH WORK

The CITY has endeavored to ascertain all pertinent information regarding site conditions, and subsurface conditions, and has, to the best of his ability, furnished all such information to the CONTRACTOR. Such information is given, however, as being the best factual information available to the CITY, but is advisory only. The CONTRACTOR, by careful examination, shall satisfy himself as to the nature and location of the work, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters that can in any way affect the work under this Contract.

Bidder shall examine the site of the proposed work and all documents pertaining to the work. It is mutually agreed that the submission of a proposal shall be considered prima facie evidence that the bidder has made such examination and is familiar with the character, quality and quantity of the work to be performed and material to be furnished.

Logs of test hole, ground water levels, and any accompanying soil reports as furnished by the Contracting Agency are furnished for general information only. The field condition so set forth shall not constitute a representation or warranty, expressed or implied, that such conditions are actually existent. Bidders shall make their own investigations and form their own estimates of the site conditions. After the submission of the proposal, no complaint or claim that there was any misunderstanding as to the quantities, conditions or nature of the work will be entertained.

2.2.2 CHANGED CONDITIONS

The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of any emergency, notify the CITY in writing of: (1) Subsurface or latent physical conditions at the site differing materially from those indicated in this Contract; or (2), previously unknown physical or other conditions at the site, of an unusual nature, not generally recognized as inherent in work of the character provided for in this Contract. The CITY PROJECT MANAGER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or the time required for, performance of this Contract, an equitable adjustment shall be made and the Contract modified in writing accordingly. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given notice as above required, provided that the CITY PROJECT MANAGER may, if he determines the facts so justify, consider and adjust any such claims assessed before the date of final settlement of the Contract. If the parties fail to agree upon the adjustment to be made, the dispute shall be determined as provided in Paragraph 2.2.33 hereof.

2.2.3 ORDER OF COMPLETION

The CONTRACTOR shall submit, schedules to the CITY PROJECT MANAGER, which shall show the order in which the CONTRACTOR proposes to carry on the work, with dates at which the CONTRACTOR will start and complete each phase of the projects. The special provisions or plans may require that certain phases or parts of the work be completed first or in a certain order. If the CONTRACTOR elects to use PERT or CPM charts, he shall furnish copies of them to the CITY PROJECT MANAGER upon request.

2.2.4 DESIGN AND INSTRUCTIONS

It is agreed that the Contractor will be responsible for the adequacy of design, Specifications, and engineered certified as-builds. The CITY PROJECT MANAGER, shall furnish Specifications, which adequately represent the requirements of the work to be performed under the Contract. All such instructions shall be consistent with the Contract Documents and shall be true developments thereof. Specifications that adequately represent the work to be done shall be furnished prior to the time of entering into the Contract. The CITY PROJECT MANAGER may, during the life of the Contract, and in accordance with Paragraph 2.2.15, issue additional instructions, by means of drawings or other media, necessary to illustrate changes in the work.

2.2.5 SURVEYS

N/A

2.2.6 CLAIMS

If the CONTRACTOR claims that any instructions by drawings or otherwise, issued after the date of the Contract, involve extra cost under the Contract, he shall give the CITY PROJECT MANAGER written notice thereof within ten (10) days, after the receipt of such instruction, and in any event before proceeding to execute the work, except emergency endangering life or property, and the procedure shall than be as provided for changes in the work. No such claim shall be valid unless so made.

2.2.7 EXECUTION AND CORRELATION OF DOCUMENTS

The Agreement shall be signed in duplicate by the CITY and the CONTRACTOR.

The Contract Documents are complimentary and what is called for by anyone shall be as binding as if called for by all. In case of conflict between Drawings and Specifications, the Specifications shall govern. Special Specifications shall govern over Standard Specifications. Materials or work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards.

2.2.8 MATERIALS AND APPLIANCES

Unless otherwise stipulated, the CONTRACTOR shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of work. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

2.2.9 EMPLOYEES

The CONTRACTOR shall, at all times, enforce strict discipline and good order among his employees, and shall seek to avoid employing, for the Contract, any unfit person or anyone not skilled in the work assigned to him.

Adequate sanitary facilities shall be provided by the CONTRACTOR.

Employees of the CONTRACTOR and/or any subcontractor working on the project shall not be considered as employees of the City of Evans, nor shall they be entitled to any of the benefits provided to City of Evans employees.

2.2.10 ROYALTIES AND PATENTS

The CONTRACTOR shall pay all applicable royalties and license fees. CONTRACTOR shall defend all suits or claims for infringement for any patent rights and save the CITY harmless from loss on accounts thereof, except that the CITY shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, unless the CITY has notified the CONTRACTOR prior to the signing of the Contract that the particular process, design, or product is patented or is believed to be patented.

2.2.11 PERMITS, LICENSES AND REGULATIONS

Permits, fees, and licenses of a temporary nature, necessary for the prosecution of the work, shall be secured and paid for by the CONTRACTOR. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the CITY, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the CONTRACTOR observes that the Specifications are at variance therewith, he shall promptly notify the CONTRACTOR ENGINEER and the CITY PROJECT MANAGER in writing, and any necessary changes shall be adjusted in the Contract for changes in the work.

2.2.12 INSPECTION OF WORK

All materials and equipment used in the construction of the project shall be subject to adequate testing in accordance with generally accepted standards as required by the Contract Documents.

The CITY shall provide sufficient competent personnel, working under qualified supervision for the inspection of the work, while such work is in progress, to ascertain that the completed work will comply in all respects with the standards and requirements set forth in the Specifications. The inspection of the Contract will be as it relates to the compliance with the Specifications, quality of workmanship, and material. Notwithstanding such inspection, the CONTRACTOR will be held responsible for the acceptability of the work.

The CONTRACTOR ENGINEER, Project Manager and there representatives shall at all times have access to work whenever it is in preparation or progress, and the CONTRACTOR shall provide proper facilities for such access and for inspection.

If the Specifications, the CONTRACTOR ENGINEER's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the CONTRACTOR shall give the CITY PROJECT MANAGER timely notice to its readiness for inspection, and if the inspection is by an authority other than the CITY PROJECT MANAGER, a date shall be fixed for such an inspection. Inspections by the CITY PROJECT MANAGER shall be promptly made, and where applicable, at the source of supply. Any work required by the CITY PROJECT MANAGER or inspectors to be uncovered for examination shall be properly restored at the CONTRACTOR's expense unless the CITY PROJECT MANAGER has unreasonably delayed inspection.

Re-examination of any work may be ordered by the CITY PROJECT MANAGER, and if so ordered, the work must be uncovered by the CONTRACTOR. If such work is found to be in accordance with the Contract Documents, the CITY shall pay the cost of re-examination. If such work is not in accordance with the Contract Document, the CONTRACTOR shall pay such cost.

2.2.13 SUPERINTENDENTS

The CONTRACTOR shall keep on his work at all times during its progress, competent superintendents and/or responsible assistants. The superintendent shall represent the CONTRACTOR and all directions given to him shall immediately be confirmed in writing to the CONTRACTOR. Superintendent shall be named in writing by CONTRACTOR at the beginning of the work.

2.2.14 PRECONTRACT EXAMINATION AND DISCOVERY OF DISCREPANCIES DURING WORK

Before submitting his proposal, the CONTRACTOR will examine all construction plans and the entire and complete specifications. The CONTRACTOR will become well and fully informed as to the materials and the character of the work required, the relationship of all of the particular parts of the work, and he will visit and inspect the site, observing and examining the conditions existing.

After the execution of the Contract, no consideration will be granted for any misunderstanding of the materials to be furnished or the work to be done, it being mutually understood that the tender of the proposal carried with it an agreement to this end and all other conditions mentioned in the Contract and the Specifications, and implied a full and complete understanding of them and all construction plans, drawings, notes, indications, and requirements.

Should anything be omitted from the construction plans or specifications necessary to the proper completion of the work herein described, it shall be the duty of the CONTRACTOR to so notify the CITY before signing the Contract, and in the event of failure of the CONTRACTOR to give such notice, he shall make good any damage or defect in his work caused thereby without extra charge. No allowance will be made for lack of full knowledge of all conditions, except such underground conditions as are determined after commencement of the work and were unknown to the CONTRACTOR.

If the CONTRACTOR, in the course of the work, finds any discrepancy between the Specifications and the physical conditions of the locality, or any errors or omissions in the layout as given by survey points and instruction, he shall immediately inform the CONTRACTOR ENGINEER and CITY PROJECT MANAGER, in writing, and the CITY PROJECT MANAGER shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the CONTRACTOR's risk, except in the event of an emergency.

2.2.15 CHANGES IN THE WORK

At any time by written order, the CITY may make changes in the Specifications or scheduling of the Contract within the general scope. All such work shall be executed under the time constraints of the original contract except that any claim for extension of time caused thereby shall be allowed and adjusted at the time of ordering such change or at such time as it can be ascertained.

In giving instruction, the CITY PROJECT MANAGER shall have authority to make minor changes in the work not involving extra cost, and not inconsistent with the purpose of the work. Except in an emergency endangering life and property, no claim for an addition to the contract sum shall be valid unless the additional work was so ordered by the CITY PROJECT MANAGER.

The CONTRACTOR shall proceed with the work as changed and the value of any such work or change shall be determined as provided for in the Agreement herein.

The CITY may at any time, as the need arises, order changes within the scope of the work without invalidating the Agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for performance of the work, the CONTRACTOR shall perform the same at the unit prices or lump sum indicated in the bid. Changes may occur to a maximum of twenty-five percent (25%) of the contract price. After exceeding twenty-five percent (25%), the applicable unit price or lump sum may be negotiable and an equitable adjustment shall be authorized by change order.

2.2.16 EXTENSION OF TIME

- a. Extension of time stipulated in the Contract for completion of the work will be made when changes in the work occur, as provided in Paragraph 2.2.15; when the work is suspended as provided in Paragraph 2.2.17; and when the work of the CONTRACTOR is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the CONTRACTOR, his subcontractors or suppliers, and which were not the result of their fault or negligence.

Extension of time for completion shall also be allowed for any delays in the progress of the work that in the opinion of the CITY PROJECT MANAGER entitles the CONTRACTOR to an extension of time.

- b. The CONTRACTOR shall notify the CITY PROJECT MANAGER promptly of any occurrence or condition which in the CONTRACTOR's opinion entitles him to an extension of time. Such notice shall be in writing and shall be submitted in ample time to permit full investigation and evaluation of the CONTRACTOR's claim. Failure to provide such notice shall constitute a waiver by the CONTRACTOR of any claim.

2.2.17 SUSPENSION OF WORK

The CITY may at any time suspend the work, or any part thereof, by giving three (3) days' notice to the CONTRACTOR in writing.

2.2.18 THE CITY'S RIGHT TO TERMINATE CONTRACT

If the CONTRACTOR should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed as a result of his insolvency, or if he should persistently or repeatedly refuse or should fail, except for cases in which extensions of time are provided, to supply enough properly-skilled workmen or materials, or if he should fail to make payments to subcontractors or for materials or labor so as to affect the progress of the work or persistently be guilty of a substantial violation of the Contract, then the CITY, upon written notice from the CITY PROJECT MANAGER that sufficient cause exists to justify such action and without prejudice to any other right or remedy, and after giving the CONTRACTOR and his Surety seven (7) days' written notice, terminate the employment of the CONTRACTOR and take possession of the premises and of all materials, tools, equipment and other facilities installed on the work and paid for by the CITY, and finish the work by whatever method the CITY PROJECT MANAGER may deem expedient. In such case, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the CONTRACTOR. If such expense shall exceed such unpaid balance, the CONTRACTOR shall pay the difference to the CITY. The expense incurred by the CITY as herein provided, and the damage incurred through the CONTRACTOR's default, shall be certified by the CITY PROJECT MANAGER.

Where the Contract has been terminated by the CITY, said termination shall not affect or terminate any of the rights of the CITY then existing or which may thereafter accrue because of such default as against the CONTRACTOR or his Surety. Any retention or

payment of moneys by the CITY due to the CONTRACTOR under the terms of the Contract, shall not release the CONTRACTOR or his Surety from liability for the CONTRACTOR's default.

2.2.19 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work should be stopped under an order of any court, or other public authority, for a period of more than three (3) months, through no act or fault of the CONTRACTOR of an undisputed sum with forty-five (45) days of its maturity and presentation, then the CONTRACTOR may, upon seven (7) days' written notice to the CITY PROJECT MANAGER, stop work or terminate this Contract and recover from the CITY payment for all work executed, plus any loss sustained upon any plant or materials, plus reasonable profit and damages.

2.2.20 CANCELLATION OF CONTRACT

Failure of the CONTRACTOR to comply with any of the requirements of the Contract and the Specifications may be considered as evidence of the inability on the part of the CONTRACTOR to maintain the quality and service standards deemed necessary, and shall be sufficient cause for the cancellation of the Agreement and the initiating of legal action against the Performance Bond of the CONTRACTOR.

2.2.21 CORRECTION OF WORK BEFORE FINAL PAYMENT

The CONTRACTOR shall promptly remove from the premises all materials and work condemned by the CITY PROJECT MANAGER as failing to meet contract requirements, whether incorporated in the work or not, and the CONTRACTOR shall promptly replace and re- execute his own work in accordance with the Contract and without expense to the CITY and shall bear the expense of making good all work of other CONTRACTORS destroyed or damaged by such removal or replacement.

All removal and replacement work shall be done at the CONTRACTOR's expense. If the CONTRACTOR does not take action to remove such condemned work and materials within ten (10) days after written notice, the CITY may remove them and store the material at the expense of the CONTRACTOR. If the CONTRACTOR does not pay the expense of such removal and storage within ten (10) days' time thereafter, the CITY may, upon ten (10) days' written notice, sell such materials at auction or at private sale and shall pay the CONTRACTOR any net proceeds thereof, after deducting all costs and expenses that should have been borne by the CONTRACTOR.

2.2.22 REMOVAL OF EQUIPMENT

In the case of termination of this Contract before completion for whatever cause, the CONTRACTOR, if notified to do so by the CITY, shall promptly remove any part or all of his equipment and supplies from the property of the CITY, failing which, the CITY shall have the right to exercise control over and to remove such equipment and supplies at the expense of, and without recourse, by the CONTRACTOR.

2.2.23 RESPONSIBILITY FOR WORK

The CONTRACTOR assumes full responsibility for the work. Until final acceptance, the CONTRACTOR shall be responsible for damage to or destruction of the work, except for any part covered by partial acceptance as set forth in Paragraph 2.2.24 and except such damage or destruction that is caused by the negligent or willful acts of the CITY.

2.2.24 PARTIAL COMPLETION AND ACCEPTANCE

If at any time prior to the issuance of the final certificate, referred to in Paragraph 2.2.34 hereinafter, any portion of the permanent construction has been satisfactorily completed to the CITY PROJECT MANAGER satisfaction, and if the CITY PROJECT MANAGER determines that such portion of the permanent construction is not required for the operations of the CONTRACTOR, but is needed by the CITY, the CITY PROJECT MANAGER shall issue to the CONTRACTOR a Certificate of Partial Completion, and thereupon or at any time thereafter, the CITY may take over and use the portion of the permanent construction described in such certificate.

The issuance of a Certificate of Partial Completion shall not be construed to constitute an extension of the CONTRACTOR's time to complete the portion of the permanent construction to which it relates, if he fails to complete it in accordance with the terms of this Contract. The issuance of such a certificate shall not operate to release the CONTRACTOR or his Sureties from any obligations under this Contract or the Performance Bond.

If such prior use increases the cost of or delays the work, the CONTRACTOR shall be entitled to extra compensation, or extension of time, or both, as the CITY PROJECT MANAGER may determine, unless otherwise provided.

2.2.25 PAYMENT WITHHELD PRIOR TO FINAL ACCEPTANCE OF WORK

As a result of subsequently discovered evidence, the CITY may withhold or nullify the whole or part of any certificate of payment to such extent as may be necessary to protect himself from loss occasioned by:

- (a) Defective work not remedied by the CONTRACTOR
- (b) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the CONTRACTOR for work done on the project
- (c) Failure of the CONTRACTOR to make payments properly to subcontractors or for material or labor
- (d) Damage by the CONTRACTOR to subcontractors or to another contractor

When the above grounds are removed, or the CONTRACTOR provides Surety Bond satisfactory to the CITY that will protect the CITY in the amount withheld, payment shall be made for amounts withheld because of them. No moneys may be withheld under (b) and

(c) If a Payment Bond is included in the Contract.

2.2.26 CONTRACTOR'S INSURANCE AND INDEMNIFICATION

The CONTRACTOR shall secure and maintain such insurance policies as will protect himself, his subcontractors, and City of Evans, its employees and agents, from claims for bodily injuries, death, or property damage, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required and must be evidenced by Certificates of Insurance:

(a) Statutory Workers' Compensation

(b) Commercial General Liability

General Aggregate	\$1,200,000
Products/ (Completed Operations Aggregate)	\$1,200,000
Each Occurrence	\$ 900,000
Personal & Advertising Injury	\$ 900,000
Fire Damage	\$ 50,000
Medical Expense	\$ 5,000

(c) Automobile Liability

Bodily Injury and Property Damage (Combined Single Limit)	\$ 900,000
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Certificates of Insurance must show "City of Evans, its employees and agents" as an Additional Insured.

All policies shall be for not less than the amount set forth above or as stated in the Special Conditions. Other forms of insurance shall also be provided if called for by the Special Conditions.

All Certificates of Insurance must be filed with the CITY PROJECT MANAGER along with the Performance and Payment Bonds and shall be subject to his approval as to adequacy of protection, within the requirements as stated herein. Said Certificates of Insurance shall contain a thirty (30) days' written notice of cancellation in favor of the CITY.

The CONTRACTOR shall indemnify and hold harmless the City of Evans, its employees and agents, from and against any and all claims, damages, losses, injuries and expenses, including attorney's fees, arising out of or resulting from the performance of work.

All insurance and bonding companies providing coverage or surety under this contract shall have a Best Insurance Rating of "A" or better.

2.2.27 SURETY BONDS

The CITY shall have the right, prior to the signing of the Contract, to require the CONTRACTOR to furnish Payment and Performance Bonds in such form as the CITY may prescribe in the bidding documents and executed by one or more financially responsible Sureties licensed to do business in the State of Colorado. The premiums for said Bonds shall be paid by the CONTRACTOR. The Payment Bond shall cover the entire Contract amount. The Performance Bond shall cover 115% of the Contract amount, regardless of changes therein, shall remain in full effect for a period of two years from the date of issuance of a Certificate of Completion, and shall be filed with the CITY PROJECT MANAGER prior to the commencement of any work on the project.

2.2.28 CONTRACTOR'S INSURANCE

The CONTRACTOR shall secure and maintain insurance to one hundred percent (100%) of the insurable value of the entire work in the Contract and any structures attached or adjacent thereto against fire, earthquake, flood, and other perils as he may deem necessary and shall name the CITY and subcontractors as Additional Insured.

All insurance and bonding companies providing coverage or surety under this contract shall have a Best Insurance rating of "A" or better.

2.2.29 ASSIGNMENT

Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other and its Surety, nor shall the CONTRACTOR assign any moneys due or to become due to him hereunder, except to a bank or financial institution acceptable to the CITY.

2.2.30 RIGHTS OF VARIOUS INTERESTS

Wherever work being done by the CITY's forces, utility companies, or by other CONTRACTOR's forces is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the CITY PROJECT MANAGER, to secure the completion of the various portions of the work in general harmony.

- (a) Before issuance of final payment, the CONTRACTOR, if required in the Special Conditions, shall certify in writing to the CITY PROJECT MANAGER that all payrolls, material bills, and other indebtedness connected with the work, have been paid or otherwise satisfied. If the Contract does not include a payment Bond the CONTRACTOR may submit, in lieu of certification of payment, a Surety Bond in the amount of the disputed indebtedness or liens, guaranteeing payment of all such disputed amounts, including all related costs and interest in connection with said disputed indebtedness or liens, which the CITY may be compelled to pay upon adjudication.
- (b) The making and acceptance of the final payment shall constitute a waiver of all claims by the CITY, other than those arising from unsettled liens, from faulty work appearing within the guarantee period, provided in the Special Conditions, from the requirements of the Drawings and Specifications, or from manufacturer's guarantees. It shall also constitute a waiver of all claims by the CONTRACTOR,

except those previously made and still unsettled.

(c) If after the work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, and the CITY PROJECT MANAGER so certifies, the CITY shall, upon certificate of the CITY PROJECT MANAGER, and without terminating the Contract, make payment of the balance due for that portion of the work fully and completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

(d) If the CITY fails to make payment as herein provided, there shall be added to each payment daily interest at the rate of six percent (6%) per annum commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the CONTRACTOR.

2.2.31 CITY PROJECT MANAGER'S STATUS

The CITY PROJECT MANAGER shall perform inspection of the work. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract. He shall also have authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

2.2.32 CITY PROJECT MANAGER 'S DECISIONS

The CITY PROJECT MANAGER shall, within a reasonable time after their presentation to the CONTRACTOR ENGINEER, make decisions in writing on all claims of the CONTRACTOR and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

2.2.33 ARBITRATION

Any controversy or claim arising out of or relating to this Contract, or the breach thereof, which cannot be resolved by mutual agreement, shall be settled by arbitration in accordance with the Rules of the American Arbitration Association, and judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

2.2.34 ACCEPTANCE AND FINAL PAYMENT

Upon receipt of written notice that the work is substantially complete or ready for final inspection and acceptance, the CITY PROJECT MANAGER will promptly make such inspection and when the CITY PROJECT MANAGER finds the work acceptable under the Contract and the Contract fully performed or substantially completed, the CITY PROJECT MANAGER shall promptly issue a certificate, over the CITY PROJECT MANAGER's own signature, stating that the work required by this Contract has been substantially completed and is accepted by the CITY PROJECT MANAGER under the terms and conditions thereof, and the entire balance found to be due the CONTRACTOR, including the retained percentage, unless a retention based on the CITY PROJECT MANAGER's estimate of the fair value of the claims against the CONTRACTOR and the cost of completing the uncompleted or unsatisfactory items of work with specified amounts for each incomplete or defective item of work, is due and payable. No final payment shall be made by the CITY unless and until the CONTRACTOR has certified in writing to the CITY PROJECT MANAGER that all payroll, material bills, and other indebtedness connected with the work have been paid or otherwise satisfied.

The making and acceptance of the final payment shall constitute a waiver of all claims by the CITY, other than those arising from unsettled liens, from faulty work appearing within the guarantee period provided in the Special Conditions, from the requirements of the Drawings and Specifications, or from the manufacturer's guarantees. It shall also constitute a waiver of all claims by the CONTRACTOR, except those previously made and still unsettled.

If, after the work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR and the CITY PROJECT MANAGER so certifies, the CITY shall, upon certificate of the CITY PROJECT MANAGER, and without terminating the Contract, make payment of balance due for that portion of the work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the project to bind the subcontractors to the CONTRACTOR by the terms of the Contract Documents, and to give the CONTRACTOR the same power as regard to terminating any subcontract that the CITY may exercise over the CONTRACTOR under any provision of the Contract Documents.

Nothing contained in this Agreement shall create any contractual relationship between any subcontractor and the CITY.

Subcontracts, or transfer of Contract, shall not release the CONTRACTOR of his liability under the Contract and Bonds.

2.2.25 LIQUIDATED DAMAGES

The CONTRACTOR agrees that he can and will complete the project within the prescribed time limit as stated in Article 1.5.9 (Notice to Proceed) and within the time as may be extended. In the event the CONTRACTOR fails to complete the work within the allotted time limit, the following liquidated damages will be applied:

From More Than	Original Contract Amount To And Including	Daily Charge
\$ 0	\$ 25,000	\$ 85
25,000	50,000	140
50,000	100,000	205
100,000	500,000	280
500,000	1,000,000	420
1,000,000	2,000,000	560
2,000,000	4,000,000	840
4,000,000	8,000,000	1,120
8,000,000	10,000,000	1,400

These rates will be assessed per calendar day for each day which the CONTRACTOR fails to finish the work in excess of the time period allotted. The parties agree that the liquidated damages, as stated herein, are not a penalty and are reasonable, given the expected harm from a delay in completion, the difficulty of proving actual loss, and the inadequacy of any other remedy.

2.2.36 ADVANCE NOTICE

In order to assure proper availability of construction supervision or other personnel from the CITY PROJECT MANAGER's staff, the following notices will be required as minimums:

- (a) One (1) week notice for major additions or modifications to construction staking.
- (b) Two (2) working days' notice for all staking except for emergencies.
- (c) Two (2) days' written notice shall be delivered to the CITY PROJECT MANAGER or inspector prior to any work done on Saturday, Sunday, nights, and legal holidays.

The failure of the CONTRACTOR to provide minimum notices will not be considered for time extensions or extra compensations.

2.2.38 TAXES

Except as may be otherwise provided in this Contract, the contract price is to include all applicable taxes, but does not include any tax from which the CITY and the Contractor are exempt. Upon request by the CONTRACTOR, the CITY shall furnish a tax exemption certificate or similar evidence of exemption with respect to any such tax not included in the contract price, pursuant to this provision.

2.3 LEGAL RELATIONS & RESPONSIBILITIES TO PUBLIC

2.3.1 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Laws and Regulations: The CONTRACTOR shall keep himself fully informed of all city and county ordinances and regulations, and state and federal laws which in any manner affect the work herein specified. He shall at all times observe and comply with said ordinances, regulations, or laws, caused by the negligent actions of the CONTRACTOR, his agent, or employees.

2.3.2 PROJECT SAFETY

The CONTRACTOR is solely responsible for and shall take reasonable precautions in the performance of the work under this Contract to protect all persons from hazards to life and property. The CONTRACTOR shall comply with all health, safety and fire protection regulations and requirements.

