Project Manual
Pine-Strawberry Water Improvement District Deep Well Drilling

Prepared for

Pine-Strawberry Water Improvement District

Prepared by

Geo-Logic ASSOCIATES

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DB21.1390

May 13, 2022

Pine-Strawberry Water Improvement District

Deep Well Drilling
Project Manual

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ADVERTISEMENT FOR BIDS

Pine-Strawberry Water Improvement District Strawberry, Arizona
Deep Water Supply Well Installation

General Notice

The Pine-Strawberry Water Improvement District (Owner) is requesting Bids for the construction of the following Project:

USDA Strawberry Deep Well
Engineer's Project #DB21.1390

Bids for the construction of the Project will be received at the Pine-Strawberry Water Improvement District located at 6306 W. Hardscrabble Road, Pine, AZ 85544 until July 14, 2022, 2:00 p.m. local time. At that time, the Bids received will be publicly opened and read.

The Project includes the following Work:

> **Drilling and construction of a new water supply well for the Pine-Strawberry Water Improvement District (PSWID). The estimated depth of the well is 2,000 feet.**

Bids are requested for the following Contract: **USDA Strawberry Deep Well**

Obtaining the Bidding Documents

Information and Bidding Documents for the Project can be found at the following designated website:

https://pswid.org/

Bidding Documents may be downloaded from the designated website. Prospective Bidders are urged to register with the designated website as a plan holder, even if Bidding Documents are obtained from a plan room or source other than the designated website in either electronic or paper format. The designated website will be updated periodically with addenda, lists of registered plan holders, reports, and other information relevant to submitting a Bid for the Project. All official notifications, addenda, and other Bidding Documents will be offered only through the designated website. Neither Owner nor Engineer will be responsible for Bidding Documents, including addenda, if any, obtained from sources other than the designated website.

The Issuing Office for the Bidding Documents is:

Pine-Strawberry Water Improvement District, Pine, AZ 85544

Prospective Bidders may obtain or examine the Bidding Documents at the Issuing Office on Monday through Friday between the hours of **8:00 a.m. and 5:00 p.m.** and may obtain copies of the Bidding Documents from the Issuing Office as described below. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including addenda, if any, obtained from sources other than the Issuing Office.

Hard copies can also be reviewed at the offices of Geo-Logic Associates 8777 N. Gainey Center Drive, Suite 250 Scottsdale, AZ 85258. Contact Marvin Glotfelty at (480) 659-7131, mglotfelty@geo-logic.com.

Printed copies of the Bidding Documents will not be made available.

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Pre-Bid Conference

A pre-bid conference for the Project will be held on **June 30, 2022** at **10:00 a.m.** at **PSWID offices (see address above).** Attendance at the pre-bid conference is **mandatory**. No questions will be submitted at this time. Questions must be submitted in writing to Marvin Glotfelty at mglotfelty@geo-logic.com by 5:00 p.m. on **July 5, 2022.** Answers to questions will be submitted to plan holders via addenda by 5:00 p.m. (MDT) on **July 8, 2022.**

Instructions to Bidders

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents.

American Iron and Steel

Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies an American Iron and Steel requirement to this project. All iron and steel products used in this project must be produced in the United States. The term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials.

The following waivers apply to this Contract:

- *De minimis*
- Minor components
- Pig iron and direct reduced iron

This Advertisement is issued by:

Owner: **Pine-Strawberry Water Improvement District**
By: **Mr. Paul S. Hendricks**
Title: **Project Manager**
Date: **June 7 and June 14, 2022, Payson Roundup**

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INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

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ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders.

ARTICLE 2—BIDDING DOCUMENTS

2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.

2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

2.03 Owner will make Bidding Documents available on the Owner's website as indicated in the Advertisement or Invitation to bid. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Attendees at the mandatory pre-bid meeting will receive Addenda issued by Owner.

2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.

2.05 *Electronic Documents*

A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.

1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version 2020 or later. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents or the Contractor's means of reproduction of such documents, the Owner and Engineer

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cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.

1. Electronic Documents that are available in native file format include:

a. **the Project Manual, which includes well diagram, well report, and technical specifications**

2. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.

3. Unless the Contract Documents explicitly identify that such information will be available to the Successful Bidder (Contractor), nothing herein will create an obligation on the part of the Owner or Engineer to provide or create such information, and the Contractor is not entitled to rely on the availability of such information in the preparation of its Bid or pricing of the Work. In all cases, the Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.

4. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 Deleted

3.02 Deleted

3.03 Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:

A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.

B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.

C. Bidder's state or other contractor license number, if applicable.

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D. Subcontractor and Supplier qualification information.

E. Other required information regarding qualifications.

3.04 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.05 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4—PRE-BID CONFERENCE

4.01 A mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.

4.02 Information presented at the pre-Bid conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-Bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 *Site and Other Areas*

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

5.02 *Existing Site Conditions*

A. *Subsurface and Physical Conditions; Hazardous Environmental Conditions*

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:

a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.

b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.

c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.

d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract

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Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

5.03 *Other Site-related Documents*

A. In addition to the documents regarding existing Site conditions referred to in Paragraph 5.02.A, the following other documents relating to conditions at or adjacent to the Site are known to Owner and made available to Bidders for reference:

1. **ADWR test well report (attached to the Supplemental Conditions)**

Owner will make copies of these other Site-related documents available to any Bidder on request.

B. Owner has not verified the contents of these other Site-related documents, and Bidder may not rely on the accuracy of any data or information in such documents. Bidder is responsible for any interpretation or conclusion Bidder draws from the other Site-related documents.

C. The other Site-related documents are not part of the Contract Documents.

D. Bidders are encouraged to review the other Site-related documents, but Bidders will not be held accountable for any data or information in such documents. The requirement to review and take responsibility for documentary Site information is limited to information in (1) the Contract Documents and (2) the Technical Data.

E. No other Site-related documents are available.

5.04 *Site Visit and Testing by Bidders*

A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.

B. A Site visit is scheduled following the pre-bid conference. Maps to the Site will be available at the pre-Bid conference.

C. A Site visit is scheduled for **June 30, 2022 immediately following the pre-bid meeting at 10:00 am**. Maps to the Site will be made available upon request.

D. Bidders visiting the Site are required to arrange their own transportation to the Site.

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E. All access to the Site other than during a regularly scheduled Site visit must be coordinated through the following Owner contact for visiting the Site: David Dickinson, DavidD@pswid.org, (928) 476-4222. Bidder must conduct the required Site visit during normal working hours.

F. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

G. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

H. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 *Owner's Safety Program*

A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.06 *Other Work at the Site*

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Express Representations and Certifications in Bid Form, Agreement*

A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.

B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

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ARTICLE 7—INTERPRETATIONS AND ADDENDA

7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.

7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:

A. **Marvin Glotfelty, GLA: (480) 659-7131 extension 211, mglotfelty@geo-logic.com**

7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.

7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **5** percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner's damages in the case of a damages-form bond. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9—CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.

9.02 Deleted

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9.03 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10—SUBSTITUTE AND "OR EQUAL" ITEMS

10.01 Deleted

10.02 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 10 days of the issuance of the Advertisement for Bids or invitation to Bidders. Each such request must comply with the requirements of Paragraphs 7.05 and 7.06 of the General Conditions, and the review of the request will be governed by the principles in those paragraphs. Each such request shall include the Manufacturer's Certification for Compliance with AIS. Refer to the Manufacturer's Certification form provided in these construction Contract Documents. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all registered Bidders. Bidders cannot rely upon approvals made in any other manner. Substitutes and "or-equal" materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.05 and 7.06 of the General Conditions after the Effective Date of the Contract. Each such request shall include Manufacturer's Certification letter to document compliance with AIS requirements of Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A – Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference, if applicable. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

10.03 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 Deleted

11.02 Bidders shall submit to Owner a list of the Subcontractors or Suppliers proposed for the Project, with their Bid.

11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder's Bid price will be increased (or

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decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

11.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

11.05 The contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.07A.

ARTICLE 12—PREPARATION OF BID

12.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.

12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.

12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.

12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.

12.06 A Bid by an individual must show the Bidder's name and official address.

12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.

12.08 All names must be printed in ink below the signatures.

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12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.

12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.

12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Deleted*

13.02 *Deleted*

13.03 *Deleted*

13.04 Deleted

13.05 *Unit Price*

A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity", which Owner or its representative has set forth in the Bid Form, for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

13.06 *Allowances*

A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

13.07 Deleted

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ARTICLE 14—SUBMITTAL OF BID

14.01 The Bidding Documents include one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 2 of the Bid Form.

14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, the name and address of Bidder, and must be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid must be addressed to the location designated in the Advertisement.

14.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.

15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

16.02 Bids will be publicly opened and read.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

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ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.

18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.

18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.

18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.

18.05 *Evaluation of Bids*

A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner will announce to all bidders a "Base Bid plus alternates" budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.

C. For determination of the apparent low Bidder(s) when sectional bids are submitted, Bids will be compared on the basis of the aggregate of the Bids for separate sections and the Bids for combined sections that result in the lowest total amount for all of the Work.

D. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

E. Deleted

F. Deleted

18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

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ARTICLE 19—BONDS AND INSURANCE

19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 21—FEDERAL REQUIREMENTS

21.01 If the contract price is in excess of $100,000, provisions of the Contract Work Hours and Safety Standards Act at 29 CFR 5.5(b) apply.

21.02 Federal requirements at Article 19 of the Supplementary Conditions apply to this Contract.

21.03 American Iron and Steel requirements apply to this project.

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BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to: **Pine-Strawberry Water Improvement District**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security;

B. List of Proposed Subcontractors;

C. List of Proposed Suppliers;

D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;

E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;

F. Required Bidder Qualification Statement with supporting data;

G. If Bid amount exceeds $10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplementary Conditions of the Construction Contract (EJCDC C-800);

H. If Bid amount exceeds $25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions (AD-1048);

I. If Bid amount exceeds $100,000, signed RD Instruction 1940-Q Exhibit A-1, Certification for Contracts, Grants, and Loans.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Unit Price Bids*

A. Bidder will perform the following Work at the indicated unit prices:

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BID SCHEDULE

Drilling & Installation of the USDA Well
Pine-Strawberry Water Improvement District

Company Name: _____

Item	Description	Unit	Number of Units	Unit Price ($)	Total Price ($)
1.	Mobilization and Demobilization	Lump Sum	1		
2.	Surface Casing Construction	Linear Foot	20		
3.	Borehole Drilling and DR Casing Advance				
	A. Drill/Case 20-inch Boring to 200 feet bls	Linear Foot	180		
	B. Drill/Case 18-inch Boring to 600 feet bls	Linear Foot	400		
	C. Drill/Case 16-inch Boring to 1,000 ft bls	Linear Foot	400		
	D. Drill/Case 14-inch Boring to 1,300 ft bls	Linear Foot	300		
	E. Drill 12.5-inch Open Boring to 2,000 ft bls	Linear Foot	700		
4.	Casing and Screen Material				
	A. 8-inch LCS Well Casing	Linear Foot	400		
	B. 8-inch LCS Mill Slot Screen	Linear Foot	300		
5.	Casing and Screen Installation	Linear Foot	700		
6.	F&I Colorado Silica Sand	Ton	17		
7.	Well Development and Completion				
	A. Non-phosphoric Dispersant Installation	Lump Sum	1		
	B. Swab and Airlift Development	Hourly	38		
	C. Final Well Video	Lump Sum	1		
8.	Well Testing				
	A. FI&R Test Pump and Equipment	Lump Sum	1		
	B. Pumping Tests	Hourly	82		
9.	Rig Hourly Rate				
	A. With Crew	Hourly	1		
	B. Without Crew	Hourly	1		
				Total	

Grand Total in Written Words:

B. Bidder acknowledges that:

1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and

2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 4—DELETED

ARTICLE 5—DELETED

ARTICLE 6—TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Deleted

6.03 Deleted

6.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

7.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

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7.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 8—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

8.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work, including all American Iron and Steel requirements.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of

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discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

3. Bidder has not solicited or induced any individual or entity to refrain from bidding.

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:

a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.

b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.

d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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BIDDER hereby submits this Bid as set forth above:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

Address for giving notices:

_____

_____

Bidder's Contact:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Phone: _____

Email: _____

Address:

_____

_____

_____

Bidder's Contractor License No.: (if applicable) _____

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BID BOND (PENAL SUM FORM)

Bidder	**Surety**
Name:	Name:
Address *(principal place of business)*:	Address
Owner	**Bid**
Name: **Pine-Strawberry Water Improvement District**	Project *(name and location)*:
Address *(principal place of business)*:	**PSWID Deep Water Supply Well, Strawberry, AZ**
6306 W. Hardscrabble Road P.O. Box 134 Pine, AZ 85544	Bid Due Date: **July 14, 2022**

Bond

Penal Sum:

Date of Bond:

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

Bidder	Surety
(Full formal name of Bidder)	*(Full formal name of Surety) (corporate seal)*
By: _____	By: _____
(Signature)	*(Signature) (Attach Power of Attorney)*
Name: _____	Name: _____
(Printed or typed)	*(Printed or typed)*
Title: _____	Title: _____
Attest: _____	Attest: _____
(Signature)	*(Signature)*
Name: _____	Name: _____
(Printed or typed)	*(Printed or typed)*
Title:	Title:

Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.

EJCDC® C-430, Bid Bond (Penal Sum Form).
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1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
    3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
    3.2. All Bids are rejected by Owner, or
    3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

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ARTICLE 1—GENERAL INFORMATION

1.01 Provide contact information for the Business:

Legal Name of Business:	Pine-Strawberry Water Improvement District		
Name:		Phone number:	
Title:		Email address:	
Business address of corporate office:			
Local Office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.02 Provide information on the Business's organizational structure:

Form of Business:	☐ Sole Proprietorship ☐ Partnership ☐ Corporation		
☐ Limited Liability Company ☐ Joint Venture comprised of the following companies:			
	1.		
	2.		
	3.		
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:		State in which Business was formed:	
Is this Business authorized to operate in the Project location?	☐ Yes ☐ No ☐ Pending		

1.03 Identify all businesses that own Business in whole or in part (25% or greater), or that are wholly or partly (25% or greater) owned by Business:

Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			

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1.04 Provide information regarding the Business's officers, partners, and limits of authority.

Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	

ARTICLE 2—LICENSING

2.01 Provide information regarding licensure for Business:

Name of License:			
Licensing Agency:			
License No:		Expiration Date:	
Name of License:			
Licensing Agency:			
License No:		Expiration Date:	

ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS

3.01 Provide information regarding Business's Diverse Business Certification, if any. Provide evidence of current certification.

Certification	Certifying Agency	Certification Date
☐ Disadvantaged Business Enterprise		
☐ Minority Business Enterprise		
☐ Woman-Owned Business Enterprise		
☐ Small Business Enterprise		
☐ Disabled Business Enterprise		
☐ Veteran-Owned Business Enterprise		
☐ Service-Disabled Veteran-Owned Business		
☐ HUBZone Business (Historically Underutilized) Business		
☐ Other		
☐ None		

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ARTICLE 4—SAFETY

4.01 Provide information regarding Business's safety organization and safety performance.

Name of Business's Safety Officer:	

Safety Certifications		
Certification Name	Issuing Agency	Expiration

4.02 Provide Worker's Compensation Insurance Experience Modification Rate (EMR), Total Recordable Frequency Rate (TRFR) for incidents, and Total Number of Recorded Manhours (MH) for the last 3 years and the EMR, TRFR, and MH history for the last 3 years of any proposed Subcontractor(s) that will provide Work valued at 10% or more of the Contract Price. Provide documentation of the EMR history for Business and Subcontractor(s).

Year									
Company	EMR	TRFR	MH	EMR	TRFR	MH	EMR	TRFR	MH

ARTICLE 5—FINANCIAL

5.01 Provide information regarding the Business's financial stability. Provide the most recent audited financial statement, and if such audited financial statement is not current, also provide the most current financial statement.

Financial Institution:		
Business address:		
Date of Business's most recent financial statement:		☐ Attached
Date of Business's most recent audited financial statement:		☐ Attached
Financial indicators from the most recent financial statement		
Contractor's Current Ratio (Current Assets ÷ Current Liabilities)		
Contractor's Quick Ratio ((Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities)		

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ARTICLE 6—SURETY INFORMATION

6.01 Provide information regarding the surety company that will issue required bonds on behalf of the Business, including but not limited to performance and payment bonds.

Surety Name:			
Surety is a corporation organized and existing under the laws of the state of:			
Is surety authorized to provide surety bonds in the Project location?	☐ Yes ☐ No		
Is surety listed in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" published in Department Circular 570 (as amended) by the Bureau of the Fiscal Service, U.S. Department of the Treasury? ☐ Yes ☐ No			
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 7—INSURANCE

7.01 Provide information regarding Business's insurance company(s), including but not limited to its Commercial General Liability carrier. Provide information for each provider.

Name of insurance provider, and type of policy (CLE, auto, etc.):			
Insurance Provider		Type of Policy (Coverage Provided)	
Are providers licensed or authorized to issue policies in the Project location?		☐ Yes ☐ No	
Does provider have an A.M. Best Rating of A-VII or better?		☐ Yes ☐ No	
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

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ARTICLE 8—CONSTRUCTION EXPERIENCE

8.01 Provide information that will identify the overall size and capacity of the Business.

Average number of current full-time employees:	
Estimate of revenue for the current year:	
Estimate of revenue for the previous year:	

8.02 Provide information regarding the Business's previous contracting experience.

Years of experience with projects like the proposed project:				
As a general contractor:		As a joint venturer:		
Has Business, or a predecessor in interest, or an affiliate identified in Paragraph 1.03:				
Been disqualified as a bidder by any local, state, or federal agency within the last 5 years? ☐ Yes ☐ No				
Been barred from contracting by any local, state, or federal agency within the last 5 years? ☐ Yes ☐ No				
Been released from a bid in the past 5 years? ☐ Yes ☐ No				
Defaulted on a project or failed to complete any contract awarded to it? ☐ Yes ☐ No				
Refused to construct or refused to provide materials defined in the contract documents or in a change order? ☐ Yes ☐ No				
Been a party to any currently pending litigation or arbitration? ☐ Yes ☐ No				
Provide full details in a separate attachment if the response to any of these questions is Yes.				

8.03 List all projects currently under contract in Schedule A and provide indicated information.

8.04 List a minimum of three and a maximum of six projects completed in the last 5 years in Schedule B and provide indicated information to demonstrate the Business's experience with projects similar in type and cost of construction.

8.05 In Schedule C, provide information on key individuals whom Business intends to assign to the Project. Provide resumes for those individuals included in Schedule C. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Resumes may be provided for Business's key leaders as well.

ARTICLE 9—REQUIRED ATTACHMENTS

9.01 Provide the following information with the Statement of Qualifications:

A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.

B. Diverse Business Certifications if required by Paragraph 3.01.

C. Certification of Business's safety performance if required by Paragraph 4.02.

D. Financial statements as required by Paragraph 5.01.

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E. Attachments providing additional information as required by Paragraph 8.02.

F. Schedule A (Current Projects) as required by Paragraph 8.03.

G. Schedule B (Previous Experience with Similar Projects) as required by Paragraph 8.04.

H. Schedule C (Key Individuals) and resumes for the key individuals listed, as required by Paragraph 8.05.

I. Additional items as pertinent.

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This Statement of Qualifications is offered by:

Business: _____
(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(date signed)

(If Business is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address:

_____

_____

_____

Phone: _____

Email: _____

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Schedule A—Current Projects

Name of Organization				
Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

EJCDC® C-451, Qualifications Statement—Schedule A—Current Projects.
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Schedule B—Previous Experience with Similar Projects

Name of Organization				
Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

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Schedule B—Previous Experience with Similar Projects

Name of Organization				
Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

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Schedule C—Key Individuals

Project Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Project Superintendent			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

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Safety Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Quality Control Manager			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

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NOTICE OF AWARD

Date of Issuance:

Owner:	Pine Strawberry Water Improvement District	Owner's Project No.:	
Engineer:	Geo-Logic Associates	Engineer's Project No.:	DB21.1390
Project:	Deep Water Supply Well		

Contract Name:

Bidder:

Bidder's Address:

You are notified that Owner has accepted your Bid dated _____ for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

USDA Strawberry Deep Well

The Contract Price of the awarded Contract is $_____. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

Four unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

☐ Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner **4** counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): **Conformance with WIFA Contract package**

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: **Pine-Strawberry Water Improvement District**

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

Copy: Engineer

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AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between **Pine-Strawberry Water Improvement District** ("Owner") and **_____** ("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1—WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents.

ARTICLE 2—THE PROJECT

2.01 The Project is generally described as follows: Drill and construct a deep (2,000-foot) water supply well.

ARTICLE 3—ENGINEER

3.01 The Owner has retained Geo-Logic Associates ("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by Geo-Logic Associates

ARTICLE 4—CONTRACT TIMES

4.01 *Time is of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Deleted

4.03 *Contract Times: Days*

A. The Work will be substantially complete within **120 calendar days** after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within **150 calendar days** after the date when the Contract Times commence to run.

4.04 Deleted

4.05 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration

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proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. *Substantial Completion:* Contractor shall pay Owner **$1,070** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.

2. *Completion of Remaining Work:* After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $**1,070** for each day that expires after such time until the Work is completed and ready for final payment.

3. Liquidated damages for failing to timely attain Substantial Completion, and final completion are not additive, and will not be imposed concurrently.

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

C. Deleted

4.06 *Special Damages*

A. Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

C. The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.

ARTICLE 5—CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item as shown on the Bid Form.

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B. The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

ARTICLE 6—PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the **25th** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.

a. 95 percent of the value of the Work completed (with the balance being retainage).

1) Deleted

b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion of the entire construction to be provided under the construction Contract Documents, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

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6.05 *Interest*

A. All amounts not paid when due will bear interest at an interest rate comparable to short term lending rate or State law percent per annum.

ARTICLE 7—CONTRACT DOCUMENTS

7.01 *Contents*

A. The Contract Documents consist of all of the following:

1. This Agreement.
2. Bonds:
    a. Performance bond (together with power of attorney).
    b. Payment bond (together with power of attorney).
3. General Conditions.
4. Supplementary Conditions.
5. Specifications as listed in the table of contents of the project manual (copy of list attached).
6. Figures.
7. Addenda (numbers __ to ___, inclusive).
8. Exhibits to this Agreement (enumerated as follows):
    a. **none**
9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.
    d. Field Orders.
    e. Warranty Bond, if any.

B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 *Contractor's Representations*

A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:

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1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

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8.02 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.03 *Standard General Conditions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on **_____, 2022,** (which is the Effective Date of the Contract).

Owner:

_____
(typed or printed name of organization)

By: _____
(individual's signature)

Date: _____
(date signed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Attest: _____
(individual's signature)

Title: _____
(typed or printed)

Address for giving notices:

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address:

Phone:

Email:

*(If **[Type of Entity]** is a corporation, attach evidence of authority to sign. If **[Type of Entity]** is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)*

Contractor:

_____
(typed or printed name of organization)

By: _____
(individual's signature)

Date: _____
(date signed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

*(If **[Type of Entity]** is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest: _____
(individual's signature)

Title: _____
(typed or printed)

Address for giving notices:

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address:

Phone:

Email:

License No.: _____
(where applicable)

State:

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CERTIFICATE OF OWNER'S ATTORNEY AND AGENCY CONCURRENCE

Notes to User: This exhibit consists of two certificates, on a single page, to be attached to the Contract and signed upon execution. The first is a certificate to be signed by the Owner's attorney and the second is the concurrence to be signed by the State Engineer. This page is to be inserted after the Agreement between Owner and Contractor for Construction Contract (Stipulated Price) (EJCDC C-520, 2018) in the Construction Contract Documents.

CERTFICATE OF OWNER'S ATTORNEY

PROJECT NAME:

CONTRACTOR NAME AND CONTRACT NUMBER:

I, the undersigned, _____, the duly authorized and acting legal representative of _____, do hereby certify as follows: I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Name Date

AGENCY CONCURRENCE

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

Agency Representative Date

Name

PERFORMANCE BOND

Contractor	**Surety**
Name:	Name:
Address *(principal place of business)*:	Address *(principal place of business)*:
Owner	**Contract**
Name: **Pine-Strawberry Water Improvement District**	Description *(name and location)*:
Mailing address *(principal place of business)*:	**USDA Strawberry Deep Well, Strawberry, AZ**
6306 W. Hardscrabble Road **P.O. Box 134** **Pine, AZ 85544**	Contract Price: Effective Date of Contract:

Bond

Bond Amount:

Date of Bond:

(Date of Bond cannot be earlier than Effective Date of Contract)

Modifications to this Bond form:

☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
_____	_____
(Full formal name of Contractor)	*(Full formal name of Surety) (corporate seal)*
By: _____	By: _____
(Signature)	*(Signature)(Attach Power of Attorney)*
Name: _____	Name: _____
(Printed or typed)	*(Printed or typed)*
Title: _____	Title: _____
Attest: _____	Attest: _____
(Signature)	*(Signature)*
Name: _____	Name: _____
(Printed or typed)	*(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:

    3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;

    3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

    3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

    5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

    5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

    5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

    5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

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5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

   7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

   7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

   7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.

12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with

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said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

    14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

    14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

    14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

    14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

    14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

16. Modifications to this Bond are as follows: **None**

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PAYMENT BOND

Contractor	**Surety**
Name:	Name:
Address *(principal place of business)*:	Address *(principal place of business)*:
Owner	**Contract**
Name: **Pine-Strawberry Water Improvement District**	Description *(name and location)*: **USDA Strawberry Deep Well, Strawberry, AZ**
Mailing address *(principal place of business)*: **6306 W. Hardscrabble Road P.O. Box 134 Pine, AZ 85544**	Contract Price:
	Effective Date of Contract:

Bond

Bond Amount:

Date of Bond:

(Date of Bond cannot be earlier than Effective Date of Contract)

Modifications to this Bond form:

☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
_____ *(Full formal name of Contractor)*	_____ *(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature)(Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

EJCDC® C-615, Payment Bond.
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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety's obligations to a Claimant under this Bond will arise after the following:

    5.1. Claimants who do not have a direct contract with the Contractor

        5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

        5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).

    5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.

7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

    7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

    7.2. Pay or arrange for payment of any undisputed amounts.

    7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

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8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

    16.1. *Claim*—A written statement by the Claimant including at a minimum:

        16.1.1. The name of the Claimant;

        16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;

        16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;

        16.1.4. A brief description of the labor, materials, or equipment furnished;

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16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;

16.1.7. The total amount of previous payments received by the Claimant; and

16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

18. Modifications to this Bond are as follows: **None**

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*

a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by

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Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

d. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or

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communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.

23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.

    a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.

    b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.

    c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.

25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.

28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.

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32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.

34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.

36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.

39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part

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thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.

44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

46. *Technical Data*

    a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

    b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

    c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. *Unit Price Work*—Work to be paid for on the basis of unit prices.

49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

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50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*: The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*: The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;

2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

3. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.

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4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. *Contract Price or Contract Times*: References to a change in "Contract Price or Contract Times" or "Contract Times or Contract Price" or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term "or both" is not expressed.

G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).

B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. *Evidence of Owner's Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

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2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

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2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

G. Nothing in the Contract Documents creates:

1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or

2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

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3.02 *Reference Standards*

A. *Standards Specifications, Codes, Laws and Regulations*

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take

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precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

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ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

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C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
2. Abnormal weather conditions;
3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
4. Acts of war or terrorism.

D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

   1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
   2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
   3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

   1. The circumstances that form the basis for the requested adjustment;
   2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
   3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
   4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
   5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

   Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the

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effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise;

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(b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

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D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
2. is of such a nature as to require a change in the Drawings or Specifications;
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement

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to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

    a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

    b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

    c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

    a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;

    b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

    c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities.

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Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;

4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. *Engineer's Review*: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;

2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;

3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and

4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written

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statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

   a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

   b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and

   c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;

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2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

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F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

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ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the

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required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and

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2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

A. *Required Insurance*: Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. *General Provisions*: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;

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4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and

5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

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D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.

2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

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1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at

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Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

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7.05 *"Or Equals"*

A. *Contractor's Request; Governing Criteria*: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

    a. in the exercise of reasonable judgment Engineer determines that the proposed item:

        1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

        2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

        3) has a proven record of performance and availability of responsive service; and

        4) is not objectionable to Owner.

    b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

        1) there will be no increase in cost to the Owner or increase in Contract Times; and

        2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

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E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:

   a. will certify that the proposed substitute item will:

      1) perform adequately the functions and achieve the results called for by the general design;

      2) be similar in substance to the item specified; and

      3) be suited to the same use as the item specified.

   b. will state:

      1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;

      2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

      3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

   c. will identify:

      1) all variations of the proposed substitute item from the item specified; and

      2) available engineering, sales, maintenance, repair, and replacement services.

   d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in

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Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or

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otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any

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license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to

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such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.

C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any

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of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).

J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

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7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. *Shop Drawings*

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. *Samples*

a. Contractor shall submit the number of Samples required in the Specifications.

b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer

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may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two

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resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03. 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.

B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and

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2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;

2. Recommendation by Engineer or payment by Owner of any progress or final payment;

3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. Use or occupancy of the Work or any part thereof by Owner;

5. Any review and approval of a Shop Drawing or Sample submittal;

6. The issuance of a notice of acceptability by Engineer;

7. The end of the correction period established in Paragraph 15.08;

8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.

E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity

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directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;

2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and

3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.

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G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be

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set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
2. An itemization of the specific matters to be covered by such authority and responsibility; and
3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.

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C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

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9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

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B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

A. Engineer has the authority to reject Work in accordance with Article 14.

B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.

C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any

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Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

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3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving

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the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or

2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;

b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;

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c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and

f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

A. *Purpose and Content*: Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

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B. *Change Proposal Procedures*

1. *Submittal*: Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. *Supporting Data*: The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.

    a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.

    b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

    The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review*: Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. *Engineer's Full Review and Action on the Change Proposal*: Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

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11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal

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and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe

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benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.

5. Other costs consisting of the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

        1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

    c. *Construction Equipment Rental*

        1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment,

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machinery, or parts must cease when the use thereof is no longer necessary for the Work.

2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

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2. The cost of purchasing, renting, or furnishing small tools and hand tools.

3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:

a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:

1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.

2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

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13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

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b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

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5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved

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by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then

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Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

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3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work;

   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;

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c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;

d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

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e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

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C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.

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2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents;

b. consent of the surety, if any, to final payment;

c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

d. a list of all duly pending Change Proposals and Claims; and

e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment

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bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Final Application and Recommendation of Payment*: If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim, appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

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15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such adjacent areas;
2. correct such defective Work;
3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

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ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as

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to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

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ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and

2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be

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as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

SC-1.01.A.8 – Add the following at the end of the Paragraph:

The Change Order form to be used on this Project is EJCDC C-941 (2018). Agency approval is required before Change Orders are effective.

SC-1.01.A.30 – Add the following at the end of the Paragraph:

For the purposes of Rural Development, this term is synonymous with the term “applicant” as defined in 7 CFR 1780.7 (a) (1), (2) and (3) and is an entity receiving financial assistance from the federal programs.

SC-1.01.A.50 – Add the following at the end of the Paragraph:

The Work Change Directive form to be used on this Project is EJCDC C-940 (2018). Agency approval is required before a Work Change Directive is issued.

SC-1.01.A.51 – Add the following new paragraph immediately after Paragraph 1.01.A.50:

51. Agency – The Project is financed in whole or in part by USDA Rural Utilities pursuant to the Consolidated Farm and Rural Development Act (7 USC Section 1921 et seq.). The Rural Utilities Service programs are administered through the USDA Rural Development offices; therefore, the Agency for these documents is USDA Rural Development.

52. American Iron and Steel Definitions

a. *American Iron and Steel (AIS)* - Requirements mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference for “iron and steel products,” meaning the following products, if made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials. AIS requirements apply in each of the several states, the District of Columbia, and each federally recognized Tribe, but not the U.S. Territories.
b. *Coating* - A covering that is applied to the surface of an object. If a Coating is applied to the external surface of a domestic iron or Steel component, and the application takes place outside of the United States, said product would be considered a compliant product under the AIS requirements. Any Coating processes that are applied to the external surface of Iron and Steel

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components that would otherwise be AIS compliant would not disqualify the product from meeting the AIS requirements regardless of where the Coating processes occur, provided that final assembly of the product occurs in the United States. This exemption only applies to Coatings on the *external surface* of Iron and Steel components. It does not apply to Coatings or linings on internal surfaces of Iron and Steel products, such as the lining of lined pipes. All Manufacturing Processes for lined pipes, including the application of pipe lining, must occur in the United States for the product to be compliant with AIS requirements.

c. *Construction Materials* - Those articles, materials, or supplies made primarily of iron and/or steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered "structural steel". Note: Mechanical and electrical components, equipment and systems are not considered Construction Materials. See definitions of Mechanical Equipment and Electrical Equipment.
d. *Contractor's Certification* - Documentation submitted by the Contractor upon Substantial Completion of the Contract that all Iron and Steel products installed were Produced in the United States.
e. *De Minimis* - Various miscellaneous, incidental low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. Examples of *De Minimis* components could include small washers, screws, fasteners (such as "off the shelf" nuts and bolts), miscellaneous wire, corner bead, ancillary tube, signage, trash bins, door hardware etc. Costs for such *De Minimis* components cumulatively may comprise no more than a total of five percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed one percent of the total cost of the materials used in and incorporated into a project.
f. *Electrical Equipment* - Typically any machine powered by electricity and includes components that are part of the electrical distribution system. AIS does not apply to Electrical Equipment.
g. *Engineer's Certification* - Documentation submitted by the Engineer that Drawings, Specifications, and Bidding Documents comply with AIS.
h. *Iron and Steel products* - The following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials. Only items on the above list made primarily of iron or steel, permanently incorporated into the project must be Produced in the United States. For example, trench boxes, scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. iron or steel.
i. *Manufacturer* - A Supplier, fabricator, distributor, materialman, or vendor is an entity with which the Owner, Contractor or any subcontractor has contracted to furnish materials or equipment to be incorporated in the project by the Owner, Contractor or a subcontractor.
j. *Manufacturer's Certification* - Documentation provided by the Manufacturer stating that the Iron and Steel products to be used in the project are produced in the United States in accordance with American Iron and Steel (AIS) Requirements. If items are purchased via a Supplier, distributor, vendor, etc. from the Manufacturer directly, then the Supplier, distributor, vendor, etc. will be responsible for obtaining and providing these certifications to the parties purchasing the products.
k. *Manufacturing Processes* - Processes such as melting, refining, pouring, forming, rolling, drawing, finishing, and fabricating. Further, if a domestic Iron and Steel product is taken out of the United States for any part of the manufacturing process, it becomes foreign source material.

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However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the material(s), if any, being applied as a Coating are similarly not covered. Non-iron or Steel components of an Iron and Steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-Iron and Steel components do not have to be of domestic origin. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-U.S. sources.

l. *Mechanical Equipment* - Typically equipment which has motorized parts and/or is powered by a motor. AIS does not apply to Mechanical Equipment.

m. *Minor Components* - Components *within* an iron and/or Steel product otherwise compliant with the American Iron and Steel requirements; this waiver is typically used by Manufacturers. It differs from the *De Minimis* definition in that *De Minimis* pertains to the entire project and the minor component definition pertains to a single product. This waiver allows use of non-domestically produced miscellaneous Minor Components comprising up to five percent of the total material cost of an otherwise domestically produced Iron and Steel product. However, unless a separate waiver for a product has been approved, all other Iron and Steel components in said product must still meet the AIS requirements. This waiver does not exempt the whole product from the AIS requirements only Minor Components within said product and the iron or Steel components of the product must be produced domestically. Valves and hydrants are also subject to the cost ceiling requirements described here. Examples of Minor Components could include items such as pins and springs in valves/hydrants, bands/straps in couplings, and other low-cost items such as small fasteners etc.

n. *Municipal Castings* - Cast iron or Steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and solid waste infrastructure.

o. *Primarily Iron or Steel* - A product is made of greater than 50 percent iron or Steel on a materials cost basis. An exception to this definition is reinforced precast concrete (see Definitions). All technical specifications and applicable industry standards (e.g. NIST, NSF, AWWA) must be met. If a product is determined to be less than 50 percent iron and/or steel, the AIS requirements do not apply. For example, the cost of a fire hydrant includes:
    - The cost of materials used for the iron portion of a fire hydrant (e.g. bonnet, body and shoe); and
    - The cost to pour and cast to create those components (e.g. labor and energy).

  Not included in the cost are:
    - The additional material costs for the non-iron or Steel internal workings of the hydrant (e.g. stem, coupling, valve, seals, etc.); and
    - The cost to assemble the internal workings into the hydrant body.

p. *Produced in the United States* - The production in the United States of the iron or Steel products used in the project requires that all Manufacturing Processes must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives.

q. *Reinforced Precast Concrete* – Reinforced Precast Concrete structures must comply with AIS, regardless of whether it consists of at least 50 percent iron or steel. The reinforcing bar and wire must be Produced in the United States and meet the same standards as for any other iron or Steel product. Additionally, the casting of the concrete product must take place in the United States. The cement and other raw materials used in concrete production are not required to be of domestic origin. If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered Construction Materials and must be Produced in the United States.