2.3.3 PROTECTION OF THE PUBLIC AND OF WORK AND PROPERTY

The CONTRACTOR shall provide and maintain all necessary watchmen, barricades, warning lights, and signs in accordance with the Manual of Uniform Traffic Control Devices, and take all reasonable precautions for the protection and safety of the public. He shall continuously maintain reasonable protection of all work from damage, and shall take all reasonable precautions to protect the CITY's property from injury or loss arising in connection with this Contract. Streets and highways shall be kept free of dirt and litter from CONTRACTOR's handling operations. The CONTRACTOR shall take reasonable precautions to protect private property adjacent to the project from such nuisances as dust and dirt, rock, and excessive noise. He shall make good any damage, injury or loss to his work and to the property owner resulting from lack of reasonable protective precautions, except such as may be due to errors in the Contract Documents, or caused by agents of adjacent private and public property, as provided by law and the Contract Documents.

2.3.4 NON-DISCRIMINATION

In connection with the performance of work under this Contract, the CONTRACTOR agrees not to refuse to hire, discharge, promote, or demote, or discriminate in matters of compensation against any person otherwise qualified, solely because of race, creed, sex, color, national origin, handicap status or ancestry; and further agrees to inset the foregoing provision in all subcontracts hereunder.

2.14 MATERIALS & WORKMANSHIP

2.4.1 GUARANTEES

The CONTRACTOR shall guarantee his work against defective materials or workmanship for a period of two (2) years from the date of initial acceptance.

Contractor warrants and guarantees to the CITY that all equipment and materials furnished under this Contract are free from all defects in workmanship and materials.

Contractor shall remove from the project area all work or materials rejected by the CITY or its inspector for failure to comply with the Contract Documents, whether incorporated in the construction or not. The CONTRACTOR shall promptly replace the materials or re-execute the work in accordance the Contract Documents and without expense to the CITY which are or become defective due to such defects within two (2) years after the date of receipt by the CITY. The CONTRACTOR shall also bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

2.4.2 WARRANTIES

The CONTRACTOR shall guarantee his work against defective materials and workmanship for a period of two (2) years from the date of initial acceptance.

2.5 MEASUREMENT & PAYMENT

2.5.1 PAYMENT

Partial payment under the Contract shall be made at the request of the CONTRACTOR once each month, based upon partial estimates to be furnished by the CONTRACTOR and approved by the CONTRACTOR once each month, based upon partial estimates to be furnished by the CONTRACTOR and approved by the CITY PROJECT MANAGER or inspector. In making such partial payment, there shall be retained three percent (3%) of the estimated amounts until final completion and acceptance of all work covered by the Contract; provided, however, that the CITY PROJECT MANAGER, at any time after fifty percent (50%) of the work has been completed, finds that satisfactory progress is being made, shall recommend that the remaining partial payment be paid in full.

In preparing estimates for partial payments, the material delivered on the site and preparatory work done may be taken into consideration.

Payments for work under subcontracts of the CONTRACTOR shall be subject to the above conditions applying to the contract after the work under a subcontract has been fifty percent (50%) completed. In preparing estimates for partial payments, the material delivered on the site and preparatory work done may be taken into consideration.

Should the CONTRACTOR fail to proceed properly and in accordance with the Guarantee, the CITY may have such work performed at the expense of the CONTRACTOR.

2.5.2 PAY QUANTITIES

The CONTRACTOR shall be paid on a unit price basis as indicated by the proposal for the actual quantities installed.

2.6 SCOPE OF WORK

2.6.1 CHANGES IN THE WORK

At any time by written order, the CITY may make changes in the Drawings and Specifications or scheduling of the Contract within the general scope. All such work shall be executed under the time constraints of the original Contract, except that any claim for extension of time caused thereby shall be allowed and adjusted at the time of ordering such change or at such time as it can be ascertained.

- (a) Unit prices previously approved
- (b) An agreed lump sum
- (c) The actual cost of labor, direct overhead, materials, supplies, equipment and other services necessary to complete the work. In addition, there shall be added on an amount to be agreed upon, but not to exceed fifteen percent (15%) of the actual cost of the work, to cover the cost of general overhead and profit.

2.6.2 SUBLETTING OF CONTRACT

The CONTRACTOR shall not sublet, sell, transfer, assign, or otherwise dispose of the Contract, or of his rights, title, or interest therein, without written consent of the CITY. The CONTRACTOR may utilize the services of specialty subcontractors on those parts of the project which, under normal contraction practices, are performed by specialty subcontractors.

The CONTRACTOR shall not award work to subcontractors in excess of fifty percent (50%) of the contract price without prior written approval of the CITY.

The CONTRACTOR shall be as fully responsible to the CITY for the acts and omissions of his subcontractors and of persons directly or indirectly employed by him, as he is for the acts and omissions of persons directly employed by him.

2.6.3 SEPARATE CONTRACTS

The CITY reserves the right to let other contracts in connection with this project. The CONTRACTOR shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs. If the proper execution or results of any part of the CONTRACTOR's work depends upon the work of any other contractor, the CONTRACTOR shall inspect and promptly report to the CITY PROJECT MANAGER any defects in such work that render it unsuitable for such proper execution and results.

2.6.4 SUBCONTRACTS

The CONTRACTOR shall, as soon as practicable after signing the Contract, but in any event prior to the performance of any work by any subcontractor, notify the CITY, in writing, of the names of the subcontractors proposed for the work, designating the portions of work to be performed by each.

The CONTRACTOR agrees that he is as fully responsible to the CITY for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the CITY.

2.6.5 UNDERGROUND OBSTRUCTIONS

The CONTRACTOR shall anticipate all underground obstructions, such as water lines, gas lines, sewer lines, concrete, debris, and all other types of utility lines. No extra payment will be allowed for the removal, protection, replacement, repair or possible increased cost caused by underground obstruction. Any such lines or obstructions indicated on the Drawings show only the approximate location from the information available and must be verified in the field by the CONTRACTOR. The CITY PROJECT MANAGER will endeavor to familiarize the CONTRACTOR with all underground utilities and obstructions, but this will not relieve the CONTRACTOR from full responsibility for anticipating all underground obstructions.

In accordance with C.R.S. Section 9-1.5-103 (1973), the CONTRACTOR shall not make or begin excavation without first notifying the owners, operators or association of owners and operators having underground facilities in the area of such excavation. Notice may be given in person, by telephone, or in writing and shall be given at least two business days prior to beginning work.

The CONTRACTOR shall protect the existing utilities in a manner as requested by the respective utility owners at no extra compensation. The CONTRACTOR, by his signature on this proposal and subsequently on the Agreement, agrees to hold City of Evans, the agencies thereof, and their officers and employees, harmless from any and all losses, damages or claims which may arise out of, or be connected with, construction performed where said utilities are located.

Should it be necessary to relocate utilities in the area of construction, the CITY, at its own expense, will coordinate these relocations with the utility owner and the CONTRACTOR.

2.6.6 EMERGENCY WORK

In an emergency affecting the safety of life or of the work or of adjoining property, the CONTRACTOR is, without special instructions or authorization from the CITY PROJECT MANAGER, hereby permitted to act at his discretion to prevent such threatening loss or injury. He shall also act, without appeal, if so authorized or instructed by the CITY PROJECT MANAGER. Any compensation claimed by the CONTRACTOR as a result of emergency work, shall be determined by agreement or in accordance with Article 2.2.33.

2.6.7 CLEANING UP

The CONTRACTOR shall remove, at his own expense, from the CITY's property and from all public and private property, all temporary structures, rubbish and waste materials resulting from his operations. This requirement shall not apply to property used for permanent disposal of rubbish or waste materials in accordance with permission of such disposal granted to the CONTRACTOR by the CITY thereof where such disposal is in accordance with local ordinances and is approved by the CITY PROJECT MANAGER.

ARTICLE 3.0

SPECIAL CONDITIONS

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GOVERNING DOCUMENTS

The governing documents for this Work are as follows:

- Contract Documents Articles 1.0 through 3.0
- Supplementary Technical Specifications

In the case of conflict, documents shall have the following priorities: (1) Contract Documents Article 3.0 – Special Conditions, (2) Contract Documents Article 2.0 – General Conditions, and (3) Construction Drawings,

3.1 **SCOPE**

3.1.1 **DESCRIPTION OF WORK**

The work covered under the Evans Emergency Generator installation will consist of the following; (Note: all works shall be in conformance with the current City adopted codes {International Building Code 2012, International Plumbing Code 2012, International Mechanical Code 2012, International Fire Code 2012, and the National electrical Code 2011}):

Project A (Evans Public Works Operation Center):

Emergency Backup Generator

Pre-work

1. Develop and provide licensed engineered drawings for the project to the City Project Manager.

Outside work

2. Install concrete pad to support a 130KW generator (1EA) Per Generators Manufactures specifications.
3. Furnish and install (1) new 130KW Natural Gas 120/208V 3 Phase Generator. (with batteries)
4. Furnish and install conduit and wiring from existing service to new ATS, from ATS to new generator and from ATS to existing tap box.
5. Trench and backfill underground wires from new generator to building.

Fuel Supple

6. Install new natural gas service line form new gas meter to generator.
7. Bury all natural gas lines underground.

Fuel Pumps

8. Ensure that the both deasil and regular fuel pumps are connected to backup generators (1 EA)

Inside Work

9. Furnish and install (1) new 400A 120/208V 3 Phase 4 wire, open transition,

- NEMA 3R, automatic transfer switch. (1 EA)
- 10. Intercept load side of existing 400A service and re-route to new transfer switch.
- 11. Furnish and install remote annunciator for new generator system. (1 EA)

Project B (Evans Fire Station 2):

Emergency Backup Generator

Pre-work

- 1. Develop and provide engineered drawings for the project.
- 2. Demo existing manual transfer switch feeding current EM Panel.
- 3. Demo existing mobile back-up generator.

Outside work

- 4. Furnish and install (1) new 200KW Natural Gas 120/240V 1 Phase Generator (with batteries).
- 5. Furnish and install conduit and wiring from existing service to new ATS, from ATS to new generator and from ATS to existing tap box.
- 6. Installation of j –box on exterior of building to reconnect panel to MDP.
- 7. Trench and backfill underground wires from new generator pad to building.

Fuel Supply

- 8. Install new natural gas service line form new gas meter to generator.
- 9. Bury all natural gas lines underground.

Inside Work

- 10. Furnish and install (1) new 800A 120/240V 1 Phase 3 wire, open transition, NEMA 3R, service rated automatic transfer switch. (1 EA)
- 11. Furnish and install remote annunciator for new generator system.
- 12. Intercept load side of existing 800A service and re-route to new transfer switch.
- 13. Re-work existing wiring so that existing EM panel is fed directly from MDP which will be backed up by new generator system.

3.1.2 DRAWINGS

The separate drawings for each project include the following types of sheets: cover, site photos, casework layouts, and civil details.

3.2 GENERAL PROJECT SPECIFICATIONS

It is the intent of these Special Conditions to require a functionally complete project (or part thereof) to be constructed in accordance, and in conjunction with, all Contract Documents as defined within Article 1.0 – Contracting Procedures and Article 2.0 – General Conditions. Any work, materials, or equipment that may be reasonable inferred, as being required to produce the intended result will be provided whether or not specifically called for. When words, which have a well-known technical or trade meaning, are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning.

Use of these Special Conditions in conjunction with related Contract Documents to establish the total requirements of the project. The CONTRACTOR shall obtain all required documents and have them available during the execution of work.

3.2.1 EXISTING CONDITIONS

Prior to starting work on the project, the CONTRACTOR shall walk the project site in the areas scheduled for work with the City Project Manager to discuss conditions that may affect the work being performed. These conditions may include: fencing, walls, driveways, existing structures, buried utilities, and other existing improvements (collectively surface improvements) that are to remain on both public and private property. The CITY PROJECT MANAGER may record the existing conditions and/or features using a video camera for future reference and/or comparison prior to final project acceptance.

If in the opinion of the CITY PROJECT MANAGER, there is sufficient operating space to perform the work in a reasonable manner without disturbing, destroying and/or removing existing improvements, the CONTRACTOR shall perform the work without disturbing, destroying and/or removing said improvements. In no event shall the CONTRACTOR remove trees, shrubs, vines, or other items without receiving prior approval (in writing) of the CITY PROJECT MANAGER.

The CONTRACTOR shall make every effort to prevent or limit damage to surface improvements within or adjacent to the work area. The CONTRACTOR is responsible for protecting or restoring all such surface improvements to their original or improved condition. Any of these surface improvements damaged by the CONTRACTOR shall be replaced by the CONTRACTOR at his/her own expense.

3.2.2 SALES TAX

Sales Tax shall not be paid for materials purchased for use on this project.

3.2.3 WORKING HOURS

The CONTRACTOR shall restrict working hours to between 7:00 A.M. and 5:00 P.M. on normal City of Evans business days unless prior approval has been obtained from the City.

3.2.4 PROJECT WARRANTY

The CONTRACTOR shall provide a two-year warranty for all construction beginning on the date of initial acceptance. All work that fails or deteriorates during the first or second year shall be replaced under this warranty. There will be no additional cost to the CITY for material, equipment, labor and/or traffic control for warranty work. Warranty work shall be completed in accordance with these contract specifications within 30 days of written notification by the CITY.

3.2.5 MATERIALS, MANUFACTURER'S CERTIFICATES & RECOMMENDATIONS

Shop drawings or samples required by these specifications shall be submitted before confirmation of orders.

Certifications by the manufacturer that the material or equipment conforms to all applicable requirements shall be submitted. These certifications shall reference the

standard specifications with which compliance is required.

Shop drawings shall be submitted in triplicate to the CITY PROJECT MANAGER and shall bear both the CONTRACTOR's and ENGINEERS certification he has reviewed, checked, and approved the shop drawings and that they are in conformance with the requirements of the Contract Documents.

The CITY PROJECT MANAGER shall return shop drawings to the CONTRACTOR within 14 days from the time of receipt. If they are returned noted "disapproved," they shall be re-submitted with necessary revisions and the 14-day review period again shall be required.

The CONTRACTOR shall maintain a set of reviewed shop drawings in good order at the site of work. Said drawings shall be available to the CITY PROJECT MANAGER.

3.2.6 EROSION AND DUST CONTROL

The CONTRACTOR is responsible for the control of erosion and dust within the project limits. The contractor will be solely responsible for executing the permit requirements and for all record keeping and reporting requirements. Dust shall be controlled at all times in accordance with applicable regulations and as directed by the CITY.

3.2.7 CONSTRUCTION WATER

Construction water shall consist of providing a water supply sufficient for the needs of the project and the hauling and applying of all water required. The CONTRACTOR SHALL NOT use water from local residences for construction purposes or to provide water to laborers.

The CONTRACTOR is encouraged to use water obtained from the Evans Ditch whenever possible and appropriate. Contact the City of Evans Public Works Department to arrange for use of Evan Ditch water. Evans Ditch water may not be available at the time of construction.

The CONTRACTOR shall make arrangements for and provide all necessary water for his construction operation and domestic use at his own expense. The CONTRACTOR shall secure permission from the water utility and notify the City Project Manager and Fire Department/District before obtaining water from the fire hydrants.

If the CONTRACTOR purchases water from a water utility at a fire hydrant on or near the project, he shall make all arrangements at his own expense and payment made direct to the water utility as agreed upon. The CONTRACTOR shall follow all rules and regulations of the respective district. Use only special hydrant-operating wrenches to open hydrants. Make certain that the hydrant valve is open "full" since cracking the valve causes damage to the hydrant. If any hydrants are damaged, the CONTRACTOR will be held responsible and shall immediately notify the appropriate agencies so that all damages can be repaired as quickly as possible. Fire hydrants shall be completely accessible to the Fire Department/District at all times. Upon completion of the work, the CONTACTOR shall remove all temporary piping from the facilities.

The CONTRACOR shall meet all applicable requirements of OSHA, state, and other governing agencies pertaining to sanitary facilities for workers. No separate payment will be

made for construction water. All of the CONTRACTOR's costs of whatsoever nature shall be included in all associated Bid Items on the bid schedule.

3.2.8 REMOVALS

The CONTRACTOR shall be responsible for locating sites and making arrangements for disposal of all materials removed from the site. The CONTRACTOR's handling and disposition of excavation material shall be to a disposal site designated and/or approved by the CITY PROJECT MANAGER. This includes concrete, asphalt, unsuitable or unstable sub-grade material, and any other trash, rubbish, or debris generated as a result of the construction. No trash, rubbish, or debris shall be allowed on the lawns of local residences by the CONTRACTOR's workforce. No separate payment will be made for disposal of excavation material generated. This disposal shall be considered incidental to the construction and all costs thereof shall be included in various unit CONTRACT process.

3.2.9 SAMPLES AND TESTING

All testing if required shall be completed by an independent testing laboratory hired by the CONTRACTOR, and acceptable to the CITY PROJECT MANAGER.

3.2.10 SUBCONTRACTORS

All subcontractors are subject to approval by the CITY.

3.2.11 MINOR ITEMS OF CONSTRUCTION

Minor items of construction that do not have a bid item provided will not be paid for separately. The costs of these items shall be merged with unit prices shown on the bid form.

3.2.12 CLEANING DURING CONSTRUCTION

During execution of work, the CONTRACTOR shall clean the sites, adjacent properties, and public access roadways on a daily basis at a minimum or as directed by the CITY PROJECT MANAGER and shall dispose of waste materials, debris, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish. The CONTRACTOR shall wet down dry materials and rubbish to lay dust and prevent blowing dust.

The CONTRACTOR shall provide containers for collection and disposal of waste materials, debris, and rubbish.

The CONTRACTOR shall cover or wet loads of excavated material leaving the site or of material being imported to prevent blowing dust. The CONTRACTOR shall also clean the public access roadways to the site of any material falling from the trucks or equipment.

The CONTRACTOR shall clean debris from pipelines and manhole structures, as necessary and as directed by the CITY PROJECT MANAGER.

3.2.13 FINAL CLEANUP

At the completion of the work and immediately prior to final inspection, the CONTRACTOR shall remove from the Construction Site all temporary structures and all materials, equipment, and appurtenances not required a part of, , the completed work. The CONTRACTOR shall notify the CITY when final cleanup is ready for inspection.

The CONTRACTOR shall repair, patch, and touch-up marred surfaces to specified finish to match adjacent surfaces.

The CONTRACTOR shall broom-clean paved surfaces and rake clean other surfaces of ground as necessary and as directed by the CITY PROJECT MANAGER.

3.3 PROJECT SCHEDULE AND SEQUENCE

It is the intent of the CITY to award this project as soon as possible after receiving bids. The CONTRACTOR will have substantially complete on or before January 15 2016 and completed and ready for final payment on or before January 31, 2016 to complete the work prescribed herein.

At the Pre-Construction Conference, the CONTRACTOR shall submit their baseline construction schedule for review and discussion. This schedule shall clearly present the key milestones of the project and outlining the overall sequencing of work. After acceptance, the

CONTRACTOR will maintain the schedule and update the CITY as required throughout the project.

3.4 PROJECT COORDINATION

The CONTRACTOR is responsible for contracting and coordinating with all project affected stakeholders. These affected stakeholders may include:

- City of Evans Public Works Staff
- Property Owners
- Utility Companies (listing of possible companies can be obtained from the CITY)
- Weld County
- Evans Fire Protection District
- Evans Police Department

It is the responsibility of the CONTRACTOR to field verify locations of utilities prior to initiating construction and any measurement of the influent channel of the treatment facility headwork. In addition, any street closures must be properly coordinated with any and/or all the affected stakeholders listed above.

3.5 MEASUREMENT AND PAYMENT

3.5.1 GENERAL

All materials will be measured and paid for in accordance with the Contract Documents. All material shall arrive at the job site with load or batch tickets indicating time loaded or batched, material type, material quantity, and date. A copy of the tickets shall be given to the CITY PROJECT MANAGER on site the day the material arrives. Material delivered and placed without a load ticket will not be paid for. The CITY will not pay for any material if the load ticket indicates that the vehicle and its load exceeded the legal weight limit for the vehicle type.

All work performed and all materials furnished shall conform to the requirements, including tolerances, provided within the Contract Documents.

The CONTRACTOR is responsible for providing a product to be in conformance with the Governing Document. The suitability of the finished product will be determined by the CITY PROJECT MANAGER. A finished product that is not found suitable by CITY PROJECT MANAGER may be subject to:

1. Disapproval and subsequent removal and replacement of the material/product at the CONTRACTOR'S expense.
2. A reduction in pay as discussed with the CITY PROJECT MANAGER. Only the CITY PROJECT MANAGER will determine suitability for material/products related to this project.
3. The CITY PROJECT MANAGER allows questionable material/product to remain in place with the CONTRACTOR providing some type of remedial action to make the material/product suitable. The type of remedial action to be used will be determined by the CITY PROJECT MANAGER and paid for by the CONTRACTOR.
4. The addition of an extended warranty for questionable material/product to allow further review to determine suitability and any further action by CONTRACTOR at end of warranty period.

The measurement and payment for this project shall be as written specifically for this project and included in this Article of the Contract Document and the Measurement and Payment specification section 01025.

The work performed under this Agreement shall be paid for on a unit price basis as outlined in Article 1.0 – Bid Schedule. The quantities provided on the Article 1.0 – Bid Schedule are only estimates of the actual quantities of the work to be performed, and are only included for informational purposes. The CITY reserves the right to alter and/or eliminate any item of work. Modifications, if any, will be made by Change Order.

Unless otherwise provided for specifically in this section, all lump sum bid items will be paid for

upon completion of all work associated with the lump sum bid item.

All costs incurred shall comply with the provisions of the Contract Documents and shall be included in the lump sum price bid for the associated items in the proposal. Except as may be otherwise stipulated, no material, labor, or equipment will be furnished by the CITY.

3.5.2 MEASUREMENTS

- A. Refer to Section 01025 MEASUREMENT AND PAYMENT
- B. No measurement for payment shall be made for any of the work, materials and equipment required for mobilization. A lump sum payment will be made.
- C. The work to be paid will be as identified within Article 1.0 – Bid Proposal to perform work, including but not limited to, the furnishing and installation of all components and accessories, in accordance with the Contract Documents.
- D. No separate measurement shall be made for fittings and accessories necessary to install bid items.
- E. No measurement for payment shall be made for removal or replacement of materials and/or existing features damaged by the CONTRACTOR in his operation.

3.5.3 PAYMENTS

- A. The work covered by the Contract Documents is as follows: See Section 3.1.1 DESCRIPTION OF WORK
- B. Refer to Section 01025 MEASUREMENT AND PAYMENT found in Article 4.0.
- C. No separate payment shall be made for fittings and accessories necessary to install bid item.
- D. Payment for the Bid Item other than mobilization & demobilization shall include full compensation for, but is not limited to, all materials, labor, supplies, transportation, disposal, equipment required to complete the work in accordance with the Contract Documents.
- E. No separate payment shall be made for fittings and accessories necessary to install bid item.
- F. CONTRACTOR will not be reimbursed for the retesting of any materials that fail, or due to inclement weather, or for any other reason. All samples required for testing will be provided by the CONTRACTOR and at no cost to the OWNER.
- G. Excess excavation shall be disposed of off-site and shall not be paid for separately.
- H. All samples required for testing will be provided by the CONTRACTOR and at no cost to the CITY.

3.6 FEMA REQUIREMENTS

3.6.1 PREVISION FOR TERMINATION OF CAUSE AND CONVENIENCE

Termination for convenience” is the exercise of a subgrantee’s right to completely or partially terminate the contractor’s performance of work under a contract when it is in the

subgrantee's interest. On the other hand, "termination for cause" (or "default") is the exercise of a party's right to completely or partially terminate a contract because of the other party's actual or anticipated failure to perform its contractual obligations.

3.6.2 EQUAL OPPORTUNITY

During the performance of this contract, the contractor agrees as follows:

- A. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- B. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- C. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- D. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- E. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- F. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- G. The contractor will include the portion of the sentence immediately preceding paragraph (A) and the provisions of paragraphs (1) through (G) in every subcontract or

purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.”

3.6.3 ANTI-KICKBACK ACT

- A. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
- B. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as the FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- C. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.”

3.6.4 DAVIS-BACON ACT

Davis-Bacon Act wage rates are required for this project.

- A. Contractors and their SUBCONTRACTORS must pay workers employed directly upon the site of work no less than the locally prevailing wages and fringe benefits paid on projects of similar character.

3.6.5 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Compliance with the Contract Work Hours and Safety Standards Act

- A. 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.
- B. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition,

such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

- C. Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- D. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.”

3.6.6 FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) REPORTING REQUIREMENTS AND REGULATIONS

1. General. The City of Evans is using grant award funding from Hazard Mitigation Grant funding (HMPG) awarded from FEMA and from Community Development Block Grant-Disaster Recovery (CDBG-DR from Colorado Department of Local affairs to pay, in whole or in part, for the costs incurred under this contract. As a condition of both Hazard Mitigation grant and Community Development Block Grant-Disaster Recovery funding under (major disaster or emergency) declaration FEMA-4145, FEMA requires the City of Evans to provide various financial and performance reports. It is important that the contractor is aware of these reporting requirements, as the City of Evans may require the contractor to provide certain information, documentation, and other reporting in order to satisfy reporting requirements to the City of Evans which, in turn, will enable the City of Evans to satisfy reporting requirements to FEMA.
2. Failure of the City of Evans to satisfy reporting requirements to FEMA is a material breach of the FEMA-State Agreement, and could result in loss of federal financial assistance awarded to fund this contract.

- B. Applicable Regulations and Policy. The applicable regulations, FEMA policy, and other sources setting forth these reporting requirements are as follows:
 - 1. 44 C.F.R. § 13.40 (Monitoring and Reporting Program Performance)
 - 2. 44 C.F.R. § 13.41 (Financial Reporting)
 - 3. 44 C.F.R § 13.50(b) (Reports)
 - 4. 44 C.F.R. § 206.204(f) (Progress Reports)
 - 5. FEMA Standard Operating Procedure No. 9570.14, Public Assistance Program Management and Grant Closeout Standard Operating Procedure (Dec. 2013)
 - 6. FEMA-State (or Tribal) Agreement
 - 7. The Davis-Bacon Act (sec. 1-7, 46 Stat. 1949, as amended; Pub. L. 74-403, 40 U.S.C. 276a-276a-7).
- C. Financial Reporting. The City of Evans is required to submit to the following financial reports to FEMA:
 - 1. Initial Report. An initial Federal Financial Report (SF 425) no later than 30 days after FEMA has approved the first Public Assistance project under FEMA-4145- PA-EVANS.
 - 2. Quarterly Reports. Following submission of the initial report, quarterly Federal Financial Reports until submission of the final report described in the following subparagraph. Reports are due on January 10, April 10, July 10, and October 10.
 - 3. Final Report. A final Federal Financial Report within 30 days of the end of the period of performance for the Hazard Mitigation grant.
- D. Performance Reporting. The City of Evans is required to submit to the following financial reports to FEMA:
 - 1. Quarterly Reports. Following submission of the initial report, quarterly performance reports until submission of the final report described in the following subparagraph. Reports are due on January 10, April 10, July 10, and October 10.
 - 2. Final Report. A final performance report within 30 days of the end of the period of performance for the Hazard Mitigation grant.

3.6.7 PATENT RIGHTS AND COPYRIGHTS AND RIGHTS IN DATA

Not applicable

3.6.8 ACCESS TO RECORDS

Access to Records. The following access to records requirements apply to this contract:

- A. The contractor agrees to provide the City of Evans, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representative's access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- B. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- C. The contractor agrees to provide the FEMA Administrator or his authorized representative's access to construction or other work sites pertaining to the work

being completed under the contract.

3.6.9 RETENTION OF RECORDS

“Retention of Records. The contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three years after the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case contractor agrees to maintain same until the City of Evans, the FEMA Administrator, the Comptroller General of the United States, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related to the litigation or settlement of claims.”

3.6.10 COMPLIANCE WITH CLEAN AIR AND CLEAN WATER

ACT Clean Air Act

- A. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- B. The contractor agrees to report each violation to the City of Evans and understands and agrees that the City of Evans will, in turn, report each violation as required to assure notification to the City of Evans, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- C. The contractor agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with federal assistance provided by FEMA.

Federal Water Pollution Control Act

- A. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- B. The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the city of Evans, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office. The contractor agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with federal assistance provided by FEMA.

3.6.11 ENERGY EFFICIENCY

Energy Conservation. The contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.”

ARTICLE 4.0

EVANS EMERGENCY GENERATOR INSTALLATION TECHNICAL SPECIFICATIONS

INDEX

SECTION 01025	Measurement and Payment
SECTION 01300	Submittals
SECTION 01400	Quality Control
SECTION 01700	Contract Closeout
SECTION 03110	Concrete Forming
SECTION 03150	Construction Joints.
SECTION 03210	Reinforcement steel.
SECTION 03300	Small Volume Cast-In-Place Concrete
SECTION 03350	Concrete Finishing
SECTION 03390	Concrete Curing
SECTION 10800	Generators
SECTION 10900	Natural Gas Line

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Measurement and payment criteria applicable to portions of the Work performed where unit price adjustments are provided.
- B. Defect assessment and non-payment for rejected work.

1.2 AUTHORITY

- A. The CONTRACTOR ENGINEER will take all measurements and compute quantities accordingly.
- B. Assist by providing necessary equipment, workers, and survey personnel as required.

1.3 ADJUSTMENT UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the CONTRACTOR ENGINEER and/or inspection firm to determine final payment.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit prices contracted.
- C. If the actual Work requires a 25 percent or greater change in quantity than those quantities indicated, the Owner or Contractor may claim for a Contract Price adjustment.

1.4 MEASUREMENT OF QUANTITIES

- A. Measurement Devices:
 - 1. Weigh Scales: Inspected, tested and certified by the State of Colorado Weights and Measures department within the past year.
 - 2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
 - 3. Metering Devices: Inspected, tested and certified by the applicable State department within the past year.
- B. Measurement by Weight: Measured by actual scale ticket weight for specific items identified.
- C. Measurement by Volume: Measured by actual area and depth of in place material.
- D. Measurement by Area: Measured by square dimension using mean length and width or radius.
- E. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- F. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.5 PAYMENT

- A. Payment Includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.
- B. Final payment for work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the CONTRACTOR ENGINEER multiplied by the unit sum/price for Work which is incorporated in or made necessary by the Work.

1.6 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the CONTRACTOR ENGINEER and Owner, it is not practical to remove and replace the Work, the OWNER will direct one of the following remedies:
 - 1. The defective Work may remain, but the unit sum/price will be adjusted to a new sum/price at the discretion of the OWNER.
 - 2. The defective Work will be partially repaired to the instructions of the CONTRACTOR ENGINEER, and the unit sum/price will be adjusted to a new sum/price at the discretion of the OWNER.
- C. The individual specification sections may modify these options or may identify a specific formula or percentage sum/price reduction.
- D. The authority of the OWNER to assess the defect and identify payment adjustment, is final.

1.7 NON-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected Products.

1.8 SCHEDULE OF UNIT PRICES

The unit prices shall include all work, materials and equipment required to complete the work as specified for the Evans Emergency Generator Installations.

- A. Mobilization/Demobilization: N/A

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed Products list.
- D. Product Data.
- E. Shop Drawings.
- F. Samples.
- G. Design data.
- H. Test reports.
- I. Certificates
- J. Manufacturer's instructions.
- K. Manufacturer's field reports.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control: Manufacturers' field services and reports.
- B. Section 01700 - Contract Closeout: Contract warranties, bonds, and closeout submittals.

1.3 REFERENCES

- A. AGC (Associated General Contractors of America) publication "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry".

1.4 SUBMITTAL PROCEDURES

- A. Transmit each submittal with CITY PROJECT MANAGER accepted form.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to CITY PROJECT MANAGER at Evans Emergency Generators

the address of 1100 37th Street, Evans, Colorado 80620. Coordinate submission of related items. For each section of the specifications, the initial submittal shall be complete for all items and components contained within that section of the specifications.

- F. For each submittal for review, allow 15 days excluding delivery time to and from the contractor.
- G. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- H. Provide space for CONTRACTOR and ENGINEER review stamps.
- I. When revised for resubmission, identify all changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- K. Submittals not requested will not be recognized or processed.
- L. If more than one resubmission is required because of lack of previously requested data or additional information. This would not include submittal data for slump tests, field tests, and other submittal requirements for placing equipment into service.

1.5 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedule in duplicate within 15 days after date of OWNER-CONTRACTOR Agreement.
- B. Revise and resubmit as required.
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Submit a horizontal bar chart with separate line for each major portion of Work or operation, identifying first work day of each week.
- E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- F. Indicate estimated percentage of completion for each item of Work at each submission.
- G. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by OWNER and required by Allowances.

1.6 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of OWNER-CONTRACTOR Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.7 PRODUCT DATA

- A. Product Data For Review:
 - 1. Submitted to CITY PROJECT MANAGER for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. After review, provide copies and distribute in accordance with SUBMITTAL

PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

B. Product Data For Information:

1. Submitted for the CITY PROJECT MANAGER'S knowledge as contract administrator or for the OWNER.

C. Product Data For Project Close-out:

1. Submitted for the OWNER'S benefit during and after project completion.

D. Submit the number of copies which the Contractor requires, plus three copies which will be retained by the CITY PROJECT MANAGER.

E. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this project.

F. Indicate Product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

G. After review, distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700 - CONTRACT CLOSEOUT.

1.8 SHOP DRAWINGS

A. Shop Drawings:

1. Shop drawings must include an Engineers stamp of approval.

B. Shop Drawings For Review:

1. Submitted to CITY PROJECT MANAGER for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

2. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

B. Shop Drawings For Information:

1. Submitted for the CITY PROJECT MANAGER'S knowledge as contract administrator or for the OWNER.

C. Shop Drawings For Project Close-out:

1. Submitted for the OWNER'S benefit during and after project completion.

D. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

E. Submit the number of opaque reproductions which Contractor requires, plus three copies which will be retained by CITY PROJECT MANAGER.

1.9 SAMPLES

A. Samples For Review:

1. Submitted to CITY PROJECT MANAGER for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

2. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in

Section 01700 - CONTRACT CLOSEOUT.

- B. Samples For Information:
 - 1. Submitted for the CITY PROJECT MANAGER knowledge as contract administrator or for the OWNER.
- C. Samples For Selection
 - 1. Submitted to CITY PROJECT MANAGER for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for CITY PROJECT MANAGER selection.
 - 3. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.
- D. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- E. Include identification on each sample, with full Project information.
- F. Submit the number of samples specified in individual specification sections; one of which will be retained by CITY PROJECT MANAGER.
- G. Reviewed samples which may be used in the Work are indicated in individual specification sections.
- H. Samples will not be used for testing purposes unless specifically stated in the specification section.

1.10 DESIGN DATA

- A. Submit for the CITY PROJECT MANAGER'S knowledge as contract administrator or for the Owner.
- B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.11 TEST REPORTS

- A. Submit for the CITY PROJECT MANAGER'S knowledge as contract administrator or for the OWNER.
- B. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.12 CERTIFICATES

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to CITY PROJECT MANAGER, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to CITY PROJECT MANAGER.

1.13 MANUFACTURER'S INSTRUCTIONS

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- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to CITY PROJECT MANAGER for delivery to owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- C. Refer to Section 01400 - Quality Control, Manufacturers' Field Services article.

1.14 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for the CITY PROJECT MANAGER benefit as contract administrator or for the Owner.
- B. Submit report in duplicate within 30 days of observation to CITY PROJECT MANAGER for information.
- C. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

PART 2. PRODUCTS
Not Used.

PART 3. EXECUTION
Not Used.

END OF SECTION

SECTION 01400
QUALITY
CONTROL

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances
- C. References and standards.
- D. Testing services.
- E. Manufacturers' field services.

1.2 RELATED SECTIONS

- A. All sections.

1.3 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from CITY PROJECT MANAGER before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.4 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from CITY PROJECT MANAGER before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.5 REFERENCES AND STANDARDS

- A. For Products or workmanship specified by association, trades, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date specified in the individual specification sections, except where a specific date is established by code
- C. Obtain copies of standards where required by product specification sections.
- D. Neither the contractual relationships, duties, nor responsibilities of the parties in Contract nor those of the CITY PROJECT MANAGER shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.6 TESTING SERVICES

- A. OWNER will perform inspections and contractor will perform tests where services are not required by various Specification Sections to be provided by the OWNER r. Contractor must provide at last 24 hour notice of need for inspection or testing services.
- B. CONTRACTOR is responsible for all costs associated with testing any work or equipment, i.e. concrete work or generators. OWNER will hold back the 10% of final payment until any work tested has received exceptions verification.
- C. Services will be performed in accordance with requirements of governing authorities and with specified standards.
- D. Reports will be submitted to CITY PROJECT MANAGER in duplicate giving observations and results of tests, indicating compliance or non-compliance with specified standards and with Contract Documents.
- E. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the CONTRACTOR ENGINEER or the OWNER.
- F. Cooperate with testing firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
- G. Testing does not relieve CONTRACTOR to perform work to contract requirements.
- H. Re-testing required because of non-conformance to specified requirements shall be paid by the CONTRACTOR.

1.7 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to CITY PROJECT MANAGER 30 days in advance of required observations. Observer subject to approval of CITY PROJECTMANAGER.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Refer to Section 01300 - SUBMITTALS, MANUFACTURERS' FIELD REPORTS article.

PART 2. PRODUCTS

Not Used.

PART 3. EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and substrata surfaces are acceptable for subsequent work. Beginning new work means acceptance of existing conditions.
- B. Verify that existing substrata is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.2 PREPARATION

- A. Remove unsuitable materials from substrata surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrata prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrata primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Spare parts and maintenance Products.
- F. Warranties and bonds.
- G. Operation and Maintenance Data.

1.2 RELATED SECTIONS

- A. General Conditions.

1.3 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for CITY PROJECT MANAGER'S review.
- B. Provide submittals to CITY PROJECT MANAGER that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.
- C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- D. Replace filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.5 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.6 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract drawings.
- G. Submit documents to CITY PROJECT MANAGER with claim for final Application for Payment.

1.7 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Provide spare parts, maintenance, and extra Products in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

1.8 WARRANTIES AND BONDS

- A. Provide duplicate notarized copies.
- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in three ring binder with durable plastic cover.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated

submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

1.9 OPERATION AND MAINTENANCE DATA

- A. All required Operation and Maintenance information shall be bound by division in notebooks, each with a Table of Contents and index tabs. More than one division may be bound in the same three-ring binder, but the volume must be suitably labeled for easy access by maintenance personnel.
- B. Submit data bound in 8-1/2 x 11 inch (A4) text pages, three D side ring binders with durable plastic covers.
- C. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- D. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- E. Contents: Prepare a Table of Contents for each volume, with each roduct or system description identified, typed on 20 pound white paper, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of City Project Manager, Engineer, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - 3. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Certificates.
 - c. Photocopies of warranties.
- F. Submit two (2) draft copies of completed volumes prior to 50% payment of contract. These copies will be reviewed and one (1) copy returned with CITY PROJECT MANAGER comments. Revise content of all document sets as required prior to final submission.
- G. Submit four (4) sets of revised final volumes after review and acceptance of initial submittal set. The final draft shall be submitted two weeks prior to equipment start-up.

PART 2. PRODUCTS

Not Used.

PART 3. EXECUTION

Not Used.

END OF SECTION

SECTION 03110

CONCRETE FORMING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. CONTRACTOR shall supply all labor, tools, equipment and materials to set forms for the proper placement of concrete for structures. It is CONTRACTOR's responsibility to design and build adequate forms and to leave them in place until the forms can be safely removed. CONTRACTOR is responsible for damage and injury caused by removing forms carelessly or before the concrete has gained sufficient strength.

1.2 RELATED SECTIONS

- A. The following is a list of SPECIFICATIONS which may be related to this section:
 - 1. Section 03150, Construction Joints.
 - 2. Section 03210, Reinforcement steel.
 - 3. Section 03300, Small Volume Cast In Place Concrete
 - 4. Section 03350, Concrete Finishing.
 - 5. Section 03390, Concrete Curing.

1.3 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
 - 1. American Concrete Institute (ACI):
 - a. Manual of Concrete Practice.
 - b. 117, Specifications for Tolerances for Concrete Construction and Materials.
 - c. 318, Building Code Requirements for Structural Concrete.
 - d. SP-4, Formwork for Concrete.
 - 2. American Plywood Association (APA):
 - a. J20, Grades and Specifications.
 - b. PS-1-07, US Product Standard for Structural Plywood.
 - c. V345, Concrete Forming.

1.4 SUBMITTALS

- A. General:
 - 1. Design, placement and maintenance of formwork and form systems is the responsibility of CONTRACTOR. Submittals other than those listed are not required nor will they be reviewed.
- B. Product Technical Data:

1. Manufacturer and type of form materials.
 2. Manufacturer and type of form ties.
 3. Manufacturer and type of void form including compressive strength.
 4. Manufacturer of form release agent.
- C. CONTRACTOR shall submit information about the type of wedge anchor or nail, and the means of patching the surface for review and acceptance by CITY PROJECT MANAGER.

1.5 QUALITY ASSURANCE

- A. Formwork, and if required shoring and reshoring, shall be designed by a Professional Engineer licensed to practice in the state where the PROJECT is located.

PART 2 PRODUCTS

2.1 GENERAL

- A. For the purposes of this SPECIFICATION, exposure shall be defined as a surface, interior or exterior, of a structure that will be exposed to view during its use. For example, the interior wall of a buried culvert is a surface exposed to view.

2.2 FORMS FOR SURFACES EXPOSED TO VIEW

- A. Walls:
1. N/A
- B. Beams:
1. N/A
- C. Sides of Column Footings:
D. N/A.

2.3 FORMS FOR SURFACES NOT EXPOSED TO VIEW

- A. Wood or steel sufficiently tight to prevent mortar leakage.

2.4 ANCHORAGE IN SLABS FOR BRACES FOR WALL AND COLUMN FORMS

- A. Braces shall be anchored to deadmen of sufficient size and weight to maintain the proper wall/column alignment under all load conditions including wind.
- B. Wedge anchors of any type, inserts or concrete nails are specifically not permitted for anchorage of wall or column braces in water retaining structures. Wedge anchors or nails may be used in other structures when in the opinion of CONTRACTOR ENGINEER the resulting concrete finish patch will be acceptable.

2.5 ANCHORAGE IN SLABS FOR UPTURNED COLUMN FOOTING FORMS

- A. N/A

2.6 FORM TIES

- A. Other Structures: Symons, S-Panel Ties, or equal, with one (1) inch break back cones on both tie ends, unless otherwise called out or shown in the DRAWINGS or approved by CONTRACTOR ENGINEER, shall be used on all wall forms.
- B. Twisted Wire Ties: Twisted wire ties with loops to hold forms in position are not permitted.

2.7 CHAMFER STRIP

- A. Chamfer strips, three-quarters (3/4) inch or as shown on the DRAWINGS, shall

be placed in the corners of forms and at the tops of walls or up-turned footings, to produce beveled edges on permanently exposed concrete surfaces. Interior angles of intersecting concrete surfaces and edges of construction joints shall not be beveled unless otherwise indicated in the DRAWINGS. The chamfer strip may be made of wood or polyvinyl chloride (PVC).

2.8 STIFF-BACKS

A. N/A

2.9 GANG WHALER PLATES FOR THE TOP OF CURVED WALLS

1. N/A

2.10 WEDGE INSERTS

A. N/A

2.11 FORM RELEASE AGENT

A. Magic Kote by Symons Corp. or equal.

PART 3 EXECUTION

3.1 GENERAL

- A. Forms shall be used, wherever necessary, to confine the concrete and shape it to the specified lines and grades as shown on the DRAWINGS. CONTRACTOR shall set and maintain concrete forms so as to ensure completed WORK is within all applicable tolerance limits. If a type of form does not, in the opinion of CONTRACTOR ENGINEER, consistently perform in an acceptable manner, the type of form shall be changed and the method of erection shall be modified by CONTRACTOR, subject to the review CONTRACTOR ENGINEER.
- B. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of concrete, and shall be maintained rigidly in position. The design of formwork and placing rate of concrete with medium and high-range water reducing agents shall be adjusted to compensate for the greater hydraulic pressures exerted on the forms by concrete of high fluidity.
- C. Forms shall be clean and free from mortar and other foreign material from previous use prior to being placed.
- D. CONTRACTOR shall demonstrate that forms are vertical, with proper alignment, grade or radius when requested by CONTRACTOR ENGINEER.

3.2 FORM SURFACE TREATMENT

- A. Prior to placing reinforcing steel, coat the forms with a non-staining release agent that will effectively prevent the absorption of moisture and prevent bond of the concrete to the form. Contact with hardened concrete against which fresh concrete is to be placed is prohibited. All bond breaking materials or processes shall be used only after acceptance by CONTRACTOR ENGINEER. Care shall be taken in applying form oil to avoid contact with reinforcement steel.

Embedded material which becomes coated with form oil shall be thoroughly cleaned or replaced at the expense of CONTRACTOR.

3.3 TOLERANCES

- A. Tolerances are defined as allowable variations from specified alignments, grades, and dimensions. Allowable variations from specified alignments, grades, and dimensions are prescribed in the following sub-section. Descriptions of these criteria can be found in Part 2 of the ACI Manual of Concrete Practice, and ACI 117.
- B. Footings and Foundations:
 - 1. Drilled Piers:
 - a. N/A
 - 2. Continuous Wall Footings (Circular and Non-circular):
 - N/A.
 - 3. Column Footings:
 - N/A.
- C. Cast-in-Place Concrete for Buildings and other Structures:
 - 1. Member (such as a beam, column, wall, slab, or pier):
 - a. Vertical Alignment: Variation from specified plump less than or equal to three-eighths ($\leq 3/8$) inch (full height) one-quarter ($1/4$) inch (one form section).
 - b. Lateral Alignment:
 - 1) Maximum in Any Bay: Variation less than or equal to one-half ($\leq 1/2$) inch.
 - 2) Maximum in Any Twenty (20) Feet of Length: Variation less than or equal to one-half ($\leq 1/2$) inch.
 - 3) Maximum for Entire Wall Length: Variation less than or equal to one (≤ 1) inch.
 - 4) Floor and Wall Opening Locations: Variation less than or equal to one-half ($\leq 1/2$) inch.
 - 5) Saw cuts and Joints: Variation less than or equal to three-quarters ($\leq 3/4$) inch.
 - c. Level Alignment:
 - 1) Top Elevation of Slabs: Variation less than or equal to three-quarters ($\leq 3/4$) inch.
 - 2) Lintels, Other Lines Exposed to View: Variation less than or equal to three-quarters ($\leq 3/4$) inch.
 - d. Cross-sectional Dimensions:
 - 1) Walls and Slabs (Thickness): Variation plus or minus one-quarter ($\pm 1/4$) inch.
Columns and Beams: Variation more than one-half ($1/2$) inch, less than one-quarter ($1/4$) inch.
 - 2) Size of Wall and Floor Openings: Variation plus or minus one-quarter

(±1/4) inch.

- e. Relative Alignment (Offset between Adjacent Formwork): Variation plus or minus one-quarter inch (±1/4) inch.
- f. Variation in Specified Grade:
 - 1) For Any Distance Less than Ten (<10) Feet: Variation less than or equal to one-quarter (≤1/4) inch.
 - 2) For Entire Structure: Variation plus or minus one-half (±1/2) inch.
 - 3) For Manholes and Outlet Structures: Variation less than or equal to one (≤1) inch.

2. Stairways:

- a. Relative Alignment:
 - 1) Difference in Height between Adjacent Risers: One-eighth (1/8) inch.
 - 2) Difference in Width between Adjacent Treads: One-quarter (1/4) inch.

3.4 PLUMB AND STRING LINES

- A. Plumb and string lines shall be installed on wall and column forms before, and maintained during, concrete placement. There shall be sufficient number of plumb or string lines in walls, for example at every other stiff-back, properly installed to permit continuous monitoring. During concrete placement, CONTRACTOR shall continually monitor plumb and string line positions and immediately correct deficiencies. The plumb and string lines shall extend to a point at least six (6) inches above the top of wall or column.

3.5 FORMWORK CAMBER

- A. In order to maintain specified tolerances of joists, beams or slabs subject to dead load deflection, CONTRACTOR shall camber formwork to compensate for dead load deflection prior to hardening of the concrete.

3.6 GANG WHALER PLATES FOR CIRCULAR WALLS

- A. N/A

3.7 HAND SET MODULAR FORMS

- A. Hand set modular forms, such as Symons hand set steel-ply forms, shall be placed with no more than two intersecting joints occurring at one level in the formwork above the bottom modular form level. Figure 1 illustrates the required form pattern.

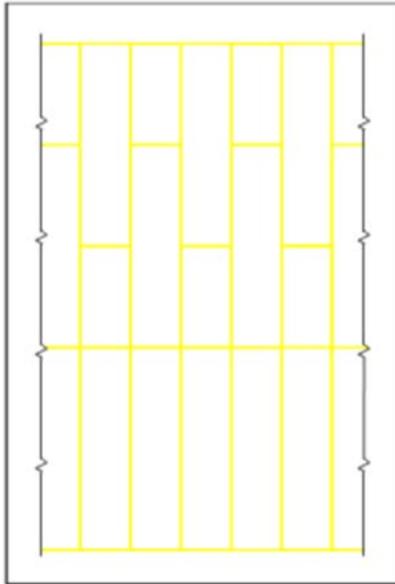


Figure 1

- B. The above form configuration is one way recommended by Simons Corp. to eliminate vertical, in plane, bending of the forming system. CONTRACTOR may develop alternate means of maintaining vertical alignment.
- 3.8 FORMWORK CLOSURE**
- A. Forms that prohibit visual review of items such as reinforcing steel, waterstops and bearing pads by CONTRACTOR ENGINEER, shall not be placed until CONTRACTOR ENGINEER has performed a final review of the reinforcing steel.
- B. CONTRACTOR shall use compressed air from an air compressor to blow out construction debris and dirt at the bottom of sections or members to be placed such as walls, slabs, beams and columns, prior to placing forms or concrete.
- C. CONTRACTOR shall demonstrate to CONTRACTOR ENGINEER that all debris, such as loose concrete particles, saw dust, loose tie wire, bar tags, tape, trash and dirt, have been thoroughly removed.
- 3.9 HOT OR COLD WEATHER PLACEMENT AND STEEL FORMS**
- A. Prior to placing concrete when steel forms are used, the forms shall be heated when the surface temperature of the form is below forty degrees Fahrenheit (40°F) or cooled when the surface temperature of the form is above ninety degrees Fahrenheit (90°F). If water is used to cool forms where ponding of water may occur (for example, at the bottom of a column), the water shall be permitted to drain prior to placing concrete.
- 3.10 REMOVAL OF FORMS**
- A. The forms for any portion of a structure shall not be removed until the concrete has reach sufficient strength with a factor of safety of 2.0, to withstand applied loads such as self-weight and wind loads or withstand damage when the forms are removed.

- B. For post-tensioned concrete slabs and beams, formwork shall not be removed until the entire slab or member has been stressed and stressing records accepted.

3.11 RESHORES

- A. When a reshore plan is to be performed, it shall comply with Article Quality Assurance.

END OF SECTION

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SECTION 03150

CONSTRUCTION JOINTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. CONTRACTOR shall supply all labor, tools, equipment and material for the preparation of construction joints in concrete in accordance with these SPECIFICATIONS and as shown in the DRAWINGS.

1.02 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
 - 1. American Concrete Institute (ACI):
 - a. 117, Specifications for Tolerances for Concrete Construction and Materials.
 - b. 301, Specifications for Structural Concrete.
 - c. 302, Guide for Concrete Floor and Slab Construction.
 - d. 318, Building Code Requirements for Structural Concrete.

1.03 SUBMITTALS

- B. Provide Product Data for the Following: Bonding Agent.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Epoxy Bonding Agent:
 - 1. Master Builders; Concresive Liquid (LPL).
 - 2. Master Builders; Concresive Standard Liquid.
- B. Concrete and Closure Grout Placement: In accordance with Section 03 60 00, Grouting.