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r. *Steel* - An alloy that includes at least 50 percent iron, between 0.02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of Steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of Steel covers carbon steel, alloy steel, stainless steel, tool steel, and other specialty steels.

s. *Structural Steel* - Rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees, and zees. Other shapes include but are not limited to, H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

SC-2.01 Delete Paragraphs 2.01.B. and C. in their entirety and insert the following in their place:

B. *Evidence of Contractor's Insurance:* When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by Contractor in this Contract. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

C. *Evidence of Owner's Insurance:* After receipt from Contractor of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner in this Contract (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 *Copies of Documents*

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

A. Owner shall furnish to Contractor **five** printed copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

2.06 *Electronic Transmittals*

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

B. *Electronic Documents Protocol:* The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol ("EDP" or "Protocol") for exchange of electronic transmittals.

1. *Basic Requirements*

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a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.

b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.

c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.

d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.

e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party's use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.

f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions ("System Infrastructure") at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.

1) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.

b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology ("IT") for

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maintaining operations of its System Infrastructure during the Project, including coordination with the party's individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.

c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.

d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.

e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.

f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.

g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the Electronic Document or use an alternative delivery method to complete the communication.

h. The Owner will operate a Project information management system (also referred to in this EDP as "Project Website") for use of Owner, Engineer and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this EDP or the General Conditions, use of the Project Website by the parties as described in this Paragraph will be mandatory for exchange of Project documents,

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communications, submittals, and other Project-related information. The following conditions and standards will govern use of the Project Website:

1) Describe the period of time during which the Project Website will be operated and be available for reliance by the parties;

2) Provide any minimum system infrastructure, software licensing and security standards for access to and use of the Project Website;

3) Describe the types and extent of services to be provided at the Project Website (such as large file transfer, email, communication and document archives, etc.); and

4) Include any other Project Website attributes that may be pertinent to Contractor's use of the facility and pricing of such use.

C. *Software Requirements for Electronic Document Exchange; Limitations*

1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.

a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.

2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.

3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

SC-2.06 Supplement Paragraph 2.06 of the General Conditions by adding the following paragraph:

D. *Requests by Contractor for Electronic Documents in Other Formats*

1. Release of any Electronic Document versions of the Project documents in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be at the sole discretion of the Owner.

2. To extent determined by Owner, in its sole discretion, to be prudent and necessary, release of Electronic Documents versions of Project documents and other Project information requested by Contractor ("Request") in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be subject to the provisions of the Owner's response to the Request, and to the following conditions to which Contractor agrees:

a. The content included in the Electronic Documents created by Engineer and covered by the Request was prepared by Engineer as an internal working

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document for Engineer's purposes solely, and is being provided to Contractor on an "AS IS" basis without any warranties of any kind, including, but not limited to any implied warranties of fitness for any purpose. As such, Contractor is advised and acknowledges that the content may not be suitable for Contractor's application, or may require substantial modification and independent verification by Contractor. The content may include limited resolution of models, not-to-scale schematic representations and symbols, use of notes to convey design concepts in lieu of accurate graphics, approximations, graphical simplifications, undocumented intermediate revisions, and other devices that may affect subsequent reuse.

b. Electronic Documents containing text, graphics, metadata, or other types of data that are provided by Engineer to Contractor under the request are only for convenience of Contractor. Any conclusion or information obtained or derived from such data will be at the Contractor's sole risk and the Contractor waives any claims against Engineer or Owner arising from use of data in Electronic Documents covered by the Request.

c. Contractor shall indemnify and hold harmless Owner and Engineer and their subconsultants from all claims, damages, losses, and expenses, including attorneys' fees and defense costs arising out of or resulting from Contractor's use, adaptation, or distribution of any Electronic Documents provided under the Request.

d. Contractor agrees not to sell, copy, transfer, forward, give away or otherwise distribute this information (in source or modified file format) to any third party without the direct written authorization of Engineer, unless such distribution is specifically identified in the Request and is limited to Contractor's subcontractors. Contractor warrants that subsequent use by Contractor's subcontractors complies with all terms of the Contract Documents and Owner's response to Request.

3. In the event that Owner elects to provide or directs the Engineer to provide to Contractor any Contractor-requested Electronic Document versions of Project information that is not explicitly identified in the Contract Documents as being available to Contractor, the Owner shall be reimbursed by Contractor on an hourly basis (at $**[number]** per hour) for any engineering costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Engineer.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

SC-3.01 Delete Paragraph 3.01.C in its entirety.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01.A – Delete the last sentence of paragraph.

4.05 *Delays in Contractor's Progress*

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SC-4.05 Amend Paragraph 4.05.C by adding the following subparagraphs: There will be no "bad weather days" considered abnormal nor acknowledge as causing delays.

5. Paragraph is mandatory for WWD projects.

a. Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered abnormal weather conditions. Requests for time extensions due to abnormal weather conditions will be submitted to the Engineer within five days of the end of the abnormal weather condition event. It is the responsibility of the Contractor to provide the information listed in SC 4.05.C.5.b.

ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.03 *Subsurface and Physical Conditions*

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

Report Title	Date of Report	Technical Data
Report on the Drilling of an Exploratory Borehole Near Strawberry, Arizona	May 18-June 2, 2000	Hydrogeologic investigation

F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
None known		

G. Contractor may examine copies of reports and drawings identified in SC-5.03.E and SC-5.03.F that were not included with the Bidding Documents at **[location]** during regular business hours, or may request copies from Engineer.

5.06 *Hazardous Environmental Conditions*

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

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4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely:

Report Title	Date of Report	Technical Data
None known		

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
None known		

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 – Disregard EJCDC Guidance Notes – Performance and Payment Bonds, Note 1. Performance and Payment Bonds are required for WWD projects.

SC-6.01 – EJCDC Guidance Notes – "Other Bonds," Warranty Bond, Note 1. RD does not require a Warranty Bond, and RD will not accept a Warranty Bond in place of a Performance and Payment Bond. The decision to include a Warranty Bond is made by the Owner and their counsel. Please refer to EJCDC.

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the form of EJCDC® C-610, Performance Bond (2010, 2013, or 2018 edition).

2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form of EJCDC® C-615, Payment Bond (2010, 2013, or 2018 edition).

6.02 *Insurance—General Provisions*

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

6.03 *Contractor's Insurance*

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SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

D. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: **Pine-Strawberry Water Improvement District, Geo-Logic Associates and its subsidiaries**

E. *Workers' Compensation and Employer's Liability:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers' Compensation and Related Policies	**Policy limits of not less than:**
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	$
Bodily injury by disease—aggregate	$
Employer's Liability	
Each accident	$1,000,000
Each employee	$500,000
Policy limit	$1,000,000
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	$

F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:

1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
2. damages insured by reasonably available personal injury liability coverage, and
3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:

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1. Products and completed operations coverage.
    a. Such insurance must be maintained for three years after final payment.
    b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
4. Underground, explosion, and collapse coverage.
5. Personal injury coverage.
6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
2. Any exclusion for water intrusion or water damage.
3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
4. Any exclusion of coverage relating to earth subsidence or movement.
5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
6. Any limitation or exclusion based on the nature of Contractor's work.
7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

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I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	Policy limits of not less than:
General Aggregate	$2,000,000
Products—Completed Operations Aggregate	$1,000,000
Personal and Advertising Injury	$1,000,00
Bodily Injury and Property Damage—Each Occurrence	$500,000

J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	Policy limits of not less than:
Bodily Injury	
Each Person	$500,000
Each Accident	$1,000,000
Property Damage	
Each Accident	$500,000
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	$1,000,000

K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	$1,000,000
General Aggregate	$500,000

L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy's policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of $3,000,000 after accounting for partial attribution of its limits to underlying policies, as allowed above.

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6.04 *Builder's Risk and Other Property Insurance*

SC-6.04 Delete Paragraph 6.04.A and insert the following in its place:

A. Owner shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

F. *Builder's Risk Requirements:* The builder's risk insurance must:

1. be written on a builder's risk "all risk" policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).

    a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.

    b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.

2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).

4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the

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premises of a manufacturer or Supplier). If this coverage is subject to a sublimit, such sublimit will be a minimum of $**1,000**.

5. extend to cover damage or loss to insured property while in transit. If this coverage is subject to a sublimit, such sublimit will be a minimum of $**1,000**.

6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.

7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.

8. include performance/hot testing and start-up, if applicable.

9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.

10 include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds." In addition to Owner, Contractor, and Subcontractors of every tier, include as insureds the following:

   a. **Pine-Strawberry Water Improvement District, Geo-Logic Associates and its affiliates and wholly owned subsidiaries**

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provision:

G. *Coverage for Completion Delays:* The builder's risk policy will include, for the benefit of Owner, loss of revenue and soft cost coverage for losses arising from delays in completion that result from covered physical losses or damage. Such coverage will include, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, compensation for loss of net revenues, rental costs, and attorneys' fees and engineering or other consultants' fees, if not otherwise covered.

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

H. *Builder's Risk and Other Property Insurance Deductibles:* The purchaser of any required builder's risk, installation floater, or other property insurance will be responsible for costs not covered because of the application of a policy deductible.

1. The builder's risk policy (or if applicable the installation floater) will be subject to a deductible amount of no more than $**[number]** for direct physical loss in any one occurrence.

SC-6.04 Delete Paragraph 6.04.A of the General Conditions and substitute the following in its place:

A. *Installation Floater*

1. Contractor shall provide and maintain installation floater insurance on a broad form or "all risk" policy providing coverage for materials, supplies, machinery, fixtures, and equipment that will be incorporated into the Work ("Covered Property"). Coverage

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under the Contractor's installation floater will include loss from covered "all risk" causes (perils) to Covered Property:

a. of the Contractor, and Covered Property of others that is in Contractor's care, custody, and control;

b. while in transit to the Site, including while at temporary storage sites;

c. while at the Site awaiting and during installation, erection, and testing;

d. continuing at least until the installation or erection of the Covered Property is completed, and the Work into which it is incorporated is accepted by Owner.

2. The installation floater coverage cannot be contingent on an external cause or risk, or limited to property for which the Contractor is legally liable.

3. The installation floater coverage will be in an amount sufficient to protect Contractor's interest in the Covered Property. The Contractor will be solely responsible for any deductible carried under this coverage.

4. This policy will include a waiver of subrogation applicable to Owner, Contractor, Engineer, all Subcontractors, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.03 *Labor; Working Hours*

SC-7.03 Delete Paragraph 7.03.C in its entirety, and insert the following:

C. In the absence of any Laws or Regulations to the contrary, Contractor may perform the Work on holidays, during any or all hours of the day, and on any or all days of the week, at Contractor's sole discretion.

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

D. **Contractor** shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.03 Add the following new subparagraph immediately after Paragraph SC-7.03.D:

1. For purposes of administering the foregoing requirement, additional overtime costs are defined as **Engineer's billing rates, at time and half where applies to non-exempt employees.**

SC-7.04.D – Add the following new paragraph immediately after Paragraph 7.04.C:

1. All Iron and Steel products must meet American Iron and Steel requirements.

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SC-7.04.E – Add the following new paragraph immediately after Paragraph 7.04.D:

2. For projects utilizing a *De Minimis* waiver, Contractor shall maintain an itemized list of non-domestically produced iron or steel incidental components and ensure that the cost is less than 5% of total materials cost for projects.

SC-7.05.A – Amend the third sentence of paragraph by striking out the following words:

Unless the specification or description contains or is followed by words reading that that no like, equivalent, or "or-equal" item is permitted,

SC-7.05.A.1.a.3 – Amend the last sentence of Paragraph a.3 by striking out "and;" and adding a period at the end of Paragraph a.3.

SC-7.05.A.1.a.4 – Delete paragraph in its entirety and insert "Deleted."

SC-7.05.B – Add the following at the end of paragraph:
Contractor shall include a Manufacturer's Certification letter for compliance with American Iron and Steel requirements in support data, if applicable. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

SC-7.06.A.3.a.2 – Remove "and" from the end of paragraph.

SC-7.06.A.3.a.3 – Add "; and" to the end of paragraph.

SC-7.06.A.3.a.4 – Add the following new paragraph immediately after Paragraph 7.06.A.3.a.3:

1. Comply with American Iron and Steel by providing Manufacturer's Certification letter of American Iron and Steel compliance, if applicable. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

SC-7.07.A – Amend by adding the following to the end of the paragraph:

The total amount of work subcontracted by the Contractor shall not exceed fifty percent of the Contract price without prior approval from the Owner, Engineer and Agency.

SC-7.07.B – Delete paragraph in its entirety and insert "Deleted".

SC-7.07.E – Delete the second sentence of paragraph and insert the following in its place:

Owner may not require that Contractor use a specific replacement.

SC-7.12.A Amend paragraph by adding the following after "written interpretations and clarifications,":

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Manufacturers' Certifications,

SC-7.16.A.1.c – Amend paragraph by deleting the last period and adding:

, including Manufacturer's Certification letter for any item in the submittal subject to American Iron and Steel requirements and include the Certificate in the submittal. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

SC-7.16.C.9 – Add new paragraph immediately after Paragraph 7.16.C.8:

A. Engineer's review and approval of a Shop Drawing or Sample shall include review of Manufacturer's Certifications in order to document compliance with American Iron and Steel requirements, as applicable.

SC-7.17.F – Add new paragraph immediately after Paragraph 7.17.E:

F. Contractor shall certify upon Substantial Completion that all Work and Materials have complied with American Iron and Steel requirements as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference. Contractor shall provide said Certification to Owner. Refer to General Contractor's Certification Letter provided in these Contract Documents.

ARTICLE 8—OTHER WORK AT THE SITE

8.02 *Coordination*

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.13 *Owner's Site Representative*

SC-9.13 Add the following new paragraph immediately after Paragraph 9.12 of the General Conditions:

9.13 *Owner's Site Representative*

A. Owner will furnish an "Owner's Site Representative" to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner's Site Representative is not Engineer's consultant, agent, or employee. Owner's Site Representative will be Geo-Logic Associates. The authority and responsibilities of Owner's Site Representative follow: **construction observation and review of work and reports as described in the technical specifications.**

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.03 *Resident Project Representative*

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SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.B:

C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:

1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.

2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.

3. *Liaison*

   a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.

   b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.

   c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.

4. *Review of Work; Defective Work*

   a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.

   b. Observe whether any Work in place appears to be defective.

   c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.

5. *Inspections and Tests*

   a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.

   b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.

6. *Payment Requests:* Review Applications for Payment with Contractor.

7. *Completion*

   a. Participate in Engineer's visits regarding Substantial Completion.

   b. Assist in the preparation of a punch list of items to be completed or corrected.

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c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.

d. Observe whether items on the final punch list have been completed or corrected.

D. The RPR will not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.

5 Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11—CHANGES TO THE CONTRACT

Delete the sentence "No suggested Supplementary Conditions in this Article."

SC-11.02.C – Add new paragraph immediately after Paragraph 11.02.B:

1. The Engineer or Owner shall contact the Agency for concurrence on each Change Order prior to issuance. All Contract Change Orders must be concurred on (signed) by Agency before they are effective.

SC-11.03.A.2 - Add new Paragraph 11.03.A.2 immediately after Paragraph 11.03.A, which shall be renamed Paragraph 11.03.A.1:

2. The Engineer or Owner shall contact the Agency for concurrence on each Work Change Directive prior to issuance. Once authorized by Owner, a copy of each Work Change Directive shall be provided by Engineer to the Agency.

SC-11.05.B – Add the following at the end of this paragraph:

For Owner-authorized changes in the Work, the Contractor will provide the Manufacturer's Certification(s) for materials subject to American Iron and Steel requirements except when sole-source is specified, in which case the Engineer will provide the Manufacturer's Certification(s).

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SC-11.09.B.2.c – Add new paragraph immediately after Paragraph 11.09.B.2.b:

C. Change orders involving materials subject to American Iron and Steel requirements shall include supporting data (name of Manufacturer, city and state where the product was manufactured, description of product, signature of authorized Manufacturer's representative) in the Manufacturer's Certification Letter, as applicable.

ARTICLE 12—CLAIMS

No suggested Supplementary Conditions in this Article.

ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK

SC-13.02.C – Delete paragraph in its entirety and insert "Deleted".

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

ARTICLE 14 – Delete the sentence "No suggested Supplementary Conditions in this Article."

SC-14.03.G – Add new paragraph immediately after Paragraph 14.03.F:

G. Installation of materials that are non-compliant with American Iron and Steel requirements shall be considered defective work.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 *Progress Payments*

SC-15.01.B.4 – Add the following language at the end of paragraph:

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage or invest the retainage for the benefit of the Contractor.

SC-15.01.B.5. – Add new paragraph immediately after Paragraph 15.01.B.4:

5. The Application for Payment form to be used on this Project is EJCDC® C-620. The Agency must approve all Applications for Payment before payment is made.

SC-15.01.B.6. – Add new paragraph immediately after Paragraph 15.01.B.5:

6. By submitting an Application for Payment based in whole or in part on furnishing equipment or materials, Contractor certifies that such equipment and materials are compliant with American Iron and Steel requirements. Manufacturer's Certification letter for materials satisfy this requirement. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

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SC-15.01.C.2.d – Add the following new paragraph immediately after Paragraph 15.01.C.2.c:

d. The materials presented for payment in an Application for Payment comply with American Iron and Steel requirements.

SC-15.01.D.1 – Delete paragraph in its entirety and insert the following in its place:

1. The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due twenty (20) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-15.01 Add the following new Paragraph 15.01.F:

F. For contracts in which the Contract Price is based on the Cost of Work, if Owner determines that progress payments made to date substantially exceed the actual progress of the Work (as measured by reference to the Schedule of Values), or present a potential conflict with the Guaranteed Maximum Price, then Owner may require that Contractor prepare and submit a plan for the remaining anticipated Applications for Payment that will bring payments and progress into closer alignment and take into account the Guaranteed Maximum Price (if any), through reductions in billings, increases in retainage, or other equitable measures. Owner will review the plan, discuss any necessary modifications, and implement the plan as modified for all remaining Applications for Payment.

SC-15.02.A – Amend paragraph by striking out the following text: "7 days after".

15.03 *Substantial Completion*

SC-15.03.A – Modify by adding the following after the last sentence:

Contractor shall also submit the General (Prime) Contractor's Certification of Compliance certifying that to the best of the Contractor's knowledge and belief all substitutes, equals, and all Iron and Steel products proposed in the Shop Drawings, Change Orders, and Partial Payment Estimates, and those installed for the Project, are either Produced in the United States or are the subject of an approved waiver under Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

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15.08 *Correction Period*

ARTICLE 16—SC-15.08 SUSPENSION OF WORK AND TERMINATION

No suggested Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

17.02 *Arbitration*

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

17.02 *Arbitration*

A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of $100,000 or less will be settled in accordance with the American Arbitration Association's supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.

E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.

F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the

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making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:

1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and

4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.

H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

17.03 *Attorneys' Fees*

SC-17.03

17.03 *Attorneys' Fees*

A. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

SC-19 – Add the following new Article 19 immediately after Article 18:

ARTICLE 19 – FEDERAL REQUIREMENTS

19.01 *Agency Not a Party*

A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, not any of its departments, entities, or employees, is a party to this Contract.

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19.02 *Contract Approval*

A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the "Certificate of Owner's Attorney" (Exhibit G of this Bulletin) before Owner submits the executed Contract Documents to Agency for approval.

B. Agency concurrence is required on both the Bid and the Contract before the Contract is effective.

19.03 Conflict of Interest

A. Contractor may not knowingly contract with a Supplier or Manufacturer if the individual or entity who prepared the Drawings and Specifications has a corporate or financial affiliation with the Supplier or Manufacturer. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest or other interest in or a tangible personal benefit from the Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

19.04 Gratuities

A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

B. In the event this Contract is terminated as provided in paragraph 19.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

19.05 *Small, Minority and Women's Businesses*

A. If Contractor intends to let any subcontracts for a portion of the work, Contractor will take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Affirmative steps will include:

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1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
5. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

19.06 *Anti-Kickback*

A. Contractor shall comply with the Copeland Anti-Kickback Act (40 USC 3145) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

19.07 *Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended*

A. Contractor to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

19.08 *Equal Employment Opportunity*

A. The Contract is considered a federally assisted construction contract. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

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19.09 *Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)*

A. Contractors that apply or bid for an award exceeding $100,000 must file the required certification (RD Instruction 1940-Q Exhibit A-1). The Contractor certifies to the Owner and every subcontractor certifies to the Contractor that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining the Contract if it is covered by 31 U.S.C. 1352. The Contractor and every subcontractor must also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

19.10 Environmental Requirements

A. When constructing a Project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental conditions:

1. Wetlands – When disposing of excess, spoil, or other Construction Materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

2. Floodplains – When disposing of excess, spoil, or other Construction Materials on public or private property, Contractor shall not fill in or otherwise convert 100-year floodplain areas (Standard Flood Hazard Area) delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, e.g., alluvial soils on NRCS Soil Survey Maps.

3. Historic Preservation - Applicants shall ensure that Contractors maintain a copy of the following inadvertent discovery plan onsite for review:
   a. If during the course of any ground disturbance related to any Project, any post review discovery, including but not limited to, any artifacts, foundations, or other indications of past human occupation of the area are uncovered, shall be protected by complying with 36 CFR § 800.13(b)(3) and (c) and shall include the following:
      i. All Work, including vehicular traffic, shall immediately stop within a 50 ft. radius around the area of discovery. The Contractor shall ensure barriers are established to protect the area of discovery and notify the Engineer to contact the appropriate RD personnel. The Engineer shall engage a Secretary of the Interior (SOI) qualified professional archeologist to quickly assess the nature and scope of the discovery; implement interim measures to protect the discovery from looting and vandalism; and establish broader barriers if further historic and/or precontact properties, can reasonably be expected to occur.
      ii. The RD personnel shall notify the appropriate RD environmental staff member, the Federal Preservation Officer (FPO), and State Historic Preservation Office RUS Bulletin 1780-26 Exhibit B, Attachment 6 Page 12 (SHPO) immediately. Indian tribe(s) or Native Hawaiian Organization (NHOs)

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that have an interest in the area of discovery shall be contacted immediately. The SHPO may require additional tribes or NHOs who may have an interest in the area of discovery also be contacted. The notification shall include an assessment of the discovery provided by the SOI qualified professional archeologist.

iii. When the discovery contains burial sites or human remains, the Contractor shall immediately notify the appropriate RD personnel who will contact the RD environmental staff member, FPO, and the SHPO. The relevant law enforcement authorities shall be immediately contacted by onsite personnel to reduce delay times, in accordance with tribal, state, or local laws including 36 CFR Part 800.13; 43 CFR Part 10, Subpart B; and the Advisory Council on Historic Preservation's Policy Statement Regarding treatment of Burial Sites, Human Remains, or Funerary Objects (February 23, 2007).

iv. When the discovery contains burial sites or human remains, all construction activities, including vehicular traffic shall stop within a 100 ft. radius of the discovery and barriers shall be established. The evaluation of human remains shall be conducted at the site of discovery by a SOI qualified professional. Remains that have been removed from their primary context and where that context may be in question may be retained in a secure location, pending further decisions on treatment and disposition. RD may expand this radius based on the SOI professional's assessment of the discovery and establish broader barriers if further subsurface burial sites, or human remains can reasonably be expected to occur. RD, in consultation with the SHPO and interested tribes or NHOs, shall develop a plan for the treatment of native human remains.

v. Work may continue in other areas of the undertaking where no historic properties, burial sites, or human remains are present. If the inadvertent discovery appears to be a consequence of illegal activity such as looting, the onsite personnel shall contact the appropriate legal authorities immediately if the landowner has not already done so.

vi. Work may not resume in the area of the discovery until a notice to proceed has been issued by RD. RD shall not issue the notice to proceed until it has determined that the appropriate local protocols and consulting parties have been consulted.

vii. Inadvertent discoveries on federal and tribal land shall follow the processes required by the federal or tribal entity.

4. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.

5. Mitigation Measures – The following environmental mitigation measures are required on this Project: *[Insert mitigation measures from the Letter of Conditions here]*.

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19.11 *Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)*

A. Where applicable, for contracts awarded by the Owner in excess of $100,000 that involve the employment of mechanics or laborers, the Contractor will comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, the Contractor will compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic will be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

19.12 *Debarment and Suspension (Executive Orders 12549 and 12689)*

A. contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

19.13 *Procurement of recovered materials*

A. The Contractor will comply with 2 CFR Part 200.322, “Procurement of recovered materials.”

19.14 *American Iron and Steel*

A. Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies an American Iron and Steel requirement to this project. All iron and steel products used in this project must be produced in the United States. The term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials.

B. The following waivers apply to this Contract:

1. *De Minimis*,
2. Minor Components,
3. Pig iron and direct reduced iron

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SC-20 – Add the following new Article 20 immediately after Article 19:

Article 20 – STATE REQUIREMENTS

SC 20.1 Water Infrastructure Finance Authority of Arizona requirements apply. See attached Contract packet.

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EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFIs and responses to RFIs, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contactors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG	
a.6	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
a.8	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	DB	

Notes	
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.

Key	
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)
PDF	Portable Document Format readable by Adobe® Acrobat Reader Version 2020 or later
DWG	Autodesk® AutoCAD .dwg format Version 2020
DOC	Microsoft® Word .docx format Version **2019**
EXC	Microsoft® Excel .xls or .xml format Version**2019**
DB	Microsoft® Access .mdb format Version 2019

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REPORT ON THE DRILLING OF AN EXPLORATORY BOREHOLE NEAR STRAWBERRY, ARIZONA
(May 18 – June 2, 2000)

A Hydrogeologic Investigation for the
Northern Gila County Water Plan Alliance

Report Written by

Frank Corkhill
Arizona Department of Water Resources
Hydrology Division

August 9, 2000

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ACKNOWLEDGEMENTS

The drilling of the exploratory borehole near Strawberry, Arizona was accomplished through the cooperation and collective efforts of many organizations and individuals. Gratitude and appreciation is expressed to the following organizations and individuals that played important roles in the funding, planning, drilling, data collection and data analysis phases of this project.

Northern Gila County Water Plan Alliance (NGCWPA)
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Gila County
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John Parker

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Bruce Hammett
Leslie Unangst
Teri Davis
Bill Remick

Salt River Project (SRP)
Greg Kornrumph

City of Payson
Karen Probert

INTRODUCTION

The Northern Gila County Water Plan Alliance (NGCWPA) was formed to address the increasing need for a firm water supply for the northern Gila County area. Over the past two and one half years many meetings of participants have taken place to discuss and pursue possible answers.

Currently, federal, state and local participants are funding a project by the United States Geological Survey (USGS) to study the surface and subsurface geology in the northern Gila County area. In order to supplement this project, an exploratory borehole was drilled in the Strawberry area to gather information and gain further insight into the deep subsurface geology of the area.

This report describes the drilling of the exploratory borehole, NGCWPA-1 (ADWR well registration number 55-581081), in the vicinity of Strawberry, Arizona during the period May 18 to June 2, 2000. The report provides descriptions of geologic samples and interpretations of hydrogeologic data derived from the geophysical logging of the borehole. Recommendations for future monitoring of the borehole are also provided.

WELL SITE LOCATION

The well site is located one-quarter mile south of Fossil Creek Road and 500 feet north of Strawberry Creek on a Gila County easement about 100 feet east of Juniper and Oak Roads (Figure 1). The Global Positioning System (GPS) coordinates of the well are: Latitude 34° 24' 15.1", Longitude 111° 31' 11.6", or UTM coordinates (NAD27 Zone12 Northing 452,214 Easting 3,806,900). The GPS coordinates were obtained using a hand-held unit with an estimated potential horizontal error of 18 feet (the GPS coordinates were obtained the day after the selective availability of the Precise Positioning Service had been lifted). The cadastral location of the well is (A-12-08) 29aaa.

The GPS determined land surface elevation of the well site is 5,805 feet (above mean sea level). The land surface elevation of the well site was also estimated to be about 5,750 feet from the USGS 7.5 minute topographic map of the Strawberry Quadrangle. For interpretation purposes the land surface elevation of the well site was estimated to be 5,780 feet.

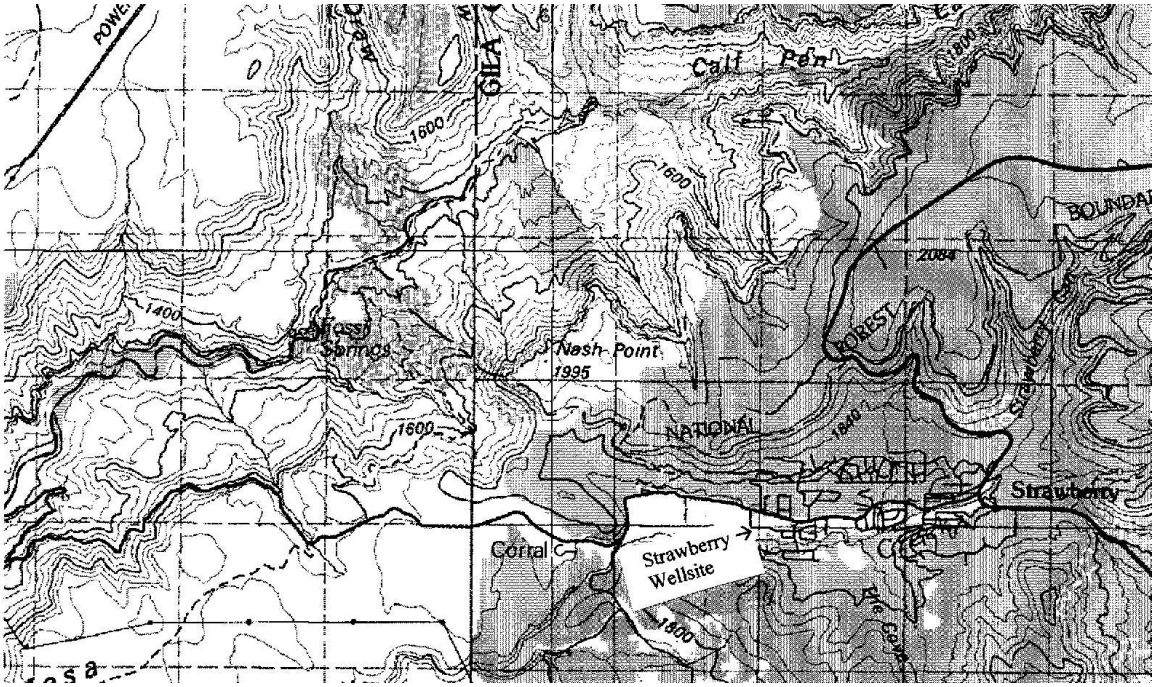


Figure 1 Topographic Map of the Strawberry area

WELL DRILLING AND COMPLETION OPERATIONS

The NGCWPA-1 exploratory borehole was drilled by the Stewart Brothers Drilling Company (Milan, New Mexico). Project supervision and oversight were provided by the NGCWPA. United States Bureau of Reclamation (USBR) personnel served as site geologists during the drilling operations. Technical advice concerning drilling operations and geophysical logging were provided by personnel from the ADWR.

The drilling equipment (Figures 2-4) included: a Failing CF2500 Holemaster (conventional mud/air rotary drilling rig); 6.25 inch tricone roller rockbits; 280 feet of 4.75 inch by 20 foot drill collars; 3.5 inch by 20 foot drill rods; Gardner Denver 5x10 mud pumps; mix pump (for foam); Sullair 900xh 900cfm compressor; a Grimmer Schmidt compressor booster; a mix tank; two 8 by 12 foot mud pits; and two 3,200 gallon water trucks.

Drilling operations began on the Strawberry exploration well on May 18, 2000. The well was drilled using conventional mud rotary techniques from the land surface to a depth of 1,461 feet below land surface (BLS). The drilling fluid was a mixture of water and bentonite. Samples were collected from the flow line using a hand strainer (Figure 5). The drilling mud weight ranged from 8.4 to 8.7 pounds per gallon. The mud funnel viscosity ranged from 35 to 46 seconds.

During drilling operations several zones were encountered where all the drilling fluid drained from the borehole. These “lost circulation” zones corresponded to probable large fractures or cavities. Initially, lost circulation materials were added to the drilling mud to control fluid loss at depths of 415 to 417 feet (BLS) and 645 to 650 feet (BLS). Eventually, it was determined that the fluid loss could not be controlled with standard lost circulation materials, and cement was subsequently pumped into the borehole and allowed to harden for several hours when lost circulation zones were encountered. Cement was tremmied through the drill pipe at depths of 575 to 650 feet (BLS), 645 to 650 feet (BLS), 982 to 983 feet (BLS), 973 to 998 (BLS) and 987 to 1,004 feet (BLS).

Due to fluid loss problems caused by numerous cavities and fractures, no drilling fluid or samples were circulated to the land surface below a depth of 970 feet. Although no drilling fluid or samples were returned to the surface, drilling operations using mud continued to a depth of 1,461 feet. Drilling operations were suspended at a depth of 1,461 feet because of the large fluid loss, and because the local water supplier declined to sell any additional water to the drilling contractor. The fluid loss encountered during the last several hours of drilling was estimated to be about 90,000 gallons.

Drilling was initially suspended on May 25, 2000. Geophysical well logging operations were conducted on May 26, 2000 (Figures 6 and 7). The geophysical well logging operations were conducted by Southwest Geophysical using logging equipment and personnel dispatched from Chandler, Arizona and Farmington, New Mexico. The

logging services that were run included: 16-inch and 64-inch normal and spontaneous potential (E-log), induction electric, compensated density, neutron, natural gamma ray and caliper. Blockage or bridging of the borehole prevented advancing the neutron and induction logging tools below a depth of 900 feet, therefore these logs were only run above that depth. Geophysical well logging operations were witnessed by USBR and ADWR personnel.

After the completion of geophysical logging operations on May 26, 2000 it was decided that further drilling would be attempted using conventional air rotary techniques. The conversion from mud rotary to air rotary was accomplished on May 30, 2000, and air drilling began on May 31, 2000. Drilling activities were terminated due to difficulty in drilling and budgetary considerations on June 1, 2000 at a total depth of 1,872 feet. No samples were returned to the surface during air rotary drilling.

A second set of geophysical well logs were run on the deepened borehole. The geophysical well logging operations were conducted by Southwest Geophysical using logging equipment and personnel dispatched from Chandler, Arizona and Farmington, New Mexico. The logging services that were run included: 16-inch and 64-inch normal and spontaneous potential (E-log), temperature, compensated density, neutron, natural gamma ray and caliper. Blockage or bridging of the borehole prevented advancing any of the logging tools below a depth of 1,773 feet, therefore these logs were only run above that depth. Geophysical well logging operations were witnessed by USBR and ADWR personnel.

Once the final logging was completed 4-inch steel casing was set as deep in the well as borehole conditions allowed. Based on difficulties experienced during drilling, and further difficulties encountered during the preparation of the borehole for running casing it seemed unlikely that the casing could be set to the original total hole depth. As anticipated, borehole bridging and/or sluffing prevented the casing from being advanced below a depth of 1,420 feet (a depth about 40 feet below the static water level in the borehole). The bottom of the 4-inch casing was left open, and the bottom 150 feet (from 1,420 to 1,270 feet) of casing was slotted. A cement basket was set between the outside of the casing and the borehole wall at a depth of 210 to 212 feet to prevent downward seepage from a shallow ground water zone that was encountered at a depth of about 170 feet. The design of the completed borehole is shown in Figure 8.

On June 16, 2000 personnel from the ADWR tapped the well cap to create a water level sounding port and installed a threaded steel plug. The depth to water that was measured on June 16, 2000 was 1,377 feet.

Figure 2 Stewart Brothers Drilling Rig

Figure 3 Mud Pit

Figure 4 Drilling Mud and Lost Circulation Materials

Figure 5 Samples of drill cuttings

Figure 6 Geophysical logging truck

Figure 7 Logging engineer prepares logging tool

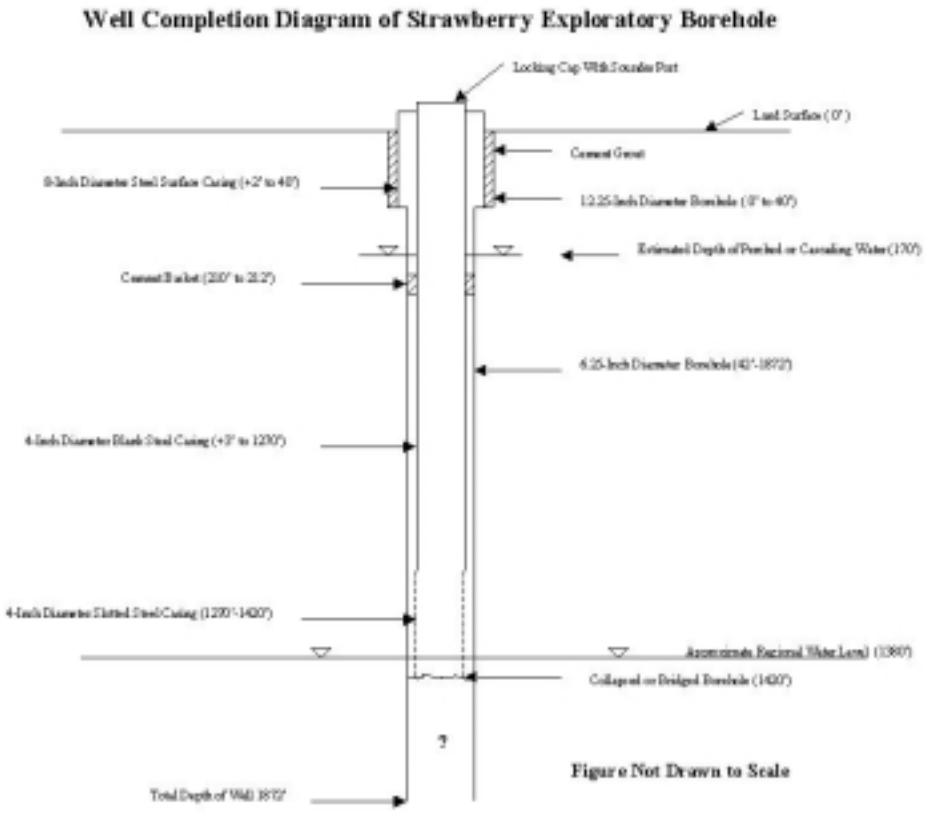


Figure 8 Well design diagram

HYDROGEOLOGIC SETTING OF THE WELL SITE

The Strawberry exploratory borehole is located near the base of the Mogollon Rim, and about three miles southeast of Fossil Springs (Figure 1). The Mogollon Rim, which is the eroded south-southwestern edge of the Colorado Plateau, forms an escarpment that is locally more than 1,000 feet high. Layers of sedimentary rock of Paleozoic age are exposed on the face of the escarpment.