PART 3 EXECUTION

3.01 EXAMINATION

- A. CONTRACTOR ENGINEER shall review the preparation of all construction joints prior to concrete and grout closure placements. It is the responsibility of CONTRACTOR to notify CONTRACTOR ENGINEER of these activities. If joint placement is performed without ENGINEER's presence or approval, the WORK may be deemed unacceptable and non-conforming to these SPECIFICATIONS. If ENGINEER determines that construction review of a particular activity is unnecessary, CONTRACTOR ENGINEER will provide direction to CONTRACTOR to proceed with that particular activity without construction review.

3.02 SURFACE PREPARATION

- A. The surface of concrete construction joints shall be clean of all materials that inhibit bond. Materials such as curing compounds, laitance, saw dust, wood, dirt, polyethylene, pipe tape coating, and paper shall be removed. Concrete shall be roughened to produce a surface texture of plus or minus one-sixteenth ($\pm 1/16$) inch. Concrete surfaces shall be wetted with clean potable water and standing water removed immediately before new concrete or closure grout is placed. Unless otherwise called out in the DRAWINGS, a bonding agent shall be used prior to placing the concrete or grout.

3.03 PIPE GROUT CLOSURE SECTIONS

- A. Pipe Surface Preparation: Unless otherwise detailed in DRAWINGS, all pipes penetrating concrete sections such as wall and floor slabs shall have all coatings and other materials that can inhibit bond completely removed from the portion of the pipe to be in contact with the concrete or slab closure grout.
- B. Ground Surface Preparation: The ground surface at joints such as pipe/slab closures shall be smooth and properly graded and compacted. All debris such as Styrofoam, paper, polyethylene and wood shall be removed. The ground surface shall be dampened and prepared to prevent the inclusion of dirt, pieces of aggregate or balls of soil in the concrete or grout.

3.04 CONCRETE AND CLOSURE GROUT PLACEMENT

- A. Special care shall be taken to ensure that the grout is thoroughly and properly consolidated at waterstops, pipe weep rings, and existing concrete surfaces. An appropriate capacity vibrator shall be used when necessary or required by the manufacturer to properly consolidate the grout.

END OF SECTION

SECTION 03200

REINFORCING STEEL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This WORK shall consist of furnishing and placing reinforcing steel in accordance with these SPECIFICATIONS and in conformity with the DRAWINGS.

1.02 REFERENCES

- B. The following is a list of standards which may be referenced in this section:
 - 1. American Association of State and Highway Transportation Officials (AASHTO):
 - a. M31M/M31, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - b. AASHTO Standard Specifications for Welding of Structural Steel Highway Bridges.
 - 2. American Concrete Institute (ACI):
 - a. ACI Detailing Manual.
 - b. 117, Specifications for Tolerance for Concrete Construction and Materials.
 - c. 318, Building Code Requirements for Structural Concrete.
 - 3. American Welding Society (AWS):
 - a. D1.1/D1.1M, Structural Welding Code - Steel.
 - b. D1.4/D1.4M, Structural Welding Code - Reinforcing Steel.
 - c. D2.0, Welded Highway and Railway Bridges.
 - 4. ASTM International (ASTM):
 - a. A82/A82M, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - b. A497/A497M, Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete.
 - c. A615, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - d. A996/A996M, Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.
 - e. A706/A706M, Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
 - f. A767/A767M, Standard Specification for Zinc-coated (Galvanized) Steel Bars for Concrete Reinforcement.
 - g. A775/A775M, Standard Specification for Epoxy-coated Steel Reinforcing.
 - 5. Concrete Reinforcing Steel Institute (CRSI):
 - a. Manual of Standard Practice.
 - b. Placing Reinforcing Bars.

1.03 SUBMITTALS

- A. Two copies of a list of all reinforcing steel and bending diagrams shall be furnished to the CONTRACTOR ENGINEER at the site of the work at least one week before the placing of reinforcing steel is begun. Such lists will not be reviewed for accuracy. The CONTRACTOR shall be responsible for the accuracy of the lists and for furnishing and placing all reinforcing steel in accordance with the details shown on the plans.

1.04 DELIVERY, STORAGE, AND PROTECTION

- A. Reinforcing steel shall be stored off of the ground and protected from oil or other materials detrimental to the steel or bonding capability of the reinforcing bar. Epoxy coated reinforcing bars shall be stored on protective cribbing.

PART 2 PRODUCTS

2.01 REINFORCING STEEL

- A. Deformed Bars: All bar steel reinforcement shall be of the deformed type, ASTM A615, AASHTO M31M/M31, and Grade (40 or 60) as specified on the DRAWINGS.
- B. Spirals:
 - 1. Spirals, hot-rolled plain or deformed bars per ASTM A615, Grade 60 or cold drawn wire per ASTM A82/A82M as specified on the DRAWINGS.
 - 2. Spirals for columns shall have two (2) "spacers" with a section modulus $>0.030\text{in}^3$ in order to maintain the proper pitch and spacing.
- C. Epoxy-Coated Reinforcing Bars: Epoxy-coated reinforcing bars shall conform to ASTM A775/A775M. When required, damaged epoxy coating shall be repaired with patching material conforming to ASTM A775/A775M in accordance with the material manufacturer's recommendations.
- D. Zinc-coated (Galvanized Reinforcing Bars): Zinc-coated reinforcing bars shall conform to ASTM A767/A767M. When required, damaged zinc coating shall be repaired with a zinc-rich formulation conforming to ASTM A767/A767M.
- E. Welded Wire Fabric: All welded wire fabric reinforcement shall conform to ASTM A497/A497M. F. Identification:
 - 1. Bundles of reinforcing bars and wire spirals shall be tagged, with a metal tag, showing specification, grade, size, quantity, and suitable identification to permit checking, sorting, and placing. When bar marks are used to identify reinforcing bars on the DRAWINGS, the bar mark shall be shown on the tag. Tags shall be removed prior to concrete placement.
 - 2. Bundles of flat sheets and rolls of welded wire fabric shall be tagged similar to reinforcing bars.

2.02 TIE WIRE

- A. 16 gauge wire ties, manufactured by American Wire Tie, Inc., or equal. When epoxy-coated reinforcing steel is shown on the DRAWINGS, PVC coated wire

ties shall be used. The minimum PVC coating shall be 0.7 mils.

2.03 BAR SUPPORTS

- A. General: Bar supports and spacing shall be in accordance with the CRSI Manual of Standard Practice, Chapter 3, a maximum of four (4) feet, or as required by the DRAWINGS.
- B. Floor Slabs: Uncoated steel or non-metallic composite chairs shall be used unless otherwise shown on the DRAWINGS. If required by ENGINEER, the chair shall be stapled on a bearing pad to prevent chair displacement. The bearing pad shall be made of exterior grade plywood and be approximately five (5) inches square.
- C. Epoxy-Coated and Zinc-Coated Bar Supports: Epoxy-coated reinforcing bars supported from formwork shall rest on coated wire bar supports made of dielectric or other acceptable materials. Wire supports shall be fully coated with dielectric material, compatible with concrete. Reinforcing bars used as support bars shall be epoxy-coated. In walls reinforced with epoxy-coated bars, spreader bars shall be epoxy-coated. Proprietary combination bar clips and spreaders used in walls with epoxy-coated reinforcing shall be made of corrosion-resistant material or coated with dielectric material.

2.04 FABRICATION

- A. Fabrication tolerances for straight and bent bars shall be in accordance with the requirements of Subsection 4.3, Tolerance, of ACI 315 and the CRSI Manual of Standard Practice.

PART 3 EXECUTION

3.01 GENERAL

- A. Rust, seams, surface irregularities, or mill scale shall not be cause for rejection provided that the weight and height of deformations of a hand-wire-brushed test specimen are not less than the applicable ASTM Specification.

3.02 BAR LIST

- A. CONTRACTOR shall be responsible for the accuracy of the lists and for furnishing and placing all reinforcing steel in accordance with the details shown on the

3.03 DRAWINGS

- A. Bar lists and bending diagrams for structures, which are included on the DRAWINGS, do not have to be furnished by CONTRACTOR. When bar lists and bending diagrams are included on the DRAWINGS, they are intended for estimating approximate quantities. CONTRACTOR shall verify the quantity, size, and shape of the bar reinforcement against those shown on the DRAWINGS and make any necessary corrections before ordering.

3.04 BENDING

- A. All reinforcing bars shall be bent cold. Bars partially embedded in concrete shall

not be field bent, except as shown on the DRAWINGS or permitted. Bars shall not be bent or straightened in a manner that may injure the material.

3.05 SPIRALS

- A. One and one-half (1-1/2) finishing bends are required at the top and bottom of the spiral. Spacers shall be provided in accordance with Chapter 5, Section 9 of the CRSI Manual of Standard Practice. Welding as an aid to fabrication and/or installation is not permitted.

3.06 PLACING AND FASTENING

- A. When placed in the WORK, the reinforcing bars shall be free from dirt, loose mill scale, paint, oil, loose rust, or other foreign substance.
- B. The placing, fastening, splicing, and supporting of reinforcing steel and wire mesh or bar mat reinforcement shall be in accordance with the DRAWINGS and the latest edition of "CRSI Placing Reinforcing Bars." In case of discrepancy between the DRAWINGS and the CRSI publication stated above, the DRAWINGS shall govern. Reinforcement shall be placed within the tolerances provided in ACI 117.
- C. Steel reinforcement shall be accurately placed in the positions shown on the DRAWINGS and firmly held during the placing and setting of concrete by means of spacer strips, stays, metal chairs or other approved devices or supports. Precast concrete bricks or other types of bricks are not permitted for support of reinforcement in footings, slabs, or any other part of the work. Chair and bolster supports for slabs and walls shall be spaced at a maximum of four- (4-) foot centers unless otherwise shown on the DRAWINGS. Staples used to attach bar supports to wall and roof forms shall have the staple "tails" clipped after form removal. For columns, three (3) wheels, spaced one hundred twenty degrees (120°) apart, shall be placed every four (4) feet of column height. CONTRACTOR may increase the column spiral pitch if a conflict occurs with the wheel. Pre-tied column reinforcing steel lowered into column forms shall be lowered vertically to prevent damage to the space wheels.
- D. Bars shall be securely tied at fifty percent (50%) of all intersections except where spacing is less than one (1) foot in each direction, when alternate intersections shall be tied unless otherwise called out on the DRAWINGS or in applicable SPECIFICATIONS. Tying of steel by spot welding shall not be permitted unless specifically authorized by ENGINEER.
- E. Bundle bars shall be tied together at not more than six- (6-) foot centers.

3.07 SPLICING

- A. Bar steel reinforcement shall be furnished in the full lengths indicated on the DRAWINGS. Splicing of bars, except where shown on the DRAWINGS, shall not be permitted without the written acceptance of ENGINEER. Splices shall be staggered. In cases where permission is granted to splice bars, other than those shown on the DRAWINGS, the additional material required for the lap shall be furnished by CONTRACTOR at CONTRACTOR's own expense. The minimum distance between staggered splices for reinforcing bars shall be the length required for a lapped splice in the bar. All splices shall be full contact splices.

- B. Splices shall not be permitted at points where the section is not sufficient to provide a minimum distance of two (2) inches between the splice and the nearest adjacent bar or the surface of the concrete.
- C. Welding of reinforcement shall be done only if detailed on the DRAWINGS or if authorized by ENGINEER in writing. Welding shall be done by a certified welder. The welding shall conform to AWS D1.4/D1.4M with the modifications and additions specified hereinafter. Where AWS D2.0 Specifications for Welded Highway and Railway Bridges is referenced, the reference shall be construed to be for AWS D1.1. Where the term AWS D1.1/D1.1M is used it shall mean the American Welding Society Structural Welding Code, D1.5/D1.5M as modified and amended by the AASHTO Standard Specifications for Welding of Structural Steel Highway Bridges. After completion of welding, coating damage to coated reinforcing steel bars shall be repaired.
- D. When required or permitted, a mechanical connection may be used to splice reinforcing steel bars or as substitution for dowel bars. The mechanical connection shall be capable of developing a minimum of one hundred twenty five percent (125%) of the yield strength of the reinforcing bar in both tension and compression. All parts of mechanical connections used on coated bars, including steel splice sleeves, bolts, and nuts shall be coated with the same material used for repair of coating damage.

3.08 CUTTING

- A. When coated reinforcing bars are cut in the field, the ends of the bars shall be coated with the same material used for repair of coating damage.

END OF SECTION

SECTION 03300
SMALL VOLUME CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 DESCRIPTION

- A. This Section covers cast-in-place concrete; including forms, reinforcing steel, materials, transporting, placing, finishing, curing, and other appurtenant items of construction.
- B. Inform CITY PROJECT MANAGER at least forty-eight (48) hours in advance of time and places at which Contractor intends to place concrete.

1.2 QUALITY ASSURANCE

- A. Perform all work as specified herein and in accordance with the latest revisions of the following codes and standards.
 - 1. Federal, state, and local codes, regulations, and standards.
 - 2. American Society for Testing and Materials, (ASTM).
 - 3. Meets emergency generators manufactures specification for depth and reinforcement.
- B. Reference Standards.
 - 1. Except as noted or modified in this Section, all concrete materials, transporting, placing, finishing, and curing shall conform to the requirements of the following standard specifications.
 - a. American Concrete Institute Standards (ACI).
 - i) 301 – Specifications for Structural Concrete.
 - ii) 304 – Guide for Measuring, Mixing, Transporting, and Placing Concrete.
 - iii) 305 – Hot Weather Concreting.
 - iv) 306 – Cold Weather Concreting.
 - v) 309 – Guide for Consolidation of Concrete.
 - vi) 315 – Details and Detailing of Concrete Reinforcement.
 - vii) 318 – Building Code Requirements for Reinforced Concrete.
 - viii) 347 – Recommended Practice for Concrete Formwork.
- C. In case of conflict or disagreement between codes, standards, laws, ordinances, rules and regulations, or within any document itself the more stringent requirements as determined by CONTRACTORS ENGINEER shall govern.
 - 1. Here work required by the drawings and specifications is above the standard required by local regulations or recommended standards, it shall be completed as shown and/ or specified.

1.3 SUBMITTALS

A. Test Results.

1. Perform and submit test reports for the following products in accordance with the above general reference standards and specific standards of these specifications.

B. Proposed Mix Design.

1. Prior to commencing concrete work, submit certified test reports describing proposed concrete mix design, including:
 - a. Fine aggregate - Source, type, gradation, deleterious substances, and bulk-specific gravity on the basis of weight of saturated surface - dry aggregate (ASTM C 128).
 - b. Coarse aggregate - Source, type, gradation, deleterious substances, and bulk-specific gravity on the basis of weight of saturated surface - dry aggregate (ASTM C 217).
 - c. Reactive aggregate test reports.
 - d. Ratio of fine to total aggregates.
 - e. Weight (surface dry) of each aggregate per cubic yard.
 - f. Total water content in gallons per cubic yard and proposed source.
 - g. Slump on which design is based.
 - h. Brand, type, and quantity of cement.
 - i. Brand, type, and quantity of admixtures.
 - j. Air content.
 - k. Two (2) sets of compression test cylinders, two (2) cylinders per set, shall be made for each proposed mix design.
 - i) Test one (1) set of two (2) cylinders at age seven (7) days and other set at twenty-eight (28) days.

C. Cylinder Compression Test Reports.

1. Submit two (2) copies of certified test reports to CITY PROJECT MANAGER.

D. Ready-mix Delivery Tickets.

1. Submit delivery tickets for each load at the time of delivery indicating the following.
 - a. Quantity delivered.
 - b. Quantity of each material in batch.
 - c. Outdoor temperature in shade.
 - d. Time at which water was added.
 - e. Elapsed time between when water was added and concrete load was in place.
 - f. Amounts of initial and supplemental water added.
 - g. Name of individual authorizing supplemental water.
 - h. Numerical sequence of delivery by indicating cumulative yardage delivered on each ticket.

E. Shop Drawings.

1. Show sizes, quantity, and dimensions for fabrication and placing of reinforcing bars, bar supports, and embedments.
2. Indicate bar schedules, stirrup and tie spacing, and diagrams of bent bars.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Cement.

1. Store in weather-tight enclosures and protect against dampness, contamination, and warehouse set.
2. Do not use cement that has become caked or lumpy.

B. Aggregates.

1. Stockpile to prevent excessive segregation or contamination with other sizes of aggregates.
2. Use only one (1) supply source for each aggregate stockpile.
3. The bottom six inches (6") of all aggregate piles in contact with the ground shall not be used.

C. Admixtures.

1. Store to prevent contamination, evaporation, or damage.
2. Protect liquid admixtures from freezing or harmful temperature ranges.
3. Agitate emulsions before use.

D. Mixing and Transporting Ready-mixed Concrete.

1. Maximum elapsed time from time water is added to mix until concrete is in place shall not exceed one and one-half (1-1/2) hours when concrete is transported in revolving-drum truck bodies.

E. Reinforcing Steel.

1. Deliver to site in bundles marked with metal tags indicating bar size and length.
2. Carefully handle and store on supports that will keep the steel from coming in contact with the ground.

1.5 JOB CONDITIONS

A. Environmental Requirements.

1. Do not place concrete during rain, sleet, or snow unless adequate protection is provided.
2. Do not allow rainwater to increase mixing water or damage surface finish.

B. Cold Weather Concreting.

1. Conform to ACI 306.
2. Temperature of concrete when placed shall not be less than following.

Air Temp. (°F.)	Sections with Least Dimension Under Twelve Inches (12")	Sections with Least Dimension Twelve Inches (12") and Over
30 to 45	60 °F.	50 °F.
0 to 30	65 °F.	55 °F.
Below 0	70 °F.	60 °F.

3. Heated concrete shall not be warmer than eighty degrees Fahrenheit (80 °F) when placed.
 4. Prior to placing concrete, all ice, snow, and surface and subsurface frost shall be removed.
 - a. The temperature of the surfaces to be in contact with the new concrete shall be raised above thirty-five degrees Fahrenheit (35 °F) for a minimum of twenty-four (24) hours immediately prior to placing concrete.
 5. Protect concrete from freezing during specified curing period.
 - a. Cold weather protection shall be maintained at a minimum temperature of fifty degrees Fahrenheit (50 °F) for a minimum of five (5) days.
 6. Heated enclosures shall be strong and windproof to ensure adequate protection of corners, edges, and thin sections.
 7. Do not permit heating units to locally heat or dry the concrete.
 8. Do not use combustion heaters during the first twenty-four (24) hours unless the concrete is protected from exposure to exhaust gases that contain carbon dioxide.
- C. Hot Weather Concreting.
1. Conform to ACI 305.
 2. Take precautions when ambient air temperature is ninety degrees Fahrenheit (90° F) or above.
 3. Temperature of concrete, when placed, shall not exceed eighty-five degrees Fahrenheit (85 °F).
 4. Cool forms and reinforcing to a maximum of ninety degrees Fahrenheit (90 °F) by spraying with water before placing concrete.
 5. Do not use cement that has reached a temperature of one hundred seventy degrees Fahrenheit (170 °F) or more.
 6. Prevent plastic shrinkage and cracking due to rapid evaporation of moisture.
 7. Do not place concrete when evaporation rate (actual or anticipated) equals or exceeds specified limits in ACI 305.
 8. Set-retarding and water-reducing admixtures may only be used with CONTRACTORS ENGINEER'S concurrence.

1.6 ALTERNATIVES
A. NOT USED

1.7 GUARANTEE

33
Evans Emergency
Generator

03300-

Evans, Colorado 2015

A. NOT USED

PART 2 PRODUCTS

2.1 MATERIALS

A. Concrete.

1. Cement.
 - a. ASTM C 150, Type I/II or Type II, sulfate resistant.
 - b. Tricalcium Aluminate (C3A) in the Type II cements shall not exceed eight percent (8%).
2. Aggregates.
 - a. Fine aggregate: ASTM C 33.
 - b. Coarse aggregate: ASTM C 33.
 - i) Air-cooled blast furnace slag will not be allowed.
 - ii) Nominal maximum size of coarse aggregate shall conform to ACI 318.
3. Water.
 - a. Shall be clean, fresh, and free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances that may be deleterious to concrete reinforcement.
4. Admixtures.
 - a. Do not use admixtures that cause accelerated setting of cement.
 - b. Calcium chloride is not permitted.
 - c. Air-entraining agent: ASTM C 260, nontoxic after thirty (30) days and containing no chlorides.
 - d. Water-reducing and retarding: ASTM C 494, Type A or Type D.
 - i) May only be used with CONTRACTOR'S ENGINEER concurrence.
 - e. Pozzolan (Fly Ash): Class C or Class F fly ash in accordance with ASTM C618, Tables 1 and 2, except as modified herein:
 - i) Loss on Ignition: Maximum three percent (3%).
 - ii) Water Requirement: Maximum one hundred percent (100%) of control.
 - iii) $\frac{\text{CaO}(\%)-5}{\text{Fe}_2\text{O}_3(\%)}$: Maximum 1.5
 - iv) ASTM C618, Table 1A shall apply when aggregates or portion of coarse or fine aggregates used are reactive as specified hereinbefore in paragraph Nonpotentially Reactive Aggregates.
 - v) ASTM C618, Table 2A, Reactivity with Cement Alkalies, apply when aggregates or portions of aggregates are reactive as specified under paragraph Nonpotentially Reactive Aggregates.
 - vi) ASTM C618, Table 2A, Uniformity Requirements, apply when loss on ignition of fly ash furnished exceeds three percent (3%).
 - f. Superplasticizers: ASTM C 494.
 - i) Use in all structural walls and beams. Use in other elements and slabs at Contractor's option.

B. Form Materials

1. General.

- a. Reference ACI 301.
- b. Where "Smooth and Finish" or "Grout Cleaned Finish" is specified, use prefabricated plywood panel forms, job-built plywood forms, forms lined with plywood or fiberboard, or steel forms.
- c. Where "Rough Form Finish" is specified, unlined wooden forms may be used.
- d. Lumber.
 - i) Straight, uniform width and thickness; free from knots, offsets, holes, dents, and other surface defects.
 - ii) Chamfer Strips: Clean, white pine; surface against concrete planed.

2. Form Ties.

- a. Removable end, permanently-embedded body type, with cones on outer ends.
 - i) Provide form ties with center waterstop ring at locations where surface water, ground water or hydrostatic conditions may be encountered, as indicated on the drawing, or as directed by CONTRACTOR ENGINEER.
- b. Sufficient strength and rigidity to support and maintain the form in proper position and alignment without the use of auxiliary spreaders.
- c. The permanently-embedded portion shall be recessed a minimum of one inch (1") from concrete surface.

3. Form Coating.

- a. Non-staining chemical release agent that will not damage the concrete surface.
- b. For all exposed surfaces not in contact with earth backfill, use:
 - i) Symons Corporation, "Magic Kote."
 - ii) Or approved equal.

C. Reinforcement Material.

1. Rebar.

- a. Conform to ACI 315 and ACI 318.
- b. Bars shall be Grade 60 unless indicated otherwise on the Drawings, ASTM A 615.
- c. Column spirals shall be cold-drawn wire, ASTM A 82.
- d. Tie wire shall be annealed steel, sixteen (16) gauge minimum ASTM A 510.
- e. Bar Supports.
 - i) Where concrete surface will be exposed to weather, the portions of the supports or accessories within one-half inch (1/2") of the concrete surface shall be non-corrosive or protected against corrosion (epoxy covered).
 - ii) Plastic bar supports are not acceptable.

2. Welded Wire Fabric.

- a. Plain Wire: ASTM A 185.
- b. Deformed Wire: ASTM A 497.

- D. Concrete Accessory Materials.
1. Curing Materials.
 - a. Water.
 - b. Sheet material: ASTM C 171.
 - c. Liquid membrane: ASTM C 309.
 2. Expansion Joint Filler.
 - a. Bituminous type: ASTM D 994.
 - b. Cork type: ASTM D 1752, Type 2 or 3.
 - c. Fiber type: ASTM D 1751.
 3. Bond Break Material.
 - a. Felt: ASTM D 2475.
 - b. Polyethylene sheet material.
 4. Joint Sealers.
 - a. Cold-application type: ASTM D 1850.
 - b. Hot-poured elastic type: ASTM D 1190.
 - c. Hydrostatic pressure resistant type sealant.
 - i) Sikaflex 2C NS/SL.
 - ii) Or approved equal.
 5. Waterstop.
 - a. Material: Polyvinyl chloride, (PVC).
 - b. Type.
 - i) Construction joints: Ribbed with center bulb.
 - ii) Expansion joints: Ribbed with center bulb.
 - iii) Greenstreak.
 - iv) Or approved equal.
 - c. Size.
 - i) Six inches (6") wide, minimum.
 - ii) Three-eighths-inch (3/8") thick, minimum.
 - d. Hydrophilic waterstop – where specifically noted on Drawings.
 - i) Hydrotite hydrophilic waterstop as supplied by Greenstreak.
 - ii) Or approved equal.
 6. Vapor Barrier Material.
 - a. Polyethylene sheet.
 7. Curing Compounds.
 - a. Liquid membrane-forming.
 - b. Pigmented and non-pigmented ASTM C 309.
 - i) "Klearseal."
 - ii) Or approved equal.
 8. Non-Shrink Grout.
 - a. Master Builders 713.
 - b. SonogROUT 14K.
 - c. Or approved equal.

2.2 MIXES

A. NOT USED

2.3 FABRICATION AND MANUFACTURE

A. Concrete Production.

1. Ready-mixed Concrete.
 - a. Mixed and delivered, reference ACI 304.
2. Batching and Mixing Equipment.
 - a. Conform to ACI 304.
3. Proportioning.
 - a. Proportion ingredients to produce a well-graded mix of high density and maximum workability consistent with submitted mix design and subject to the following minimum twenty-eight (28) day compressive strength:
 - i) 4000 psi for all structural concrete.
 - ii) 3000 psi for manhole bases, thrust blocks, pipe encasements, curbs and gutters, and sidewalks.
 - b. Minimum entrained air for concrete exposed to weather and for sidewalks, curbs, gutters, and pavements.
 - i) Six percent plus or minus one percent ($6\% \pm 1\%$) for three-quarter-inch (3/4") coarse aggregate.
 - ii) Five percent plus or minus one and one-half percent ($5\% \pm 1-1/2\%$) for one and one-half-inch (1-1/2") coarse aggregate.
 - iii) Refer to ACI 301 for further requirements.
 - c. Minimum entrained air for concrete required to be watertight including concrete for all liquid-containing structures.
 - i) Six percent plus or minus one percent ($6\% \pm 1\%$) for three-quarter-inch (3/4") or one-inch (1") coarse aggregate.
 - ii) Five percent plus or minus one percent ($5\% \pm 1\%$) for one and one-half-inch (1-1/2") coarse aggregate.
4. Strength.
 - a. Design and proportion concrete to meet the following minimum compressive strengths.

Specified Strength, psi	7-Day Test,	28-Day Test, psi	W/C Ratio Non-Air Entrained	W/C Ratio Air Entrained
3000	2100	3000	0.58	0.46
4000	2800	4000	0.44	0.40

- b. Water/cement ratios greater than those shown above may be submitted for consideration in accordance with quality provisions of ACI 318.

5. Slump Range at Site:
 - a. Nonsuperplasticized Concrete: Three inches (3") minimum, five inches (5") maximum.
 - b. Superplasticized Concrete: Four and one-half inches (4-1/2") minimum, eight inches (8") maximum.
 - c. Take design mix test cylinders from concrete with slump equal to that used on Project at the point of discharge into the forms.
 6. Mixing - Minimum time.
 - a. Central-mixed concrete, one (1) minute for mixer capacities of one cubic yard (1 CY) or less, plus fifteen (15) seconds for each cubic yard, or fraction thereof, of additional capacity.
 - b. Truck-mixed concrete, one hundred (100) revolutions after introduction of all ingredients.
 7. Admixtures:
 - a. Water-reducing and retarding agents: May only be used with CONTRACTOR ENGINEER'S concurrence.
 - b. Fly Ash: Maximum twenty-five percent (25%), minimum fifteen percent (15%) of total weight of fly ash plus cement.
 - c. Superplasticizers: Use at Contractor's option. Control the slump and workability to at least a four and one-half inch (4-1/2") slump at discharge into forms by adjusting the superplasticizer at the batch plant.
- B. Rebar Fabrication.
1. No plus or minus (\pm) tolerance shall be allowed for rebar fabricated with multiple bends.
 - a. Rebar with multiple bends shall be fabricated such that concrete coverage specified herein or as otherwise indicated in the Specifications or the Drawings shall be maintained.

PART 3 EXECUTION

3.1 INSPECTION

A. General.

1. Assure that excavations and formwork are completed.
2. Assure that dirt, mud, encrusted concrete, debris, and excess water have been removed.
3. Check that reinforcement is properly positioned and secured in place.
4. Verify that expansion joint material, anchors, waterstops, and other embedded items are secured in proper position.
5. Verify that all required tests for pipes under slabs have been completed.

3.2 PREPARATION

A. Concrete Surfaces.

1. Before placing fresh concrete against surface of hardened concrete or rock.
 - a. Roughen, clean, and thoroughly wet hardened surface to sound concrete.
 - b. Remove all laitance, foreign substances (including curing compound), wash with clean water, and thoroughly wet hardened surface before placing fresh concrete.
 - c. Blast cleaning shall be required when necessary to assure a clean-bonded joint.
2. Prepare slab subgrades in accordance with ACI 301.

B. Form Surfaces.

1. Remove mortar, grout, and other foreign material from form surfaces.
2. Coat form surfaces with form coating material before either the reinforcing steel or concrete is placed.
3. Do not allow form coating to:
 - a. Stand in puddles in the forms.
 - b. Come in contact with the reinforcing steel.
 - c. Come in contact with adjacent hardened concrete against which fresh concrete is to be placed.

C. Reinforcement.

1. Remove all mud, oil, loose rust, mill scale, and other foreign materials that may reduce bond of the concrete to the steel reinforcing.
2. Rust or mill scale that is "tight" will be permissible without cleaning or brushing provided weights, dimensions, cross-sectional area, and tensile properties meet requirements of ASTM A 615.

3.3 INSTALLATION, APPLICATION, AND PERFORMANCE

A. Form Erection.

1. General.
 - a. Erect forms substantially and sufficiently tight to prevent leakage of mortar, and braced or tied to maintain the desired position, shape, and alignment before, during, and after concrete placement.
 - b. Use adequate walers, stiffeners, and braces to ensure proper alignment.
 - c. Provide temporary openings at the bottom of column and wall forms and at other locations where necessary to facilitate cleaning and inspection.
 - d. Provide temporary openings in wall or column forms to limit the free fall of concrete to a maximum of four feet (4'-0").
 - i) If tremies of proper lengths are used for depositing concrete in walls or columns, temporary openings for concrete placement will not be required.
 - e. At other locations, bring forms to a true line and grade, or provide a wooden guide strip at the proper location on the forms so that the top surface can be finished with a screed or template for concrete which is to have a specified elevation, slope, or contour.

- f. At horizontal construction joints in walls, do not extend the forms on one (1) side more than two feet (2'-0") above the joint.
 - g. Anchor bolts, castings, steel shapes, conduits, sleeves, masonry anchorage, and other materials that are to be embedded in the concrete shall be accurately positioned in the forms and securely anchored.
2. Edges and Corners.
 - a. Place chamfer strips in forms to bevel exposed edges and projecting corners.
 - b. Tool the top edges of walls and slabs not indicated on the Drawings to be beveled.
 - c. Form beveled edges for all vertical and horizontal corners of equipment bases unless indicated otherwise on the Drawings.
 - d. Chamfer strips shall be three-quarter inch (3/4") unless indicated otherwise on the Drawings.
 3. Form Removal.
 - a. Reference ACI 347.
 - b. Do not remove or disturb forms until the concrete has attained sufficient strength to safely support all dead and live loads.
- B. Reinforcement Installation.
1. Bar Placement.
 - a. Conform to ACI 318.
 2. Bar Supports.
 - a. Conform to ACI 315.
 - b. Do not use pebbles, rocks, pieces of broken stone, common or face brick, metal pipe, or wood blocks to support reinforcement.
 - c. Use one-half (1/2) solid concrete bricks to support rebar on ground.
 3. Placement, and Coverage Tolerances.
 - a. Reference ACI 318.
 4. Splices.
 - a. Do not splice bars except at locations shown on the Drawings unless reviewed by CINTRACTOR ENGINEER.
 - b. Minimum lay distance shall be as shown on the Drawings. If not shown, splices shall be as specified in ACI 318.
 5. Welded Wire Fabric.
 - a. Install in longest practicable length.
 - b. Lap adjoining pieces one (1) full mesh plus two inches (2"), minimum.
 - c. Offset laps in adjacent widths to prevent contiguous laps.
 - d. Extend fabric through contraction joints and construction joints unless otherwise indicated on the Drawings.
- C. Concrete Placement.
1. General.
 - a. Conform to ACI 304.
 2. Conveying.
 - a. Convey concrete from mixer to final position as rapidly as practicable without segregation or loss of material.

3. Depositing.
 - a. Deposit concrete in a continuous operation until section is completed.
 - b. Regulate rate of placement so concrete remains plastic and flows into position.
 - c. Each layer of concrete shall be plastic when covered with the following layer.
 - d. Use tremies to prevent free fall of more than four feet (4'-0").
 - e. Do not allow concrete to fall on reinforcement or other objects that would cause segregation.
 - f. Do not exceed six feet (6'-0") of vertical height for any portion of wall or column placed monolithically with floor or roof slab.
 4. Consolidation.
 - a. During and immediately after placement, thoroughly compact and work around all reinforcements, embedments, and corners of forms.
 - b. Number and type of vibrators shall be subject to concurrence with CONTRACTOR ENGINEER.
 - c. Do not use vibrators to transport concrete laterally in forms.
 - d. Operate vibrators in order to avoid segregation of materials.
- D. Joints.
1. Watertight Joints.
 - a. Provide on water bearing structures.
 - b. Provide on structures submerged in groundwater.
 - c. Provide at all locations shown on the Drawings.
 2. Expansion and Contraction Joints.
 - a. At all locations shown on the Drawings.
 - b. Do not extend reinforcement continuously through expansion joint unless specifically shown on the Drawings.
 - c. Form joint with felt extending full depth, where "bond break" or "isolation" joint is indicated.
 3. Construction Joints.
 - a. Where shown on the Drawings.
 - b. Obtain CONTRACTOR ENGINEER'S concurrence for location of construction joints not shown on the Drawings.
- E. Finishing.
1. Unformed Surfaces
 - a. Finish unformed surfaces as specified herein and as shown in the Finish Schedule at the end of this Section.
 2. Slabs, floors, stairs, pavements, sidewalks, driveways, curb and gutters, and similar structures.
 - a. Provide surface conforming to proper elevation and contour with all aggregates completely embedded in mortar by screeding.
 - b. Provide an initial float finish as soon as concrete has stiffened sufficiently for proper working.
 - i) Produce a surface of uniform texture and appearance with initial floating, without unnecessary working of surface.

- c. Provide a second floating at time of initial set.
 - i) Produce a finish of uniform texture and color with second floating.
3. Brooming.
 - a. Follow second floating with a broomed treatment of surface to provide a uniform abrasive texture of constant color, in areas where concrete is to remain exposed.
4. Troweling.
 - a. Perform steel troweling after second floating when surface has hardened sufficiently to prevent excess of fines being drawn to surface.
 - i) Produce a dense, smooth, uniform surface, free from blemishes and trowel marks within plus or minus one-quarter-inch ($\pm 1/4''$) of specified grade.
5. Finishing Surfaces for Bonding to be Covered with Concrete Topping.
 - a. Float finish all surfaces.
 - b. Remove by brushing or air blasting at time of initial set, all laitance, surface mortar, and unsound material.
 - c. Surfaces shall be rough, clean, and sound.
 - d. Edging.
 - i) Edge exposed edges of floated or troweled surfaces with a tool having a minimum one-quarter-inch ($1/4''$) corner radius unless these edges are specified to be beveled.
6. Finishing Formed Surfaces
 - a. Finish formed surfaces as specified herein and as shown in the Finish Schedule at the end of this Section.
 - b. Rough form finish all surfaces not exposed to view such as surfaces in contact with earth.
 - i) Remove all fins and other surface projections when dampproofing is specified.
 - ii) Provide a flush surface and use a power grinder, if necessary, to remove fins and projections.
 - iii) Fill all tie holes with non-shrink grout.
 - c. Smooth form finish all exposed surfaces not generally exposed to view including submerged surfaces of tanks.
 - i) Use form facing to produce a smooth, hard, uniform surface.
 - ii) Keep number of seams to a minimum.
 - iii) Remove all fins and projections.
 - iv) Clean, wet, and fill all tie holes with non-shrink grout.
 - v) Repair all defects.
 - d. Grout clean finish all concrete surfaces exposed to view.
 - i) Complete operations for smooth form finish.
 - ii) Wet surface and apply grout mix of one (1) part of Portland Cement and one and one-half ($1-1/2$) parts of fine sand.
 - iii) Use bonding agents as necessary to ensure grout adherence.
 - iv) Substitute white Portland Cement for gray as required to match surrounding concrete.

- v) Rub surface with cork float or stone to fill all air bubbles and holes.
- vi) Remove excess grout by rubbing with a rubber float, burlap bag, or other means.
- vii) Do not begin cleaning until all contiguous surfaces are completed and accessible.

F. Curing.

1. Moisture Cure.
 - a. Keep concrete continuously moist for at least seven (7) days after placement by use of:
 - i) Ponding, continuous sprinkling, wet burlap or wet absorptive mats.
2. Membrane Curing Compound.
 - a. Use only with CONTRACTOR ENGINEER'S concurrence on a pour-by-pour basis.
 - b. Spray apply at coverage as recommended by Manufacturer.
 - c. Membrane curing compound shall be reapplied each day during curing period after any work activity has occurred on concrete surface.
 - d. For concrete surfaces to be painted or top coated, neutralize and remove curing compound after curing period.
3. Film Curing.
 - a. Use only with CONTRACTOR ENGINEER'S concurrence on a pour-by-pour basis.
 - b. Begin as quickly as possible after initial set of concrete.
 - c. Cover surfaces completely with polyethylene sheeting.
 - d. Anchor continuously all edges and anchor surface as necessary to prevent billowing.
 - e. Keep concrete continuously wet during curing period.

3.4 FIELD QUALITY CONTROL

A. Concrete Tests.

1. Concrete tests shall be in accordance with the requirements of ACI 301 except as noted or modified in this Section.
 - a. Strength test.
 - i) Mold and cure four (4) cylinders from each sample.
 - ii) Test one (1) cylinder at seven (7) days for information, two (2) cylinders at twenty-eight (28) days for acceptance, and hold one (1) cylinder for future break.
 - iii) If additional cylinders are required for Contractor's information, said cylinders will be in addition to those listed above.
 - b. Minimum samples.
 - i) Collect one (1) sample set for each fifty (50) cubic yards or as designated by CONTRACTOR ENGINEER.
 - c. Slump test.
 - i) Conduct test for each batch.
 - d. Air content.
 - i) Conduct test for each batch.

3.5 ADJUST and CLEAN

A. Repair of Defective Concrete.

1. Repair work shall conform to ACI 301.

3.6 SCHEDULES

A. Finish Schedule.

FINISH SCHEDULE	
Surface	Finish
Formed Surface Exposed to View	Sack Rub

END OF SECTION

SECTION 03350

CONCRETE FINISHING

Part 1 GENERAL

1.1 SECTION INCLUDES

- A. CONTRACTOR shall supply all labor, tools, equipment, and materials to finish properly placed concrete for structures.

1.2 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
 - 1. American Concrete Institute (ACI):
 - a. 116, Cement and Concrete Terminology.
 - b. 121, Quality Assurance Systems for Concrete Construction.
 - c. SP-15, ACI 301 Field Reference Manual.
 - d. 309, Identification and Control of Consolidation-Related Surface Defects in Formed Concrete.
 - e. 311, Guide for Inspection of Concrete.
 - 2. ASTM International (ASTM):
 - a. C33, Standard Specification for Concrete Aggregates.
 - b. C150, Standard Specification for Portland Cement.
 - 3. U.S. Department of Interior—Bureau of Reclamation (USBR):
 - a. M-47, Standard Specifications for Repair of Concrete.

1.3 SUBMITTALS

- A. Provide product data on the following:
 - 1. Grout.
 - 2. Bonding agent.
 - 3. Method of repairing defects, unless otherwise called out herein.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver the materials to the PROJECT site in the manufacturer's containers with all labels intact and legible at the time of use. Materials shall be stored in a secure, indoor, dry area. Maintain grouts and aggregates in a dry condition during delivery, storage, and handling.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Premixed Pre-Packaged Grout:
 - 1. Master Builders; EMACO R320.
 - 2. Master Builders; EMACO S66-CR.
- B. Epoxy Bonding Agent:
 - 1. Master Builders; Concrevice Liquid (LPL).

2. Master Builders; Concrese Standard Liquid.
- C. Cement:
 1. ASTM C150, Type to match original concrete surface.
- D. Aggregate:
 1. ASTM C33, one hundred percent (100%) passing the No. 30 mesh sieve.
- E. Bond Coat Mortar:
 1. Mortar used to bond patching mortar shall be made of the same materials and of approximately the same proportions as used for the concrete, except that the coarse aggregate shall be omitted and the mortar shall consist of one (1) part cement to not more than one (1) part sand by damp loose volume.
- F. Patching Mortar:
 1. Patching mixture shall be made of the same materials and of approximately the same proportions as used for the concrete, except that the coarse aggregate shall be omitted and the mortar shall consist of one (1) part cement to not more than two and one-half (2-1/2) parts sand by damp loose volume. White Portland cement shall be substituted for a part of the gray Portland cement on exposed concrete in order to produce a color matching the color of the surrounding concrete, as determined by a trial patch. The quantity of mixing water shall be no more than necessary for handling and placing. The patching mortar shall be mixed in advance and allowed to stand with frequent manipulation with a trowel, without addition of water, until it has reached the stiffest consistency that shall permit placing.
- G. Water:
 1. Only clean potable water shall be used. A calibrated measuring device is required for measuring the proper amount of water to be added to pre-packaged grouts and mortars.

PART 3 EXECUTION

3.01 PREPARATION

- A. The means and methods of repair of improperly placed or finished concrete shall be reviewed by CITY PROJECT MANAGER prior to performing the WORK. Regardless of prior approval of the means and methods of concrete finish repair, no concrete finish shall be repaired until CITY PROJECT MANAGER has reviewed the existing finish. This includes defects caused by ineffective and improper vibration such as honeycomb, excessive air voids on formed surfaces, placement "pour" lines (cold joints), and sand streaking. It also includes defects caused by excessive form deflections, form damage, or form failure.
- B. Repair of Surface Defects:
 1. Surface defects, unless otherwise specified by the CONTRACT DOCUMENTS, shall be repaired immediately after form removal, but not before review by CITY PROJECT MANAGER. The surface temperature of the concrete shall be fifty degrees Fahrenheit (50°F) and rising. CONTRACTOR shall measure surface temperatures when requested by CITY PROJECT MANAGER. If necessary, CONTRACTOR shall enclose

and heat the area to be repaired to bring the surface temperature of the concrete and air temperature to acceptable levels, and to permit proper curing.

2. All honeycombed and other defective concrete shall be removed down to sound concrete. If chipping is necessary, the edges shall be perpendicular to the surface or slightly undercut. Feathered edges shall not be permitted. The area to be patched and an area at least six (6) inches wide surrounding it shall be dampened to prevent absorption of water from the patching mortar. A bonding grout shall be prepared, mixed to the consistency of thick cream, and after surface water has evaporated from the area to be patched, well brushed into the surface.
3. When the bond coat begins to lose the water sheen, the premixed patching mortar shall be applied. The mortar shall be thoroughly consolidated into place and struck off so as to leave the patch slightly higher than the surrounding surface. To permit initial shrinkage, it shall be left undisturbed for at least one (1) hour before being finally finished. The patched area shall be kept damp for seven (7) days. Metal tools shall not be used in finishing a patch in a formed wall that shall be exposed.

C. Alternative Surface Defect Repairs:

1. Certain types of defects may require the use proprietary compounds for adhesion or as patching ingredients. CITY PROJECT MANAGER shall review these defects and request means and methods for these repairs from CONTRACTOR.
2. In lieu of, or in addition to, the foregoing patching procedures using bond coat and patching mortars, epoxy bonding agents and premixed pre-packaged grouts may be used for repair of defective areas. Such compounds shall be used in accordance with the manufacturer's written recommendations and directions. CITY PROJECT MANAGER shall review and provide written acceptance of these procedures.

3.02 APPLICATION

A. Tie Holes:

1. Unless otherwise called out in the DRAWINGS tie holes shall be finished as specified herein.
- 2.

B. Finishing of Formed Surfaces:

1. Finishes shall be performed as called out on the DRAWINGS and in referenced SPECIFICATIONS.
2. Smooth Form Finish: The form facing material shall produce a smooth, hard, uniform texture on the concrete. The arrangement of the facing material shall be orderly and symmetrical, with the number of seams kept to the practical minimum. Surface textures that result from forms with raised grain, torn surfaces, worn edges, patches, dents, or other defects shall be ground smooth or otherwise repaired.
 - a. Air Voids on Formed Surfaces: Air voids on formed surfaces deeper than one-quarter ($\frac{1}{4}$) inch shall be filled with patching mortar. The

frequency and size of air voids shall be equal to or better than shown in Figure 1. The total void area is one percent (1%) of the surface area, or thirty-six hundredths (0.36) square inches. This six-inch (6") by six-inch (6") figure shall be the visual standard for acceptance of the finish that does not require filling of air voids.

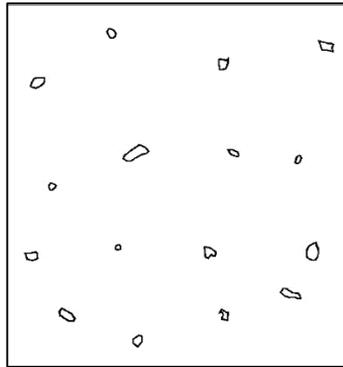


FIGURE 1

- b. Tie Holes: Tie holes shall be filled as specified in Section 03 60 00, Grouting.
 - c. Form Fins: Chip or rub off form fins exceeding one-sixteenth ($1/16$) inch in height.
 - d. Rock Pockets: Poorly consolidated concrete shall be removed to sound concrete and the defect repaired. CITY PROJECT MANAGER shall outline the area to be repaired.
3. As-Cast Finish: For as-cast concrete finish form materials shall produce a sound surface.
 - a. Air Voids: Fill air voids deeper than one-quarter ($1/4$) inch and larger than one-half ($1/2$) square inch. The total area of acceptable air voids is seventy-two hundredths (0.72) square inch in a six-inch (6") by six-inch (6") square.
 - b. Tie Holes: Tie holes shall be filled as specified in Section 03 60 00, Grouting.
 - c. Form Fins: Chip or rub off form fins exceeding one-eighth ($1/8$) inch in height.
 4. Rubbed Finish: Immediately after removing the forms, form ties shall be broken back a minimum of three-quarters ($3/4$) inch from the surface, honeycomb, voids, and other surface defects grouted. The surfaces shall then be thoroughly dampened and rubbed with a No. 16 carborundum stone or equal abrasive to create a uniform surface paste. The rubbing shall be continued to remove all form marks and surface irregularities producing a smooth, dense surface. After setting, the surface shall then be rubbed with a No. 30 carborundum stone until the surface is smooth in texture and uniform in color. Unless otherwise shown in the DRAWINGS only exposed surfaces shall have a rubbed finish.
 5. Grout Finish: Prepare surface as described in "Rubbed Finishes" above. Mix one (1) part Portland cement and one-half ($1/2$) part fine sand with sufficient

water to produce a grout with the consistency of thick paint. Wet surface of concrete to prevent absorption of water from grout, and apply grout uniformly with brushes. Immediately after applying grout mix, scrub the surface with a cork float or stone to coat surface and fill remaining air voids and other remaining surface defects. Remove excess grout by working the surface with rubber float. After the surface whitens from drying, rub with clean burlap. Cure surface for a period of seventy two (72) hours.

- C. Finishing of Unformed Surfaces: Unless otherwise shown on the DRAWINGS unformed surfaces shall be finished as follows:
1. Slabs: Screed with straightedge to remove low and high spots bringing the surface to the required finish elevation of slope and float with a steel float at least three (3) feet in width. When the concrete has reached its initial set, finish with a steel trowel. Use a steel power trowel for large areas. Leave finish essentially free of trowel marks, uniform in texture and appearance and plane to the correct tolerance. Dusting the surface with dry cement, sand, or sprinkling with water is prohibited.
 2. No wetting of concrete surfaces during slab finishing operations shall be permitted. Further, no concrete finishing operation shall be permitted while there is water on the surface of slabs and other flatwork.
 3. Finishes that are exposed and subject to foot traffic shall receive a broom finish with a texture of plus or minus one-sixteenth ($\pm 1/16$) inch or as designated on the DRAWINGS.
 4. Tops of Walls with Bearings: Strike smooth tops of walls and similar unformed surfaces that shall have bearings or bearing pads, and finish with a steel trowel.
 5. Stairways and Sidewalks: Strike smooth tops of stairs and sidewalks and finish with a light broom providing a texture of plus or minus one-sixteenth ($\pm 1/16$) inch.
 6. Slabs with Waterproofing Membranes: Strike smooth and float finish.
 7. Construction Joint Surfaces: Surface shall be broom or raked finished. Surface shall be water or grit blasted prior to placing additional concrete, such as columns on column footings and column footings on reservoir slabs.

END OF SECTION

SECTION 03390

CONCRETE CURING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. CONTRACTOR shall furnish all labor, tools, and equipment for curing plain, reinforced, and post-tensioned, and cast-in-place concrete.

1.2 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
 - 1. American Concrete Institute (ACI):
 - a. 305.1, Specification for Hot Weather Concreting.
 - b. 306.1, Specification for Cold Weather Concreting.
 - c. 308.1, Standard Practice for Curing Concrete.
 - 2. ASTM International (ASTM):
 - a. C171, Standard Specification for Sheet Materials for Curing Concrete.
 - b. C309, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
 - c. D2103, Standard Specification for Polyethylene Film and Sheeting.

1.3 SUBMITTALS

- A. Provide data on curing compounds, sheet materials, and methods of securing sheet materials in place.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver curing materials in manufacturer's original packaging including applicable instructions and manufacturer's safety data sheets (MSDS).

PART 2 PRODUCTS

2.01 MATERIALS

- A. Sheet Materials for Curing Concrete: White burlap-polyethylene sheeting weighing not less than ten (10) ounces per linear yard, forty (40) inches wide, impregnated on one side with white opaque polyethylene 0.004 inch thick as specified in ASTM C171 shall be used when called out in the DRAWINGS or in other applicable SPECIFICATIONS. The polyethylene shall be securely bonded to the burlap so that there will be no separation.
- B. Liquid Membrane-Forming Compounds for Curing Concrete: Liquid membrane forming compounds for curing concrete shall and conform to ASTM C309, Type 1-D with a red or white fugitive dye. Use a white dye unless otherwise directed by CITY PROJECT MANAGER.
- C. Polyethylene Film: Polyethylene film shall conform to ASTM D2103. The film shall have a thickness of six (6) mils and be a white opaque color.
- D. Evaporative Retardant: Confilm manufactured by Master Builders, Inc. or approved equal.

- E. Water: Only water from sources approved by CITY PROJECT MANAGER shall be used.
- F. Penetrating Sealer and Chloride Ion Screen: Masterseal SL40 by Master Builders, Inc. or approved equal.
- G. Organic Corrosion Inhibiting Admixture: Rheocrete 222+ by Master Builders or approved equal.