The Paleozoic rocks that may occur at depth, but are not exposed at the land surface in the Fossil Creek-Strawberry area include the Cambrian Tapeats Sandstone, and the Devonian Martin Limestone. Although the Tapeats Sandstone is not exposed in the Strawberry area the Tapeats does outcrop north of Payson at the Highway 87 bridge crossing of the East Verde River. At that location the Tapeats Sandstone is a medium to coarse-grained, moderately cemented, reddish-beige colored sandstone that overlies the Precambrian Payson Granite. In general, the Tapeats Sandstone forms a thin layer which overlies Precambrian basement rocks. The thickness of Cambrian rocks in the northern Gila County area has been mapped by Pierce (1976) to be less than 100 feet.

The Devonian Martin Limestone overlies the Tapeats Sandstone in much of the Payson-Pine-Strawberry area. Although the Martin Formation does not outcrop in the Fossil Creek-Strawberry area it has generally been described in other locations as a dark-colored, dolomitic limestone with disseminated argillaceous and arenaceous material (Kreiger, 1965). The dark color, thinly and evenly bedded character, and steplike slopes to which the formation weathers serve to distinguish it from the overlying Redwall Limestone (Krieger, 1965). The thickness of Devonian rocks in the northern Gila County area has been mapped by Pierce (1976) to range from about 200 to 400 feet.

The Paleozoic sedimentary rocks that are exposed in the Fossil Creek-Strawberry area include rocks that range from Mississippian to Permian age (Figure 9). The Mississippian Redwall Limestone, the oldest exposed sedimentary rocks in the area, is exposed at Fossil Springs in the bottom of the Fossil Creek Canyon. Although the thickness of the Redwall Limestone varies, the exposed thickness at an outcrop on the west side of Fossil Creek is 106 feet (McKee, and Gutshick, 1969). At Fossil Springs, several major springs discharge about 30,000 acre-feet of groundwater per year from fractures, cavities and/or other solution features from outcrops located near the contact between the Redwall Limestone and the overlying Naco Formation (Figures 10-11) (USGS, 1998).

The Pennsylvanian Naco Formation overlies the Redwall Limestone in the Fossil Creek-Strawberry area. The Naco Formation consists of interbedded grayish limestone and limey claystone. The Naco Formation displays many secondary solution and karstic features typical of carbonate rocks. In the Fossil Creek-Strawberry area the Naco Formation is unsaturated. The total thickness of the Naco Formation on the east side of Fossil Creek is about 400 feet (Figure 12).

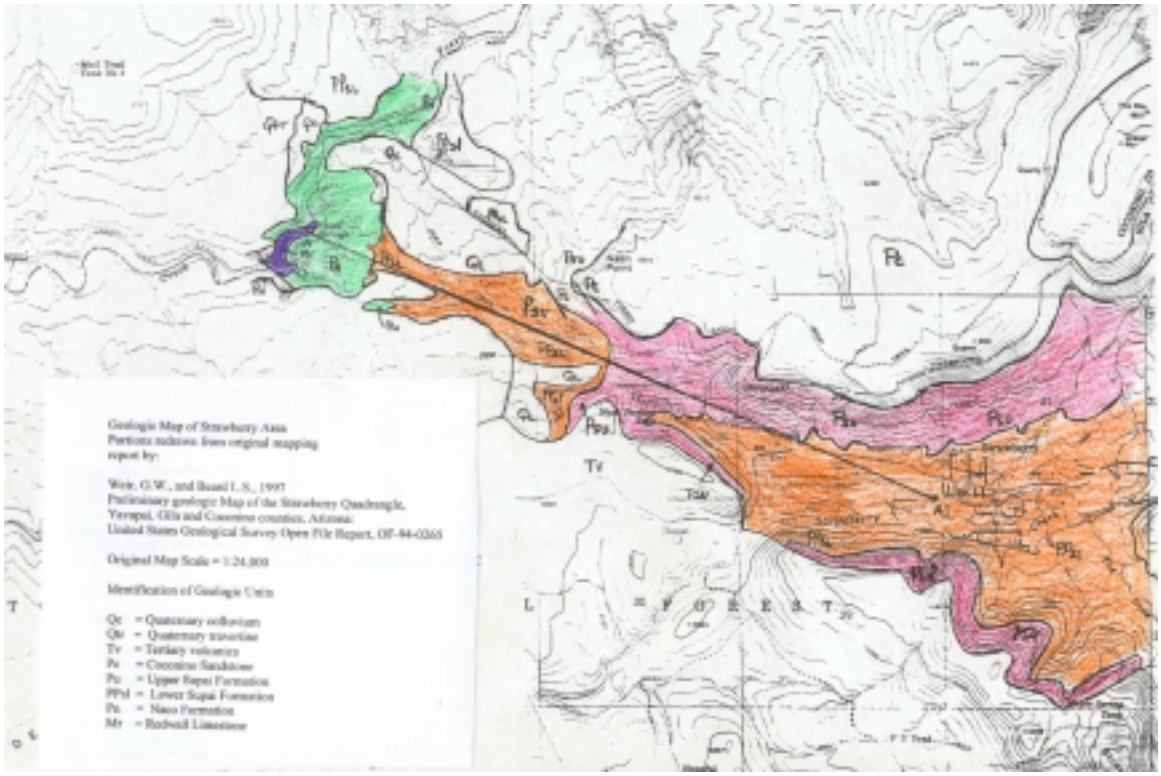


Figure 9 Geologic Map of Strawberry - Fossil Springs area

Figure 10 A major spring at Fossil Springs

Figure 11 Water seeping from a limestone outcrop at Fossil Springs

Figure 12 View to the East toward Strawberry from Fossil Springs

The Naco Formation forms the cliff above Fossil Creek in the foreground. The Lower and Upper Supai Formations are exposed in the background, overlying the Naco. Coconino Sandstone caps the highest cliffs on the horizon.

The Pennsylvanian-Permian Supai Formation overlies the Naco Formation in the Fossil Creek-Strawberry area (Figure 12). In the Fossil Springs-Strawberry area the Supai Formation has been divided into upper and lower members. The Supai Formation consists of mainly red beds, sandstone, siltstone, mudstone with some interbedded limestone. In the Fossil Creek-Strawberry area the Supai Formation may contain water-bearing strata at depths of a few hundred to several hundred feet below land surface. It is believed that these water-bearing strata mainly receive recharge from local surface water drainages. The total thickness of the lower member of the Supai Formation is about 1,000 to 1,100 feet on the east side of Fossil Creek (Figure 12). The lower member of the Supai Formation, which is comprised of mainly red sandstone, siltstone and mudstone is exposed in Strawberry Creek, located just to the south of the Strawberry well site.

The youngest Paleozoic formation that is exposed in the Fossil Creek-Strawberry area is the Permian Coconino Sandstone. The Coconino Sandstone overlies the Supai Formation and is exposed as the upper cliff forming unit that caps the Mogollon Rim north of Strawberry. In that area the Coconino Sandstone is a light yellowish-brown to white colored, fine-grained, poorly to moderately cemented sandstone. In many parts of the Colorado Plateau region the Coconino Sandstone comprises the major regional aquifer. However, in the Strawberry area the Coconino Sandstone appears to lie well above the major regional aquifer system.

ANALYSIS OF DRILL CUTTINGS

Drill samples were collected from the drill fluid return flow line at 10-foot intervals from the land surface to a depth of 970 feet. The drilling contractor bagged the samples, and Bureau of Reclamation geologists provided a preliminary log of the samples that is included as Appendix I of this report. A more detailed analysis of the drill cuttings was later conducted by ADWR personnel (Appendix II). No drilling fluid or samples were recovered below a depth of 970 feet due to lost circulation conditions.

The analysis of the drilling samples indicated that the upper 970 feet of the well penetrated sedimentary rocks that were, in general, typical of the lower member of the Supai Formation. The types of materials that were described in the drill cuttings included: reddish-brown sandstone, siltstone, mudstone, and clay with minor amounts gray limestone.

ANALYSIS OF GEOPHYSICAL LOGS

As mentioned previously, geophysical well logs were run on two separate occasions during the drilling of the exploratory borehole. The logs that were run included: 16-inch and 64-inch normal and spontaneous potential (E-log), induction electric, compensated density, neutron, natural gamma ray, temperature, and caliper. The suite of correlated geophysical logs is shown in Figure 13. Copies of the individual logs are included in Appendix III.

Analysis of the well logs has revealed 5 major lithologic zones that may be reasonably correlated to recognized regional geologic formations or units. For the most part the lithologic zones have been identified by their distinctive electrical resistivity, bulk density, neutron porosity, natural gamma radiation, and caliper log responses (see Figure 13 and Appendix III). The five major zones and their characteristic log responses are listed in Table 1. Correlations to recognized geologic units are included in Table 1 and and graphically depicted in a hydrogeologic cross-section constructed from Fossil Creek to the Strawberry well site (Figure 14).

Table 1

Major Lithologic Zones Identified and Typical Geophysical Well Log Responses for the Strawberry Exploratory Borehole (NGCWPA-1)

Depth Zone (Feet BLS)	Gamma Ray API Units	Resistivity Ω•m	Bulk Density (g/cc)	Neutron API Units	Caliper (Inches) ***	Probable Geological Formation or Unit
0 – 400	80 -120	20 - 35	1.80 – 2.10	3000 - 3200	≈7.00	Unsaturated lower member of the Supai Formation (Red Bed Unit)
400 – 1040	80 - 120	25 – 60 *(400 – 904)	2.20 – 2.35	2400 - 3200	≈7.00 Few washouts	Unsaturated lower member of the Supai Formation
1040 – 1295	80 - 160	NA	NU	2000 - 3400	≈6.25 - >12 Ragged borehole highly washed out	Unsaturated Naco Formation
1295 – 1380	15 - 35	NA	2.20 –2.35	3000-4000	≈6.25 Few washouts	Unsaturated Redwall Limestone
1380 – 1395	15	200 – 3600	2.45	1600	≈6.25	Water level transition zone falls within Redwall Limestone**
1395 –1670	15 – 60	500 - 1000	2.40 –2.60	800-1200	≈6.25 Few washouts	Saturated Redwall Limestone/ Martin Formation ?
1670 – 1773	15 – 35	200 - 400	2.30 – 2.45	400 - 800	≈6.25-11.0 Moderate number of washouts	Saturated Martin Formation?/ Tapeats Sandstone?

Note: Some logging responses are greatly effected by borehole conditions, such as fluid level and borehole diameter. Therefore, differences in logging responses may not be indicative of actual lithologic differences.

* = Actual logged interval for any particular log, if different from depth zone
** = Water level in borehole and aquifer falls within this interval. Some logging responses are transitional due to the effects of the logging tool emerging from fluid
*** = Average borehole diameter. Bit size = 6.25 inches.
NA = Logging data not available
NU = Logging data not useful to interpretation due to highly irregular borehole conditions

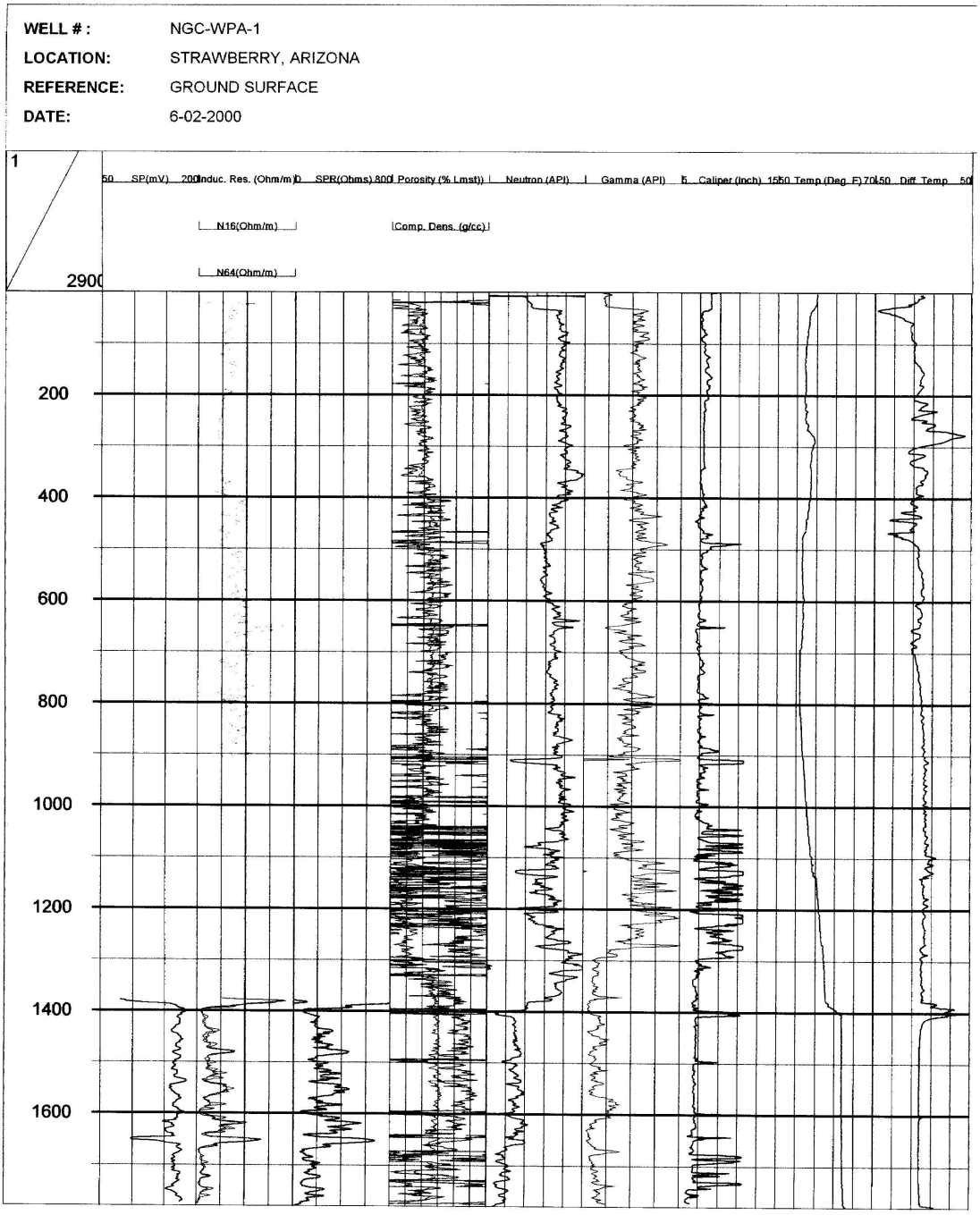
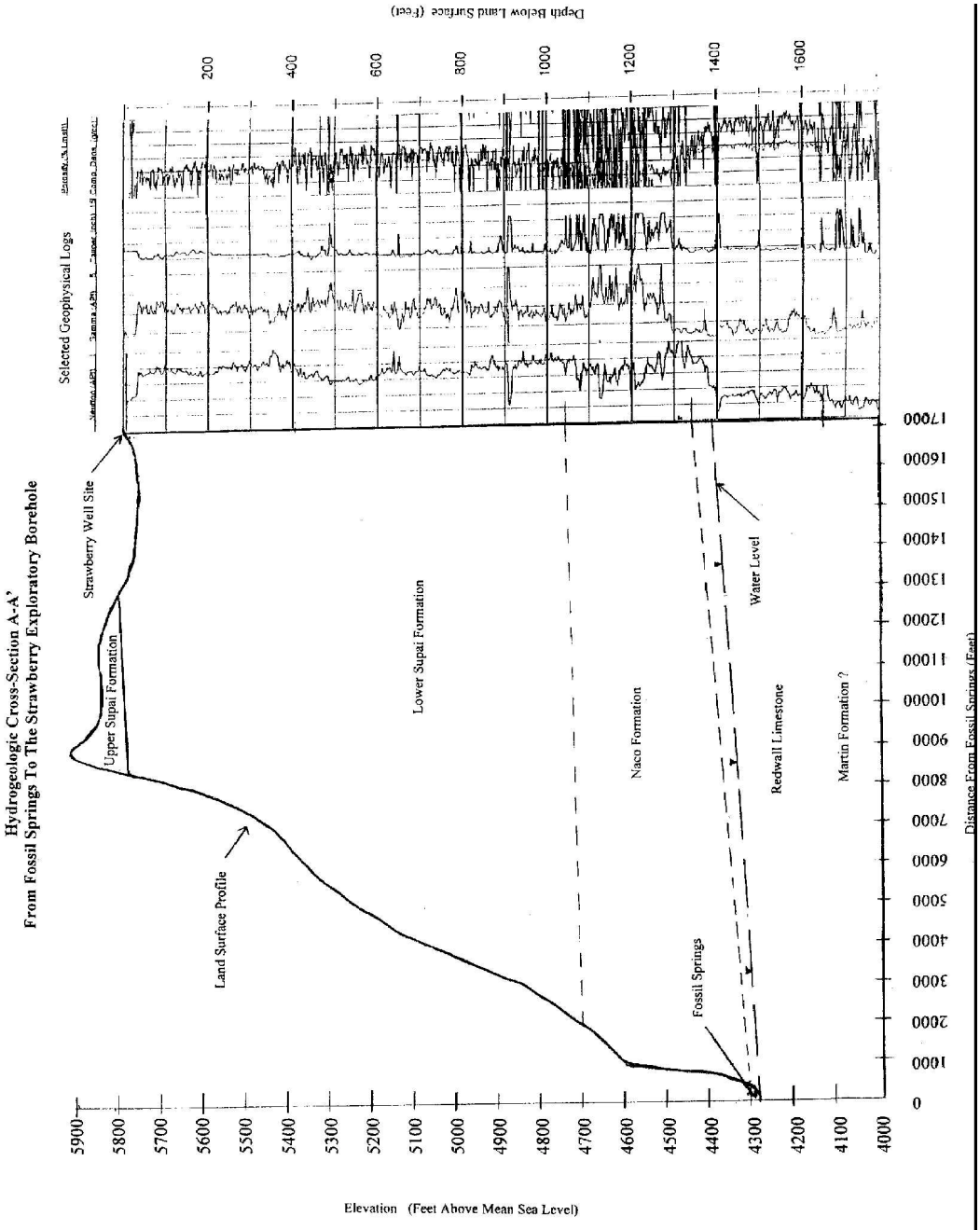


Figure 13 Correlated Geophysical Logs

Figure 14


Hydrogeologic Cross-Section A-A'
From Fossil Springs To The Strawberry Exploratory Borehole
Depth Below Land Surface (Feet)
Selected Geophysical Logs
Strawberry Well Site
Upper Supai Formation
Lower Supai Formation
Naco Formation
Redwall Limestone
Martin Formation ?
Water Level
Land Surface Profile
Fossil Springs
Elevation (Feet Above Mean Sea Level)
Distance From Fossil Springs (Feet)

Summary

An exploratory borehole has been drilled in the Strawberry area to a total depth of 1,872 feet below land surface. Although the total depth of the hole was 1,872 feet, "lost" circulation problems combined with unstable borehole conditions did not allow the collection of drilling samples from depths below 970 feet, and limited the depth of geophysical logs to 1,773 feet.

The major geologic units penetrated by the borehole include the lower member of the Supai Formation, the Naco Formation, the Redwall Limestone, and possibly the Martin Formation and/or the Tapeats Sandstone. A shallow groundwater zone that produced a small, unquantified amount of water into the borehole was encountered in the lower member of the Supai Formation at a depth of about 170 feet. The water level of the regional aquifer system was encountered in the Redwall Limestone at a depth of about 1,380 feet (about 4,400 feet in elevation above mean sea level). Based on interpretation of the geophysical logs it does not appear that basement rock (such as, granite or quartzite) was penetrated by the borehole.

Due to well bridging and/or borehole sluffing it was only possible to run casing down to a depth of 1,420 feet. A cement basket was set between the outside of the casing and the borehole wall at a depth of 210 to 212 feet to prevent downward seepage from a shallow ground water zone that was encountered at a depth of about 170 feet. The basket was filled with cement pumped through a tremmie line.

Recommendations

The following recommendations are being made to provide further information from the Strawberry exploratory borehole, and any other future drilling projects .

1) Obtain the surveyed elevation of the well site.

2) Obtain a water sample from the well to establish base line water quality information. Note! The drilling fluid that was used may still effect water quality, therefore bailing or purging of the well is advised before sampling.

3) Run a video log of the well to determine borehole conditions at the bottom of the well. This information would be valuable if any future attempt is made to cleanout or clear the uncased portion of the borehole.

4) Based on the results of video logging, consider drilling out the bottom uncased portion of the borehole, and run a smaller diameter casing through the 4-inch casing. Note! It is likely that no more than a 2-inch steel or PVC casing could be run through the 4-inch casing to the bottom of the hole.

5) If Recommendation 4 is accomplished run a pump test on the well. However, it is important to realize that due to the small casing diameter and large pumping lift it is questionable whether a small submersible pump, such as the Redi-flo2, could sufficiently stress the aquifer to provide representative test results.

If Recommendation 4 is **not** accomplished, evaluate the possibility of conducting some type of pump test on the well. It is also important to realize that a test on the well in its current state would provide results that would be highly effected by partial penetration, and therefore should be considered only as a last alternative to no testing at all.

6) Continue to monitor water levels and water quality in the borehole on a periodic basis (water levels semi-annually, water quality annually).

7) Potential future exploratory well drilling projects should be planned and coordinated to support the data collection efforts of the USGS Fossil Creek – East Verde River – Tonto Creek study.

8) Alternative drilling methods for any future exploratory boreholes should be carefully chosen to minimize the lost circulation problems encountered during the drilling of the Strawberry borehole.

References

Krieger, M.H., 1965, Geology of the Prescott and Paulden Quadrangles, Arizona: U.S. Geological Survey Professional Paper 467,127 p.

McKee, E.D., and Gutschieck, R.D., 1969, History of the Redwall Limestone of northern Arizona: Geological Society of America Memoir 114, 726p.

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USGS, 1998, Water Resources Data Arizona water Year 1997, U.S. Geological Survey Water-Data Report AZ-97-1, 416 p.

Weir, G.W., and Beard, L.s., 1997, Preliminary map of the Strawberry Quadrangle, Yavapai, Gila, and Coconino Counties, Arizona:U.S. Geological Survey Open-File Report, OF-94-0265, (1 sheet).

Appendix I

USBR Geologist's Notes and Well Log of Strawberry Borehole

GEOLOGIC LOG OF DRILL HOLE NO. NGCWPA-2000-01

SHEET 1 OF 4

FEATURE: Exploratory Borehole
LOCATION: Strawberry, AZ
BEGUN: 5/18/00 FINISHED: 6/2/00
DEPTH AND ELEV OF WATER LEVEL
AND DATE MEASURED: 1380.0 (4400.00) Based on geophysical data

PROJECT: Northern Gila Co. Water Plan Alliance
COORDINATES: N 452,214.0 E 3,806,900.0
TOTAL DEPTH: 1872.0
DEPTH TO BEDROCK: 30

STATE: Arizona
GROUND ELEVATION: 5780.0
ANGLE FROM HORIZONTAL: 90 AZIMUTH:
HOLE LOGGED BY: B. Prudhom, M. Miller
REVIEWED BY:

NOTES

PURPOSE OF HOLE:
Exploratory hole to characterize Paleozoic stratigraphy and water supply potential; perform geophysical logging and packer water testing; drill to 2500 feet or 10 feet into granitic basement.

DRILL SITE & SET-UP:
On original ground at edge of private apple orchard in Strawberry Valley one-quarter mile south of Fossil Creek Road and 500 feet north of Strawberry Creek on county easement about 100 feet east of Juniper and Oak Roads; GPS coordinates: Latitude 34 24' 15.1" Longitude 111 31' 11.6"; cadastral (A-12-08) 29aaa.

DRILL EQUIPMENT:
Failing CF 2500 Holemaster (conventional mud/air rotary); 6-1/4-in. tricone roller rockbits, 280 feet of 4-3/4-in. by 20-foot-long collar rods, 3-1/2-in. by 20-foot-long pipe rods; Gardner-Denver 5X10 mud pumps, mix pump (for foam); Sullair 900xh 900cfm compressor; Grimmer Schmidt compressor booster; mix tank; two 8 by 12-foot mud pits; two 3,200 gallon water trucks.

WATER TEST EQUIPMENT:
Water tests not performed due to limited budget and concerns about losing packer in caving intervals.

DRILLER:
Stewart Brothers Drilling Co., Milan, NM; F. Pichard (Foreman), R. Salcido & P. Jaramillo (Drillers).

DRILL FLUID:
0.0 - 1461.0 ft.: recirculated water and bentonite mixture.
1461.0 - 1872.0 ft.: SH-1200L acrylamide copolymer mixed with water to form foam.
Lost circulation materials (LCM): Maxi-seal, powdered bentonite, cottonseed hulls, ground paper, Ex-Pando Seal bio- polymer, SH-1200L copolymer.

DRILL FLUID RETURN:

Interval Drilled (ft.)	Est. % Return*
0.0- 415.0	90
415.0- 423.0	0-10
423.0- 645.0	50-80
645.0- 650.0	0
650.0- 730.0	60-70
730.0- 795.0	80-90

DEPTH | GEOLOGIC UNIT / ELEVATION

Alluvium
5750.0

Supai

CLASSIFICATION AND PHYSICAL CONDITION

0 to 30 ft. RECENT ALLUVIUM:

0 to 20 ft. Lean Clay (CL):
Stockpile and cutting samples consist of approx. 100% fines with medium plasticity, no to slow dilatancy, high dry strength and medium toughness; no reaction with HCl. Trace of reddish brown, fine gravel-size fragments of quartzose sandstone; max. size 20 mm; 7-foot deep mudpits composed of homogeneous to blocky lean clay, mostly firm to soft consistency; interpreted as basin fill and overbank/terrace deposits from Strawberry Creek.

20 to 30 ft. Poorly Graded Sand (SP):
Cuttings sample consists of fine- to coarse-sand size, predominantly angular to subrounded fragments of predominantly quartzose sandstone. Trace of volcanic fragments. Variably colored.

30 to 1040 ft. PENNSYLVANIAN-PERMIAN SUPAI FORMATION:
(Based on geophysical logs and regional stratigraphy).

30 to 40 ft. Cuttings sample consists of fine- to coarse-sand size, angular to subrounded, predominantly platy fragments of siltstone/shale; soft, breaks easily with light finger pressure; no reaction with HCl. Moderate reddish brown color.

40 to 340 ft. Cuttings samples consist of fine-sand to fine-gravel size, predominantly platy and angular, to subrounded fragments of fine-grained sandstone to siltstone and shale; soft, breaks easily with light finger pressure; no reaction with HCl. Moderate reddish-brown color. Trace of harder greenish white quartz sandstone fragments.

80 to 90 ft. Cuttings sample similar to 40 to 340 ft. interval plus a trace of coarse-sand size chert fragments.

120 to 130 ft. Cuttings sample similar to 40 to 340 ft. interval plus a trace of calcite occurring as fillings.

140 to 150 ft. Cuttings sample similar to 40 to 340 ft. interval plus one coarse-sand size fragment of calcareous quartz sandstone.

190 to 200 ft. Cuttings sample similar to 140 to 150 ft. interval.

200 to 210 ft. Cuttings sample similar to 40 to 340 ft. interval except fragments of siltstone are predominantly medium- to coarse-sand size, platy, soft. Usually 10% of fragments are fine-gravel size.

260 to 270 ft. Cuttings sample similar to 40 to 340 ft. interval plus a trace of medium-sand size basalt fragments.

340 to 400 ft. Cuttings samples consist of mostly fine- to medium-sand size, predominantly subrounded to subangular,

Continued next page

COMMENTS:

Geologic formation names were chosen based on cuttings samples descriptions (where available), geophysical logging, drilling conditions and regional stratigraphy.

STRAWBERRY STRAW.GPJ STRAW.GDT 6/14/00 3:43:53 PM

GEOLOGIC LOG OF DRILL HOLE NO. NGCWPA-2000-01

SHEET 2 OF 4

FEATURE: Exploratory Borehole
LOCATION: Strawberry, AZ
BEGUN: 5/18/00 FINISHED: 6/2/00
DEPTH AND ELEV OF WATER LEVEL
AND DATE MEASURED: 1380.0 (4400.00) Based on geophysical data

PROJECT: Northern Gila Co. Water Plan Alliance
COORDINATES: N 452,214.0 E 3,806,900.0
TOTAL DEPTH: 1872.0
DEPTH TO BEDROCK: 30

STATE: Arizona
GROUND ELEVATION: 5780.0
ANGLE FROM HORIZONTAL: 90 AZIMUTH:
HOLE LOGGED BY: B. Prudhom, M. Miller
REVIEWED BY:

NOTES	DEPTH	GEOLOGIC UNIT / ELEVATION	CLASSIFICATION AND PHYSICAL CONDITION
795.0- 800.0 30 800.0- 850.0 50 850.0- 970.0 30-50 970.0- 1872.0 0 * Site hydrologist **LOST CIRCULATION ZONES:** 415.0- 417.0 ft., sealed with LCM 645.0- 650.0 ft., sealed with LCM and cement 970.0-1197.0 ft. (to 1872.0 ft.), unable to seal **DRILL FLUID COLOR:** Not recorded; visually brown (bentonite color) throughout. **DRILLING METHODS:** Interval Drilled (ft.) Drilling Method 0.0 - 20.0 16-in. solid stem auger 20.0 - 1872.0 6-1/4-in. tricone roller rockbit **DRILLING CONDITIONS/COMMENTS:** Rough drilling/rod chatter at 415.0 feet, lost circulation between 415.0-417.0 feet, tripped out rods, added about 30 bags lost circulation materials (LCM) and regained circulation; drilled smooth using some water to 645 feet; drillstring (rods) dropped and lost all circulation from about 645 to 650 feet in gray, calcareous fine-grained sandstone; tripped out and added about 52 bags LCM and 30 bags bentonite and thickened mud but still no drill fluid return; tripped out and tremmied in 14 bags of Portland cement with 1/4 bag calcium chloride in water (100 gallons) through rods, let set 5 hours; tripped in with bit and drilled back to 650.0 feet but still no fluid return - tremmied another 100 gallons (15 bags cement and 1/2 bag calcium chloride) and let set-up 6 hours, top of cement at 645.5 feet; gurgling and the sound of running water or escaping drill fluid heard in hole; pulled drillstring and measured perched water (on cement) at 273.2 feet, tripped back in, water level inside rods was 232.0 feet; resumed drilling with 60 percent circulation return, mixed another batch of cement (13 bags cement, 1/3 bag calcium chloride) and let set 7 hours, cement level came up to 575 feet sealing off the zone; drilled to 970 feet with about 80 percent return to 743 feet, 30-50 percent return 743 to 970 feet, and no drill fluid or cuttings sample return 970 to 1872 feet (used about 30 percent LCM in drill mud since 650 feet); drilled rough and quick then rods dropped and pressure went to zero 982.0 to 983.0 feet and at 998.0 feet; cemented hole (15 bags cement) 973.0 to 998.0 feet, lost all return again and pressure went from 250 psi to zero after drilling through cement from 999.0 to 1000.0 feet, drilled to 1004.0 feet; cemented interval 987.0 to 1004.0 feet and drilled to 1011.0 feet but no return; interpreted that loss zone was still at 982.0 to 983.0 feet in a fracture	510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000 1010 1020 1030 1040 1050 1060	Supai 4740.0 Naco	siltstone fragments. Approx. 80% of the siltstone fragments are moderate reddish-brown in color and have no reaction with HCL. Approx. 20% of the siltstone fragments are light gray in color and have a weak to moderate reaction with HCl. 400 to 410 ft. Cuttings samples consist of predominantly angular to subrounded, medium-sand to very fine-gravel size fragments of greenish gray and moderate brown siltstone and approx. 10% limestone fragments. 410 to 420 ft. Cuttings sample similar to 340 to 400 ft. interval except with more fine-gravel size, predominantly angular and platy fragments. Some fragments of various rock types, one fine-gravel size fragment of fine-grained ferruginous (?) sandstone and a trace of chert. 420 to 440 ft. Cuttings sample consists of approx. 95% very fine-grained sandstone/siltstone and approx. 5% fragments of various rock types (chert, quartz, basalt or gabbro). Fragments are angular to subrounded, medium- to coarse-sand size, predominantly platy; strong reaction with HCl. Moderate reddish-brown in color. 430 to 440 ft. Cuttings sample similar to 420 to 440 ft. interval except only a trace of angular to subangular, chert and ferruginous (?) sandstone fragments. 440 to 450 ft. Cuttings sample consists of approx. 100% angular to subangular, predominantly platy, calcium carbonate cemented siltstone; strong reaction with HCl. 450 to 480 ft. Cuttings sample consists of approx. 95% moderate reddish-brown siltstone and approx. 5% light green siltstone; strong reaction with HCl. 460 to 470 ft. Cuttings sample similar to 450 to 480 ft. interval except trace of light green siltstone and one subrounded, fine-gravel size fragment of ferruginous (?) sandstone. 480 to 530 ft. Cuttings samples consist of approx. 100% medium- to coarse-sand size, angular to subrounded, predominantly subangular and platy (tabular) siltstone and very fine-grained silty sandstone; strong reaction with HCl. Light brown, light grayish brown and moderate reddish-brown in color. 500 to 530 ft. Cuttings sample similar to 480 to 530 ft. interval plus a trace of fine- to medium-grained fragments of various rock types (quartz, chert, mafic and light green siltstone or carbonate). 530 to 540 ft. Cuttings sample similar to 450 to 480 ft. interval with a trace of fine-gravel size fragments of siltstone. Predominantly moderate reddish-brown. 540 to 550 ft. Cuttings sample similar to 480 to 530 ft. interval with a trace of moderate orange pink grains. 550 to 560 ft. Cuttings sample similar to 530 to 540 ft. interval. 560 to 570 ft. Cuttings sample consists of medium- to coarse-sand size and a trace of fine-gravel size moderate reddish-brown siltstone fragments and approx. 40 to 50% grayish brown and greenish brown

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GEOLOGIC LOG OF DRILL HOLE NO. NGCWPA-2000-01

SHEET 3 OF 4

FEATURE: Exploratory Borehole
LOCATION: Strawberry, AZ
BEGUN: 5/18/00 FINISHED: 6/2/00
DEPTH AND ELEV OF WATER LEVEL
AND DATE MEASURED: 1380.0 (4400.00) Based on geophysical data

PROJECT: Northern Gila Co. Water Plan Alliance
COORDINATES: N 452,214.0 E 3,806,900.0
TOTAL DEPTH: 1872.0
DEPTH TO BEDROCK: 30

STATE: Arizona
GROUND ELEVATION: 5780.0
ANGLE FROM HORIZONTAL: 90 AZIMUTH:
HOLE LOGGED BY: B. Prudhom, M. Miller
REVIEWED BY:

NOTES	DEPTH	GEOLOGIC UNIT / ELEVATION	CLASSIFICATION AND PHYSICAL CONDITION
or cavity; drilled blind using lots of water (about 130 gpm- the minimum to cool bit and clean cuttings away) with 16 rod drop intervals (interpreted as solution cavities/voids in the Naco Formation and/or top of Redwall Limestone) between 970 and 1399 feet (see Rod Drop Intervals); drilling rate increased from 1400 to 1418 feet but when adding rod at 1419.0 feet, hole caved about 10 feet on bit, pulled rods and drilled through 10 to 20 feet of cave to 1461.0 feet with continual caving and water loss, source of caved material may be from about 920 feet (from geophysical logging); drilling suspended by ADWR while waiting for geophysical logger to arrive, downhole tool bridged at 920 feet, pulled tool and drillers went back in to clean hole; ran resistivity/SP tool in hole with some sidewall resistance at 1100 feet; determined saturated zone at 1380.0 feet, logged to 1456.0 feet. Drilling resumed May 30 using an air/foam drilling fluid, reamed in an additional 10 feet of 8-inch surface casing to 30.0 feet; encountered cave near the top of the hole and reamed a new bit back to 1461.0 feet; good drill foam return to 850 ft., lost fluid at 850 feet; drilled smoothly but without return at 1542 feet; drilled to 1710 feet with 3 rod drop intervals; drilled harder 1650 to 1660 feet and 1694 to 1703 feet; hole tight with caving around rods at 1729.0 feet, pulled 360 feet of rods and went back in; soft, fast drilling at 1748 feet and at 1768 to 1790 feet; had a 2 foot rod drop 1790.0 to 1792.0 feet, had trouble getting rods past 1790 feet (possibly from caving) but drilled to 1872 feet; terminated hole and geophysically logged hole using E-logs to 1779.0 feet, fluid level again measured at 1380.0 feet; neutron log showed cascading fluid at 170 feet and the temperature log showed no changes 1380 to 1790 feet, could not get induction or sonic probes past 1135.0 feet. **ROD DROP INTERVALS:** RECORDED EST. INTERVAL DISTANCE (ft.) 645.0- 650.0 3-5 982.0- 983.0 0.7 998.0- 999.0 0.7 1041.0-1042.0 1.0 1042.0-1042.5 0.5 1049.0-1051.0 2 1051.0-1053.0 2 1067.0-1071.0 1075.0-1078.0 1083.0-1086.0 1089.0-1090.0 1095.0-1098.0 1125.0-1128.0 1138.0-1141.0 1145.0-1148.0	1070 1080 1090 1100 1110 1120 1130 1140 1150 1160 1170 1180 1190 1200 1210 1220 1230 1240 1250 1260 1270 1280 1290 1300 1310 1320 1330 1340 1350 1360 1370 1380 1390 1400 1410 1420 1430 1440 1450 1460 1470 1480 1490 1500 1510 1520 1530 1540 1550 1560 1570 1580 1590 1600 1610 1620 1630	Naco 4486.0 Redwall	fragments of harder sandstone. Trace of chert and fine-grained conglomeratic sandstone fragments. 570 to 580 ft. Cuttings sample similar to 480 to 530 ft. interval with trace of medium-sand size limestone fragments. 580 to 650 ft. Cuttings sample consists of approx. 70% coarse-sand to trace of fine-gravel size fragments of fine-grained, light gray to light reddish-gray sandstone to siltstone with strong reaction with HCl; approx. 30% mostly medium-sand size fragments of moderate reddish-brown sandstone/siltstone. 600 to 620 ft. Cuttings samples similar to 580 to 650 ft. interval except predominantly subangular fragments of very fine-grained, grayish reddish-brown sandstone. 650 to 680 ft. Cuttings sample consists of approx. 80% medium- to coarse-sand size, predominantly angular to subangular, to subrounded fragments of fine-grained conglomeratic or lithic sandstone (composed of subangular to rounded, fine to medium sand in a matrix of calcium carbonate cemented fines); strong reaction with HCl. Approx. 10% is soft, subrounded fragments of moderate reddish-brown siltstone. Approx. 10% also consists of soft, subrounded fragments of olive green siltstone/claystone; no reaction with HCl. Trace of chert and limestone fragments. Overall, color of interval is grayish red. 660 to 670 ft. Cuttings sample similar to 650 to 680 ft. interval except approx. 65 to 70% conglomeratic sandstone fragments and approx. 20-25% siltstone. 670 to 680 ft. Cuttings sample similar to 660 to 670 ft. interval except 30% reddish brown siltstone fragments plus a few fragments of yellowish (ferruginous ?) quartz arenite and a fine-gravel size fragment of dark dolomite. 680 to 700 ft. Cuttings sample consists of approx. 85% mostly medium- to coarse-sand size, angular to subangular and occasionally subrounded fragments of moderate brown to moderate reddish-brown siltstone; strong reaction with HCl. Approx. 15% greenish-gray sandy limestone and olive green mudstone with a trace of conglomeritic sandstone. 700 to 760 ft. Cuttings samples consist of approx. 90% moderate brown siltstone and silty sandstone fragments and approx. 10% light greenish-gray, sometimes mottled limestone. 710 to 720 ft. Cuttings sample similar to 700 to 760 ft. interval plus a trace of conglomeritic sandstone and olive green siltstone fragments. 720 to 740 ft. Cuttings sample similar to 700 to 760 ft. interval plus a trace of ferruginous (?) sandstone fragments. 740 to 750 ft. Cuttings sample similar to 700 to 760 ft. interval plus a trace of limestone and olive green siltstone/claystone and fine-sand size, subrounded, hard fragments of yellowish claystone; may be caliche; moderate to strong reaction with HCl. 750 to 760 ft. Cuttings sample similar to 700 to 760 ft. interval

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GEOLOGIC LOG OF DRILL HOLE NO. NGCWPA-2000-01

SHEET 4 OF 4

FEATURE: Exploratory Borehole
LOCATION: Strawberry, AZ
BEGUN: 5/18/00 FINISHED: 6/2/00
DEPTH AND ELEV OF WATER LEVEL
AND DATE MEASURED: 1380.0 (4400.00) Based on geophysical data

PROJECT: Northern Gila Co. Water Plan Alliance
COORDINATES: N 452,214.0 E 3,806,900.0
TOTAL DEPTH: 1872.0
DEPTH TO BEDROCK: 30

STATE: Arizona
GROUND ELEVATION: 5780.0
ANGLE FROM HORIZONTAL: 90 AZIMUTH:
HOLE LOGGED BY: B. Prudhom, M. Miller
REVIEWED BY:

NOTES

1157.0-1159.0
1194.0-1197.0
1397.0-1399.0
1597.0-1598.0
1642.0-1644.0
1690.0-1693.0
1790.0-1792.0

CASING AND CEMENTING RECORD:

CS/CM (in.)	Depth (ft.)	Interval Drilled (ft.)
		0.0- 20.0
8-in.	0.0- 20.0	20.0- 650.0
CM	645.0- 650.0	645.0- 650.0
CM	645.5- 650.0	
CM	575.0- 650.0	575.0- 998.0
CM	973.0- 998.0	973.0-1004.0
CM	987.0-1004.0	987.0-1461.0
8-in.	20.0- 30.0	1461.0-1872.0
4-in.	0.0-1420.0	

DEPTH TO WATER DURING DRILLING:

Date (2000)	Depth to Water (ft.)	Hole Depth (ft.)
5/25	1380	1461
6/2	1380	1872

GEOPHYSICAL SURVEY DATA:
Hole geophysically logged on 5/26/00 (T. D. 1461.0 ft.) and on 6/2/00 (T.D 1872.0 ft.) by Southwestern Geophysical Surveys, Inc.; Geophysical tools used: E-log 0-1779 ft.; Dual Density 0-1790 ft.; Caliper 0- 1790 ft.; Induction 0-1456 ft.; Neutron 0-1790 ft.; Gamma 0-1790 ft.; Temperature 1380-1790 ft.; attempted Sonic, but could not get past 1135 ft.. Fluid level was at 1380 ft. for all tests.

SAMPLE DATA:
Cuttings collected by driller every 10 feet and placed in small waxed cloth sample bags from 20.0 to 970 feet; cuttings retained by Arizona Department of Water Resources (ADWR); cutting sample piles photographed. No cuttings sample returned below 970 feet.

HOLE COMPLETION:
Pulled rods; installed approx. 1420 ft. of 4 in. dia. casing; bottom 150 ft. slotted; welded cap on surface casing.

REASON FOR HOLE TERMINATION:
Drilling problems and budget limitations precluded drilling to 2500 feet or into granite basement rock; reached an adequate depth of 1872 feet.

ESTIMATED DRILLING TIME:

12-HR. Shifts	
Set-Up	1.0
Drilling	21.5
Down	0.5

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DEPTH | GEOLOGIC UNIT / ELEVATION

1640 1650 1660 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760 1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870

Redwall
4110.0

Martin?

3908.0
BOTTOM OF HOLE

CLASSIFICATION AND PHYSICAL CONDITION

except trace of limestone.

760 to 800 ft. Cuttings sample consists of approx. 95% predominantly medium-sand size, angular to subangular fragments of moderate brown siltstone and 5% olive green siltstone and dark limestone.

800 to 850 ft. Cuttings sample consists of approx. 85% moderate brown siltstone/silty sandstone fragments, 15% light grayish green limestone fragments, a trace of yellowish beige and ferruginous (?) sandstone, and a trace of hard limestone fragments; strong reaction with HCl. Note: A large amount of lost circulation material (LCM) seen in samples from about 800 feet.

830 to 840 ft. Cuttings sample similar to 800 to 850 ft. interval plus a trace of chert and calcium carbonate fragments.

850 to 870 ft. Cuttings samples consist predominantly of medium- to coarse-sand size, moderate brown silty sandstone and siltstone fragments; approx. 5% fine- to medium-sand size, light green limestone fragments, trace to 5% medium- to coarse-sand size, variable-colored fragments of clean sandstone and chert; no reaction with HCl.

870 to 970 ft. Cuttings samples consist of approx. 70% predominantly moderate brown, very fine-grained sandstone, silty sandstone, and siltstone fragments; approx. 30% medium-sand to trace of fine-gravel size, angular to subrounded, light greenish-gray limestone fragments and trace of chert and yellow orange ferruginous (?) sandstone fragments; moderate to strong reaction with HCl.

890 to 900 ft. Cuttings sample similar to 870 to 970 ft. interval plus several medium-sand size fragments of basalt.

900 to 920 ft. Cuttings samples similar to 870 to 970 ft. interval except 40% light greenish-gray, silty limestone fragments, no chert or volcanics, and one coarse-sand size fragment of soft, yellowish sandstone; weak to no reaction with HCl.

920 to 970 ft. Cuttings samples similar to 900 to 920 ft. interval except approx. 30% light greenish-gray limestone fragments.

1040 to 1294 ft. NACO FORMATION:
(Based on geophysical logs and regional stratigraphy).

No cuttings sample returned.

1294 to 1670 ft. REDWALL FORMATION
(Based on geophysical logs and regional stratigraphy).

No cuttings sample returned.

1670 TO 1872 ft. MARTIN (?) FORMATION
(Based on geophysical logs and regional stratigraphy).

No cuttings sample returned.

APPENDIX II

ADWR Sample Log of Strawberry Borehole

DEPTH	Percent Lithic Fragments	Maximum Fragment Size	% SS Frags	SS Color	SS Texture	% LS Frags	LS Color	% MS/STS Frags	MS/STS Color	Frag. Acid Reaction	Percent Fines	DESCRIPTION
0-10	3%	5mm	15%	Brown	Fine	15%	Red/Grey	70%	Red	M	97%	97% R/B Fines
10-20	0%					0%				No react	100%	100% R/B Fines
20-30	50%	10mm	60%	Buff	Fine	0%		40%	R/B	No react	50%	Gravelly silt w/ sandstone&mudstone gravel
30 - 40	50%	8mm	5%	Buff	Fine	0%		95%	R/B	No react	50%	R/B mudstone with no HCl rxn
40 - 50	50%	1.2cm	0%			0%		100%	R/B	No react	50%	R/B mudstone
50 - 60	50%	1.2cm	0%			0%		100%	R/B	No react	50%	R/B mudstone
60 - 70	75%	23mm	5%	Buff	Fine	0%		95%	R/B		25%	
70 - 80	65%	14mm	0%			0%		100%	R/B	M-S	35%	R/B mudstone
80 - 90	50%	15mm	0%			0%		100%	Buff-Grey	M	50%	5% mudstone/siltstone buff-grey
90-100	50%	15mm	0%			0%		100%	Buff-Grey	M	50%	5% mudstone/siltstone buff-grey
100-110	40%	6mm	0%			0%		100%	Light Grey	No react	60%	Brown mudstone fragments
110-120	60%	10mm	0%			0%		100%	Light Grey	M	40%	Brown with light grey siltstone lithics
120-130	60%	14mm	0%			0%		100%	Brown	W-M	40%	Brown with some light grey inclusions
130-140	50%	7mm	0%			0%		100%	Brown	W	50%	Brown
140-150	50%	10mm	0%			0%		100%	Lt brown	M-S	50%	Brown with traces of white carbonate lithicfragments
150-160	65%	15mm	0%			0%		100%	Lt brown	W-M	35%	Soft lt brown mudstone
160-170	70%	10mm	0%			0%		100%	Lt brown	M	30%	Limey mud/silt stone
180-190	80%	2mm	0%			0%		100%	Lt brown	M	20%	Brown with traces of calcareous inclusions
190-200	50%	12mm	0%			0%		100%	Lt brown	S	50%	Brown with traces of calcareous inclusions
200-210	50%	5mm	0%			0%		100%	B/G	S	50%	Brown grey with 50% calcareous lithic fragments
210-220	80%	10mm	0%			0%		100%	R/B	M-S	20%	Mudstone with carbonate inclusions
220-230	85%	8mm	0%			0%		100%	Lt brown	S	15%	Mudstone with carbonate inclusions
230-240	0%	0	0%			0%		0%		S	100%	mud with carbonate inclusions
240-250	0%	0	0%			0%		0%		M-S	100%	mud with carbonate inclusions
250-260	0%	0	0%			0%		0%		M-S	100%	mud with carbonate inclusions, inclusions larger than 230-250
260-270	3%	14mm	100%	Buff	Fine	0%		0%		M-S	97%	mudstone with gravel size ss
270-280	0%	0	0%			0%		0%		M	100%	mud with carbonate
280-290	0%	0	0%			0%		0%		S	100%	mud fines, more coarse than 270-280, less ca cement
290-300	0%	0	0%			0%		0%		M	100%	mud fines with few carbonate inclusions

DEPTH	Percent Lithic Fragments	Maximum Fragment Size	% SS Frags	SS Color	SS Texture	% LS Frags	LS Color	% MS/STS Frags	MS/STS Color	Frag. Acid Reaction	Percent Fines	DESCRIPTION
300-310	1%	12mm	0%			0%		100%	dk grey	W	99%	highly mud fines,
310-320	0%	0	0%			0%		0%		W	100%	mud fines, less hard than 310-320, no carbonate inclusions
320-330	4%	10mm	0%			0%		100%	red	M	96%	mud fines w/calcareous inclusions and one siltstone fragment
330-340	0%	0	0%			0%		0%		M	100%	mud fines w/few calcareous inclusions
340-350	4%	10mm	0%			0%		100%	R/B	M-S	96%	mud fines w/calcareous inclusions
350-360	10%	10mm	0%			20%	grey/green	80%	brown	M-S	90%	mud fines w/many calcareous inclusions w/ms & ls frags
360-370	0%	0	0%			0%		0%		M	100%	mud fines w/few calcareous inclusions
370-380	5%	5mm	0%			50%	lt grey	50%	R/B	M-S	95%	mud fines w/many calcareous inclusions up to 2mm
380-390	0%	0	0%			0%		0%		M	100%	mud fines w/moderate amount of calcareous inclusions
390-400	5%	10mm	0%			100%	lt grey	0%		M-S	95%	mud fines w/ large lithic fragments of limestone
400-410	80%	8mm	0%			13%	grey/green	87%	Brown	M	20%	mudstone and limestone litho fragments up to small gravel size
410-420	80%	13mm	0%			75%	green-red	25%	R/B	S	20%	mudstone composed of calcareous grains
420-430	90%	13mm	10%	lt yellow	Fine	5%	grey	95%	Brown	W-M	10%	mudstone with few quartzose and limestone fragments
430-440	95%	15mm	0%			20%	grey	80%	Dk. R/B	S	5%	Primarily calcareous Mudstone
440-450	95%	10mm	5%	Buff	Fine	5%	grey	95%	R/B	S	5%	Calcareous Mudstone with traces of quartzose sandstone and limestone
450-460	95%	13mm	0%			10%	grey	90%	R/B	S	5%	Calcareous Mudstone
460-470	95%	13mm	0%			10%	grey	90%	R/B	S	5%	Calcareous Mudstone
470-480	90%	14mm	0%			33%	grey	67%	R/B	S	10%	Calcareous Mudstone
480-490	90%	10mm	0%			11%	grey	89%	R/B	W-M	10%	Mudstone
490-500	75%	11mm	0%			40%	dk. Grey	60%	R/B	M	25%	Calcareous Mudstone
500-510	75%	15mm	0%			5%	lt grey	95%	R/B	S	25%	Calcareous Mudstone with mafic pieces
510-520	80%	11mm	0%			5%	lt grey	95%	R/B	S	20%	Calcareous Mudstone
520-530	80%	14mm	0%			5%	lt grey	95%	R/B	M-S	20%	Calcareous Mudstone
530-540	80%	14mm	0%			5%	lt grey	95%	R/B	M-S	20%	Calcareous Mudstone
540-550	50%	9mm	0%			50%	lt grey	50%	R/B	M-S	50%	sm litho fragments and calcareous inclusions
550-560	20%	5mm	0%			5%	lt grey	95%	R/B	M-S	80%	sm litho fragments and calcareous inclusions
560-570	20%	9mm	0%			33%	lt grey	66%	R/B	S	80%	mudstone w/many white powdery calcareous inclusions
570-580	20%	6mm	0%			50%	grey/green	50%	R/B	M-S	80%	mudstone w/many white powdery calcareous inclusions

DEPTH	Percent Lithic Fragments	Maximum Fragment Size	% SS Frags	SS Color	SS Texture	% LS Frags	LS Color	% MS/STS Frags	MS/STS Color	Frag. Acid Reaction	Percent Fines	DESCRIPTION
580-590	50%	10mm	80%	grey-brown	Fine	0%		20%	Brown	M	50%	platey ss/cong w/sand size calcareous grains+2 calcite crystal clusters
590-600	50%	12mm	80%	grey-brown	Fine	0%		20%	R/B	S	50%	platey sandstone/conglomerate consisting of sand size calcareous grains
600-610	60%	8mm	80%	grey-brown	Fine	0%		20%	R/B	M-S	40%	w/angular to subangular ss pieces, calcareous inclusions
610-620	60%	12mm	80%	grey-brown	Fine	5%	Green	15%	R/B	M-S	40%	w/angular to subangular ss pieces, calcareous inclusions
620-630	80%	10mm	90%	lt grey	Fine	0%		10%	R/B	M-S	20%	ss fragments in sandy matrix
630-640	80%	10mm	90%	lt grey	Fine	5%	grey/green	5%	R/B	M-W	20%	ss fragments in sandy matrix, with few ss & mudstone fragments
640-650	90%	10mm	100%	lt grey	Fine	0%		0%		M-W	10%	ss fragments in sandy matrix
650-660	90%	6mm	100%	grey-brown	Fine	0%		0%		W	10%	same as 630-650 w/smaller lithic fragments
660-670	95%	15mm%	95%	lt grey	Fine	0%		5%	Brown	W	5%	same as 630-650 w/smaller lithic fragments
670-680	95%	12mm	95%	grey/brown	Fine	0%		5%	Brown	W	5%	calcareous mudstone and ss
680-690	85%	15mm	85%	grey/brown	Fine	5%	grey/green10%	10%	Brown	M-W	15%	small fragments primarily ss w/few mudstone % ls fragments
690-700	95%	12mm	85%	Brown	Fine	10%	lt grey-green	5%	Brown	M-W	5%	small fragments primarily ss w/few mudstone % ls fragments
700-710	90%	14mm	45%	Brown	Fine	10%	green/grey	45%	R/B	W-M	10%	Gravelly size fragments of silty sandstone with pieces of limestone
710-720	90%	12mm	95%	R/B	Fine	5%	grey	0%		W	10%	Angular to sub-angular sandstone with a few limestone fragments
720-730	100%	11mm	100%	grey/brown	Fine	0%		0%		W	0%	Sub-angular sandstone
730-740	90%	13mm	70%	Brown	Fine	30%	white/red	0%		M-W	10%	Sub-angular sandstone w/ls fragments
740-750	95%	12mm	100%	Brown/ Red	Fine	0%		0%		M	5%	Sub-angular fine grain sandstone
750-760	100%	13mm	100%	Brown	Fine	0%		0%		W	0%	Sub-angular sandstone with a trace of limestone fragments
760-770	80%	10mm	0%			5%	lt brown	95%	B/G	M-S	20%	Primarily calcareous Mudstone
770-780	90%	10mm	0%			5%	grey/brown	95%	Brown	W	10%	Mudstone
780-790	90%	8mm	0%			5%	grey/brown	95%	Brown	M-S	10%	smaller lithic fragments than 770-780, calcareous mudstone
790-800	90%	8mm	0%			5%	grey/brow	95%	Brown	M-S	10%	same as 780-790
800-810	90%	12mm	0%			15%	grey	85%	grey/R/B	S	10%	mudstone w/ls lithic fragments
810-820	90%	12mm	5%	Buff	Fine	10%	grey/brown	85%	R/B	M-S	10%	mudstone w/few ls fragments
820-830	90%	8mm	5%	Buff	Fine	10%	grey/brown	85%	R/B	M-S	10%	mudstone w/few ls and ss fragments

DEPTH	Percent Lithic Fragments	Maximum Fragment Size	% SS Frags	SS Color	SS Texture	% LS Frags	LS Color	% MS/STS Frags	MS/STS Color	Frag. Acid Reaction	Percent Fines	DESCRIPTION
830-840	70%	14mm	5%	Brown	Fine	30%	Red/Grey/Brown	60%	R/B/Grey	M-S	30%	calcareous mudstone
840-850	70%	7mm	0%			40%	R/B/Grey	60%	R/B	M-S	30%	calcareous mudstone
850-860	100%	8mm	5%	yellow	Medium	10%	R/B/Grey	85%	R/B	M	0%	calcareous mudstone w/few quartzose ss lithic fragments
860-870	100%	11mm	5%	yellow	Medium	20%	R/B/Grey	75%	R/B	M	0%	calcareous mudstone w/few quartzose ss lithic fragments & ls fragments
870-880	100%	13mm	0%			10%	lt grey	90%	B/G	M	0%	calcareous mudstone
880-890	100%	13mm	0%			20%	grey/red	80%	R/B	M	0%	calcareous mudstone w/trace of quartzose fragments and few ls fragments
890-900	100%	9mm	0%			20%	grey/red	80%	R/B	M	0%	calcareous mudstone w/few ls fragments
900-910	100%	8 mm	0%			10%	lt grey	90%	R/B	M	0%	calcareous mudstone
910-920	100%	11mm	0%			10%	lt grey	90%	R/B	M	0%	calcareous mudstone
920-930	100%	8mm	0%			20%	lt grey/Brown	80%	R/B	M-S	0%	calcareous mudstone
930-940	95%	8mm	0%			0%		100%	R/B	W	5%	mudstone
940-950	100%	8mm	0%			10%	lt grey	90%	R/B	M	0%	mudstone
950-960	100%	14mm	0%			20%	grey/R/B	80%	R/B	M	0%	calcareous mudstone w/few ls fragments

Acid Reaction :

W = weak
M = medium
S = strong

Color: R/B = Red/Brown
G/B = Grey/Brown

Lithology : SS=Sandstone
LS=Limestone
STS=Siltstone
MS=Mudstone

"General Decision Number: AZ20220037 02/25/2022

Superseded General Decision Number: AZ20210037

State: Arizona

Construction Type: Heavy

Counties: Apache, Cochise, Gila, Greenlee and La Paz Counties in Arizona.

HEAVY CONSTRUCTION, Includes Water and Sewer Lines, Heavy Construction on Treatment Plant Sites and Pipeline Construction

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at https://www.dol.gov/agencies/whd/government-contracts.

Modification Number	Publication Date
0	01/07/2022
1	02/25/2022

BOIL0627-004 01/01/2021

	Rates	Fringes
BOILERMAKER	$ 36.07	30.59

ELEC0570-013 12/01/2021

	Rates	Fringes
ELECTRICIAN	$ 29.49	18%+6.00

ZONE DEFINITIONS-

Zone A: the area within a thirty-nine (39) mile radius from a base point at the Tucson Town Hall.
Zone B: 40 to 74 mile radius from the town hall in Tucson- an additional $ 3.50 per hour
Zone C: 75 mile radius from the town hall in Tucson to the outer limits of the geographic jurisdiction- an additional $ 7.50 per hour

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IRON0433-001 01/01/2014

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 33.50	26.80

LABO1184-011 06/01/2021

	Rates	Fringes
LABORER		
GROUP 4		
Jackhammer	$ 25.40	6.27

SUAZ2012-026 05/17/2012

	Rates	Fringes
LABORER: Common or General	$ 15.65	0.00
LABORER: Pipelayer	$ 20.00	0.00
OPERATOR: Loader (Front End)	$ 20.23	6.31
OPERATOR: Backhoe/Excavator/Trackhoe	$ 22.70	0.00
TRUCKDRIVER	$ 21.00	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that

no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

WATER INFRASTRUCTURE
FINANCE AUTHORITY OF ARIZONA

Douglas A. Ducey, Governor
Daniel A. Dialessi, Executive Director

Contract Packet

Governmental

Includes:

1. Contract Packet
2. AIS Sample Certification Letters
3. AIS and De Minimis Worksheet
4. Sample Wage Determination (Wage Decision Schedule)
5. Project Wage Rate Worksheet
6. Request for Authorization of Additional Classification and Rate (Wage Determination Request) form (SF1444) and instructions
7. Davis-Bacon poster (WH-1321) – English and Spanish versions
8. Payroll certification form (WH-347) and instructions
9. Employee Interview form and instructions
10. Construction Sign Specifications
11. Sample Disbursement Request form

A digital version of this packet is available for download at: https://www.azwifa.gov/contract-packet/

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

CONTRACT PACKET for Governmental Borrowers

This packet lists required contract conditions that apply to all Clean Water and Drinking Water Revolving Fund projects and contains forms that must be used in the procurement process. Please review this packet prior to bidding.

PLEASE NOTE

- **This packet, in its entirety, must be physically included in all bidding, solicitation and contract documents.**
- Use of American Iron and Steel (AIS) applies to this project.:
    - AIS includes the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
- Federal Davis-Bacon prevailing wages apply to this project.
    - Payment of the wages, fringe benefits and overtime rates is required.
    - The appropriate Federal (Davis-Bacon) Prevailing Wage Decision must be physically incorporated into the bidding and contract documents.
    - The construction category of Heavy (excluding dam construction) should typically be applied to all projects funded by WIFA. If you believe that a different category of wages, such as Building, should be applied to your project or portions of your project, please contact WIFA in advance.
    - Weekly certified payroll submittal is required under the Federal Davis-Bacon laws.
- Compliance with the Civil Rights Act and Equal Employment Opportunity is required.
- Promotion of Small, Minority and Women-owned Businesses and participation in EPA's Disadvantaged Business Enterprise (DBE) Program is required.
- Prohibition on Certain Telecommunication and Video Surveillance Services or Equipment.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Required Contract Conditions

This project is being financed in whole or in part by the Water Infrastructure Finance Authority of Arizona through the Clean Water or Drinking Water Revolving Fund. The loan recipient is required to comply with the following federal and state laws, rules and regulations and must ensure that their contractor(s) also comply(ies) with these regulations, laws and rules.

1. (i) Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352, 42 U.S.C. Sec. 2000d), (ii) the Rehabilitation Act of 1973 (Pub. L. 93-1123, 87 Stat. 355, 29 U.S.C. Sec. 794), (iii) the Age Discrimination Act of 1975 (Pub. L. 94-135 Sec. 303, 89 Stat. 713, 728, 42 U.S.C. Sec. 6102), (iv) Section 13 of the Federal Water Pollution Control Act (Pub. L. 92-500, 33 U.S.C. Sec. 1251), and subsequent regulations, ensures access to facilities or programs regardless of race, color, national origin, sex, age or handicap.

2. Equal Employment Opportunity (Executive Order 11246, as amended by Executive Orders 11375 and 12086 and subsequent regulations). Prohibits employment discrimination on the basis of race, color, religion, sex or national origin. Inclusion of the seven clauses in Section 202 of Executive Order 11246 as amended by Executive Orders 11375 and 12086 are required in all project related contracts and subcontracts over $10,000.

3. (i) Promoting the use of Small, Minority, and Women-owned Businesses (Executive Orders 11625, 12138 and 12432), (ii) Small Businesses Reauthorization & Amendment Act of 1988 (Section 129 of Pub. L. 100-590), (iii) Department of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1993 (Pub. L. 102-389, 42 U.S.C. Sec. 437d), and (iv) Title X of the Clean Air Acts Amendments of 1990 (Pub. L. 101-549, 42 U.S.C. Sec. 7601 note) ("EPA's 10% statute"). Encourages recipients to award construction, supply and professional service contracts to minority and women's business enterprises (MBE/WBE) and small businesses and requires recipients to utilize affirmative steps in procurement.

4. Participation by Disadvantaged Business Enterprises in Procurement under Environmental Protection Agency (EPA) Financial Assistance Agreements (40 C.F.R. Part 33).

5. Debarment and Suspension (Executive Order 12549). Prohibits entering into contracts or sub-contracts with individuals or businesses who are debarred or suspended. Borrowers are required to check the status of all contractors (construction and professional services) and must require contractors to check the status of subcontractors for contracts expected to be equal to or over $25,000 via this Internet address: https://www.sam.gov/SAM/.

6. E-Verify (A.R.S. § 41-4401). A governmental entity shall not award a contract to any contractor or subcontractor that fails to comply with A.R.S. § 23-214(A). Every government entity shall (i) ensure that every government entity contractor and subcontractor complies with the federal immigration laws and regulations that relate to their employees and A.R.S. § 23-214(A); (ii) require that every government entity contract include the required provisions listed under A.R.S. § 41-4401(A); and (iii) establish procedures to conduct random verification of the employment records of government entity contractors and subcontractors.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Use of American Iron and Steel

Public Law 113-76, enacted January 17, 2014

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

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

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

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

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

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

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

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

Highlights from EPA Guidance on Use of American Iron and Steel

Complete document available at http://water.epa.gov/grants_funding/aisrequirement.cfm

What is considered American Iron and Steel?

What is an iron or steel product?

For purposes of the CWSRF and DWSRF projects that must comply with the AIS requirement, an iron or steel product is one of the following made primarily of iron or steel that is permanently incorporated into the public water system or treatment works: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

What is a 'construction material' for purposes of the AIS requirement?

Construction materials are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered "structural steel". This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e., nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drains, cable hanging systems, manhole steps, fencing and fence tubing, guardrails, doors, and stationary screens.

What is NOT considered American Iron and Steel?

What is NOT considered a 'construction material' for purposes of the AIS requirement?

Mechanical and electrical components, equipment and systems are NOT considered construction materials. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system. The following examples (including their appurtenances necessary for their intended use and operation) are NOT considered construction materials: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, analytical instrumentation, and dewatering equipment.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Use of American Iron and Steel - De Minimis Waiver

Every water infrastructure project involves the use of thousands of miscellaneous, generally low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. For many of these incidental components, the country of manufacture and the availability of alternatives is not always readily or reasonably identifiable prior to procurement in the normal course of business; for other incidental components, the county of manufacture may be known but the miscellaneous character in conjunction with the low cost, individually and (in total) as typically procured in bulk, mark them as properly incidental.

Examples of incidental components could include small washers, screws, fasteners (i.e., nuts and bolts), miscellaneous wire, corner bead, ancillary tube, etc.

Example of items that are clearly not incidental include significant process fittings (i.e., tees, elbows, flanges, and brackets), distribution system fittings and valves, force main valves, pipes for sewer collection and/or water distribution, treatment and storage tanks, large structural support structures, etc.

EPA has established a public interest waiver for de minimis incidental components. This action permits the use of products when they occur in de minimis incidental components of such projects.

- Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5% of the total cost of the materials used in and incorporated into a project.
- The cost of an individual item may not exceed 1% of the total cost of the materials used in and incorporated into a project.

Assistance recipients who wish to use this waiver should in consultation with their contractors determine the items to be covered by this waiver and must retain relevant documentation (i.e., invoices) as to those items in their project files.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Davis-Bacon Contract Conditions (Federal Prevailing Wages)

PLEASE NOTE: Federal Davis-Bacon prevailing wages apply to this project. Payment of the wages, fringe benefits and overtime rates is required.

The "subrecipient" referred to throughout the Davis-Bacon contract conditions is the WIFA Borrower.

"WIFA" is the Water Infrastructure Finance Authority of Arizona, State Capitalization Grant recipient, recipient, or the Authority.

Wage Rate Requirements
(Also referred to as Attachment 6)

Preamble

With respect to the Clean Water and Drinking Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides subgrants or loans to eligible entities within the State. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section 3(3)(ii)(A) below and for compliance as described in Section 5.

Requirements for Subrecipients That Are Governmental Entities:
The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient will contact EPA. The recipient or subrecipient may also obtain additional guidance from DOL's web site at https://www.dol.gov/agencies/whd/government-contracts/construction.

1. Applicability of the Davis-Bacon prevailing wage requirements.
Davis-Bacon prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a Clean Water Revolving Fund and to any construction project carried out in whole or in part by assistance made available by a Drinking Water Revolving Fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the State recipient before authorizing work on that site.

2. Obtaining Wage Determinations.

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

(i) While the solicitation remains open, the subrecipient shall monitor https://beta.sam.gov/ weekly to ensure that the wage determination contained in the solicitation remains current. The subrecipient shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination 10 days or less prior to the closing date, the subrecipient may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.

(ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage

determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor https://beta.sam.gov/ on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from https://beta.sam.gov/ into the ordering instrument. Typically, the appropriate wage determination would be the one in effect on the date the task order, work assignment or similar instrument is awarded.

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

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

3. Contract and Subcontract provisions.

The recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of $2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in 29 CFR § 5.1, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 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 paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, https://beta.sam.gov/.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

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

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

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

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient(s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of

all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

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

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

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the recipient may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the

contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

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

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

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

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees -

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the Apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency

recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and subrecipient(s), the State recipient, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

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

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

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of 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 paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient**,** upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

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

5. Compliance Verification

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use WIFA's interview form, Department of Labor's Standard Form 1445, or equivalent documentation to memorialize the interviews. WIFA's interview form and instructions are included with this packet.

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

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate

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

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

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

Joe Ochab, EPA Region 9, 75 Hawthorne St. (P-22), San Francisco, CA 94105

Clean Water Revolving Fund
Drinking Water Revolving Fund

Equal Employment

Inclusion of these seven clauses (excerpt from Executive Order No. 11246, Section 202 as amended by Executive Order 11375 and 12086) is required in all CWRF and DWRF project related contracts and subcontracts over $10,000:

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

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, 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 by the contracting officer setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or worker's representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and all of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of Sept. 24, 1965, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in

Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of Sept. 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of Sept. 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 may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Disadvantaged Business Enterprises (DBE)

Good Faith Efforts

Borrowers and their prime contractors must follow, document, and maintain documentation of their good faith efforts as listed below to ensure that Certified Disadvantaged Business Enterprises* (DBEs) have the opportunity to participate in the project by increasing DBE awareness of procurement efforts and outreach.

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities; including placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitation for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
3. Consider in the contracting process whether firms competing for large contracts could be subcontracted with DBEs. This will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
5. Use the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U. S. Department of Commerce.
6. If the prime contractor awards subcontracts, require the prime contractor to take the steps in numbers 1 through 5 above.

Required Contract Conditions

These conditions must be included in all procurement contracts entered into by the Borrower for all DWRF and CWRF projects:

1. The prime contractor must pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the owner.
2. The prime contractor must notify the owner in writing prior to the termination of any Disadvantaged Business Enterprise subcontractor for convenience by the prime contractor.
3. If a Disadvantaged Business Enterprise contractor fails to complete work under the subcontract for any reason, the prime contractor must employ the six good faith efforts if soliciting a replacement contractor.
4. The prime contractor must continue to employ the six good faith efforts even if the prime contractor has achieved its fair share objectives.

5. A Borrower must ensure that each procurement contract it awards contains the following terms and conditions:

> The contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

** A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.*

*** More information about DBE requirements can be found at https://www.epa.gov/grants/frequently-asked-questions-disadvantaged-business-enterprises*

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Prohibition on Certain Telecommunication and Video Surveillance Equipment

Public Law 115-232, enacted August 13, 2020

WIFA borrowers must comply with regulations at 2 CFR 200.216, *Prohibition on certain telecommunication and video surveillance services or equipment*, implementing section 889 of Public Law 115-232. The regulation prohibits the use of Federal funds to procure (enter into, extend, or renew contracts) or obtain equipment, systems, or services that use "covered telecommunications equipment or services" identified in the regulation as a substantial or essential component of any system, or as critical technology as part of any system. Prohibitions extend to the use of Federal funds by recipients and subrecipients to enter into a contract with an entity that "uses any equipment, system, or service that uses covered telecommunications equipment or services" as a substantial or essential component of any system, or as critical technology as part of any system. Certain equipment, systems, or services, including equipment, systems, or services produced or provided by entities subject to the prohibition are recorded in the System for Award Management exclusion list (*https://sam.gov/SAM/*).

As described in section 889 of Public Law 115-232, covered telecommunications equipment or services includes:

- **Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).**
- For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other security purposes, **video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).**
- Telecommunications or video surveillance services provided by such entities or using such equipment.
- Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

There is no exhaustive list of components and services that fall under the prohibition. Borrowers and contractors should be particularly mindful of project components with internet or cellular connections. For example, automatic meter reading (AMR) technology and advanced metering infrastructure (AMI), instrumentation control systems (e.g. process control systems, distributed control systems and programmable logic controls), and security cameras and other electronic security measures. Items included in the prohibition are not eligible costs, and WIFA cannot reimburse borrowers for these costs.