PART 3 EXECUTION

3.01 GENERAL

- A. Perform the WORK in accordance with this SPECIFICATION and in accordance with applicable ACI standards. When a conflict occurs between this SPECIFICATION and ACI, the ACI standard shall control. All materials shall be used in accordance with the manufacturer's printed instructions, a copy of which shall be on site.
- B. Beginning immediately after placement, concrete shall be protected from premature drying, excessively hot or cold temperatures, and mechanical injury, and shall be maintained with minimal moisture loss at a relatively constant temperature for the period necessary for hydration of the cement and hardening of the concrete in accordance with ACI 308.1. The materials and method of curing shall be subject to review and acceptance by CITY PROJECT MANAGER. Specific curing requirements may be called out on the DRAWINGS.
- C. Curing shall be continued for at least seven (7) days. Alternatively, if tests are made of cylinders kept adjacent to the structure and cured by the same methods, moisture retention measures may be terminated when the average compressive strength has reached seventy percent (70%) of the specified concrete strength.

3.02 CURING METHODS

- A. Perform curing of concrete by curing compound, by moist curing, by moisture-retaining cover curing, or combinations thereof, as herein specified.
- B. Provide moisture curing by one of the following methods:
 - 1. Keep concrete surface continuously wet by covering with water.
 - 2. Use continuous water-fog spray.
 - 3. Cover concrete surface with moisture retaining cover specified in Paragraph 2.01.A. Place cover to provide coverage of concrete surfaces and edges with four- (4-) inch lap over adjacent moisture retaining covers, and seal using waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- C. Provide liquid membrane curing compound specified in Article Materials to concrete surfaces as follows:
 - 1. Apply specified curing compound to concrete slabs within one (1) hour of final finishing operations or within one (1) hour of form removal. Apply uniformly in continuous operation by spray or roller in accordance with manufacturer's directions and these SPECIFICATIONS. Recoat areas subjected to heavy rainfall within three (3) hours after initial application. Maintain continuity of coating and repair damage during curing period.

- a. Liquid Membrane Forming Compound and Evaporative Retardant Applicators/Sprayers: Membrane curing and evaporative retardant compounds shall be applied with a sprayer capable of maintaining a constant pressure. Spraying membrane curing compounds or evaporative retardants by other methods, such as rolling, shall be approved by CONTRACTOR ENGINEER.
 - b. When a spray-applied membrane-curing compound is used, it shall be applied in two (2) coats with the second coat applied at right angles to the first coat.
2. If finish materials are to be applied to the surface of concrete, follow manufacturer's recommendations to remove membrane curing compound.

3.03 APPLICATION

- A. Curing Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces for seven (7) days by moist curing with forms in place. If forms are removed prior to completion of specified seven (7) day period, continue curing by methods specified in Article Curing.
- B. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of specified curing methods in Article Curing.
- C. Other Surfaces: Unless otherwise shown on the DRAWINGS all other surfaces shall be cured using two (2) applications of a membrane-curing compound conforming to ASTM C309. The second application shall be applied at ninety degrees Fahrenheit (90°F) to the first application.
- D. Rate of Temperature Change: Changes in temperature of the air immediately adjacent to the concrete during and immediately following the curing period shall be kept as uniform as possible and shall not exceed five degrees Fahrenheit (5° F) in any one (1) hour or fifty degrees Fahrenheit (50° F) in any twenty four (24) hour period.
- E. Cold Weather: Curing during cold weather conditions shall include the above methods except for water cure unless measures are taken to prevent freezing of the water as specified in ACI 306.1.
- F. Hot Weather: If the rate of evaporation approaches 0.2 lb/ft²/hr, as estimated by ACI 305.1, precautions against plastic shrinkage cracking are required. CONTRACTOR shall have a recording thermometer, hygrometer, and wind gage on site seven (7) days prior to first concrete placement. When necessary, provision for windbreaks, shading, fog spraying, sprinkling, ponding, or wet covering with a light colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as concrete hardening and finishing operations will allow. Precautions against plastic shrinkage cracks may be required in conditions other than what is normally considered hot weather conditions.

3.04 PENETRATING SEALER AND CHLORIDE ION SCREEN

- A. Concrete that may be subjected to deicing salts, brackish water, or spray from brackish water shall be protected with a penetrating sealer and chloride ion screen that is readily absorbed into the surface of the concrete to provide a breathable, water repellent finish that does not affect the surface color or texture of the concrete. A penetrating sealer and chloride ion screen is not required if the concrete contains an organic corrosion inhibiting admixture which slows the ingress of chlorides and moisture and forms a durable, protective film at the level of reinforcing steel. Concrete to be protected includes but is not limited to exterior concrete in walkways, stairs, slabs on grade, elevated parking areas, etc. Concrete surface and air temperature adjacent to the concrete shall be at least forty degrees Fahrenheit (40° F) during application and curing of sealer. Application rate shall be as recommended by manufacturer.

3.05 PROTECTION

- A. During the curing period, the concrete shall be protected from damaging mechanical disturbances, such as load stresses, heavy shock, and excessive vibration. All finished concrete surfaces shall be protected from damage by construction equipment, materials, or methods, by application of curing procedures, and by rain or running water. Self-supporting structures shall not be loaded in such a way as to overstress the concrete.

END OF SECTION

SECTION 10800

Generators

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. **Project A** (Evans Public Works Operation Center)
- B. **Project B** (Evans Fire Station 2)

1.2 SUMMARY

- A. This Section includes packaged engine-generator sets for standby power supply with the following features:
 - 1. Gas engine
 - 2. Unit-mounted cooling system.
 - 3. Unit-mounted control and monitoring.
 - 4. Performance requirements for sensitive loads
 - 5. Muffler
 - 6. Jacket Heater
 - 7. Battery charger
 - 8. Including the following:
 - a Division 16 Section "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine-generator sets.

1.3 DEFINITIONS

- A. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.
- B. Steady-State Voltage Modulation: The uniform cyclical variation of voltage within the operational bandwidth, expressed in Hertz or cycles per second.

1.4 SUBMITTALS

- A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:
 - 1. Data on features, components, accessories ratings and performance.
 - 2. Thermal damage curve for generator.
 - 3. Time-current characteristic curves for generator protective device.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.
2. Design Calculations: Signed and sealed by a qualified professional engineer. Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
3. Vibration Isolation Base Details: Signed and sealed by a qualified professional engineer. Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.
4. Wiring Diagrams: Power, signal, and control wiring.
5. Qualification Data: For manufacturer.
6. Source quality-control test reports.
7. Certified summary of prototype-unit test report.
8. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
9. Certified Summary of Performance Tests: Certify compliance with specified requirement to meet performance criteria for sensitive loads.
10. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
11. Report of sound generation.
12. Report of exhaust emissions showing compliance with applicable regulations.
13. Certified Torsional Vibration Compatibility: Comply with NFPA 110.
 - a Field quality-control test reports.
 - b Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Operation and Maintenance Data," include the following:
14. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
 - a. Warranty: Special warranty specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

1. Maintenance Proximity: Not more than four hours' normal travel time from Installer's place of business to Project site.
 2. Engineering Responsibility: Preparation of data for vibration isolators and seismic restraints of engine skid mounts, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
- b. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 200 miles of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.
 - c. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL), and that is acceptable to authorities having jurisdiction.
 1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
 - d. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.
 - e. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 - f. Comply with ASME B15.1.
 - g. Comply with NFPA 37.
 - h. Comply with NFPA 70.
 - i. Comply with NFPA 110 requirements for Level [1] [2] emergency power supply system.
 - j. Comply with UL 2200.
 - k. Engine Exhaust Emissions: Comply with applicable state and local government requirements.

1.2 PROJECT CONDITIONS

- A. Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
 1. Ambient Temperature: 5 to 40 deg C.
 2. Relative Humidity: 0 to 95 percent.
 3. Altitude: Sea level to 1900 feet.

1.3 COORDINATION

- A. Coordinate size and location of concrete bases for package engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

1.4 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

1.5 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

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1.6 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Fuses: One for every 10 of each type and rating, but no fewer than one of each.
 2. Indicator Lamps: Two for every six of each type used, but no fewer than two of each.
 3. Filters: One set each of lubricating oil, fuel, and combustion-air filters.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Caterpillar; Engine Div.
 2. Generac Power Systems, Inc.
 3. Kohler Co.; Generator Division.
 4. Onan/Cummins Power Generation; Industrial Business Group.
 5. Spectrum Detroit Diesel.

2.2 ENGINE-GENERATOR SET

- C. Factory-assembled and -tested, engine-generator set.
- D. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.
1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.
 2. Capacities and Characteristics:
 3. Power Output Ratings: Nominal ratings as indicated, with capacity as required to operate as a unit as evidenced by records of prototype testing.
 4. Output Connections:
 - a **Project A** 120/208 Volt, three-phase, four wire.
 - b **Project B** 120/240 Volt, single-phase, three wire.
 5. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.
- E. Generator-Set Performance:

1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage from no load to full load.
2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.
4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
7. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 250 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
8. Start Time: Comply with NFPA 110, Type 10, system requirements.

F. Generator-Set Performance for Sensitive Loads:

1. Oversizing generator compared with the rated power output of the engine is permissible to meet specified performance.

G. Nameplate Data for Oversized Generator: Show ratings required by the Contract Documents rather than ratings that would normally be applied to generator size installed.

1. Steady-State Voltage Operational Bandwidth: 1 percent of rated output voltage from no load to full load.
 2. Transient Voltage Performance: Not more than 10 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 0.5 second.
 3. Steady-State Frequency Operational Bandwidth: Plus or minus 0.25 percent of rated frequency from no load to full load.
 4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
 5. Transient Frequency Performance: Less than 2-Hz variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within three seconds.
 6. Output Waveform: At no load, harmonic content measured line to neutral shall not exceed 2 percent total with no slot ripple. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
 7. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to winding insulation or other generator system components.
 8. Excitation System: Performance shall be unaffected by voltage distortion caused by nonlinear load.
- H. Provide permanent magnet excitation for power source to voltage regulator.
1. Start Time: Comply with NFPA 110, Type 10, system requirements.

2.4 ENGINE

- A. Fuel: Fuel oil, Grade NG
- B. Rated Engine Speed: 1800 rpm.
- C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm.
- D. Lubrication System: The following items are mounted on engine or skid:
 1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
 2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- E. Engine Fuel System:
 1. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.
- F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.
- G. Governor: Adjustable isochronous, with speed sensing.

- H. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.
1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
 2. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
 3. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.
 4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
 5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, ultraviolet-, and abrasion-resistant fabric.
- I. Rating: 50-psig maximum working pressure with coolant at 180 deg F (82 deg C), and non-collapsible under vacuum.
- J. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.
- K. Muffler/Silencer: Industrial type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.
1. Minimum sound attenuation of 12 dB at 500 Hz.
 2. Sound level measured at a distance of 25 feet from exhaust discharge after installation is complete shall be 87 dBA or less.
- L. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.
- M. Starting System: 24-V electric, with negative ground.
1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.
 2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
 3. Cranking Cycle: As required by NFPA 110 for system level specified.
 4. Battery: Adequate capacity within ambient temperature range specified in Part 1 "Project Conditions" Article to provide specified cranking cycle at least three times without recharging.
 5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
 6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient

temperature within range specified in Part 1 "Project Conditions" Article. Include accessories required to support and fasten batteries in place.

7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
8. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. Unit shall comply with UL 1236 and include the following features:
 - a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
 - b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg C to plus 60 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.
 - c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
 - d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
 - e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
 - f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

2.5 CONTROL AND MONITORING

- A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.
- B. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration.
- C. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 1 system, and the following:

1. AC voltmeter.
 2. AC ammeter.
 3. AC frequency meter.
 4. DC voltmeter (alternator battery charging).
 5. Push-to-test indicator lamps, one each for low oil pressure, high coolant temperature, overspeed and overcrank.
 6. Engine-coolant temperature gage.
 7. Engine lubricating-oil pressure gage.
 8. Running-time meter.
 9. Ammeter-voltmeter, phase-selector switch (s).
 10. Generator-voltage adjusting rheostat.
 11. Generator overload.
- D. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.
- E. Connection to Data Link: A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication is reserved for connections for data-link transmission of indications to remote data terminals. Data system connections to terminals are covered in Division 16 Section "Electrical Power Monitoring and Control."
- F. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

2.6 GENERATOR OVERCURRENT AND FAULT PROTECTION

- A. Generator Circuit Breaker: Insulated-case, electronic-trip type; 100 percent rated; complying with UL 489.
1. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.
 2. Trip Settings: Selected to coordinate with generator thermal damage curve.
 3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
 4. Mounting: Adjacent to or integrated with control and monitoring panel.
- B. Generator Protector: Microprocessor-based unit shall continuously monitor current level in each phase of generator output, integrate generator heating effect over time and predict when thermal damage of alternator will occur. When signaled by generator protector or other generator-set protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from load circuits. Protector shall perform the following functions:

1. Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other generator-set malfunction alarms.
2. Under single or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds.
3. As overcurrent heating effect on the generator approaches the thermal damage point of the unit, protector switches the excitation system off, opens the generator disconnect device, and shuts down the generator set.
4. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.

Ground-Fault Indication: Comply with NFPA 70, "Emergency System" signals for ground-fault. Integrate ground-fault alarm indication with other generator-set alarm indications.

2.7 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H or Class F.
- D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.
- E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.
- F. Enclosure: Drip-proof.
- G. Instrument Transformers: Mounted within generator enclosure.
- H. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified.
 1. Adjusting rheostat on control and monitoring panel shall provide plus or minus 5 percent adjustment of output-voltage operating band.
- I. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.
- J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- K. Subtransient Reactance: 12 percent, maximum.

2.8 MOTORS

- A. General requirements for motors are specified in Division 15 Section "Motors."
 1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
 2. Controllers, Electrical Devices, and Wiring: Electrical devices and connections are specified in Division 16 Sections.

2.9 VIBRATION ISOLATION DEVICES

- A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.
 - 1. Material: Bridge-bearing neoprene, complying with AASHTO M 251.
 - 2. Durometer Rating: 50.
 - 3. Number of Layers: Three.
- B. Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic restraint.
 - 1. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to wind loads or if weight is removed; factory-drilled baseplate bonded to 1/4-inch- (6-mm-) thick, elastomeric isolator pad attached to baseplate underside; and adjustable equipment mounting and leveling bolt that acts as blocking during installation.
 - 2. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load.
 - 3. Minimum Additional Travel: 50 percent of required deflection at rated load.
 - 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 - 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

2.10 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

2.11 SOURCE QUALITY CONTROL

- A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
 - 1. Tests: Comply with NFPA 110, Level 1 Energy Converters and with IEEE 115.
- B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:

1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
2. Full load run.
3. Maximum power.
4. Voltage regulation.
5. Transient and steady-state governing.
6. Single-step load pickup.
7. Safety shutdown.
8. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.
9. Report factory test results within 10 days of completion of test.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.
- B. Examine roughing-in of piping systems and electrical connections. Verify actual locations of connections before packaged engine-generator installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with packaged engine-generator manufacturers' written installation and alignment instructions and with NFPA 110.
- B. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.
- C. Install packaged engine generator with elastomeric isolator pads having a minimum deflection of 1 inch on 4-inch-high concrete base. Secure sets to anchor bolts installed in concrete bases. Concrete base construction is specified in Division 16 Section "Electrical Supports and Seismic Restraints."
- D. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

3.3 CONNECTIONS

- A. Piping installation requirements are specified in Division 15 Sections. Drawings indicate general arrangement of piping and specialties.
- B. Connect fuel, cooling-system, and exhaust-system piping adjacent to packaged engine generator to allow service and maintenance.
- C. Connect engine exhaust pipe to engine with flexible connector.
- D. Connect fuel piping to engines with a gate valve and union and flexible connector.
 1. Natural- and LP-gas piping, valves, and specialties for gas piping inside the building are specified in Division 15 Section "Fuel Gas Piping."
- E. Ground equipment according to Division 16 Section "Grounding and Bonding."
- F. Connect wiring according to Division 16 Section "Conductors and Cables."

3.4 IDENTIFICATION

A. Identify system components according to Division 15 Section "Mechanical Identification" and Division 16 Section "Electrical Identification."

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.
- C. Perform tests and inspections and prepare test reports.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:
 - 1. Perform tests recommended by manufacturer and each electrical test and visual and mechanical inspection for "AC Generators and for Emergency Systems" specified in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, single-step full-load pickup test.
 - 3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
- E. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
- F. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
- G. Verify acceptance of charge for each element of the battery after discharge.
- H. Verify that measurements are within manufacturer's specifications.
 - 1. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
 - 2. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.
 - 3. Exhaust-System Back-Pressure Test: Use a manometer with a scale exceeding 40-inch wg (120 kPa). Connect to exhaust line close to engine exhaust manifold. Verify that back pressure at full-rated load is within manufacturer's written allowable limits for the engine.
 - 4. Exhaust Emissions Test: Comply with applicable government test criteria.
 - 5. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100

percent step-load increases and decreases, and verify that performance is as specified.

6. Harmonic-Content Tests: Measure harmonic content of output voltage under 25 percent and at 100 percent of rated linear load. Verify that harmonic content is within specified limits.
 7. Noise Level Tests: Measure A-weighted level of noise emanating from generator-set installation, including engine exhaust and cooling-air intake and discharge, at four locations on the property line, and compare measured levels with required values.
- I. Coordinate tests with tests for transfer switches and run them concurrently.
 - J. Test instruments shall have been calibrated within the last 12 months, traceable to standards of NIST, and adequate for making positive observation of test results. Make calibration records available for examination on request.
 - K. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - L. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 - M. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - N. Remove and replace malfunctioning units and retest as specified above.
 - O. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.

Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each power wiring termination and each bus connection. Remove all access panels so terminations and connections are accessible to portable scanner.

1. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
2. Record of Infrared Scanning: Prepare a certified report that identifies terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators. Refer to Division 1 Section "Demonstration and Training."

END OF SECTION

SECTION 10900
Natural Gas Lines

PART 1 GENERAL

3.7 SECTION INCLUDES

- A. **Project A** (Evans Public Works Operation Center)
- B. **Project B** (Evans Fire Station 2)

3.8 REFERENCES

3.9 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.
- C. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

3.10 REGULATORY REQUIREMENTS

- A. Conform to International Building code for access for the handicapped.
- B. Confirm to all plumbing codes

3.11 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on product data.

3.12 COORDINATION

- A. Coordinate work under provisions of Section 01005.
- B. Coordinate the work with the placement of the concrete pad
- C. Coordinate of Generator installation.
- D. Coordinate of natural gas line and new mete installation (CITY PROJECT MANAGER is coordinating the gas line installation from service line to new meter).

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS – Natural gas lines and fittings

- A. Industry standard or
- B. Atmos Energy recommendation.

2.2 MATERIALS

- A. Industry standard or
- B. Atmos Energy recommendation Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.3 FABRICATION

- A. Follow industry standard or
- B. Atmos Energy recommendation

2.4 KEYING

A. N/A

2.5 FINISHES

A. N/A

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify site conditions.

B. Verify that site conditions are ready to receive work and dimensions are as indicated on shop drawings.

C. Verify exact location for installation.

3.2 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.3 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions.

B. Install plumb and level, securely and rigidly anchored to substrate.

END OF SECTION



U.S. Department of Housing
and Urban Development

Labor Relations Desk Guide
LR01.DG

DAVIS-BACON

LABOR STANDARDS

*A Contractor's Guide
to Prevailing Wage Requirements
for Federally-Assisted Construction Projects*

*January 2012
Previous versions obsolete*



INTRODUCTION

This Guide has been prepared for you as a contractor performing work on construction projects that are assisted by the Department of Housing and Urban Development and subject to Davis-Bacon prevailing wage requirements. This Guide does not address contractor requirements involved in direct Federal contracting where HUD or another Federal agency enters into a procurement contract. In this latter case, the Federal Acquisition Regulations (FAR) are applicable. While the guidance contained in this Guide is generally applicable to any Davis-Bacon covered project, specific questions pertaining to direct Federal contracts should be addressed to the Contracting Officer who signed the contract for the Federal agency.

Our objective here is to provide you with a guide which is simple and non-bureaucratic yet comprehensive and which will help you better understand and comply with Davis-Bacon labor standards. HUD's Office of Labor Relations worked closely with the Department of Labor's Wage and Hour Division to make sure that the labor standards provisions in your contract and the specifics of complying with them represent the latest information. It is the Department of Labor which has general administrative oversight of all Federal contracting agencies, such as HUD, which administer the day-to-day responsibilities of enforcing Davis-Bacon provisions in construction contracts they either fund or assist in funding.

There are three chapters in this Guide. The first chapter offers a brief description of the laws and regulations associated with Federal labor standards administration and enforcement and discusses both what's in your contract that requires Davis-Bacon compliance and your responsibilities. The second chapter deals with labor standards and payroll reporting requirements. The third chapter discusses what can happen in the event there is a dispute about the wage rates that should be (or have been) paid and any back wages that may be due.

Finally, not all HUD construction projects are covered by Davis-Bacon wage rates. For the purpose of this Guide, we are assuming that a determination has already been made that Davis-Bacon wage rates are applicable. Should you wish assistance in determining whether Davis-Bacon wage rates apply to a particular project or if you need other related technical assistance, please consult with the HUD Labor Relations Field staff for your area. If you don't know which staff to contact, a list of Labor Relations field offices and their geographic areas and telephone numbers can be found on HUD's Home Page at the address below.

Visit the Office of Labor Relations on-line:

<http://www.hud.gov/offices/olr>

Obtain additional copies of this Guide and other publications at our website or by telephone from HUD's Customer Service Center at (800)767-7468.

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CHAPTER 1 LAWS, REGULATIONS, CONTRACTS AND RESPONSIBILITIES

The following paragraphs describe what the labor standards laws and regulations actually say and what they mean to you on HUD projects:

1-1 DAVIS-BACON AND OTHER LABOR LAWS.

- a. **The Davis-Bacon Act (DBA).** The Davis-Bacon Act requires the payment of prevailing wage rates (which are determined by the U.S. Department of Labor) to all laborers and mechanics on Federal government and District of Columbia construction projects in excess of \$2,000. Construction includes alteration and/or repair, including painting and decorating, of public buildings or public works.

Most HUD construction work is not covered by the DBA itself since HUD seldom contracts directly for construction services. Most often, if Davis-Bacon wage rates apply to a HUD project it is because of a labor provision contained in one of HUD's "Related Acts" such as the U. S. Housing Act of 1937, the National Housing Act, the Housing and Community Development Act of 1974, the National Affordable Housing Act of 1990, and the Native American Housing Assistance and Self-Determination Act of 1996. The Related Acts are often referred to as the Davis-Bacon and Related Acts or DBRA.

- b. **The Contract Work Hours and Safety Standards Act (CWHSSA).** CWHSSA requires time and one-half pay for overtime (O/T) hours (over 40 in any workweek) worked on the covered project. The CWHSSA applies to both direct Federal contracts and to indirect Federally-assisted contracts **except** where the assistance is solely in the nature of a loan guarantee or insurance. CWHSSA violations carry a liquidated damages penalty (\$10/day per violation). Intentional violations of CWHSSA standards can be considered for Federal criminal prosecution.

CWHSSA does not apply to prime contracts of \$100,000 or less. In addition, some HUD projects are not covered by CWHSSA because some HUD programs only provide loan guarantees or insurance. CWHSSA also does not apply to construction or rehabilitation contracts that are not subject to Federal prevailing wage rates (e.g., Davis-Bacon wage rates, or HUD-determined rates for operation of public housing and Indian block grant-assisted housing). However, even though CWHSSA overtime pay is not required, Fair Labor Standards Act (FLSA) overtime pay is probably still applicable. (See also Labor Relations Letter SL-95-01, CWHSSA Coverage threshold for overtime and health and safety provision, available on-line at the HUD Labor Relations Library at: www.hud.gov/offices/olr/library.cfm)

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- c. **The Copeland Act (Anti-Kickback Act).** The Copeland Act makes it a Federal crime for anyone to require any laborer or mechanic (employed on a Federal or Federally-assisted project) to kickback (i.e., give up or pay back) any part of their wages. The Copeland Act requires every employer (contractors and subcontractors) to submit weekly certified payroll reports (CPRs) and regulates permissible payroll deductions.
 - d. **The Fair Labor Standards Act (FLSA).** The FLSA contains Federal minimum wage rates, overtime (O/T), and child labor requirements. These requirements generally apply to any labor performed. The DOL has the authority to administer and enforce FLSA. HUD will refer to the DOL any possible FLSA violations that are found on HUD projects.

1-2 DAVIS-BACON REGULATIONS.

The Department of Labor (DOL) has published rules and instructions concerning Davis-Bacon and other labor laws in the Code of Federal Regulations (CFR). These regulations can be found in ***Title 29 CFR Parts 1, 3, 5, 6 and 7.*** Part 1 explains how the DOL establishes and publishes DBA wage determinations (aka wage decisions) and provides instructions on how to use the determinations. Part 3 describes Copeland Act requirements for payroll deductions and the submission of weekly certified payroll reports. Part 5 covers the labor standards provisions that are in your contract relating to Davis-Bacon Act wage rates and the responsibilities of contractors and contracting agencies to administer and enforce the provisions. Part 6 provides for administrative proceedings enforcing Federal labor standards on construction and service contracts. Last, Part 7 sets parameters for practice before the Administrative Review Board. These regulations are used as the basis for administering and enforcing the laws.

DOL Regulations are available on-line on the World Wide Web:
http://www.dol.gov/dol/allcfr/Title_29.htm

1-3 CONSTRUCTION CONTRACT PROVISIONS

Each contract subject to Davis-Bacon labor standards requirements must contain labor standards clauses and a Davis-Bacon wage decision. These documents are normally bound into the contract specifications.