SAMPLE Step Certification Letter (Processed/Manufactured)
Use of American Iron and Steel
Water Infrastructure Finance Authority of Arizona
CWSRF and DWSRF Funded Projects

The following information is provided as a sample letter of certification for AIS compliance (From March 20, 2014 EPA Memorandum American Iron and Steel Requirement Guidance).

Documentation must be provided on company letterhead.

Documentation should include the following five items:

- *Project name*
- *Product identification*
- *City and state where process took place*
- *Reference to American Iron and Steel Requirements as mandated by the EPA State Revolving Fund Programs.*
- *Signature*

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXX)

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

Item, Products and/or Materials:

1. XXXX
2. XXXX
3. XXXX

Such process took place at the following location: _CITY AND STATE_____

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

Signed by company representative

SAMPLE Step Certification Letter (Shipped/Provided)
Use of American Iron and Steel
Water Infrastructure Finance Authority of Arizona
CWSRF and DWSRF Funded Projects

The following information is provided as a sample letter of certification for AIS compliance (From March 20, 2014 EPA Memorandum American Iron and Steel Requirement Guidance).

Documentation must be provided on company letterhead.

Documentation should include the following five items:

- *Project name*
- *Product identification*
- *City and state where process took place*
- *Reference to American Iron and Steel Requirements as mandated by the EPA State Revolving Fund Programs.*
- *Signature*

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:
1. XXXX
2. XXXX
3. XXXX

Such process took place at the following location: _CITY AND STATE_____

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

Signed by company representative

American Iron and Steel Materials and De Minimis Worksheet

Rev: 03/2020

Water Infrastructure Finance Authority of Arizona

CWSRF and DWSRF Funded Projects

Visit EPA's Guidance Document for more information on American Iron and Steel Covered Products and De Minimis items.

Project:	
Total Materials Cost:	**$0.00**
Total Amount Covered Under De Minimis Waiver (incidental items):	**$0.00**
Percent (must be 5% or less of total materials cost):	**#DIV/0!**

Covered products include: Lined or unlined pipes or fittings; manhole covers; municipal castings; pipe clamps and restraints; valves; structural steel; hydrants, tanks; flanges; reinforced precast concrete; construction materials.

Products not subject to American Iron and Steel include mechanical and electrical equipment and related appurtances.

Incidental items are miscellaneous, generally low-cost items, often procured in bulk, such as washers, screws, fasteners, small amounts of wire, etc.

Product Classification ***(select from drop-down)***	**Product Description**	**Dollar Amount**	**Date Purchased**	**Supplier**	**AIS Documentation Received (covered products only)**

Guidance Document Viewer

De Minimis Exemption

On this page:

Section 1: Regulatory Text
- Section 2: Summary

Section 3: Examples
Section 4: Questions and Answers

Section 1: Regulatory Text

40 CFR §372.38(a):

> *"De minimis concentrations of a toxic chemical in a mixture. If a toxic chemical is present in a mixture of chemicals at a covered facility and the toxic chemical is in a concentration in the mixture which is below 1 percent of the mixture, or 0.1 percent of the mixture in the case of a toxic chemical which is a carcinogen as defined in 29 CFR 1910.1200(d)(4), a person is not required to consider the quantity of the toxic chemical present in such mixture when determining whether an applicable threshold has been met under §372.25 or determining the amount of release to be reported under §372.30. This exemption applies whether the person received the mixture from another person or the person produced the mixture, either by mixing the chemicals involved or by causing a chemical reaction which resulted in the creation of the toxic chemical in the mixture. However, this exemption applies only to the quantity of the toxic chemical present in the mixture. If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the mixture or in a mixture at higher concentrations, in excess of an applicable threshold quantity set forth in §372.25, the person is required to report under §372.30. This exemption does not apply to toxic chemicals listed in §372.28, except for purposes of §372.45(d)(1)."*

Section 2: Summary

The de minimis exemption allows covered facilities to disregard certain minimal concentrations of non-PBT chemicals in mixtures or trade name products. The de minimis exemption does not apply to the manufacture of a non-PBT chemical except if that toxic chemical is manufactured as an impurity and remains in the product distributed in commerce, or if the toxic chemical is imported below the appropriate de minimis level. The de minimis exemption does not apply to a byproduct manufactured coincidentally as a result of manufacturing, processing, otherwise use, or any waste management activities.

When determining whether the de minimis exemption applies to a listed non-PBT chemical, the owner/operator should consider only the concentration of the non-PBT chemical in mixtures and trade name products. If the non-PBT chemical is manufactured as an impurity, imported, processed, or otherwise used and is below the appropriate de minimis concentration level, then the quantity of the toxic chemical in that process stream does not have to be applied to threshold determinations nor included in release or other waste management calculations. If a non-PBT chemical in a mixture or trade name product is below the appropriate de minimis level, all releases and other waste management activities associated with the toxic chemical in the mixture or trade name product are exempt from EPCRA Section 313 reporting. It is possible to meet an activity (e.g., processing) threshold for a toxic chemical on a facility-wide basis, but not be required to calculate releases or other waste management quantities associated with a particular process because that process involves only mixtures or trade name products containing the toxic chemical below the de minimis level.

Once a non-PBT chemical concentration is above the appropriate de minimis level in mixture or trade name product, threshold determinations and release and other waste management calculations must be made, even if the chemical later falls below the de minimis level in the same mixture or trade name prodct. Thus, all releases and other quantities managed as waste that occur after the de minimis level has been exceeded are subject to reporting. If a non-PBT chemical in a mixture or trade name product above de minimis is brought on-site, the de minimis exemption never applies.

The 0.1 percent de minimis levels are dictated by determinations made by the National Toxicology Program (NTP), Annual Report on Carcinogens, the International Agency for Research and Cancer (IARC) ADDENDUM EPCRA Section 313 Questions and Answers Addendum 32 Monographs, or 29 CFR part 1910, subpart Z. Therefore, once a chemicals status under NTP, IARC, or 29 CFR part 1910, subpart Z indicates that the chemical is a carcinogen or potential carcinogen, the reporting facility may disregard levels of the chemical below the 0.1 percent de minimis concentration provided that the other criteria for the de minimis exemption is met. De minimis levels for chemical categories apply to the total concentration of all chemicals in the category within a mixture, not the concentration of each individual category member within the mixture. All other listed toxic chemicals have a one percent (1.0 percent) de minimis level.

Section 2.1: De Minimis Application to the Processing or Otherwise Use of a Mixture

The de minimis exemption applies to the processing or otherwise using, of a listed non-PBT chemical in a mixture. Threshold determinations and release and other waste management calculations begin at the point where the chemical exceeds de minimis. If a listed non-PBT chemical is present in a mixture at a concentration below the de minimis level, this quantity of the substance does not

have to be included for threshold determination, release and other waste management reporting. The exemption will apply as long as the mixture containing de minimis amounts of a non-PBT chemical never goes above the de minimis limit. Also, see the two examples below in which a manufacturing activity would qualify for the de minimis exemption.

Section 2.1.1: Examples of Process and Otherwise Use Scenarios

There are many cases in which the de minimis limit is crossed or recrossed within a process or otherwise use scenario. The following examples are meant to illuminate these complex reporting scenarios. These applications are further described in the general section of the Toxic Chemical Release Inventory Reporting Forms and Instructions.

Section 2.1.1.1: A. Example of Increasing Process Concentration to Above De Minimis Levels

A manufacturing facility receives toluene which contains less than the de minimis concentration of chlorobenzene. Through distillation, the chlorobenzene content in process streams is increased over the de minimis concentration of 1 percent. From the point at which the chlorobenzene concentration exceeds 1 percent in process streams, the amount present must be factored into threshold determinations and release and other waste management calculations. The facility does not need to consider the amount of chlorobenzene in the raw material, i.e., when below de minimis levels, when making threshold determinations. The facility does not have to report emissions of chlorobenzene from storage tanks or any other equipment where the chlorobenzene content is less than 1 percent.

Section 2.1.1.2: B. Example of Fluctuating Process Concentration

A manufacturer produces an ink product which contains toluene, a listed toxic chemical below the de minimis level. The process used causes the percentage of toluene in the mixture to fluctuate: it rises above the de minimis level for a time but drops below the level as the process winds down. The facility must consider the chemical toward threshold determinations from the point at which it first exceeds the de minimis limit. Once the de minimis limit has been crossed the exemption cannot be taken.

Section 2.1.1.3: C. Example of Concentration Levels that Straddle the De minimis Level

A facility processes 9,500,000 lbs. of mixtures containing 0.25–1.25 percent manganese. Manganese is subject to 1 percent de minimis concentration exemption. The amount of mixture subject to reporting is:

9,500,000 × (1.2 - 0.99)/(1.2 - 0.25) = 2,000,000 lbs. non-exempt mixture

The average concentration above de minimis is 1.1 percent.

2,900,000 × 0.011 manganese = 22,000 lbs manganese (below threshold)

In this example, because the facility's information pertaining to the toxic chemical is available to two digits past the decimal point, the facility used 0.99 to determine the amount of the toxic chemical below the de minimis level. If the facility has information pertaining to the chemical that is available only to one digit past the decimal point, the facility should use 0.9.

Section 2.2: De Minimis Application in the Manufacture of the Listed Chemical in a Mixture

De Minimis Application in the Manufacture of the Listed Chemical in a Mixture The de minimis exemption generally does not apply to the manufacture of a non-PBT chemical. The de minimis exemption may apply to mixtures and trade name products containing non-PBT chemicals that are imported into the United States. Another exception applies to non-PBT chemicals that are coincidentally manufactured as impurities that remain in the product distributed in commerce at below the de minimis levels. In that case, the amount remaining in the product is exempt from threshold determinations. If the non-PBT chemical is separated from the final product, thereby classifying the chemical as a byproduct, it cannot qualify for the exemption. Any amount that is separated, or is separate from the product, is considered a byproduct and is subject to threshold determinations and release and other waste management calculations. Any amount of a toxic chemical that is manufactured in a wastestream must be accounted for on the Form R.

Section 2.2.1: Examples of Coincidental Manufacture Scenarios

Section 2.2.1.1: A. Example of Coincidental Manufacture as a Product Impurity

Toluene 2,4-diisocyanate reacts with water to form trace quantities of 2,4-diaminotoluene. The resulting product contains 99 percent toluene 2,4-diisocyanate and 0.05 percent 2,4-diaminotoluene. The 2,4-diaminotoluene would not be subject to Section 313 reporting nor would supplier notification be required because the concentration of 2,4-diaminotoluene is below its de minimis concentration of 0.1 percent in the product. Coincidental manufacture/production refers only to production of a chemical via a chemical reaction. It would not include separation of a byproduct from a purchased mixture during a processing operation.

Section 2.2.1.2: B. Example of Coincidental Manufacture as a Commercial Byproduct and Impurity

Chloroform is a reaction byproduct in the production of carbon tetrachloride. It is removed by distillation to a concentration of less than 150 ppm (0.0150 percent) remaining in the carbon tetrachloride. The separated chloroform at 90 percent concentration is sold as a byproduct. Chloroform is subject to a 0.1 percent (1,000 ppm) de minimis level. Any amount of chloroform manufactured and separated as byproduct must be included in threshold determinations because the de minimis exemption does not apply to manufacture of a chemical byproduct. Releases of chloroform prior to and during purification of the carbon tetrachloride should be reported. The de minimis level can, however, be applied to the chloroform remaining in the carbon tetrachloride as an impurity. Because the concentration of chloroform remaining in the carbon tetrachloride is below the de minimis level, this quantity of chloroform is exempt from threshold determinations, release and other waste management reporting, and supplier notification.

Section 2.2.1.3: C. Example of Coincidental Manufacture as a Waste Byproduct

A small amount of formaldehyde is manufactured as a reaction byproduct during the production of phthalic anhydride. The formaldehyde is separated from the phthalic anhydride as a waste gas and burned, leaving no formaldehyde in the phthalic anhydride. The amount of formaldehyde produced and removed as waste must be included in threshold determinations and release and other waste management calculations even if the formaldehyde is present below the de minimis level in the process stream where it was manufactured or in the wastestream which it was separated.

The de minimis exemption also does not apply to situations where the manufactured chemical is released or transferred to wastestreams and thereby diluted to below the de minimis level.

Section 2.3: De Minimis Levels Impact Supplier Notification Requirements

If the toxic chemical in a mixture or trade name product is present below the de minimis level for that toxic chemical, supplier notification is not required for that chemical regardless of whether or not it is a PBT chemical.

Section 3: Examples

Example 5: De Minimis Applications to Process and Otherwise Use Scenarios for Non-PBT Chemicals

Example 5: De Minimis Applications to Process and Otherwise Use Scenarios for Non-PBT Chemicals

There are many cases in which the *de minimis* "limit" is crossed or re-crossed by non-PBT chemicals within a process or otherwise use scenario. The following examples are meant to illustrate these complex reporting scenarios.

Increasing Concentration to or Above *De Minimis* Levels During Processing for Non-PBT Chemicals

A manufacturing facility receives toluene that contains chlorobenzene at a concentration below its *de minimis* limit. Through distillation, the chlorobenzene content in process streams is increased over the *de minimis* concentration of 1 percent. From the point at which the chlorobenzene concentration equals 1 percent in process streams, the amount present must be factored into threshold determinations and release and other waste management estimates. The facility does not need to consider the amount of chlorobenzene in the raw material when below *de minimis* levels, i.e., prior to distillation to 1 percent, when making threshold determinations. The facility does not have to report emissions of chlorobenzene from storage tanks or any other equipment associated with that specific process where the chlorobenzene content is less than 1 percent.

Fluctuating Concentration During Processing for Non-PBT Chemicals

A manufacturer produces an ink product that contains toluene, an EPCRA Section 313 chemical, below the de minimis level. The process used causes the percentage of toluene in the mixture to fluctuate: it rises above the *de minimis* level for a time but drops below the level as the process winds down. The facility must consider the chemical toward threshold determinations from the point at which it first equals the *de minimis* limit. Once the de minimis limit has been met the exemption cannot be taken.

Example 6: Concentration Ranges Straddling the De Minimis Value

Example 6: Concentration Ranges Straddling the De Minimis Value

Scenario 1: A facility processes 8,000,000 pounds of a mixture containing 0.25 to 1.25 percent manganese. Manganese is eligible for the *de minimis* exemption at concentrations up to 1 percent. The amount of mixture subject to reporting is the quantity containing manganese at or above the *de minimis* concentration:

[(8,000,000) × (1.25% - 0.99%)] ÷ (1.25% - 0.25%)

The average concentration of manganese that is not exempt (above the *de minimis*) is:

(1.25% + 1.00%) ÷ (2)

Therefore, the amount of manganese that is subject to threshold determination and release and other waste management estimates is:

$$\left[\frac{(8{,}000{,}000)\times(1.25\%-0.99\%)}{(1.25\%-0.25\%)}\right]\times\left[\frac{(1.25\%+1.00\%)}{(2)}\right]=23{,}400\,pounds$$

= 23,400 pounds manganese (which is below the processing threshold for manganese)

In this scenario, because the facility's information pertaining to manganese was available to two decimal places, 0.99 was used to determine the amount below the *de minimis* concentrations. If the information was available to one decimal place, 0.9 should be used, as in the scenario below.

Scenario 2: As in the previous example, manganese is present in a mixture, of which 8,000,000 pounds is processed. The SDS states the mixture contains 0.2 percent to 1.2 percent manganese. The amount of mixture subject to reporting (at or above *de minimis* limit) is:

[(8,000,000) × (1.2% - 0.9%)] ÷ (1.2% - 0.2%)

The average concentration of manganese that is not exempt (at or above *de minimis* limit) is:

(1.2% + 1.0%) ÷ (2)

Therefore, the amount of manganese that is subject to threshold determinations and release and other waste management estimates is:

$$\left[\frac{(8{,}000{,}000)\times(1.2\%-0.9\%)}{(1.2\%-0.2\%)}\right]\times\left[\frac{(1.2\%+1.0\%)}{(2)}\right]=26{,}400\,pounds$$

= 26,400 pounds manganese (which is above the processing threshold for manganese)

Example 6: Concentration Ranges Straddling the De Minimis Value

Example 7: De Minimis Application in the Manufacture of a Toxic Chemical in a Mixture

Manufacture as a Product Impurity

Toluene 2,4 diisocyanate reacts with trace amounts of water to form trace quantities of 2,4-diaminotoluene. The resulting product contains 99 percent toluene 2,4-diisocyanate and 0.05 percent 2,4-diaminotoluene. The 2,4 diaminotoluene would not be subject to EPCRA Section 313 reporting nor would supplier notification be required because the concentration of 2,4- diaminotoluene is below its *de minimis* limit of 0.1 percent in the product.

Manufacture as a Commercial Byproduct and Impurity

Chloroform is a reaction byproduct in the production of carbon tetrachloride. It is removed by distillation to a concentration of less than 150 ppm (0.0150 percent) remaining in the carbon tetrachloride. The separated chloroform at 90 percent concentration is sold as a byproduct. Chloroform is subject to a 0.1 percent (1000 ppm) *de minimis* limit. Any amount of chloroform manufactured and separated as byproduct must be included in threshold determinations because EPA does not interpret the *de minimis* exemption to apply to the manufacture of a chemical as a byproduct. Releases of chloroform prior to and during purification of the carbon tetrachloride must be reported. The *de minimis* exemption can, however, be applied to the chloroform remaining in the carbon tetrachloride as an impurity. Because the concentration of chloroform remaining in the carbon tetrachloride is below the *de minimis* limit, this quantity of chloroform is exempt from threshold determinations, release and other waste management reporting, and supplier notification.

Manufacture as a Waste Byproduct

A small amount of formaldehyde is manufactured as a reaction byproduct during the production of phthalic anhydride. The formaldehyde is separated from the phthalic anhydride as a waste gas and burned, leaving no formaldehyde in the phthalic anhydride. The amount of formaldehyde produced and removed must be included in threshold determinations and release and other waste management estimates even if the formaldehyde were present below the *de minimis* level in the process stream where it was manufactured or in the waste stream to which it was separated because EPA does not interpret mixtures and trade name products to includes wastes.

Section 4: Questions and Answers

TEST

When *de minimis* may Apply (Q&A #)	When *de minimis* does not Apply (Q&A #)
• Question Number 246: Impurity; Process • Question Number 265: De minimis Exemption; Solvent Recovery • Question Number 299: Otherwise Use • Question Number 410: De minimis Exemption; Mixture; Trade Name • Question Number 413: De minimis Exemption; Release Reporting • Question Number 430: Ash; De minimis Exemption; Otherwise Use • Question Number 433: De minimis Exemption; Waste • Question Number 434: Ash; De minimis • Question Number 593: Release Reporting; Releases; Storage	• Question Number 248: Activity Threshold; Coincidental Manufacturing • Question Number 265: De minimis Exemption; Solvent Recovery • Question Number 410: De minimis Exemption; Mixture; Trade Name • Question Number 412: Coincidental Manufacturing; De minimis Exemption; Impurity • Question Number 423: De minimis Exemption; Manufacture; Threshold Determination; Wastewater Treatment • Question Number 425: Ammonia; De minimis Exemption • Question Number 427: De minimis Exemption • Question Number 429: De minimis Exemption; Otherwise Use; Waste Stream • Question Number 435: De minimis Exemption; Waste • Question Number 492: Air Releases; De minimis Exemption; Storage Tanks • Question Number 594: Otherwise Use

No Previous Section | Table of Contents | Guidance Document List | No Next Section

General Decision Number: AZ120010 03/30/2012 AZ10

Superseded General Decision Number: AZ20100010

State: Arizona

Construction Type: Heavy

Counties: Coconino, Maricopa, Mohave, Pima, Pinal and Yuma Counties in Arizona.

HEAVY CONSTRUCTION PROJECTS (excluding dam construction)

Modification Number	Publication Date
0	01/06/2012
1	03/30/2012

* BOIL0627-004 01/01/2012

	Rates	Fringes
BOILERMAKER	$ 31.39	25.46

CARP0408-003 07/01/2011

	Rates	Fringes
CARPENTER (Including Cement Form Work)	$ 23.58	8.49
PILEDRIVERMAN	$ 24.08	8.49

ELEC0518-005 08/01/2010

PINAL COUNTY (North of the line, "First Standard Parallel South", and East of the line, "Second Guide Meridian East".

	Rates	Fringes
Electrician/Wireman	$ 24.25	9.67

ELEC0570-001 12/01/2011

PIMA, PINAL [Remaining Southern Area], and YUMA COUNTIES

	Rates	Fringes
Electrician/Wireman	$ 23.75	18%+4.70

ZONE DEFINITIONS-

Zone A: the area within a twenty-nine (29) mile radius from a basing point at the Tucson Town Hall.
Zone B: 29 to 46 mile radius from the town hall in Tucson- an additional $ 1.25 per hour
Zone C: 47 mile radius from the town hall in Tucson to the outer limits of the geographic jurisdiction- an additional $ 3.75 per hour

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ELEC0611-005 11/01/2011

APACHE COUNTY [Area North of Highway 66]

	Rates	Fringes
Electrician/Wireman		
Zone 1	$ 29.30	3%+8.68

ZONE 1: 0 to 10 miles from Gallup, NM
ZONE 2: 10 to 30 miles from Gallup - Add 9%
ZONE 3: 30 to 40 miles from Gallup - Add 15%
ZONE 4: Over 40 miles from Gallup - Add 26%

ELEC0640-001 06/21/2011

COCONINO; MARICOPA; MOHAVE COUNTIES; and the following portion of PINAL COUNTY (Area lying North andWest of the boundary line beginning at a point where Papago Indian Reservation Road No.15 crosses the Pima-Pinal County line, then extending in a

Northeasterly direction on Papago Indian Reservation Road No. 15 to the intersection with Highway FAS-267, extending North on Highway FAS-267 to the intersection with the Florence Canal, North and East on the Florence Canal to the intersection of the line "Second Guide Meridian East" then North to the Pinal-Maricopa County lines)

	Rates	Fringes
Electrician/Wireman	$ 25.01	3%+7.50

ELEC0769-001 05/01/2011

	Rates	Fringes
Line Construction:		
Cable Splicer	$ 42.24	19%+5.04
Groundman	$ 22.32	19%+5.04
Lineman	$ 38.48	19%+5.04
Powderman	$ 27.13	19%+5.04
Technician, Crane 80 Ton & over, Pilot	$ 37.39	19%+5.04

Equipment Operator: 75% of Lineman rate.
HD Equipment Operator: 85% of Lineman rate.
Mechanic: 75% of Lineman rate.

ENGI0428-013 06/01/2010

	Rates	Fringes
Power Equipment Operator		
(2) Asphalt Roller	$ 25.22	9.79

IRON0075-007 08/01/2011

	Rates	Fringes
Ironworker		
Rebar & Structural	$ 26.52	19.35

Zone 1: 0 to 50 miles from City Hall in Phoenix or Tucson
Zone 2: 050 to 100 miles - Add $4.00
Zone 3: 100 to 150 miles - Add $5.00
Zone 4: 150 miles & over - Add $6.50

LABO0383-008 06/01/2010

	Rates	Fringes
Laborers		
(2) Concrete Worker	$ 18.63	4.35
(3) Power tools	$ 19.42	4.35
(6) Construction Specialist	$ 19.39	4.35

PLUM0469-004 07/01/2011

ZONE A: COCONINO, MARICOPA, MOHAVE & YUMA COUNTIES

ZONE B: PIMA AND PINAL COUNTIES

	Rates	Fringes
PLUMBER		
Zone A	$ 32.50	15.15
Zone B	$ 32.50	15.15

INDUSTRIAL WORK: Add $6.00 to basic hourly rate

SHEE0359-002 08/01/2011

PIMA and PINAL (South of the 33rd Parallel) COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC)		
Zone 1	$ 29.55	14.05

SHEE0359-003 08/01/2011

COCONINO, MARICOPA, MOHAVE, PINAL (North of the 33rd Parallel), and YUMA COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC)	$ 29.55	14.05

SUAZ2004-007 03/04/2004

	Rates	Fringes
Cement Mason/Finisher	$ 17.18	2.12
Laborers		
General/Cleanup	$ 10.32	0.00
Pipelayer	$ 11.11	1.74
MILLWRIGHT	$ 16.97	3.40
Power Equipment Operator		
Backhoe	$ 16.82	2.52
Blade/Grader	$ 14.45	2.45
Crane	$ 20.76	4.42
Excavator	$ 18.00	0.00
Loader	$ 16.67	2.14
Scraper	$ 12.91	1.68
Sound & Communication Technician	$ 22.00	0.00
TRUCK DRIVER		
Dump	$ 12.13	1.16
Flatbed Utility	$ 12.50	1.48
Water Truck	$ 11.91	1.32

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

WIFA PROJECT WAGE RATE WORKSHEET

The construction category of Heavy (excluding dam construction) should typically be applied to all projects funded by WIFA. If you believe that a different category of wages, such as Building, should be applied to your project or portions of your project, please contact WIFA in advance.

PROJECT NAME:	WAGE DECISION NUMBER AND DATE:
WIFA PROJECT NUMBER:	PROJECT COUNTY:

WORK CLASSIFICATION	BASIC HOURLY RATE	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE

ADDITIONAL CLASSIFICATIONS NEEDED (DOL FORM SF-1444)

WORK CLASSIFICATION	BASIC HOURLY RATE	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE	DATE OF WIFA SUBMISSION TO DOL	DATE OF DOL APPROVAL

SF 1444 Instructions
Request for Additional Classification and Wage Rate Form

Attached is a copy of the federal standard form 1444, Request for Authorization of Additional Classification and Wage Rate. This form must be submitted when a wage classification is not listed on the applicable wage decision. The classification and wage rate submitted on the form should bear a reasonable likeness to similar skill classifications listed in the federal wage determination.

The prime contractor is responsible for the completion and submission of this form. The following are the procedures for the completion and submission of the form:

1. Check "Construction Contract" in the upper right-hand corner.

Box 2. Insert the following information:
Water Infrastructure Finance Authority of Arizona
(WIFA) 100 N. 7th Ave., Ste. 130
Phoenix, AZ 85007

Box 3. Prime contractor's name.

Box 4. Date the prime contractor submitted the form to WIFA.

Box 5. Contract number.

Box 6. Date the bid was opened, if applicable.

Box 7. Date the contract was awarded.

Box 8. Actual date the contractor will be starting or started work.

Box 9. (This box is not applicable.)

Box 10. List all subcontractors that will utilize the labor classification listed in box 13a. If none, enter "N/A."

Box 11. Project title and a brief description of the project.

Box 12. Include both the city and county, as well as Arizona.

Box 13. Federal "General Decision Number" (e.g. AZ00009) and the date.

Box 13a. List all classifications not covered by the federal wage determination, which are utilized by either the prime or the subcontractor(s).

Box13b. The wage rate should bear a reasonable likeness to the category classification wage rates (equipment operators, laborers, truck drivers, etc.) listed in the federal wage determination.

Box 13c. The fringe rate should bear a reasonable likeness to the category classification fringe rates (equipment operators, laborers, truck drivers, etc.) listed in the federal wage determination.

Box 14. If there is a subcontractor listed on line 10, its representative signs on this line.

Box 15. The prime contractor's representative must sign on this line.

Box 16. If the contractor has a specific employee who will be performing the labor classification(s) listed in box 13a, or if the employees' have legal representation (union, etc.), they should sign this line and include their title. If no specific employee is identified to perform work under the listed classification(s), then write "unknown" in the box. The "Agree" or "Disagree" boxes are checked by anyone signing in boxes 14, 15, and 16.

The contractor will make a copy of the completed signed form and submit the original to WIFA (not required to be in quadruplicate).

WIFA will complete the section below the heavy line TO BE COMPLETED BY CONTRACTING OFFICER and submit it to DOL and EPA. Typically DOL responds in 30 days. WIFA will send the borrower a copy of the approved wage classification.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND RATE

CHECK APPROPRIATE BOX
☐ SERVICE CONTRACT
☐ CONSTRUCTION CONTRACT

OMB Control Number: 9000-0066
Expiration Date: 4/30/2022

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 U.S.C. § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0066. We estimate that it will take .5 hours to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: U.S. General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.

INSTRUCTIONS: THE CONTRACTOR SHALL COMPLETE ITEMS 3 THROUGH 16, KEEP A PENDING COPY, AND SUBMIT THE REQUEST, IN QUADRUPLICATE, TO THE CONTRACTING OFFICER.

1. **TO:** ADMINISTRATOR, WAGE AND HOUR DIVISION U.S. DEPARTMENT OF LABOR WASHINGTON, DC 20210	2. **FROM:** *(REPORTING OFFICE)*
3. CONTRACTOR	4. DATE OF REQUEST

5. CONTRACT NUMBER	6. DATE BID OPENED *(SEALED BIDDING)*	7. DATE OF AWARD	8. DATE CONTRACT WORK STARTED	9. DATE OPTION EXERCISED (If *APPLICABLE) (SERVICE CONTRACT ONLY)*

10. SUBCONTRACTOR *(IF ANY)*

11. PROJECT AND DESCRIPTION OF WORK *(ATTACH ADDITIONAL SHEET IF NEEDED)*

12. LOCATION (*CITY, COUNTY, AND STATE)*

13. IN ORDER TO COMPLETE THE WORK PROVIDED FOR UNDER THE ABOVE CONTRACT, IT IS NECESSARY TO ESTABLISH THE FOLLOWING RATE(S) FOR THE INDICATED CLASSIFICATION(S) NOT INCLUDED IN THE DEPARTMENT OF LABOR DETERMINATION

NUMBER: _____ DATED: _____

a. LIST IN ORDER: PROPOSED CLASSIFICATION TITLE(S); JOB DESCRIPTION(S); DUTIES; AND RATIONALE FOR PROPOSED CLASSIFICATIONS *(Service contracts only)*	b. WAGE RATE(S)	c. FRINGE BENEFITS PAYMENTS
(Use reverse or attach additional sheets, if necessary)		

14. SIGNATURE AND TITLE OF SUBCONTRACTOR REPRESENTATIVE *(IF ANY)*	15. SIGNATURE AND TITLE OF PRIME CONTRACTOR REPRESENTATIVE	
16. SIGNATURE OF EMPLOYEE OR REPRESENTATIVE	TITLE	CHECK APPROPRIATE BOX-REFERENCING BLOCK 13. ☐ **AGREE** ☐ **DISAGREE**

TO BE COMPLETED BY CONTRACTING OFFICER *(CHECK AS APPROPRIATE - SEE FAR 22.1019 (SERVICE CONTRACT LABOR STANDARDS) OR FAR 22.406-3 (CONSTRUCTION WAGE RATE REQUIREMENTS))*

☐ THE INTERESTED PARTIES AGREE AND THE CONTRACTING OFFICER RECOMMENDS APPROVAL BY THE WAGE AND HOUR DIVISION. AVAILABLE INFORMATION AND RECOMMENDATIONS ARE ATTACHED.

☐ THE INTERESTED PARTIES CANNOT AGREE ON THE PROPOSED CLASSIFICATION AND WAGE RATE. A DETERMINATION OF THE QUESTION BY THE WAGE AND HOUR DIVISION IS THEREFORE REQUESTED. AVAILABLE INFORMATION AND RECOMMENDATIONS ARE ATTACHED.

(Send 3 copies to the Department of Labor)

SIGNATURE OF CONTRACTING OFFICER OR REPRESENTATIVE	TITLE AND COMMERCIAL TELEPHONE NUMBER	DATE SUBMITTED

EMPLOYEE RIGHTS

UNDER THE DAVIS-BACON ACT

FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

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:

Water Infrastructure Finance Authority of Arizona
100 N. 7th Ave. Suite 130
Phoenix, AZ 85007

Tel: (602) 364-1310
Fax: (602) 364-1327

or contact the U.S. Department of Labor's Wage and Hour Division.

WAGE AND HOUR DIVISION
UNITED STATES DEPARTMENT OF LABOR

1-866-487-9243
TTY: 1-877-889-5627
www.dol.gov/whd

WH1321 REV 10/17

DERECHOS DEL EMPLEADO
BAJO LA LEY DAVIS-BACON

PARA OBREROS Y MECÁNICOS EMPLEADOS EN PROYECTOS DE CONSTRUCCIÓN FEDERAL O CON ASISTENCIA FEDERAL

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:

Water Infrastructure Finance Authority of Arizona
100 N. 7th Ave. Suite 130
Phoenix, AZ 85007

Tel: (602) 364-1310
Fax: (602) 364-1327

o póngase en contacto con la División de Horas y Salarios del Departamento de Trabajo de los EE.UU.

DIVISIÓN DE HORAS Y SALARIOS
DEPARTAMENTO DE TRABAJO DE LOS EE.UU.

1-866-487-9243
TTY: 1-877-889-5627
www.dol.gov/whd

WH1321 SPA REV 10/17

Instructions For Completing Payroll Form, WH-347

- WH-347 (PDF)
  OMB Control No. 1235-0008, Expires 04/30/2021.

General: Form WH-347has been made available for the convenience of contractors and subcontractors required by their Federal or Federally-aided construction-type contracts and subcontracts to submit weekly payrolls. Properly filled out, this form will satisfy the requirements of Regulations, Parts 3 and 5 (29 C.F.R., Subtitle A), as to payrolls submitted in connection with contracts subject to the Davis-Bacon and related Acts.

While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) requires contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) Regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Under the Davis-Bacon and related Acts, the contractor is required to pay not less than prevailing wage, including fringe benefits, as predetermined by the Department of Labor. The contractor's obligation to pay fringe benefits may be met either by payment of the fringe benefits to bona fide benefit plans, funds or programs or by making payments to the covered workers (laborers and mechanics) as cash in lieu of fringe benefits.

This payroll provides for the contractor to show on the face of the payroll all monies to each worker, whether as basic rates or as cash in lieu of fringe benefits, and provides for the contractor's representation in the statement of compliance on the payroll (as shown on page 2) that he/she is paying for fringe benefits required by the contract and not paid as cash in lieu of fringe benefits. Detailed instructions concerning the preparation of the payroll follow:

Contractor or Subcontractor: Fill in your firm's name and check appropriate box.

Address: Fill in your firm's address.

Payroll No.: Beginning with the number "1", list the payroll number for the submission.

For Week Ending: List the workweek ending date.

Project and Location: Self-explanatory.

Project or Contract No.: Self-explanatory.

Column 1 - Name and Individual Identifying Number of Worker: Enter each worker's full name and an individual identifying number (e.g., last four digits of worker's social security number) on each weekly payroll submitted.

Column 2 - No. of Withholding Exemptions: This column is merely inserted for the employer's convenience and is not a requirement of Regulations, Part 3 and 5.

Column 3 - Work Classifications: List classification descriptive of work actually performed by each laborer or mechanic. Consult classification and minimum wage schedule set forth in contract specifications. If additional classifications are deemed necessary, see Contracting Officer or Agency representative. An individual may be shown as having worked in more than one classification provided an accurate breakdown or hours worked in each classification is maintained and shown on the submitted payroll by use of separate entries.

Column 4 - Hours worked: List the day and date and straight time and overtime hours worked in the applicable boxes. On all contracts subject to the Contract Work Hours Standard Act, enter hours worked in excess of 40 hours a week as "overtime".

Column 5 - Total: Self-explanatory

Column 6 - Rate of Pay (Including Fringe Benefits): In the "straight time" box for each worker, list the actual hourly rate paid for straight time worked, plus cash paid in lieu of fringe benefits paid. When recording the straight time hourly rate, any cash paid in lieu of fringe benefits may be shown separately from the basic rate. For example, "$12.25/.40" would reflect a $12.25 base hourly rate plus $0.40 for fringe benefits. This is of assistance in correctly computing overtime. See "Fringe Benefits" below. When overtime is worked, show the overtime hourly rate paid plus any cash in lieu of fringe benefits paid in the "overtime" box for each worker; otherwise, you may skip this box. See "Fringe Benefits" below. Payment of not less than time and one-half the basic or regular rate paid is required for overtime under the Contract Work Hours Standard Act of 1962 if the prime contract exceeds $100,000. In addition to paying no less than the predetermined rate for the classification which an individual works, the contractor must pay amounts predetermined as fringe benefits in the wage decision made part of the contract to approved fringe benefit plans, funds or programs or shall pay as cash in lieu of fringe benefits. See "FRINGE BENEFITS" below.

Column 7 - Gross Amount Earned: Enter gross amount earned on this project. If part of a worker's weekly wage was earned on projects other than the project described on this payroll, enter in column 7 first the amount earned on the Federal or Federally assisted project and then the gross amount earned during the week on all projects, thus "$163.00/$420.00" would reflect the earnings of a worker who earned $163.00 on a Federally assisted construction project during a week in which $420.00 was earned on all work.

Column 8 - Deductions: Five columns are provided for showing deductions made. If more than five deduction are involved, use the first four columns and show the balance deductions under "Other" column; show actual total under "Total Deductions" column; and in the attachment to the payroll describe the deduction(s) contained in the "Other" column. All deductions must be in accordance with the provisions of the Copeland Act Regulations, 29 C.F.R., Part 3. If an individual worked on other jobs in addition to this project, show actual deductions from his/her weekly gross wage, and indicate that deductions are based on his gross wages.

Column 9 - Net Wages Paid for Week: Self-explanatory.

Totals - Space has been left at the bottom of the columns so that totals may be shown if the contractor so desires.