- a. The labor standards clauses. The labor standards clauses describe the responsibilities of the contractor concerning Davis-Bacon wages and obligate the contractor to comply with the labor requirements. The labor standards clauses also provide for remedies in the event of violations, including withholding from payments due to the contractor to ensure the payment of wages or liquidated damages which may be found due. These contract clauses enable the contract administrator to enforce the Federal labor standards applicable to the project. HUD has standard forms that contain contract clauses. For example, the HUD-2554, Supplementary Conditions to the Contract for Construction, which is issued primarily for FHA multifamily housing and other construction projects

administered by HUD; the HUD-4010, Federal Labor Standards Provisions, which is used for CDBG and HOME projects, and the HUD-5370, General Conditions of the Contract for Construction or the HUD-5370-EZ (construction contracts ≤\$100,000) which are used for Public and Indian Housing projects.

HUD program labor standards forms are available on-line at:
www.hud.gov/offices/adm/hudclips/index.cfm

- b. Davis-Bacon Wage Decisions. The Davis-Bacon wage decision (or wage determination) is a listing of various construction work classifications, such as Carpenter, Electrician, Plumber and Laborer, and the minimum wage rates (and fringe benefits, where prevailing) that people performing work in those classifications must be paid.

Davis-Bacon wage decisions are established by the DOL for various types of construction (e.g., residential, heavy, highway) and apply to specific geographic areas, usually a county or group of counties. Wage decisions are modified from time to time to keep them current. In most cases, when the contract is awarded or when construction begins, the wage decision is “locked-in” and no future modifications are applicable to the contract or project involved.

All current Davis-Bacon wage decisions can be accessed on-line at no cost at:
<http://www.wdol.gov>

1-4 RESPONSIBILITY OF THE PRINCIPAL CONTRACTOR

The principal contractor (also referred to as the ***prime*** or ***general contractor***) is responsible for the full compliance of all employers (the contractor, subcontractors and any lower-tier subcontractors) with the labor standards provisions applicable to the project. Because of the contractual relationship between a prime contractor and his/her subcontractors, subcontractors generally should communicate with the contract administrator only through the prime contractor. (See Contract Administrator, below.)

To make this Guide easier to understand, the term “prime contractor” will mean the principal contractor; “subcontractor” will mean all subcontractors including lower-tier subcontractors; and the term “employer” will mean all contractors as a group, including the prime contractor and any subcontractors and lower-tier subcontractors.

1-5 RESPONSIBILITY OF THE CONTRACT ADMINISTRATOR.

The **contract administrator** is responsible for the proper administration and enforcement of the Federal labor standards provisions on contracts covered by Davis-Bacon requirements. We use this term to represent the person (or persons) who will provide labor standards advice and support to you and other project principals (e.g., the owner, sponsor, architect), including providing the proper Davis-Bacon wage decision (see 2-1, **The Wage Decision**) and ensuring that the wage decision and contract clauses are incorporated into the contract for construction. The contract administrator also monitors labor standards compliance (see 2-6, **Compliance Reviews**) by conducting interviews with construction workers at the job site and reviewing payroll reports, and oversees any enforcement actions that may be required.

The contract administrator could be an employee or agent of HUD, or of a city or county or public housing agency. For HUD projects administered directly by HUD staff, usually FHA-insured multifamily projects, the contract administrator will be the HUD Labor Relations field staff. But many HUD-assisted projects are administered by local contracting agencies such as Public Housing Agencies (PHAs), Indian tribes and tribally-designated housing entities (TDHEs), and States, cities and counties under HUD's Community Development Block Grant (CDBG) and HOME programs. In these cases, the contract administrator will likely be local agency staff. In either case, the guidance for you remains essentially the same.

The DOL also has a role in monitoring Davis-Bacon administration and enforcement. In addition, DOL has independent authority to conduct investigations. A DOL investigator or other DOL representative may visit Davis-Bacon construction sites to interview construction workers or review payroll information.

CHAPTER 2 HOW TO COMPLY WITH LABOR STANDARDS AND PAYROLL REPORTING REQUIREMENTS

WHERE TO START? Now that you know you're on a Davis-Bacon project and you know some of the legal and practical implications, what's next?

SECTION I - THE BASICS

2-1 **THE WAGE DECISION.**

Davis-Bacon labor standards stipulate the wage payment requirements for Carpenters, Electricians, Plumbers, Roofers, Laborers, and other construction work classifications that may be needed for the project. The Davis-Bacon wage decision that applies to the project contains a schedule of work classifications and wage rates that must be followed. If you don't have it already (and by now you should), you'll want to get a copy of the applicable Davis-Bacon wage decision.

Remember, the wage decision is contained in the contract specifications along with the labor standards clauses. See 1-3, Construction Contract Provisions.

- a. **The work classifications and wage rates.** A Davis-Bacon wage decision is simply a listing of different work classifications and the minimum wage rates that must be paid to anyone performing work in those classifications. You'll want to make sure that the work classification(s) you need are contained in the wage decision and make certain you know exactly what wage rate(s) you will need to pay. Some wage decisions cover several counties and/or types of construction work (for example, residential and commercial work) and can be lengthy and difficult to read. Contact the contract administrator (HUD Labor Relations field staff or local agency staff) if you have any trouble reading the wage decision or finding the work classification(s) you need.

To make reading lengthy wage decisions easier for you, the contract administrator may prepare a Project Wage Rate Sheet (HUD-4720). This Sheet is a one-page transcript that will show only the classifications and wage rates for a particular project. A blank copy of a Project Wage Rate Sheet is provided for you in the appendix. Also, a fillable version of this form is available on-line at HUDClips (see web address in the Appendix). Contact the contract administrator monitoring your project for assistance with a Project Wage Rate Sheet.

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- b. **Posting the wage decision.** If you are the prime contractor, you will be responsible for posting a copy of the wage decision (or the Project Wage Rate Sheet) and a copy of the DOL Davis-Bacon poster titled Employee Rights under the Davis-Bacon Act (Form WH-1321) at the job site in a place that is easily accessible to all of the construction workers employed at the project and where the wage decision and poster won't be destroyed by wind or rain, etc. The Employee Rights under the Davis-Bacon Act poster is available in English and Spanish on-line at HUDClips (see address in the Appendix).

The Employee Rights under the Davis-Bacon Act poster (WH-1321) replaces the Notice to all Employees. The new poster is available in English and Spanish on-line at HUDClips (see address in the Appendix).

2-2 ADDITIONAL "TRADE" CLASSIFICATIONS AND WAGE RATES.

What if the work classification you need isn't on the wage decision? If the work classification(s) that you need doesn't appear on the wage decision, you will need to request an additional classification and wage rate. This process is usually very simple and you'll want to start the request right away. Basically, you identify the classification you need and recommend a wage rate for DOL to approve for the project. There are a few rules about additional classifications; you'll find these rules in the DOL regulations, Part 5, and in the labor clauses in your contract. The rules are summarized for you here:

- a. **Additional classification rules.** Additional classifications and wage rates can be approved if:
1. The requested classification is used by construction contractors in the area of the project. (The area is usually defined as the county where the project is located).
 2. The work that will be performed by the requested classification is not already performed by another classification that is already on the wage decision. (In other words, if there already is an Electrician classification and wage rate on the wage decision you can't request another Electrician classification and rate.)
 3. The proposed wage rate for the requested classification "fits" with the other wage rates already on the wage decision. (For example, the wage rate proposed for a trade classification such as Electrician must be at least as much as the lowest wage rate for other trade classifications already contained in the wage decision.)
And,
 4. The workers that will be employed in the added classification (if it is known who the workers are/will be), or the workers' representatives, must agree with the proposed wage rate.

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- b. **Making the request.** A request for additional classification and wage rate must be made in writing through the contract administrator. (If the contract administrator is a local agency, the agency will send the request to the HUD Labor Relations staff.) If you are a subcontractor, your request should also go through the prime contractor. All you need to do is identify the work classification that is missing and recommend a wage rate (usually the rate that employer is already paying to the employees performing the work) for that classification. You may also need to describe the work that the new classification will perform.
- c. **HUD review.** The HUD Labor Relations field staff will review the requested classification and wage rate to determine whether the request meets the DOL rules outlined in paragraph 2-2(a), above. If additional information or clarification is needed, the staff will contact the prime contractor (or contract administrator for local agency projects) for more information, etc. If the Labor Relations review finds that the request meets the rules, the staff will give preliminary approval on the request and refer it to the DOL for final approval. The staff will send to you a copy of the preliminary approval/referral letter to the DOL.

If the HUD Labor Relations staff doesn't think the request meets the rules and if agreement can't be reached on the proper classification or wage rate for the work described, the HUD Labor Relations staff will not approve the request. In this case, the staff will send your request to the DOL with an explanation why HUD believes that the request shouldn't be approved. The DOL still has final decision authority. You will receive a copy of the disapproval/referral letter to the DOL.

- d. **DOL decision.** The DOL will respond to HUD Labor Relations in writing about the additional classification and wage rate request. HUD Labor Relations will notify you of the DOL decision in writing. If the DOL approves the request, the prime contractor must post the approval notice on the job site with the wage decision.

If the DOL does not approve the request, you will be notified about what classification and wage rate should be used for the work in question. You will also receive instructions about how to ask for DOL reconsideration if you still want to try to get your recommendation approved.

It's always a good idea to talk to the contract administrator before submitting an additional classification and wage rate request. The contract administrator can offer suggestions and advice that may save you time and increase the likelihood that DOL will approve your request. Usually, the contract administrator can give you an idea about what the DOL will finally decide.

2-3 **CERTIFIED PAYROLL REPORTS.**

You'll need to submit a weekly certified payroll report (CPR) beginning with the first week that your company works on the project and for every week afterward until your firm has completed its work. It's always a good idea to number the payroll reports beginning with #1 and to clearly mark your last payroll for the project "Final."

- a. **Payroll formats.** The easiest form to use is DOL's WH-347, Payroll. A sample copy of the WH-347 is included in the back of this Guide. You may access a fillable version of the WH-347 on-line at HUDClips (see web address in the Appendix). Also, the contract administrator can provide a few copies of the WH-347 that you can reproduce.

You are not required to use Payroll form WH-347. You are welcome to use any other type of payroll, such as computerized formats, as long as it contains all of the information that is required on the WH-347.

- b. **Payroll certifications.** The weekly payrolls are called certified because each payroll is signed and contains language certifying that the information is true and correct. The payroll certification language is on the reverse side of the WH-347. If you are using another type of payroll format you may attach the certification from the back of the WH-347, or any other format which contains the same certification language on the WH-347 (reverse).

DOL's website has Payroll Instructions and the Payroll form WH-347 in a "fillable" PDF format at this address:
www.dol.gov/whd/forms/wh347.pdf

- c. **"No work" payrolls.** "No work" payrolls may be submitted whenever there is a temporary break in your work on the project, for example, if your firm is not needed on the project right now but you will be returning to the job in a couple of weeks. (See tip box, for "no work" payroll exemption!) However, if you know that your firm will not be working on the project for an extended period of time, you may wish to send a short note to the contract administrator to let them know about the break in work and to give an approximate date when your firm will return to the project. If you number payrolls consecutively or if you send a note, you do not need to send "no work" payrolls.

If you number your payroll reports consecutively, you do not need to submit "no work" payrolls!

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- d. **Payroll review and submission.** The prime contractor should review each subcontractor’s payroll reports for compliance prior to submitting the reports to the contract administrator. Remember, the prime contractor is responsible for the full compliance of all subcontractors on the contract and will be held accountable for any wage restitution that may be found due to any laborer or mechanic that is underpaid and for any liquidated damages that may be assessed for overtime violations. All of the payroll reports for any project must be submitted to the contract administrator through the prime contractor.

An alert prime contractor that reviews subcontractor payroll submissions can detect any misunderstandings early, prevent costly underpayments and protect itself from financial loss should underpayments occur.

- e. **Payroll retention.** Every contractor (including every subcontractor) must keep a complete set of their own payrolls and other basic records such as employee addresses and full SSNs, time cards, tax records, evidence of fringe benefit payments, for a Davis-Bacon project for at least 3 years after the project is completed. The prime contractor must keep a complete set of all of the payrolls for every contractor (including subcontractors) for at least 3 years after completion of the project.
- f. **Payroll inspection.** In addition to submitting payrolls to the contract administrator, every contractor (including subcontractors) must make their own copy of the payrolls and other basic records available for review or copying to any authorized representative from HUD or from DOL.

2-4 **DAVIS-BACON DEFINITIONS.**

Before we discuss how to complete the weekly payroll forms, we need to review a couple of definitions. These definitions can help you understand what will be required of you:

- a. **Laborer or mechanic.** “Laborers” and “mechanics” mean anyone who is performing construction work on the project, including trade journeymen (carpenters, plumbers, sheet metal workers, etc.), apprentices, and trainees and, for CWHSSA purposes, watchmen and guards. “Laborers” and “mechanics” are the two groups of workers that must be paid not less than Davis-Bacon wage rates.
1. **Working foremen.** Foremen or supervisors that regularly spend more than 20% of their time performing construction work and do not meet the exclusions in paragraph 2 below are covered “laborers” and “mechanics” for labor standards purposes for the time spent performing construction work.
 2. **Exclusions.** People whose duties are primarily administrative, executive or clerical are not laborers or mechanics. Examples include superintendents, office staff, timekeepers, messengers, etc. (Contact the contract administrator if you have any questions about whether a particular employee is excluded.)

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- b. **Employee.** Every person who performs the work of a laborer or mechanic is “employed” regardless of any contractual relationship which may be alleged to exist between a contractor or subcontractor and such person. This means that even if there is a contract between a contractor and a worker, the contractor must make sure that the worker is paid at least as much as the wage rate on the wage decision for the classification of work they perform. Note that there are no exceptions to the prevailing wage requirements for relatives or for self-employed laborers and mechanics.

For more information about working subcontractors, ask the contract administrator or your HUD Labor Relations Field Staff for a copy of Labor Relations Letter LR-96-01, Labor standards compliance requirements for self-employed laborers and mechanics. Labor Relations Letters and other helpful Labor Relations publications are available at HUD’s Labor Relations web site (see the list of web site addresses in the Appendix).

- c. **Apprentices and trainees.** The only workers who can be paid less than the wage rate on the wage decision for their work classification are “apprentices” and “trainees” registered in approved apprenticeship or training programs. Approved programs are those which have been registered with the DOL or a DOL-recognized State Apprenticeship Council (SAC). Apprentices and trainees are paid wage rates in accordance with the wage schedule in the approved program.

Most often, the apprentice/trainee wage rate is expressed as a series of percentages tied to the amount of time spent in the program. For example, 0-6 months: 65%; 6 months - 1 year: 70%; etc. The percentage is applied to the journeyman’s wage rate. On Davis-Bacon projects, the percentage must be applied to the journeyman’s wage rate on the applicable wage decision for that craft.

1. **Probationary apprentice.** A “probationary apprentice” can be paid as an apprentice (less than the rate on the wage decision) if the DOL or SAC has certified that the person is eligible for probationary employment as an apprentice.
2. **Pre-apprentice.** A “pre-apprentice”, that is, someone who is not registered in a program and who hasn’t been DOL- or SAC-certified for probationary apprenticeship is not considered to be an “apprentice” and must be paid the full journeyman’s rate on the wage decision for the classification of work they perform.
3. **Ratio of apprentices and trainees to journeymen.** The maximum number of apprentices or trainees that you can use on the job site cannot exceed the ratio of apprentices or trainees to journeymen allowed in the approved program.

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- d. **Prevailing wages or wage rates.** Prevailing wage rates are the wage rates listed on the wage decision for the project. The wage decision will list a minimum basic hourly rate of pay for each work classification. Some wage decisions include fringe benefits which are usually listed as an hourly fringe rate. If the wage decision includes a fringe benefit rate for a classification, you will need to add the fringe benefit rate to the basic hourly rate unless you provide bona fide fringe benefits for your employees.
1. **Piece-work.** Some employees are hired on a piece-work basis, that is, the employee's earnings are determined by a factor of work produced. For example, a Drywall Hanger's earnings may be calculated based upon the square feet of sheetrock actually hung, a Painter's earnings may be based upon the number of units painted. Employers may calculate weekly earnings based upon piece rates provided the weekly earnings are sufficient to satisfy the wage rate requirement based upon actual hours, including any overtime, worked. Accurate time records must be maintained for any piece-work employees. If the weekly piece rate earnings are not sufficient, the employer must recompute weekly earnings based upon the actual hours worked and the rate on the wage decision for the work classification(s) involved.
- e. **Fringe benefits** Fringe benefits can include health insurance premiums, retirement contributions, life insurance, vacation and other paid leave as well as some contributions to training funds. Fringe benefits do not include employer payments or contributions required by other Federal, State or local laws, such as the employer's contribution to Social Security or some disability insurance payments.

Note that the total hourly wage rate paid to any laborer or mechanic (basic wage or basic wage plus fringe benefits) may be no less than the total wage rate (basic wage or basic wage plus fringe benefits) on the wage decision for their craft. If the value of the fringe benefit(s) you provide is less than the fringe benefit rate on the wage decision, you will need to add the balance of the wage decision fringe benefit rate to the basic rate paid to the employee. For example, if the wage decision requires \$10/hour basic rate plus \$5/hour fringe benefits, you must pay no less than that total (\$15/hour) in the basic rate or basic rate plus whatever fringe benefit you may provide. You can meet this obligation in several ways: you could pay the base wage and fringe benefits as stated in the wage decision, or you could pay \$15 in base wage with no fringe benefits, or you could pay \$12 basic plus \$3 fringe benefits. You can also off-set the amount of the base wage if you pay more in fringe benefits such as by paying or \$9 basic plus \$6 fringe benefits; as long as you meet the total amount. The amount of the base wage that you may off-set with fringe benefits is limited by certain IRS and FLSA requirements.

- f. **Overtime.** Overtime hours are defined as all hours worked on the contract in excess of 40 hours in any work week. Overtime hours must be paid at no less than one and one-half times the regular rate of basic pay plus the straight-time rate of any required fringe benefits.

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- g. **Deductions.** You may make payroll deductions as permitted by DOL Regulations 29 CFR Part 3. These regulations prohibit the employer from requiring employees to “kick-back” (i.e., give up) any of their earnings. Allowable deductions which do not require prior DOL permission include employee obligations for income taxes, Social Security payments, insurance premiums, retirement, savings accounts, and any other legally-permissible deduction authorized by the employee. Deductions may also be made for payments on judgments and other financial obligations legally imposed against the employee.

Referring, again, to our example above where the wage decision requiring a \$15 total wage obligation (\$10 basic wage plus \$5 fringe benefits) was met by paying \$9 base wage plus \$6 fringe benefits: Note that overtime rates must be based on one and one-half times the basic rate as stated on the wage decision. In the above example, the employer must pay for overtime: \$15/hr (\$9 basic + \$6 fringe) plus \$5 (one-half of \$10, the wage decision basic rate) for a total of \$20 per hour.

- h. **Proper designation of trade.** You must select a work classification on the wage decision for each worker based on the actual type of work he/she performed and you must pay each worker no less than the wage rate on the wage decision for that classification regardless of their level of skill. In other words, if someone is performing carpentry work on the project, they must be paid no less than the wage rate on the wage decision for Carpenters even if they aren’t considered by you to be fully trained as a Carpenter. Remember, the only people who can be paid less than the rate for their craft are apprentices and trainees registered in approved programs.
1. **Split-classification.** If you have employees that perform work in more than one trade during a work week, you can pay the wage rates specified for each classification in which work was performed only if you maintain accurate time records showing the amount of time spent in each classification of work. If you do not maintain accurate time records, you must pay these employees the highest wage rate of all of the classifications of work performed.
- i. **Site of work.** The “site of work” is where the Davis-Bacon wage rates apply. Usually, this means the boundaries of the project. “Site of work” can also include other adjacent or virtually adjacent property used by a contractor or subcontractor in the construction of the project, like a fabrication site that is dedicated exclusively, or nearly so, to the project.

SECTION II - REPORTING REQUIREMENTS

2-5 COMPLETING A PAYROLL REPORT.

What information has to be reported on the payroll form? The weekly payroll form doesn't ask for any information that you don't already need to keep for wage payment and tax purposes. For example, you need to know each employee's name; his or her work classification (who is working for you and what do they do?), the hours worked during the week, his or her rate of pay, the gross amount earned (how much did they earn?), the amounts of any deductions for taxes, etc., and the net amount paid (how much should the paycheck be made out for?). No more information than you need to know in order to manage your work crew and make certain they are paid properly. And, certainly, no more information than you need to keep for IRS, Social Security and other tax and employment purposes.

For many contractors, the Weekly Certified Payroll is the only Davis-Bacon paperwork you need to submit!

You are required to submit certified payrolls to illustrate and document that you have complied with the prevailing wage requirements. The purpose of the contract administrator's review of your payrolls is to verify your compliance. Clearer and complete payroll reports will permit the contract administrator to complete reviews of your payroll reports quickly.

- a. **Project and contractor/subcontractor information.** Each payroll must identify the contractor or subcontractor's name and address, the project name and number, and the week ending date. Indicate the week dates in the spaces provided. Numbering payrolls is optional but strongly recommended.
- b. **Employee information.** Effective January 18, 2009, payrolls shall not report employee addresses or full Social Security Numbers (SSNs). Instead, the first payroll on which each employee appears shall include the employee's name and an individually identifying number, usually the last 4 digits of the employee's SSN. Afterward, the identifying number does not need to be reported unless it is necessary to distinguish between employees, e.g., if two employees have the same name.

Employers (prime contractors and subcontractors) must maintain the current address and full SSN for each employee and must provide this information upon request to the contracting agency or other authorized representative responsible for federal labor standards compliance monitoring. Prime contractors may require a subcontractor(s) to provide this information for the prime contractor's records. DOL has modified form WH-347, Payroll, to accommodate these reporting requirements.

- c. **Work classification.** Each employee must be classified in accordance with the wage decision based on the type of work they actually perform.

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1. **Apprentices or trainees.** The first payroll on which any apprentice or trainee appears must be accompanied by a copy of that apprentice's or trainee's registration in a registered or approved program. A copy of the portions of the registered or approved program pertaining to the wage rates and ratios shall also accompany the first payroll on which the first apprentice or trainee appears.
 2. **Split classifications.** For an employee that worked in a split classification, make a separate entry for each classification of work performed distributing the hours of work to each classification, accordingly, and reflecting the rate of pay and gross earnings for each classification. Deductions and net pay may be based upon the total gross amount earned for all classifications.
- d. **Hours worked.** The payroll should show ONLY the regular and overtime hours worked on this project. Show both the daily and total weekly hours for each employee. If an employee performs work at job sites other than the project for which the payroll is prepared, those "other job" hours should not be reported on the payroll. In these cases, you should list the employee's name, classification, hours for this project only, the rate of pay and gross earnings for this project, and the gross earned for all projects. Deductions and net pay may be based upon the employee's total earnings (for all projects) for the week.
- e. **Rate of pay.** Show the basic hourly rate of pay for each employee for this project. If the wage decision includes a fringe benefit and you do not participate in approved fringe benefit programs, add the fringe benefit rate to the basic hourly rate of pay. Also list the overtime rate if overtime hours were worked.
1. **Piece-work.** For any piece-work employees, the employer must compute an effective hourly rate for each employee each week based upon the employee's piece-work earnings for that week. To compute the effective hourly rate, divide the piece-work earnings by the total number of hours worked, including consideration for any overtime hours.

The effective hourly rate must be reflected on the certified payroll and this hourly rate may be no less than the wage rate (including fringe benefits, if any) on the wage decision for the classification of work performed. It does not matter that the effective hourly rate changes from week-to-week, only that the rate is no less than the rate on the wage decision for the classification of work performed.

Remember, the overtime rate is computed at one and one-half times the basic rate of pay plus any fringe benefits. For example, if the wage decision requires \$10/hour basic plus \$5/hour fringe benefits, the overtime rate would be: $(\$10 \times 1 \frac{1}{2}) + \$5 = \$20/\text{hour}$.

- f. **Gross wages earned.** Show the gross amount of wages earned for work performed on this project. Note: For employees with work hours and earnings on other projects, you may show gross wages for this project over gross earnings all projects (for example, \$425.40/\$764.85) and base deductions and net pay on the "all projects" earnings.

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- g. **Deductions.** Show the amounts of any deductions from the gross earnings. “Other” deductions should be identified (for example, Savings Account or Loan Repayment). Any voluntary deduction (that is, not required by law or by an order of a proper authority) must be authorized in writing by the employee or provided for in a collective bargaining (union) agreement. A short note signed by the employee is all that is needed and should accompany the first payroll on which the other deduction appears.

Only one employee authorization is needed for recurring (e.g., weekly) other deductions. Written employee authorization is not required for income tax and Social Security deductions.

- h. **Net pay.** Show the net amount of wages paid.
- i. **Statement of compliance.** The Statement of Compliance is the certification. It is located on the reverse side of a standard payroll form (WH-347). Be sure to complete the identifying information at the top, particularly if you are attaching the Statement of Compliance to an alternate payroll form such as a computer payroll. Also, you must check either 4(a) or 4(b) if the wage decision contains a fringe benefit. Checking 4(a) indicates that you are paying required fringe benefits to approved plans or programs; and 4(b) indicates that you are paying any required fringe benefit amounts directly to the employee by adding the fringe benefit rate to the basic hourly rate of pay. If you are paying a portion of the required fringe benefit to programs and the balance directly to the employee, explain those differences in box 4(c).

Only one Statement of Compliance is required for each employer’s weekly payroll no matter how many pages are needed to report the employee data.

- j. **Signature.** Make sure the payroll is signed with an original signature in ink. The payroll must be signed by a principal of the firm (owner or officer such as the president, treasurer or payroll administrator) or by an authorized agent (a person authorized by a principal in writing to sign the payroll reports). Signature authorization (for persons other than a principal) should be submitted with the first payroll signed by such an agent. Signatures in pencil; signature stamps; xerox, pdf and other facsimiles are not acceptable.

SECTION III - PAYROLL REVIEWS AND CORRECTIONS

2-6 COMPLIANCE REVIEWS.