Statement Required by Regulations, Parts 3 and 5: While the "statement of compliance" need not be notarized, the statement (on page 2 of the payroll form) is subject to the penalties provided by 18 U.S.C. § 1001, namely, a fine, possible imprisonment of not more than 5 years, or both. Accordingly, the party signing this statement should have knowledge of the facts represented as true.

Items 1and 2: Space has been provided between items (1) and (2) of the statement for describing any deductions made. If all deductions made are adequately described in the "Deductions" column above, state "*See* Deductions column in this payroll." *See* "FRINGE BENEFITS" below for instructions concerning filling out paragraph 4 of the statement.

Item 4 FRINGE BENEFITS - Contractors who pay all required fringe benefits: If paying all fringe benefits to approved plans, funds, or programs in amounts not less than were determined in the applicable wage decision of the Secretary of Labor, show the basic cash hourly rate and overtime rate paid to each worker on the face of the payroll and check paragraph 4(a) of the statement on page 2 of the WH-347 payroll form to indicate the payment. Note any exceptions in section 4(c).

Contractors who pay no fringe benefits: If not paying all fringe benefits to approved plans, funds, or programs in amounts of at least those that were determined in the applicable wage decision of the Secretary of Labor, pay any remaining fringe benefit amount to each laborer and mechanic and insert in the "straight time" of the "Rate of Pay" column of the payroll an amount not less than the predetermined rate for each classification plus the amount of fringe benefits determined for each classification in the application wage decision. Inasmuch as it is not necessary to pay time and a half on cash paid in lieu of fringe benefits, the overtime rate shall be not less than the sum of the basic predetermined rate, plus the half time premium on basic or regular rate, plus the required cash in lieu of fringe benefits at the straight time rate. In addition, check paragraph 4(b) of the statement on page 2 the payroll form to indicate the payment of fringe benefits in cash directly to the workers. Note any exceptions in section 4(c).

Use of Section 4(c), Exceptions

Any contractor who is making payment to approved plans, funds, or programs in amounts less than the wage determination requires is obliged to pay the deficiency directly to the covered worker as cash in lieu of fringe benefits. Enter any exceptions to section 4(a) or 4(b) in section 4(c). Enter in the Exception column the craft, and enter in the Explanation column the hourly amount paid each worker as cash in lieu of fringe benefits and the hourly amount paid to plans, funds, or programs as fringe benefits. The contractor must pay an amount not less than the predetermined rate plus cash in lieu of fringe benefits as shown in section 4(c) to each such individual for all hours worked (unless otherwise provided by applicable wage determination) on the Federal or Federally assisted project. Enter the rate paid and amount of cash paid in lieu of fringe benefits per hour in column 6 on the payroll. See paragraph on "Contractors who pay no fringe benefits" for computation of overtime rate.

Public Burden Statement: We estimate that it will take an average of 55 minutes to complete this collection of information, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection of information, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W.,Washington, D.C. 20210.

Note: In order to view, fill out, and print PDF forms, you need Adobe® Acrobat® Reader® version 5 or later, which you may download for free at www.adobe.com/products/acrobat/readstep2.html.

U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division

Rev. Dec. 2008

OMB No.:1235-0008
Expires: 04/30/2021

NAME OF CONTRACTOR OR SUBCONTRACTOR	ADDRESS	
PAYROLL NO.	FOR WEEK ENDING	PROJECT AND LOCATION / PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE — HOURS WORKED EACH DAY	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS: FICA	WITH-HOLDING TAX			OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that is will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

Date _____

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

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ 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

_____ from the full
(Contractor or Subcontractor)

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.

EMPLOYEE INTERVIEW FOR DAVIS-BACON LABOR STANDARDS INSTRUCTIONS

The Davis-Bacon Act requires interviews to determine if the contractor is complying with the Federal Davis-Bacon prevailing wages. Interviewers must use WIFA's interview form, Department of Labor's Standard Form 1445, or equivalent documentation. WIFA's form may be downloaded from WIFA's website: www.azwifa.gov/contract-packet. See Section 5: Compliance Verification of the WIFA Contract Packet for the interview requirements.

Interviews should be conducted in the following manner:

Interviewer: Each borrower is required to conduct interviews. The interviewer must be someone unaffiliated with the contractors and on site regularly (i.e., project manager, or consultant, etc.).

Purpose: The purpose of the interview is to ensure that the work actually being done by construction workers and mechanics is consistent with the corresponding job titles and wages being reported on the certified payrolls. The payroll checker must compare the interviews to the payrolls to identify inconsistencies. Any inconsistencies must be addressed. Keep in mind that both the interview and the information on the interview form are considered confidential. Interviews should be conducted individually and in private. All employees on the work site should be available for an interview if requested by the interviewer; however, the employee's participation is voluntary.

Number of Interviews: A representative sample of interviews is required. The interviewer must interview at least one person from every contractor and subcontractor company on the job site.

Timing: Interviews should be done, at minimum, on two different occasions. One should be within the first two weeks after construction begins and whenever a new subcontractor begins work on the project. The second round should be done closer to substantial completion while workers are still on site. Additional interviews should be done when issues or discrepancies arise and should be targeted at the contractor in question.

Records: Interview forms should be kept by the borrower with the rest of the project records at least three years after the contract is completed. The interview forms have employee information that should be kept confidential from contractors generally, but the project folders must be available for inspection by WIFA, EPA, or Department of Labor upon request.

Item	**INTERVIEW**
2b. - 2c.	This information is required in case it is necessary to follow up with the employee.
3a.	The interviewer should make it clear to the employee that these items relate only to work on this project, not necessarily to other projects.
3b.	Employees should be encouraged (but not required) to produce pay stubs or pay envelopes which document the wages received.
5. - 6.	If the employee does not know where the wage rate decision and Davis-Bacon poster are posted, the interviewer should inform the person of the location(s) and encourage them to look at the documents.
8.	Many employees will not be familiar with the term "fringe benefits." The interviewer should explain to the employee that fringe can be paid as part of their hourly rate, or can be in the form of benefits such as vacation, medical, etc.
9a. -9c.	The interviewer should make it clear to the employee that these items relate only to work on this project, not necessarily to other projects.

11. - 13.	Be certain that the employee's responses are specific. The employee may not be familiar with the classifications used on the wage determination and thus may use a term which may not be found on the determination. The answers to questions 12 and 13 should elicit enough information to identify the appropriate wage classification. Confirm the presumed wage classification with the employee.

INTERVIEWER'S COMMENTS	
16.	This represents some of the most important information gathered while conducting on-site interviews. Be specific about the duties the employee was observed performing. It may be easiest to make these observations before the interview. Comments in this section should include whether observed duties and tools used were the same as those described by the employee during the interview.
19. - 20.	This refers to the wage decision and date as posted on the job site. This information should be consistent with the contract documents.

FOR USE BY PAYROLL CHECKER	
21. - 22.	The payroll checker can be the same person as the interviewer. If not, it should be someone familiar with the wage rate decision, labor standards provisions and the construction project. This part of the form is completed *after* receipt of the payroll reports covering the week during which the interview was conducted. It is important that the payroll reports are received in a timely manner so that the payroll checker can compare and verify the interview information and investigate discrepancies. Once the corresponding payroll reports are received, the information on the interview form must be compared to the payroll reports. Specifically, the payroll checker must check that: • the payroll report is consistent with the dates and hours the employee worked (Items 9a.-9c.). • the payroll report indicates that the employee's job classification is the same as that indicated by the employee in Items 11 - 13. • the payroll report indicates that the employee received the wages as s/he stated in Item 3a. • the payroll report indicates that the employee received the fringe benefits in the amount and as stated in Item 8. • the wages/fringes paid agree with the wage rate decision in the contract and any additional classification requests approved by DOL (SF1444). Any discrepancies noted between the interview form and payroll reports shall be reported in Item 22. <u>If discrepancies are noted, follow-up actions to resolve the discrepancies must be taken</u>. For example, if the payroll indicates that the employee worked a different number of hours than the employee indicated, the payroll checker must: a) contact the employee and ask for clarification; and b) request the contractor's actual time records. This should be done without revealing the identity of the employee, e.g. by asking for all employee records for one work week.

EMPLOYEE INTERVIEW FOR DAVIS-BACON LABOR STANDARDS

1a. Project Name		2a. Employee Name	
1b. Contract Number	Wage Decision and Date	2b. Employee Phone Number	
1c. Name of Prime Contractor		2c. Employee Home Address and Zip Code	
1d. Name of Employer and Supervisor			
3a. Hourly rate of pay on this project: 3b. Do you have your most recent paystub? Y N	4. Do you know that you are working on a federally-funded project and that you are to be paid wages set by DOL (Davis-Bacon wages)? Y N	5. Do you know where the Davis-Bacon Wage Rate Decision for this project is posted? Y N	6. Do you know where the "Employee Rights under the Davis-Bacon Act" poster is posted? Y N
7a. Do you ever work over 8 hours per day? Y N	7b. Do you ever work over 40 hours per week? Y N	7c. Are you paid at least time and a half for overtime hours? Y N N/A	8. Do you receive Fringe Benefits? Vacation Y N Medical Y N Pension Y N Cash/pay Y N Other:
9a. Date you began work on this project:	9b. Date of last work day on this project before interview:	9c. How many hours did you work on your last work day before this interview on this job?	
10. What deductions other than taxes and social security are made from your pay?		11. Work Classification (list all on this project):	
12. Your duties on this project:		13. Tools and equipment you use on this project:	

THE ABOVE IS CORRECT TO THE BEST OF MY KNOWLEDGE

14. Employee Signature	Date	
15. Interviewer Signature	Interviewer Name	Date

INTERVIEWER'S COMMENTS

16. Work employee was doing/tools employee was using when interviewed:	17. Is employee properly classified and paid? Y N	18. Are wage rate and poster displayed? Y N
	19. Wage Rate Decision Number:	20. Wage Rate Decision Date:

FOR USE BY PAYROLL CHECKER

21. Is above information in agreement with payroll data? Y N	22. If no, provide explanation and resolution:	
23. Payroll Checker Signature	Payroll Checker Name	Date

WIFA Project Construction Sign Guidelines and Specifications

In accordance with Exhibit B Section 4.6 of the WIFA Loan Agreement, WIFA Construction Sign(s), at commencement of construction the Local Borrower will establish (in consultation with WIFA staff) one or more WIFA construction signs at prominent locations at or near the construction site per the following guidance and attached specifications.

1. The general contractor as directed by the Owner shall furnish and install a construction sign(s) for identification of the WIFA project. The sign shall be constructed in accordance with the enclosed drawing/specifications. (If the contractor chooses to erect a separate sign, it may be attached to or adjacent to the project sign, but no other contractor or subcontractor or material signs will be permitted on the WIFA sign.)

2. The cost of preparation and erection of the sign is loan eligible.

3. The construction sign for identification of the WIFA project will be installed prior to commencement of construction at a location which is near the project site and amenable to public viewing.

4. The sign will be adequately supported with regard to site conditions and will be an adequate distance above the prevailing grade to permit public viewing.

5. The sign will be constructed of a 4.0 feet by 8.0 feet exterior type high density overlaid plywood or other sign material of equivalent quality and framed with nominal 2 inch by 4 inch wood of suitable grade.

6. The sign will be painted with black lettering on a matte white background. The WIFA logo will be painted with process blue color and black lettering in strict proportion to the attached detail.

7. Lettering will be of professional quality and in accordance with the attached drawing; all lettering will be in proportion to the sizes shown and centered on the sign.

8. Information specified on the attached detail will be displayed on the sign. A draft sign will be rendered and reviewed by WIFA prior to production.

9. Any additional information displayed on the sign will not detract from or displace the information required in the drawing. Changes must be approved by WIFA.

10. The sign will be maintained in good condition by the contractor until completion of the construction project.

11. The sign will be removed and appropriately disposed of when the construction is complete and accepted by WIFA.

WIFA Project Construction Sign Guidelines and Specifications

City of Bullhead City Sewer Collection Line Project

Financed by the Water Infrastructure Finance Authority of Arizona

Sponsor: City of Bullhead City
Mayor: Norm Hicks, JoAnn Allen,
Council: Olivia Brusso-McCormick, Don Sullivan, DəArchy Down-Vollbracht, Damian Holthler, and Jacquie Jessie
Engineers: Sunrise Engineering, Inc., Filmore Utah
Contractor: Barnard Construction, Bozeman, Montana

WATER INFRASTRUCTURE FINANCE AUTHORITY OF ARIZONA

State of Arizona
Douglas A. Ducey

EPA Horizontal Logo

Engineers logo

U.S. EPA
Andrew Wheeler, Administrator

Water Infrastructure Finance Authority Requisition 1, Page 1 of 6
Certifications & Signatures
«Borrower Name»
«Loan_Number»

This disbursement request is made in accordance with the Loan Agreement between the Water Infrastructure Finance Authority and the Borrower.

Borrower Certifications

The Borrower hereby states as follows:

1. The amount requested is a proper and accurate cost of the project, which is unpaid or unreimbursed and which has not been the basis of any previous request.

2. The materials, equipment, labor or services represented by this request have been satisfactorily purchased, performed, or received and applied to the project and under the terms and provisions of the contracts related to the project, the Borrower is required to make such payments.

3. As of the date of this request, there does not exist any Event of Default under the Loan Agreement nor any condition which, with the passage of time, would constitute an Event of Default thereunder.

4. The undersigned are duly authorized to submit this disbursement request.

By _____ By _____
Title_____ Title_____
Dated _____ Dated _____

Engineer Certifications

The Engineer certifies that the amounts requested constitute proper costs of the project; that the materials, equipment, labor and services represented by the invoices have been satisfactorily purchased, received, and applied to the project in accordance with contract documents; that payment is in accordance with the contract provisions and that the construction, to date, complies with the contract documents. This certification is not applicable to administrative costs.

Engineer's Seal

By _____ Title _____

Dated _____ Firm _____

Approvals by the Water Infrastructure Finance Authority

By _____ By _____
Controller Environmental Manager

Dated _____ Dated _____

Sample

Water Infrastructure Finance Authority Requisition 1, Page 2 of 6
Davis-Bacon Compliance Certification
«Borrower Name»
«Loan_Number»

Davis-Bacon Compliance Certification

The Loan Agreement Addendum - Wage Rate Requirements for Compliance with P.L. 111-88 requires that all laborers and mechanics employed by contractors and subcontractors on projects funded with this loan shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with the subchapter IV of chapter 31 of title 40, United States Code.

The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the Borrower, that is, the entity that receives a loan from WIFA.

As the Borrower, you are required to receive this documentation and the documentation must be available at the request of WIFA or EPA. It is further required, as to each payroll copy received, the Borrower shall provide written confirmation in a form satisfactory to WIFA indicating whether or not the project is in compliance with the requirements of 29CFR 5.5 (a)(1) based on the most recent payroll copies for the specified week.

Each Disbursement Request submitted requesting loan funds requires certification of compliance with Davis-Bacon including the requirements outlined above. Please sign below certifying that during the period covering this disbursement request, payroll copies have been received and the project is in compliance.

Sample

_____ _____

Signature Date

Water Infrastructure Finance Authority Requisition 1, Page 3 of 6
Cost Incurred Report and Disbursement Request
«Borrower Name»
«Loan_Number»

Type of Request:	**Select One**	**Period Covered:**		**to**	
			(mm/dd/yy)		(mm/dd/yy)

*If final, please complete page 6.

Borrower Contact & Address:

«Borrower Name»
«LA3_Mailing_Address_Street»
«LA4_Mailing_Address_City», Arizona
«LA5_Mailing_Address_Zip»

Wire Transfer Instructions (Optional)	
Bank Name:	
Bank ABA Number:	
Account Number:	
Reference:	
Attention:	
Phone:	

Contact Name:
Phone #:

Attach statements, invoices, or other proof that the amount requested below is currently due or has been advanced by the Borrower.

Request by Budget Item * (1)	**Loan Budget * (2)**	**Previously Disbursed (3)**	**This Request (4)**	**Total to Date (5)=(4)+(3)**	**Budget (6)=(5)/(2)**	**Balance (7)=(2)-(5)**
Planning	«DR1_Budget_Planning»			$0.00	#VALUE!	#VALUE!
Design & Engineering	«DR2_Budget_Design_Eng»			$0.00	#VALUE!	#VALUE!
Legal/Debt Authorization	«DR3_Budget_Legal_Debt_Auth»			$0.00	#VALUE!	#VALUE!
Financial Advisor	«DR4_Budget_Financial_Advisor»			$0.00	#VALUE!	#VALUE!
Land/System Acquisition	«DR5_Budget_Land_Sys_Acq»			$0.00	#VALUE!	#VALUE!
Equipment/Materials	«DR6_Budget_Equip_Materials»			$0.00	#VALUE!	#VALUE!
Construction/Installation/ Improvement	«DR7_Budget_Const_Inst_Impr»			$0.00	#VALUE!	#VALUE!
Inspection & Construction Management	«DR8_Budget_Insp_Const_Mgmt»			$0.00	#VALUE!	#VALUE!
Project Officer	«DR9_Budget_Project_Officer»			$0.00	#VALUE!	#VALUE!
Administration	«DR10_Budget_Administration»			$0.00	#VALUE!	#VALUE!
Staff Training	«DR11_Budget_Staff_Training»			$0.00	#VALUE!	#VALUE!
Capitalized Interest	«DR12_Budget_Cap_Interest»			$0.00	#VALUE!	#VALUE!
Other	«DR13_Budget_Other»			$0.00	#VALUE!	#VALUE!
Refinancing/Rollover Loan	«DR15_Budget_Refinance»			$0.00	#VALUE!	#VALUE!
Totals	«DR14_Budget_Total_Requested»	$0.00	$0.00	$0.00	#VALUE!	#VALUE!

Sample

* If adjustments to the loan budget categories are necessary, please contact your project manager:
Sara Konrad at 602-364-1319, Nicole Petker at 602-364-1321 or Brandon Nguyen at 602-364-1326

Water Infrastructure Finance Authority Requisition 1, Page 4 of 6
Invoice Detail Report
«Borrower Name»
«Loan_Number»

A. Within Column A in the table below, list each contractor, subcontractor, or vendor that provided supplies, equipment, construction, or other goods or services included in this disbursement request. List subcontractors separately only if separately invoiced.

B. Within Column B, detail each invoice number and date included with this disbursement request.

C. Within Column C, enter the amount paid or payable for each invoice listed in Column B. The total for Column C must equal the total requested on page 3 of this request.

A	B	C
Contractor/Subcontractor/Vendor Name	**Invoice # and Date**	**$ Amount**
Total of Column C must equal total requested on Page 3, Column 4 of this Requisition		$0.00

Sample

Should you require additional pages to list inovices please contact your project manager:
Sara Konrad at 602-364-1319, Nicole Petker at 602-364-1321 or Brandon Nguyen at 602-364-1326

Water Infrastructure Finance Authority Requisition 1, Page 5 of 6
Status Report
«Borrower Name»
«Loan_Number»

1. Provide a narrative summary in one or two paragraphs of the work included in this requisition:

2. Since the previous requisition, have total project cost estimates changed by 5% or more due to a Change Order or other project event? If Yes, explain below. Select One

3. Are the Borrower, contractors, and subcontractors current on all reporting requirements of the Loan Agreement, Standard Terms and Conditions, Exhibits and Addendum? If No, explain below. Select One

4. Weekly payrolls filed by prime contractor and all sub-contractors are on file with the owner and have been reviewed. If No, explain below. Select One

Date Payroll Last Checked

5. Certification has been obtained or is in the process of being obtained for all American Iron and Steel Products. If No, explain below. Select One

6. Report on Disadvantaged Business Enterprises (DBE): list all Minority Business Enterprises (MBE) and Women-Owned Business Enterprises (WBE) included in this requisition.

Contractor/Subcontractor/Vendor Name	MBE or WBE	Code 1 = Construction 2 = Supplies 3 = Services 4 = Equipment	Amount

Sample

Water Infrastructure Finance Authority Requisition 1, Page 6 of 6
Future Disbursements & Final Deobligation Authorization
«Borrower Name»
«Loan_Number»

Within the table below, estimate future loan disbursements.

Loan Obligation Remaining	#VALUE!

# of Weeks from Requisition Date	Estimated Disbursements
Less than 4 Weeks	
Between 4 and 12 Weeks	
Between 12 and 26 Weeks	
More than 26 Weeks	
Total Estimated Disbursements	$0.00
Estimated De-Obligation	#VALUE!

Sample

Final Deobligation Authorization

Only fill out the portion below if this is your final disbursement request and you are requesting a deobligation of the remaining loan balance.

This confirms that «Borrower Name» is deobligating the amount of _____ on loan number «Loan_Number», and therefore acknowledges that WIFA has completed its obligation to make disbursements on the loan.

Name: _____ Title: _____

Signature: _____ Dated: _____
(Authorized Representative)

If you have any questions regarding this form, please contact your project manager:
Sara Konrad at 602-364-1319, Richard Mendolia at 602-364-1321 or Brandon Nguyen at 602-364-1326

NOTICE TO PROCEED

Owner:	Pine Strawberry Water Improvement District	Owner's Project No.:	
Engineer:	Geo-Logic Associates	Engineer's Project No.:	DB21.1390
Contractor:		Contractor's Project No.:	
Project:	USDA Strawberry Deep Well		
Contract Name:			
Effective Date of Contract:			

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on **_____** pursuant to Paragraph 4.01 of the General Conditions.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work will be done at the Site prior to such date.

In accordance with the Agreement:

> The number of days to achieve Substantial Completion is **120 days** from the date stated above for the commencement of the Contract Times, resulting in a date for Substantial Completion of **_____**; and the number of days to achieve readiness for final payment is **150 days** from the commencement date of the Contract Times, resulting in a date for readiness for final payment of **_____**.

Before starting any Work at the Site, Contractor must comply with the following:

Owner:	**Pine-Strawberry Water Improvement District**
By *(signature)*:	
Name *(printed)*:	
Title:	
Date Issued:	

Copy: Engineer

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Contractor's Application for Payment

Owner:	Pine-Strawberry Water Improvement Dist	**Owner's Project No.:**	
Engineer:	Geo-Logic Associates	**Engineer's Project No.:**	DB21.1390
Contractor:		**Contractor's Project No.:**	
Project:	USDA Strawberry Deep Well		
Contract:			
Application No.:		**Application Date:**	
Application Period:	**From**	**to**	

1. Original Contract Price				$ -
2. Net change by Change Orders				$ -
3. Current Contract Price (Line 1 + Line 2)				$ -
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)				$ -
5. Retainage				
a.	X	$ -	Work Completed	$ -
b.	X	$ -	Stored Materials	$ -
c. Total Retainage (Line 5.a + Line 5.b)				$ -
6. Amount eligible to date (Line 4 - Line 5.c)				$ -
7. Less previous payments (Line 6 from prior application)				
8. Amount due this application				$ -
9. Balance to finish, including retainage (Line 3 - Line 4)				$ -

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor:

Signature: **Date:**

Recommended by Engineer		**Approved by Owner**	
By:		**By:**	
Title:		**Title:**	
Date:		**Date:**	
Approved by Funding Agency			
By:		**By:**	
Title:		**Title:**	
Date:		**Date:**	

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Progress Estimate - Lump Sum Work

Contractor's Application for Payment

Owner:	Pine-Strawberry Water Improvement District	**Owner's Project No.:**	
Engineer:	Geo-Logic Associates	**Engineer's Project No.:**	DB21.1390
Contractor:		**Contractor's Project No.:**	
Project:	USDA Strawberry Deep Well		
Contract:			

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I
			Work Completed					
Item No.	Description	Scheduled Value ($)	(D + E) From Previous Application ($)	This Period ($)	Materials Currently Stored (not in D or E) ($)	Work Completed and Materials Stored to Date (D + E + F) ($)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) ($)
	Original Contract							
			-			-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
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						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
	Original Contract Totals	$ -	$ -	$ -	$ -	$ -		$ -

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Progress Estimate - Lump Sum Work

Contractor's Application for Payment

Owner:	Pine-Strawberry Water Improvement District	**Owner's Project No.:**	
Engineer:	Geo-Logic Associates	**Engineer's Project No.:**	DB21.1390
Contractor:		**Contractor's Project No.:**	
Project:	USDA Strawberry Deep Well		
Contract:			

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I
			Work Completed					
Item No.	Description	Scheduled Value ($)	(D + E) From Previous Application ($)	This Period ($)	Materials Currently Stored (not in D or E) ($)	Work Completed and Materials Stored to Date (D + E + F) ($)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) ($)
Change Orders								
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
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						-		-
						-		-
						-		-
						-		-
						-		-
	Change Order Totals	$ -	$ -	$ -	$ -	$ -		$ -
Original Contract and Change Orders								
	Project Totals	$ -	$ -	$ -	$ -	$ -		$ -

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Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner:	Pine-Strawberry Water Improvement District	**Owner's Project No.:**	
Engineer:	Geo-Logic Associates	**Engineer's Project No.:**	DB21.1390
Contractor:		**Contractor's Project No.:**	
Project:	USDA Strawberry Deep Well		
Contract:			

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I	J	K	L
		Contract Information				Work Completed					
Bid Item No.	Description	Item Quantity	Units	Unit Price ($)	Value of Bid Item (C X E) ($)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) ($)	Materials Currently Stored (not in G) ($)	Work Completed and Materials Stored to Date (H + I) ($)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) ($)
Original Contract											
					-		-		-		-
					-		-		-		-
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					-		-		-		-
				Original Contract Totals	$ -		$ -	$ -	$ -		$ -

EJCDC C-620 Contractor's Application for Payment
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Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner: Pine-Strawberry Water Improvement District
Engineer: Geo-Logic Associates
Contractor:
Project: USDA Strawberry Deep Well
Contract:

Owner's Project No.:
Engineer's Project No.: DB21.1390
Contractor's Project No.:

Application No.: **Application Period:** From to **Application Date:**

A	B	C	D	E	F	G	H	I	J	K	L
		Contract Information				Work Completed					
Bid Item No.	Description	Item Quantity	Units	Unit Price ($)	Value of Bid Item (C X E) ($)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) ($)	Materials Currently Stored (not in G) ($)	Work Completed and Materials Stored to Date (H + I) ($)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) ($)
Change Orders											
					-		-		-		-
					-		-		-		-
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				Change Order Totals	$ -		$ -	$ -	$ -		$ -
Original Contract and Change Orders											
				Project Totals	$ -		$ -	$ -	$ -		$ -

EJCDC C-620 Contractor's Application for Payment
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Stored Materials Summary

Contractor's Application for Payment

Owner:	Pine-Strawberry Water Improvement District	**Owner's Project No.:**	
Engineer:	Geo-Logic Associates	**Engineer's Project No.:**	DB21.1390
Contractor:		**Contractor's Project No.:**	
Project:	USDA Strawberry Deep Well		
Contract:			

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I	J	K	L	M
						Materials Stored			Incorporated in Work			
Item No. (Lump Sum Tab) or Bid Item No. (Unit Price Tab)	Supplier Invoice No.	Submittal No. (with Specification Section No.)	Description of Materials or Equipment Stored	Storage Location	Application No. When Materials Placed in Storage	Previous Amount Stored ($)	Amount Stored this Period ($)	Amount Stored to Date (G+H) ($)	Amount Previously Incorporated in the Work ($)	Amount Incorporated in the Work this Period ($)	Total Amount Incorporated in the Work (J+K) ($)	Materials Remaining in Storage (I-L) ($)
								-			-	-
								-			-	-
								-			-	-
								-			-	-
								-			-	-
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								-			-	-
								-			-	-
					Totals	$ -	$ -	$ -	$ -	$ -	$ -	$ -

EJCDC C-620 Contractor's Application for Payment
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WORK CHANGE DIRECTIVE NO.: ___

Owner:	Pine Strawberry Water Improvement District	Owner's Project No.:	
Engineer:	Geo-Logic Associates	Engineer's Project No.:	DB21.1390
Contractor:		Contractor's Project No.:	
Project:	USDA Strawberry Deep Well		
Contract Name:			
Date Issued:		Effective Date of Work Change Directive:	

Contractor is directed to proceed promptly with the following change(s):

Description:

Attachments:

Purpose for the Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

Notes to User—Check one or both of the following

☐ Non-agreement on pricing of proposed change. ☐ Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: $ _____ **[increase] [decrease] [not yet estimated]**.

Contract Time: _____ days **[increase] [decrease] [not yet estimated]**.

Basis of estimated change in Contract Price:

☐ Lump Sum ☐ Unit Price ☐ Cost of the Work ☐ Other

	Recommended by Engineer	Authorized by Owner
By:		
Title:		
Date:		

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CHANGE ORDER NO.: ___

Owner:	Pine Strawberry Water Improvement District	Owner's Project No.:	
Engineer:	Geo-Logic Associates	Engineer's Project No.:	DB21.1390
Contractor:		Contractor's Project No.:	
Project:	USDA Strawberry Deep Welll		
Contract Name:			
Date Issued:		Effective Date of Change Order:	

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments:

Change in Contract Price	**Change in Contract Times [State Contract Times as either a specific date or a number of days]**
Original Contract Price: $ _____	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] from previously approved Change Orders No. 1 to No. **[Number of previous Change Order]**: $ _____	**[Increase] [Decrease]** from previously approved Change Orders No.1 to No. **[Number of previous Change Order]**: Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: $ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] this Change Order: $ _____	**[Increase] [Decrease]** this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: $ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

	Recommended by Engineer (if required)	Accepted by Contractor
By:	_____	_____
Title:	_____	_____
Date:	_____	_____
	Authorized by Owner	Approved by Funding Agency (if applicable)
By:	_____	_____
Title:	_____	_____
Date:	_____	_____

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FIELD ORDER NO.: __

Owner:	Pine Strawberry Water Improvement District	Owner's Project No.:	
Engineer:	Geo-Logic Associates	Engineer's Project No.:	DB21.1390
Contractor:		Contractor's Project No.:	
Project:	USDA Strawberry Deep Well		
Contract Name:			
Date Issued:		Effective Date of Field Order:	

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with Paragraph 11.04 of the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s):

Drawing(s) / Details (s):

Description:

Attachments:

Issued by Engineer

By: _____

Title: _____

Date: _____

EJCDC® C-942, Field Order.
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CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	Pine Strawberry Water Improvement District	Owner's Project No.:	
Engineer:	Geo-Logic Associates	Engineer's Project No.:	DB21.1390
Contractor:		Contractor's Project No.:	
Project:	USDA Strawberry Deep Well		
Contract Name:			

This ☐ Preliminary ☐ Final Certificate of Substantial Completion applies to:

☐ All Work ☐ The following specified portions of the Work:

Drilling and construction of deep water supply well

Date of Substantial Completion: _____

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities: ☐ None ☐ As follows:

Amendments to Contractor's Responsibilities: ☐ None ☐ As follows:

The following documents are attached to and made a part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Engineer

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

EJCDC® C-625, Certificate of Substantial Completion.
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NOTICE OF ACCEPTABILITY OF WORK

Owner:	Pine Strawberry Water Improvement District	Owner's Project No.:	
Engineer:	Geo-Logic Associates	Engineer's Project No.:	DB21.1390
Contractor:		Contractor's Project No.:	
Project:	USDA Strawberry Deep Well		
Contract Name:			
Notice Date:		Effective Date of the Construction Contract:	

The Engineer hereby gives notice to the Owner and Contractor that Engineer recommends final payment to Contractor, and that the Work furnished and performed by Contractor under the Construction Contract is acceptable, expressly subject to the provisions of the Construction Contract's Contract Documents ("Contract Documents") and of the Agreement between Owner and Engineer for Professional Services dated_____ ("Owner-Engineer Agreement"). This Notice of Acceptability of Work (Notice) is made expressly subject to the following terms and conditions to which all who receive and rely on said Notice agree:

1. This Notice has been prepared with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.
2. This Notice reflects and is an expression of the Engineer's professional opinion.
3. This Notice has been prepared to the best of Engineer's knowledge, information, and belief as of the Notice Date.
4. This Notice is based entirely on and expressly limited by the scope of services Engineer has been employed by Owner to perform or furnish during construction of the Project (including observation of the Contractor's Work) under the Owner-Engineer Agreement, and applies only to facts that are within Engineer's knowledge or could reasonably have been ascertained by Engineer as a result of carrying out the responsibilities specifically assigned to Engineer under such Owner-Engineer Agreement.
5. This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Contract Documents, or to otherwise comply with the Contract Documents or the terms of any special guarantees specified therein.
6. This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.

Engineer

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

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AMERICAN IRON AND STEEL *DE MINIMIS* LIST FORMAT

Notes to User: This exhibit is an example format for Contractors to use in maintaining a list of items to document the use of the De Minimis waiver of the American Iron and Steel requirements. This list or similar is required to be filled out throughout the construction Contract as needed. The State Engineer may periodically ask to review this information. At the Contract completion, this list, along with all Manufacturers' certifications, are to be given to the Engineer for delivery to the Owner.

DE MINIMIS COSTING WORKSHEET

Project Name: _____

Contract Name/# (if more than one) _____

Contractor (Company Name): _____

Representative: _____

Date: _____

Total Cost of All Materials (or Estimated Value at 50% of the Installed Bid Price): $ _____

Allowable Total *De Minimis* Costs (5% of all materials) $ _____

Total Cost of all *De Minimis* Items $ _____

Remaining Amount Allowed for Future *De Minimis* Items $ _____

Note: No single De Minimis item can be more than 1% of the total material cost.

No.	Detailed Description and Manufacturer or Local Source of *De Minimis* Material	Quantity	Cost Per Item	Total Item Cost
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

ENGINEER'S CONSTRUCTION CERTIFICATIONS

Notes to User: This exhibit consists of four statements that will be certified by the Engineer, to be executed and then submitted to the Agency concurrently with the construction Contract Document package. This certification is to be submitted to the Agency prior to Authorization to bid but is <u>not</u> to be included in the bid package.

PROJECT NAME AND CONTRACT NUMBER:_____
ENGINEER'S NAME:_____

ENGINEER'S CERTIFICATION

The final Drawings and Specifications, construction Contract Documents, Bidding Documents (or requests for proposals or other construction procurement documents), and any other final design phase deliverables, comply with all applicable federal requirements, to the best of my knowledge and professional judgment. This includes the following:

☐ initial — The Engineers Joint Contract Documents Committee (EJCDC) documents have been used, and all acceptable revisions identified in this Bulletin have been made in accordance with the terms of the license agreement, which states in part that the Engineer "will plainly show all changes to the standard EJCDC text, using 'Track Changes' (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions." Such other means may include attachments indicating changes (e.g. Supplementary Conditions modifying the General Conditions).

☐ initial — Any building(s) designed for this Project will comply with the requirements of the Architectural Barriers Act (ABA), the Americans with Disabilities Act (ADA) of 1990, and the Rehabilitation Act.

☐ initial — All Iron and Steel products referenced in the Drawings, Specifications, and Bidding Documents for this Project comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee.

☐ initial — All Iron and Steel products that will be referenced in the Addenda, executed Contracts, and Change Orders will comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference, or will be the subject of a waiver approved by the Secretary of Agriculture or designee.

Note: This certification is not intended to be a warranty in any way, but rather the designer's professional opinion that to the best of their knowledge the documents comply.

_____
Engineer signature Date

_____
Printed name and title

GENERAL (PRIME) CONTRACTOR'S CERTIFICATION OF COMPLIANCE

Notes to User: This exhibit is the sample General (Prime) Contractor's Certification of Compliance with the American Iron and Steel requirements to be provided by all General (Prime) Contractors to Engineer for delivery to the Owner at Substantial Completion.

GENERAL (PRIME) CONTRACTOR'S CERTIFICATION OF COMPLIANCE WITH PROVISIONS OF THE AMERICAN IRON AND STEEL REQUIREMENTS OF SECTION 746 OF TITLE VII OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2017 (DIVISION A - AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2017) AND SUBSEQUENT STATUTES MANDATING DOMESTIC PREFERENCE

DATE:

RE: PROJECT NAME
APPLICANT
CONTRACT NUMBER

I hereby certify that to the best of my knowledge and belief all Iron and Steel products installed for this project by my company and by any and all subcontractors and Manufacturers my company has contracted with for this project comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee.

_____
Name of Construction Company (PRINT)

_____
By Authorized Representative (SIGNATURE)

_____
Title

INFORMATIONAL CHECKLIST FOR PROJECT-SPECIFIC WAIVER REQUESTS

Notes to User: This exhibit is a checklist that is to be completed by the Owner and/or Engineer to help ensure that all appropriate and necessary information is submitted with the request to USDA. All information presented in waiver requests are subject to evaluation. Waiver requests deliberately containing false information will be rejected.