The contract administrator or other inspector may visit the project site and interview some of the workers concerning their employment on the project. The DOL may also independently conduct its own reviews (see 1-5). In addition, the contract administrator will periodically review payrolls and related submissions, comparing the interview information to the payrolls, to ensure that the labor standards requirements have been met. You will be notified by the contract administrator if these reviews find any discrepancies or errors. You will be given instructions about what steps must be taken to correct any problems.

- a. **On-site interviews.** Every employer (contractor, subcontractor, etc.) must make their employees available for interview at the job site with the contract administrator or other agency representative, or HUD or DOL representative. The interviews are confidential and the employee will be asked about the kind of work they perform and their rate of pay. Every effort will be made to ensure that these interviews cause as little disruption as possible to the on-going work. The interviewer will record the interview information, usually on a form HUD-11, Record of Employee Interview, and forward the interviews to the contract administrator.
- b. **Project payroll reviews.** The contract administrator will compare the information on the interview forms to the corresponding payrolls to ensure that the workers are properly listed on the payrolls for the days and hours worked on the job site, work classification and rate of pay. The contract administrator will also review the payroll submissions to make certain that the payrolls are complete and signed; that employees are paid no less than the wage rate for the work classification shown; apprentice and trainee certifications are submitted (where needed); employee or other authorizations for other deductions are submitted (where needed); etc.

2-7 TYPICAL PAYROLL ERRORS AND REQUIRED CORRECTIONS.

The following paragraphs describe common payroll errors and the corrective steps you must take.

- a. **Inadequate payroll information.** If an alternate payroll format used by an employer (such as some computer payrolls) is inadequate, e.g., does not contain all of the necessary information that would be on the optional form WH-347, the employer will be asked to resubmit the payrolls on an acceptable form.
- b. **Missing identification numbers.** If the first payroll on which an employee appears does not contain the employee's individually identifying number, the employer will be asked to supply the missing information. This information can be reported on the next payroll submitted by the employer if the employer is still working on the project. Otherwise, the employer will be asked to submit a correction certified payroll.

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- c. **Incomplete payrolls.** If the information on the payroll is not complete, for example, if work classifications or rates of pay are missing, the employer will be asked to send a correction certified payroll.
- d. **Classifications.** If the payrolls show work classifications that do not appear on the wage decision, the employer will be asked to reclassify the employees in accordance with the wage decision or the employer may request an additional classification and wage rate (see 2-2). If reclassification results in underpayment (i.e., the wage rate reported on the payroll is less than the rate required for the new classification), the employer will be asked to pay wage restitution to all affected reclassified employees. (see 2-8 for instructions about wage restitution.)
- e. **Wage rates.** If the wage rates on the payroll are less than the wage rates on the wage decision for the work classifications reported, the employer will be asked to pay wage restitution to all affected employees.
- f. **Apprentices and trainees.** If a copy of the employee's registration or the approved program ratio and wage schedule are not submitted with the first payroll on which an apprentice or trainee appears, the employer will be asked to submit a copy of each apprentice's or trainee's registration and/or the approved program ratio and wage schedule. If the ratio of apprentices or trainees to journeymen on the payroll is greater than the ratio in the approved program, the employer will be asked to pay wage restitution to any excess apprentices or trainees. Also, any apprentice or trainee that is not registered in an approved program must receive the journeyman's wage rate for the classification of work they performed.
- g. **Overtime.** If the employees did not receive at least time and one-half for any overtime hours worked on the project, the following will occur:
1. If the project is subject to CWHSSA overtime requirements, the employer will be asked to pay wage restitution for all overtime hours worked on the project. The employer may also be liable to the United States for liquidated damages computed at \$10 per day per violation. Or,
 2. If the project is not subject to CWHSSA, the employer will be notified of the possible FLSA overtime violations. Also, the contract administrator may refer the matter to the DOL for further review.
- h. **Computations.** If the payroll computations (hours worked times rate of pay) or extensions (deductions, net pay) show frequent errors, the employer will be asked to take greater care. Wage restitution may be required if underpayments resulted from the errors.
- i. **Deductions.** If there are any "Other" deductions that are not identified, or if employee authorization isn't provided, or if there is any unusual (very high, or large number) deduction activity, the employer will be asked to identify the deductions, provide employee authorization or explain unusual deductions, as necessary.

HUD does not enforce or attempt to provide advice on employer obligations to make deductions from employee earnings for taxes or Social Security. However, HUD may refer to the IRS or other responsible agency copies of certified payroll reports that show wages paid in gross amounts (i.e., without tax deduction) for its review and appropriate action.

- j. **Fringe benefits.** If the wage decision contains fringe benefits but the payroll does not indicate how fringe benefits were paid [neither 4(a) nor 4(b) is marked on the Statement of Compliance], the employer may be asked to submit correction certified payrolls and will be required to pay wage restitution if underpayments occurred. However, if the basic hourly rates for the employees are at least as much as the total wage rate on the wage decision (basic hourly rate plus the fringe benefit rate), no correction is necessary.
- k. **Signature.** If the payroll Statement of Compliance is not signed or is missing, the employer will be asked to submit a signed Statement of Compliance for each payroll affected. If the Statement of Compliance is signed by a person who is not a principle of the firm and that person has not been authorized by principle to sign, the employer will be asked to provide an authorization or to resubmit the Statement(s) of Compliance bearing the signature of a principle or other authorized signatory.
- l. **On-site interview comparisons.** If the comparison of on-site interviews to the payrolls indicates any discrepancies (for example, the employee does not appear on the payroll for the date of the interview), the employer will be asked to submit a correction certified payroll report.
- m. **Correction certified payroll.** Any and all changes to data on a submitted payroll report must be reported on a certified correction payroll. In no case will a payroll report be returned to the prime contractor or employer for revision.

2-8 **RESTITUTION FOR UNDERPAYMENT OF WAGES.**

Where underpayments of wages have occurred, the employer will be required to pay wage restitution to the affected employees. Wage restitution must be paid promptly in the full amounts due, less permissible and authorized deductions. All wages paid to laborers and mechanics for work performed on the project, including wage restitution, must be reported on a certified payroll report.

- a. **Notification** to the Employer/Prime contractor. The contract administrator will notify the employer and/or prime contractor in writing of any underpayments that are found during payroll or other reviews. The contract administrator will describe the underpayments and provide instructions for computing and documenting the restitution to be paid. The employer/prime contractor is allowed 30 days to correct the underpayments. Note that the prime contractor is responsible to the contract administrator for ensuring that restitution is paid. If the employer is a subcontractor, the subcontractor will usually make the computations and restitution payments and furnish the required documentation through the prime contractor.

The contract administrator may communicate directly with a subcontractor when the underpayments are plainly evident and the subcontractor is cooperative. It is best to work through the prime contractor when the issues are complex, when there are significant underpayments and/or the subcontractor is not cooperative. In all cases, the subcontractor must ensure that the prime contractor receives a copy of the required corrective documentation.

- b. **Computing wage restitution.** Wage restitution is simply the difference between the wage rate paid to each affected employee and the wage rate required on the wage decision for all hours worked where underpayments occurred. The difference in the wage rates is called the adjustment rate. The adjustment rate times the number of hours involved equals the gross amount of restitution due. You may also compute wage restitution by calculating the total amount of Davis-Bacon wages earned and subtracting the total amount of wages paid. The difference is the amount of back wages due.
- c. **Correction certified payrolls.** The employer will be required to report the restitution paid on a correction certified payroll. The correction payroll will reflect the period of time for which restitution is due (for example, Payrolls #1 through #6; or a beginning date and ending date). The correction payroll will list each employee to whom restitution is due and their work classification; the total number of work hours involved (daily hours are usually not applicable for wage restitution); the adjustment wage rate (the difference between the required wage rate and the wage rate paid); the gross amount of restitution due; deductions and the net amount actually paid. A properly signed Statement of Compliance must accompany the correction payroll.

HUD no longer requires the signature of the employee on the correction payroll to evidence employee receipt of restitution payment. In addition, except in the most extraordinary cases, HUD no longer requires employers to submit copies of restitution checks (certified, cashiers, canceled or other), or employee-signed receipts or waivers.

- d. **Review of correction CPR.** The contract administrator will review the correction certified payroll to ensure that full restitution was paid. The prime contractor shall be notified in writing of any discrepancies and will be required to make additional payments, if needed, documented on a correction certified payroll within 30 days.
- e. **Unfound workers.** Sometimes, wage restitution cannot be paid to an affected employee because, for example, the employee has moved and can't be located. After wage restitution has been paid to all of the workers who could be located, the employer must submit a list of any workers who could not be found and paid (i.e., unfound workers) providing their names, Social Security Numbers, last known addresses and the gross amount due. In such cases, at the end of the project the prime contractor will be required

to place in a deposit or escrow account an amount equal to the total gross amount of restitution that could not be paid because the employee(s) could not be located. The contract administrator will continue attempts to locate the unfound workers for 3 years after the completion of the project. After 3 years, any amount remaining in the account for unfound workers will be credited and/or forwarded by the contract administrator to HUD.

CHAPTER 3 LABOR STANDARDS DISPUTES, ADMINISTRATIVE REVIEWS, WITHHOLDING, DEPOSITS AND ESCROW ACCOUNTS, AND SANCTIONS

WHAT HAPPENS WHEN THINGS GO WRONG?

3-1 INTRODUCTION.

Even in the best of circumstances, things can go wrong. In a Davis-Bacon context, “things going wrong” usually means there’s a difference of opinion or a dispute about whether and to what extent underpayments have occurred. These disputes are usually between the contract administrator and one or more employers (the prime contractor and/or a subcontractor). The dispute may involve something simple such as an additional classification request that is pending before the DOL; or something as significant as investigative findings following a complaint of underpayment. This chapter discusses some of what you may expect and what you can do to make your views known and to lessen any delays in resolving the problem or issue.

3-2 ADMINISTRATIVE REVIEW ON LABOR STANDARDS DISPUTES.

As mentioned in the Introduction above, a dispute about labor standards and compliance can arise for a number of reasons. The labor standards clauses in your contract and DOL regulations provide for administrative review of issues where there is a difference of views between the contract administrator and any employer. The most common circumstances include:

- a. **Additional classifications and wage rates.** Additional classification and wage rate requests are sometimes denied by the DOL. An employer that is dissatisfied with the denial can request reconsideration by the DOL Wage and Hour Administrator. The employer may continue to pay the wage rate, as requested, until a final decision is rendered on the matter. When the final decision is known, the employer will be required to pay any additional wages that may be necessary to satisfy the wage rate that is established.
 1. **Reconsideration.** The DOL normally identifies the reasons for denial in its response to the request. Any interested person (for example, the contract administrator, employer, representatives of the employees) may request reconsideration of the decision on the additional classification request. The request for reconsideration must be made in writing and must thoroughly address the denial reasons identified by the DOL. Employer requests for reconsideration should be made through the contract administrator but may be made directly to the DOL. (See 2-2(d), and also DOL Regulations 29 CFR 1.8.) All requests initiated by or made through the contract administrator or HUD must be submitted through the HUD Headquarters Office of Labor Relations.

2. **Administrative Review Board.** Any interested party may request a review of the Administrator's decision on reconsideration by the DOL's Administrative Review Board. DOL regulations 29 CFR Part 7 explain the procedures for such reviews. (See also 29 CFR 1.9.)

b. **Findings of underpayment.** Compliance reviews and other follow-up enforcement actions may result in findings of underpayment. The primary goal in every case and at every step in this process is to reach agreements about who may have been underpaid and how much wage restitution may be due and, of course, to promptly deliver restitution to any underpaid workers. The contract administrator will usually work informally with you to reach such agreements. You will have an opportunity to provide additional information to the contract administrator that may explain apparent inconsistencies and/or resolve the discrepancies.

If informal exchanges do not result in agreement, the final determination and schedule of back wages due will be presented to you in writing and you will be permitted 30 days in which to correct the underpayment(s) or to request a hearing on the matter before the DOL. The request for hearing must be made in writing through the contract administrator and must explain what findings are in dispute and the reasons. In such cases, HUD is required to submit a report to DOL for review and further consideration. All requests for DOL hearing must be submitted through the HUD Headquarters Office of Labor Relations.

1. **DOL review.** The DOL will review the contract administrator's report and the arguments against the findings presented in the hearing request. The DOL may affirm or modify the findings based upon the materials presented. You will be notified in writing by the DOL of the results of its review. If DOL concludes that violations have occurred, you will be given an opportunity to correct any underpayments or to request a hearing before a DOL Administrative Law Judge (ALJ). (See DOL Regulations 29 CFR 5.11 (b) and 29 CFR Part 6, Rules of Practice for Administrative Proceedings.)

2. **Administrative Review Board.** Contractors and/or subcontractors may request a review by the Administrative Review Board of the decision(s) rendered by the DOL ALJ in the administrative hearing process. See DOL regulations 29 CFR Part 7 for more information about this proceeding.

3-3 WITHHOLDING.

The contract administrator shall cause withholding from payments due to the prime contractor to ensure the payment of wages which are believed to be due and unpaid, for example, if wage underpayments or other violations are not corrected within 30 days after written notification to the prime contractor. DOL may also direct the withholding of contract payments for alleged wage underpayments. Withholding is considered to be serious and is not taken unless warranted. If withholding is deemed necessary, you will be notified in writing. Only the amounts needed to meet the contractor's (and/or subcontractors') liability shall be withheld.

3-4 **DEPOSITS AND ESCROWS.**

In every case, we attempt to complete compliance actions and resolve any disputes before the project is completed and final payments are made. Sometimes, corrective actions or disputes continue after completion and provisions must be made to ensure that funds are available to pay any wage restitution that is ultimately found due. In these cases, we allow projects to proceed to final closing and final payments provided the prime contractor deposits an amount equal to the potential liability for wage restitution and liquidated damages, if necessary, in a special account. The deposit or escrow account is controlled by the contract administrator. When a final decision is rendered, the contract administrator makes disbursements from the account in accordance with the decision. Deposit/escrow accounts are established for one or more of the following reasons:

Remember, the prime contractor is responsible and will be held liable for any wage restitution that is due to any worker employed in the construction of the project, including workers employed by subcontractors and any lower-tier subcontractors. See 1-4, Responsibility of the Principal Contractor, and 2-8, Restitution for Underpayment of Wages.

- a. **Where the parties have agreed to amounts of wage restitution that are due** but the employer hasn't furnished evidence yet that all of the underpaid workers have received their back wages, e.g., some of the workers have moved and could not be located. The amount of the deposit is equal to the total gross amount of restitution due to workers lacking payment evidence. As these workers are paid and proper documentation is provided to the contract administrator, amounts corresponding to the documented payments are returned to the depositor. Amounts for any workers who cannot be located are held in the deposit/escrow account for three years and disposed as described in 2-8(f) of this Guide.
- b. **Where underpayments are suspected or alleged and an investigation has not yet been completed.** The deposit is equal to the amount of wage restitution and any liquidated damages, if applicable, that are estimated to be due. If the final determination of wages due is less than the amount estimated and placed in the escrow account, the escrow will be reduced to the final amount and the difference will be returned to the depositor.

If the parties agree to the investigative findings, the amounts due to the workers will be paid by the employer. As these workers are paid and proper documentation is provided to the contract administrator, the gross amounts corresponding to the documented payments are returned to the depositor.

1. If the employer is unable to make the payments to the workers, e.g., lacks the funds necessary, the contract administrator may make disbursements directly to the workers in the net amounts calculated by the employer. The amounts withheld from the workers for tax deduction will be returned to the employer as payments to workers are made. The employer shall be responsible for reporting and transmitting withholdings to the appropriate agencies.

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2. If the employer is not cooperating in the resolution, the contract administrator shall make disbursements to the workers in accordance with the schedule of wages due. Amounts for unfound workers will be retained as described above (See 2-8(f) and 3-4(a)).

If the parties do not agree and an administrative hearing is requested, the escrow will be maintained as explained in 3-4(c), below.

Remember, if you have any questions or need assistance concerning labor standards requirements help is always available. Contact the contract administrator for the project you're working on or the HUD Field Labor Relations staff in your area.

- c. **Where the parties are waiting for the outcome of an administrative hearing** that has been or will be requested contesting a final determination of wages due. The deposit shall be equal to the amount of wage restitution and liquidated damages, if applicable, that have been determined due. Once a final decision is rendered, disbursements from the escrow account are made in accordance with the decision.

3-5 ADMINISTRATIVE SANCTIONS.

Contractors and/or subcontractors that violate the labor standards provisions may face administrative sanctions imposed by HUD and/or DOL.

- a. **DOL debarment.** Contractors and/or subcontractors that are found by the Secretary of Labor to be in aggravated or willful violation of the labor standards provisions of the Davis-Bacon and Related Acts (DBRA) will be ineligible (debarred) to participate in any DBRA or Davis-Bacon Act contracts for up to 3 years. Debarment includes the contractor or subcontractor and any firm, corporation, partnership or association in which the contractor or subcontractor has a substantial interest. Debarment proceedings can be recommended by the contract administrator or can be initiated by the DOL. Debarment proceedings are described in DOL regulations 29 CFR 5.12.
- b. **HUD sanctions.** HUD sanctions may include Limited Denials of Participation (LDPs), debarments and suspensions.
 1. **Limited Denial of Participation.** HUD may issue to the employer a limited denial of participation (LDP) which prohibits the employer from further participation in HUD programs for a period up to one year. The LDP is usually effective for the HUD program in which the violation occurred and for the geographic jurisdiction of the issuing HUD Office. HUD regulations concerning LDP's are found at 24 CFR 24.700-24.714.

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2. **Debarment and suspensions.** In certain circumstances, HUD may initiate its own debarment or suspension proceedings against a contractor and/or subcontractor in connection with improper actions regarding Davis-Bacon obligations. For example, HUD may initiate debarment where a contractor has been convicted for making false statements (such as false statements on certified payrolls or other prevailing wage certifications) or may initiate suspension where a contractor has been indicted for making false statements. HUD regulations concerning debarment and suspension are found at 24 CFR Part 24.

3-6 FALSIFICATION OF CERTIFIED PAYROLL REPORTS.

Contractors and/or subcontractors that are found to have willfully falsified payroll reports (Statements of Compliance), including correction certified payroll reports, may be subject to civil or criminal prosecution. Penalties may be imposed of \$1,000 and/or one year in prison for each false statement (see Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code).

Remember, if you have any questions or need assistance concerning labor standards requirements help is always available. Contact the contract administrator for the project you're working on or the HUD Field Labor Relations staff in your area.

ACRONYMS AND SYMBOLS

CDBG -	Community Development Block Grant
CFR -	Code of Federal Regulations
CPR -	Certified Payroll Report
CWHSSA -	Contract Work Hours and Safety Standards Act
DBA -	Davis-Bacon Act
DBRA -	Davis-Bacon and Related Acts
DOL -	Department of Labor
FHA -	Federal Housing Administration
FLSA -	Fair Labor Standards Act
HUD -	Housing and Urban Development (Department of)
IHA -	Indian Housing Authority
LCA -	Local Contracting Agency
LDP -	Limited Denial of Participation
O/T -	Overtime
PHA -	Public Housing Agency
S/T -	Straight-time
SAC -	State Apprenticeship Council/Agency
TDHE -	Tribally-Designated Housing Entity
§ -	Section
¶ -	Paragraph

DAVIS-BACON - RELATED WEB SITES*

HUD Office of Labor Relations:
www.hud.gov/offices/olr

HUD Regulations:
<http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR>

HUDClips (HUD Forms and Publications):
www.hud.gov/offices/adm/hudclips/index.cfm

DOL Davis-Bacon and Related Acts Homepage:
<http://www.dol.gov/whd/contracts/dbra.htm>

DOL Regulations:
<http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR>

Davis-Bacon Wage Decisions:
www.wdol.gov

DOL Forms:
www.dol.gov/whd/programs/dbra/forms.htm

***Web addresses active as of January 2012**

Project Wage Rate Sheet	U.S. Department of Housing and Urban Development Office of Labor Relations	
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Project Name:	Wage Decision Number/Modification Number:
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Project Number:	Project County:
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Work Classification	Basic Hourly Rate (BHR)	Fringe Benefits	Total Hourly Wage Rate	Laborers Fringe Benefits		\$
				Group #	BHR	
Bricklayers			\$	Group #	BHR	Total Wage
Carpenters			\$			\$
Cement Masons			\$			\$
Drywall Hangers			\$			\$
Electricians			\$			\$
Iron Workers			\$			\$
Painters			\$	Operators Fringe Benefits:		\$
Plumbers			\$	Group #	BHR	Total Wage
Roofers			\$			\$
Sheet Metal Workers			\$			\$
Soft Floor Workers			\$			\$
Tapers			\$			\$
Tile Setters			\$	Truck Drivers Fringe Benefits:		\$
Other Classifications				Group #	BHR	Total Wage
			\$			
			\$			
			\$			

Additional Classifications (HUD Form 4230-A)

Work Classification	Basic Hourly Rate (BHR)	Fringe Benefits	Total Hourly Wage Rate	Date of HUD Submission to DOL	Date of DOL Approval
			\$		
			\$		
			\$		

Date _____

I, _____ (Name of Signatory Party) _____ (Title) _____

do hereby state:

(1) That I pay or supervise the payment of the persons employed by _____ (Contractor or Subcontractor) _____ on the _____ (Building or Work) _____; that during the payroll period commencing on the _____ day of _____, and ending the _____ day of _____, all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said _____ (Contractor or Subcontractor) _____ from the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:
 (a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS
 — in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

— Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE

U.S. Department of Housing and Urban Development
Office of Departmental Operations and Coordination
Washington, DC 20410

Email: www.OfficeofLaborRelations@hud.gov

**Labor Relations Desk Guide
LR01.DG**



Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. 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 I(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 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 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 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

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

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

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

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

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

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

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee 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. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work 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. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, 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 subparagraph 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 HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

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

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

(2) That each laborer 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 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 subparagraph A.3.(ii)(b).

(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 subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee 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, HUD or its designee 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 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 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 29 CFR Part 5 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 will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, 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 this paragraph.

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 HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. 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) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(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) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. 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 the individual is employed on such work to work in excess of 40 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 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, 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 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, 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 subparagraph (2) of this paragraph.

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

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

EMPLOYEE RIGHTS UNDER THE DAVIS-BACON ACT

FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

PREVAILING WAGES

You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

OVERTIME

You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

ENFORCEMENT

Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

APPRENTICES

Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

PROPER PAY

If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

or contact the U.S. Department of Labor's Wage and Hour Division.



For additional information:

1-866-4-USWAGE

(1-866-487-9243) TTY: 1-877-889-5627



WWW.WAGEHOUR.DOL.GOV

DERECHOS DEL EMPLEADO BAJO LA LEY DAVIS-BACON

PARA OBREROS Y MECÁNICOS EMPLEADOS EN PROYECTOS DE CONSTRUCCIÓN FEDERAL O CON ASISTENCIA FEDERAL

LA SECCIÓN DE HORAS Y SUELDOS DEL DEPARTAMENTO DE TRABAJO DE EEUU

SALARIOS PREVALECIENTES

No se le puede pagar menos de la tasa de pago indicada en la Decisión de Salarios Davis-Bacon fijada con este Aviso para el trabajo que Ud. desempeña.

SOBRETIEMPO

Se le ha de pagar no menos de tiempo y medio de su tasa básica de pago por todas las horas trabajadas en exceso de 40 en una semana laboral. Existen pocas excepciones.

CUMPLIMIENTO

Se pueden retener pagos por contratos para asegurarse que los obreros reciban los salarios y el pago de sobretiempo debidos, y se podría aplicar daños y perjuicios si no se cumple con las exigencias del pago de sobretiempo. Las cláusulas contractuales de Davis-Bacon permiten la terminación y exclusión de contratistas para efectuar futuros contratos federales hasta tres años. El contratista que falsifique los registros certificados de las nóminas de pago o induzca devoluciones de salarios puede ser sujeto a procesamiento civil o criminal, multas y/o encarcelamiento.

APRENDICES

Las tasas de aprendices sólo se aplican a aprendices correctamente inscritos bajo programas federales o estatales aprobados.

PAGO APROPIADO

Si Ud. no recibe el pago apropiado, o precisa de información adicional sobre los salarios aplicables, póngase en contacto con el Contratista Oficial que aparece abajo:

o póngase en contacto con la Sección de Horas y Sueldos del Departamento de Trabajo de EEUU.



Para obtener información adicional:

1-866-4-USWAGE

(1-866-487-9243) TTY: 1-877-889-5627



WWW.WAGEHOUR.DOL.GOV

Project Wage Rate Sheet

U.S. Department of Housing and Urban Development
Office of Labor Relations

PROJECT NAME: **Evans Emergency Generator Project** WAGE DECISION NUMBER/MODIFICATION NUMBER: **C0150010 1-9-2015**

PROJECT NUMBER: **R140ALT61** PROJECT COUNTY: **Weld County**

WORK CLASSIFICATION	BASIC HOURLY RATE (BHR)	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE	LABORERS FRINGE BENEFITS:		\$ TOTAL WAGE
				GROUP #	BHR	
Bricklayers			\$			\$
Carpenters			\$			\$
Cement Masons			\$			\$
Drywall Hangers			\$			\$
Electricians	32.65	12.70	\$45.35			\$
Iron Workers			\$			\$
Painters			\$	OPERATORS FRINGE BENEFITS:		\$
				GROUP #	BHR	
Plumbers	31.93	12.27	\$44.20			\$
Roofers			\$			\$
Sheet Metal Workers			\$			\$
Soft Floor Layers			\$			\$
Tapers			\$			\$
Tile Setters			\$	TRUCK DRIVERS FRINGE BENEFITS:		\$
				GROUP #	BHR	
OTHER CLASSIFICATIONS						
			\$			\$
			\$			\$
			\$			\$

ADDITIONAL CLASSIFICATIONS (HUD Form 4230-A)

WORK CLASSIFICATION	BASIC HOURLY RATE	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE	DATE OF HUD SUBMISSION TO DOL	DATE OF DOL APPROVAL
			\$		
			\$		
			\$		
			\$		