INFORMATIONAL CHECKLIST FOR PROJECT SPECIFIC WAIVER REQUEST

Information	□
General	
• Waiver request includes the following information:	
- Description of the foreign and domestic Construction Materials	□
- Unit of measure	□
- Quantity	□
- Price	□
- Date that product is needed (e.g. time of delivery or availability)	□
- Location of the construction project	□
- Name and address of the proposed Supplier	□
- A detailed justification for the use of foreign Construction Materials	□
• Waiver request was submitted according to the instructions in the memorandum	□
• Assistance recipient made a good faith effort to solicit bids for domestic Iron and Steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime	□
Public Interest Waiver Request	
• Applicants and their Engineers will submit a written justification demonstrating definitive impacts on the community if a specified product is not utilized.	□
Cost Waiver Requests	
• Waiver request includes the following information:	
- Comparison of overall cost of project with domestic Iron and Steel products to overall cost of project with foreign Iron and Steel products	□
- Relevant excerpts from the bid documents used by the Contractors to complete the comparison	□
- Supporting documentation indicating that the Contractor made a reasonable survey of the market, such as a description of the process for identifying Suppliers and a list of contacted Suppliers	□
Availability Waiver Requests	
• Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested:	
- Supplier information or pricing information from a reasonable number of domestic Suppliers indicating availability/delivery date for Construction Materials	□
- Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying Suppliers and a list of contacted Suppliers.	□
- Date that product is needed (e.g. time of delivery or availability) to provide justification	□
- Relevant excerpts from project Drawings, Specifications, and permits indicating the required quantity and quality of Construction Materials	□
• Waiver request includes a statement from the prime Contractor and/or Supplier confirming the non-availability of the domestic Construction Materials for which the waiver is sought	□
• Has the State received other waiver requests for the materials described in this waiver request for comparable projects?	□

MANUFACTURER'S CERTIFICATION OF COMPLIANCE

Notes to User: This exhibit is the sample Manufacturer's Certification of Compliance with the American Iron and Steel requirements to be provided by all Manufacturers of American Iron and Steel covered items, to be submitted by Contractor to the Engineer with the corresponding Shop Drawing submittal for delivery to the Owner at Substantial Completion.

EXAMPLE OF A MANUFACTURER'S CERTIFICATION OF COMPLIANCE WITH PROVISIONS OF THE AMERICAN IRON AND STEEL (AIS) REQUIREMENTS OF SECTION 746 OF TITLE VII OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2017 (DIVISION A - AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2017) AND SUBSEQUENT STATUTES MANDATING DOMESTIC PREFERENCE

Date:

Company Name:

Company Address:

Subject: American Iron and Steel (AIS) Certification for Project (X), Owner's Name, and Contract Number

I, (company representative), certify that the (melting, bending, galvanizing, cutting, etc.) processes for (manufacturing or fabricating) the following products and/or material shipped or provided for the subject project is in full compliance with the AIS requirement as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.
Item, Products and/or Materials, and location of delivery (City, State):

1.

2.
Such processes for AIS took place at the following location:

_____
(City, State)

_____
Authorized Company Representative Signature

Notes: Authorized signature will be Manufacturer's representative, not the material distributor or Supplier. If any of the above compliance statements change while providing materials to this project, please immediately notify the person(s) who is requesting to use your product(s).

CONTRACT DOCUMENT CHECKLIST

Notes to User: This exhibit provides a checklist for Owner and Engineer to use to assemble the Bidding Documents for a RUS-funded project. Questions should be directed to the State Engineer.

☐	Contents	Form
	Table of Contents	Prepared by Engineer
	Advertisement for Bids for Construction Contract	EJCDC C-111 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 2
	Instructions to Bidders for Construction Contract	EJCDC C-200 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 3
	Bid Form for Construction Contract	EJCDC C-410 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 4
	Bid Bond (Penal Sum Form)	EJCDC C-430
	Qualifications Statement	EJCDC C-451
	Compliance Statement	Form RD 400-6
	Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions	Form AD-1048
	Certification for Contracts, Grants & Loans	RD Instruction 1940-Q Exhibit A-1
	Notice of Award	EJCDC C-510 **Note: Owner will obtain concurrence of State Engineer prior to issuing award.**
	Agreement between Owner and Contractor for Construction Contract (Stipulated Price)	EJCDC C-520 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 5
	Performance Bond	EJCDC C-610. **Note: the bond will be at least 100% of the bid amount.**
	Payment Bond	EJCDC C-615. **Note: the bond will be at least 100% of the bid amount.**
	Certificate of Owner's Attorney / Agency Concurrence	RUS Bulletin 1780-26 (2019) Exhibit A, Attachment 1
	Standard General Conditions of the Construction Contract	EJCDC C-700. Note: modifications to C-700 should be made in C-800, Supplementary Conditions.
	Supplementary General Conditions of the Construction Contract	EJCDC C-800 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 6
	Special Conditions	**May be added if desired by Engineer**
	State Wage Rates	State Wage Rates **if required by State Law**.
	Federal Wage Rates	Davis Bacon Wage Rates. **Note: only required if other funding source requires**
	Davis Bacon 29 CFR 5.5	Rural Development version. **Note: only required if Federal Wage Rates have been included**
	Notice to Proceed	EJCDC C-550
	Project Sign (Temporary Construction Sign)	Consult State Engineer for current requirements.
	Application for Payment	EJCDC C-620
	Work Change Directive	EJCDC C-940
	Change Order	EJCDC C-941
	Field Order	EJCDC C-942
	General (Prime) Contractor's Certification for AIS	RUS Bulletin 1780-26 (2019) Exhibit A, Attachment 4
	Manufacturer's Certification for AIS	RUS Bulletin 1780-26 (2019) Exhibit A, Attachment 5
	Certificate of Substantial Completion	EJCDC C-625
	Notice of Acceptability of Work	EJCDC C-626
	Drawings and Specifications	Engineer Submittal

NOTES:
1. *EJCDC documents are available from EJCDC, the National Society of Professional Engineers, the American Council of Engineering Companies, or the American Society of Civil Engineers. RD offices cannot distribute EJCDC documents.*
2. *For questions and copies of RD documents please contact State Engineer.*

ENGINEER AGREEMENT CERTIFICATION

PROJECT NAME:_____

The Engineer and Owner hereby concur in the Funding Agency acceptable revisions to E-500 identified in RUS Bulletin 1780-26. In addition, Engineer certifies to the following:

All modifications to E-500 have been made in accordance the terms of the license agreement, which states in part that the Engineer "must plainly show all changes to the Standard EJCDC Text, using 'Track Changes' (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions." Such other means may include attachments indicating changes (e.g. Supplementary Conditions modifying the General Conditions).

SUMMARY OF ENGINEERING FEES

Note that the fees indicated on this table are only a summary and if there is a conflict with any provision of Exhibit C, the provisions there overrule the values on this table. Fees shown in will not be exceeded without the concurrence of the Agency.

Basic Services		$_____
Resident Project Observation		$_____
Additional Services		$_____
	TOTAL:	$_____

Any adjustments to engineering fees or changes to maximum estimated values must be approved by the Agency and must include a table of what specific category or categories of fees are being changed, what fees were before and after the change, and the resulting total fee.

Engineer Date

Name and Title

Owner Date

Name and Title

Agency Concurrence:

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

Agency Representative Date

Name and Title

Technical Specifications

Geo-Logic ASSOCIATES

Pine Strawberry Water Improvement District
Deep Well Drilling
Technical Specifications

SECTION 00 01 10

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END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

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. Test reports

1.2 Submittal Procedures

A. Transmit each submittal with the form provided as Exhibit A to this section.

B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

C. Identify Project, Contractor, subcontractor and supplier, pertinent drawing and detail number, and specification section number, appropriate to submittal.

D. Apply Contractor's stamp and signature certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

E. Schedule submittals to expedite Project, and deliver to the Engineer at 6020 Academy Rd NE, Suite 100, Albuquerque, NM 87109. Coordinate submission of related items.

F. For each submittal for review, allow 7 calendar days excluding delivery time to and from Contractor.
   1. Approval Process
      a. Each submittal shall be in accordance with the Contractor's drawings submission schedule. Contractor's drawings will be returned with one of the following classifications:
         1) FURNISH AS SUBMITTED – No corrections, no marks.
         2) FURNISH AS NOTED – A few minor corrections. All items may be fabricated as marked without further resubmission for review. Resubmit a corrected copy to the Engineer.
         3) REVISE AND RESUBMIT – Minor corrections or not enough information for review. Items not noted to be revised and corrected may be fabricated. Resubmit drawings as per original

submissions with corrections noted. Allow 10 additional days for resubmission, review, and appropriate action by the Engineer.

4) REJECTED – Requires corrections or is otherwise not in accordance with the Contract Documents. No items shall be fabricated.

G. Allow space on submittals for Contractor and Engineer review stamps.

H. When revised for resubmission, identify changes made since previous submission.

I. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

J. Submittals not requested will not be recognized or processed.

1.3 Construction Progress Schedules

A. Submit initial schedules at Pre-Construction Meeting.

B. Submit revised Progress Schedules with each Application for Payment.

C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.

D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

E. Submit computer-generated horizontal bar chart with separate line for each section of Work, identifying first work day of each week.

F. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.

G. Indicate estimated percentage of completion for each item of Work at each submission.

H. Revisions to schedules:
1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken or proposed, and its effect.

1.4 Proposed Products List

A. Within 10 calendar days after date of Notice to Proceed, 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.

1.5 Product Data

A. Product Data: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit number of copies Contractor requires, plus four copies the Engineer will retain.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer standard data to provide information specific to this Project.

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

E. After review, produce copies and distribute in accordance with Submittal Procedures article and for record documents.

1.6 Shop Drawings

A. Shop Drawings: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

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

C. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
   1. Include signed and sealed calculations to support design.
   2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
   3. Make revisions and provide additional information when required by authorities having jurisdiction.

D. Submit number of reproductions Contractor requires, plus four copies the Engineer will retain.

E. After review, produce copies and distribute in accordance with Submittal Procedures article and for record documents.

1.7 Test Reports

A. Submit for Engineer’s knowledge.

B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

Geo-Logic ASSOCIATES

Submittal Transmittal No. _____ – _____

(Spec Section) (Series)

Project Name: USDA Strawberry Well		Date reviewed:
Contractor:	GLA	Reviewed by:
Address:	8777 N. Gainey Center Drive, Suite 250	Job no.
	Scottsdale, AZ 85258	Spec section:
	Attn: Marvin Glotfelty	Drawing/Detail no.
Attn:		1st Submittal ☐ Resubmittal ☐
Date transmitted:	Previous transmittal date:	

Item No.	No. Copies	Description	Manufacturer / Vendor	Mft/Vendor Dwg. or Data No.	Action Taken *
1			s		A
2					
3					
4					

Remarks:

* Action codes:

A – Furnish as submitted

B – Furnish as noted

C – Revise and resubmit:
1. Not enough information for review.
2. No reproducibles submitted.
3. Copies illegible.
4. Not enough copies submitted.
5. See Comments.

D – Rejected

E – Engineer's review not required:
1. Submittal not required.
2. Supplemental information. Submittal refined for informational purposes only.
3. Information reviewed on prior submittal.
4. For information only.
5. See Comments.

Contractor:
Certify either:
☐ A. We have verified that the material or equipment contained in this signature meets all requirements, including coordination with all related work, as specified (no exceptions)
☐ B. We have verified that the material contained in this submittal meets all the requirements specified except for the deviations noted below.

No,. **Deviation**

_____ _____
_____ _____
_____ _____

Certified by:

Contractor's Signature, By: Date

Engineer's Comments:

Comments:

Engineer's Signature By: Date

Distribution: Contractor ☐ File ☐ Field ☐ Owner ☐ Other ☐

Geo-Logic ASSOCIATES

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the drawings and specifications. Review of a specific item shall not include review of an assembly of which the item is a component. The Contractor is responsible for dimensions to be confirmed and correlated at the jobsite, information sequences and procedures of construction, coordination of the Work with that of all other trades, and performing all Work in a safe and satisfactory manner.

SECTION 33 11 00

WELL DRILLING

PART 1 GENERAL

1.1 Section Includes

A. Work description.

B. Future work.

C. Specification conventions.

1.2 Work Description

A. The work to be accomplished consists of the drilling and completion of a water supply well for the Pine-Strawberry Water Improvement District (PSWID). The well location is shown on Figure 1. The proposed well, designated herein as the USDA Strawberry Well, will be sited at the location indicated in Figure 1, in Strawberry, Arizona.

B. Definitions: Throughout this specification, the following definitions apply.
1. The term Owner shall be understood to represent the Pine-Strawberry Water Improvement District.
2. The term Design Professional shall be understood to represent Clear Creek Associates, LLC, a Geo-Logic Company, and also Daniel B. Stephens & Associates, a Geo-Logic Company.
3. The Contractor shall be the person, firm, or corporation with whom the Owner will execute an agreement setting forth the terms and conditions for the work to be performed, as specified herein.
4. The term Subcontractor will apply to any person, firm, or corporation with whom the Contractor executes a secondary agreement for a portion of the scope of work.

C. The installation of the USDA Strawberry Well consists of the Contractor drilling a borehole to the specified depth using the dual-rotary drilling method and collecting cutting samples from the borehole as specified. The dual-rotary drilling method has been specified to allow for efficient drilling through fractured sedimentary rock formations that may cause lost circulations during conventional direct-rotary drilling methods. A report prepared by the Chief Hydrologist of the Arizona Department of Water Resources for an exploratory boring located approximately 1.4 miles west of the USDA Strawberry Well site is provided in the Supplementary Conditions. The dual-rotary drilling method is conceptually depicted on Figure 2. Geophysical logging is not anticipated for this project, but may be conducted if requested by the Owner and Design Professional.

D. It is the responsibility of the Contractor to familiarize itself with the drilling conditions that may be encountered at the site, both surface and subsurface, prior to the bid submittal. It is the responsibility of the bidder to examine the drilling area and site access in order to become acquainted with local conditions. The Contractor must obtain any

required after-hours construction permits, and will be responsible for subsequent renewals of such permits through the conclusion of the project. Other permits needed to conduct this well project, such as for dust control, will also be the responsibility of the Contractor. No allowance will be made after the bid has been accepted for any errors or omissions made by the Contractor. The Contractor will install the well pursuant to the final well design, which will be developed by the Design Professional and approved by the Owner. The preliminary well design for the USDA Strawberry Well is presented on Figure 3. The scope of work presented herein includes aquifer testing (step-rate discharge test and constant-rate aquifer test) after the installation and development of the well has been completed. The Design Professional reserves the right to drill beyond the depths specified, or to stop at lesser depths, depending on subsurface conditions.

E. The Contractor shall provide a detailed plan of the intended drilling program with their bid. The specific materials and methods to be used by the Contractor must be approved by the Design Professional.

F. The Project includes the following Work:
1. Drill new supply well to a total depth as shown on Figure 3.
2. Perform lithologic logging of borehole to identify the greatest potential for groundwater production.
3. Construct new water supply well.
4. Well inspection.
5. Aquifer pump testing.

G. Location of Work: The location of the new well is the K2 Tank site shown on Figure 1 and corresponding to the following coordinates:
1. Latitude: 34°24’23.05”N
2. Longitude: 111°29’42.98”W

H. All scope of work items are to be conducted according to the construction drawings and technical specifications included with these Contract Drawings and Bid Documents.

I. Perform Work of Contract under unit price contract with Owner in accordance with Conditions of Contract.

1.3 Specification Conventions

A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.

1.4 Performance of Work

A. Contractor Qualifications:
1. The Contractor shall have no less than five years of experience using dual-rotary drilling, and must have successfully completed no fewer than five separate dual-rotary well installation projects in the southwestern United States within the past three years. The Contractor shall provide with its bid a list of no fewer than three

client references for well installations using dual-rotary drilling within the past five years. The Contractor shall also provide with its bid a list and details of all liens or lawsuits that the Contractor has been involved with that are associated with well construction projects within the past five years. At the discretion of the Owner, the Contractor bid may be rejected as non-responsive on the basis of previous or ongoing liens or lawsuits.

2. The Contractor shall hold: (1) a valid Arizona Department of Water Resources (ADWR) Well Driller's License, (2) an Arizona Registrar of Contractor License type A, A-4, A-16 or C-53, and (3) all other licenses required by federal, state, county, or municipal rules and regulations. Subcontractors may also hold a valid Arizona Well Driller's License in addition to that of the Contractor, but not in lieu of the Contractor's ADWR Well Driller's License. The Contractor shall provide a copy of their Arizona Well Driller's License and a copy of their Arizona Registrar of Contractor License with the bid submittal.

B. Operations:

1. All operations shall be performed under the direct and personal supervision of an Arizona-licensed well driller. The Contractor shall assign a foreman (tool pusher) who has been approved by the Design Professional to oversee all work required by this specification. After selection, the Contractor foreman shall provide to the Design Professional a written certification that he has read and fully understands this technical specification prior to mobilization to the well site.
2. The Contractor shall construct the USDA Strawberry Well in accordance with the Rules and Regulations of the ADWR, Article 8, Well Construction and Licensing of Well Drillers. The well construction shall also comply with all other applicable federal, state, county, and local regulations. Rejection of any materials, work, or equipment by the Design Professional shall be at the Contractor's sole expense, and at no cost to the Owner. Replacement materials, work, or equipment that is in accordance with these specifications and approved by the Design Professional will be paid for by the Owner in accordance with the Bid Schedule.

C. Contractor Responsibilities:

1. Should the well be lost due to any negligent action on the part of the Contractor (as determined by the Design Professional), the well shall be abandoned at no cost to the Owner in accordance with ADWR Article 8, Rule R12 15 816, and a replacement well shall be constructed in the immediate area. The replacement well location will be selected by the Design Professional or Owner. The replacement well shall be completed in accordance with all the terms and conditions stated herein. The Contractor shall credit the Owner for any and all costs associated with the lost well, and that credit shall be applied against any additional Contractor charges associated with the drilling and completion of the replacement well.
2. If the loss of the well was not due to any negligent action of the Contractor, the Design Professional or Owner may designate a replacement well location and the Owner shall provide reimbursement for the replacement well on the basis of the unit costs presented in the Contractor's Bid Schedule.

3. If a work delay, deficiency of work performance and/or a material's deficiency is caused by the Contractor failing to comply with any item of these specifications, the Contractor shall bear the burden of additional expenses, including any additional Design Professional charges assessed to the Owner as a direct result of the delay or deficiency. This includes delays due to equipment failure, if the Design Professional determines that the equipment failure could have been prevented through proper maintenance.
4. The Design Professional may, at its discretion, reject Contractor work that does not meet these specifications or tolerances thereof, as determined by the Design Professional. Any additional standby time or other costs incurred by the Contractor as a result of the rejection of any specified work provided by the Contractor or its Subcontractors shall not be compensated by the Owner and shall be the sole responsibility of the Contractor.
5. Confidentiality:
    a. The Contractor shall not disclose any information relating to this project or the well site to anyone other than the Owner or Design Professional without written permission from the Owner, except as may be required by law. At all times during the performance of the Contractor's services, the Contractor and its employees, Subcontractors, and agents shall treat the work conducted by the Contractor and its Subcontractors and the results thereof as confidential and proprietary to the Owner.
    b. Any questions regarding the purpose or scope of work that are directed to the Contractor from individuals or entities other than representatives of the Owner or Design Professional while work is being conducted for this project, should be directed by the Contractor to the Design Professional or Owner.
    c. The Contractor shall inform its employees of this confidentiality requirement, and shall obtain non-disclosure agreements from all Subcontractors who will have involvement in the performance of any of the work and provide Design Professional with copies of the executed non-disclosure agreements. This provision shall survive the termination of contracted work tasks.

1.5 Submittals

A. The Contractor shall submit, in accordance with Section 01 33 00, to the Owner and Design Professional (or other as noted) with his bid or during the course of the project the following items:
    1. At the time of receipt of Bids:
        a. Complete list of equipment and methods that are proposed for the work.
        b. List of relevant projects and reference information.
        c. Bid Form.
        d. List of Subcontractors for Subcontracts valued at or above one half of one percent of the bid price.
        e. EEOC Form.
        f. Bid Bond.
        g. Company's experience with similar projects.
    2. Prior to commencing construction activities:
        a. SWPPP in accordance with NMED and EPA regulations.

b. NOI.
c. Erosion Control Plan.
d. Dust Control Permit, if required.
e. Progress Schedule, including the Contractor's earliest available start date, estimated time to the drill borehole, and install the well.
f. Site Safety Plan
g. Site Plan
h. Materials of construction

3. During construction
a. Daily Drilling Report upon request of the Design Professional.
b. Cutting samples and alignment surveys to the Design Professional.
c. Quality certificates for test hole materials.
d. SWPPP Inspection forms.
e. Cement grout mix design.
f. Safety data sheets (SDSs) on any chemicals introduced to the test holes or wells.
g. Test reports

PART 2 PRODUCTS

2.1 Equipment

A. The Contractor shall furnish and maintain in safe and efficient working condition all equipment necessary to perform the specified work, including the following:
1. A drilling rig or rigs capable of performing the specified operations to the specified depths
2. Aboveground mud tanks used for circulation of drilling fluids and collection of drill cuttings
3. Pumping, testing, sampling equipment
4. Auxiliary equipment as specified or required to complete the described tasks

B. The Contractor shall submit a statement with their bid indicating the drilling equipment to be used. The drilling rig used for the installation of the USDA Strawberry Well shall have a mast capacity no less than 1½ times the string weight of the well casing and screen that will be suspended from the drill rig mast at any one time, and the well shall be installed without the use of a float plate. All equipment requirements specified in this Section shall be provided at the Contractor's expense.

C. The equipment supplied by the Contractor shall include, but not be limited to:
1. A wire line depth indicator capable of measuring depths equal to the total depth of the borehole, and equipped with a counter device that provides for a depth measurement accuracy of ±1 foot. Prior to the start of work on this project, the accuracy of the wire line depth indicator must be verified to the approval of the Design Professional.
2. Specified devices for measurement of drilling mud viscosity and weight.
3. An operating and accurate inclinometer tool. Prior to the start of work on this project, the accuracy of the inclinometer tool must be verified to the approval of the Design Professional, with a vertical or inclined test run at the land surface.

4. An operating and accurate gauge that indicates the hook load (weight) of the drill string.
5. Aboveground mud tanks capable of circulating drilling fluids and collecting drill cuttings.
6. A first aid kit.
7. A fully recharged and operable type ABC dry chemical fire extinguisher (minimum 25 pounds).
8. An operable mobile telephone located at the well site. The rig mobile phone will be made available to the Design Professional and Owner personnel for reasonable use, at no charge.

D. The Contractor shall also maintain at the well site, or have the ability to rapidly fabricate, commonly used fishing tools (such as overshots, wall hooks, junk baskets, etc.) to accommodate the event that lost tools in the borehole require fishing operations.

E. The drilling rig, pumping equipment and auxiliary equipment used for this project shall be well maintained, and shall meet the standards of the OSHA. The rig and aboveground mud tank(s) walkways and stairways shall be guarded with rails to prevent falls, and Contractor personnel shall use a safety harness at all times when ascending the rig derrick. All high-pressure hose couplings shall be equipped with a whip check to protect site personnel in the event of hose failure.

F. Prior to bringing any equipment to the site, the Contractor shall decontaminate the drill rig and downhole tools by steam cleaning to remove any latent drilling chemicals, muds, contaminants, or non-native vegetation or seed. The method and extent of steam cleaning must be approved by the Design Professional. The Contractor will be required to provide a letter of certification of the decontamination of the Contractor’s equipment prior to use. The Contractor may certify, in writing, the decontamination of critical (downhole) pieces of drilling equipment in lieu of actual steam cleaning, provided the downhole pieces of drilling equipment have not been in contact with any hazardous or toxic materials since the last decontamination. All necessary steam cleaning will be conducted at the Contractor's expense.

2.2 Surface Casing

A. The surface casing for the USDA Strawberry Well (Figure 3) shall be new low-carbon steel (LCS), and manufactured in accordance with ASTM International (ASTM) Specification A53 Grade B steel or ASTM Specification A139 Grade B steel. The surface casing shall have a 24-inch outside diameter (O.D.) and have a minimum 0.375-inch wall thickness. The minimum length of the surface casing shall be 21 feet to allow for a minimum 1-foot stickup above land surface.

B. Prior to casing installation, the Contractor shall submit a certified test report to the Design Professional to demonstrate compliance with the physical and chemical properties of the steel surface casing, as specified herein.

2.3 Surface Casing Cement Grout Seal

A. The surface casing cement grout seal material shall consist of neat cement or sand cement. The cement grout weight shall be measured prior to installation, as an indicator of the cement-water ratio. The cement grout slurry shall not exceed 17.0 pounds per gallon (lb/gal) (approximately 127 pounds per cubic foot [lb/ft^3]). The cement grout slurry may contain sand, which shall not exceed 50 percent by volume of the cement. Bentonite may be used as an additive, and must be in powder form and shall not exceed 4 percent by volume of the cement, or cement and sand. Water added for bentonite shall not exceed 1.3 gallons per 1.88 pounds of bentonite (2 percent by weight in cement). Accelerator additives, such as calcium chloride, shall not exceed 2 percent by weight of the cement. For information purposes, an example of a sand cement mix design is presented in Attachment 1. The water source and specific constituents of the cement grout must be approved by the Design Professional.

B. If the cement grout is not mixed on site, the Contractor must provide the specific constituents of the cement grout to the Design Professional prior to placement of the grout. The cement grout slurry shall be mixed thoroughly and must be free of lumps to the satisfaction of the Design Professional. Cement grout that does not comply with this specification will be rejected.

2.4 Materials

A. The Contractor shall be responsible for the timely delivery of the well casing, well screen, filter pack sand, and all other materials to the drilling site, as determined by the Design Professional and as required to complete the well installation program. The well casing, well screen, and filter pack sand must be approved by the Design Professional prior to their installation.

B. The well screen slot size and filter pack grain size are not anticipated to be changed. However, the Design Professional may change the well screen slot size and/or filter pack grain size based on the lithologic data obtained from the borehole. The final length and location of the well casing and well screen will be determined by the Design Professional based on analysis of the lithologic data from the borehole.

C. The Design Professional may, at its discretion, reject any materials that do not meet these specifications or tolerances thereof, as determined by the Design Professional. Any additional standby time or other costs incurred by the Contractor as a result of the rejection of any specified materials provided by the Contractor or its suppliers shall not be compensated by the Owner and shall be the sole responsibility of the Contractor.

D. Well Casing Material:
1. The blank LCS casing for the USDA Strawberry Well shall be new, and manufactured in accordance with ASTM Specification A139 Grade B or ASTM Specification A53 Grade B steel.
2. The well casing shall be factory assembled in not less than 20-foot-long sections. The well casing shall have an 8-inch O.D. and a minimum 0.250-inch wall thickness. The top of the well casing shall be equipped with a lefthand threaded or otherwise fabricated backoff shoe (Figure 3) to enable the Contractor to install

the casing on a string of drill pipe and release it after filter pack sand has been installed. The total length of the LCS blank well casing (including the bottom sump and backoff shoe) will be 400 feet (Figure 3). Ends of casing lengths shall be as described in Section 3.7(C).

3. The bottom sump shall consist of a 10-foot-long section of blank LCS well casing (8-inch O.D. and a 0.250-inch wall thickness) as described in this Section, installed at the base of the screened interval. The bottom sump shall be capped with a LCS bottom plate composed of the same material and same wall thickness as the bottom sump casing.
4. Prior to casing installation, the Contractor shall submit certified test reports to the Design Professional to demonstrate compliance with the physical and chemical properties of the well casing steel that are specified herein.

E. Well Screen Material:

1. The well screen for the USDA Strawberry Well shall be new mill slotted casing that is manufactured in accordance with ASTM Specification A139 Grade B or ASTM Specification A53 Grade B steel, with vertical mill slots. The mill slotted interval of the well shall extend from 1,680 feet to 1,980 feet below ground surface (bgs) (Figure 3), unless otherwise directed by the Design Professional. The slotted low-carbon steel well casing will be perforated with minimum 2-inch-long by 0.040-inch-wide vertical mill slots, with no less than 4 rows and 16 slots per linear foot.
2. The anticipated length of the well screen (mill slotted casing) shall be 300 feet (Figure 3). The Contractor shall obtain from the well screen manufacturer the well screen tensile strength (pounds), collapse strength (psi), screen weight (pounds per linear foot), and maximum recommended hang weight (pounds). This information shall be provided to the Design Professional upon delivery of the well screen to the site. Prior to installation, a steel "rabbit" with a diameter no less than ½ inch smaller than the inside diameter of the well screen shall be passed through the well screen to remove any metal slivers or obstructions that may have resulted from cutting the mill slots. Screen sections shall be provided in minimum 20-foot joint lengths. Ends of screen lengths shall be as described in this specification.
3. Prior to the well screen installation, the Contractor shall submit certified test reports to the Design Professional to demonstrate compliance with the physical and chemical properties of the well screen steel, as specified herein.

F. Filter Pack and Disinfectant Material:

1. The filter pack shall be Colorado silica sand or approved equal, consisting of clean, well-rounded grains that are smooth and uniform. The filter pack shall be siliceous with a limit of 2 percent by weight, calcareous material. The filter pack material shall be obtained from a source that has been approved by the Design Professional, and shall consist of well-rounded particles with an average density of not less than 2.5 grams per cubic centimeter, and have a uniformity coefficient no greater than 1.5. Not more than 1 percent by weight of the material shall have a density of 2.25 grams per cubic centimeter or less. The filter pack shall contain no more than 2 percent by weight, thin, flat, or elongated pieces (pieces in which the largest dimension exceeds three times the smallest dimension) determined by

hand-packing. The filter pack material shall be free of calcium carbonate, shale, mica, clay, dirt, loam, organic impurities of any kind, and shall not contain iron or manganese in a form or quantity that will adversely affect the water quality. The filter pack grain size will be retained by a 16 mesh U.S. Standard sieve and pass through and 8 mesh U.S. Standard sieve.

2. Samples of the filter pack sand and a sieve analysis (percent retained through U.S. Standard sieve numbers 4, 8, 10, 16, 30, 40, 50, 100, and 200) of the filter pack material shall be submitted to the Design Professional for approval a minimum of 3 days prior to delivery of the filter pack to the well site. The filter pack material shall be contained in a temporary storage area at the well site in such a manner as to prevent contamination. The filter pack material shall be bagged in approximately 3,000-pound (about one cubic yard) “super sacks”. Each bag must be labeled with its actual weight. Any filter pack material delivered unbagged or unlabeled will be rejected.
3. The filter pack shall be installed by use of a tremie pipe. At no time shall the bottom of the tremie pipe be located at a distance of greater than 30 feet above the interval being filled during filter pack placement. The level of the filter pack shall be measured periodically during placement with a wire line sounder, as required by the Design Professional. Placement of the filter pack will be continuous, except when additional precautions are necessary to prevent bridging, or while a measurement of the filter pack level is being conducted. The quantity of filter pack material placed in the annulus shall not be less than that of the calculated volume. Upon completion of the filter pack placement, excess filter pack material will be judged an indication of voids in the sand envelope and corrective measures shall be undertaken at the Contractor's expense. The specific method of filter pack placement and the filter pack material must be approved by the Design Professional.
4. During installation of the filter pack, NSF 60-approved, 12 percent by weight sodium hypochlorite solution or similar disinfectant approved by the Design Professional shall be added to the filter pack at the rate of ⅓ gallon per cubic yard of filter pack material. The Contractor must provide the Design Professional with documentation that the sodium hypochlorite solution does not exceed a 60-day shelf life (unless otherwise documented by the supplier), in order to prevent deterioration of hypochlorite concentration. If a lesser strength hypochlorite or other chlorine product that has been approved by the Design Professional is used, the quantity shall be adjusted accordingly. The sodium hypochlorite solution shall contain 5 percent to 15 percent available chlorine, in accordance with AWWA Standard C654 for disinfection of wells, and shall be installed in such a way as to produce a chlorine concentration of not less than 50 mg/L in the entire volume of fluid within the well.
5. Installation of liquid sodium hypochlorite solution shall be accomplished by flushing it into the well through a closed system that will prevent workers from exposure to chlorine vapors, in accordance with OSHA protocol. Solid calcium hypochlorite may be used in equivalent concentrations in lieu of sodium hypochlorite, only if partially hydrolyzed polyacrylamide (PHPA) polymers such as Baroid’s EZ-Mud were not used during drilling of the borehole, and only if approved by the Design Professional. The specific hypochlorite concentration and installation method must be approved by the Design Professional.

PART 3 EXECUTION

3.1 Protection of Site

A. Site Clearing and Restoration: The Contractor will be responsible for any required clearing of the work area prior to mobilization, and returning the area to a condition that is acceptable to the Owner after demobilization at the conclusion of the project. The Contractor shall take all necessary precautions to preserve the well site, as nearly as practical, in its present condition. The Contractor shall be responsible for replacing any damaged items. The Contractor shall provide, at its own cost, an adequate roll-off bin to contain all debris and trash collected at the site. All litter and debris will be cleaned up daily and placed in the roll-off bin for off-site disposal. The Contractor is responsible for the location and clearance of all underground utilities using Arizona 811 (formerly Blue Stake), a private utility location service or both. The Contractor shall be responsible for any damage resulting from its failure to identify and avoid underground utilities.

B. Site Plan for Approval: The Contractor shall submit to the Design Professional or Owner a site plan for approval depicting the location of equipment, materials, spoils, and fencing at the well location. The drawing shall note the location of excavations, borings, or any other significant surface disturbance necessary for the execution of the work. Water delivery methods, supply lines and water disposal methods must be identified on the drawing. These plans must be approved by the Design Professional and Owner prior to mobilization.

C. Housekeeping: A plastic tarp and berm shall be placed beneath the drilling rig during mobilization to protect each site against oil or hydraulic fluid spills or leaks, and will remain beneath the rig until demobilization. A plastic tarp and berm shall also be placed beneath other stationary equipment that may be subject to fuel or solvent spills, such as air compressors and fuel tanks. Compressed air introduced into the well during drilling, sampling, or well development must be treated by passage through a carbon or coalescing filter to remove organic contaminants (e.g., compressor lubrication oil).

D. Access and Dust Control: The access road to and from the site is paved but the site itself is a dirt surface. The Contractor is responsible to apply water for dust control to work areas and access roads as required to meet state, county, or local dust control ordinances, or as requested by the Design Professional or Owner. The Contractor shall meet the requirements for dust control, including permitting, at its own cost.

E. Management of Drilling Fluids: Circulation of drilling fluids will be conducted using aboveground mud tank(s). During drilling, the mud tank(s) shall be emptied of cuttings at necessary intervals. Drilled cuttings shall be temporarily stockpiled at the site, for removal by the Contractor to a location designated by the Owner. Any heavy drilling mud shall be containerized and removed from the site by the Contractor such that it does not pose a threat to the existing vegetation or drainage.

F. Disposal of Water: Water pumped from the well during drilling, sampling, and development operations shall be conveyed to a location identified by the Owner or Design Professional where it will not cause damage to the property, contamination of other wells or waterways, or creation of a nuisance. For bidding purposes, the Driller

should plan to discharge all fluids (not including heavy drilling mud) at a location specified by the Design Professional or Owner, within 500 feet of the well site.

G. Site Restoration: After completion of the work, the Contractor shall remove all debris, waste, oil-stained dirt, trash, and unused materials or supplies and shall obliterate all temporary construction facilities such as temporary work areas, temporary structures, stockpiles of excess or waste materials and shall restore the site, as nearly as possible, to its original condition. Any residual mineral oil within the well casings (on the groundwater surface) resulting from the use of test pumping equipment shall be removed prior to final acceptance of the well. The Design Professional or Owner must approve the cuttings disposal and site cleanup.

3.2 Utilities

A. Water: Construction water for the drilling of the USDA Strawberry Well will be the responsibility of the Contractor. The water source for the well installation will be within 500 feet of the drilling location. The Owner will provide the water at its source at no cost, but the Contractor must meter the water used, and will be responsible for all piping, connections, ancillary equipment, and labor required to convey the water to the well site for use. The Contractor will be responsible for obtaining an adequate flow rate of construction water for all operations under this specification. The Contractor will also be responsible for any coordination, permits, and/or costs associated with traffic control and road crossings that may be required to convey water to the well site. The Contractor will be responsible for all costs associated with metering the water usage and transporting water to the well site.

B. Electricity: The Contractor shall provide, at its own cost, all power required for its operations under this specification.

C. Restroom Facilities: The Contractor shall provide, at its own cost, a portable restroom facility at the well site during all operations of this project. The restroom shall be adequately maintained, and shall be made available to the Design Professional and Owner personnel for reasonable use, at no cost.

D. Site Lighting: The Contractor shall be responsible for providing all necessary lighting for night work. This is to include illuminating the drilling work area, the sampling work area, and any normal foot travel paths used by personnel during the execution of their tasks. Lighting shall provide a minimum illumination of 5-foot candles at 2 feet above ground and at work stations. Lighting shall be positioned in such a manor to ensure that all lighting is directed toward the work area and not towards the adjacent surroundings.

3.3 Surface Casing Installation

A. Details for the surface casings construction are shown on Figure 3. Surface casing shall be furnished and placed from 1 foot above the ground surface to at least 20 feet bgs. The surface casing installations shall be conducted under the observation of the Design Professional.

3.4 Surface Casing Cement Grout Installation

A. Cement grout slurry conforming to this specification shall be placed from the base of the surface casing to the ground surface. The Contractor shall be responsible to maintain an equalization of pressures to the extent necessary to prevent collapse of the surface casing during cement grout installation. The grout seal shall completely fill the annular space and form a continuous seal between the surface casing and the wall of the borehole. The surface casing shall be maintained centered in the hole during and after cement grout installation. The Design Professional must approve the method of grout installation. A minimum curing time for the surface casing grout seal is 12 hours, with the cement grout obtaining a compressive strength of at least 500 pounds per square inch (psi).

3.5 Borehole Drilling

A. The borehole shall be drilled using the dual-rotary method, to prevent lost circulation problems from the fractured sedimentary rock formation to be penetrated. To prevent excessive torque of the drill rig during drilling, multiple dual-rotary (DR) casing strings are anticipated (Figure 3). However, variations in the specific number and depths of telescoping DR casing strings will be determined based on actual conditions encountered during drilling. At the base of the upper DR casing reductions in the interval above about 800 feet, neat cement seals may be required at the discretion of the Design Professional to prevent potential hydrologic communication between shallow and deep aquifers. If installed, the specific materials and installation technique for the cement seals must be approved by the Design Professional.

B. A minimum 14-inch-diameter DR casing will be advanced to a depth of approximately 1,500 feet bgs unless otherwise approved by the Design Professional. An open hole boring shall then be advanced below the bottom of the 14-inch DR casing, to a depth of 2,000 feet bgs. The boring shall be drilled using the methods described in this specification, and in compliance with the drilling fluid control program described in this specification. During the drilling of the boring, operations may be conducted on a 24-hour per day, 7-day per week basis. Prior to mobilization, the Contractor shall provide a work schedule indicating the anticipated work hours and shift change times to the Owner and Design Professional.

C. The Contractor shall take all diligent care to produce a plumb and straight boring. Single-shot deviation surveys (“A-1 SureShot” or equal) will be required at 100-foot intervals during the drilling of the boring, unless otherwise approved by the Design Professional. Surveys will be recorded on a 3-degree target that will be replaced each time a survey is performed. The borehole alignment will be maintained at 0.5 degree or less at all times. If at any single location the survey results indicate that the borehole alignment has exceeded the specified tolerance, the Contractor will be responsible for corrective measures to realign the borehole until a survey indicates alignment is within acceptable limits. All survey results will be recorded on the Contractor’s daily drilling forms. Repeat single-shot deviation surveys may be required if requested by the Design Professional to verify the accuracy and repeatability of the tool.

D. During the drilling of the borehole, the Contractor shall collect and preserve for the Design Professional samples of the drill cuttings collected at 10-foot intervals. The

Contractor shall provide an acceptable means of sampling the drilled cuttings at the discharge pipe. A sump-type or baffle-type sample catching devise shall be provided by the Contractor. Each cutting sample shall be carefully collected from the sampling point, and the sample catching device shall be cleaned of all cuttings after each sample is taken.

E. As an on-site visual record of the borehole stratigraphy, each sample shall be laid out in a sample storage area on a waterproof tarp or ground cloth for each sampled interval in descending order. The volume of each sampled interval shall be a minimum ½-gallon. The storage area and waterproof tarp must allow samples to be maintained in sequence and unmixed with surface material or other samples until they have been examined and logged by the Design Professional. Prior to the start of drilling, the Contractor shall submit details of the proposed formation sampling method to the Design Professional, including the specific sampling equipment (e.g., sample collection box) to be used. The sampling program and equipment must be approved by the Design Professional.

3.6 Well Installation

A. After the DR casing for the well has been advanced to its total depth, the Contractor shall suspend the well casing and screen in the specified interval of the boring, add the filter pack sand via a tremie pipe, and then release the suspended casing string by use of a backoff shoe, as shown on Figure 3. The specific methods, depths and dimensions, and materials used for well installation must be approved by the Design Professional.

3.7 Casing and Screen Installation

A. After the DR casing has been advanced to its total depth, the well casing and screen shall be installed within the DR casing as specified herein (Figure 3).

B. The well casing and well screen shall be set by the Contractor at the depth intervals specified by the Design Professional. The well casing and screen shall be set centered in the hole so as not to interfere in any way with the filter pack or grout seal, or the maximum efficient operation of pumping equipment within the well casing or screen. Low-carbon steel casing centralizers that have been approved by the Design Professional shall be secured to the well casing at intervals of not greater than 60 feet on the LCS casing and screen (Figure 3). Centralizers shall be constructed of the same material as the corresponding casing and screen, and welded to the casing and screen. Centralizers will be durable and shall not bend, flex, or collapse during installation of the casing and screen. The casing and screen shall be hung in suspension until the filter pack and has been installed, after which the casing will be released from the drill pipe string with the backoff shoe. The Contractor will be required to work continuously, on a 24 hour per day, 7-day week basis, while installing and completing the well.

C. Joints in the Well Casing

1. Joints in the LCS well casing and well screen shall be field welded in accordance with applicable provisions of the AWWA Standard C206 for welded joints. A welding sequence will be followed that will avoid excessive distortion. All well casing joints or overlaps shall be made water-tight to prevent the degradation of the water supply by the migration of poor-quality water. All welding shall be performed by an experienced welder. An affidavit of compliance with the

welding provisions of this Section shall be provided to the Design Professional prior to the acceptance of the well. The affidavit of compliance will certify that all welding conducted during this project was performed in accordance with all applicable provisions of this Section of this specification.

2. The well screen sections shall be butt-welded without the use of welding rings. The ends of the casing lengths shall be factory cut with ends beveled at the factory. The ends of each casing section shall not vary more than 0.010 inch at any point from a true plane at right angles to the axis of the casing. Each casing and screen end shall be beveled at one end to allow complete penetration of the welds. The ends of each casing or screen section shall not vary more than 0.010 inch at any point from a true plane at right angles to the axis of the casing.

D. Annular Materials Installation

1. Filter Pack and Disinfectant Installation: Filter pack sand conforming to this specification shall be placed to completely fill the annulus from the total depth of about 2,000 feet up to a depth of about 1,500 feet bgs (Figure 3). The well casing and screen shall be maintained in tension, until the filter material placement has been completed to the specified level. Care shall be taken to avoid bridging during installation of filter pack material. The specific method for installation of the filter pack material must be approved by the Design Professional.
2. The filter pack shall be installed by use of a tremie pipe. At no time shall the bottom of the tremie pipe be located at a distance of greater than 30 feet above the interval being filled during filter pack placement. The level of the filter pack shall be measured periodically during placement with a wire line sounder, as required by the Design Professional. Placement of the filter pack will be continuous, except when additional precautions are necessary to prevent bridging, or while a measurement of the filter pack level is being conducted.
3. The quantity of filter pack material placed in the annulus shall not be less than that of the calculated volume. Upon completion of the filter pack placement, excess filter pack material will be judged an indication of voids in the sand envelope and corrective measures shall be undertaken at the Contractor's expense. The specific method of filter pack placement and the filter pack material must be approved by the Design Professional.
4. During installation, the filter pack shall be disinfected using NSF 60-approved hypochlorite or similar agent constituent with this specification. The Contractor is responsible for the uniform application of the disinfecting agent throughout the filter pack interval, without relying on subsequent mechanical surging action for dispersing the disinfectant. The specific method and materials used to disinfect the filter pack must be approved by the Design Professional.

3.8 Well Development

A. Well development shall be accomplished by simultaneously swabbing and airlift pumping. The diameter of the swab apparatus shall not be more than 1-inch less than the inside diameter (I.D.) of the casing and screen. It is the sole responsibility of the Contractor to develop the well in accordance with this Section, without damage to the well screen or well casing. The swabbing tool used for well development must be approved by the Design Professional. The well development shall include an initial quick pass downward, after which the well development shall proceed from the bottom of the

screen to the top of the screen, at an average rate of no less than 7.5 minutes per linear foot of screen, unless otherwise directed by the Design Professional. The Contractor shall introduce a non-phosphoric dispersant (such as Baroid PFD, Johnson Screen product NW-220, or equal) to the well bore in accordance with the manufacturer's recommendations, during development operations. The Contractor shall provide the Design Professional with SDSs for all chemical additives used for well development at least three days prior to their use. The Design Professional must approve the specific type and placement method of all chemical additives prior to their use. Development water shall be contained and/or disposed of by the Contractor as specified in this Section. Reuse of discharge water will not be allowed. The specific methods, chemical additives, and equipment used for well development must be approved by the Design Professional prior to commencement of development operations.

B. Payment for well development by swabbing and airlift pumping will be based on the unit price per hour shown on the bid schedule and shall apply only to those hours that the development tools are being operated for swabbing and airlifting and will not apply to other time such as trip time. After swabbing is complete, all sand, sediment, and foreign material shall be removed from the bottom of the production well. The Contractor shall provide the necessary equipment and air compressor capable of performing the required swabbing and airlifting.

C. After all sediment is removed from the bottom of the well, the well shall be chlorinated in accordance with AWWA Standard A100, through the drill string and surge block with the end open, starting at the bottom and working up. The supplier-recommended concentration of sodium hypochlorite shall be placed into solution and injected down the drill string and into the formation, then briefly surged into place. This procedure shall be repeated for each section throughout the screened interval.

3.9 Video Survey

A. After completion of the well construction and development, the Contractor shall provide a color video survey of the well. The video survey camera shall include both downward-looking and side-view capabilities, and the video survey shall be conducted under the observation of the Design Professional. Both the quality and clarity of the well video must be acceptable to the Design Professional. Prior to acceptance of the well, the Contractor shall provide two electronic copies of the well video (DVD or USB drive) to the Design Professional and Owner.

3.10 Well Testing:

A. General:
1. Aquifer tests to be performed at the well shall consist of an 8-hour step-rate discharge test and a 72-hour constant rate aquifer test, which will be followed by a 24-hour water-level recovery period. The Design Professional reserves the right to extend or shorten the test duration.
2. The Contractor shall obtain and record water level measurements in half-hour intervals throughout the duration of the 72-hour constant rate aquifer test, or as directed by the Design Professional.

3. The Contractor shall furnish and install a 1½-inch inside diameter sounding tube that extends from the land surface to the top of the pump bowls to facilitate the measurement of water levels. The bottom of the sounding tube shall be capped, with perforations in the lower 20 feet.

B. Test Equipment

1. The Contractor shall furnish pumping equipment capable of pumping at a rate of up to 100 gpm with a pumping lift (not including pipe friction losses) of up to 1,290 feet bgs. The pumping equipment shall include satisfactory throttling devices or valves such that the discharge can be adjusted to various rates, potentially as low as 20 gpm. The test pump setting shall be determined by the Design Professional based on the final well design. The maximum anticipated setting of the test pump inlet is 1,290 feet bgs. The pumping unit shall be complete with an ample power source and shall be capable of being operated without interruption for a period of 72 hours. After the test pump has been installed, the Contractor shall disinfect the well with chlorine. The chlorine shall be installed through the 1½-inch inside diameter sounding tube, and washed down with potable water. The concentration of chlorine in the well shall be at least 50 mg/L, and shall remain in the well for a period of at least 24 hours prior to the start of well testing.
2. The pump equipment shall not be removed from the well until after the completion of the water-level recovery test. The Contractor shall provide a flow meter for measurement of flow rates during the pumping tests.

C. Pump Discharge

1. The Contractor shall operate the test pump at the discharge rate(s) that have been directed by the Design Professional. Discharge from the pump shall be controlled by a gate valve, VFD device, or engine throttle. The discharge shall be controlled and maintained at the specific rate for the entire test duration with an accuracy of ± 2 percent.
2. Discharge from the pump shall be controlled by a gate valve, valve adjustments, and/or engine throttle during the step-discharge test and constant rate test. The pump discharge shall be measured with a flow meter, in addition to a calibrated orifice and manometer installed in the discharge pipe. The flow measurement devices must be approved by the Design Professional. The flow meter shall be relatively new with a certified calibration within 1 year prior to use on the project. The flow metering devices shall be located in a straight portion of the discharge pipe without any bends, valves, or other obstructions that may interfere with the operation and/or accuracy of the meters for a distance of no less than 10 pipe diameters upstream, and for a distance of no less than 5 pipe diameters downstream (unless otherwise recommended by the manufacturer of the meter). At all times during pumping, the discharge pipe shall be oriented in such a manner as to ensure that the pipe remains full of water and under pressure at the location of the flow meter.
3. The discharge pipe shall be equipped with three Design Professional-approved spigots or valves (which shall be stainless steel in composition) for water quality sample collection (turbidity monitoring, sand monitoring, and line pressure monitoring). The Contractor shall also furnish equipment for measurement of the

line pressure and sand production during pumping (a Rossum Sand Sampler, or equal) in accordance with AWWA Standard A-100. Discharge flow, pressure, and sand measurement devices must be approved by the Design Professional.

4. The discharge water from the well shall be directed to a point of discharge that has been approved by the Design Professional. The anticipated discharge point will be within 1,000 feet of the well site. The discharge piping shall be watertight and capable of conveying the specified flow rates for the specified pumping periods. The Contractor is responsible for providing adequate piping for the actual distance to the discharge point. The Contractor is responsible for coordination of any required permits, traffic control, and other considerations that may be required to address potential flooding or pipeline roadway crossings that result from the discharged water.

3.11 Visitation and Inspection

A. The Design Professional and Owner representatives shall, at any reasonable time during the term of work, be entitled to review the Contractor's facilities, its program operation, and the records that pertain to the program.

B. The Contractor agrees that the Design Professional or Owner, or any of their duly authorized representatives, shall have access to the Contractor's facilities and have the right to examine books, documents, and records of the Contractor involving transactions related to these specifications.

C. The Contractor further agrees to include in all subcontracts hereunder, if any, a provision that the Subcontractor agrees that the Design Professional or Owner, or any of their duly authorized representatives, shall have access to the subcontractor's facilities and have the right to examine any books, documents, and records of the Subcontractor involving transactions related to the subcontract and these specifications.

3.12 Reports, Logs and Records

A. General: The Contractor shall keep an accurate and legible daily log and record of all drilling, testing, and construction, describing all geologic material encountered during drilling, the depths at which changes in formation occur, and all difficulties or unusual conditions encountered. The log and record shall also show the method of completing the well, including the lengths of the well casing and well screen installed and the volume of all annular fill and seal materials. The forms for penetration rate log, the daily driller's report, and the drilling fluid control log must be approved by the Design Professional.

B. Penetration Rate Log: During the drilling of the borehole, each section of DR casing shall be measured and recorded prior to use, and a time log shall be kept showing the actual penetration time required to drill down each section of DR casing into the borehole. The types of bits used in each interval of the borehole shall be noted on this log and whether designed for soft, medium, or hard formations, including approximate weight on the bit and rotation speed (rpm) of the bit, and any other information that may be requested by the Design Professional. The log shall be available for review by the Design Professional throughout the drilling program and shall be delivered to the Design Professional upon completion of drilling.

C. Daily Driller's Report: During the drilling of the borehole, a detailed driller's report shall be maintained and provided daily to the Design Professional. The daily driller's report shall be recorded on forms approved by the Design Professional. The report shall give a complete description of the following:
   1. All formations encountered
   2. Number of feet drilled
   3. Number of hours on the job
   4. Shutdown due to breakdown
   5. Any occurrence of difficult drilling conditions
   6. Drilling fluid additives used
   7. Length and type of casing installed
   8. Volumes of filter pack and annular seal installed
   9. Such other pertinent data as may be requested by the Design Professional

D. Driller's Log: During the drilling of the borehole, the Contractor shall prepare a detailed driller's log in compliance with the requirements of the ADWR. The log shall include the reference point for all depth measurements, a generalized description of each formation encountered, the depth at which each formation is encountered, and the thickness of each formation. The lithologic log prepared by the Design Professional will be made available to assist the Contractor in the preparation of the driller's log. A copy of the driller's log shall be furnished to the design professional upon completion of drilling prior to acceptance of the well.

E. Drilling Fluid Record: During the drilling of the borehole, a log of drilling fluid properties shall be maintained by the Contractor. The drilling fluid record will be recorded on an American Petroleum Institute (API)-approved form. The drilling fluid record shall be available for review by the Design Professional and Owner throughout the course of drilling, and the log shall be delivered to the Design Professional upon completion of each day's work activities.

3.13 Drilling Fluid Control Program

A. Drilling Fluid Control Plan: The Contractor shall provide a drilling fluid control plan to the Design Professional prior to the start of drilling. The plan will outline specific drilling fluid additives the Contractor plans to use, how anticipated changes in the drilling conditions will affect the drilling fluid control plan, fluid testing procedures, and equipment that will be used. The Design Professional must approve the drilling fluid control plan. Drilling fluid additives should be certified by the National Sanitation Foundation (NSF).

B. Drilling Fluid Testing:
   1. The Contractor shall retain an experienced drilling fluid engineer as a Subcontractor. The Contractor's selection of a drilling fluid engineer will be subject to approval by the Design Professional. The drilling fluid engineer will be available within a 2-hour travel time of the site during all drilling and well construction operations.
   2. Drilling fluid tests will be required during periods when any drilling fluid additives (not only clear water) are being circulated in the borehole. Physical and chemical properties of the drilling fluid are to be measured in accordance with

the procedures of the API Standard RP 13B, "Standard Procedures for Testing Drilling Fluids," and shall include at a minimum fluid weight, viscosity, sand content, filtrate loss, wall cake thickness, gel strength, pH, alkalinity, hardness, chloride ratio, and free chlorine. Samples tested are those collected at the rig discharge line, with care taken to assure a true and representative sample. Drilling fluid tests shall be conducted, at a minimum, at the following times:

a. Every 24 circulating hours
b. When significant changes to the drilling fluid are made
c. Whenever conditions appear to have changed or when problems arise
d. At the request of the Design Professional

3. A Marsh-type viscosity funnel and a mud scale will be available at the well site during all well construction operations and, upon request, will be made available to the Design Professional.
4. The Contractor shall maintain current records at the site at all times to show:
   a. The time, depth, and results of all drilling fluid tests
   b. All materials added to the system, (including type, amount, time, and depth)
   c. Variances or modifications from the agreed upon fluid program such as time, depth, reason, and authorization.

C. General Requirements:

1. During the drilling of the borehole and advancing of the DR casing and during the installation of the well, the Contractor will be responsible for minimizing the chemical and biological disturbance of the vadose zone and saturated alluvial matrix. The use of certain organic drilling fluid materials (such as starch, guar, or cottonseed hulls) will not be accepted for drilling, although some organic polymer additives may be allowed. SDSs from the manufacturer for all drilling fluid additives must be provided to the design professional for review prior to their use. The Design Professional reserves the right to reject any and all proposed additives.
2. The Contractor shall be responsible for maintaining the quality of the drilling fluid to ensure:
   a. Protection of water-bearing and potential water bearing formations exposed to the borehole
   b. Representative samples of the formation materials and groundwater
   c. Maximum development capacity and optimum potential yield of the completed well
   d. Inhibition of the formation and prevention of formation-caused drilling problems
   e. Protection of the integrity of the boring during well installation and development.

D. The Contractor is responsible for maintaining an adequate supply of drilling fluid additives at the drilling site and for the removal of all drilling fluids and additives from the borehole during development of the well. The aboveground mud tank(s) at the site shall have a minimum depth of 5 feet and an adequate total volume and design that has been approved by the Design Professional. The aboveground mud tank(s) shall contain at least one baffle and sufficient solids control equipment to facilitate the separation of

cuttings and suspended solids from the drilling fluid. Smaller volume mud tank(s) may be accepted by the Design Professional if additional solids control measures are implemented. The specific dimensions and design of the aboveground mud tank(s) must be approved by the Design Professional.

PART 4 MEASUREMENT AND PAYMENT

4.1 General

A. Payment for the lengths, areas, volumes, weights, or times shall be compensation in full for the furnishing of all overhead, labor, materials, tools, equipment, and appurtenances necessary to complete the work in a satisfactory manner as specified with all connections, testing and related work completed. Each item, fixture, piece of equipment, etc., shall be complete with all necessary connections and appurtenances for the satisfactory use of and/or operation of said item. No additional payment will be made for work related to each item unless specifically noted or specified.

4.2 Basis of Measurement and Payment

A. Compensation for all work specified to be performed under this specification will be made under the payment items presented in this Section. The prices for the said payment items shall be full compensation for all costs in connection therewith. Principal features of the work to be included under the various payment items will be on a linear foot, hourly, per ton, per cubic foot, per cubic yard, per each, or lump sum basis, as designated. Measurement of completed work will be made in place, with no allowance for waste. Measurement of lengths, areas, volumes, weights, or time will be based on the dimensions indicated in this Section, unless altered by the Design Professional to accommodate field conditions.

4.3 Bid Schedule Payment Items

A. The payment schedule for well construction, development, and testing of the well is presented in the Bid Schedule. A detailed description of each item of the payment schedule is presented below.

B. Item 1 – Mobilization and Demobilization: Item 1 consists of moving and assembling all drilling, testing, and support equipment to the job site, removing or transferring the equipment from the job site when the work is completed, and job site cleanup. Payment will be made on a lump sum basis. Up to 50 percent of the lump sum can be billed after mobilization to the site with the remaining 50 percent billed after demobilization and approval of the job site cleanup.

C. Item 2 – Surface Casing Construction: Item 2 consists of all labor, equipment, material costs associated with drilling the surface borings, and placement of the surface casings and surface grout seals. This item includes drilling the surface borehole as specified herein, providing the specified materials, and installing the surface casings in accordance with this specification. Payment will be made on a linear foot basis.

D. Item 3 –Borehole Drilling and DR Casing Advance: Item 3 consists of all labor, equipment, and material costs associated with drilling and advancing the DR casing (of the various specified diameters shown on Figure 3, or other diameters as may be required). Item 3 also includes the optional cement annular seals (two seals are assumed) at casing diameter reductions. Payment will be made on a linear foot or per each basis for actual drilled depths and values.

E. Item 4 – Casing and Screen Material: Item 4 consists of the material cost of the well casing and well screen. Payment will be made on a linear foot basis for the well casing and screen for actual quantities used after placement is complete.

F. Item 5 – Casing and Screen Installation: Item 5 consists of all labor and equipment costs required for the installation of the well casing and well screen, including welding requirements, logs, and records. Payment will be made on a linear foot basis.

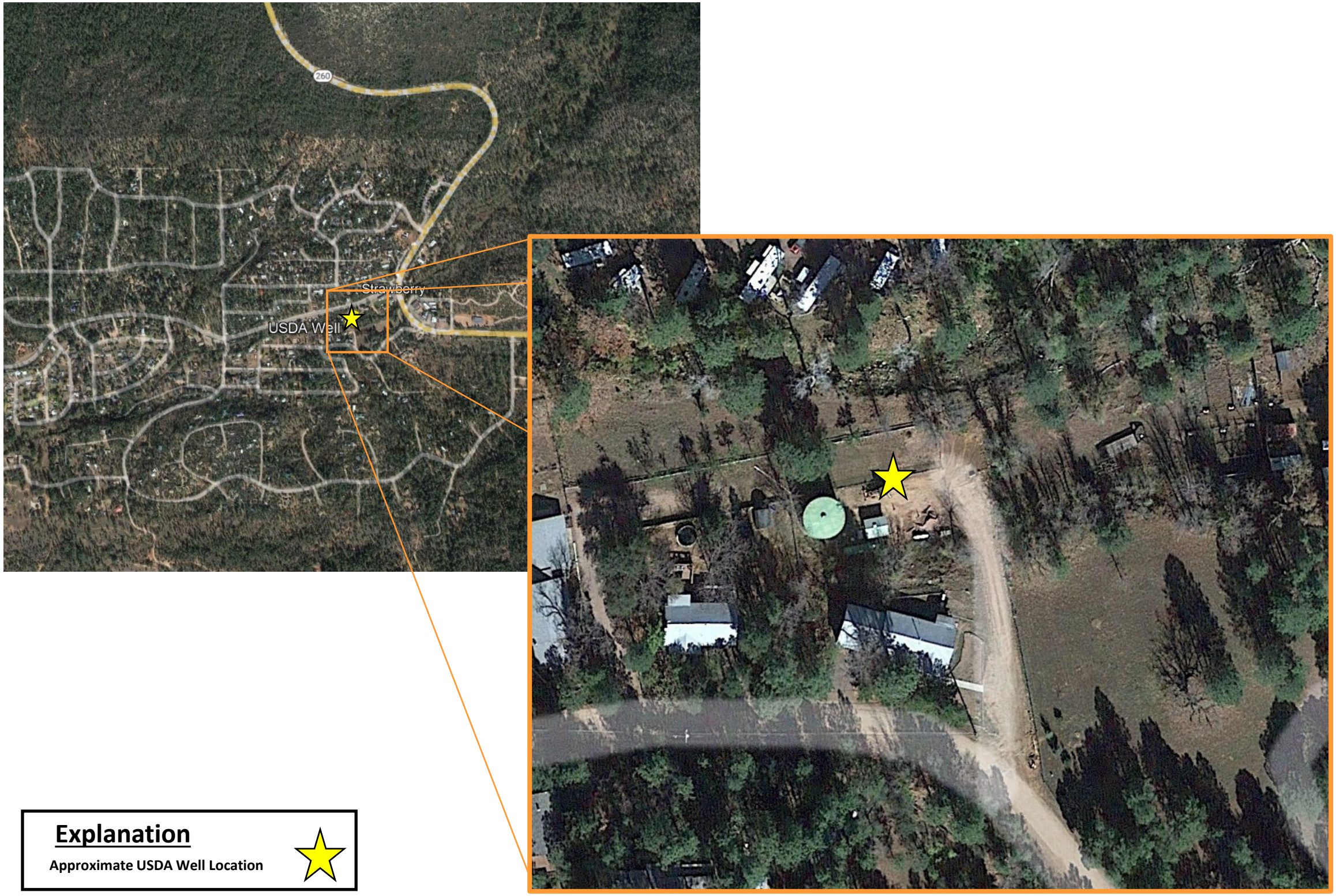
G. Item 6 – Annular Material and Installation: Item 6 consists of all labor, equipment, and material costs to furnish and install the filter pack and disinfectant as specified in this Section. The Item 6 annular material volume as indicated in the Bid Schedule is based on the calculated volume plus a 30 percent overage. Payment will be made on a per ton basis for actual quantities used.

H. Item 7 – Well Development and Completion: Item 7 consists of all labor, equipment, and material costs associated with well development by swabbing and air-lift pumping as specified in this Section. Item 7 also consists of the well video. Payment will be made on an hourly and lump sum basis.

I. Item 8 – Well Testing: Item 8 consists of the cost of all labor, equipment, and materials associated with the well testing requirements. Payment will be made on a lump sum and hourly basis.

J. Item 9 – Rig Hourly Rate (Allowance Item): Item 9 consists of the cost of maintaining equipment with and without personnel if a work stoppage occurs at the well that is not due to any fault of the Contractor or Subcontractors. Payment for any hourly time is subject to approval by the Design Professional and Owner. Payment will be made on an hourly basis.

END OF SECTION



Explanation

Approximate USDA Well Location

CLEAR CREEK ASSOCIATES
a Geo-Logic Company

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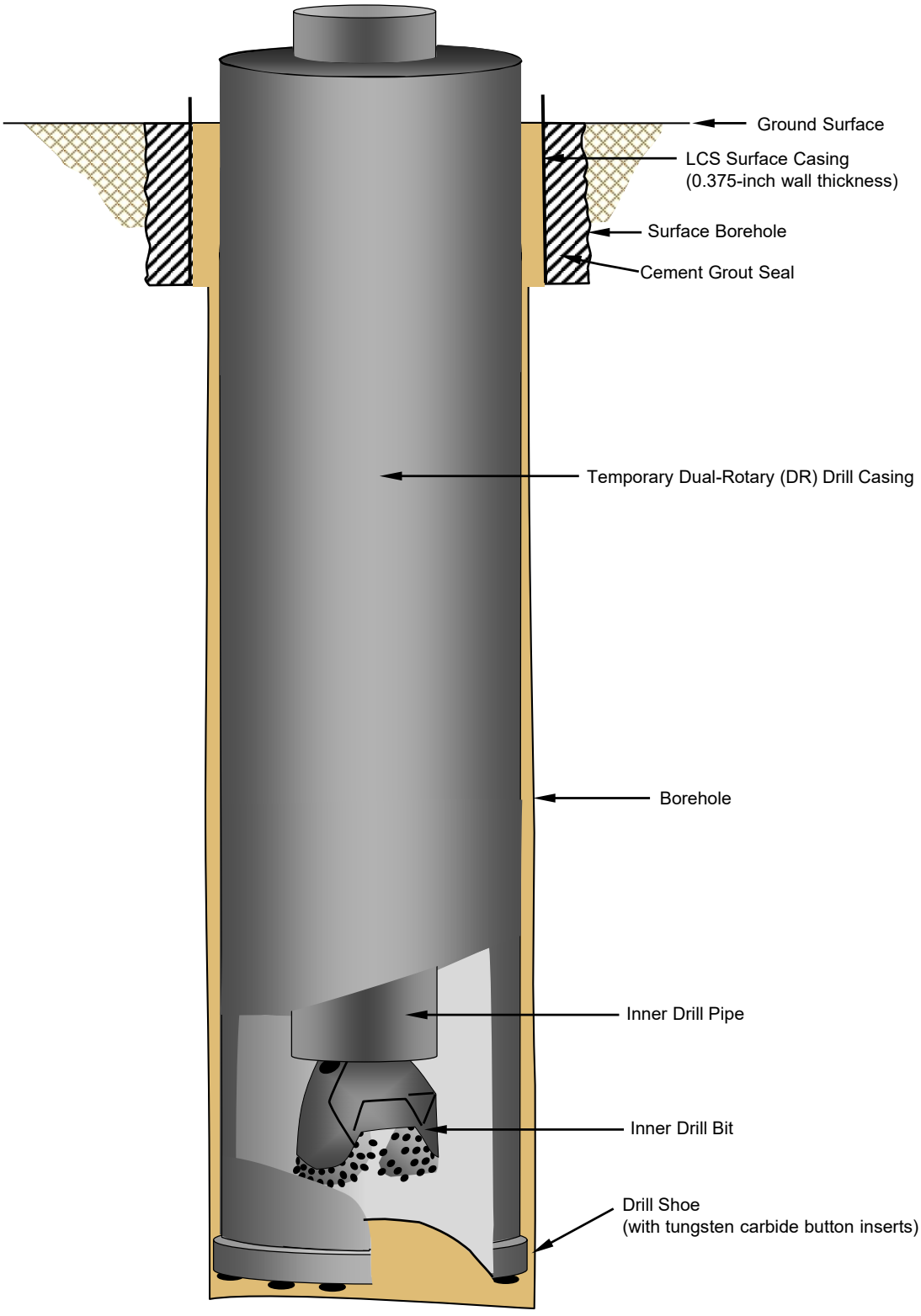
FIGURE 1
USDA Well Location
Pine-Strawberry Water Improvement District
Strawberry, Arizona



Conceptual Diagram
Not To Scale

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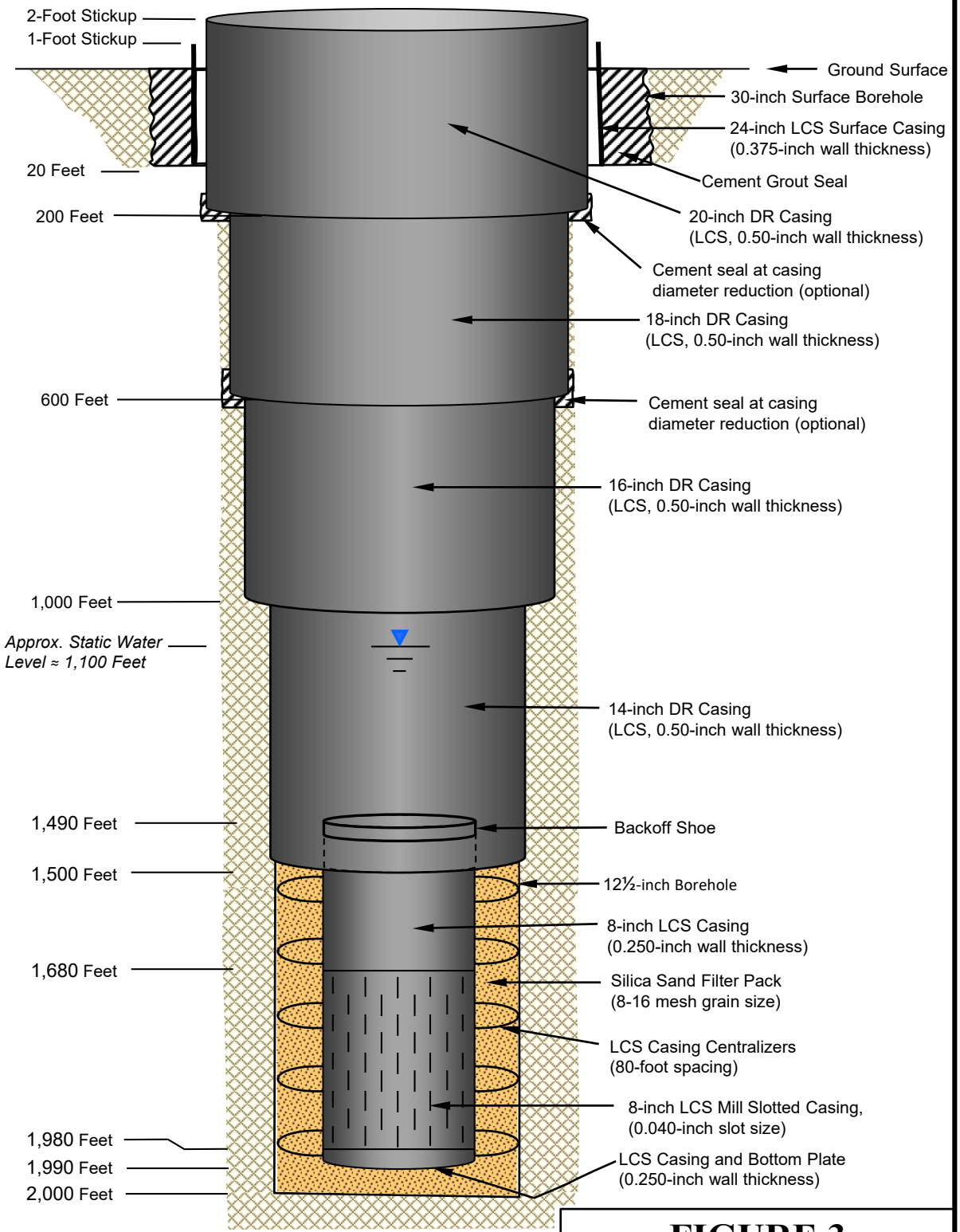
a Geo-Logic Company

FIGURE 2
Dual-Rotary Drilling Method
PSWID USDA Well
Strawberry, Arizona



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Not To Scale

Notes:

1. LCS = Low Carbon Steel
2. All diameters are OD

FIGURE 3

Preliminary Well Design
USDA Well
Pine-Strawberry Water Improvement District
Strawberry, Arizona

SAND CEMENT MIX DESIGN EXAMPLE

1 sack of cement = 1 bulk ft^3 *

= 94 lbs.

= 3.6 absolute gallons

*A sack of cement has a bulk volume of approximately 1 cubic foot, which is composed of 0.52 cubic feet of air and 0.48 cubic feet of solids (actual space occupied by the solids of one sack of cement when mixed with water to form a slurry). Calculations are based on the specific gravity of cement equal to 3.15 gm/cm^3 and the specific gravity of sand aggregate equal to 2.65 gm/cm^3.

Conversion: (specific gravity) (62.4) = lb/ft^3

Materials	Pounds of Material	Factor (Absolute ft^3/lb)	Absolute Volume (ft^3)	Water Requirement (gallons)
Cement	94	.0051	0.48	6.0
Sand	80	.0060	0.48	
Water	50	.016	0.80	
TOTAL	224		1.76	6.0

Slurry Wt. = 224 lb/1.76 ft^3 = 127 lb/ft^3 (17 lb/gal)

Slurry Yield = 1.76 ft^3/sack cement

Slurry Yield = 15.34 sack cement/yrd^3

For 1 yrd^3:	Cement	1,447 lb	7.36 ft^3
	Sand	1,217 lb	7.36 ft^3
	Water	766 lb	12.27 ft^3
		3,430 lb	27 ft^3

POZZOLAN CEMENT MIX DESIGN EXAMPLE

1 sack of cement = 1 bulk ft^3*

= 94 lbs.

= 3.6 absolute gallons

*A sack of cement has a bulk volume of approximately 1 cubic foot, which is composed of 0.52 cubic feet of air and 0.48 cubic feet of solids (actual space occupied by the solids of one sack of cement when mixed with water to form a slurry). Calculations are based on the specific gravity of cement equal to 3.15 gm/cm^3 and the specific gravity of pozzolan equal to 2.46 gm/cm^3.
Conversion: (specific gravity) (62.4) = lb/ ft^3

Materials	Pounds of Material	Factor (Absolute ft^3/lb)	Absolute Volume (ft^3)	Water Requirement (gallons)
Cement	47	.0051	0.24	3.0
Pozzolan**	37	.0065	0.24	1.95
Water	41	.016	0.66	
TOTAL	125		1.14	4.95

Slurry Wt. = 125 lb/1.14 cu ft = 110 lb/ft^3 (14.7 lb/gal)

Slurry Yield = 1.14 cu ft/sack cement and pozzolan

Slurry Yield = 23.68 sack cement and pozzolan/yrd^3

For 1 yrd^3:	Cement	1,114 lb	5.68 ft^3
	Pozzolan	874 lb	5.68 ft^3
	Water	977 lb	15.63 ft^3
		2,965 lb	27 ft^3

** Added as 50% by volume of cement. Example is for Halliburton's Pozmix A. Water requirements will vary depending on composition and grind of pozzolan material.